"The Determinants of the Export Competitiveness of the Coffee Industry in Ethiopia"

A research Thesis submitted to the Department of Marketing for Partial fulfillment of the requirements for the award of Degree of Masters of Art in MARKETING MANAGEMENT

BY: ASSEFA MULUGETA KONDAL

ADVISOR: Dr. MULUGETA G/MEDHIN (PHD)
DEPARTMENT OF MARKETING
SCHOOL OF COMERCE
ADDIS ABABA UNIVERITY

May, 2018
ADDIS ABABA

Declaration

I, Mr. Assefa Mulugeta, do hereby claim that the thesis titled ***"The Determinants of the Export Competitiveness of the Coffee Industry in Ethiopia"*** is an original work of me and did not putted forward for other program. References used are credited in the literatures and resources.

Name: Assefa Mulugeta
Date: May 2018

Place: Addis Ababa

Signature: _____

Endorsement

This research has been submitted to Addis Ababa University, School of Commerce, Department of Marketing, for examination with my approval as a university advisor.

Name: Mulugeta G/Medhin (PHD)

Date: May 2018

Place: Addis Ababa University

Signature: _____

Addis Ababa University
School of Commerce

This is to certify that the research prepared by Assefa Mulugeta, entitled: **"The Determinants of the Export Competitiveness of the Coffee Industry in Ethiopia",** and submitted in partial fulfillment of the requirements for the award of Degree of Master of Art in Marketing Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the Examining Committee:

Advisor: Mulugeta G/Medhin (PHD)
Signature: .....
Date: .....

Internal Examiner: Dr. Tewodros Mesfin
Signature: .....
Date: .....

External Examiner Dr. Mohammed Seid
Signature: .....
Date: .....

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Assefa Mulugeta

Abstract

The general objective of the study is to examine the export competitiveness and determinants of export performance of Ethiopian coffee sector. In analyzing competitiveness of the country in its exports of coffee, a data from UNCTAD-ITC is used for the periods 1991-2016. The Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) measures of competitiveness were used for the analysis. Furthermore, a multiple regression (OLS model) is also employed to investigate the determinants of coffee export competitiveness and performance as well. Results for the RCA and RSCA showed that Ethiopia has comparative advantage in exports of coffee. The regression analysis revealed domestic consumption level of coffee affects the export competitiveness of the product adversely and this relationship is statistically significant. Other variables including domestic production level, world price of coffee, exchange rate and export volume are found to affect the export competitiveness positively and the effect is significant. Though domestic producer price affects the export performance of the sector positively, the effect is statistically insignificant. The country should consider measures to address current inefficiencies in the supply side, management of price risk which are resulted from the volatile nature of both domestic and international coffee prices, quality improvement and illegal trade.

***Key Words*: Coffee, Competitiveness, Export, Ethiopia, RCA, RSCA**

TABLE OF CONTENTS

List of Tables and Figures

List of tables:

List of Figures:

Abbreviations/Acronyms

ACP = African Caribbean and Pacific

BoP = Balance of payment

CSA = Central Statistical Agency

DCC = Domestic consumption level of Coffee

DPC = Domestic Production level of Coffee

DPP = Domestic Producers Price

ECX = Ethiopian Commodity Exchange

ERCA = Ethiopian Revenue and Customs Authority

EXP = export Volume

FDI = Foreign Direct Investment

GATT = General Agreement on Trade and tariff

GDP = Gross Domestic product

ICA = International Coffee Agreement

ICO = International Coffee Organization

LDCs = Least Developing Countries

MoT = Ministry of Trade

NBE = National Bank of Ethiopia

OLS = Ordinary Least Square

RCA = Revealed Comparative Advantage

REER = Real Effective Exchange rate

RSCA = Revealed Systematic Comparative Advantage

WCO = World Customs Organization

WCP = World Coffee Price

CHAPTER ONE

1. Introduction

1.1. Background of the study

The process of economic integration, globalization and technological advancement strengthen export development of nations. Export development plays an important role in promoting economic growth and development. It contributes significantly to enhance capital inflow, reduce trade balance deficits, make balance of payment (BOP) surplus, increase employment and expand the production base of a nation. As a result of increasing size of international trade, the concept of export competitiveness plays a vital role in international trading system. Export competitiveness has been paid more attention in order to develop export portfolio of nations. To promote economic development and survival in the global competitive market, export competitiveness is an essential component of a country (Sachitra, 2013).

Foreign direct investment and exports have been mentioned as the main determinants of upholding higher economic growth. Developing countries including Ethiopia, can expand their markets by allowing firms exporting and achieving economies of scale. Export is one of the prominent channels of technology transfer from the developed economies to the LDCs (Pack, 1993). The export competitiveness or export performance generally can be measured by several factors, for instance, real exchange rate, comparative advantage, terms of trade, geographic concentration, trade policies, domestic production and consumption, world income, price and others. This study will employ Revealed Comparative Advantage (RCA), Revealed Systematic Comparative Advantage (RSCA) and simple linear regression to check export competitiveness of coffee.

Coffee is outstanding for being produced in nearly all non-arid countries in the tropics. In many of these countries who produce coffee, foreign exchange earnings from coffee exports are of vigorous significance to the balance of payments and to the economy of the countries as well. Coffee is an important cause of development, generating cash returns in subsistence economies. Moreover, the production and harvesting coffee are labor-intensive, it provides an important source of rural employment, for both men and women. In terms of international trade, coffee is the most valuable tropical agricultural product. It's the "second most traded commodity after petroleum" and "determines the livelihoods of 25 million poor families" (Utting-Chamorro, 2005). Its status as a major export for many countries and therefore a determinant of the wellbeing of national economies, gives it significant importance in the global economy.

According to ICO (2015), Of the numerous botanical varieties of coffee trees, only two are cultivated and utilized commercially to any large extent worldwide. One is Coffea arabica, usually known as Arabica, accounting on average for 60% of world production. The other one is the Robusta coffee tree, derived from the Coffea canephora species and usually known as Robusta which accounts on average for 40% of world production. After the ripe berries have been harvested, two methods are used to remove the envelope or husk from the beans so as to obtain the marketable green coffee: the wet processing and the natural sun dried methods.

Substantial improvement has been made in importing countries with respect to the reduction or removal of certain tariffs. These efforts have been undertaken both within the multilateral framework created by various rounds of trade negotiations of GATT Agreements including Tokyo, Uruguay and

Doha rounds, and within the framework of regional or bilateral arrangements. In addition, the Member countries of the European Union have applied a preferential trade system to African, Caribbean and Pacific States (ACP) since 1975. Some countries do not benefit or benefit only partially from tariff reduction measures applied by the European Union within the framework of these trade cooperation agreements. In the case of these countries, only exports of green coffee are exempt from tariffs, indicating that the creation of added value must take place within the European Union (Meaza, 2017).

The International Coffee Organization is the main intergovernmental organization for coffee, bringing together producing and consuming countries to tackle the challenges facing the world coffee sector through international cooperation. It administers the International Coffee Agreement (ICA), the latest of which is the 2007 Agreement, which was concluded in London in September 2007. The 77 Members of the ICO account for approximately 97% of world coffee production and 84% of world coffee consumption (ICO, 2016).

Like other developing countries, the Ethiopian economy is based on agriculture, which contributes about 45 percent to GDP and more than 80 percent of exports, and employs 85 percent of the population. According to IMF country report of 2016, Ethiopia heavily relies on agriculture for its foreign exchange earnings. The major agricultural export crop is coffee, providing approximately 35 percent of Ethiopia's foreign exchange earnings (David B. and Christian C., 2013). Ethiopia is the hometown of coffee Arabica and well-known for its production of high-quality coffee. The excess of this commodity has found well-established and profitable markets;

rewarding huge amounts of foreign currency and enhancing economic development (Emagne, 2014).

Ethiopia is considered not only as the origin of Arabica coffee, an important producer and exporter, but it is also the highest consumer of the crop in Africa. In other words, Ethiopia is a prominent global coffee producer as well as consumer. According to the Central Statistical Agency of Ethiopia (2015), the country produced420million kilograms of coffee beans and consumed up to about 220million kilograms (ICO, 2016), that is, more than half of its total production. Furthermore, Ethiopia is among the top producer and exporting country in the world. Despite the above facts, Ethiopia still holds much respect in the global coffee market. As to whether the country can stand the test of time given anticipated increases in world price of agricultural export commodities over the next decade and the accompanying intensification of competition on the supply-side with emergence of new producers and exporters of coffee is yet to be discovered. To mitigate any adverse future influences from competition on the world coffee market that could impede attainment of national development goals, including income generation and poverty reduction and ensure effective and efficient participation and contribution of the country to world coffee green production and exports, there exists a strong case to assess its past and current performance in export of the commodity.

There have been significant domestic policy reforms in the last decade that affected the structure and performance of the coffee export sector. First, from December 2008 onwards it became mandatory for private traders to sell their coffee through the Ethiopian Commodity Exchange (ECX), a new modern commodity exchange. Gabre-Madhin and Goggin (2005) argue that a commodity exchange in Ethiopia holds the potential to remedy to produce

a more integrated agricultural market. And the introduction of an exchange is justified from a bottom-up perspective: both farmers and traders have a demand for a better-organized domestic and regional market, and for improved agro-processing. In addition, a commodity exchange can potentially produce a more efficient and integrated agricultural market by providing actors with better information about market prices, quality controls and product standards as well as a legal framework to reduce the risk of default. However, the success of a commodity exchange depends critically on the economic order and the linking of institutions such as market information systems, quality certification, regulatory frameworks and legislation, arbitration mechanisms, and producer and trade associations.

Prior to 1991, coffee production and marketing in Ethiopia was under the control of government and Private traders had a limited role in both domestic and export marketing. Following the overthrow of the Dergue regime in 1991, the current government allows and encourages private sector participation by taking actions including liberalization of the coffee sector, lifting price ceiling of any kind, reforming of export licensing procedures, removal of price control, currency devaluation, the establishment of Ethiopian commodity exchange and so on (Gabre-Madhin and Goggin, 2005)

1.2. Statement of the Problem

Coffee prices are extremely unpredictable and volatile. Periods of spiking producer prices are followed by relatively low prices. While consumers benefit from low coffee prices, producers may face challenges with regard to the economic viability of production (ICO 2016). Besides, there are several measures of coffee quality in the Ethiopian market place. They include, most

importantly, certification, which affects marketability and prices, but not necessarily the intrinsic quality of the coffee; geographical indications of origin, grades and washing (Tadesse K and eta'al, 2014)

Ethiopia is endowed with a good production environment for growing coffee with a combination of appropriate altitude, temperature, rainfall, soil type, and so on. Ethiopia is the center of origin for Coffea Arabica. The country possesses a diverse genetic base for this Arabica coffee with considerable heterogeneity. However, it is not believed that the performance of coffee export to the rest of the world is not remarkably higher in relative to the potentials the country has. For this reason, the rationale behind conducting this is to identify the impediments that are considered as the bottle necks for the lower and unsatisfactory performance.

The role of export according to Keynesian economics is imperative in bringing economic development (D. Romer, 2006), where it's working or efficiency is determined by different factors. Therefore, examining the determinants of export competitiveness in general means identifying the means of improving economic performance of the country.

Many studies have been carried out with the view to informing future policy prescriptions, but majority of these have focused on issues related to price transmission (including Worako et al, 2008), commercialization of agriculture in coffee growing area (including Gebreselassie and Ludi, 2008) and marketing and trading policies (including ICO/CFC, 2000). The aim of this current study is to bridge current information gaps and in order to provide a springboard for future policy prescriptions, we begin with how policies have evolved over the years.

This study is different from other studies that were conducted in the past, in the sense that the econometrics procedure aiming at assessing the impact of the variables included in the model is different. At the same time, as of my knowledge, it has been some years ago that the studies on the determinants of export competitiveness of coffee in Ethiopia have conducted. Thus, this paper is in a position to update how the current trends of the variables are affecting the competitiveness. Moreover, the study will try to show the role of market institutions such as ECX and Primary Level Coffee Transaction Centers, the effects of policies and regulations, the state of exporters' resources and competitiveness in international marketing, the effect of Ethiopia's coffee quality in the international market and the role of market information on Ethiopia coffee export. To summarize, most of the international studies found the determinants of export competitiveness of coffee for developed and developing countries by using panel data methodology while in Ethiopia there are some researchers including Emagne (2014), Gebreyesus (2011) where both studies are on the determinants of coffee export performance in Ethiopia.

1.3. Research Questions

In order to accomplish the following general and specific objectives, the study attempted to address the following couple of questions.

- How does domestic coffee production influence the export competitiveness of the coffee sector in Ethiopia?
- How does exchange rate affect the export competitiveness of the coffee sector in Ethiopia?
- How does domestic consumption influence the export competitiveness of the coffee sector in Ethiopia?

- How does domestic producer price influence the export competitiveness of the coffee sector in Ethiopia?
- How does export volume influence the export competitiveness of the coffee sector in Ethiopia?

1.4. Objectives of the Study

In a broader stroke, the main objective of the study is to examine the export competitiveness of Ethiopian coffee sector. Furthermore, the study will have the following specific objectives to be achieved.

- To analyze the impact of domestic coffee production on the export competitiveness of the coffee sector in Ethiopia
- To examine the impact of exchange rate on the export competitiveness of the coffee sector in Ethiopia
- To identify the role of domestic consumption on the export competitiveness of the coffee sector in Ethiopia
- To assess the role of domestic producer price to the export competitiveness of the coffee sector in Ethiopia.
- To examine the influence of export volume on the export competitiveness of the coffee sector in Ethiopia.

1.5. Research Hypothesis

In addition to the under below research questions, this study has tested the following hypothesis with the help of an empirical analysis.

1.5.1. Dependent Variable: Export Competitiveness:

Trade theory suggests that countries do engage in trade in order to take advantage of differences among them in terms of factor endowments and technology and that the competitiveness of a country for a specific commodity is based on the concept of comparative advantage. Several trade measures have been used in past studies for measuring a country's competitiveness in a commodity. Among such are the Revealed Comparative Advantage (RCA) (Balassa, 1965), Relative Import Advantage (Vollrath, 1991), the Revealed Symmetric Comparative Advantage (which most studies used as index of competitiveness). In this study, the competitiveness of Ethiopia in its export of coffee is measured by the Revealed Comparative Advantage.

This dependent variable is going to be explained by domestic production of coffee, the price of domestic currency per unit of foreign currency, the volume of export, the ratio of world coffee price to domestic producer price, domestic consumption and domestic producers price.

1.5.2. Explanatory Variables

Domestic Coffee production: this is considered as an independent variable in the sense that if there exists higher amount of domestic production in the product then it will lead as to the hypothesis that export of the product will be competitive in the international market.

H_0: There is no positive relationship between domestic coffee production and export competitiveness of coffee.

H_1: There is a positive and significant relationship between domestic coffee production and export competitiveness of coffee in Ethiopia.

Exchange Rate: Theoretically, if the price of domestic currency (birr in our case) is lower in terms of foreign currency, this will encourage exporters and discourage importers. That is if national bank of Ethiopia deliberately devalues the birr then the price of export will be higher when it is measured in terms of birr.

H_0: There is positive and significant relationship between exchange rate and export competitiveness of coffee.
H_1: There is no positive and significant relationship between exchange rate and export competitiveness of coffee in Ethiopia.

Ratio of world coffee price to domestic producer price: in some economics books, this ratio is even used to measure the competitiveness of a product in the international trade. Similarly, this study has considered this variable as an explanatory variable. The higher the ratio between world price and domestic price is, the higher the competitive the export of coffee will be and the reverse holds true.
H_0: There will be positive relationship between the ratio of prices and export competitiveness.
H_1: There will be a negative relationship between the ratio of prices and export competitiveness.

Domestic consumption: higher domestic consumption indicates, the domestic market price for the product is set to be low holding other things being constant which in turn implies that the price set for the product in the international market will be also relatively low. As a result, the following hypothesis is developed to be tested.

H0: There is no positive relationship between domestic consumption and export competitiveness.
H1: There is a positive and significant relationship between domestic consumption and export competitiveness.

Domestic producer Price: this is more or less explained by the case of domestic consumption of the product. If domestic producers set the price of coffee at a significantly lower then, this means there will be higher demand domestically but at the same time, since rational producers objective is profit maximization, they tend to increase their profit by increasing either the production or the price of the product provided that the demand is observed increasing. Otherwise they will decide to export at a relatively higher price. Thus, higher domestic price explains lower competitive in the international market.
H0: There is no relationship between domestic producer price and export competitiveness
H1: There is positive relationship between domestic producer price and export competitiveness.

Export-Volume: The higher the volume of export for a product is, the higher competitive in the export will be.
H0: There is positive relationship between export volume and export competitiveness.
H1: There is a no positive relationship between export volume and export competitiveness.

