ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

DOMESTIC MARKET STRUCTURE AND EXPORT PERFORMANCE: CASE OF THE ETHIOPIAN LEATHER INDUSTRY

BY

DANIEL D. ABSHIR

June, 2011

Addis Ababa

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

DOMESTIC MARKET STRUCTURE AND EXPORT PERFORMANCE: CASE OF THE ETHIOPIAN LEATHER INDUSTRY

BY

DANIEL D. ABSHIR

A Project Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Economics

School of Economics

June, 2011

Addis Ababa

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DOMESTIC MARKET STRUCTURE AND EXPORT PERFORMANCE: CASE OF THE ETHIOPIAN LEATHER INDUSTRY

BY

DANIEL D. ABSHIR

Approved by Advisor

Name:……

Signature:…….

June, 2011

Addis Ababa

Acknowledgments

It is no exaggeration to state that without the help of the Almighty God, this paper would not have been in a position to finalize successfully.

First of all, I would like to extend my special thanks and gratitude to my advisor, Dr. Gebrehiwot Ageba, for his invaluable advice in directing, reshaping and suggesting substantial ideas the paper to be completed.

My deepest thanks indebted to my father Ato Dendir Abshir and my mother W/ro Filseta Abraham for their love and courage and they always have been with me in support throughout the course of the study. They have encouraged me a lot to peruse my MA study.

Table of Contents

List of Tables

Page No

List of Figures

Page No

Acronyms

CR	Concentration Ratio
CRS	Constant Returns to Scale
CSA	Central Statistical Agency
DRS	Deceasing Returns to Scale
ECA	Ethiopian Customs Authority
EEA	Ethiopian Economic Association
ELIA	Ethiopian Leather Industries Association
ELICO	Ethio Leather Industry Private Limited Company
GDP	Gross Domestic Product
GMM	General Method of Moment
HHI	Herfindahel Hirschman Index
ICAO	International Civil Aviation Organization
IRS	Increasing Returns to Scale
LI	Lerner Index
LIDI	Leather Industry Development Institute
LLPI	Leather and Leather Products Institute
LLPTI	Leather and Leather Products Technology Institute
MC	Marginal Cost
MR	Marginal Revenue
PLC	Private Limited Company
SC	Share Company
SCP	Structure Conduct Performance
SIC	Standard Industrial Classification
SITC	Standard International Trade Classification
UN	United Nations
US	United States
USAID	United States Agency for International Development

Abstract

This paper examines domestic market structure and export performance in Ethiopian leather industry manufactures from the perspective of recent developments in international trade theory, while bringing the trends of concentration level in the sector in to the analysis. Studies on the determinants of export performance in Ethiopia manufacturing industries in general and leather industry in particular focused on the macroeconomic and controllable variables of the firms to the performance of the industries in international market. The microeconomic and uncontrollable determinants of export performance have received negligible research attention. In this study, the author examines one key uncontrollable/ external factor, namely, local industry concentration, in the context of Ethiopian leather industry. In addition, the author conduct interview with Ethiopian Leather Industries Association and Leather Industry Development Institute to capture other factors that constraint and influence the competitiveness of Ethiopian leather industry firms in the global market.

This study evaluates the effect of leather industry domestic market structure on export performance using descriptive analysis for the period 1998-2009. Central Statistical Agency 2009 statistical survey report on 80 large and medium scale manufacturing firms selected for the study and the market structure and the likelihood of competition assessed by using measures of seller concentration and then its correlation to export revenue examined.

On the basis of empirical analysis, the author finds that local market concentration is potent predictor of Ethiopian leather industry firms' export revenue. The author discusses the implication of the finding to expose the reason behind the success of Ethiopian leather and leather products exporters in international markets.

Keywords: ETHIOPIA; EXPORT REVENUE; LEATHER INDUSTRY; MARKET STRUCTURE

1. Introduction

1.1 Background of the Study

A nation standard of living depends on the productivity with which national resources (labor and capital) are employed.[1] The productivity level and growth are a function of the collection of industries and industry segments in which a nation's firms can successful compete in global market, and the nature over time of the competitive advantages achieved in them (Porter, 1998).[2] Hence, in global economy, competitive industrial economy is crucial for economic and social development.

"If there were no international competition, the level of productivity attainable in a nation's economy would be largely independent of what was taking in other nations. International trade and foreign investment, however, provide both the opportunity to boost the level of national productivity and a treat to increase or even maintaining it. International trade allows a nation to raise its productivity by eliminating the need to produce all goods and services within the nation itself. A nation can thereby specialize in those industries and segments in which its firms are relatively more productive and import those products and services where its firms are less productive than foreign rivals, in this way raising the average productivity level in the economy. Imports, then, as well as exports are integral to productivity growth" (Porter, 1998).

[1] "Productivity is the value of the output produced by a unit of labor or capital. It depends on both the quality and features of products (which determine the prices they can command) and the efficiency with which they are produced" (Porter, 1998).

[2] For competitive achievement, firms from the nation must have a competitive advantage in the form of either lower costs or differentiated products that command best prices. To sustain this advantage, firm must achieve more sophisticated competitive advantage over time, by providing higher-quality products and services or producing more efficiently. This directly turns in productivity (Porter, 1998).

Competing internationally possibly involve exports and it requires a productivity level and rates of change equal or exceed those of competing economies. One of the sectors that Ethiopia has a clear comparative advantage in manufacturing is the leather sector. This industry occupies a place of prominence in the country's economy in view of its massive potential for exports, employment, and growth. The highly labor intensive nature of the industry, the national resource base mainly in raw material (hides and skins) supply,[3] the availability of low-wage and easily trainable labor force, domestic market size and opportunity for export, the strong background and forward linkage within the industry the leather industry in Ethiopia offer the potential for high levels of productivity as well as sustained productivity growth which is capable of enhancing the current low competitiveness in both the domestic and external markets (LLPTI, 2010).

Given its expected significance and an important component of revenue in Ethiopian export sector,[4] it is useful to find out the effect of market structure or the nature of competition in the industry on export performance. An empirical examination of factor that has contributed to the fast growth of exports by Ethiopian leather firms would enrich the lack of empirical studies that have investigated the effect of industry concentration on export behavior.

1.2 Statement of the Problem

There is a long time of attempts of explain international achievement in industries in the form of international trade. The conventional one is the theory of comparative advantage. There has been

[3] Ethiopia acquires one of world largest livestock populations and place seventh in the world cattle, ninth in sheep, and eight in goats. The off-take rate for cattle is estimated at 6.6 percent (2.7 million pieces), sheep at 31.7 percent (8.1) million pieces); goats at 32 percent (7.5 million pieces) (LIDI, 2010).

[4] About 10 percent of Ethiopia's export earnings came from leather products, the leather industry is third after coffee and oil seeds. But in terms of manufactured products, the leather sector ranks first. According to the statistics prepared by LIDI, the export value of the whole leather industry, was 43 million US$ in 2003/04, 75.2 million US$ in 2005/06, and 101.3 million US$ in 2007/08, which has increased 2.3 times in 4 years.

growing reaction; however, that comparative advantage based on factors of production is not sufficient to explain the volume and composition of trade.

