

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**

**THE IMPACTS OF TRADE LIBERALIZATION**  
**ON AGRICULTURAL EXPORT PERFORMANCE**  
**IN ETHIOPIA**

**BY**  
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**JUNE, 2008**  
**ADDIS ABABA**

**THE IMPACTS OF TRADE  
LIBERALIZATION ON AGRICULTURAL  
EXPORT PERFORMANCE IN ETHIOPIA**

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## **Abstract**

Developing countries have experienced extensive and rapid trade liberalization in recent years which undertaken both in the context of multilateral trade negotiations and as part of the conditionality linked to the structural adjustment and stabilization programs agreed with the International Monetary Fund (IMF) and the World Bank (WB). The impact of Trade Liberalization/Economic reforms on export performance is controversial even if it is widely adopted in developing countries.

The aim of this paper is to analyze the impact of economic reform policies on the agricultural export performance of Ethiopia; especially, diversification, competitiveness and openness for the period 1974 to 2004. The main question addressed here is whether the reforms made has a positive impact on the export performance of the country; and to analyze the relative importance of domestic supply related factors such as diversification, competitiveness and openness as compared with external demand conditions in determining agricultural export performance of the country. The performance of the sector is analyzed using these four indicator time series variables to capture the effects of both international market potential and domestic supply side policy reforms.

The data are analyzed using Ordinary Least Squares (OLS) and Error Correction Model (ECM) frameworks to examine the impact of trade policy on the agricultural export expansion of the country both in the short run and in the long run. The main findings of the analysis are agricultural export performance is more sensitive to the domestic supply side policy reforms like diversification and openness. Among them diversification is an important factor that explains export performance both in the short run and in the long run, indicating that the country should continue to diversify her exports.

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## **Abbreviations**

ADF:	Augmented Dickey Fuller
ADLI:	Agricultural Development Led Industrialization
CGE:	Computable General Equilibrium
CPO:	Crude Palm Oil
CPP:	Comprehensive Package Program
CSA:	Central Statistical Authority
DF:	Dickey Fuller
EEA:	Ethiopian Economic Association
EG:	Engle and Granger
EPRDF:	Ethiopian People's Revolutionary Democratic Front
FAO:	Food and Agricultural Organization
FFBs:	Fresh Fruit Bunches
GDP:	Gross Domestic Product
GLS:	Generalized Least Squares
GMM:	Generalized Method of Moments
GNP:	Gross national Product
IFPRI:	International Food Policy Research Institute
IFS:	International Financial Statistics
IMF:	International Monetary Fund
LDCs:	Least Developed Countries

MERRISA:	Macroeconomic Reforms and Regional Integration in Southern Africa
ML:	Maximum Likelihood
MOFED:	Ministry of Finance and Economic Development
MOI:	Ministry of Information
MPP:	Minimum Package Program
NBE:	National Bank of Ethiopia
NTB:	Non Tariff Barriers
OLS:	Ordinary Least Squares
PA:	Peasant Association
RER:	Real Exchange Rate
SAP:	Structural Adjustment Program
SITC:	Standard International Trade Classification
TGE:	Transitional Government of Ethiopia
TIR:	Trade Intensity Ratio
UNCTAD:	United Nations Conference on Trade and Development
VEC:	Vector Error Correction
VECM:	Vector Error Correction Model
WB:	World Bank
WFP:	World Food Program

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# **CHAPTER ONE**

## **Introduction**

### **1.1 Background of the Study**

Agriculture is a vital sector in most developing countries, particularly the least developed countries, and it is heavily protected in high income countries resulting in severe trade distortions. As a result, it is one of the most problematic areas in international trade negotiations. Both industrial and developing countries still provide protection to agricultural sectors. Agricultural trade liberalization is particularly sensitive in developing countries because policy makers are concerned about the potential impact on small scale farmers who typically account for a large share of the poor. The issue is politically sensitive in industrialized countries as well, at least partly because of the disproportionate political power of farm groups. In spite of this sensitivity there is a wide spread belief that reducing the trade barriers and policy distortions affecting agriculture will increase economic efficiency and aggregate income. Removal of trade distortions would raise the earnings of developing countries from agricultural exports because the agricultural sector plays a major role in their economic development. Trade liberalization was raised as a solution for the economic crises of least developed countries which they faced from 1960s onwards due to the

strong government intervention and inward looking economic policies followed during this period (ECA, 2004). The different strategies which were implemented based on heavy state intervention have failed to bring positive changes. Moreover, its low returns in turn constrained the success of the import substitution strategies that most African countries adopted in the 1960s and 1970s.

Recent years have seen a great deal of trade liberalization world wide particularly via the vehicles of regionalism and bilateralism. At the same time, however, many developing countries have also chosen to liberalize their international trade regimes unilaterally. However, the ability of least developed countries (LDCs) to benefit from agricultural trade liberalization is mainly limited by supply constraints and poorly functioning market.

Ethiopia like many countries in Africa has undergone rapid transition and adjustment in its agricultural sector. Agriculture is the foundation of the countries food production and hence the major contributing sector to food security. As a result of agriculture's role to total output and employment, government policy of the sector is expected to identify the basic problem and enhance agricultural productivity to alleviate poverty and to stimulate the overall economic growth in all non-agricultural sectors.

## **1.2 Statement of the problem**

Despite the country's huge effort made in developing agriculture, the sector has remained at subsistence level for decades. Taxes and duties on agricultural commodities remained very high which had discouraged farmers from increasing the production of cash crops (Ayele, 2000). Negative environmental influences such as, land and water resource degradation, deforestation and loss of bio-diversity have reached very critical levels. Moreover, unreliable and erratic rainfall regimes coupled with unchecked population growth has aggravated the already poor performance of the sector. To this, could be also added the inappropriate micro and macroeconomic policies and strategies such as, controlled price and quota delivery, land reform measures, forced collectivization and villagisation, overvaluation of the currency, and monopoly agricultural input supply have greatly attributed to slow agricultural growth and its subsequent negative impact on the social and economic development of the country (Kinfu, 2001).

According to the International Monetary Fund's (IMF) measure of trade liberalization most of the LDCs have undertaken deeper trade liberalization than the large industrializing Asian and Latin American countries (UNCTAD, 2004). Along with trade liberalization, the LDCs

have also introduced more flexible exchange rate policies with substantial devaluations of their exchange rate. Trade liberalization and devaluation have also taken place in the context of a general move towards more liberal domestic economic policies through privatization and reduction of the direct role of the state in the economy.

As of recent, however, various macroeconomic policy reforms have been put in to effect so as to reverse the negative trends of the agricultural sector development. The Transitional Government of Ethiopia (TGE) since come in to power in 1991 has undertaken a series structural adjustment programs under the regulation and support of international financial institutions (IMF and WB) since 1992/93 (Kinfе, 2001). Moreover, private sector participation in agricultural development is placed utmost emphasis. The reform mainly focuses on external sector liberalization, monetary and exchange rate policies, financial sector reform, investment policy and public enterprise reform. The core idea behind the new policy regime is to increasingly open the economy with a view of benefiting the economy from expanded markets and increasing its efficiency through foreign competition. The performance of the agricultural sector is crucial to the improvement of the overall economic well being in the country. Agricultural development Led Industrialization

(ADLI), an economic development strategy, aimed at promoting the agricultural sector was adopted for ensuring accelerated and sustainable economic growth.

From a policy perspective an evaluation of the impact of trade reforms on export performance becomes very important as the country continues to liberalize the economy with the view to boosting the underlying supply capacity. Agricultural policy reform is required to increase the incentives facing domestic producers and to remove the constraints such as access to inputs, credit and technology that peasant farmers tend to subject to. The potential global gains from full agricultural trade liberalization are much more significant but most of the gains accruing to each country arise from their own liberalization rather than that of their partner countries (Tokarick, 2006). Tariff barriers in many developing countries discourage their own exports to a greater extent than rich country tariffs; mostly due to the fact that their tariff barriers are higher.

Many studies have been done relating world trade liberalization as proposed by the Uruguay Round with the performance of agricultural exports, but there are few studies that analyze the impact of own trade liberalization/reform on agricultural export performance. To the best of my knowledge there is no study undertaken in the area for the case of

Ethiopia. Therefore, it is important to analyze the impact of agricultural trade reform of Ethiopia for the past two decades on agricultural export performance of the country.

### **1.3 Objectives of the study**

Liberalization doesn't mean free trade. It does, however, imply a substantial enough reducing in tariff and non tariff barriers to establish a noticeably more open market as compared with the pre liberalization era. The general objective of the study is to analyze the impact of trade liberalization on agricultural export performance of Ethiopia especially diversification, competitiveness and openness.

The specific objectives are:-

- To examine the export performance of the country following trade liberalization.
- To analyze the relative importance of domestic supply related factors as compared with external demand factors in affecting agricultural export performance.
- To draw conclusions and forward policy recommendations.

## **1.4 Methodology and Data Source**

The data for this study came from different government organizations such as National Bank of Ethiopia (NBE) and Ministry of Finance and Economic Development (MOFED); and databases such as Food and Agricultural Organization (FAO) and International Financial statistics (IFS) and United Nations Conference on Trade and Development (UNCTAD). The data are on annual basis collected for a period covering 31 years starting from 1974 to 2004. These periods are chosen to take into account the data before and after the reforms have been taken place in 1992. To investigate the impact of duty reductions and liberalization on agricultural export performance, an Engle and Granger (1987) estimation technique will be applied.

## **1.5 Hypothesis of the Study**

The issue of the impact of trade liberalization on export performance is controversial and needs empirical investigation.

The hypothesis to be tested under this study is:

- Policy reforms made on the agricultural sector through reduction of tariff and non tariff barriers, tax reforms can positively and significantly contribute to export expansion of the sector.
- The impacts of domestic policy variables overwhelm that of external demand in explaining export performance of the country.

## **1.6 Significance of the Study**

Ethiopia started its trade reform programs since 1992 as soon as the military regime was overthrown. An economic reform program was adopted by the Transitional Government of Ethiopia (TGE) to liberalize the economy in the context of various Structural Adjustment Programs (SAPs) with the aim of accelerating economic growth. However, no systematic analysis has been done on the agricultural policy reform in identifying the agricultural export performance of Ethiopia following the reform. Policy makers in general depend primarily on policy analysis which helps them to recognize and define problems, choose policy priorities, undertake policy formulation and implementation. In this regard, the Ethiopian agricultural policy is one of the most debatable issues which needs a rigorous research work on different aspects of the sector.

This study enables to give an overview of the sector's performance and also provide an explicit analysis of the performance of sector following the reform. The final result obtained in this study is useful in improving policy design, to become as source document to policy makers and also to researchers who are working in government and non- government organizations.

## **1.7 Scope and Limitation of the Study**

The study mainly devotes itself to the assessment of the impact of trade liberalization on the export performance of one sector, agriculture. It doesn't consider its impact on the other sectors, like industry and services. Moreover, liberalization of trade, both unilateral and multilateral, affects an economy in many dimensions: Balance of Payment (BOP), growth, inequality, poverty, etc. are the few among them; but not addressed in this study. Difficulty to get satisfactory data to measure some indicator variables; and time and financial constraints are the main limitation of this study.