1.6. Significance of the Study

At the end of the day, this research will have a major contribution to corresponding individuals which includes helping in identifying the determinants that are currently be considered as challenges in the export of coffee, helping the researches to be equipped with necessary skill and technique to undertake the assessment procedures of export competitiveness. Furthermore, it will also help other future researchers who have a plan to conduct a research on the subject export competitiveness.

1.7. Scope of the study

The study is basically restricted to show the determinant of the competitiveness of coffee export industry in Ethiopian. So far, different factors have been identified by different researchers that have a potential to determine the degree of export competitiveness of a product. However, this study will limit itself to the quantity of coffee produced in the country (measured by tones), export volumes of coffee, world coffee price and domestic producer price, exchange rate of domestic currency per unit of foreign currency in which all are a time series data.

Furthermore, the study is conducted in the case of Ethiopia where the time series data is extended from 1991 to 2016.

1.8. Organization of the paper

The paper is organized in five broader sections. The first chapter will present the introduction part of the study where background, statement of the problem, both general and specific objectives of the study, research questions and hypothesis, significance of the study and other related issues. While different empirical works will be reviewed in the second chapter, the

methodological framework including econometric technique and data source issues will be presented in the third chapter. The result of empirical result will be interpreted and discussed, conclusions will be drawn based on the results obtained from the regression and recommendation will be forwarded in the fourth and fifth chapter respectively.

CHAPTER TWO

2. Literature Review

2.1. Theoretical literature review

2.1.1. Competitiveness

According to the Business English Dictionary, competition is "the rivalry in which every business tries to get what other businesses are seeking at the same time: sales, profit and market share by offering the best practicable combination of price, quality and service".

M. Porter, an economist of the United States, said that the competition is gaining market share. The essence of the competition is to seek profit, which is higher than the current average return of a company. The result of the competition is the average profit of the industry trend of improved deep consequences resulting prices may decrease. (Porter, 1998.)

The idea of competitiveness is related to the economic concept of comparative advantage. Comparative advantage is defined by relative resource endowments. For agriculture, land and climate are particularly important. However, competitiveness requires more than that. To be competitive in international markets any agricultural industry must also have the power to draw capital and other productive resources from domestic and international economies. In particular, continued access to new technology and new ideas and consequent productivity growth is a necessary condition for an industry's competitiveness (Petit and Gnaegy 1995; Gopinath, Arnade, Shane and Roe 1997).

Both international and domestic policies may be important to the competitiveness of an industry. International trade policies affect access to markets, the returns that are obtainable from those markets and the competitiveness of rival exporters. However, direct subsidies or trade barriers that convey price support have a once off impact on competitiveness (Gopinath et al. 1997). Farmers receiving price support are better off than those not receiving the support. Nevertheless, they lose ground over time unless their productivity growth at least matches that of farmers receiving no support or they receive periodic to ups to their price support (Gopinath et al. 1997).

At a domestic policy level, the macroeconomic and regulatory environment may have a strong influence on aspects of an industry's competitiveness. Macroeconomic policy may have an influence on an industry's competitiveness through both domestic and international channels. Domestically, macroeconomic policy can affect input costs through its influence on factors such as interest rates and inflation. Internationally, macroeconomic policy may affect the real exchange rate. A wide range of other domestic policies may influence the efficiency of the economy as a whole, and thus any particular industry's access to inputs. Policies that are likely to have strong implications for the meat industry are those that affect transport, communications and processing infrastructure and those that affect the industry's access to knowledge and innovation (Petit and Gnaegy 1995; Gopinath, Arnade, Shane and Roe 1997)..

2.1.2. Measurement of Competitiveness

In scientific literature different methods of competitiveness measurements are focused on measurement of country, regional or enterprise competitiveness. The same methods can be applied to measure export competitiveness, including several factors determining export competitiveness.

Competitiveness can be applied to economies, countries, regions, industries, individual firms and individual product or service (Shafaei, 2009). At the level of individual firms, competitiveness is the ability of a firm to survive and prosper, given the competition of other firms for the same profits. Creating and sustaining competitive advantage required that a firm always stay ahead of its competition. A nation's industry is competitive relative to other nations' industries if the industry as an aggregate has a competitive advantage that allows it to consistently create higher value and higher profits than rival industries in other nations. At the level of national competitiveness, the term is typically used to describe either a nation's ability to sustain high productivity, leading to higher standards of living for its citizens (Hoefter, 2001).

Export is often associated with competitiveness of the country at the international level. Export competitiveness can cover a wide range of aspects that enable the country to produce and sell goods in foreign market of a quality and at prices that ensure long-term viability and sustainability (World Bank, 2008).

One of the most important factors, which could stimulate the development of national economy, is export. Higher export competitiveness could help the

country to overcome after-effects of economic recession and stimulate the development of the total national economy (Bruneckiene and Paltanavicience, 2012).

Krugman (1994) also argued that, export is obviously important for the country competitiveness. Export expansion within external market increase export revenue and diversity of export structure can be considered as the country with necessary competitiveness. International competitiveness generally refers to the ability of a country to expand its share in domestic and world markets. Therefore, international trade may be an engine that drives economic growth of nations, whereas international competitiveness represents the fuel that empowers that engine. The competitiveness of export causes the nation to command greater market shares sustain the level of revenue, income, and employment created in the various sector of economy. Export competitiveness involves, measuring international share, diversifying export baskets, sustaining high rate of export growth, upgrading the technology, and skill content of export activity and expanding the base of domestic firms to compete internationally (Nogami, 2008).

There are so many indices developed to measure competitiveness; especially export competitiveness, since 1965. As an example; Reveal Comparative Advantage (RCA), Export Competitiveness (XC), Reveal Symmetric Comparative Advantage (RSCA), Net-Export RCA, Modified RCA (RCA*), Real effective exchange rate (REER), Global Competitiveness Index (GCI), Baltic States Export Competitiveness Index (BalECI), Michaely Index (MIij), Contribution to Trade Balance (CTB), Business Competitiveness Index (BCI), Manufacturing Export Competitiveness Index (MECI), and so on.

2.1.3. Coffee as a Global Commodity

Coffee is remarkable for being produced in almost all non-arid countries in the tropics. Over 50 countries produce coffee in significant amounts; in many of these, earnings from coffee exports are of vital importance to the country's balance of payments. A further characteristic is that, with negligible exceptions, coffee is produced in developing countries, including a significant number of least developed countries (LDCs). Consumption, on the other hand, takes place in industrialized countries and Brazil, the second largest coffee consuming country in the world behind the USA. Coffee is an important agent of development, providing a livelihood for millions of people around the world; generating cash returns in subsistence economies and, since coffee production and harvesting are labor-intensive, providing an important source of rural employment, for both men and women.

The coffee tree is grown for its fruits, which contain one, or more usually two coffee beans. After various stages of processing, these beans are roasted and used primarily in the preparation of a beverage known throughout the world. Of the numerous botanical varieties of coffee trees, only two are cultivated and utilized commercially to any large extent worldwide. One is *Coffea arabica*, usually known as Arabica, accounting on average for 60% of world production. The other one is the Robusta coffee tree, derived from the *Coffea canephora* species and usually known as Robusta which accounts on average for 40% of world production. After the ripe berries have been harvested, two methods are used to remove the envelope or husk from the beans so as to obtain the marketable green coffee: the wet and the dry methods.

In the wet method the beans are separated from the cherries by consecutive operations involving considerable quantities of water, consisting of pulping, fermentation to remove mucilage, drying and hulling. In the dry method the harvested berries are placed on racks to dry in the sun for some three weeks, following which hulling can take place. The harvest time (crop year) depends on the geographical zone and climate. In some countries the harvest starts in April, whereas in other countries it starts in July or October.

Although there exists a multiplicity of specific grades traded worldwide the International Coffee Organization recognizes four main groups:
(a) *Colombian Mild Arabicas*, exported by Colombia, Kenya and Tanzania;
(b) *Other Mild Arabicas,* exported by other Arabica producing countries;
(c) *Brazilian and other Natural Arabicas* exported by Brazil, Ethiopia and Paraguay; and
(d) *Robustas*, generally produced in Africa, in some countries in Asia and also in Brazil.

Excellent coffees in terms of their organoleptic characteristics can be produced in all these groups. However, these characteristics do vary and certain groups of coffee are favored above others with respect to their use in particular preparations or brewing methods.

Coffee is the "second most traded commodity after petroleum" and "determines the livelihoods of 25 million poor families" (Utting-Chamorro, 2005). Its status as a major export for many countries and therefore a determinant of the wellbeing of national economies, gives it significant importance in the global economy. However, coffee also disproportionately affects small scale farmers as "coffee is one of the few internationally traded

commodities that is still produced mainly on smallholdings farmed by peasant households, with almost 70 per cent of production coming from producers who farm less than ten acres of land" (Utting-Chamorro, 2005).

Small-scale producers are more vulnerable to economic swings, so if the price of production dips below the amount they receive for the product, producers look for ways to lower the cost of production. Often this results in "threats to the land and wildlife where coffee is grown" – perhaps through selling land to developers or plantations, not maintaining high production standards, or simply neglecting land when producers seek work elsewhere (Utting-Chamorro, 2005).

Coffee is generally sold on the commodity market where price is determined by supply and demand. As an agricultural product, the supply of coffee is dependent upon many factors including weather, trade relations, and other market conditions. A freeze in Brazil can decrease supply, resulting in increased prices almost overnight, while the establishment of new coffee producing regions can cause prices to fall (ICO 2015).

As coffee-producing regions tend to be economically poorer regions of the world, poverty in these areas makes it tempting for struggling producers to cut corners in order to make short-term profits. Since March 2015 the ICO composite price has been consistently below the 10-year average of 137.24 US cents/lb, raising concerns about the economic viability of coffee production and putting the livelihoods of coffee producers at risk in many countries (ICO 2015).

Prolonged periods of low prices strain liquidity at the farm level, resulting in less than optimal input use during the following production cycle, negatively affecting yields and quality. The expectation of future coffee prices too low to cover full costs of production can hamper important investments in renovation of coffee plantations. Replanting is particularly important as part of the mitigation of the impact of climate change and to respond to increased pest and disease pressure. Finally, low or negative profitability may lead to the abandonment of coffee production as farmers may switch to other more profitable agricultural crops.

As a result, there is a widespread concern in the coffee sector that a prolonged phase of low coffee prices could negatively affect the supply of high quality coffee beans and could have adverse effects on household incomes in coffee growing communities. Hence, specific policies need to be formed to address the issue of economic sustainability of coffee production, stabilizing supply in the future and enabling farmers to be fairly remunerated (ICO 2015).

Because the health of the coffee market makes a significant difference to small-scale farmers, coffee quality, and the local environment, there has been an interest on the part of Northern consumers to get involved in the market. One such way has been to develop certification systems to ensure that standards to further given priorities are ensured. Therefore, certification systems developed for the coffee industry have different focuses, but most include some mix of social, environmental, and economic components. In the meantime, consumers have become increasingly educated about coffee, resulting in exponential growth in the specialty coffee market and coffee with given certifications. "Coffee has been transformed over the last two decades from a boring staple good to a vibrant and differentiated specialty

item” (Raynolds et al, 2007). Growth in the Eco labeled coffee industry has led to competition among labelers and the temptation to exaggerate the benefits of a given Eco label to gain more market share. ICO (2015)

2.1.4. Ethiopian Coffee Industry

The story of coffee has its beginning in Ethiopia- the original home of the Coffee Arabica plant, which still grows wild in high land forests. In terms of varietals, all coffees from Ethiopia are typical Arabica; the country is the original homeland, and over the years has developed numerous varieties. Amongst these is the known Gesha variety, which is indigenous to Ethiopia (but best known as Panamanian Geisha after it was transported to Panama after the 1930s). The existence of genetically diverse strains of coffee places Ethiopia at the center of origin, diversity and dissemination of the plant. The cultural heritage of coffee consumption has significantly contributed to the sustainable production of the crop for centuries in Ethiopia.

Coffee in Ethiopia has a unique slow ceremony that takes more than an hour. The ceremony has a great value in human relations and stimulating discourse. During the session different social, political and economic issues are raised, discussed and solved.

According to ICO 2014, it is estimated that the per capita consumption of coffee in Ethiopia is around 2.3 kg per year. Meanwhile the population is estimated at 90 million people, which would bring the total annual consumption of coffee to 207,000 tons. As Ethiopia is also exporting a similar quantity, the national annual production would be roughly around 414,000 tons (± 5-10%).

Ethiopia is the first country where coffee was sold according to the location from which it was produced. The known coffee types that are produced and exported from Ethiopia include Yirgacheffe, Sidamo, Limu, Teppi, Bebeka, Djimma, Lekempti, Kaffa and Harrar. These are found growing in the southern, south-western and eastern parts of the country. New coffee types emerging from the northern producing region include Zege and Ayehu. The reason is the distinctive and inherent quality profiles of coffees coming from individual growing regions. These distinctive and inherent quality profiles of coffees matched well with the interest of customers who chose to buy certain and selected qualities only.

Coffee is the leading export commodity in Ethiopia. Ethiopia stands as the biggest coffee producer and exporter in Africa and amongst the leading in the world. On top of its significance as a major export commodity it provides a means of livelihood for millions of people and plays a vital role in their socio – economic and cultural values. Since 90% of the coffee in Ethiopia is produced by smallholders' farmers, coffee is an important source of income and employment at farm level.

Coffee is produced mainly in 5 regions or 30 zones and 172 Woredas. Of these, 125 Woredas are considered the major producers for export. Coffee contributes 24 % of the country's foreign exchange, has a total estimated coffee land of 700,000 ha and annual production of 480,000 tons per year, 25% million people directly and indirectly engaged in the sector; about 50% of the produced coffee is consumed domestically.

Ethiopian coffee production systems are broadly classified into: forest (8-10%), Semi forest (30-35%), Garden (50-55%), Plantation (5-8%). The

basis of Ethiopian coffee culture is rooted in organic farming, agro-ecological sustainability and biodiversity.

Ethiopian coffee types are identified by their distinct characteristics such as flavor, aroma, and taste. Due to its unique qualities exported Ethiopian coffee is commonly used when blending coffees of other origins, which is why Ethiopian coffee types are found in specialty markets branded in the name of producing region.

The Ethiopia coffee has been exported more than 50 countries; the major destinations are Germany, Saudi Arabia, Japan, Belgium, United States of America and France.

2.2. Empirical studies

There are some studies done by researcher and policy makers to highlight the determinants of exports competitiveness such as Mahmood (2004) used RCA Balassa index to calculate comparative advantage for the nonagricultural sector of Pakistan. RCA index can be used for commodity specific and region specific but cannot conclude the future comparative advantage. Rahmaddi and Ichihashi (2012) investigated competitiveness of manufacturing exports and export's structure for Indonesian economy by using RCA measure. In the following section, a review of researchers' work is to be presented to identify the determinants of export competitiveness.

Tadesse G. (2015) investigated the major determinants of coffee export supply in Ethiopia for the period of 1981-2011. It employs Vector Auto Regressive and Error Correction approach to identify the major determinants. The study has further used the granger causality test so as to

find the direction of causality between coffee export supply and some of the independent variables. The findings of the study indicated that real export price of coffee, domestic production of coffee, physical infrastructure, and world supply of coffee affects coffee export supply significantly. The ratio of export plus import to GDP which is a proxy for openness to trade affects coffee export supply only in the long run. Finally, the study found that the impact of real exchange rate in the long run as well as in the short run is statistically insignificant. Granger causality test established bidirectional causality of coffee exports with domestic production of coffee, but the direction of causality of coffee exports supply with real export price and world production of coffee is unidirectional. The policy implication is that improvement in the quality of coffee export, expansion in domestic production of coffee and road sector are believed to provide significant effect on export supply of coffee.

Hussein M and Nandees wara R. (2015) has attempted to analyze the determinants of Ethiopia's Sidama coffee exports in the international market over fourteen years for four years. In this regard, the Tobit Random Effect Model were developed to come up with the findings of the study. The result of the traditional gravity model shows that most of the exogenous variables have shown the already expected signs. That is Ethiopia's GDP is significant and positive effect on exportation of Sidama coffee to the rest of the world. The coefficients of exporter country's population and importer country's population are shown positive and negative impact respectively However, only economic size of exporter nation, difference in per capita income and the resistance factor of distance have possessed a significant effect on in trade with Sidama coffee. Concentration of export in a limited number of countries is clearly seen from the structure of Ethiopian foreign trade. With

regard to the direction of Ethiopia's exports, Europe was a major trading partner accounting for almost all of its export including Sidama coffee.

The research of Manel M. and Faika C. (2013) was interested to explain the role of macro-economic determinants and to evaluate the effect of structural factors on the export competitiveness of the Tunisian economy, in a context of liberalization and crisis. In addition to the usual variables affecting export performance of countries such as exchange rates, tariffs and FDI, we try to examine the role of spending on research and development and technological effort in the evolution of Tunisian exports.