"Conventional trade theory explains trade entirely by differences among countries, especially differences in their relative endowments of factors of production. This suggests an inverse relationship between similarity of countries and volume of trade between them. In practice, however, nearly half the world's trade consists of trade between industrial countries that are relatively similar in their relative factor endowments. This intra-industry trade seems both pointless and hard to explain from the point of view of a conventional trade analysis" Helpman and Krugman (1985).[5]

In order to explain the phenomenon of intra-industry trade, recent trade theory has get rid of the two orthodox assumptions of perfect competition and constant returns to scale and put emphasis on imperfect competition and increasing returns to scale.[6] With increasing returns, a firm's marginal cost is lower than average cost. If the firm faces a perfectly competitive market it must set its product price marginal cost and will incur losses. Thus, increasing returns to scale are unable to coexist with perfect competition[7] and are likely to produce a natural monopoly (Chang, 1995). According to Helpman and Krugman (1985), when constant returns of the comparative

[5] Helpman and Krugman (1985) indentify four major points in which conventional trade theory seems to be inadequate in explaining the patterns of trade.

[6] Increasing returns to scale offer an additional incentive and will give rise to trade even if countries are identical in tastes, technologies, and factor endowments i.e. it provide a simple explanation of intra-industry trade. Economies of scale give the nation's firms able to capture them a cost advantage that allows them to export (Helpman and Krugman, 1985).

[7] The presence of increasing returns to scale, entry barriers, and product differentiations can lead to imperfect competition (Chang, 1995).

advantage theories of trade assumption are relaxed; we must deal with the issue of market structure.[8]

Even if the insights gained from traditional theory continue to be useful in a world where increasing returns and imperfect competition are imperative this paper investigate the effect of one external factor, namely, market structure on export performance.

The causal relationship between local market structure and export performance is not unambiguous however. This paper explores two competing hypotheses about the effect of domestic market structure on international market performance. The first is that domestic collusion, merger, and restrain on competition enhance international competitiveness; here the relation between the strength of local rivalry and international competition is negative. It is frequently argued that domestic competition is uneconomical, because it leads to duplication of efforts and prevents firms from gaining scale economies. The right solution is seen as nurturing one or two firm who become "national champions", with the scale and power to compete against foreign rivals or, alternatively, to promote inter-firm cooperation (Porter, 1998).

Consistent with this view, there is a long line of argument suggesting that monopolists will be more innovative than firms facing competition. Schumpeter (1943) cited in Sakakibara and Porter (2000) argued that monopolies are essential for expanding research and development, because there are scale economies in research and development, market power allows monopolists to fund more research and development, and large firms are ready to take greater risks. Concentrated

[8] Scale economies entail that the market can support only a limited number of firms, which will consequently be imperfect competitive (Markusen et al., 1995). The presence of economies of scale at the level of the firm implies that price taking behavior is inconsistent with non-negative profits and thus that markets cannot be perfectly competitive. Hence, we have to face up to market structure.

domestic industries, then, would be associated with more innovation and enhanced international competitiveness.

A second, hypothesis is that there should be a strong positive association between domestic market structure and international competitiveness. Among the strongest empirical findings from Porter (1998) who argues that "domestic rivalry pressures firms to innovate and upgrade while fostering positive static and dynamic externalities in the local business environment (e.g., supplier availability, easier access to technology and market information, specialized human resource development)." Local rivals push business owners to decrease costs, enhance quality and service, and create new product and processes. Porter studies on successful industries nations with leading positions in socio-economic development often have a number of strong local rivals. This is observed not only in fragmented industries but also industries with substantial economies of scale.

According to Porter Vigorous local rivalry not only sharpens advantages at home but pressure domestic firms to sell abroad in order to develop. Particularly when there are scale economies, local competitors force each other to look outward in the pursuit of greater efficiency and higher profitability.

Studies on the determinants of export performance of Ethiopian industries in general and leather industry in particular relate macroeconomic variables to the performance of a manufacturer in global markets (see Mulualem, 2002). Even though, this is a sound approach to study international competitiveness and to designing monetary and fiscal policies, it has drawbacks in explaining the global success of industries or firms. At the industry or firm level, macroeconomic variables may explain only a small part of international success and failure. The performance of industries or firms in international markets appears to be more strongly related to industry

characteristics and trade barriers (Kim and Marion, 1997). This paper fills the gap in its focus on the microeconomic side of Ethiopian leather industry international competitiveness.

1.3 Significance of the Study

This paper, which identifies the effect of Ethiopian leather industry market structure on export performance, will improve the public understanding on the role of domestic market structure on export performance. In addition, it improves literature on Ethiopian leather industry market structure and its effect on firm's performance in global market. Finally, it can be used as a guideline for others in conducting a research in this area.

1.4 Objectives of the Study

Export behavior is determined by external and internal factors; the objective of this study is to analyze the effect of one external factor, namely, domestic market structure on export performance in Ethiopian leather industry.[9] In line with this, the following are the specific objectives:

- To analyze the market structure and the current state of competition in Ethiopia leather industry;
- To study the domestic market concentration and export performance relationship for the industry;
- To assess and identify the challenges and prospects of leather industry in Ethiopia.

[9] Helpman and Krugman (1985) partial equilibrium analysis indicated there is a possibility trade will have a pro-competitive effect, i.e. leading to a reduction of monopoly distortions. The paper doesn't investigate the possibility that trade will have a pro-competitive effect. In addition, this paper doesn't come out the case where increasing returns are consistent with perfect competition. This is the case where returns to scale are constant at the level of firm and social increasing returns take the form of external economies (Markusen et al., 1995).

1.5 Data and Method of the Study

This study used secondary data. Information and secondary data from different reports, literatures, articles, journals and books are used. The method for analyzing the data includes measurers of industry concentration like four-firm Concentration Ratio and Herfindahl-Hirschman Index and descriptive tools like simple statistical tools, tables, and charts. An attempt is made to see the effect of leather industry concentration trends on export revenue using descriptive statistics, by employing a database from CSA statistical survey report on 80 large and medium scale manufacturing firms over 2005-2009 and LIDI statistical reports.

1.6 Organization of the Paper

The remainder of the paper is organized as follows. In the section that follows, we briefly review the theoretical conceptual framework and measurements of industry concentration. In this section also, theories on the relationship between industrial organization and international trade are presented and Porter's diamond theory in general is also discussed. At the end of this section empirical literature is reviewed. Sections 3 discuss the leather industry in Ethiopia and analyze the industry domestic market structure to evaluate the state of competition and its relation with export revenue. Finally, the paper present and discuss the results and their implications.

2. Review of Related Literature

2.1 Theoretical Literature

Industrial organization deal with the way firms form an organization and other characteristics of firms. The four types of industrial organization are competition, monopoly, monopolistic competition,[10] and oligopoly[11] (Thompson, 2006). It is important to distinguish the characteristics

[10] Monopolistic competition lies between perfect competition and oligopoly. Each firm seeks to make its product unique. In a sense, then, each firm is a little monopoly (Kohls and Uhl, 2001).

of the two extremes of market structure in detail i.e. perfect competition, where there are many firms and monopoly, with one firm.