## **1.8 Organization of the Paper**

The rest of the study is organized as follows. The next chapter provides an overview of the Ethiopian agriculture; the structure, the policy followed in different regimes and the contribution of the sector to the national economy. Chapter three deals with a review of both theoretical and empirical literatures relating trade liberalization/ economic reforms with export performance. Chapter four deals with specification of the model and methodology; and presents the type and source of data and the estimation technique followed in the analysis part. Chapter five is wholly devoted to the statistical analysis of the impact of trade liberalization on agricultural export performance of the country for the time series data based on the adopted methodology. It also presents the results obtained from the analysis. The last chapter, chapter six, provides conclusions drawn from the empirical findings and forward policy recommendation based on the result of the analysis.

## **CHAPTER TWO**

### **Overview of the Ethiopian Agriculture**

#### **2.1 Structure of the Agricultural Sector of Ethiopia**

Ethiopia is a land endowed with various natural resources suitable for agriculture. Its climate, topography, rivers as well as other natural and bio-diversified resources make the country favourable for agricultural investment. Farming can play a decisive role as a source of wealth for agrobusiness in Ethiopia. While the total land area of the country is 115.5 million hectares, 66 percent (73.6 million hectares) is suitable for agriculture. On the other hand, only 22 percent (16.5 million hectare) has been utilized for crop production so far (MOI, 2004). Out of the cultivated land, 14.6 million hectare is yielding annual crops; the rest produces ‘inset’, coffee and other perennial crops.

The Central Statistical Authority (CSA) produced a series of agricultural census reports in 2003 and 2004 that showed the structure of farms in Ethiopia (EEA, 2006). According to the report there are two categories of farms: small rural and urban private farms and large scale commercial farms.

### ***2.1.1 Small Holder/Peasant Agriculture***

It is the most important and constituted for more than 90 percent of the agricultural production and for approximately 95 percent of the total area under crop production. The total agricultural population of Ethiopia in 2002 was 53.7 million (80 percent) of the country's population (EEA, 2006). This population lived in 10.4 million agricultural households with average 5.2 persons per household. The total land holding size of these agricultural households was 11.0 million hectares with an average holding size of 1.06 hectares per household. Of this, 74.2 percent (8.2 million hectares) was used for temporary crops, while only 6 percent (6.7 thousands hectares) was used for permanent crops. The remaining was used for other purposes. The distribution of land by tenure in 2001/02 was known to be 86.35 percent cultivated by farmers having use rights, 10.1 percent rented and 3.6 percent of other tenure type (Girma, 2006).

**As shown in table 2.1**, in terms of landholdings the structure of the Ethiopian peasant farms is relatively homogenous. Over 86 percent of the farming community cultivates farm land with area less than 2 hectares. Farmers who cultivate land as small as 0.1 hectare or less constitute 7 percent, while another 29 percent cultivate farms less than 0.5 hectare (but

greater than 0.1 hectare). Some 26 percent of the farmers cultivate farms that vary between 0.5 and 1.0 hectare in size.

**Table 2.1: The distribution of landholding size of the small holder households**

<b>Land holding size</b>	<b>%of agricultural households</b>	<b>Cumulative %of agricultural HHs</b>
<b>&lt;0.10ha</b>	<b>7.2</b>	<b>7.2</b>
<b>0.10 – 0.50ha</b>	<b>28.6</b>	<b>35.8</b>
<b>0.51 – 1.00ha</b>	<b>25.8</b>	<b>61.6</b>
<b>1.01 – 2.00ha</b>	<b>24.8</b>	<b>86.4</b>
<b>2.01 – 5.00ha</b>	<b>12.5</b>	<b>98.6</b>
<b>5.01 – 10.00</b>	<b>1</b>	<b>99.9</b>
<b>&gt;10.00ha</b>	<b>0.1</b>	<b>100</b>

Source: Girma (2006 in EEA, 2006).

### ***2.1.2 Medium and Large Scale Commercial Farms***

Commercial farming system was officially introduced during the third five year plan (1968-73) of the imperial government of Ethiopia (Ayele, 2000). Among the strategies envisaged to modernize agriculture and increase

marketable surplus, the plan stated that available government land would be utilized for the establishment of large commercial farms. As a result, many entrepreneurs rented and developed commercial farms in the Awash Valley, the Rift Valley and other areas. After the 1974 revolution, all these farms were confiscated by the government and additional government lands in many parts of the country were also developed in to large scale commercial farms.

In terms of ownership structure, there are three types of medium and large scale commercial farms: State owned private and semi-private commercial farms. The later include farms owned by institutions with non agricultural mandates such as prisons, schools, etc., grouped under 'other farms' (see Table 2.2). Among the 2,809 large and medium scale farms that existed in 2001/02, those owned by private commercial farms are 740 (26 percent), their average size being 320 hectare. While only 1 percent of the farms are state owned, the large majority, 73 percent are grouped under 'other farms' (EEA, 2006).

**Table 2.2: Number, land area, production and yield levels of large and medium scale farms in Ethiopia**

	<b>Unit</b>	<b>All Farms</b>	<b>State Farms</b>	<b>Private Commercial farms</b>	<b>Others</b>
Number of farms	No.	2,809	31	740	2,038
Average farm size	Ha	129	2,310	320	27
Temporary food crops area	Ha	284,174	32,214	206,222	45,738
Temporary food crop production	Qt	2,294,070	841,231	1,046,033	406,748
Yield of temporary crops	Qt/ha	8.1	26.1	5.1	8.9
Permanent crops area	Ha	49,888	25,051	16,067	8,770
Permanent crops production	Qt	682,771	210,935	361,310	102,619
Yield of permanent crops	Qt/ha	13.4	8.4	22.5	11.7

Source: Girma (2006 in EEA, 2006).

## **2.2 Agricultural policy of Ethiopia**

This section focuses on the agricultural policy of Ethiopia since the imperial period and the reforms made in those respective periods.

### ***2.2.1 Agricultural Policy of imperial regime (pre - 1974)***

During this regime a three five year plans from 1957-1973 was implemented and private commercial agriculture was officially introduced during the third year plan (1967-73) of the then government (Ayele, 2000). According to Haile (1998) two approaches were outlined in line with the overall strategy;

#### **2.2.1.1 Establishment and Development of package program**

The program relies on the provision of inputs and services to the selected area in the form of package. There were two types of package projects: The Comprehensive Package Program (CPP) and The Minimum Package Program (MPP). CPP were designed to supply important inputs such as chemical fertilizers, high yield seeds and pesticides and services such as extension, marketing, credit at lower interest rate, expansion of education, nutrition and health.

The objectives of this project include:

- Raising the living standard of the poor peasants by raising per capita income;
- Creating employment opportunities by encouraging labor intensive technology;
- Encouraging peasant participation in the development process to solve problems; and
- Expanding experimental stations for new ideas in agricultural technology and improved farm tools.

The package projects were selected based on the criteria of conducive natural condition of the areas such as rainfall, good weather and soil fertility, accessibility to transport, market and communication, and farmers' willingness to accept the innovation.

The CPP was resulted in increased agricultural production and increased income, but the benefit goes to the landlords in the form of increased land rent. Since the benefit shifts to the non-targeted lords they start evicting tenants to establish large scale farms. Moreover, because of the huge costs associated with them, the program was too difficult to be duplicated in other areas of the country. As a result, the government launched the MPP

in 1972, aiming at raising production and income of small holders quickly over a wide area with a minimum reliance on scarce resources. The MPP was intended to provide the most crucial inputs and services mainly chemical fertilizers, improved seeds, credit and farm implements. The first MPP was established in 1971 in the hope that it will be duplicated at a rate of ten projects every year to cover the entire rural class. But still the benefits were mal-distributed in favor of landowners and large cultivators and eviction of tenants was repeated in some areas. This program was also continued well even during the Derge regime.

#### **2.2.1.2 Large Scale Commercial Farms**

This requires bringing extensive area of land under cultivation with the use of modern agricultural inputs such as modern technology, machinery, equipment (tractors and combiners) spray airplanes for pesticides, chemical fertilizers and hired labor contrary to the family labor used in the small holder farming system. Fiscal policies including duty free imports of tractors and fuels were employed in order to attract foreign private capital and managerial know-how in to the agricultural sector (Ayele, 2000). As a result, many foreigners come and invest in large scale farms such as *wonji* Sugar Enterprise, *Tendaho* Plantation and *Setit Humera* Plantation. It is the time the country was considered as one of the main supplier of food

materials to international market. The objectives of these projects were to increase consumption of agricultural production but they were producing industrial inputs. The end results became the capital outflow to their country and the country could not get the benefit of capital and employment.

### ***2.2.2 Agricultural policy of the Derge Regime (1974-1991)***

This is the period where the military government was in power with socialist orientation. This was followed by overall shifts in the economic policies of the country. The revolutionary government was committed itself first to address the issue of hunger through raised agricultural output. The principal articulation for the commitment was the implementation of three major policy initiatives aimed at state led growth in agriculture (Ayele, 2000).

#### **2.2.2.1 Land Reform**

Public ownership of rural lands, that is, proclamation No. 31 of 1975 had clearly indicated the exclusion of private property (Ayele, 2000). Land in excess of 10 hectares and large scale mechanized farms were confiscated

without any compensation. As a consequence of this policy many mechanized private farms were confiscated and in turn organized to state farms. According to this proclamation, transfer of land by buying or selling and mortgaging of land was forbidden, tenancy was abolished and renting of land was not allowed. Furthermore, all communal lands, church lands, state and private land was transformed to public or state ownership of rural land. The land reform contributes somewhat towards equalizing access to land and providing security for the landless. Such measures were welcomed most in the central and southern regions formerly characterized by extensive absentee ownership of land, tribute farming and large scale commercial agriculture.

#### **2.2.2.2 Aggregation of Production**

The government had also organized along socialized lines for the purpose of collective production and marketing of agricultural outputs and distribution of inputs. Three types of associations were established to implement this objective: service cooperatives, producer cooperatives, and state farms.

Peasant Associations (PAs) were encouraged to work toward the formation of cooperatives. The organization of service cooperatives were

designed to sell farm input, provide storage and processing facilities, offer low interest loans and marketing of agricultural outputs. The producers' cooperatives were pooled land, labor and other resources in an attempt to capture economies of scale. In order to attract members, the cooperatives offered low taxes, interest free loans and priority access to inputs and consumer goods. The third and smallest component of the farming system was made up of state farm. The private commercial farm functioning before 1974 were converted in to state farms.

In general, the agricultural sector policies of the Derg were characterized by the following:

- Nationalization of all private and commercial farms
- Prohibition of all private investment in the agricultural sector
- Involuntary collectivization of peasants in to peasant association and producers and service cooperatives.
- Forced villagization and settlements
- Government control of virtually all agricultural input and output markets
- Forced food grain quota deliveries at predetermined low prices
- Restriction of the movement of agricultural outputs from one part of the country to another.