M. saqib and Q. Xin (2017) have attempted to investigate the determinants of exports competitiveness which is an empirical analysis through revealed comparative advantage of external sector of Pakistan. In the paper, the researchers have endeavored to analyze a sector-wise export performance of Pakistan using Revealed Comparative Advantage with the global market. Data for the period 2003-2015, Harmonized System (HS) 1988/92 developed by the World Customs Organization (WCO) are employed in the analysis. they have observed that Pakistan foreign trade concentrated limited products and markets for many years and there are no serious attempts to diversify its export share to the world. Empirical results show that Pakistan is not a major trading player in the international trade. However, it is a major trading player in some of its export items such as, textile and clothing sector, Vegetable, and hides and skins sector which have prominent revealed comparative advantage. Pakistan should diversify its exports and improve its trade diplomacy.

Vilani S. (2013) studied the determinants of export competitiveness of tea industry in Sri Lanka. Quantitative research approach was used and Porter's diamond model with some adaptations was taken as proposed model of this study. Partial least squares structural equation model (PLS-SEM) was utilized to analyze the contribution of each factor on tea export competitiveness. The empirical evidences this study found out that factor conditions have the most significant influence of export competitiveness of tea industry and the second important is government support. Followed by government support, demand condition and brand loyalty have also made positive impact on export competitiveness of tea industry in Sri Lanka. Then the results suggested that factor conditions, demand conditions, government support, brand loyalty and related and supporting industries can help Sri Lankan tea industry to sustain its competitive advantage. While identifying important elements, results indicated that raw material, technology, physical infrastructure, information infrastructure, related industries, and firm characteristics have significant impact. The study has forwarded a recommendation which is strategies should be developed to enhance competitiveness of Sri Lankan tea export. By creating favorable conditions, Sri Lanka can remain competitive position in the global tea industry for many years to come.

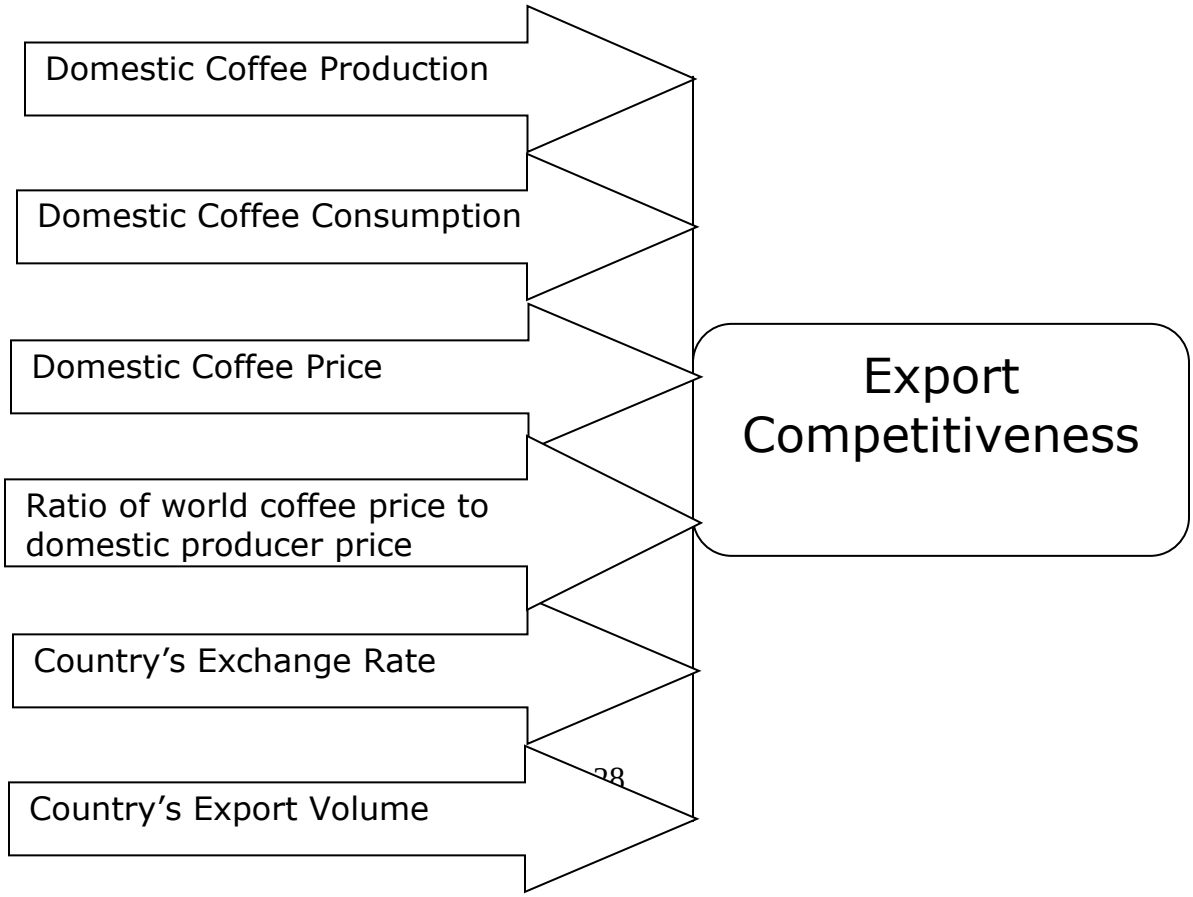
Yusuf M and Gonul M. (2013) has conducted a research on the determinants of a country's ability to export (both by means of volume and sophistication) as well as the determinants of export competitiveness i.e. a country's global export market share. In this context, it has been a question whether foreign direct investments contribute to export competitiveness of countries. Some studies in the literature suggest a positive link between exports and FDI inflows while others suggest a negative impact of FDI on exports competitiveness. In the study, export competitiveness of OECD countries are

analyzed. Firstly a RCA index for manufactures exports is constructed and then panel data techniques are employed to test the effects of physical capital, labor cost, infrastructure, human capital and FDI inflows on export competitiveness of manufactures. The results of the study indicated that conventional variables determine the export competitiveness of manufactures in OECD countries. Furthermore, FDI to the manufacturing sector has not contributed positively to the export competitiveness of OECD countries for the last decade.

2.3. Conceptual Framework

According to the literature reviews made for this study, this study research has developed the following conceptual frame work where real effective exchange rate, domestic production level of coffee, domestic level of consumption for coffee, domestic pricing practice of the product and other variables are identified as those explanatory variables that are potentially affecting the export competitiveness of coffee in Ethiopia.

Figure 2.1: Conceptual Framework of the study



Domestic Coffee production: this is considered as an independent variable in the sense that if there exists higher amount of domestic production in the product then it will lead as to the hypothesis that export of the product will be competitive in the international market.

Exchange Rate: According to David Romer, if the price of domestic currency (birr in our case) is lower in terms of foreign currency, this will encourage exporters and discourage importers. That is if national bank of Ethiopia deliberately devalues the birr then the price of export will be higher when it is measured in terms of birr.

Ratio of world coffee price to domestic producer price: in some economics books, this ratio is even used to measure the competitiveness of a product in the international trade. Similarly, this study has considered this variable as an explanatory variable. The higher the ratio between world price and domestic price is, the higher the competitive the export of coffee will be and the reverse holds true.

Domestic consumption: D. Romer, (2006) has outlined higher domestic consumption indicates, the domestic market price for the product is set to be low holding other things being constant which in turn implies that the price set for the product in the international market will be also relatively low.

Domestic producer Price: this is more or less explained by the case of domestic consumption of the product. If domestic producers set the price of coffee at a significantly lower then, this means there will be higher demand domestically but at the same time, since rational producers objective is profit maximization, they tend to increase their profit by increasing either

the production or the price of the product provided that the demand is observed increasing. Otherwise they will decide to export at a relatively higher price. Thus, higher domestic price explains lower competitive in the international market.

Export-Volume: The higher the volume of export for a product is, the higher competitive in the export will be.

CHAPTER THREE

3. Research methodology and design

3.1. Introduction

This chapter explains the methodology of approach that is used to identify the determinants of coffee export competitiveness in Ethiopia. It mainly discussed the research design, target population and sample, data collection method and data analysis method.

The goals of this chapter are;

- To introduce main research approach
- To describe the major methods used to identify the determinants of coffee export competitiveness.
- To clearly present how the investigation assignment is valid in line with other research

3.2. Research approach

Creswell (2003) discusses three research approaches, namely qualitative, qualitative and mixed research approaches. The following paragraphs briefly discuss the nature of each of these research approaches.

3.2.1. Quantitative research approach

The study is classified as quantitative if you want to quantify the variation in a phenomenon, situation, problem or issue; if information is gathered using predominantly quantitative variables; and if the analysis is geared to ascertain the magnitude of the variation. The main function of statistics is to act as a test to confirm or contradict the conclusions that you have drawn on the basis of your understanding of analyzed data. Statistics, among other things, help you to quantify the magnitude of an association or relationship,

provide an indication of the confidence you can place in your findings and help you to isolate the effect of different variables.

3.2.2 Qualitative research approach:

A study is classified as qualitative if the purpose of the study is primarily to describe a situation, phenomenon, problem or event; if the information is gathered through the use of variables measured on nominal or ordinal scales (qualitative measurement scales); and if the analysis is done to establish the variation in the situation, phenomenon or problem without quantifying it.

3.2.3 Mixed research approach:

As both qualitative and quantitative approaches have their strengths and weaknesses, and advantages and disadvantages, 'neither one is markedly superior to the other in all respects' (Ackroyd& Hughes 1992). The measurement and analysis of the variables about which information is obtained in a research study are dependent upon the purpose of the study.

It is strongly recommended that you do not 'lock yourself' into becoming either solely a quantitative or solely a qualitative researcher. It is true that there are disciplines that lend themselves predominantly either to qualitative or to quantitative research. The research problem itself should determine whether the study is carried out using quantitative or qualitative methodologies. As a result, this study will use mixed approach where the quantitative approach is simply the econometrics model (OLS analysis) developed below, RCA and RSCA and the quantitative approach is a narration of the primary data collected through questionnaire and focused group discussion. The primary data mainly collected on coffee quality, domestic marketing, institutional arrangements, and government directives aspects of coffee export.

3.3. Research design

The research design selected in this study will be descriptive research which will help to clearly describe and show the determinants of coffee export competitiveness. According Anol(2012) Research design is [...] "a comprehensive plan for data collection in an empirical research project. It is a "blueprint" for empirical research aimed at answering specific research questions or testing specific hypotheses, and must specify at least three processes: the data collection process, the instrument development process, and the sampling process''.

As it is indicated above, this study will use mix of quantitative and qualitative approach. The quantitative approach intends to assess the determinants of export competitiveness in the coffee industry of Ethiopia. The study used survey of records as a strategy of inquiry. The time series analysis techniques are employed in the study to identify the determinant. Besides, the qualitative version of the study will be basically the primary data collected by focused group discussion and questionnaire.

3.4. Population and sampling

Population refers to all the members of a real or hypothetical set of people, events or objects to which we wish to generalize the results of our research. The target populations of this study will be exporters of coffee, suppliers, export associations, ECX, MoT, CSA, NBE, ERCA, ICO and others. As it is presented in the previous sections, the data sample will be collected from Ministry of Trade (MoT), Central Statistics Authority (CSA), National Bank of Ethiopia (NBE) and the Ethiopian Revenue and Custom Authority (ERCA). The data covered the time period from 1991-2015.

However, to develop a strong evidence towards the findings, this study will also have a primary sources of data obtained through focused group discussion which is potentially composed of 10 stakeholders to those who are able to provide relevant information on the sector. To make the study manageable with time and cost constraint the convenient sampling methods will be employed for the questionnaire survey and focused group discussion.

Regarding the sample size, the number of active exporters of the sector differs from year to year and those who are licensed does not necessary mean they are actively exporting to the rest of the world. This study therefore considers those firms that have actively exported coffee during the fiscal year 2016. According to the data from ERCA, Ethiopia Coffee and Tea Authority and Ministry of Trade, the number of exporters are roughly estimated to be less than 100. In this specific study, the rule of thumb is used which is 30 percent of the total population and decided to collect data from 35 firms.

3.5. Data collection methods

According to Koul (2006) using appropriate data collection techniques help researchers to combine the strengths and amend some of the inadequacies of any source of data to minimize risk of irrelevant conclusion. He further argues that consistent and reliable research indicates that research conducted by using appropriate data collection techniques increase the credibility and value of the research findings.

In addition to the above research methodology, the sources of the data to be analyzed in this paper are both primary[1] and secondary data in a purpose to

[1] Primary sources including by asking individual observations, focused group discussion about

enhance the quality of the study. There are two major approaches to gathering information about a situation, person, problem or phenomenon. When you undertake a research study, in most situations, you need to collect the required information; however, sometimes the information required is already available and need only be extracted. Based upon these broad approaches to information gathering, data can be categorized as: primary data and secondary data.

Information gathered using the first approach is said to be collected from primary sources, whereas the sources used in the second approach are called secondary sources.

In order to conduct the study professionally, it is incorporated qualitative data along with quantitative data which the researcher considers as a supplementary instrument in order to have a strong and conclusive finding in line with the general and specific objectives. The qualitative data will be collected using key questionnaire survey and focused group discussion (FGD) whereas the quantitative data will be gathered using desk review and observations as well.

3.5.1. **Questionnaire survey**:

The research used survey questionnaires to collect primary data which are structured using a five-point Likert scale on a number of variables. Data was gathered via self-administered e-mail survey. The questioner is annexed.

As part of this data collection instrument, the researcher has deliberately selected those respondents to be amongst the top management level in each

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the subject matter to strengthen the ideas and conclusion of the study

corresponding exporting firms in order to get very relevant information. As a result, those managing directors, marketing managers, operation managers and export managers were among the top targeted respondents to appropriately complete the questionnaire. Once the researcher obtained the list of those active exporting companies in the recent years, samples are randomly selected from lists and attempted to make the selection as representative of the whole population as possible.

3.5.2. **Focused Group Discussion (FGD)**

The researcher strongly accepts as true that the data that focus group discussions produce are distinct in a number of ways from data collected by other qualitative methods. The aim of the focus group is to initiate open discussion between members, and it is this interaction that makes the data distinct. Thus, the study will have focus group composed of small-group discussion guided by a trained and well-resourced leader. It is used to discuss complex ideas in-depth. The group format stimulates discussion, generates new ideas, and promotes exploration of unknowns.

The research had a separate and continuous focus group discussions with targeted population to get precise and strong insights about the area of discussion.

3.5.4 Desk Review

The desk review allows the researcher in general to familiarize him or herself to all the major issues and important discussions concerning exporting endeavors in the country. Thus, the research will review assessment studies, reports and others conducted by various stakeholders, NGOs, and government offices, particularly in the subject matter.

Documents to be included in the desk review may typically include those within various research institutes, any other academic or scientific papers related to the issue of interest, official government policies, legislations, strategies and programs, non-governmental development agencies report and so on.

Reviewers will be very familiar with the content of these documents so that they will able to explore the national factual summaries on the ground in relation to the repeatedly mentioned disease, the health system of Ethiopia, the trend of ageing populations and the degree of vulnerability and burdens associated with being older. The desk review facilitates the production of a brief report which blends the relevant information into a user- friendly text that can be read by the client and other interested bodies. Also, desk review creates the opportunity to identify gaps and locally specific research questions, and to think about whether the methodology may have to be adapted for subsequent phases of the study. Generally speaking, the desk review can be considered as a rigorous literature search, reviews, and production of all relevant documents.

3.5. Data analysis methods

Data type for this study is basically a secondary data which is collected from different sources including the International coffee organization, International Trade Centre, Ethiopia Revenue and Customs Authority, Central Statistics Authority, Ethiopia Coffee and Tea Authority, Ministry of Trade, National Bank of Ethiopia and other sources.

This study employed the following three different techniques to identify the factors that affect the export competitiveness of coffee export.

A. Revealed Comparative Advantage (RCA)

In scientific literature different methods of competitiveness measurements are focused on measurement of country, regional or enterprise competitiveness. The same methods can be applied to measure export competitiveness, including several factors determining export competitiveness. A broad notion of competitiveness refers to the indication and skills to compete, to win and retain a position in the market, to increase market share and profitability and to consolidate commercially successful activities (Durand, Simon and Webb, 1992).

There are so many indices developed to measure competitiveness; especially export competitiveness, since 1965. As an example; Reveal Comparative Advantage (RCA), Export Competitiveness (XC), Reveal Symmetric Comparative Advantage (RSCA), Net-Export RCA, Modified RCA (RCA*), Real effective exchange rate (REER), Global Competitiveness Index (GCI), Contribution to Trade Balance (CTB), Business Competitiveness Index (BCI), Manufacturing Export Competitiveness Index (MECI), and so on.