Individual firms in a perfectly competitive industry face a perfectly elastic demand curve and no firm can use price or quantity as a strategic variable to increase its profits beyond the normal profits. The product price is determined by the industry demand and supply. Each firm takes this price as a given and produces at a level that equates marginal cost to marginal revenue, which, in a competitive industry, also equals price. A monopolist, on the other hand, faces a forward falling demand curve and charges a price at the profit–maximizing output, given by the intersection of the marginal cost and marginal revenue curves, that exceeds marginal cost. The firm can use either price or output as a strategic variable to earn supernormal profits.[12]

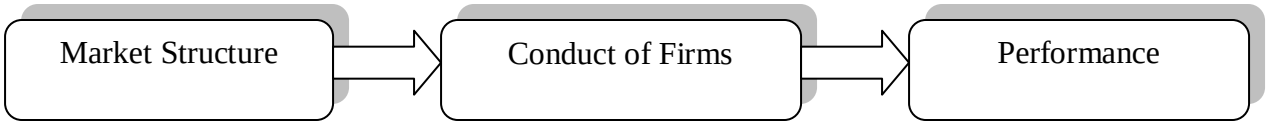
"The Structure-Conduct-Performance (SCP) model, for the first time, used inferences from microeconomic analysis to discuss industrial organization. In the SCP paradigm, an industry's performance depends on the conduct of sellers and buyers, which depends on the structure of the market. The structure, in turn, depends on basic conditions such as technology and demand for a product" (Carlton and Perloff, 1999). This paper empirically tests the traditional SCP hypothesis for the Ethiopian leather industry market structure and exports performance relationship. The figure below shows the likelihood that market structure can affect output, price, and other decisions of the businesses and in turn, these characteristics of the market effect on performance.

---

[11] In an oligopoly (few seller), the control of sales is in the hands of a few large firms. This market concentration is so great that the leading firms can influence the market price through their output decisions. Each firm, in making production and price decisions, must consider the effects of its action on the market price and how rival firms will react (Kohls and Uhl, 2001).

[12] This is not necessarily true. If markets are contestable in the sense that firms can enter or exit the industry without incurring substantial costs, any attempt by incumbent firms to earn supernormal profits will result in new entry, competing away the excess profits.

Figure 2.1 Market Structure, Conduct, and Performance Casual View



2.1.1 Measuring Concentration

To determine how export performance varies with market structure, we need measures of market concentration. These measures provide an indication of the ability of the largest firms to control price, output, and restrain competition. One of the debates in industrial economics concerns the appropriate method of summarizing the size distribution of firms in an industry. Such a vigorous search for the optimal measure is due to the absence of a generally accepted theoretical model that links structure, behavior, and performance from which an index can be derived, and the fact that in the absence such a model, different people attach different weight to the various dimensions of market structure (Baldwin, 1995).

Despite the lack of consensus as to which market structure index is superior, there is an agreement that the index should take in to account at least two dimensions of the size distribution of firms i.e. the number of firms and the variance of in the size of firms. Therefore, many indices have the characteristics that they increase if either the number of firm's falls or the degree of inequality in firm size increase (Baldwin, 1995).

"Indices of market structure are divided in to two broad categories: discrete and summary indices. The two are differentiated in the set of points from the size distribution of firms that are used to derive the index. The discrete measures use data on the share of a small number of the largest firms. The widely used concentration ratio (CR4) uses the leading four largest firms. In contrast the summary measures, as the name implies, use all the data points in the size distribution. The summary indices offer one from another primarily in how they weight individual firms' market

share. The Herfindahl index weights each market share by itself, while the entropy index uses the log of share as the weight" (Baldwin, 1995). This paper employed these measures to analyze leather industry market concentration level and the measures are described below.

Concentration Ratio CR(K):- the sum of the largest i firms' market share (Si), based on domestic production capacity (assets) or employment:

$$\sum_{i=1}^{k} \text{Si}$$

Herfindahl-Hirschman Index (HHI):- measure the sum of squared market shares of all firms classified to the industry:

$$\sum_{i=1}^{n} s^2 \text{ (Varies from 0 to 1)}$$

The inadequacy of the concentration ratio, both as a measure of market structure and as an indicator of the degree of competition, has been debated.[13] Concern has been expressed that the concentration ratio may not reveal the extent of principal change, and other measures of the size distribution of forms have been proposed.[14]

Lerner Index

This is a measure of the exercise of monopoly power. Although all industrial organization economists probably would agree that market power is a meaningful logical construct, there is

[13] Even for their main purpose of ranking industries by the potential for anti-competitive behavior, they are not perfect statistics (Baldwin, 1995).

[14] "Some emphasize one aspect of the size distribution, such as the variance in the logarithm of firms' sizes; others try to provide measures that summarize several dimensions of the size distribution. Another response to the deficiencies inherent in concentration statistics has been to suggest that mobility indices better capture the impact of this dynamics process." For more explanation see Baldwin (1995).

strong disagreement as to how best to measure it. The following argument is assumed that the appropriate measure is the gap between price and marginal cost.

If the n firms in an industry produce a homogeneous output ($q_1 = \ldots = q_n \equiv q$), industry output is $Q = nq$; there is a single price, p; and the inverse market demand curve is

$$p = p(Q, Z),$$

where Z is a vector of other variables, such as income and the price of substitutes, that may affect demand. The i^{th} firm's cost function is $C_i(q_i)$, and marginal cost (MC) is $C_i(q_i)$. If we can directly measure MC, p - MC tells us how much market power does a firm exercise, i.e. the ability of a firm to raise price above marginal cost. To make this independent of the units of measurement of p and MC, we can use Lerner's (1934) measure,

$$\mathbf{LI} \equiv \frac{p-MC}{p},$$

This lerner index is a measure of deviation from optimal resource allocation and used to evaluate the market power a firm put into effect and its implications for efficiency. But it is not helpful to estimate the market power a firm has in the industry (Perloff, 1991). The index ranges from 0 to 1; the higher the value, the higher the monopoly power.

2.1.2 Theories on the Relationship Between Market Structure and International Trade

Two key external, and arguably uncontrollable, factors that potentially determine export performance are industry concentration and firm location. Although the impact of industry concentration on firm performance has long been a part of industrial analysis, it has received little attention as a factor in the theory of export marketing. The study of the relationship between export behavior and industry concentration is primarily the result of an increasing convergence of international trade and industrial organization theories. Recognizing the existence of various

types of imperfect competition, researchers from the two disciplines have attempted to integrate the analysis of exporting with the analysis of industry concentration (Das, 1982).

Most of the traditional theories of trade have been developed on the assumptions of perfect competition and constant returns to scale. Typical examples are the Ricardian and Heckscher-Ohlin models of trade. In the Ricardian model, trade is due to technological differences between countries. In the Heckscher-Ohlin, technologies are assumed identical between countries, and trade is due differences in relative factor endowments. Both models succeed in explaining the determinants of inter-industry trade. However, they are not capable of explaining the phenomenon of intra-industry trade, which is a major component of world trade. This is chiefly due to the two traditional key assumptions of perfect competition and constant returns to scale (Chang, 1995).

The most recent development has been to explain trade flows in terms of imperfectly competitive markets, so called intra-industry trade.[15] In search for more general models of such intra-industry trade, economists have been led in to the field of imperfect competition, developing what are often referred to as the new trade theories. Explanations of intra-industry trade typically involve all some of product differentiation, economies of scale,[16] monopolistic competition or oligopolistic behavior, the working of multinational companies, and so on (Sodersten and Reed, 1994).

[15] Intra-industry trade may be broadly defined as the situation where countries simultaneously import and export what are essential the same products (Sodersten and Reed, 1994).

[16] "Returns to scale refer to how changing inputs affect output in a firm's production. There are constant returns to scale (CRS) when a proportional change in all inputs results in a proportional change output. With increasing returns to scale (IRS) output will more than double. With deceasing returns to scale (DRS) out put would rise by less than 100%" (Thompson, 2006).