### ***2.2.3 Agricultural policy of post 1991 (the current regime)***

After the dawn fall of the Derge in 1991, a new economic policy was announced by the TGE. The objectives of replacing the previous centrally planned economy with market oriented economic system was based on the ideology to implement principles of decentralization, autonomy, competition, efficiency and profit maximization has steadily improved the overall policy environment in the agricultural sector. The state continued to operate only those state farms considered strategic to the economy with the participation of private domestic or foreign capital (Kinfе, 2001). However, individuals were given the right to operate large commercial farms without capital limits. The private sector was considered as engine to the country's economic growth and various policy measures aiming at developing the sector was put in place. Accordingly, private agricultural sector is anticipated to play a significant role in creating employment, supplying raw materials to industries, earning/saving foreign exchange and providing food for the population (Ayele 2000). Thus various forms of incentives were permitted to promote private agricultural investment in the sector.

The TGE began the implementation of a comprehensive macroeconomic and structural reform with the support of IMF and the WB. The first phase of structural and economic reform program was undertaken during 1992/93 - 1994/95. The program focused on economic stabilization and structural reform measures, particularly in the financial sector, public enterprises and civil service areas (Kinfe, 2001). These measures were also aimed at removing price distortions, improving market related incentives, promoting private enterprise and exports; progressively liberalize the economy and reducing the role of the public sector.

According to (Kinfe, 2001), the following reforms were undertaken during this period:

- The Birr was devalued by 58.6percent in USD terms;
- An auction system was introduced to determine the exchange rate applicable to most transactions;
- Procedures for export and import licensing were streamlined ;
- A new interest rate structure was introduced and positive real rate of interest maintained;
- Direct price controls were virtually eliminated and internal marketing, transport and trade were decentralized;

- The maximum tariff rate was reduced from 230 percent to 80 percent; and
- Treasury bills and auctions were introduced.

The second phase of economic reform policy was implemented during the period 1994/95 – 1996/97 (Ibid). The objectives of this phase program were:

- To continue to revitalize the economy to create a conducive environment for labor intensive development
- To limit the role of the government to selected economic services, and
- To promote greater private sector activity and investment.

ADLI was chosen as a development strategy in this endeavor. It is a long term economic strategy where priority is given to agricultural sector. It has internal forward and backward linkages between the agricultural and the industrial sectors, and linkage with the external (export) sector. This linkage can be understood in two ways;

- Agriculture will provide food for domestic requirement, supply industrial inputs and provide commodities for export,

- Development of agriculture expands market for domestically produced goods as a result of increased incomes of farmers.

At program level ADLI consists of:

1. Ensuring accelerated economic growth through rural-centered development program which mainly focuses on the development of agricultural sector's output using package program.
2. Ensuring accelerated economic growth with target at improving the living standards of urban population which includes rapid change in urban dwellers living conditions and supporting indigenous investors.
3. Adopting effective education strategy by including specifying instruments of targets and sub targets in the short and long time period, and
4. Preventive and primary health care strategies of the programs are among the basic once.

## **2.3 Contribution of Agriculture to the National**

### **Economy**

Agriculture is the back bone of Ethiopian economy. It plays a key role both in the development of the nation as well as in the well being of its people. Its primary role was to provide sufficient low-price food and man power to the expanding industrial economy, which was thought to be the dynamic sector leading towards economic development. The following are some of the sector's contribution to the national economy:

#### ***2.3.1 Source of food and Raw Materials***

Agriculture is known to supply the country with food grains, cash crops, and dairy and meat products among other things. Besides, the sector provides relatively abundant food and raw materials to the increasing industry-based urban population. Productivity in the agricultural improves the level of income received by the rural people. Increased income is believed to generate increased demand for the manufactured good from the industrial sector. This creates a favourable opportunity to widen the domestic market for manufacturers (Kinfе, 2001). This increases the demand for both manufactured goods and agricultural inputs. In addition,

it facilitates an opportunity for the generation of additional off-farm employment that will raise rural income.

### ***2.3.2 Contribution to Gross Domestic Product (GDP)***

The Ethiopian economy is highly dependent on agriculture, which contributes about 48 percent to GDP in 2004/05 (NBE, 2005). The contribution of agriculture to GDP growth was the highest relative to other sectors. For instance in 2004/05 the economy grew by 8.8 percent, of which 5.8 percent (or 66 percent) was contributed by the agricultural sector (EEA, 2006). Even though the agricultural sector performed well in recent years the annual growth rate of its GDP fluctuated from year to year. Growth rate was negative in 2001/02 and 2002/03, while it was positive then after (NBE, 2005). This variation was largely associated with weather condition. Moreover, expansion in the size of cultivated land and improvement in the use of fertilizers had also contributed to the recent improvement in the performance of the sector.

### ***2.3.3 Contribution to export Earnings***

During the fiscal year 2004/05 total export earnings which stood at US\$ 818 million has shown an increase by 36 percent relative to the preceding fiscal year. Agricultural export is accounted for more than 83 percent of this total earning (EEA, 2006). Most of the export products were unprocessed raw products, while few were semi-processed agricultural products. Among the agricultural commodities, coffee contributed about 41 percent of the export revenue in 2004/05, while semi processed agricultural commodities did not exceed 3 percent. The recent improvement in export earnings could be attributed to the increase in the volume of export and improved world price of agricultural export commodities. The volume of coffee export rose by 28 percent between 2002/03 and 2004/05 (Table 2.3). During the same period, export of oil seeds and pulses grew by 70 percent and 83 percent, respectively. The revenue obtained from these export commodities increased even by higher rate during the corresponding years. Earning from coffee exports doubled while that of oil seeds and pulses increased by over 120 percent and 78 percents respectively. Similarly, world price for hides and skins, meat and meat products, fruits and vegetables, and live animals all increased by about 23, 6, 75 and 133 percents respectively during 2004/05. For others,

such as pulses and sugar and molasses, world price declined by about 15 and 94 percents respectively (FAO/WFP, quoted from EEA, 2006).

**Table 2.3: Major commodity exports of Ethiopia – (2001-2004)**

Commodity	2002/03	2003/04	2004/05	Change (%) (2004/05)/(2002/03)
Coffee (US\$ Million)	165.2	223.6	335.4	103.0
Volume (000' tones)	126.1	159.7	161.0	27.7
Pulses (US\$ Million)	20.0	22.6	35.5	77.5
Volume (000' tones)	66.2	73.0	121.6	83.4
Oilseeds (US\$ Million)	46.1	82.7	102.3	121.9
Volume (000' tones)	83.0	106.0	140.7	69.5
Chat (US\$ Million)	58.0	88.1	99.9	72.2
Volume (000' tones)	8.07	13.8	21.67	168.5
Other exports (US\$ Million)	193.3	183.7	244.8	26.6
Total exports (US\$ Million)	482.7	600.7	817.9	69.4

Source: FAO/WFP, (2006 in EEA, 2006).

Livestock trade activities have also improved in recent years. The largest contributor in this sub-sector is hides and skin. Export of meat and live animals seem to have revived in the last few years after facing serious challenges from export banning particularly in Middle Eastern countries. In 2004/05, Ethiopia earned over 500 million birr each from export of live animals and meat (EEA, 2006).

# **CHAPTER THREE**

## **Review of Related Literatures**

### **3.1. Theoretical Literatures**

#### ***3.1.1 Trade Liberalization***

##### **3.1.1.1 Definition of Trade Liberalization**

Countries are considered as more outward oriented if their trade reforms imply a move towards neutrality, liberality or openness. Specifically a shift towards neutrality involves equalizing incentives between the exporting and import competing sectors. A regime is regarded as more liberal when the general level of intervention has been reduced. Sometimes an increase in openness is equated with an increase in the importance of trade in the economy. However, a more neutral trade regime can be accomplished through a reduction in import barriers, or via the introduction of a symmetric system of export subsidies, where the first policy implies a reduction in the intervention of trade policy whilst the latter implies an increase (Santos, 2005).

### **3.1.1.2 The benefits of Trade liberalization**

Policies that make an economy open to trade and investment with the rest of the world are needed for sustained economic growth. This is because there is no country in recent decades achieved economic success, in terms of substantial increases in living standards for its people, without being open to the rest of the world (IMF, 1997). There is considerable evidence that more outward- oriented countries tend consistently to grow faster than ones that are inward- looking. Moreover, developing countries would gain more from trade liberalization as a percentage of their GDP than industrial countries, because their economies are more highly protected and because they face higher prices.

Although there are benefits from improved access to other countries' markets, countries benefit most from liberalizing their own markets (Tokarick, 2006). The main benefits for industrial countries would come from the liberalization of their agricultural markets. Developing countries would gain about equally from liberalization of manufacturing and agriculture. However, the group of low-income countries would gain most from agricultural liberalization in industrial countries because of the greater relative importance of agriculture in their economies (IMF, 2001). Industrial countries maintain high protection in agriculture through an

array of very high tariffs, including tariff peaks (tariff above 15 percent), tariff escalation (tariffs that increase with the level of processing) and restrictive tariff quotas (limit on the amount that can be imported at a lower tariff rate). This shows the need for further liberalization of international trade. Many developing countries themselves have high tariffs. On average, their tariffs on the industrial products they import are three to four times as high as those of industrial countries, and they exhibit the same characteristics of tariff peaks and escalation (IMF and WB, 2001). Further liberalization by both industrial and developing countries will be needed to realize trade's potential as a driving force for economic growth and development. Greater efforts by industrial countries and the international community more broadly, are called for to remove the trade barriers facing developing countries, particularly the poorest countries. Moreover, developing countries would strengthen their own economies (and their trading partners') if they made a sustained effort to reduce their own trade barriers further.

Enhanced market access for the poorest developing countries would provide them with the means to harness trade for development and poverty reduction. Offering the poorest countries duty and quota free-access to

world markets would greatly benefit these countries at little cost to the rest of the world (IMF, 2001).

### **3.1.1.3 The Sequencing, Timing and Speed of Trade**

#### **Liberalization**

Trade liberalization has generally taken place in the Least Developed Countries (LDCs) as part of the structural adjustment programs in which most of them have been engaged in the 1980's. This is not part of the negotiated global process of trade liberalization rather it has been the IMF and the WB policy conditionality for aid inflows and debt relief (UNCTAD, 2004). The promise of economic success through adjustment, together with the marginalization of LDCs in the context of global and private capital flows and their dependence on debt relief and aid explains why the LDCs have been gone further than other developing countries in trade liberalization.

#### **3.1.1.3.1 Sequencing of Trade Liberalization**

With regard to the design of trade liberalization which is part of the process of structural reform, Edwards (1997) has summarized the sequencing as follows:

- The government should find an alternative source of revenue before the tariff cut is made;
- Import licenses and prohibitions should be eliminated during the early stages of the liberalization scheme, and tariffs should replace them if necessary;
- A real exchange rate overvaluation should be avoided and nominal exchange rate anchors should be introduced at the beginning of the reform; and
- A uniform tariff structure should be introduced for efficiency reasons.

UNCTAD, (2004) also identifies a series of common steps that were typically followed by LDCs in their liberalization efforts. These steps conformed somewhat to the sequence recommended by Edwards, but there were divergences which conformed more closely to other views of best practice.