The RCA indicates whether a country is in the process of extending the products in which it has a trade potential, as opposed to situations in which the number of products that can be competitively exported is static. A measure of revealed comparative advantage is used to help assess a country's export potential. It can also provide useful information about potential trade prospects with new partners. RCA measures, if estimated at

high levels of product disaggregation, can focus attention on other nontraditional products that might be successfully exported.

Revealed comparative advantage (RCA) is one of the measures of international competitiveness and has gained general acceptance (Utkulu and Seymen, 2004). It is based on conventional trade theory and measures a country's exports of a commodity relative to that of a set of countries.

The RCA analysis is largely based on contributions of Balassa (1977) and Vollrath (1991). The concept of RCA was introduced by Balassa in 1965 to identify the relative trade performances in countries. In this model, it assumes that the commodity pattern of trade reflects inter-country differences in relative costs as well as in non-price factors.

RCA is one the measure of international competitiveness and has gained general acceptance in the literature (Utkulu and Seymen, 2004). It is grounded in conventional trade theory, and it measures a country's exports of a commodity relative to that of a set of countries.

RCA indices evaluates export performance as the total exports of a specific product, divided by the total exports of that country compared to the world exports of the product, divided by total world exports. The factors that contribute to movements in RCA are economic: structural change, improved world demand and trade specialization. The RCA index is defined as the ratio of two shares. The numerator is the share of a country's total export quantity of the commodity of interest in its total exports volume. The denominator is share of world exports quantity of the same commodity in total world exports volume. RCA is defined as follows:

$$RCA_{ij} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt})$$

Where, RCA_{ij} represents the RCA of a given country i,

X_{ij} represents the export volume of product j in country i,

X_{it} represents the total export volume of country i,

X_{wj} represents the export volume of product j of the world and

X_{wt} represents the total export volume of the world.

RCA<1: the product has no capacity of competitiveness

1<RCA<2.5: the product has a low capacity of competitiveness

RCA>2.5: the product has a high capacity of competitiveness

B. Revealed Symmetric Comparative Advantage (RSCA)

The Revealed Symmetric Comparative Advantage measure reflects the RCA in its symmetric form as an index of competitiveness.

$$RSCA = \frac{RCA-1}{RCA+1}$$

Where the RSCA ranges from [-1 to +1]. The closer the value is to +1, the higher the competitiveness of a country in the commodity of interest.

C. Multiple OLS Regression

While assessing the determinants of export competitiveness, the study will apply an econometrics techniques which is multiple OLS analysis, different variables have identified according to various studies conducted on the export competitiveness so far but for this paper, the export competitiveness is indexed by the RSCA and will be explained by the independent variables which includes domestic production of coffee, the price of domestic currency per unit of foreign currency, the volume of export, world coffee price,

domestic consumption and domestic producer price. The OLS regression equation will be the following.

$$\mathbf{RSCA_t = F\ [DPCt,\ EXRt,\ EXPt,\ WCP_t,\ DCCt,\ DPPt]}$$

Where,

RSCAt = Revealed Symmetric Comparative Advantage at time t

DPCt = Domestic Production of Coffee (tons) at time t

EXRt = Exchange Rate of Birr in terms of USD at time t

EXPt = Export volume of coffee at time t

WCPt = World Price Coffee at time t

DPPt = Domestic Producers Price at time t

DCCt = Domestic consumption of coffee at time t

The above expression can be rewritten as follows after it is transformed in to log-log form of equation to be estimated in the proceeding sections of the paper.

$$\text{LnRSCAt} = \mathbf{\beta_0 + \beta_1 LnDPCt + \beta_2 LnEXRt + \beta_3 LnEXPt + \beta_4 LnWCp_t, + \beta_5 DPPt + \beta_6 DCCt + \varepsilon_t}$$

Where, ε_t = white noise error term and others are log-form of the variables presented above.

Both the dependent and explanatory variables are expressed in a logarithmic form, the coefficients $\mathbf{\beta_1 - \beta_6}$ take to mean the elasticities. Off all those coefficients, the sign of the first three betas are attention-grabbing which tests the hypothesis developed in the above section.

3.6. Data Quality control and Triangulation

Above all, the best way to ensure the quality of data is simply to triangulate the data collection instruments in a way it generates a meaningful and quality data and finally significant conclusions to be drawn.

Generally, triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena (Patton, 1999). Triangulation also has been viewed as a qualitative research strategy to test validity through the convergence of information from different sources. Denzin (1978) and Patton (1999) identified four types of triangulation: method triangulation, investigator triangulation, theory triangulation, and data source triangulation.

As a result, in this study, the researcher will essentially adopt method triangulation and data sources triangulation. Firstly, the collected data will be analysed using different research methods in a particular way that it both qualitative and quantitative methods of analysis will be employed. Secondly, the research will perform a continuous focus group discussion and Questionnaire in order to cross check the validity of the data collected from the targeted participants. By doing so, more comprehensive will be obtained. Since having quality data is a prerequisite for decision making and drawing any conclusion, the quality of data should be checked before, during and after data collection.

Data triangulation validates our data and study by cross verifying the same information. This triangulation of data strengthens our study because the data has increased credibility and validity.

CHAPTER FOUR

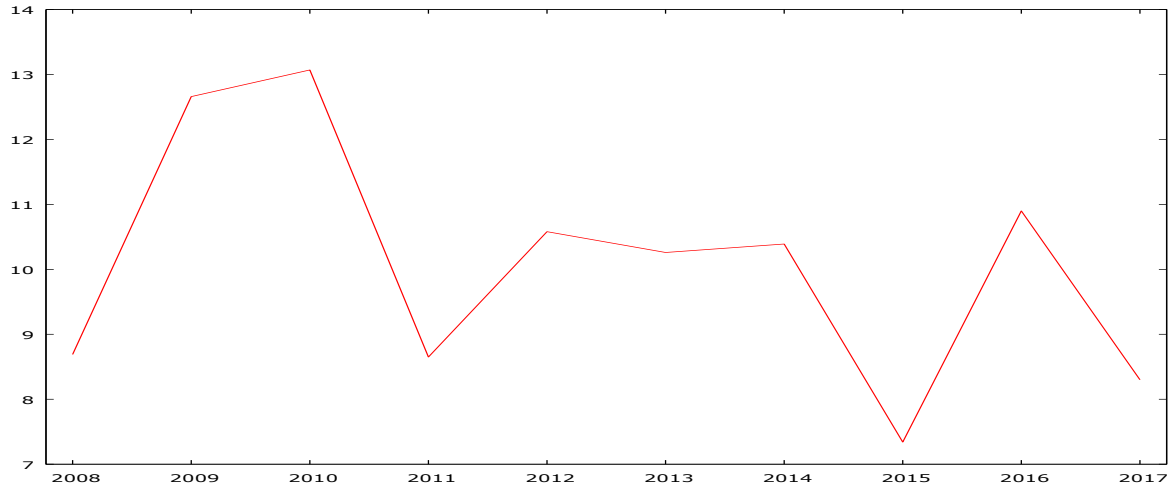
4. Data Presentation, Analysis and Discussion
4.1. Overall Macroeconomic Performance of Ethiopia

According to IMF country report of 2016, the economic growth of Ethiopia has declined from the previous years due to the negative effects of the harsh drought happened in the country and fragile worldwide environment. However, the decline in the economic growth has moderated or alleviated with an effective implementation of timely policies to tackle the problems associated with drought. This slowdown in the economic growth is simply is in comparative to the previous years where the country has consistently registered a positive economic growth and at the same time poverty reducing record for above ten years starting from 2004. The share of service sector to the GDP growth is basically increasing with time while the role of agriculture is being undertaken by the growing service and slightly by industry sectors though it contributes higher share in absolute term.

However, being dependent on the weather and traditional tools means it is too challenging to keep the role of agriculture on the economy as consistent as it should be. Whenever there exists, shortage of rainfall, the productivity of the economy will automatically decline (Willenbockel and eta'al, 2008) and that is why huge amount of Ethiopian people are adversely affected by the drought which in turn results in a fall in the economic growth as of the past two years. Succeeding to the previous long term policies[2] implemented by Ethiopia , the country has currently adopted a five years plan which is GTP-II as a means that paves the way to secure the medium income level in the next ten years.

[2] 7SDPRP , PASDEP and GTP-I are poverty reduction 5 years programs adopted from 2001/02 to 2004/05, 2005/06 to 2009/10 and 2010/11 to 2014/15 respectively.

Fig 4.1: The Trend of Economic Growth of Ethiopia from 2000-2016 taken from NBE data



As it is shown in the above figure, the economy of the country is growing with time with the exception of the beginning of 2000s. In the early periods, the economy growth declines and reaches a negative figure in 2002. These decline in the growth are mostly associated with Ethio-Eritrea war which caused a lot of damages in human life as well as in materials. However, the economy started to grow in an increasing rate which is about 11.7% in 2004 and showed a positive growth for the consecutive 10 years ranging from 8.7 % in 2012 and 13.5% in 2011.

4.1.1. Overall Trade Performance of Ethiopia

As it is discussed in the previous section, the degree of openness to the international trade shows how much ones' economy is exposed to international relationship or the degree of integration with the external market. Developing countries exports primary products (agricultural products) for cheap international prices and imports in turn capital goods including machineries, chemicals, automobiles and etc in higher prices which

makes their trade balance to be in deficit. The case for Ethiopia is not different from those circumstance where the trade balance of the country is being in deficit for the last indefinite periods.

According to the expenditure approach of measuring GDP if import exceeds the export of one country then the GDP will be deteriorate given other things being constant. However, those deteriorations can be counterbalanced and be compensated from the gains resulted from imports.

Table 4.1: The Trends of Export and Import for Ethiopia from 2008 -2016 in Billions of Birr

Indicators	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average
Economic Growth	8.69	12.66	13.07	8.65	10.58	10.26	10.39	7.34	10.9	10.28
Export Value	42.88	42.97	62.72	85.95	77.04	77.26	79.44	70.53	64.74	67.06
Growth	-0.57	0.22	45.96	37.04	-10.36	0.28	2.82	-11.22	-8.20	6.22
Import Value	115.93	117.43	151.87	162.49	177.01	179.39	198.56	228.17	224.62	172.83
Growth	6.65	1.30	29.32	6.99	8.94	1.34	10.69	14.91	-1.56	8.73
Trade balance	-73.05	-74.46	-89.15	-76.54	-99.97	-102.1	-119.1	-157.7	-159.9	-105.77
Openness, % GDP	42.69	39.67	47.11	48.23	45.40	41.47	40.74	39.66	35.79	42.31

Source: NBE and author computation

4.1.2. **Coffee Production, consumption and Export Performance of Top Producers in the World**

Ethiopia is one among the largest producing and exporting countries of coffee products in the world. Coffee production has heavily contributed to both domestic and foreign earnings in the country. Moreover, coffee also serves as a primary source of labour, especially for the rural smallholder farmers. Ethiopia is fifth in the world in total production, according to statistics from the International Coffee Organization, and many of its Arabica beans are recognized internationally for their high quality.

In the birthplace of coffee, a conflict is brewing over who gets Ethiopia's best beans. The governments of this East African countries wants dollars to build infrastructure, and so it has ambitious targets to increase coffee exports, capitalizing on world-wide demand for its high-end Arabica beans.

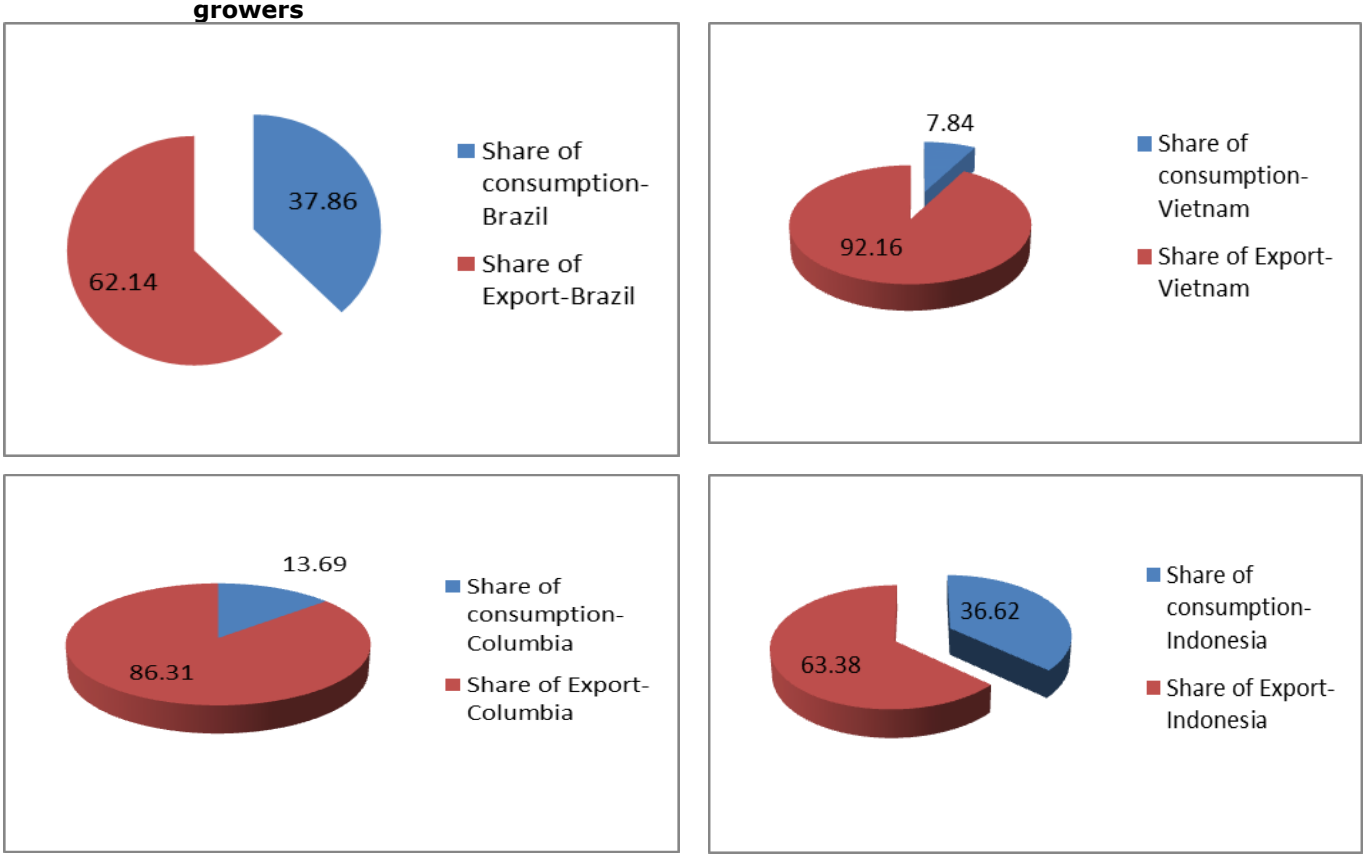
But Ethiopians, Africa's top coffee consumers, want to keep the beans at home. With urban incomes rising, Ethiopian drinkers increasingly want better quality. In most cases, the domestic price is higher than international prices and as a result, exporters are reluctant to export their product into international markets. They prefer to sell their product at home than exporting to the rest of the world. In contrast to this, the government want the export in general to be promoted for the fact that harder currency.

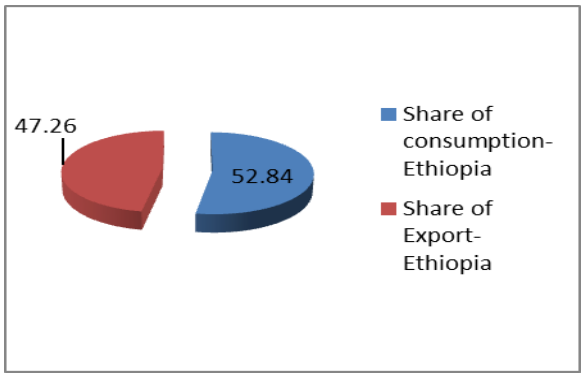
The below pie charts are drawn using the average data from 2010 -2016 extracted from International Coffee Organization for the purpose of comparison. they show us the share of coffee consumed domestically and exported to the rest of the world. It is found then, on average, Vietnam

exported above 92 percent of the total production and domestic coffee consumption is about 8 percent which can be concluded that it has been a main sources of foreign exchange for the country and at the same time the people are not consuming more. Similarly, Columbia has exported above 86 percent of the domestic production annually and the remaining 14 percent is consumed home.

In contrast to this, for the last seven years, the share of domestic consumption and export volume is comparably balanced in the case of Ethiopia with consumption slightly higher than the export volume.