The relationship between domestic industry concentration and firms' export behavior is complicated. Various arguments support either a positive or a negative relationship on the basis of the industrial organization theory (see Zhao and Zou 2002; Das 1982; Clougherty and Zhang 2008). The followings are different theoretical studies that argue either a positive or negative on the relationship between industrial concentration and trade performance.

White (1974) was one of the early theoretical studies linking trade and industry concentration proposes a useful theoretical framework to analyze the relationship between the domestic market structures and export/import. According to him there are theoretical reasons for interface between domestic market structure and international trade flows. Tracing the fact a firm with market power will face different incentives and act differently with respect to these trade flows than would a group of competitors.

Under his basic model he assumed that the domestic and imported products are perfect substitutes and to focus on the consequences of market power he also assumed the supply curve for the competitive industry is identical to the marginal cost curve for the monopolist.

Let us look his investigation when the local market is "open to the global economy, with no tariffs, transport costs, or other barriers to trade. In Figure 2.1 below, let SS be the industry supply curve and DD be the domestic demand curve. Since by assumption the economy is wide open and the domestic producer or producers cannot affect the world price, the domestic monopolist becomes just one more competitor in the world marketplace. Hence, domestic market structure will not affect export or import performance. At any world price above P_c, say P_w, the country will be a net exporter and Q_1Q_2 will be exported, regardless of market structure. At any world price below P_c, say P'_w, the country will be a net importer and Q_3Q_4 will be imported, regardless of market structure."

The domestic monopolist set a domestic price higher than the world price when domestic economy is closed with tariffs or other trade barriers. In the graph MR is the local marginal revenue curve. Facing P_w, the competitive industry's behavior would be unchanged: it would continue to produce OQ_2 with OQ_1 sold in the domestic market and Q_1Q_2 exported. However, the monopolist will take advantage of the domestic demand curve and provide only Q'_m to the domestic market, at a price P'_m. He would provide Q'_mQ_2 to the export market.

A difference of Q'_mQ_1 will be exported by the monopolist if he can segment his markets i.e. the monopolist will generate a higher level of exports than will the competitive industry. But, there is a consumer's surplus loss of ABC and an income transfer of P'_mABP_w from consumers to the monopolist. In fact, the restraint of supply to the domestic market releases extra low cost supply that can profitably be sold in export markets.

White point out a monopolist who can discriminate and dump may export more than a competitive industry. But this situation of a high domestic price and a lower international price would be considered to be dumping. The monopolist might choose to focus his attention on the domestic industry and export less than the competitive industry.

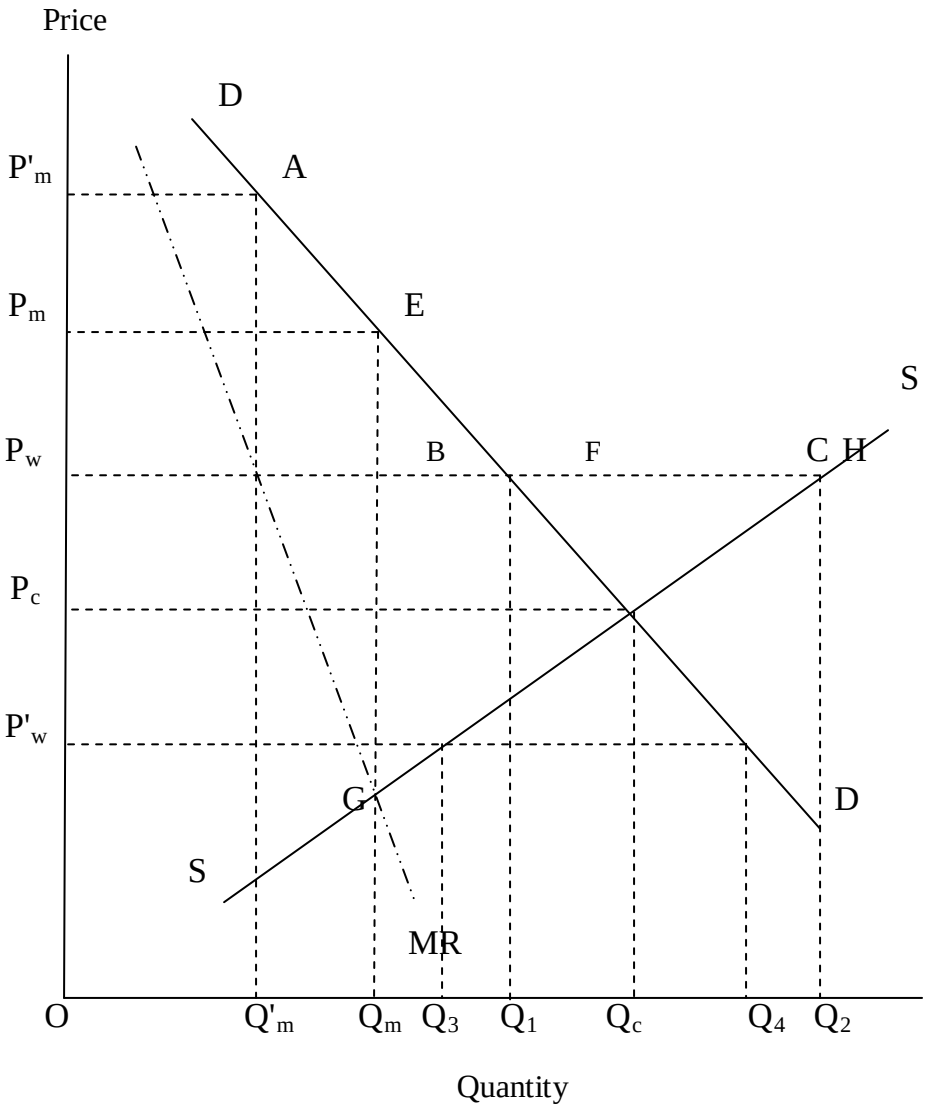
“Suppose that dumping is not permitted by international trading rules. Then the monopolist can no longer take advantage of his domestic market and simultaneously export. He faces a choice: he can either produce exclusively for the domestic market and forego exporting, or he can choose to export and also sell at home but forego the monopoly profits from the domestic market. In the latter case, he becomes just another competitor in the world market, and he exports the same amount as would a competitive industry. Which alternative he will choose will depend on the extra profits, above the world price, that could be made by selling exclusively in the domestic market, versus the extra producer's surplus to be made from selling in export markets, or

rectangle P_mEFP_w versus triangle FGH. At best, then, he will export the same as a competitive industry; at worst, he will forego exporting entirely."

Therefore, from above analysis we can note that the connection between domestic market structure and international trade flows on export side are ambiguous. A monopolist who can discriminate and dump may export more than a competitive industry. But if dumping is not allowed, he might choose to focus his attention on the domestic industry and export less than the competitive industry. If the local and foreign products are imperfect substitutes the monopolist enjoys some market power in both local and foreign markets.

According to White, if there are obstacles to exports (foreign tariffs, transportation costs, etc.) by the local industry, so we are completely concerned with the likelihood of imports. On the import side, a monopoly market structure let greater import levels than would a competitive industry, unless the domestic and imported products are perfect substitutes and all variables are known with certainty. Even lower marginal costs by the monopolist may not help; the efficiency gain has to be great enough to overcome the effects of the market power that the monopolist can exploit.