The steps undertaken by LDCs were;

- A macro economic reform in the form of exchange rate reform necessary to ease constraints on exporters, and currency devaluation;

- Abolition of export restrictions, price decontrol and privatization to strengthen the role of the private sector through the elimination of monopolies on foreign trade and through the promulgation of foreign investment laws;
- Elimination of quantitative measures and/or conversion of import restrictions into ad valorem tariff rates. The tariff regime was rationalized and simplified through a reduction in the number of tariff bands. Indirect taxes were normally introduced at this stage, or shortly thereafter, to compensate for the lack of tariff revenue accruing to the government;
- Introduction of measures to facilitate and support exports; and
- Further liberalization on a regional basis-while joining free trade areas or custom unions.

A general feature of the sequencing of trade liberalization in the LDCs is that financial and other support measures to their exporting companies were not introduced either before or during the early stages of trade liberalization. Some countries introduced export promotion policies before the implementation of tariff reforms.

### **3.1.1.3.2 The Timing and Speed of Trade**

#### **liberalization**

According to (UNCTAD, 2004) the least developed countries report, on the basis of speed of liberalization, LDCs can be divided in to three groups:

- **Fast Liberalizers:** Countries that liberalized with in a five-year period: Benin, Cape Verde, Gambia, Malawi, Mozambique, Sudan and Zambia;
- **Gradual Liberalizers:** Countries that liberalize with in six to fifteen years period: Guinea, Haiti, Lesotho, Madagascar, Mali Mauritania, Nepal, Togo and Uganda; and
- **Current Liberalizers:** countries that are still undertaking reforms: Bangladesh, Rhutan, Burkina Faso, Burundi, Cambodia, Ethiopia, the Lao People's Democratic republic, Maldives, Senegal and the Solomon Islands.

### ***3.1.2 Trade Policy and Liberalization***

Most cross countries investigations have emphasized the fact that in developing countries, non-tariff barriers (quotas, licenses and prohibitions)

have traditionally constituted the most significant way of restricting trade. Trade orientation was measured by the degree to which the structure of protection and incentives in a country was biased against exports. Santos, (2005) defined liberalization and bias reduction using the concepts of effective exchange rate (EER) and quantitative restrictions (QR). The degree of bias (B) of the trade regime at time t is defined as:

$$B_t = \frac{EER_m}{EER_x} = \frac{E_m (1+t+n+PR)}{E_x (1+s+r)} \dots \dots \dots (3.1)$$

That is, the ratio of the exchange rate effectively paid by importers (EER<sub>m</sub>) to the exchange rate effectively paid by exporters (EER<sub>x</sub>). The effective exchange rate for imports  $E_m (1+t+n+PR)$  is defined as the nominal exchange rate applied to imports  $E_m$ , corrected by the average effective import tariff (t), other import charges (n) and the premium associated with the existence of quantitative restrictions such as import licenses. The effective exchange rate for exports ( $E_x$ ), corrected by export subsidies (s) and other incentives to exports (r), including export encouragement schemes. If this ratio is greater than one ( $B > 1$ ), it implies that the trade regime is biased against exports, that is, the country is following an import substitution strategy. If there are unified nominal exchange rates for commercial transactions, then the trade regime is

regarded as trade neutral ( $B=1$ ). Finally, if  $B < 1$  the country in question is engaged in an export promotion strategy.

### ***3.1.3 Further developments of measuring Trade liberalization***

Santos (2005) classified measures of trade liberalization as follows:

#### **3.1.3.1 World Bank (1987)/ Greenaway-Nam (1988) outward-in word trade orientation.**

The most influential and controversial classification of trade openness has been provided by the WB based on Greenaway and Nam (1988). The four trade orientation categories are defined as:

**Strongly outward oriented:** trade controls are either non-existent or very low in the sense that any disincentives to export resulting from import barriers are more or less counterbalanced by export incentives. There is little or no use of direct control and licensing agreements, and the exchange rate is maintained so that the effective exchange rates for importable and exportable are roughly equal.

**Moderately outward oriented:** the overall incentive structure is moderately biased toward production for domestic rather than export markets.

**Moderately inward oriented:** the overall incentive structure distinctly favors production for the domestic market and the exchange rate is clearly overvalued.

**Strongly inward oriented:** the overall incentive structure strongly favors production for the domestic market and the exchange rate is significantly overvalued

### **3.1.3.2 Leamer (1988) Openness Index**

Leamer measures openness using trade intensity ratio (TIR). It is the ratio of overall trade surplus/deficit to Gross National Product (GNP) or GDP. Leamer (1988) develops a model that provides an explanation of trade at the three digits SITC (Standard International Trade Classification, Revision 2) level of desegregations; and attributes the computed residuals of the model to trade barriers. Implicitly, trade barriers are assumed to be the only important omitted variables, and they are correlated with the included variables. In Leamer's index, factor endowments (land, labor, capital, oil production, and minerals), along with distance and the trade

balance, are used to predict net trade with in a product category for each country. Net trade with in a product category is regressed on factor endowments for a cross-section of countries. A separate equation is estimated for each product category. The measure of trade intensity nets (actual values) imports (M) from exports (X) at the three digit SITC level of disaggregation:

$$\text{TIR}^* = \frac{\sum_j |X_j - M_j|}{\text{GNP}} \dots \dots \dots (3.2)$$

Where  $\sum_j$  refer to the set of commodity types

At the very lowest level of aggregation, commodities are expected to be either exported or imported, but not both. Leamer also estimated intra-industry trade measures, which are defined as the difference between total trade (TIR) and trade surplus (TIR\*), that is:

$$\text{TIT} = \left[ \frac{\sum_j (|X_j| + |M_j|)}{\sum_j |X_j - M_j|} \right] - 1 = \left( \frac{\text{TIR}^*}{\text{TIR}} \right) - 1 \dots \dots \dots (3.3)$$

Where (3.3) would be zero if there were no intra-industry trades at this level of disaggregation. While this model does not predict the patterns of trade under trade liberalization conditions, one of its assumptions is that

each country adopts the world's average level of protection. In this sense, Leamer's model represents an improvement over the traditional measure of trade intensity, which only indicates the degree to which countries differ in terms of factor endowments, not in their level of protection.

### **3.1.3.3 Dollar (1992) Distortion Index**

Dollar constructs two separate indices; an index of real exchange rate (RER) distortion and an index of RER variability. These indicators relate to outward-orientation as defined by Dollar:

*“Outward orientation generally means a combination of two factors: first, the level of protection, especially for inputs in to the production process, is relatively low (resulting in a sustainable level of the real exchange rate that is favorable to exporters); and second, there is relatively little variability in the real exchange rate, so that incentives are consistent over time”* (Dollar, 1992, p.524 in Santos, 2005).

Dollar uses the variation in the value of the RER distortion across countries to measure differences in the restrictiveness of trade policy. However, this is a very limited approach because it does not consider tariffs, export duties and taxes, export subsidies and other non tariff

barriers applied. The measure of RER variability is simply the variation of each country's RER distortion index around its mean during the period.

#### **3.1.3.4 Sachs and Warner (1995) Openness Index**

The authors construct an openness index to solve the measurement error problem, which combines information about numerous aspects of trade policy and other country-specific factors. Their major conclusion is that there is 'strong evidence that protectionist trade policies reduce overall growth.' The Sachs and Warner (S-W) indicator is a dichotomous variable (zero-one), which takes the value of zero if the economy is closed, that is, if it satisfies at least one of the following criteria (or 'open' if none of the following condition is satisfied):

1. Non-tariff barriers covering 40 percent or more of trade;
2. Average tariff rates of 40% or more;
3. A black-market exchange rate that has depreciated on average by 20 percent or more relative to the official exchange, during the 1970s and 1980s;
4. The country has a socialist economic system; and
5. The country has a state monopoly of major exports.

### 3.2. Empirical Literatures

Developing countries have experienced extensive and rapid liberalization in recent years which undertaken both in the context of multilateral trade negotiations and as part of the conditionality linked to structural adjustment and stabilization programmes agreed with the IMF and the WB. Researchers work has been done in the past attempting to quantify the effect of trade liberalization (both multilateral and unilateral) on export performance in cross-country and specific country cases.

Santos (2000) examines the impact of trade liberalization on export growth for a sample of developing economies<sup>1</sup> using the export demand function approach. He applied dynamic panel data models based on fixed effects and generalized method of moments (GMM) estimators. In addition heterogeneous panels for complete sample as well as for different regions are estimated using a time-series/cross-section technique.

The finding is that liberalization of the trade regimes appears as a crucial determinant of export growth in all the regions analyzed. The reduction or elimination of trade policy distortions reduces anti-export bias, and

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<sup>1</sup> India, Pakistan, Sri Lanka, Indonesia Korea, Malaysia, Philippines, Thailand, Cameroon, Malawi, Morocco, Tunisia, Zambia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Paraguay, Uruguay and Venezuela.

therefore improves export competitiveness. The investigation also provides empirical evidence supporting the premise that the elimination of trade policy distortions has a positive impact on export growth. Moreover, external demand that is world income growth has a positive effect on export growth and trade liberalization emerges as a fundamental determinant of export growth in all countries analyzed.

Kirkpatrick and Weiss (1995) examined empirically the effectiveness of reform measures adopted by SSA economies during the 1980's concentrating on trade liberalization. Almost all SSA countries undertake Structural adjustment programmes during 1980 in response to the conditional ties attached to WB and IMF lending policies. The authors applied three proxy measures of trade reform: changes in the share of imports to GDP, changes in the share of import tariffs in total government revenue and the average foreign exchange premium in the black market. The assumption is that economies undergoing trade liberalization will have increasing share of imports in GDP, will rely less on import tariffs and will experience a declining black-market premium for foreign exchange. Regression tests on cross-country data give a positive but insignificant relation between the value of the liberalization index and the degree of structural changes as measured by the change in the share of

manufacturing in GDP. Whilst the majority of countries pursued a pegged exchange rate policy at the start of the 1980s, during the decade there was a move to greater flexibility in exchange rate management. Testing for a correlation between real exchange rate and export growth reveals statistically very weak and unexpectedly positive relationships. This implies that real depreciation have not been associated with export growth. The analysis of real exchange rate changes does not confirm the conventional expectation that depreciation will contribute to export growth and product diversification. This implies that exchange rate policy may be a relatively ineffective means of stimulating an export sector in low-income countries, primary product exporting economies. The results also imply that; if there have been some modest benefits from adopting trade liberalization measures, there must have come from aspects of the policy reform package than real devaluation.

Tokarickk, (2006) quantifies the extent to which import protection acts as a tax on a country's export sector by using an applied general equilibrium model for twenty-six developing countries<sup>2</sup>. Each country model consists of five sectors; two export sectors, two import sectors and non traded

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<sup>2</sup> Tunisia, India, Morocco, Egypt, Romania, Bangladesh, Thailand, Tanzania, Vietnam, China, Peru, Mozambique, Sri Lanka, Malawi, Philippines, Albania, Colombia, Zambia, Brazil, Argentina, South Africa, Uruguay, Malaysia, Botswana, Madagascar and Singapore.

sectors and six factors of production. Tariff barriers in many developing countries discourage their export to a greater extent than rich country tariffs. Certainly, tariffs applied by industrial countries reduce exports from developing countries but developing countries own tariff and non-tariff barriers introduce quantitatively large export disincentives. Tariff will have little effect on exports, if it is applied to a good for which consumers and producers are insensitive to changes in price and will be disincentive for export if it is applied to goods for which consumers and producers are very sensitive to price changes. Moreover, tariffs on imports can create a disincentive to export by directly raising the domestic price of imports relative to exports or equivalently by reducing the price of exports relative to imports. The authors conclude that import protection create disincentives that diminish a country's ability to export and reducing import barriers would serve as an export promotion strategy by ameliorating the implicit tax they introduce on exports. That is reductions in a country's import tariffs, which can be accomplished unilaterally or independent of the action by rich countries, can serve as ways to increase their exports.