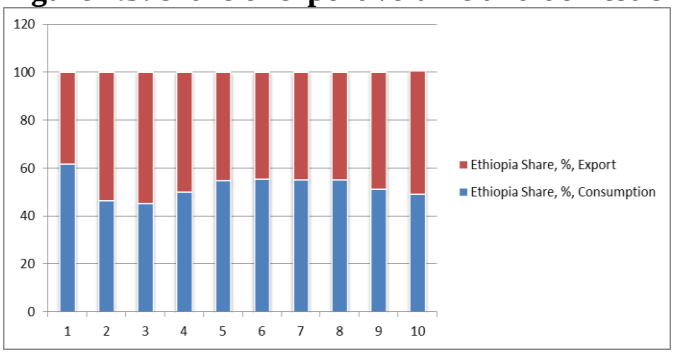
Figure 4.2: share of domestic consumption and export volume for the top five coffee growers

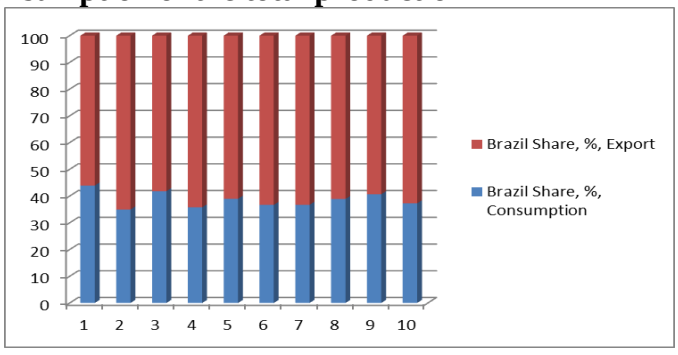


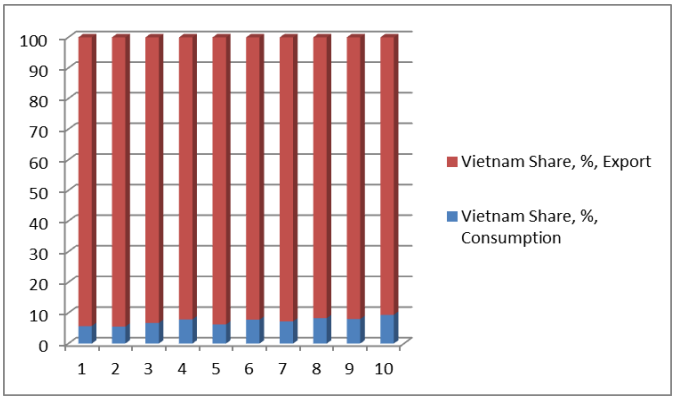


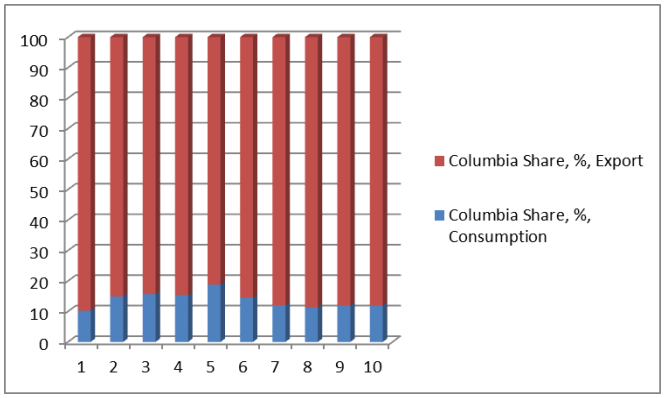
While demand for specialty coffee is creating a market for Ethiopian beans, the push to export also comes as coffee countries face steep competition. Currency devaluations in the world's largest Arabica producers have pushed farmers to export beans. Ethiopia is also competing against other African producers like Uganda, Kenya and Tanzania to export premium beans. But people in those countries mostly drink tea and use their coffee largely for exports. Without gains in production and with steady competition at home, Ethiopia's answer may not be in exporting more coffee but simply charging more.

Figure 4.3: share of export volume and domestic consumption of the total production









Compared to the top coffee producers like Brazil and Vietnam, the amount of coffee being consumed at home is by far larger in Ethiopia. Whereas, the level of export in the top producers is most of the time greater than the quantity of coffee being consumed domestically. According to the data extracted from the international coffee organization, the average share of coffee being exported and consumed domestically for the last ten years is estimated to be 47.26 percent and 52.84 percent respectively.

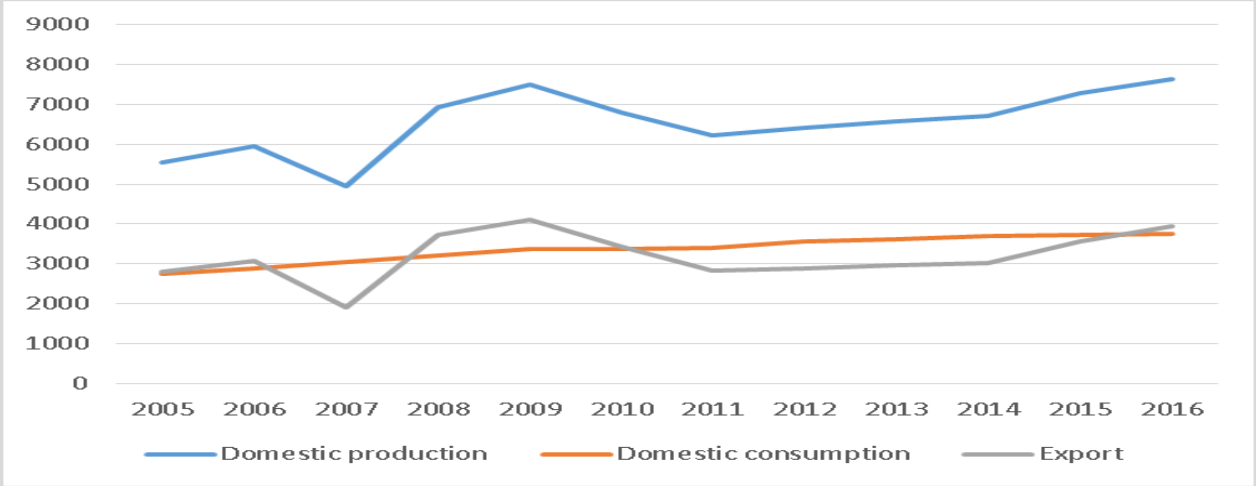
Table:4.2 the growth rate of domestic coffee production, domestic coffee consumption and export in `1000 sixty kilogram bags

Year	Domestic production	Growth-Rate	Domestic consumption	Growth-Rate	Export	Growth-Rate
2005	5550.74	-	2748	-	2802.74	-
2006	5966.68	7.49	2894	5.31	3072.68	9.63
2007	4948.99	-17.06	3048	5.32	1900.99	-38.13
2008	6931.20	40.05	3210	5.31	3721.20	95.75
2009	7500.38	8.21	3383	5.39	4117.38	10.65
2010	6798.41	-9.36	3383	0.00	3415.41	-17.05
2011	6233.01	-8.32	3400	0.50	2833.01	-17.05
2012	6427.44	3.12	3550	4.41	2877.44	1.57
2013	6575.26	2.30	3625	2.11	2950.26	2.53
2014	6713.98	2.11	3700	2.07	3013.98	2.16
2015	7296.98	8.68	3725	0.68	3571.98	18.51
2016	7650.00	4.84	3750	0.67	3950.00	10.58

Source: ICO

Though there exist fluctuations in the quantity of coffee produced and the export level of coffee, the amount of coffee being consumed domestically does not show any decrement. Therefore, a decrease in the domestic production is totally reflected in the decrease of export volume. That is, whenever, the domestic production level decreases, the export volume will decrease but not the consumption level.

Figure 4.4: Trend of domestic consumption, production and export volume



Similarly, the above graph indicated that the trend of domestic coffee consumption is continuously increasing with time whereas the lines for domestic production and export of coffee showed fluctuations. Roughly speaking, the quantity of domestic consumption of coffee exceeds the level of coffee export starting from 2010 to 2015 and then starts to be balanced in the later years. This revealed that the domestic demand for coffee is continuously increasing and Ethiopian people are enhancing the tradition to drink more cup of coffee which in turn results in higher price at domestic. When domestic price are increasing and become relatively higher than the international prices, exporters always seek to sell their product domestically which is against the government strategy of export promotion in order to

accumulate hard currency. If there is shortage of foreign currency, then there will not the financial capacity to import products from the rest of the world. Combinely those circumstances will affect the overall economy adversely.

4.2. Empirical Analysis

4.2.1. Statistical Summary

In this section, a detailed descriptive statistical summary is carried out before proceeding into to the main econometrics analysis. As it is shown in the table below, the average of Ethiopia's domestic coffee production is 4854 thousand of 60 kg with a maximum and minimum production level of 7650 thousand of 60 kg and 1825 thousand of 60 kg coffees respectively during the sample period. Likewise, the average of domestic consumption and export volume for the years 1991 -2016 is 2531 and 2325 thousand of 60 kg coffee respectively where almost half of the total production is exported to the rest of the world.

The mean of RCA index for the same years is 157.895 with a minimum of 25.8179 and maximum value of 383.614 with both figures indicating that the country has a comparative advantage for the product over the specified periods of time.

Table 4.3: Summary Statistics, using the observations 1991 – 2017

Variable	Mean	Median	Minimum	Maximum
Domestic Consumption	2531.19	2478.00	1264.00	3750.00
Domestic Production	4853.83	4779.49	1825.17	7650.00
Exchange Rate	10.5056	8.61970	2.07000	23.2600
RCA	157.895	154.641	25.8179	383.614
RSCA	0.971021	0.986189	0.925400	0.994800
Domestic Producer Price	66.3517	69.8290	30.7864	145.462
World Price of Coffee	130.470	132.399	60.3654	273.209
Export	2324.50	2040.72	494.171	4117.38
WCP/DPP	1.96721	1.96078	1.76508	2.43703
Variable	**Std. Dev.**	**C.V.**	**Skewness**	**Ex. kurtosis**
Domestic Consumption C	853.096	0.337034	0.0305643	-1.45056
Domestic Production C	1752.80	0.361116	0.0870721	-1.35494
Exchange Rate	5.92465	0.563950	0.746527	-0.516555
RCA	124.236	0.786826	0.495965	-1.12238
RSCA	0.0248706	0.0256129	-0.623456	-1.27441
Domestic Producer Price	26.3633	0.397327	0.768616	1.11034
World Price of Coffee	51.9580	0.398238	0.607937	0.270642
Export	961.160	0.413491	0.177837	-0.909056
WCP/DPP	0.130130	0.0661493	2.13837	5.43857
Variable	**5% Percentage**	**95% Percentage**	**IQ range**	**Missing obs.**
Domestic Consumption C	1290.80	3740.00	1659.00	0
Domestic Production C	2200.19	7590.15	3460.11	0
Exchange Rate	2.07000	22.6320	9.61717	0
RCA	26.2447	381.080	219.708	0
RSCA	0.926560	0.994765	0.0460862	0
Domestic Producer Price	31.1013	128.393	39.8718	0
World Price of Coffee	60.9830	245.064	75.4577	0
Export	736.962	4050.43	1403.65	0
WCP/DPP	1.78911	2.37196	0.0364130	0

Source: Statistical summary of the variables

4.2.2. Revealed Comparative Advantage

The revealed comparative advantage is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows.

The study has conducted a RCA index analysis for Ethiopia and other top producers/exporters in order to assess the degree of advantage or dis advantage that the countries has in the international market. As it is discussed in the previous sections, a RCA index greater than one indicates countries have a comparative advantage on the sector whereas, a RCA index less than shows a comparative disadvantage in the international market.

Table 4.4: Revealed Comparative Advantage of Ethiopia and the Top producers

Country	RCA Ethiopia	RCA Brazil	RCA Vietnam	RCA Columbia	RCA Indonesia	RCA – Uganda	RCA-Kenya
2006	330.43	17.34	24.72	49.32	4.72	159.60	31.91
2007	254.96	16.50	30.72	45.01	4.34	154.81	31.56
2008	255.80	15.34	24.57	37.14	5.27	170.40	22.26
2009	142.23	15.42	18.86	29.83	4.40	111.25	28.06
2010	187.24	16.08	15.99	29.99	3.22	109.44	25.04
2011	162.79	15.76	14.32	23.45	2.56	108.64	19.19
2012	178.16	13.15	17.20	18.03	3.65	87.72	24.28
2013	156.31	12.69	12.91	21.83	4.30	118.02	23.02
2014	155.62	15.89	13.03	27.14	3.49	107.12	22.36
2015	154.64	15.66	8.02	38.83	4.28	95.53	22.67
2016	143.82	13.60	7.98	41.22	3.62	77.65	23.40
Average	**192.91**	**15.22**	**17.12**	**32.89**	**3.99**	**118.20**	**24.89**

Source: Own calculation of data extracted from ITC

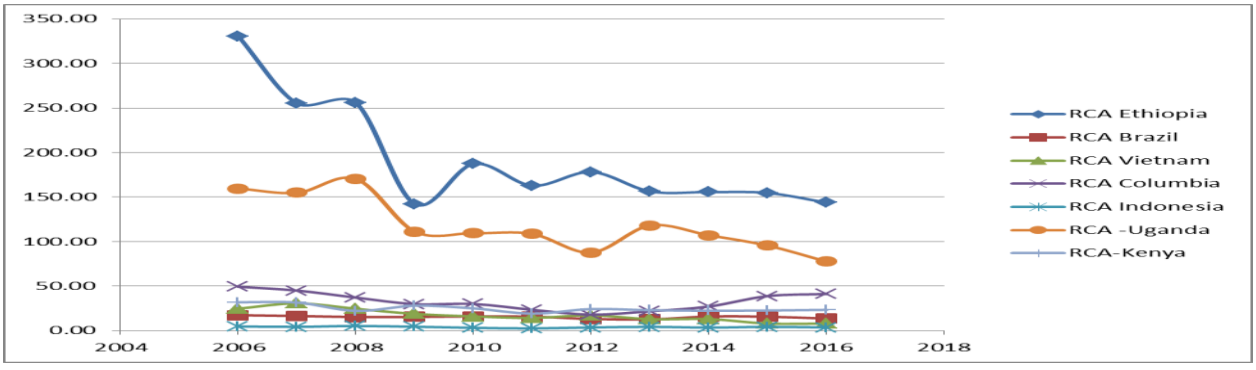
This table shows a comparison of the revealed comparative advantage indexes for coffee for the period of 2006 to 2016 based on the data extracted from UNCTAD-ITC database. The RCA indices of Ethiopia and other countries including the top producers of coffee in the world (Brazil,

Vietnam, Columbia and Indonesia) and in Africa (Ethiopia, Uganda and Kenya) are summarized for comparison. The table indicates that the RCA index of coffee for all the countries is greater than 1 which indicates that all of these countries have a comparative advantage from the export of the product.

Ethiopia's coffee sector in general enjoys significant international comparative advantages owing to its quality, production potential and available raw materials, highly disciplined workforce and reasonable prices. As discussed in the previous sections, Ethiopia boasts the largest Thus, this Revealed Comparative advantage in coffee is expected.

Given the comparative advantages of coffee, the product in general has a potential to gain market share in the global market and to become a world class supplier of high quality processed and raw coffee seed though a value added export is more recommended than exporting raw seed of the product. However, the extent to which these comparative advantages translate into a competitive advantage on international markets depends on various factors, especially the overall technical efficiency of the sector, labour productivity, and the quantity and quality of the locally supplied raw materials.

Figure 4.5: RCA graph of the top coffee producers and exporters



As above Figure shows the RCA index of the coffee of Ethiopia is much higher than the other countries including the greatest coffee grower, Brazil pointing to a promising capacity to be exploited relative to other countries. It is discussed in the previous section that RCA is the ratio of two different ratios, that is, share of a country's total export quantity of the commodity of interest in its total exports volume and the share of world total export volume of coffee to all export volume. Therefore, the decreasing trend of this RCA of Ethiopia in the sector shows that the composition of exportable product of the country is increasing. It is argued that, the export sector of Ethiopia is dominated by few products, however, the composition is increasing from time to time that increase the volume of Ethiopia's total export of all products compared against the export volume of coffee.

To sum up, Though, Ethiopia experiencing a decreasing comparative advantage, it is much stable over years and substantially much greater than other countries of the study.

4.2.3. Revealed Systematic Comparative Advantage

in addition to RCA, this study has also undertaken a RSCA analysis to investigate the export competitiveness of coffee for the periods 2006-2016. For the purpose of comparison, the coffee export data of the top coffee growers both worldwide and in Africa are also considered. RSCA ranges from -1 to +1. The closer the value is to +1, the higher the competitiveness of a country in the commodity of interest.

The index of RSCA is closer to +1 for the product across all the years indicating that Ethiopia holds comparative advantage in the sector in the world market. Looking at the average Revealed Systematic Comparative

Advantage index of Ethiopia, it accounts 0.98893 an index which is very closer to one. This indicates that, the sector is internationally competitive in the world market for coffee and it is being preferable by others due to its taste and quality it possess in relative to others.