Figure 2.2 Graphical Representation of White Theory



Kim and Marion (1997) theoretical study on the link between domestic market structure and trade performance is modeled in homogeneous and differentiated goods cases. Although trade performance of homogenous goods is mainly determined by prices or costs, the performance of differentiated goods is also dependent on product diversity. The detail of the author's analysis presented as follows.

Let n firms produce homogeneous products in a nation and applying conjectural variations oligopolistic interactions of firms are modeled.[17] For simplification, there exist only two countries: the home country and the rest of the world. In addition, the model assumes that local and foreign markets are segmented; each firm sees each country as a separate market and makes distinct quantity decisions for each market. "First, consider the case in which firms in the foreign country behave competitively. In many industries, there exist so many producers in the rest of the world that they are not able to exercise market power. In the case of exports, domestic oligopolist í will face both domestic demand and foreign demand." The profit of firm í is given as

$$\Pi_{í} = P(Q)q_{í} + P_w(X)x_{í} - cq_{í} - cx_{í} - F,$$

"where qí and xí represent domestic sales and export sales of firm í, respectively. P(Q) is the inverse demand in the home country and $P_w(X)$ denotes the inverse of excess demand from the foreign country. Given the assumption of symmetry, the equilibrium export price is expressed as:

$$P_w(X) = [1- \frac{\alpha}{n\varepsilon x}]^{-1} c$$

where, εx represents the elasticity of excess demand from the foreign country. If firms in a country face downward sloping export demand curves from a foreign country and $\alpha > 0$, total exports of that country are positively related to the number of domestic firms ($\partial X/\partial n > 0$). "

The authors also investigate the case in which domestic and foreign firms can interact in the local as well as the foreign market. They found a country's net exports are an increasing function of the number of domestic firms if the numbers of foreign firms are fixed and $\alpha > 0$.[18]

[17] "The term conjectural variation is defined as a firm's anticipation of the change in industry output as a result of a unit change in its own output. The mathematical expression would be $\alpha í = {}^{\partial Q}/_{\partial q í}$ where qí denotes firm í's output and $Q = \sum qí$."

[18] Detail analyses of the case where there are only a small number of producers in the world are available in the paper.

In differentiated good case to look the consequence of product variety on trade patterns, the authors assume first that the amount of varieties offered in the market is exogenously fixed at nd in the local market and at nf in the foreign market. While the equilibrium amounts of varieties are determined by so many things, it is widely argued that firms' provision of varieties is partly influenced by the degree of firm competition, entry conditions and government regulations. "Under free trade, both the home and foreign countries consume all the varieties available in the world market, nd + nf. For the home country, nd varieties are produced at home and nf varieties are imported from the foreign country. The home country, however, can consume only a part of total world production. Denoting x(x*) as output of each firm in the home country (foreign) country, net exports of the home country can be expressed as

$$NX_d = (1-s)ndx - snfx^*$$

where s represents the share of world income accounted for by the home country. This expression clearly implies that net exports of a country are an increasing function of the number of varieties produced in that country, other things being equal." [19]

Market structure can determine product variety but which market structure i.e. monopoly or a competitive market produce more varieties is ambiguous. It depends on the incentives of new product development which needs research and development. Therefore, neither monopolies nor competition industries are perfect for product diversity. But, the authors argue that industry concentration in the domestic market is negatively related to net exports in the case of differentiated products.

Clougherty and Zhang (2008) address the effect of domestic rivalry on export performance using theoretical model. The authors consider a model with one domestic and one international

[19] See the perception behind this proposition in the paper.

markets and one industry. “Home-international” firms are *n* home firms that sell their output and compete in both the domestic and international markets. They meet rivalry in the domestic market from *m* other “home-domestic” firms, which strictly sell in the domestic market. The *n* home firms compete with *f* foreign firms in the international market.

In each of the above three groups, firms assumed to produce homogeneous output. Given the demand and costs function of the three markets,[20] each firm’s profit (πí, πi, πk) is specified; and Cournot game is modeled for multi-market competition. The local and international markets are segmented so that “home-international” firms choose different quantities, xi and $\hat{x}$i, for each market.

Clougherty and Zhang obtained the impacts of domestic competition on export market share by conducting comparative statics of the Cournot equilibrium. The number of home firms used as a proxy for domestic competition.

The authors propose and proof the following (1) “In the absence of a rivalry rationale, an increase in home-domestic firms would reduce, increase, or not-effect each home-international firm’s export market share if there are respectively joint-economies, dis-economies, or no-relations in the production of domestic and international output. (2) Under the rivalry rationale, an increase in home-domestic firms would – in the absence of the joint-economies effect – increase each home firm’s export market share.” [21]

Das (1982) discusses the traditional factor abundance hypotheses and the pattern of trade. Then he studied a few hypotheses on comparative advantage in the presence of imperfect competition and increasing returns to scale.

[20] Aggregate quantities, inverse demand function, and total cost of the three groups are denoted in the study.

[21] The proof of this proposition is presented in the paper.

It is assumed that factor supplies and production functions are the same between the two countries so that the effects of factor abundance are nil, but the market structures, are however different between the two countries. In addition, assume that market structure in one sector, say sector I, is the same between the two countries. Then, Das concludes from his analysis that higher concentration in a sector leads to a higher comparative advantage in the product produced in that sector.[22]

"If the scale elasticities are the same between the sectors in each country a higher relative concentration in sector 2 for example implies higher relative output in sector 2. Hence, a country will export the product of its relatively more concentrated sector."

There are two hypotheses on the effect of market structure on international trade. The first one, "other things remaining the same, in the presence of economies of scale, the output of an individual firm tends to be higher because the unit costs are lower if there are fewer firms. This tends to increase the aggregate output. But at the same time fewer firms mean, other things remaining the same, less aggregate output. Hence, a priori, it is not clear that the aggregate output of a product becomes higher with fewer firms. However, Das study suggested that the economies of scale effects on the aggregate output are dominant even in general equilibrium, so that higher concentration leads to a greater comparative advantage."

In sum, the Heckscher- Ohlin trade theories on factor prices and comparative advantage are preserved, if market structures are endogenous; but if market structures are exogenous because of entry limitations, it exert an influence on the comparative advantage, and in particular the degree of concentration in a sector and its degree of comparative advantage are positively correlated.

[22] The detail of the analysis is stated and proved in the paper.

Therefore, from the above four theoretical studies we can generalize that theories provide different views concerning industry concentration and firm export performance. So, depending on which of these views one holds, there is a case for arguing that leather industry concentration level in Ethiopia are either too high or too low as far as international competitiveness is concerned.

2.1.3 Porter's Framework of National Competitive Advantage

Classical theories of international trade propose that comparative advantage resides in the factor endowments that a country may be fortunate enough to inherit. Factor endowments include land, natural resources, labor, and the size of the local population. Porter says that sustained industrial growth has hardly ever been built on above mentioned basic inherited factors. Abundance of such factors may actually undermine competitive advantage. He introduces a concept called "clusters or groups of interconnected firms, suppliers, related industries, and institutions, which arise in certain locations." According to Porter, as a rule competitive advantage of nations is the outcome of four interlinked advanced factors and activities in and between companies in these clusters.