Bashir (2003) studied the impacts of economic reforms and trade liberalization on Agricultural export performance in Pakistan using time

series data from 1961 to 2000. The analysis generated four time series variables namely; world demand for traditional agricultural exports or international market potential, competitiveness in traditional agricultural exports, agricultural export diversification and openness of agricultural trade to explain the change in real agricultural exports both in the short run and the long run rather than merely static effect. Johansen's method based on vector error correction model (VECM) was used to establish a valid long run relationship between variables and they are found to have a long run equilibrium relationship. The result suggests that the world demand variable is not playing a helpful role in the agricultural export performance of Pakistan. In addition, the study found that domestic policies affecting supply side performance can have positive influence on export growth as these can enable developing countries to achieve better export performance, even if world demand influences fail to translate in to higher export demand. The result have strong implication in that, in the short run the domestic policy reforms should emphasize on diversifying exports towards new products and increasing competitiveness of agricultural products to compete in the world markets by reducing cost of production and by reducing taxes on associated products.

Kwadwo (2002) examines the impact of trade liberalization on export performance during 1980's and 1990's in South Africa by employing a time series regression analysis covering the period 1976-1999. The study assumes that export performance is determined by external market conditions, the country's ability to compete in world markets and the extent to which the country succeeds in diversifying the commodity composition of its exports. Unlike the case of Pakistan this study did not include the openness variable as an explanatory variable in determining export performance. The result indicates that external market conditions were the important determinant of export performance across all sectors during the sample period. While competitiveness contributed to increased performance of manufacturing and mining exports diversification in to new export lines faltered in all sectors. The finding is in contrast with the above analysis in that export is highly sensitive to demand conditions than to supply factors.

Blake et al (2001) using Computable General Equilibrium (CGE) model evaluates the impact of world trade liberalization in agricultural commodities in Uganda. They found that the impact of multilateral trade liberalization is small but positive. This is mainly because the liberalization of world trade in agricultural commodities has little impact

on the world prices of the products that Uganda exports. Moreover, they also found that the greatest share of gains in welfare actually arises from reforms that are essentially unilateral, which improves the relative incentives for agricultural producers.

Milner and Zogvu (2003) in their work export responses to trade liberalization in the presence of high trade costs investigated the relative importance of trade policy and natural sources of export taxation, which captures the effects of factors such as geographical distance and location on international transportation costs, in Malawi. For a land locked country like Malawi, natural barriers have been a more important constraint on export supply than border import taxes. These sources of export taxation are in turn used to explore how export supply would respond to trade liberalization as opposed to measures which lower other international trade costs. They model export supply function so as to capture the relative impact of policy and natural barriers (true export protection) on export growth by incorporating both policy and natural sources of taxation by using annual data for the period 1970-1998. The simulations also show that the contribution that trade liberalization has made thus far to export growth is small, relative to what could be achieved by further liberalization and/or lowering natural barriers. For non-traditional exports

the elimination of natural barriers is predicted to induce a significantly larger export response than that resulting from import liberalization. The evidence also shows that for non-traditional exports in particular, international transport costs have been a major source of export taxation and that the export supply response is sensitive to trade cost induced changes in true export taxation.

Dimitrios et al (2002) estimate the effects of trade reforms on import demand using import demand elasticity for Turkey over the period 1970-1995 by employing a disaggregated 3-digit SITC industry level data. By concentrating on two different liberalization attempts of the Turkish economy in 1980 and 1984 they analyze this elasticity across structurally different sub-samples and observe the impacts of the policy instruments on the import demand function. They have estimated disaggregated import elasticity for various product groups and tested for different elasticity over “closed” and “open” economy periods. To address the issue of endogeneity of import and domestic prices, they estimate the import demand equations using instrumental variables (two stage least squares with Autoregressive corrections). To capture most of the variations of explanatory variables (import prices, domestic prices and expenditures)

with the instruments, they select the exogenous variables from the three largest trading partners of turkey for each product group.

The finding is that the effects of trade reforms of the 1980's were significant for a number of industries that form the backbone of the Turkish economy. The magnitude of the elasticity estimates of these product groups are found to have changed notably as a result of these reforms, indicating that Turkish consumers have a wide access to substitute goods. The authors also compared the results with elasticity estimates from past studies for developed countries. Based on these estimates they infer that Turkey has caught up with the developed countries in some industries such as cotton, petroleum products and textile machinery, while additional steps are needed in other industries like vehicle parts and pharmaceutical products in order to reduce the development gap.

Bautista et al (1998) examine quantitatively the economy wide income and equity effects of trade liberalization in Zimbabwe in isolation and in conjunction with potentially complementary changes in fiscal and land policies, using an agriculture- focused CGE model with 1991 as the base period. They make use of counterfactual simulations, based on a CGE model of the Zimbabwean economy recently developed by the

International Food Policy Research Institute's (IFPRI) ongoing project on Macroeconomic Reforms and Regional Integration in Southern Africa (MERRISA), to investigate the medium term growth and equity effects of trade liberalization. Such policy experiments serve to isolate the policy effects from other possible influences on economic performance (such as external market developments and weather disturbances). The model also differentiates between owner/manager and farm-laborer households in the commercial sector, in view of marked differences in their average incomes.

The important finding is that trade policy reform alone (dismantling of import and foreign exchange controls, and reduction of import taxes to a low uniform rate) increases aggregate disposable household income significantly. However, the least income gain accrues to small holder households, which account for about four-fifths of the poor in Zimbabwe. Furthermore, the substantial loss in import tax revenue renders this policy option unattractive and perhaps infeasible against background of an already large fiscal deficit of the country. Their model simulation of adjusting direct tax (on income of enterprises and the two affluent household groups) to compensate for the decline in import tax collection and keep government dissaving at the base level leads to an improvement

in both aggregate household income and its distribution from base period conditions. However compared to the policy experiment of trade liberalization alone, household income gains are generally much lower. The simulation results support the conclusion that, with an effective land reform and restructuring of the government expenditure and taxation, the substantial progress achieved under ESAP (Economic Structural Adjustment Program) in reforming trade and exchange rate policies in Zimbabwe could have helped promote the twin objectives of overall income growth and equity. More generally, complementarities between trade policy and other aspects of domestic policy environment are potentially significant. Failure to undertake complementary policies may help explain why trade liberalization efforts in many African countries have not contributed significantly to unhampered growth.

Mohd et al (1999) analyze the effect of trade liberalization using Ordinary Least squares (OLS) in Malaysia from two main perspectives. The first is from a commodity perspective where the effects of trade liberalization on the commodity with respect to prices, consumers' and producers' welfare were evaluated. It also attempted to analyze the aggregate effects of liberalization on the areas where the farmers are located. This study covers

three major commodities of the country namely; palm oil, paddy and tobacco and producers involved in this commodities.

To quantitatively evaluate the effects of tariffs on Malaysian palm oil five functions are estimated: the domestic supply and demand functions, the export demand function and two price linkage equations. The equations are estimated using OLS. However, when evidence suggests that there are problems of autocorrelation Generalized Least Square (GLS) estimates generated by the Cochrane-Orcutt procedure are used. The price linkage equations are to ascertain the relation between world and domestic prices of palm oil and also the relation ship between domestic crude palm oil (CPO) and fresh fruit bunches (FFBs) prices.

The finding is that, under a free trade environment where tariffs by importing countries of Malaysian palm oil are zero, exports of Malaysian palm oil are expected to increase by 1.973 percent (current weighted tariff of major importers = 15 percent). Using the 1996 data of exports of CPO equivalent of 7,587,855 tons, exports of CPO will increased by 149,708 tons under free market conditions. Prices of palm oil in the domestic market are expected to increase by about 3 percent as such consumers are expected to lose as a result of this increase in price. Producers are expected to register gains since FFB prices are predicted to increase by 3.2

percent. Hence the net gain from totally liberalized trade in palm oil is estimated to be RM 235 million. Furthermore, Malaysia will gain from the increased foreign exchange earnings resulting from the increased exports of palm oil. Analysis also shows that liberalization of the paddy and rice industries would as expected decrease domestic supply while increasing demand resulting in a net welfare loss. This is because the paddy sub sector is one of the most highly protected sub sectors in Malaysia with a high degree of market intervention. The study confirms the fact that industries that are competitive will gain while inefficient domestic industries will lose from liberalization. Palm oil presumed to be the most efficient in the world, will benefited in all aspects including increased exports, higher earnings to the industry and better competitive in the international market while uncompetitive industries such as rice and tobacco will lose.

De Groote et al (2006) analyze the impact of liberalization on the intensification of maize production in Kenya. They first analyze the impact of liberalization on input and output prices followed by an analysis of farmer practices comparing two major farmer surveys, from 1992 and 2002. The results of two representative farmer surveys, covering all major agro ecological zones in Kenya are compared. This study refined these

zones in to six major agro ecological zones for maize production. Combining data from both surveys also allow an analysis of the factors influencing adoption of new maize technologies.

A logistic model was estimated using adoption of improved maize varieties and fertilizer as dependent variables. A dummy was added for the year of the survey to allow potential differences. However, after taking in to account the other factors, the proportion of farmers using improved varieties has not changed, but there is a positive tendency for the proportion of farmers using fertilizer. They also analyze the effect of new technologies and other factors on the major indicator of agricultural intensification, yield, using a multiple linear egression model. Both fertilizer and improved maize varieties have a significant impact, although the effect of fertilizer is low. They concluded that liberalization has had a general positive impact on the evolution of prices, with a decrease in input/output price ratios. However, fluctuations of maize prices has become very high and combined with a decrease of marketing by the marketing board has increased the uncertainty in maize production. Liberalization has also resulted in a decrease in extension services. Fortunately, farmers have an increased access to credit services. The combined effect of prices and access to services has resulted in little

change in the number of farmers using new maize technologies in particular improved varieties and fertilizer. The analysis also showed that credit and extension have a major effect on adoption and, indirectly on yield. The results indicate that an effort is needed to improve extension access and the increased price fluctuation and market uncertainty should be addressed through improved use of price buffer mechanisms. Market access can substantially be improved through investment in infrastructure.