Table 4.5: RSCA index of top coffee producers and exporters

Country	RSCA Ethiopia	RSCA Brazil	RSCA Vietnam	RSCA Columbia	RSCA Indonesia	RSCA – Uganda	RSCA-Kenya
2006	0.99397	0.89093	0.92225	0.96025	0.65054	0.98755	0.93922
2007	0.99219	0.88570	0.93695	0.95653	0.62556	0.98716	0.93858
2008	0.99221	0.87763	0.92179	0.94755	0.68118	0.98833	0.91403
2009	0.98604	0.87822	0.89931	0.93513	0.62975	0.98218	0.93118
2010	0.98938	0.88292	0.88230	0.93546	0.52610	0.98189	0.92321
2011	0.98779	0.88065	0.86946	0.91821	0.43829	0.98176	0.90092
2012	0.98884	0.85864	0.89011	0.89492	0.57022	0.97746	0.92089
2013	0.98729	0.85390	0.85619	0.91240	0.62234	0.98320	0.91673
2014	0.98723	0.88158	0.85741	0.92893	0.55453	0.98150	0.91439
2015	0.98715	0.87998	0.77825	0.94979	0.62154	0.97928	0.91552
2016	0.98619	0.86297	0.77734	0.95263	0.56711	0.97457	0.91805
Average	**0.98893**	**0.87574**	**0.87194**	**0.93562**	**0.58974**	**0.98226**	**0.92115**

Source: Author computation using UNCTAD-ITC database

Generally, results of both Revealed Comparative Advantage and Revealed Symmetric Comparative Advantage show that Ethiopia has comparative advantage in export of coffee.

4.2.4 OLS Regression Result

Prior to running the OLS regression on the determinants, all the variables included in the model need to be checked for their stationarity. In most cases, economic variables are non-stationary at their level. However, in few circumstances, those time series data set can be stationary if a growth is being used. According to A.H. Studenmund (2014), any time series whose

its mean and variance do not change with time is stationary series. That is if both mean and variance are not varying over-time and if the correlation coefficient of a variables and their lagged variables depends on the lag lengths, then the time series are said to be stationary time series. Otherwise, if either of the above properties is violated, that is, if either mean and variance changes with time then the series is non-stationary. If a non-stationary variable is being regressed on another non-stationary dependent variable, the result will lead us to a spurious regression (M. Verbeek, 2004) where inferences based on such regression are confusing and estimators are false estimators.

In order to know whether the variables included in our model are stationary or non-stationary and to make sure that the regression result we obtained is not spurious, it is recommendable to use a non-stationary test which commonly are called Unit root test as it is indicated in A.H. Studenmund (2014). Henceforth, after having all variables included in the specified model being stationary, the problem of spurious regression will not be our stress. Traditionally, sketching a time series plot of variables[3] can be used to identify if it is stationary or non-stationary by simply having a look if it is trending up, trending down or not. However, the most commonly used non-stationary tests includes DF-test, ADF-test, PP tests, KPSS test and others where the former test is being used in this study which postulate there is unit root against the alternative hypothesis of the null-hypothesis is not true.

In this study, the researcher has used ADF –test to check the stationarity of the variables and as a result, all the variables are found non-stationary at their level after transformed into logarithmic form. Therefore, regressing the

[3] See annex for the time series plot of the variables.

non-stationary variables on some non-stationary variables will not help us to investigate the determinants of coffee export. As a result, differencing the variables is the remedy to convert them in to stationary data. Variables should be continuously differenced until they are found to be stationary. In line with this, all the variables have become stationary after differencing them once with the exception of domestic coffee consumption level which become stationary after the second differencing. The following table presents the detailed ADF test of stationarity.

Table 4.6: Unit root test of stationarity using Augmented Dickey Fuller

		Augmented Dickey Fuller Test			Remark
		P-Value (without constant)	P-Value (with constant)	P-Value (with constant & trend)	
RCA	Level	0.4194	0.5088	0.8671	I(1)
	1st difference	0.0000***	0.0011***	0.0051***	
LnDCC	Level	0.06609	0.1667	0.3770	I(2)
	1st difference	0.2387	0.4787	0.1582	
	2nd difference	0.0000***	0.0000***	0.2778	
LnDPC	Level	0.9992	0.6991	0.0013	I(1)
	1st difference	0.0000***	0.0000***	0.0000***	
LnEXR	Level	0.9999	0.9834	0.0000***	I(1)
	1st difference	0.0000***	0.0000***	0.0000***	
LnDPP	Level	0.7645	0.3740	0.5146	I(1)
	1st difference	0.0000***	0.0006***	0.0037***	
LnEXP	Level	0.9775	0.6677	0.0000***	I(1)
	1st difference	0.0000***	0.0000***	0.0593*	
LnWPC	Level	0.7610	0.3651	0.1635	I(1)
	1st difference	0.0000***	0.0005***	0.0034***	

Source: author computation using GRETL

*, **, *** shows the significance level at 10%, 5% and 1% respectively.

H_0: Not Cointegrated is tested against H_1: variables are cointegrated.

After checking for the stationarity of variables and ensured they are stationary the next task is running the OLS regression. In order to investigate the main magnitude of the determinants of export competitiveness, the case of Ethiopia, this study has considered, export volume, exchange rate, domestic production, level, domestic consumption level, world coffee price and domestic producer price. For this purpose, a

simple OLS regression is performed using the log-log form where the variables are changed using logarithmic form.

With regard to the signs of the explanatory variables, the following table reveals that signs are as of the expectation which are hypothesized in the earlier steps of the research. In this model, all the explanatory variables (export volume, exchange rate, domestic production, level, domestic consumption level and world coffee price) are found to be significant at 1% whereas the domestic producer price is insignificant at any level.

As it is presented in the following summary of table, domestic production level of coffee, Exchange rate, export volume of the product, world price of coffee all affects the degree of competitiveness positively and this relationship is statistically significant. Whereas domestic consumption level and export competitiveness are negatively related where this relationship is also statistically significant. Finally, the domestic producer price have a negative implication on the degree of competitiveness though this impact is statistically insignificant.

Now it is a turn to look at the magnitude of the effects of a unit change in the independent variables on the export competitiveness where it is measure by the RCA index for comparison purpose of which of those regressors comes to exist to affect the competitiveness. Referring to model below, On average, other things being the same, a one unit change in the domestic consumption level has a 19.6 percent change in the revealed comparative advantage index of the country. More specifically, when the domestic consumption of coffee increase /decrease by 1 percent, on average, the export competitiveness of coffee will decrease/increase by 19.6 percent. This

result is consistent in line with the findings of D. Boansi and C. Crentsil (2013). Tadesse G. (2015) investigated the major determinants of coffee export supply in Ethiopia for the period of 1981-2011 using VAR and Error Correction Model. The findings of the study indicated that real export price of coffee, domestic production of coffee, physical infrastructure, and world supply of coffee affects coffee export supply significantly.

With the same fashion, a one percent change in domestic production of coffee and export volume of coffee lead to 25.44 percent and 11.4 percent change on average in the export competitiveness respectively. Holding everything to be constant, a 1 percent change in the value of domestic currency in terms of foreign currency, usually dollar will have an impact of 2.18 percent change in the export competitiveness of coffee for the country. Yusuf M and Gonul M. (2013) have found that export volume and FDI level has positive impact on the export competitiveness of a country. As a result, the finding of this paper is also compatible with their result.

Model: OLS, using observations 1991-2017 (N = 27)
Dependent variable: l_RCA
HAC standard errors, bandwidth 2 (Bartlett kernel)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Intercept	11.6818	3.90712	2.9899	0.0072	***
LogDCCt	-19.5915	3.88929	-5.0373	<0.0001	***
LogDPCt	25.4453	6.09525	4.1746	0.0005	***
LogEXPt	11.4011	2.75193	4.1430	0.0005	***
LogEXRt	2.17949	0.458655	4.7519	0.0001	***
LogDPPt	-0.702225	0.432469	-1.6238	0.1201	
LogWPCt	1.50055	0.365848	4.1016	0.0006	***

Mean dependent var	4.661525	S.D. dependent var	0.987188
Sum squared resid	3.712978	S.E. of regression	0.430870
R-squared	0.853462	Adjusted R-squared	0.809501
F(6, 20)	33.81780	P-value(F)	1.88e-09
Log-likelihood	−11.52731	Akaike criterion	37.05461
Schwarz criterion	46.12547	Hannan-Quinn	39.75185
Rho	0.301819	Durbin-Watson	1.324771

Therefore, the equation according to the out using the GRETL Software package can be rewritten as follows:

LogRCAt =	11.682	-19.56LogDCCt	+ 25.45LogDPCt	+ 11.40LogEXPt	+2.18LogEXRt	+1.50LogWCPt
	(3.907)	(3.889)	(6.095)	(2.752)	(0.459)	(0.366)

N = 27 year

R2 = 85%

Adjusted R2 = 81%

Values in parenthesis are standard errors

Regarding the diagnosis, the study comes with different procedural tests performed (including Autocorrelation using Durbin-Watson, Heteroskedasticity using White tests, Multicollinearity using VIF, Outlier using CUMSUM[4]) to come up with this final stage, therefore it is evidenced that the model specification followed in the study do not exhibit any statistically problem and as a result this can be taken as a good representation of the variables.

Finally, the goodness of the fit (R-squared and Adjusted $R^{2)}$ of the model are elaborating a considerable relationship of the variables. About 85.3 percent (using R-squared) and about 81 percent (using Adjusted R^2) of variations in the export competitiveness of coffee is described by the variations in the independent variables included of the model. The Durbin-Watson statistic is also showing that error terms are not serially correlated.

[4] See the outcome of those diagnosis tests in the annex

4.3. Discussion on The Primary Data (FGD & Questionnaire Survey)

Though the research paper is designed to depend on the quantitative method of data analysis which includes RCA, RSCA and OLS regression to investigate the determinants of coffee export competitiveness in Ethiopia, a qualitative data is also gathered using FGD and Questionnaire survey. The result is discussed below.

4.3.1. Questionnaire-Survey

To conduct a survey, thirty-five companies were selected and questionnaires were sent through e-mail. The number of questionnaires responded were thirty. Therefore, the response rate is about 86% which can be considered as higher response rate. The survey was conducted by using twenty-six questionnaires. First part of the questionnaire gathered information about the organization's background. Information related to export competitiveness determinants were gathered from second part of the questionnaire. final part of the questionnaire consisted with an open-ended question which allowed respondents to propose their identical factors that could gain competitive advantage to coffee industry in Ethiopia.

4.3.1.1. Background of Respondents

Respondents are selected those who are working as either general manager, operational manager or export manager of those selected coffee exporting companies. In this specific study about 18 respondents are Export managers, 11 are general managers and the remaining 1 is operational manager. The following table summarizes the educational level, number of working experience, age distribution and gender of the selected respondents contacted during the data collection process.

Table 4.7: General information of Respondents

Responsibility of the Respondents		
Responsibility	**Respondents No**	**Percentage Share**
Export Manager	18	60.0
General Manager	11	36.7
Operational Manager	1	3.3
Educational background of the Respondents		
Educational background	**Respondents No**	**Percentage Share**
12th grade	-	
Diploma	3	10.0
1st degree	17	56.7
Masters & above	10	33.3
Years' experience of the Respondents		
years' experience	**Respondents No**	**Percentage Share**
<1	-	
1-5	7	23.3
5-10	4	13.3
>10	19	63.4

Gender and Age of the Respondents					
Gender	**No**	**%**	**Age**	**No.**	**Percentage Share**
Male	28	93.3	< 25	-	
			25-45	11	36.7
Female	2	6.7	45-65	19	63.3
			>65	-	

Source: Author analysis using the data collected using questionnaire

As it is shown in the table above, majority of the respondents who are responsible for the overall export activities of the selected firms are first degree holders which accounts about 56.7 percent of the selected participants. This is followed by masters' holders and diploma graduates with 33.3 percent and 10.0 percent respectively. Therefore, about 90.0 percent of the participants are first degree and above holders where education really matters for the overall performance of a company. Generally speaking, those who are more educated are higher productive than those individuals with low education level, holding other things unchanged.

Similarly, in addition to the level of education that managers have, the number of years worked by those individuals also is very crucial. According to the survey collected, the lion share of the respondents are very well experienced with many years of experience. Of the total respondents, the researcher has found that about 63.4 percent have a work experience of 10 years and above, 23.3 percent of the respondent has work experience of 1-5 years and the remaining 13.3 percent have a work experience between 6 and 10 years. Those when individuals own many years of experience, the likelihood to be specialized on the area they are working will be high. When employees are made to stay longer years on similar position, through learning by doing and the education they have grasped, they will tend to be more efficient and be able to work tasks without wasting time, money and effort.

4.3.1.2. Degree of International Competitiveness:

In assessing the degree of competitiveness of selected exporting companies, the question was "Do you think that your company is internationally competitive?", provided that they said yes, respondents are expected to rate among the given enabling environments that makes their companies to be internationally competitiveness. Likert scale is performed to assess the determinants coffee export competitiveness of this study. Likert scale analysis was initially developed by Rensis Likert in 1932 to measure attitude, the typical Likert scale is 5 or 7-point ordinal scale used by respondents to rate the degree to which they agree or disagree with a statement. In an ordinal scale, responses can be rated or ranked but the distance between responses is not measurable. Accordingly, they have forwarded their view as follows.

Table 4.8: Factors improving the export competitiveness of companies

Reasons for being competitive	Response in Percentage					
	SDA	DA	N	A	SA	Total
There is strong support from the government	17.24	17.24	10.34	31.03	24.14	100
We have strong marketing strategy	20.69	6.90	6.90	48.28	17.24	100
Low cost of production including transportation cost	13.79	20.69	10.34	37.93	17.24	100
There is higher demand for our product		10.34	10.34	51.72	27.59	100
The company has strong human capital, R & D and international experiences			17.24	58.62	24.14	100
The company has skilled labour that can conduct market research	10.34	24.14	27.59	20.69	17.24	100
Percentage	10.34	13.22	13.79	41.38	21.26	100

Source: Author computation from the interview

The information gathered from respondents' categories discussed above (export manager, general managers and operational managers) has shown that most of those participants agreed their exporting company is internationally competitive due to the factors presented above. About 59.8 percent of the respondent has indicated that support from the government, the marketing strategy the companies have, low cost of production, existence of higher demand for their product, the strong and skilled human capital with ample experience to conduct market research and R & D have resulted positive outcome in making their company to be internationally competitiveness.

In contrast to this, about 23.5 percent of the respondents explained those factors are not applicable to make the company as competitive as they want to be. Complement to this, the remaining 12.8 percent reserve to reflect on the degree in which their company is competitive and explain the impact of those factors for the competitiveness of their company.

When it comes to the specific factors accounting for the competitiveness among those listed above: the presence of strong human capital, R &D and International experience come to result higher degree of competitiveness followed by the presence of higher demand to their product both at national and international levels and their marketing strategy. Relatively speaking, the experience of employees to conduct market research exists to affect the competitiveness in lower degree than others.

4.3.1.3. Reasons for Under performance

Like the above question on internationally competitiveness, respondents are also asked to reflect whether or not their company underperforms in the previous year compared to the predetermined set plan to be achieved. Under performance, in this paper is simply to refer if the performance of the company is less than 100 percent. The degrees of under-performance of companies may be differ from one to another but the intention here is to reason out why those companies failed to perform as per their plan. In the following section, the study discusses the reasons for the underperformance of the selected companies.

Table 4.9: Reasons for underperforming by exporting companies

Reasons for under performance	Response in Percentage					
	SDA	DA	N	A	SA	Total
The company has faced lack of working capital.	20.83	41.67	16.67	16.67	4.17	100
There was lack of access to finance.	16.67	50.00	12.50	12.50	8.33	100
There was supply shortage.	8.33	25.00	29.17	33.33	4.17	100
The company has experienced lack of skilled labor.	12.50	62.50	16.67	8.33	-	100
The company has failed to update the working technology level.	16.67	41.67	29.17	12.50	-	100
The company has faced problem of sustainable supply in quality	8.33	25.00	4.17	50.00	12.50	100
The company has faced default problem	29.17	45.83	16.67	8.33	-	100
Percentage	16.07	41.67	17.86	20.24	4.17	100

Source: Author computation from the interview

As it is indicated in the above table, most of the respondents has revealed that working capital, default case, skilled labor, technological issues are not among their problems that contributed to perform below their plan. In other words, about 58 percent of the respondent disagrees on those factors identified by the researcher while about 25 percent of the participants indicated that their company fails to perform as per the plan due to those factors indicated above.

More specifically, lack of sustainable supply of quality coffee is among the most important challenges that accounts for the underperformance of exporting companies according to the information gathered from the

respondents. However, lack of skilled labor, the technological level of the company being used are not the reasons that contributes to the underperformance of the selected exporting firms.