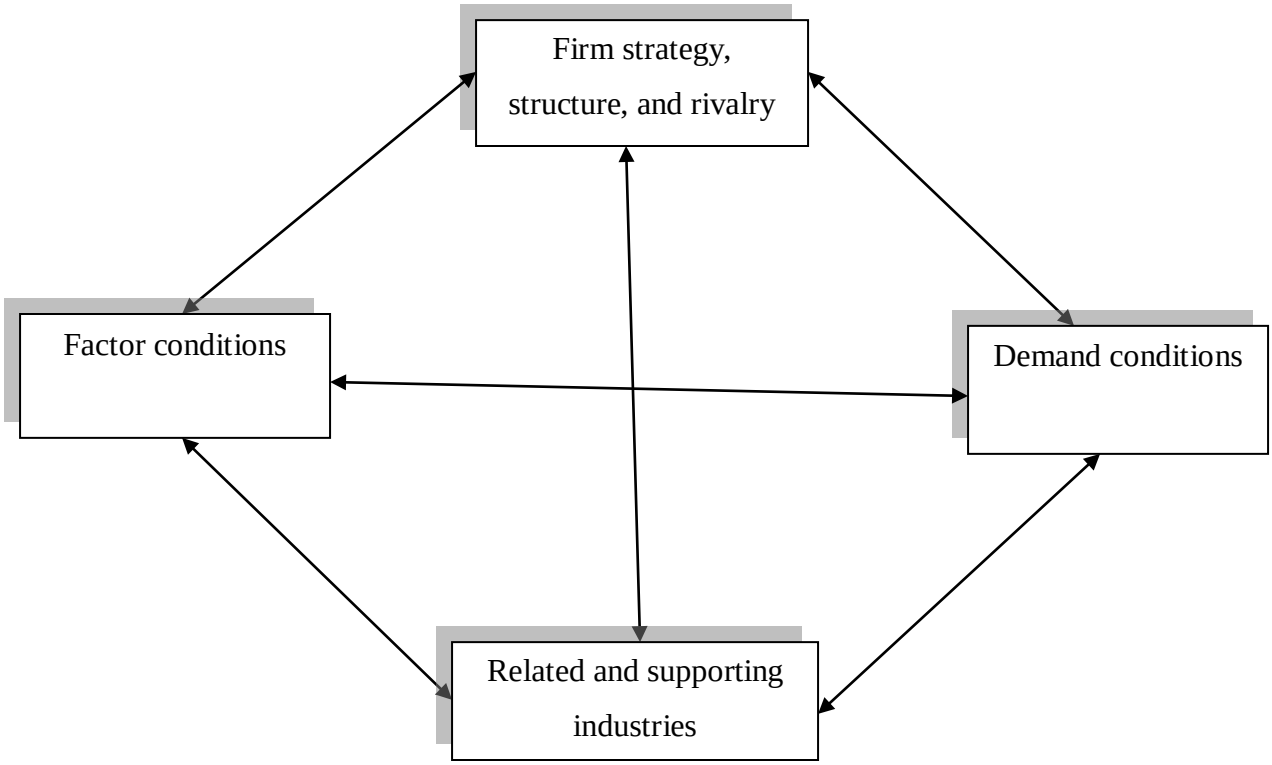
I. Factor conditions: the nation's position in factors production, such as skilled labor, infrastructure, and technology bases than on a pool of human and natural resources. These factors are upgraded / deployed over time to meet the demand.
II. Demand conditions: the nature and character of home demand for the industry's product or service. Demand conditions give home firms "a clear and earlier picture of emerging buyer needs. A nation's companies gain competitiveness if its consumers are sophisticated and demanding buyers."
III. Related and supporting industries: the presence or absence in the nation of suppliers industries and related industries that are internationally competitive. Internationally

competitive home based suppliers create advantages in downstream industries. Also, competitive end-using industries help upgrade supplying firms.

IV. Firm strategy, structure, and rivalry: is the context in which firms are created, organized, and managed, as well as the nature of domestic rivalry. Local competition creates innovations and cost effectiveness. Domestic competition is arguably the most important determinant of international success because it has a strong stimulating effect on all other determinants. The patter of rivalry at home also has a profound role to play in the process of innovation and the ultimate prospects for international success. The willingness and ability of firms to compete globally is partly a function of other determinants such as pressure from domestic market saturation or local rivalry and the pull through of international demand.

Porter used a diamond shaped diagram as the basis of a framework to illustrate the determinants of national advantage. This diamond represents the national playing field that countries establish for their industries. The diamond also is a self-reinforcing system. The effect of one determinant is contingent on the state of others. For example, a high level of rivalry often leads to the formation of unique specialized factors.

Figure 2.3 Porter's Diamond of National Advantage



This paper officially articulates Porter's hypothesis of the effect of market structure on trade; the hypothesis is then tested empirically using data from Ethiopia leather industry.

2.2 Empirical Literature

Empirical results on the relationship between industry market structure and export performance is also mixed. Some studies have found that a few dominant firms in an industry possess the ability to sell abroad, and therefore industry concentration has a positive effect on both import and export share (Geroski 1982; Glejser, Jacquemin, and Petit 1980) cited in Zhao and Zou (2002). However, other studies suggest an inverse relationship between domestic market structures and exporting, arguing that, insofar as seller concentration denotes monopoly power, dominant firms in a sector can exploit the negatively sloped demand curve and avoid the necessity of exporting (Koo and Martin, 1984) cited in Zhao and Zou (2002).

Empirical studies relating domestic industry concentration to international trade often rely upon the theoretical framework of White (1974). The much studied relationship between domestic rivalry and export performance consists of those supporting a "national-champion rationale", and those supporting a "rivalry rationale".

Kim and Marion (1997) empirical tested Porter's hypothesis that the degree of rivalry in domestic markets is positively linked to performance in international markets i.e. net export share. The hypothesis is tested using measures of the trade performance of U.S. food manufacturing industries as proxies for international competitiveness. Other variables, like the competitiveness of agricultural inputs, research and development, and trade barriers of other countries are determinants of the performance of these industries in global markets.

Data on the global performance of U.S. food manufacturing industries taken from U.S. exports, imports, and world total trade reported in U.N. D-series trade data then U.S. net export share calculated. The food processing industries in this study are basically four-digit SIC 20 industries. Since some SIC 20 industries did not have comparable trade data, 32 industries are used in the study.[23]

"The empirical study relates net export share as the dependent variable to various industrial organization, comparative advantage and control variables. While several of the variables in the empirical model flow directly from their theoretical models, other variables are included as control variables to adjust for measurement problems, or because of their significance in previous empirical work. Then, the empirical model is specified in a linear form."

In the empirical estimation for 32 U.S. food manufacturing industries, least square regression results net export share, is negative and significant for 1967, 1977 and 1987 seller concentration

[23] In order to aggregate trade data to the four digit industry level, the Standard International Trade Classification (SITC) system was matched to the U.S. Census SIC numbering systems.

in all equations except in the differentiated good case. While CR is negative and significant in the homogenous good industries, it is positive and insignificant in the differentiated good industries. These results suggest that domestic seller concentration has a negative influence on international trade performance in the homogenous good case, but has insignificant effects in the case of differentiated goods.

A negative relationship between industry concentration and net export share was also reported in **Clougherty and Zhang (2008)** study. The impact of domestic rivalry on export performance is tested using world airline industry data.

The data for the empirical test obtained from the Traffic series and Traffic by Flight Stage series compiled by the International Civil Aviation Organization (ICAO). "The data are structured on an airline's performance in a particular country pair market for a particular year; i.e., observations are at the airline/route/year level of analysis. Accordingly, 433 specific airline routes (i.e., panels) reside within the total 1,889 observations. In order to give further details beyond the total number of observations and panels, the data consist of thirty seven airlines from nineteen nations over the 1987-1992 periods."