Dejene et al (2007) analyze the impact of unilateral trade liberalization in Ethiopia on poverty and inequality using a CGE micro simulation analysis. As expected, total elimination of tariff cut is likely to lead to increases in the exports of most commodities. Liberalization results in slow growth of investment and employment in sectors which used to be sources of livelihood for the urban poor. As CGE result depicts farm house holds, in general, benefit from both the decline in prices of consumption goods and increase in total consumption subsequently improving their welfare. In contrast, wage earners and entrepreneurs suffer from an increased in consumer price and a decline in total consumption. The finding of this study also confirm the contention that rapid liberalization may have adverse effect on domestic production and investment due to fierce competition from relatively cheap and better

quality imported goods. Complete removal of tariff is likely to lead to slow growth of demand for domestic goods and may dampen the growth of investment and production especially in manufacturing industries, which are already contracting in the face of cheap imports from China and other emerging economies. In particular; textile, leather and food processing industries are likely to further shrink in the face of cheap imports. The welfare effects of trade liberalization, as captured by the poverty indices show that at the national level poverty increases contrary to what is envisaged in Ethiopia. Full liberalization may not have a significant effect on inequality. The variation in inequality before and after the reform is significant in all cases implying that openness might not have any significant effect on income distribution in Ethiopia.

# CHAPTER FOUR

## Model specification and Methodology

### 4.1. Model Specification

In analyzing the impact of agricultural trade policy reforms on agricultural export performance the study attempts to evaluate it in terms of: export diversification, export competitiveness and openness of agricultural trade. The relative export performance of a country depends on domestic supply and external demand conditions. The domestic supplies conditions affect export performance by upholding a country's ability to maintain its competitiveness in traditional products and by diversifying exports. According to Authukorala (1991), in a given composition of traditional exports and its market shares, the export performance can be evaluated by analyzing:

- Relative export growth
- The change in market shares of (traditional) agricultural exports and
- The change in the commodity composition.

The starting point for the analysis uses the following linear model due to Kravis (1970) cited by Bashir (2003):

$$XV_t = f(DW_t, CM_t, DV_t, OP_t) \text{ ----- (4.1)}$$

This equation can also be written in the form of ln:

$$\ln XV_t = \alpha_0 + \alpha_1 t + \alpha_2 \ln DW_t + \alpha_3 \ln CM_t + \alpha_4 \ln DV_t + \alpha_5 \ln OP_t + e_t \text{ -----(4.2)}$$

where  $XV_t$  denotes the volume of agricultural exports;  $DW_t$  denotes world demand or export market potential for a set of traditional export commodities;  $CM_t$  is competitiveness in traditional exports or an index of competitiveness in traditional agricultural exports;  $DV_t$  export diversification; and  $OP_t$  denotes openness of agricultural trade.

In the analysis, the marginal effects of  $DW_t$ ,  $CM_t$  and  $OP_t$  are expected to be positive. As  $DV_t$  is an inverse measure of diversification we expect a negative sign for its coefficient. If the international market conditions have an overriding effect in controlling agricultural export performance, the world export market potential should have a strong influence in explaining changes in real agricultural export performance. On the other hand, if the local supply side conditions have a strong influence, then the volume of

real agricultural exports should be mainly explained by  $CM_t$ ,  $DV_t$  and  $OP_t$ .

$CM_t$  and  $DV_t$ , supply side policy variables, used in the analysis can depict the influence of non-policy factors along with domestic policy. These non-policy aspects include: resource shifting from agricultural sectors due to industrialization, failure to extend cultivation, and limitations on diversification due to lack of new product lines. Nevertheless, the studies by Al-Marhubi (2000) has shown that domestic policies have a strong influence in gaining market share in traditional agricultural exports and export diversification as compared to the influence of non-policy factors. Based on the findings from this study, it is expected that  $CM_t$ ,  $DV_t$  and  $OP_t$  would capture the effects of domestic policy on agricultural export performance. For mapping the impacts of domestic policies, however, it is difficult to use alternative representative variables for domestic policies due to conceptual and data difficulties as, generally, many aspects of the incentive to export can not be evaluated directly (Riedel et al.1984). Moreover, time variable is included to capture the impacts of other incentives such as infrastructure developments and research and development in agriculture and related areas.

## 4.2 Specification of Variables

The principal variables comprising the model are: external demand conditions or international market potential ( $DW_t$ ), competitiveness in traditional agricultural exports ( $CM_t$ ), agricultural export diversification ( $DV_t$ ), and openness of agricultural trade ( $OP_t$ ). The derivation of each four time series variables will be as follows:

1) World demand or export market potential ( $DW_t$ ) for a set of traditional export commodities is measured in terms of a weighted average index of constant price world exports of related commodities at time:

$$DW_t = \sum_{i=1}^n \alpha_{it} Wx_{it} \text{ ----- (4.3)}$$

Where;  $\alpha_{it}$  is the share of the commodity  $i$  in the country's total agricultural exports;  $Wx_{it}$  denote constant price index of world exports for commodity  $i$ , and  $n$  is the number of commodities exported.

2) Competitiveness in traditional exports, or an index of competitiveness in traditional agricultural exports, is the ratio of total real agricultural exports to total hypothetical agricultural exports. Hypothetical agricultural

exports are estimated by assuming that the country has maintained its initial market share in the agricultural exports of these commodities. The competitiveness variable is given by:

$CM_t = \text{Observed agricultural exports} / \text{initial period agricultural exports},$

Or

$$CM_t = 100 \left( \frac{\sum_{i=1}^n X_{it}}{\sum B_i X_{wit}} \right) \text{-----} (4.3)$$

Where  $X_{it}$  is the agricultural export earnings of the given country;  $X_{wit}$  is the value of world agricultural export ;  $B_i$  is the initial period world market share (1974 – 1978); and the commodities ( $i$ ) includes: coffee, chat, oil seeds, hides and skins, pulses, fruits and vegetables, live animals and Bees wax.

Domestic factors influence export performance through their impact on the country's market shares. The competitiveness variable describes the performance of export growth as compared with other countries by improving upon its export shares in the world markets. In the face of deteriorating external market conditions, for example, a country may

offset wholly or partially, any resulting decline in earnings and may even raise earnings if improvements in its competitive standing enable it to raise its market shares (Bashir, 2003). A high values for competitiveness indicates an increase in the export shares in the world market.

3)  $DV_t$ , concentration coefficient, is an inverse measure of diversification. The success in reducing a country's dependence on a narrow range of export products may be judged by the extent to which an index of concentration is reduced. It is estimated by using Gini-Hirschman formula following Kwadwo (2002) and Bashir (2003):

$$DV_t = 100 \sqrt{\sum_{i=1}^n (X_{it} / X_t)} \text{ ----- (4.5)}$$

Where  $X_{it}$  denotes the value of exports of commodity  $i$  in year  $t$  and  $X_t$  is total export earnings in year  $t$ .

The resulting values are normalized to make values range from 0 to 100. The highest likely value is 100, which indicates that the total agricultural exports are comprised of only one commodity. When the number of goods exported increases, then the value of  $DV_t$  is lower, indicating that export diversification has increased.

4) Openness of agricultural trade is measured by the ratio of agricultural exports to agricultural sector GDP. It represents the average share of agricultural exports to agricultural sector GDP (during the period 1974 to 2004).

$$OP_t = \frac{\text{total agricultural exports}}{\text{Agricultural sector GDP}} \text{-----} (4.6)$$

### **4.3. Data Type and Source**

For this analysis the annual time series covering the period from 1974 to 2004 will be used. National data for agricultural sector GDP and both value and volume of agricultural export is obtained from MOFED and the NBE in Addis Ababa respectively. Data on world export volume is obtained from FAO trade yearbook and world price indices are obtained from IFS and UNCTAD databases.

### **4.4. Model Estimation Technique**

To examine the dynamic relationship between the variables, namely, the volume of agricultural exports, world demand or market potential for agricultural exports, export competitiveness, export diversification and openness, an Engle and Granger (1987) cointegration technique will be

used. Cointegration techniques are used to establish valid long run relationships between variables. An equilibrium relationship exists when nonstationary variables in the model are cointegrated. In simple cases two conditions must be satisfied for variables to be cointegrated. First, the data series for each variables involved should exhibit similar statistical properties, that is, be integrated to the same order and second, there must exist a stationary linear combination.

A series is said to be covariance (weakly) stationary if it exhibits the following three criteria:

- i) if its mean reverts, that is, has long run constant mean,
- ii) if it has a finite variance that is time invariant,
- iii) if it has a theoretical correlation that diminishes as lag length increase.

Moreover, the impact of stationary series is temporary while for a unit root is permanent.

On the other hand, a series is nonstationary (unit root), if it has no long run mean to which the series reverts, has a variance that is time dependent and a slowly dying out sample correlograms (Enders, 1995). Estimation

techniques applied to estimate the relationship between variables in the presence of unit root result in regression that are spurious. Therefore, the need to regress time series becomes based on the awareness for the possibilities of spurious correlation that exist in correlated time trend rather than meaningful economic relationships. A combination of various series that contain time trend, nonstationary may lead to spurious correlation. Nonstationary has a severe implication in time series data for the reason that the data are highly susceptible to autocorrelation (Harris, 1995).

Spurious regression is a situation in which results obtained from the regression model suggest that there are statistically significant relationships between the variables, but without meaningful causal relations or contemporaneous correlations (ibid). One possible solution of avoiding unit root problems is through a transformation of variables in the form of differencing to remove the nonstationary (stochastic trend). That is, estimates should be between the rates of change of variables rather than between their absolute levels. Many nonstationary economic time series become stationary when they are first differenced (Thomas, 1993). Accordingly, if the series is differenced once to induce stationarity, it is often referred to as integrated of order one,  $I(1)$ . However, if the series is

stationary at levels it is often referred as integrated of order zero,  $I(0)$ . Generally, if the series is differenced  $d$  times to attain its stationarity, it is regarded as integrated of order  $d$ ,  $I(d)$ .

#### ***4.4.1. Test for Stationary and Unit Roots***

There are several mechanisms that aid in identification of unit root in series. One such tool is examining the properties (shape) of correlograms or auto correlation graphs which dies out slowly in its presence and cuts off in stationary series. A graphic method however is imprecise as a near unit root process will have the same shape of ACF (Auto Correlation Function) as a unit root processes.<sup>3</sup> The Dickey Fuller (DF) and Augmented Dickey Fuller (ADF) tests are the most widely used because of their simplicity or their more general nature (Harris, 1995). These are used to test, the null hypothesis that the series has unit root, that is, nonstationary against the alternative hypothesis of stationarity in the series. This test is conducted on the variables in level and differences until the order of integration is determined. The variables that are integrated of the same order may be co integrated.

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<sup>3</sup> What may appear as a unit root to one observer may appear as a stationary process to another in the graphic analysis Harris (1995).

#### ***4.4.2 Test for Cointegration and Error Correction***

##### ***Model***

The test of cointegration is needed to identify whether a linear combination of the series has a lower order of integration than any of the series in the combination. As a result, this test will help to describe the existence or non-existence of equilibrium relationships among two or more economic time series (Thomas, 1993). Lack of cointegration on the other hand, suggests the absence of long run link<sup>4</sup> between the two variables and this leads to the problem of spurious correlations. There are two common methods of testing for cointegration: The Engle and Granger (1987) and the Johansen (1988) maximum likelihood method. According to Engle and Granger cointegration is defined as a situation where two or more series are linked to form an equilibrium relationships over span of time. In other words, even if the individual time series data are non-stationary, their linear combination could be stationary and they will move closely together over time to make their differences stable (stationary).

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<sup>4</sup> A failure to find cointegration does not necessarily mean that there is no long run relationship, but only suggests the absence of long run linear relationships (Harris, 1995).