4.3.1.4. General Infrastructure for Conducive Environment?

Table 4.10: general Infrastructural environment

Infrastructure development	Response in Percentage					
	SDA	DA	N	A	SA	Total
Inadequate availability of transport	3.33	13.33	10.00	60.00	13.33	100
Inadequate supply of telephone	3.33	30.00	36.67	23.33	6.67	100
Inadequate supply of electricity	-	-	10.00	66.67	23.33	100
Inadequate supply of water	6.67	6.67	40.00	40.00	6.67	100
Frequent interruption of telephone	-	16.67	16.67	50.00	16.67	100
Frequent interruption of electricity	-	3.33	-	50.00	46.67	100
High transport charges/price	-	-	13.33	53.33	33.33	100
High telephone charges/price	3.33	13.33	26.67	43.33	13.33	100
High electricity charges/price	6.67	23.33	30.00	36.67	3.33	100
High water charges/price	6.67	20.00	43.33	26.67	3.33	100
	3.00	12.67	22.67	45.00	16.67	100

Source: Author computation from the interview

One of the enabling environment for the general export sector of the country is that it is free of duty tax and those days the current currency is being devaluating deliberately by the monetary policy authority which is National Bank of Ethiopia. However, there are many obstacles that impedes the

exporting capacities of companies to the rest of the world. Most of the exporters require electricity service, water service, telecommunication services and different transport modes in order be able to process their export to the external economies. The idea of this question is to investigate the level of availability of the infrastructure and the cost of those available infrastructure.

Of the total respondents, about 61.67 percent of the participants replied that there is inadequate electricity, water, telecommunication and transport service where their availability is accompanied by frequent interruptions during the time of production. This affects their responsibility to deliver their products to their international partners as per the contractual agreement. The prevalence of defaults to deliver products implies that exporters are subject to incur irrelevant and unexpected costs and will forced to sell their products at a price below their agreement.

Complement to this, those services which are very crucial ingredients for any business, the limited access has been provided at higher cost which increases the cost of the production. While the primary objective of the business establishment is to maximize the profit, higher cost of production means companies are expected to raise the price to cover the incurred cost and then make profit. However, the higher the price is set for the product, the lower it will competitive with other similar product.

Lastly, about 15.67 percent of those respondent has explained that there is conducive environment for their business including the availability of those service at lower possible price.

4.3.2. Focused Group Discussion

In order to support the findings of RCA, RSCA and OLS regression results, this study has also undertaken qualitative data analysis for the data collected using different method of data collection. One of those data collection tools is focused group discussion. In doing so, very knowledgeable experts from various private and public office including have been called and participated in the discussion. The researcher acts as a moderator, note taker and tape recorder was also used to capture the issues raised while the discussion is held. The moderator was responsible in controlling over all process of the discussion. The discussion recorded using the tape recorder is later transcribed in a way it is useful to support the findings of the research as a whole. The findings according to the focused group discussion is simply summarized below.

Policy/ regulation, institutional Issues

- Unpredictable Customs Procedures and Regulations
- Poor transparency, Corruption and unnecessary legal bureaucracy
- Lack of legal enforcement which leads to illegal or black market
- Price distortion due to others factors. Such as USD shortage
- Inconsistence of government regulation
- Assignment of officials and senior posts in the coffee sector has be merit based rather than political affiliations
- In Ethiopia there is no risk management tools. Exporters, coffee farmers, and coffee suppliers are exposed to price volatility. This will also affect the financial sectors in the long term. Thus, we have to work on how to create hedge mechanism for our coffee to protect from price risk.
- There is no collaborative work between the Federal and Regional coffee authorities (especially, at Zonal and woreda level).

- The inability of the governing bodies to regulate the "irregular" entrants in the market
- The inability of the governing bodies, to regulate the contraband market, that is much more profitable than the export market
- The inability of the extension system to teach the farmers good farming and pruning methods, that will allow them to increase their productivity and hence their income.
- The institutional structure of the coffee industry has been frequently changed by Government in the last 27 years thus making Coffee sector unpredictable

Ethiopian Commodity Exchange (ECX)

- Highest Local price of ECX, it does not match with International market
- Costs of production from producer via ECX makes export less competitive
- Poor service rendered by ECX leading to inferior quality supply
- Institutions like ECX have brought about no improvement in coffee quality, delivery and price benefits to the farmers.
- ECX has created multiple value chains which are completely detrimental both to coffee farmers and exporters.

Other Marketing and/or pricing aspects

- Lack of ethical competition between our local buyers/exporters at the local collection areas and at ECX market
- The sales/selling price of each exporter doesn't interface with each other. This has also highly affected export performance.
- Illegal Local Market

- Uneducated brokers where they buy coffee at higher price, and then keep the coffee in their warehouse.
- In Ethiopia not only in the coffee export business but also in most of the export commodities, there is high and unnecessary competition of price by being price competitive even below its break even.
- Defaults by some exporters (Again, these practices are adversely affecting our country's reputation). ECX not delivering the coffees we purchased (quantity and quality).
- The price of coffee at which bought in the country is high and the sale price is low which negatively affecting our competitiveness and makes as to fill there is something hidden and wrong which will kill the export of the country in long run.

Supply & Quality matters

- Quality problem and sometimes shortage of coffee at auction market and time of shipment elapses
- The production is very inadequate to insure completely the demand.

Chapter –Five

5. Summary, Conclusions and Recommendations

5.1. Summary of Findings

This study has aimed at identifying the factors that affects the export competitiveness of coffee sector in Ethiopia and has found the following points.

- According to the data from ITC, of the total amount of domestic coffee production more than half of it is domestically consumed, only 47.26 percent of the production is exported to the rest of the world. Whereas, those top producer of the products exports most of the production. Domestic consumption level of coffee is increasing with time.

- The RCA index of coffee for all the countries is greater than 1 which indicates that all of these countries have a comparative advantage from the export of the product. Ethiopia's coffee sector in general enjoys significant international comparative advantages owing to its quality, production potential and available raw materials, highly disciplined workforce and cheap prices. Both Revealed Comparative Advantage and Revealed Symmetric Comparative Advantage show that Ethiopia has comparative advantage in export of coffee.

- Domestic consumption level of coffee affects the export competitiveness of the product adversely and this relationship is statistically significant. Higher consumption level at domestic level means, export competitiveness will be reduced.

- All other variables including domestic production level, world price of coffee, exchange rate and export volume are found to affect the export competitiveness positively and the effect is significant. Though domestic producer price affects the export performance of the sector positively, the effect is statistically insignificant.

- The Focus Group Discussion mainly revealed policy issues such as inconsistence of government regulation, unpredictable Customs Procedures and regulations, the frequently changed institutional structure of the coffee industry has been affecting competitiveness.

5.2. Conclusions

Ethiopia is one of the largest producing and exporting countries of coffee products in the world. Coffee production has heavily contributed to both domestic and foreign earnings in the country. Moreover, coffee also serves as a primary source of labor, especially for the rural smallholder farmers. Ethiopia is fifth in the world in total production, according to statistics from the International Coffee Organization.

The study analyzed the competitiveness of Ethiopia in its exports of coffee green. In addition, it estimated the magnitude and effects or directions of key economics determinant of competitiveness of coffee exports. In analyzing competitiveness of the country in its exports of coffee, a data from UNCTAD-ITC is used for the periods 1991-2016. The Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) measures of competitiveness were used for the analysis. Furthermore, a simple regression (OLS model) is also employed to investigate the determinants of coffee export competitiveness and performance as well.

Results for the RCA and RSCA showed that Ethiopia has comparative advantage in exports of coffee. Though, Ethiopia experiencing a decreasing comparative advantage, it is much stable over years and substantially much greater than other countries of the study.

5.3. Recommendations

The domestic demand for coffee is continuously increasing and Ethiopian people are enhancing the tradition to drink more cup of coffee which in turn results in higher price at domestic. When domestic price is increasing and become relatively higher than the international prices, exporters always seek to sell their product domestically which is against the government strategy of export promotion in order to accumulate hard currency.

Therefore, in order to enhance its competitiveness in the coffee market amidst the anticipated increase in supply-side competition in the near future, The country should consider measures to address current inefficiencies in the supply side, management of price risk which are resulted from the volatile nature of both domestic and international coffee prices, quality improvement and illegal trade. This could be achieved to a greater extent by strengthening the extension system, taking quality improvement measures like replacing aging trees, pruning, and control of blending different flavors coffees; putting in place measures to reduce the number of intermediaries in the supply chain to help minimize unnecessary competition. In addition, appropriate investment should be made in yield-enhancing innovations.

Finally, any potential researcher can further use this work as a benchmark while conducting their research on the export competitiveness of coffee sector in specific and other areas of study viz-a-viz other countries experience. Furthermore, primary and micro data can be collected and entered into specified model in order to look at the similarities and/or difference of those different approaches/method of analysis and be able to forward corresponding recommendations.

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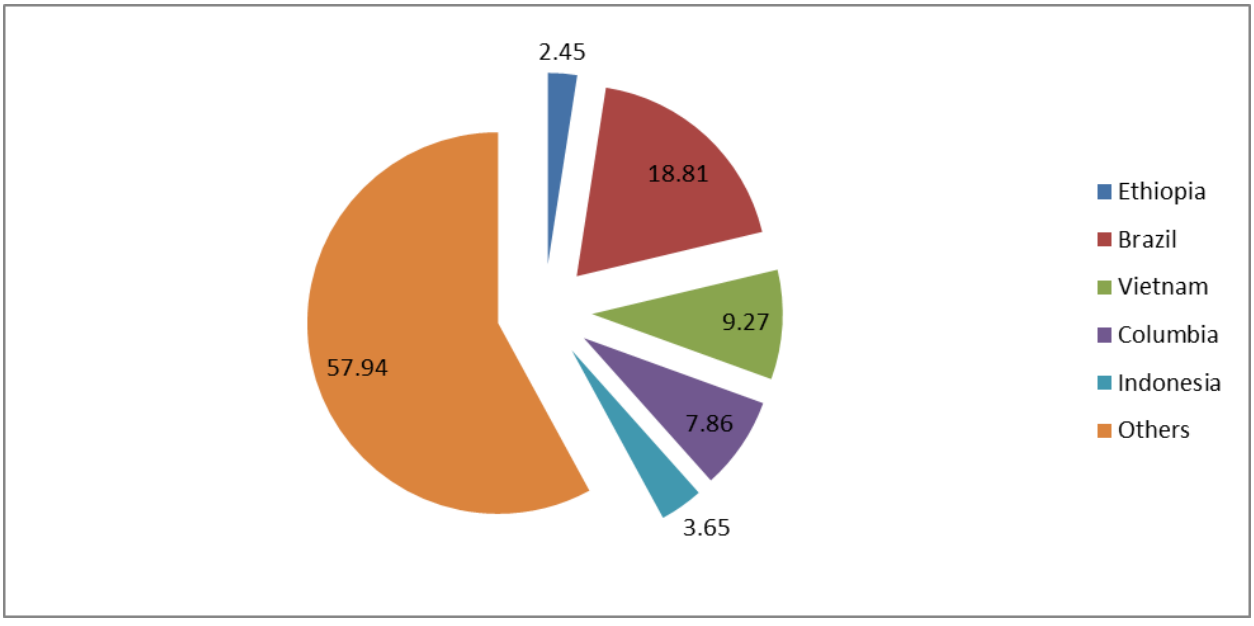
Annexes

1. The share of top exporters to the world total coffee export

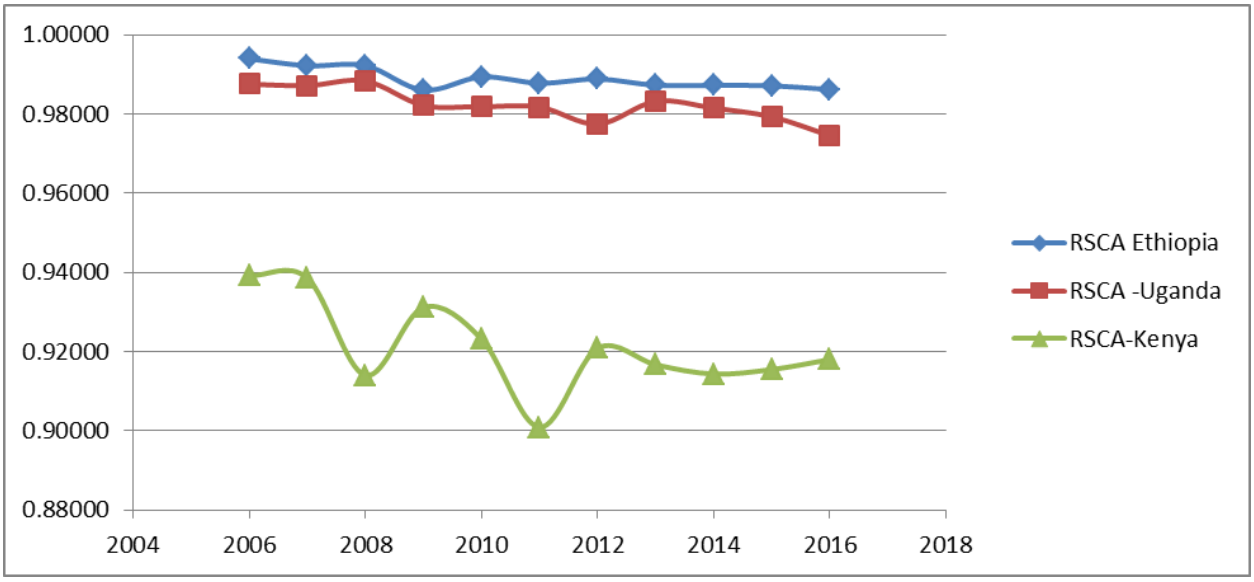
Exporters	2010	2011	2012	2013	2014	2015	2016	Average
Ethiopia	699148	846866	878958	606340	784288	775392	725390	644801.3
Share, %	2.89	2.35	2.66	2.15	2.46	2.54	2.36	2.45
Brazil	5204111	8026399	5740321	4598100	6052719	5565582	4855884	4941896.7
Share, %	21.52	22.32	17.34	16.27	18.96	18.25	15.79	18.81
Vietnam	1851411	2761069	3545275	2551422	3311396	2415423	3382893	2436094
Share, %	7.65	7.68	10.71	9.03	10.37	7.92	11.00	9
Columbia	1913679	2657525	1956066	1922532	2516694	2576546	2462526	2065351.9
Share, %	7.91	7.39	5.91	6.80	7.88	8.45	8.01	7.86
Indonesia	814311	1036671	1249519	1174044	1039609	1197735	1008549	960075.45
Share, %	3.37	2.88	3.77	4.15	3.26	3.93	3.28	3.65
Others	13705277	20639968	19730196	17409653	18215894	17968185	18322953	15220233.6
Share, %	56.66	57.38	59.61	61.60	57.07	58.91	59.57	57.9
World export	**24187937**	**35968498**	**33100335**	**28262091**	**31920600**	**30498863**	**30758195**	**26268453.3**