The authors use the number of domestic competitors in the focal airline's domestic market to measure domestic competition with more domestic competitors obviously related to more competition.

The empirical tests used a dynamic panel data model i.e. a model where the lagged dependent variable is included as an explanatory variable to estimate the appropriate coefficient estimates.[24]

Clougherty and Zhang expect higher levels of domestic rivalry (more domestic competitors) to lead to enhanced export performance (higher international market shares). The variable of

[24] To firmly grasp the actual regression estimations being considered, find the model representing the fixed panel and period effects regression model in the paper.

primary concern i.e. domestic competitors yields coefficient estimates that are consistently positive per expectation and significant in all four regression estimations i.e. Random Effects Regression, Fixed Effects Regression, GMM, Instrument for Lagged Y Variables and GMM, Instrument for all Potentially Endogenous Variables.

Zhao and Zou (2002) examined the relationships between export behavior with industry concentration and firm location.

In the first step of the analysis a total of 1649 manufacturing firms used for study on export propensity. Of the 1649 sample firms, 999 firms reported exports. These used in the second step analysis on export intensity. A dummy variable, export, used to capture the exporting firms and non exporting firms.

According to the authors export behavior of firms comprises two major dimensions: export propensity and export intensity. To test the hypotheses related to these two dimensions, the analysis divide into two steps. The first step tests the export propensity measured by a dichotomous variable using a logistic regression model. This analysis relates the likelihood of an export decision to industry concentration, firm location, and other observable factors that suits the test well. The second step tests the export intensity dimension using a multiple regression model. This model is applied to the reduced sample of 999 firms that have export sales.

There is a thought that insofar as industry concentration means oligopolistic power, dominant Chinese firms are able to avoid the possibility of exporting by exploiting their favorable market positions in the home market. In addition, if industries are under government protection, firms may develop a sense of satisfaction and have little incentive to expand through export sales. Although, the Chinese firms are dominated by traditional state owned enterprises the study has found that industry concentration exerts a negative influence on both export propensity and export intensity.

This finding is not exceptional to the Chinese firms only, because this study also finds a negative influence of leather industry concentration on export revenue, although, like China some key dominant state owned firms is also observed in Ethiopia leather industry.

Cortes (2006) re-examine two conflicting views on the relationship between domestic competition and economic performance in Japan. The first one is the view of Sakakibara and Porter (2001) who state that the strength of domestic competition was an important factor for the international success of Japanese industries. On the other hand, trade protection or the existence of a cartel worked against international competitiveness. Conventional comparative advantage variables, such as capital and labor intensity, had a weak or nonexistent relationship with export performance. The size of the local market was also insignificant; suggesting that scale economies per se is not a vital factor in determining competitiveness. The second examination is the view of Uriu (1996) "who argues that concentrated industries possess more economic alternatives (e.g., flexible labor and capital inputs, diversification, ability to shift excess capacity overseas, etc.) for adjustment and growth than fragmented industries."

Cortes tested the impact of domestic competition on export performance on homogeneous and heterogeneous good industry. Using the method of principal components analysis on a cross-section of Japanese industries from the Japan Industrial Productivity database the author finds that a key measure of competition, the concentration ratio, is positively and significantly related with industry exports performance opposite to Sakakibara and Porter.

Hamilton (1997) investigates the association between manufacturing sector performance in terms of international trade flows and industry concentration in New Zealand the decade (1985-1995) following trade liberalization.

His findings evaluate the view that the dominance of the domestic market in New Zealand associated with superior trade performance in terms both of higher export growth and lower rates

of import growth. Using regression analysis Hamilton finds that some industries did much better than others in terms of export growth and/or import substitution, is because of industry concentration. However, this relationship appears to have weakened over the period under investigation. It has been those industries which have become more concentrated during the 1980s which have delivered the best trade performance. While very high levels of industry concentration may once have been necessary for enhanced trade performance, his analysis suggests that this may no longer be the case.

Azam et al. (2000) present a simple theoretical model of an exporting firm that discriminates between the export and the domestic markets, where firms engage in Cournot competition. The authors then shown that the impact of increased competition on export performance by the firms is ambiguous, and may be negative for a non trivial range of parameter values. Using survey data on Ivoirian firms, their empirical analysis gives some support to this forecast, showing that the probability of a firm exporting decline with increased competition.

Mulualem (2002) study examines the determinants of the Ethiopian leather export sector. The author applied a time series econometrics to estimate the variables in export supply response of the leather sector and he obtained long run and short run error correction supply equations using log-linear models.

In his analysis long run supply estimation confirms that change in world unit price and real exchange rate significantly determines exports of leather sector. Other variables (i.e., real GDP, domestic consumption and world supply) are found to have insignificance effect on the supply response of the export sector.

The short run export supply is statistically zero to foreign price realization from sales in the international market. The short run analysis entails the significance of domestic consumption

relative to production in affecting the availability of the exportable for the world market so that a positive change in local absorption tends to reduce the supply of the exports sector.

The coefficient of world supply variable is significant to explain the variation in supply of the exports. Mulualem interpreted the importance of this variable that the leather sector has lost its international market share resulting from declining productivity and competitiveness in terms of quality status, value added and prices of the exports.

One of the limitations of Mulualem study is that he did not incorporate the microeconomic side of industry competitiveness. Studding a nation international competitiveness at firm or industry level microeconomic variables and the industry characteristics are crucial. Therefore, this study fills the gap by evaluating the impact of leather industry domestic market structure on export performance.

3. Ethiopian Leather Industry

3.1 Overview of Ethiopian Manufacturing Sector in General and Leather Industry in Particular

Ethiopian economy is based on agriculture and this sector is the dominant in terms of value added, employment creation and export earnings. It contributes about 43 % to the total GDP, 80% of exports and total employment. The contribution of the service sector to GDP shows some progress accounting for 43.4% of GDP. However, similar trend has not been observed in the manufacturing industry, as its share remained nearly constant, including small scale and handicrafts, contributes about 13.7% to GDP and 15% of the total exports.

Economic growth of a nation is influenced by the level and growth of the manufacturing industries. The Ethiopian economy is one of the least industrialized and developed in worldwide, even in sub-Sahara standard. The manufacturing sector is still in an incipient stage in many

respects, including volume of production, quality of products, technological status, labor skill, export capacity etc. Its structural linkages with the other sectors of the economy like agriculture, construction, transport etc and within itself are distorted and unbalanced and dependent on imports for its intermediate inputs and capital goods. Its role in supporting the transformation of other sectors of the economy is negligible. Hence, the manufacturing sector has to be structurally transformed, for ensuring the development of the rest of the economy at large (EEA, 2005).

Out of the manufacturing industries in Ethiopia the leather industry is the major one in terms of employment and foreign currency generation. The leather industry is considered the second oldest profession in the world and in Ethiopia this industry is relatively an older industry with more than 80 years of involvement in processing leather and producing leather products. Currently, the leather sector is in the process of undergoing significant development. The industry bases itself on the country's livestock resources. Ethiopia possesses one of world largest livestock populations and stands seventh in the world cattle, ninth in sheep, and eighth in goats (LIDI, 2010).