## **CHAPTER FIVE**

### **Empirical Analysis and Results**

#### **5.1 Introduction**

A number of studies have investigated the effects of trade liberalization on export growth in developing countries, and have reached inconclusive results. Some studies have identified positive effects of trade liberalization on export performance (Krueger (1997), Bleaney (1999), and Ahmed (2002); and others confirmed an insignificant or even negative relationship (Greenaway, et al. (1994), Jenkins (1996), and Greenaway, et al. (2002) as cited in Bashir (2003). There are a number of reasons for conflicting conclusions: including different researchers have used different indicator variables for liberalization and different methods to analyze the effect, difference in the extent of liberalization studies and most studies have analyzed the scenarios rather than evaluating the effect (Ibid).

This study analyzes agricultural trade policy of Ethiopia and assesses the impact of trade liberalization on agricultural export performance, especially diversification, competitiveness and openness. The relative importance of domestic supply related factors such as tariffs quotas, etc as compared with external demand factors in affecting agricultural export

expansion is analyzed with respect to: relative agricultural export growth, changes in market shares of agricultural exports, and changes in the commodity export composition. The paper discusses a model based on the framework of Authukorala (1991) and Al-Marhubi (2000). The resultant model will be analyzed by estimating the time series econometric models using OLS and ECM frameworks to test the impacts of trade liberalization on agricultural export performance both in the short run and the long run.

## **5.2 Empirical Results**

### ***5.2.1 Unit Root Tests***

To investigate whether there is a stable linear steady state relationship between the interested variables; unit root and cointegration tests will be applied to each variable. Cointegration requires the variables to be integrated of the same order. So we test the variables for unit roots to verify their order of integration. In order to test for unit roots in the sample data this study employs the Augmented Dickey Fuller (ADF) tests on both level and first differences of all variables. For this test; intercept and trend variable are included in the regression model to capture technological, infrastructural and other changes that plays a significant role in determining export performance.

**Table 5.1 Unit root test for regression variables at level**

Variables	Specifications	ADF Test statistic	Critical Value at	
			1%	5%
Lxv	LWI	-0.717	-3.679	-2.968
	LWIT	-1.657	-4.301	-3.574
Ldw	LWI	-2.904	-3.679	-2.968
	LWIT	-3.245	-4.301	-3.574
Lcm	LWI	-1.183	-3.679	-2.968
	LWIT	-1.760	-4.301	-3.574
Ldv	LWI	-1.327	-3.679	-2.968
	LWIT	-2.945	-4.301	-3.574
Lop	LWI	-1.923	-3.679	-2.968
	LWIT	-1.908	-4.301	-3.574

Where, LWI = level with intercept

LWIT = level with intercept and trend

The above table shows that the null hypothesis that each variable is I(1) can not be rejected for all variables as the ADF statistics are above the critical value at 1 and 5 percent level of significance ; indicating that the existence of unit root in all variables.

**Table 5.2 Unit root test for regression variables at first differences**

Variables	Specifications	ADF Test statistic	Critical Value at	
			1%	5%
Lxv	DWI	-3.774	-3.689	-2.972
	DWIT	-4.467	-4.323	-3.581
Ldw	DWI	-4.906	-3.689	-2.972
	DWIT	-4.798	-4.324	-3.581
Lcm	DWI	-5.644	-3.689	-2.972
	DWIT	-5.799	-4.324	-3.581
Ldv	DWI	-4.048	-3.70	-2.976
	DWIT	-4.598	-4.356	-3.595
Lop	DWI	-4.424	-3.689	-2.972
	DWIT	-4.417	-4.324	-3.581

Where, DWI = difference with intercept

DWIT = difference with trend and intercept

The results show that for all variables in log form null hypothesis of unit root can be rejected at 1 and 5 percent level of significance. This implies that all the variables are difference stationary that is, integrated of order one I (1). In order to find out the cointegration relationship among the time

series variable one can use the Engle and Granger (1987) cointegration technique.

### ***5.2.2 Cointegration Tests***

Cointegration analysis determines the long run relationship between the variables when all variables are found to be non stationary at level (that is, have unit roots). Provided that all the variables in the model are non stationary and integrated of order one, I (1) then the EG method can be applied to test whether these variables are cointegrated. The results of the cointegration test and long run coefficients are reported in the following tables.

#### **5.2.2.1 Long-Run Results**

Engle and Granger (1987), cointegration technique has been applied after estimating the equation by OLS and conducted ADF test for the residual from this estimation. The ADF test for the residual gives the value of -5.213 which is larger than -4.4, -3.574 and -3.222 at 1, 5 and 10 percent level of significance, respectively. This indicates that unit root hypothesis can be rejected which means that there is cointegration and existence of long run relationship between the variables. Using the variables  $\ln XV_t$ ,  $\ln DW_t$ ,  $\ln CM_t$ ,  $\ln DV_t$  and  $\ln OP_t$  OLS estimation is made to obtain the following relationship.

**Table 5.3 Long-run OLS Estimation Result of LXV**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.0536	1.7414	10.9418	0.0000
LDW	0.2196	0.1304	1.6848	0.1050
LCM	0.1186	0.1030	1.1510	0.2611
LDV	-2.4435	0.3773	-6.4764	0.0000
LOP	0.4236	0.1546	2.7400	0.0114
AR(1)	-0.0360	0.2468	-0.1457	0.8854

R-squared = 0.80      Adjusted R-squared = 0.76      DW = 1.92      F-statistic = 19.03

$$\ln xv_t = 19.06 + 0.22 \ln DW_t + 0.12 \ln CM_t - 2.44 \ln DV_t + 0.42 \ln OP_t$$

P-value	(0.0000)	(0.1050)	(0.2611)	(0.0000)	(0.0114)
t-statistics	[10.9418]	[1.6848]	[1.1510]	[-6.4764]	[2.7400]

Since all variables used are in the logarithmic form, the estimated coefficients can be directly interpreted as long term elasticities. Coefficients on the variable diversification and openness are statistically significant at 1% level of significance. The long run elasticity of agricultural exports ( $XV_t$ ) with respect to  $DV_t$  is -2.44 indicating that agricultural export performance is most sensitive to diversification ( $\ln DV_t$ ). That is, a 1% increase in diversification of agricultural product will increase agricultural export performance by 2.44 percent per year. The highest responsiveness of agricultural export performance to the diversification may be as a result of Ethiopia's was having moved away

from her traditional exports to new commodities such as floriculture which is of high quality and highly demanded in the world market. Openness of agricultural export is also with expected sign and significant; implying that a 1 percent increase in the openness variable increases agricultural export performance by 0.42 percent. The other variables namely; competitiveness and world demand, are with expected sign but are not statistically significant in explaining the export performance for the period specified. The possible explanation that the world demand variables do not respond positively to the export performance of the country may be due to the fact that developing countries export including Ethiopia's is mainly primary commodities whose demand is less in the world market. The demand for primary goods and raw materials is both price and income inelastic, which has an adverse impact on the export expansion of primary commodity exporters. This is because developed countries do not want to depend on other countries produces for their food item, which is developing countries main export; as such they give incentive to their farmers to produce more and to be competitive in the world market. This is the main reason why the Doha Round is not yet concluded among with other issues such as TRIMs (Trade Related Investment Measures) and TRIPs (Trade Related Intellectual Property Rights). Furthermore, technological progress in developed countries has been successful in substituting raw materials like

hides and skins by synthetic products, which reduce the demand for these commodities in the importing countries. The competitiveness variable is also insignificant in explaining export expansion, showing that there is no improvement in the export shares of our commodities in the world markets for the specified period. If there is any improvement in the export share; that is, the competitiveness variable is significant in explaining export performance of the country, even in the face of deteriorating external market conditions a country may offset any resulting decline in earnings that may arise.

#### **5.2.2.2 Short-Run Results**

This relates the change in  $\ln XV_t$  to the changes in the variables such as  $\ln DW_t$ ,  $\ln CM_t$ ,  $\ln DV_t$  and  $\ln OP_t$  and the error term in the lagged periods. Here the lagged difference terms for  $d\ln DW_t$ ,  $d\ln CM_t$ ,  $d\ln DV_t$  and  $d\ln OP_t$  capture the short run changes in the corresponding level variables while the error correction term captures the long run impact.

**Table 5.4 Short-run OLS Estimation Results of D(LXV)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LDW)	0.1467	0.1307	1.1217	0.2731
D(LCM)	-0.0014	0.0590	-0.0231	0.9818
D(LDV)	-1.7643	0.5043	-3.4985	0.0018
D(LOP)	0.4801	0.1103	4.3525	0.0002
ECM(-1)	-0.8800	0.3919	-2.2453	0.0342

R-squared = 0.36    Adjusted R-squared = 0.26    DW = 2.17

$$D(\ln XV_t) = 0.15D(\ln DW) - 1.76D(\ln DV) + 0.48D(\ln OP) - 0.88ECM(-1)$$

t-statistics	(1.1217)	(-3.498511)	(4.3525)	(-2.2453)
P-value	[0.2731]	[0.0018]	[0.0002]	[0.0342]

The short run results indicate that only diversification and openness variables are significant with expected sign in explaining agricultural export performance. This shows in the short run the domestic policy reforms should emphasize on diversifying exports towards new products. The competitiveness variable is completely insignificant in explaining export performance in the short run indicating that much has to be done to make our commodities competitive in the world market. The speed of adjustment coefficient is also significant with the correct sign at 5 percent level. This means that the speed at which the rate of variation of the

export performance, the dependent variable, in the ECM system adjusts towards the single long run cointegrating relationship differs from zero. That is, the equation for the export performance contains information about the long run relationship since the cointegrating vector does enter into this equation. According to this estimate, short run export performance disequilibrium is corrected at a speed of 88% per year.

## **CHAPTER SIX**

### **Conclusions and Recommendations**

#### **6.1 Conclusions**

The paper has analyzed the dynamic effects of trade liberalization on agricultural export performance of Ethiopia for the period 1974 to 2004 by examining the impact of both domestic supply-side factors: diversification, openness and competitiveness and external demand conditions. The results suggest that agricultural export performance is more sensitive to the domestic factors such as diversification, which can be changed due to economic reforms. This supports the importance of domestic policies designed to improve domestic supply conditions aimed at promoting agricultural export performance. This will result in an increase in export volume of agricultural products which in turn results in an increase in export earnings.

The findings also suggest that developing countries can be able to achieve a better export performance even if world demand influences fail to translate in to higher export demand. This may be because of the fact that developed countries put restriction on developing countries export on the ground that their products do not meet the standard required such as

sanitary and physio-sanitary measures. In general, since export diversification plays a key role in explaining agricultural export performance, the country should continue to diversify her exports by giving different incentives to farmers and by adopting favorable supply side policies.

## **6.2 Recommendations**

Based on the findings of this study the following policy recommendations are forwarded:-

- Since reforms in domestic policies are the most important factor as compared to external market conditions to stimulate agricultural export expansion in Ethiopia, the agricultural policy should incorporate trade policy as one component to promote agricultural trade both in domestic and world markets by improving terms of trade for primary commodities.
- Research and development (R&D) and extension services to adopt new agricultural systems are crucial issues to foster diversification in to high value added crops such as fruits and vegetables and floriculture.
- Since competitiveness is a domestic policy variable the

government can influence it by providing different incentives to producers which will enable them to meet international criteria and requirements to increase their share in the world market, which in turn overcomes the impacts of world demand variable.