The share of top exporters to the world total coffee export



2. Total production level of countries, share of export and domestic consumption

Top -5 producers	Variables	Year							Average
		2010	2011	2012	2013	2014	2015	2016	
	Production	53428.41	50591.83	55420.23	54698.08	52298.98	50387.64	54999.76	**53117.85**
	Consumption	19132	19720	20330	20085	20333	20500	20500	**20085.71**
	Share, %	**35.81**	**38.98**	**36.68**	**36.72**	**38.88**	**40.68**	**37.27**	**37.86**
	Export	34296.41	30871.83	35090.23	34613.08	31965.98	29887.64	34499.76	**33032.13**
Brazil	Share, %	**64.19**	**61.02**	**63.32**	**63.28**	**61.12**	**59.32**	**62.73**	**62.14**
	Production	20000	26499.61	23402.11	27609.78	26499.84	28736.59	25540.29	**25469.75**
	Consumption	1583	1650	1825	2000	2200	2300	2400	**1994**
	Share, %	**7.92**	**6.23**	**7.80**	**7.24**	**8.30**	**8.00**	**9.40**	**7.84**
	Export	18417	24849.61	21577.11	25609.78	24299.84	26436.59	23140.29	**23475.75**
Vietnam	Share, %	**92.08**	**93.77**	**92.20**	**92.76**	**91.70**	**92.00**	**90.60**	**92.16**
	Production	8522.687	7652.129	9926.786	12163.13	13339.47	14009.15	14634	**11463.91**
	Consumption	1307.808	1438.709	1441.209	1468.973	1504.744	1671.791	1736.441	**1509.954**
	Share, %	**15.35**	**18.80**	**14.52**	**12.08**	**11.28**	**11.93**	**11.87**	**13.69**
	Export	7214.879	6213.42	8485.577	10694.15	11834.73	12337.36	12897.56	**9953.953**
Columbia	Share, %	**84.65**	**81.20**	**85.48**	**87.92**	**88.72**	**88.07**	**88.13**	**86.31**
	Production	9129.402	10643.55	11518.54	11265.19	11418.28	12317.48	11491.03	**11111.92**
	Consumption	3333	3667	3900	4167	4333	4500	4600	**4071.43**
	Share, %	**36.51**	**34.45**	**33.86**	**36.99**	**37.95**	**36.53**	**40.03**	**36.62**
	Export	5796.402	6976.554	7618.538	7098.194	7085.277	7817.475	6891.027	**7040.50**
Indonesia	Share, %	**63.49**	**65.55**	**66.14**	**63.01**	**62.05**	**63.47**	**59.97**	**63.38**
	Production	6798.41	6233.007	6427.444	6575.262	6713.975	7296.98	7650	**6813.58**
	Consumption	3383	3400	3550	3625	3700	3725	3750	**3590.43**
	Share, %	**49.76**	**54.55**	**55.23**	**55.13**	**55.11**	**51.05**	**49.02**	**52.84**
	Export	3415.41	2833.007	2877.444	2950.262	3013.975	3571.98	3950	**3230.30**
Ethiopia	Share, %	**50.24**	**45.45**	**44.77**	**44.87**	**44.89**	**48.95**	**51.63**	**47.26**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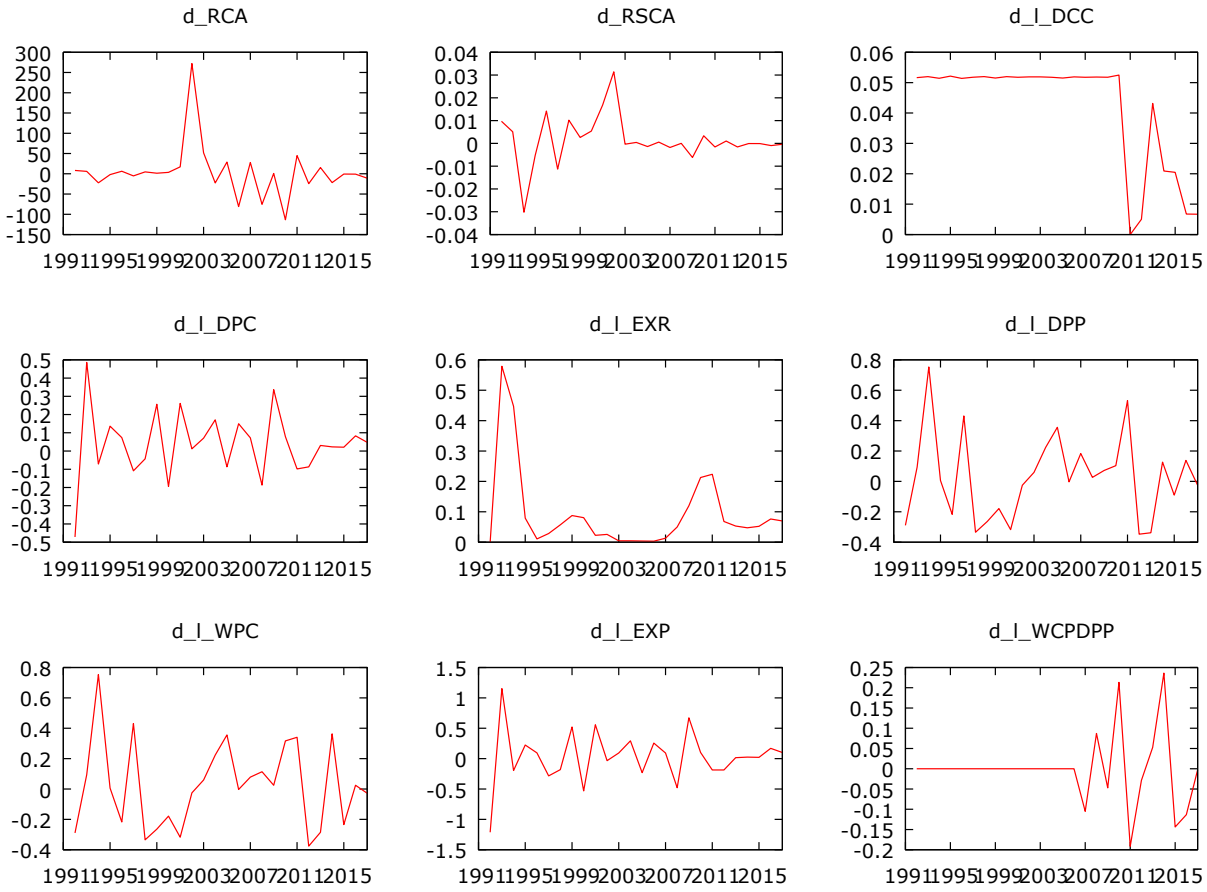
d_RCA
d_RSCA
d_l_DCC
d_l_DPC
d_l_EXR
d_l_DPP
d_l_WPC
d_l_EXP
d_l_WCPDPP
1991 1995 1999 2003 2007 2011 2015

3. Model: OLS, using observations 1991-2017 (T = 27)
Dependent variable: l_RCA

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−11.6818	6.06619	−1.9257	0.0685	*
l_DCC	-19.5915	6.2186	-3.1505	0.0050	***
l_DPC	25.4453	10.1193	2.5145	0.0206	**
l_EXR	2.17949	0.532915	4.0898	0.0006	***
l_DPP	−0.798328	0.263306	−3.0319	0.0066	***
l_WCPDPP	1.50055	1.38737	1.0816	0.2923	
l_EXP	11.4011	4.37235	2.6076	0.0168	**

Mean dependent var	4.661525	S.D. dependent var	0.987188
Sum squared resid	3.712978	S.E. of regression	0.430870
R-squared	0.853462	Adjusted R-squared	0.809501
F(6, 20)	19.41397	P-value(F)	2.26e-07
Log-likelihood	−11.52731	Akaike criterion	37.05461
Schwarz criterion	46.12547	Hannan-Quinn	39.75185
rho	0.301819	Durbin-Watson	1.324771

Auxiliary regression for **RESET specification test**
OLS, using observations 1991-2017 (T = 27)
Dependent variable: l_RCA

	coefficient	std. error	t-ratio	p-value	
const	316.563	128.187	2.470	0.0238	**
l_DCC	−472.191	190.808	−2.475	0.0235	**
l_EXR	52.2088	21.1116	2.473	0.0236	**
l_DPP	−16.4435	6.61674	−2.485	0.0230	**
l_EXP	−275.294	111.180	−2.476	0.0234	**
l_WPC	35.8083	14.4528	2.478	0.0234	**
l_DPC	613.847	247.834	2.477	0.0234	**
yhat^2	5.72431	2.30152	2.487	0.0229	**
yhat^3	−0.423184	0.175820	−2.407	0.0270	**

Test statistic: F = 3.991482,
with p-value = P(F(2,18) > 3.99148) = 0.0367

Durbin-Watson statistic = 1.32477
p-value = 0.0060034

Breusch-Godfrey test for first-order autocorrelation
OLS, using observations 1991-2017 (T = 27)
Dependent variable: uhat

	coefficient	std. error	t-ratio	p-value
const	−2.43024	6.02116	−0.4036	0.6910
l_DCC	−3.40687	6.33615	−0.5377	0.5970

```
  l_DPC        5.86869     10.3785       0.5655   0.5784
  l_EXR        0.258830     0.536579     0.4824   0.6351
  l_DPP       -0.226493     1.33787     -0.1693   0.8674
  l_WPC        0.139839     1.33664      0.1046   0.9178
  l_EXP       -2.71586      4.52418     -0.6003   0.5554
  uhat_1       0.404883     0.249332     1.624    0.1209

  Unadjusted R-squared = 0.121873

Test statistic: LMF = 2.636971,
with p-value = P(F(1,19) > 2.63697) = 0.121

Alternative statistic: TR^2 = 3.290582,
with p-value = P(Chi-square(1) > 3.29058) = 0.0697

Ljung-Box Q' = 2.72864,
with p-value = P(Chi-square(1) > 2.72864) = 0.0986

Auxiliary regression for RESET specification test
OLS, using observations 1991-2017 (T = 27)
Dependent variable: l_RCA

             coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------
  const       316.563      128.187       2.470    0.0238  **
  l_DCC      -472.191      190.808      -2.475    0.0235  **
  l_DPC       613.847      247.834       2.477    0.0234  **
  l_EXR        52.2088      21.1116      2.473    0.0236  **
  l_DPP       -16.4435       6.61674    -2.485    0.0230  **
  l_WPC        35.8083      14.4528      2.478    0.0234  **
  l_EXP      -275.294      111.180      -2.476    0.0234  **
  yhat^2        5.72431      2.30152     2.487    0.0229  **
  yhat^3       -0.423184     0.175820   -2.407    0.0270  **

Test statistic: F = 3.991482,
with p-value = P(F(2,18) > 3.99148) = 0.0367

Breusch-Pagan test for heteroskedasticity
OLS, using observations 1991-2017 (T = 27)
Dependent variable: scaled uhat^2

             coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------
  const       27.7219       16.4892      1.681    0.1083
  l_DCC       16.4309       16.9035      0.9720   0.3426
  l_DPC      -29.9606       27.5064     -1.089    0.2890
  l_EXR       -0.385115      1.44858    -0.2659   0.7931
  l_DPP       -1.62025       3.76192    -0.4307   0.6713
  l_WPC       -0.872282      3.77118    -0.2313   0.8194
  l_EXP       14.2963       11.8850      1.203    0.2431

  Explained sum of squares = 24.5784

Test statistic: LM = 12.289220,
with p-value = P(Chi-square(6) > 12.289220) = 0.055819
```

4. Survey Questionnaire

Addis Ababa University
School of Commerce
Graduate program in Marketing Management

I am a graduate student in the department of Marketing in Addis Ababa University School of Commerce. As part of my studies, I am conducting a study on "Determinants Of The Export Competitiveness Of The Coffee Industry In Ethiopia". You are cordially invited to participate in this survey, and I would appreciate you for taking your time to answer the questionnaire. I would like to stress that the information that you provided in this survey is strictly confidential, and will remain so. When data is organized and entered into computer, your firm will not be identified or mentioned, and any information that may identify your firm or the respondent will not be added, or be used in any document based on this survey. I therefore like to get a correct information for each applicable question as that helps me to get a clear understanding of the current coffee export status of the country which at the end of this research some programmatic recommendations will be made based on the information you gave me.

Any confusion should be clearly explained by the enumerator so that respondents are asked to make any ambiguities clear before they respond. Instructions are mentioned in each section of the questions. Please read these instructions before completing the questionnaire

The information obtained here will be held in the strictest confidentiality. Either your name or the name of your business and your opinions will not be used in any document based on this survey.

Thus, I am kindly requesting you to have a look at the following questions and answer accordingly in a fully-fledged way. The information you are providing here is extremely important to identify the major and built-in problems of the sector.

Part-I: General Information

1. Name of the firm (optional):_____
2. Position of respondent: _____
3. Sex: Male ☐ Female ☐
4. Age

   Below 25 ☐ 25-45 ☐

   45-65 ☐ Above 65 ☐
5. How many Years of experience do you have on the current position?

   Below 1 year ☐ 1-5 years ☐

   5-10 years ☐ Above 10 years ☐
6. **Highest Educational Level:**

   12 grade complete ☐ College Diploma ☐

   First degree ☐ Masters and above ☐

7. **Legal status of firm:**

   Public Enterprise ☐ Partnership ☐

   Sole Proprietorship ☐ Share company ☐

   Joint-Venture ☐ Other (specify) ☐
8. Year of Establishment (Ethiopian calendar) ----------
9. What was the approximate capital of the firm during the year of establishment (Ethiopian Birr) ----------?
10. What is the current capital of the firm (Ethiopian Birr) ----------?
11. . How many employees (both permanent and temporary) does the company had during its establishment? _____
12. how many employees (both permanent and temporary) does the company has currently? _____

Part-II: Please attempt to address the following questions as per the provided instructions;

13. Do you think that your company is internationally competitive?

14. If your answer for the above question is yes, what is the reason for being competitive?

Reasons for being competitive	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
We have strong marketing strategy					
We have reputable customers					
There is higher demand for our product					
Low cost of production including transportation cost					
The company has strong human capital					
The company has strong Research & Development capacity					
The company has strong international experiences					
We have strong logistics capacity					
We have strong & consistence promotional capacity/effort					
There is strong support from the government					

15. Has your company performed 100 percent of the predetermined corresponding plan for the last year?

16. If your answer for the above question is No, what was the reason for under performance?

Reasons for under performance	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
There was supply shortage.					
There was quality problem/consistency					
The company has faced lack of market.					
The company has faced lack of working capital.					
There was lack of access to finance.					
The company has experienced lack of skilled labor.					
The company has failed to update the working technology level.					
The company has faced default/contract failure problem					

17. Please identify the most significant factor that impedes this establishment from exporting. Rank according to importance, with 1 being most binding factor.

Other barriers to export	**Rank**
Transport service availability & costs	
Inability to produce to potential clients' standards and specifications	
Inability to meet to potential clients' schedule	
Miss match between domestic vs export prices	
Cannot match prices of foreign competitors	
Foreign clients quality demand upgrades and changes too frequently	
Supplying the domestic market is relatively more profitable	
Inefficient Customs procedures and administration	
Non-custom related problems such as time and cost of pre-shipment activities (inspection, packaging, transport), loading/unloading at factory gate, roadblocks and related charges, etc.	
Lack of reliable supplier of inputs or intermediary materials/raw materials of the required quality	
Lack of working capital to produce goods for export market	
Lack of specialized technology required to meet foreign market needs	
Volatile nature of export price	
Default / not respecting contractual agreement	
Problem of quality consistency in supply coffee	
Stringent Government Regulations	
Weak synergy among regulatory & supporting organizations (MoT, MoANR, ECX, ECXA, ERCA)	
Weak Service in Ethiopia Commodity Exchange (Quality, Volume, Timeliness, Costumer Handling)	

18. Is the general infrastructure creating conducive environment for your business?

Infrastructure development	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Inadequate availability of transport					
Inadequate supply of telephone					
Inadequate supply of electricity					
Inadequate supply of water					
Frequent interruption of telephone					
Frequent interruption of electricity					
High transport charges/price					
High telephone charges/price					
High electricity charges/price					
High water charges/price					

1.20. From your experience in export activities would you mention some other factors that affects the export performance of your company?

_____
_____
_____
_____
_____
_____

Thank you very much for your caring cooperation once again!!

5. Questionnaire Survey Respondents General Information

R. No.	Respondents Company Name	Respondent Position	Company's Years of Establishment
1	Adulina plc	Export Manager	2003
2	Ethio Agri Ceft plc	Export Manager	-
3	Alfa Trading	General Manager	-
4	Alfoz plc	Export Manager	1989
5	ASK plc	General Manager	1944
6	Bashenfer Trading plc	Export Manager	1989
7	Bebeka Coffee Estate Share Company	Export Manager	2003
8	Berhe Hagos plc	Export Manager	2004
9	Firalmi Trading plc	General Manager	2003
10	BNT plc	Operational Manager	2004
11	Ethiopian Business Trading Corporation	Export Manager	1937
12	Hailesilase Ambaye plc	Export Manager	1995
13	Hora Trading plc	Export Manager	1998
14	Kemal Abdela International plc	Export Manager	1989
15	Kuru Ethiopia Coffee Development	General Manager	2001
16	Legesse Sherefa plc	Export Manager	1970
17	METAD plc	General Manager	2002
18	Moblaco plc	General Manager	1963
19	Mogos Ayenew plc	Export Manager	1998
20	Mochaland plc	General Manager	1995
21	Mulege plc	Export Manager	1986
22	Nardos pplc	General Manager	1998
23	Orchid Business Group plc	Export Manager	2007
24	Oromia Farmers Cooperatives Union	Export Manager	1993
25	S.A. Bageresh plc	Export Manager	1943
26	S.Sara Export Business Investment	General Manager	2002
27	Sidama Coffee Farmers Union	Export Manager	2001
28	TADE GG plc	General Manager	2000
29	Tadesse Desta plc	Export Manager	2003
30	Yergacheffe CFU	General Manager	1994

6. Lists of Focus Group Discussion Members

Mr. Getahun Bikora;	Coffee & Tea Authority Advisor to the General Manager
Mr. Tatik Girma;	Coffee & Tea Authority Market Promotion Team Leader
Mr. Gizat Worku	Ethiopia Coffee Exporters Association General Manager
Mr. Brihanu Gezahegn	Coffee Quality Liquoring & Testing Unit Head
Mr. Birhanu Tsegaye	Coffee & Tea Authority Coffee Quality Director
Mr. Lishan Mitike	Ethiopia Commodity Exchange Director
Mrs. Haimnaot Tibebu	Ministry of Tarde Export Promotion Director
Mr. Kifelw Shawel	Ministry of Trade Export Promotion Senior Expert
Mr. Bereket MEseret	Ethiopia Commodity Exchange Manager
Mr. Yetsdaw Emange	Private Consultant