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## APPENDICES

### Appendix 1: Data used for computing the agricultural export performance

Year	XVt	DWt	CMt	DVt	OPt
1974	292493	74.9865	78.73	50.51	61.67
1975	257162	43.5545	122.73	65.22	92.85
1976	201112	79.9268	148.41	68.82	106.58
1977	138063	144.77	119.1	82.67	95.15
1978	150311	108.568	273.59	89.5	185.05
1979	142605	114.349	83.65	78.03	110.4
1980	149827	101.046	66.06	76.55	87.57
1981	160804	62.6894	67.96	71.02	68.78
1982	182746	31.0351	276.12	75.3	299.4
1983	117430	73.6345	88.94	76.01	83.73
1984	112647	84.282	61.12	78.79	75.83
1985	123237	77.6484	85	82.5	82.07
1986	138889	126.684	57.44	75.72	70.62
1987	129335	69.1832	63.56	68.05	65.81
1988	143211	80.9755	8.25	76.47	80.19
1989	97935	68.8981	60.4	69.07	56.55
1990	45155.45	58.5596	53.26	68.22	35.05
1991	83298.1	55.5603	37.87	74.25	14.82
1992	118416.48	41.4972	117.92	74.49	39.69
1993	154660.78	47.4066	108.95	67.23	50.48
1994	165139.61	86.7378	158.87	73.07	120.22
1995	204835.13	95.6454	169.71	74.78	91.54
1996	250673.63	84.2179	262.79	75.59	108.6
1997	218620.63	106.567	276.82	73.92	138.34
1998	230221.22	80.7882	241.37	67.87	128.1
1999	222937.99	58.5719	309.26	65.63	135.37
2000	46,036.45	60.8741	263.58	57.08	107.62
2001	17,828.82	60.3575	305.6	53.84	105.95
2002	29,124.71	54.0088	327.47	53.91	123.52
2003	48,060.07	64.6263	335.64	54.43	156.56
2004	29,893.18	63.8014	488.91	54.78	186.21

**Source:** own computation from different databases

**Appendix 2:** Value of Export Items in thousands of Birr

Period	Coffee	Oil Seeds	Hides & Skins	Pulses	Fruits & Veget.	Live Animals	Chat	Bees Wax	Grand Total
1974	117,507.00	88,760.00	37,225.00	73,529.00	9,794.00	-	5,539.00	2,518.00	334,872.00
1975	297,688.00	35,435.00	42,753.00	52,820.00	7,111.00	31,375.00	4,125.00	2,665.00	473,972.00
1976	408,850.00	26,807.00	52,556.00	48,506.00	9,299.00	52,075.00	7,967.00	3,259.00	609,319.00
1977	514,525.00	11,938.00	57,955.00	30,442.00	4,076.00	1,542.00	3,215.00	3,933.00	627,626.00
1978	1,176,626.00	9,648.00	104,051.00	17,907.00	2,728.00	1,541.00	7,462.00	-	1,319,963.00
1989	631,651.00	13,586.00	138,691.00	25,851.00	7,441.00	8,326.00	4,233.00	-	829,779.00
1980	524,325.00	15,539.00	92,705.00	23,693.00	5,378.00	9,800.00	22,349.00	3,583.00	697,372.00
1981	377,245.00	19,532.00	94,673.00	20,822.00	6,760.00	8,565.00	21,135.00	1,443.00	550,175.00
1982	497,650.00	15,536.00	77,052.00	28,372.00	1,764,618.00	15,885.00	36,541.00	2,347.00	2,438,001.00
1983	590,444.00	30,066.00	93,654.00	20,274.00	6,431.00	14,716.00	29,002.00	4,625.00	789,212.00
1984	446,473.00	11,571.00	72,674.00	13,083.00	4,269.00	16,544.00	8,620.00	1,803.00	575,037.00
1985	664,790.00	7,686.00	94,759.00	12,635.00	6,027.00	18,903.00	8,477.00	1,271.00	814,548.00
1986	524,348.00	9,793.00	108,291.00	8,481.00	12,847.00	15,646.00	28,677.00	764.00	708,847.00
1987	439,181.00	22,015.00	133,004.00	15,965.00	11,787.00	32,357.00	21,323.00	2,469.00	678,101.00
1988	626,448.00	11,029.00	123,498.00	16,317.00	8,999.00	23,539.00	7,906.00	18,752.00	836,488.00
1989	405,097.00	8,387.00	134,049.00	35,961.00	4,068.00	10,821.00	21,024.00	1,700.00	621,107.00

1990	268,451.00	3,633.00	92,206.00	15,716.00	12,001.00	5,169.00	20,422.00	689.00	418,287.00
1991	168,324.00	383.00	58,645.00	386.00	6,399.00	467.00	5,073.00	657.00	240,334.00
1992	536,982.00	1,186.00	134,515.00	4,050.00	2,729.00	1,322.00	65,727.00	1,917.00	748,428.00
1993	718,019.00	44,187.00	203,610.00	27,704.00	6,864.00	10,757.00	107,932.00	5,514.00	1,124,587.00
1994	1,799,033.71	50,130.01	373,548.93	103,287.42	18,192.37	7,655.38	172,338.76	6,520.75	2,530,707.33
1995	1,724,008.09	41,938.44	309,700.76	77,224.11	21,029.12	770.44	174,443.67	7,987.48	2,357,102.09
1996	2,307,393.56	74,239.26	372,252.91	87,854.07	45,792.62	11,200.74	199,533.42	9,175.88	3,107,442.46
1997	2,889,530.58	314,660.13	347,699.01	102,952.83	31,479.22	10,562.15	272,354.99	10,513.97	3,979,752.88
1998	2,112,712.75	271,461.58	243,052.17	101,657.63	40,564.39	5,724.43	444,987.59	9,914.05	3,230,074.59
1999	2,133,645.55	255,329.49	286,459.46	80,021.17	44,249.59	14,136.61	618,771.55	5,549.27	3,438,162.70
2000	1,520,100.60	269,597.92	633,751.82	72,799.62	45,689.35	1,505.57	510,505.60	7,247.27	3,061,197.74
2001	1,393,809.27	278,738.22	474,425.60	281,409.10	80,114.24	7,132.33	418,674.25	6,005.77	2,940,308.78
2002	1,418,323.93	395,565.10	448,002.81	171,243.68	82,118.01	4,129.02	497,866.40	4,032.26	3,021,281.20
2003	1,926,678.82	712,737.99	375,844.17	194,678.54	109,662.71	16,453.94	758,878.39	8,280.41	4,103,214.97
2004	2,901,327.29	1,082,215.25	585,184.51	306,609.32	139,052.79	110,874.61	866,802.94	9,587.91	6,001,654.64

**Source:** National Bank of Ethiopia

### Appendix 3: Volume of Export Items in thousands Tones

Period	Coffee	Oil Seeds	Hides & Skins	Pulses	Fruits & Veget.	Live Animals	Chat	Bees Wax	Grand Total
1974	48,999.00	78,555.00	8,023.00	112,316.00	30,826.00	10,570.00	2,709.00	495.00	292,493.00
1975	77,112.00	42,411.00	7,463.00	86,172.00	19,965.00	21,070.00	2,261.00	708.00	257,162.00
1976	43,011.00	30,449.00	8,157.00	92,151.00	21,838.00	2,171.00	2,864.00	471.00	201,112.00
1977	57,827.00	14,844.00	11,681.00	45,754.00	5,902.00	946.00	427.00	682.00	138,063.00
1979	80,096.00	9,003.00	10,629.00	33,710.00	11,321.00	3,027.00	2,075.00	450.00	150,311.00
1980	88,416.00	8,253.00	8,897.00	24,516.00	6,486.00	3,547.00	2,124.00	366.00	142,605.00
1981	80,159.00	12,027.00	10,190.00	34,841.00	7,192.00	2,776.00	2,471.00	171.00	149,827.00
1982	87,917.00	11,615.00	8,272.00	35,559.00	8,842.00	5,083.00	3,152.00	364.00	160,804.00
1983	97,180.00	31,265.00	9,702.00	27,555.00	9,143.00	4,685.00	2,558.00	658.00	182,746.00
1984	70,643.00	9,434.00	7,970.00	15,197.00	7,217.00	5,952.00	734.00	283.00	117,430.00
1985	69,999.00	5,630.00	11,996.00	7,550.00	9,228.00	7,353.00	711.00	180.00	112,647.00
1986	80,216.00	8,219.00	10,249.00	4,427.00	12,075.00	5,012.00	2,931.00	108.00	123,237.00
1987	71,165.00	17,821.00	8,617.00	12,499.00	10,895.00	14,056.00	3,363.00	473.00	138,889.00
1988	92,141.00	5,390.00	9,674.00	11,943.00	10,187.00				129,335.00
1989	88,834.00	6,911.00	8,637.00	23,709.00	8,741.00	4,314.00	1,814.00	251.00	143,211.00

1990	58,232.00	2,558.00	5,660.00	14,759.00	12,960.00	2,195.00	1,469.00	102.00	97,935.00
1991	32,249.00	176.00	3,676.00	1,398.00	7,194.00	124.45	251.00	87.00	45,155.45
1992	67,374.52	392.00	5,573.71	1,527.00	6,051.48	311.99	1,936.40	131.00	83,298.10
1993	69,160.00	10,188.00	7,807.00	9,840.00	15,893.00	2,407.00	2,808.48	313.00	118,416.48
1994	82,198.64	11,911.64	9,863.88	26,106.65	19,435.63	771.59	4,072.16	300.60	154,660.78
1995	97,578.82	7,831.71	7,546.77	28,968.69	19,002.97	182.53	3,698.29	329.83	165,139.61
1996	123,165.51	14,069.25	8,648.34	30,468.23	21,834.21	1,304.73	5,031.20	313.66	204,835.13
1997	120,049.57	66,553.67	7,851.75	30,909.01	17,010.26	1,323.60	5,980.93	994.84	250,673.63
1998	101,232.34	51,366.30	5,824.34	29,832.62	19,394.35	918.92	9,702.07	349.69	218,620.63
1999	116,558.42	43,130.82	8,603.80	23,527.34	20,733.97	1,766.31	15,683.65	216.92	230,221.22
2000	99,133.97	55,051.37	12,408.95	26,861.22	17,029.74	214.07	11,927.73	310.95	222,937.99
2001	110,346.95	76,604.41	10,334.48	109,227.46	29,695.83	165.68	9,376.67	284.98	346,036.45
2002	126,127.58	82,801.23	10,544.95	66,154.41	25,304.01	607.07	6,105.58	184.00	317,828.82
2003	156,408.56	105,945.50	9,401.48	73,279.84	36,844.37	3,141.42	43,670.52	433.03	429,124.71
2004	161,060.55	170,797.64	15,644.15	121,652.98	37,906.33	21,225.97	19,389.92	382.54	548,060.07

**Source:** National Bank of Ethiopia.