This enormous population of livestock provides ample opportunity for the development of leather industry in the country. In addition to, possessing large livestock population, "Ethiopian cattle hides are well known for their fine grain pattern and good fiber structure and are ideal for the production of high quality leather garments, sport gloves and has great demand on the international leather market" (LLPTI, 2010). As well, Ethiopia produces some of the finest sheep and goat skins in the world-ideal for making top grade fashion gloves and suede for garments according to USAID (Dressler et al..., 2008).

The Ethiopian leather and leather products industry comprises three major industrial sub-sector or components: the tanneries processing and production the leather, the footwear manufacturers (shoe producing), and the leather goods and garment manufactures. They are medium and large

enterprises operating in the formal sector, where as the micro enterprise particularly in footwear manufacturing area operate in the informal sector.

Currently, there are 22 tanneries operating in Ethiopia with installed daily capacity of producing 5,760 square feet of hides and 101,600 square feet of skins. The actual daily capacity utilizations, however, are 81% and 44.97% for hides and skins, respectively. Taken as a whole, these tanneries have created direct job opportunities for more than 4,000 people. Of the 22 tanneries, 9 are 100% export oriented in semi-processed skins mainly pickle and wet blue. The footwear (shoe) industry is, in turn, composed of two sub-sectors: the larger mechanized shoe industries sub-sector and the smaller production units micro, small and medium enterprises including the informal ones, with fluctuating employment levels, unhealthy work infrastructures and seasonal production schemes. Currently, there are 13 medium and large mechanized footwear factories in the formal sector. They primarily produce and export men's and children's shoe and also ladies shoe for the local market and export (LLPTI, 2010).

On the other hand, there are 16 enterprises operating in the leather goods and garment sub-sector. The overall installed capacity and actual outputs per day were 700 pieces and 309 pieces, respectively. However, the actual factory outputs ranges from 10-60 pieces of garments per day (LLPTI, 2010).

3.2 Ethiopia Leather Sector from Competitive Forces Perspective

Competitive strategy must grow out of a sophisticated of the structure of the industry and how it is changing. According to Porter (1998) in any industry, whether it is domestic or international, the nature of competition is embodied in five competitive forces: (1) the threat of new entrants, (2) the threat of substitute products or services, (3) the bargaining power of suppliers, (4) the bargaining power of buyers, and (5) the rivalry among the exiting competitors. The power of the five forces fluctuates from industry to industry and determines long term industry profitability.

"The strength of each of the five competitive forces is a function of industry structure or the underlying economic and technical characteristics of an industry" (Porter, 1998). Table 3.1 evaluate and present the Ethiopian leather industry from the above five perspectives of competitive forces.

Table 3.1 Markets Positioning of the Ethiopian LLPI

Matrix of the Leather Industry

Market	Threat of New Entrants	Substitutes	Bargaining Power of the buyers	Bargaining Power of Suppliers
Domestic	low	no	high	low
Regional	high	yes	high	low
International	high	yes	high	low

Matrix for the Leather Products Industry

Market	Treat of New Entrants	Substitutes	Bargaining Power of the buyers	Bargaining Power of Suppliers
Domestic	high	yes	high	low
Regional	high	yes	high	low
International	high	yes	high	low

Source: LIDI-Leather Industry Master Plan

Table 3.1 shows that from the five competitive forces perspectives the Ethiopian leather and leather products industry is potentially exposed to competition from local and international firms and new businesses especially of foreign investment.

3.3 Trends of Seller Concentration and Empirical Evidence of Competition in Ethiopian Leather Industry

Competition may be the spice of life, but in economics it has been more nearly the main dish.

George Stigler (1968)

Measure of concentration is most widely used in the United States, the United Kingdom and Canada for the measure of market structure. Measures of concentration capture characteristics of the firm-size distribution at a point in time. The size of distribution changes slowly over time and so do the associated measures of concentration.

According to Carlton and Perloff (1999) industry concentration is typically measured as a function of the market share of some or all of the firms in the market. It represents an important characteristic of the nature of competition in an industry. A highly concentrated industry connotes the presence of dominant firms with a large percentage of market share and the ability to exercise price discrimination.

Examining the firm-size distribution to make inferences about the degree of competition in an industry is commonly practiced by those who use trends in concentration to assess changes in the intensity of competition. This approach implies that the more vigorous the competitive process, the greater the expected change in concentration. “Mergers, entry, exist, and the rise and fall of incumbents should all lead to changes in the size of distribution of firms, and, hence, changes in concentration. Entry of smaller firms may lead to a decrease in concentration. Shake-outs may lead to an increase in concentration. These changes may occur not only as a result of increase in international competition due to falling transportation costs and tariff barriers, technological change, and shift in demand, but also because of oligopolistic interaction and the dynamics of market competition” (Baldwin, 1995).

To determine how Ethiopian leather industry export performance differs with structure, we need to find out the state of competition in the sector using measures of seller concentration. Seller concentration is a measure of the number and size distribution of firms. It is usually regarded as a significant dimension of market structure because it is thought to play an important part in determining market power and hence, business behavior and performance (Curry and George, 1983). A variety of measures of seller concentration are used, all of which are thought to have some correlation to the degree of competitiveness in an industry. To determine the seller concentration and the possibility of competition in Ethiopian leather industry in specific cases, it is necessary to define the relevant markets of the industry. This study divided the industry in to three sub-sectors based on the market definition.[25] These are the tannery, leather footwear, and leather garment and leather products sub-sectors.

The degree of competition in Ethiopian's leather industry can be measured by standard concentration measures such as the four-firm concentration ratio and the Herfindahl- Hirschman Index. Concentration is measured using dominant leather's industry sub-sector firm's market share for the four firm-firm concentration ratios while HHI includes all leather's industry sub-sector firms in the study i.e. it weight individual firms' market share.

CR4 for tannery includes four largest firms in the sub-sector namely the Ethiopian Tannery S.C., Ethio Leather Industry Private Limited Company (ELICO), Mersa Tannery Plc, and Hafde Tannery Plc. CR4 for leather footwear comprises Anbessa Shoes S.C., Wallia Shoes, Peacock Shoes, and Tikur Abay Shoes S.C. Finally, CR4 for leather garment and products includes four

[25] Market definition incorporates both the product and the geographical dimensions of the relevant market, can be used to determine whether there are actual competitors who are capable of constraining the behavior of the firms in question and to assess the degree of real competition on the market.

largest firms in the sub-sector namely the Universal Leather Products, Bazra, Modern Zege Leather, and Joy Leather Garments.

CR4 and HHI were production capacity and employment based, specifically; for CR4 calculation, the percentage of production capacity and employment share by the largest four firms employed, this being the basis on which these data were readily available for all 13 years and it is a sound bases for leather industry, because; this industry is characterized by high labor intensity and the output depends on the production capacity of the plant.

22 tanneries, 13 footwear factories in the formal sector, and 11 leather garment and products firms were included in the analysis. The non availability of some data for leather footwear and leather garment and products sub-sector firms caused to drop 10 firms from the main sample. The mean and standard deviation of the industry sub-sectors calculated for each year in order to possibly relate market concentration with export revenue at industry level in the next sub-section. Leather industry sub-sectors concentration trends for several years are presented in table 3.2.

Table 3.2: Leather Industry Concentration Trends by Sub-sector, 1997-2009

Year	Leather's Industry Sub-sectors	CR4 Production Capacity	CR4 Employm-ent	HHI Production Capacity	HHI Employm-ent
1997	Tannery	47	58	926	1144
	Leather Footwear	75	87	1655	2383
	Leather Garments and Products	61	65	1301	1698
	Mean	**61**	**70**	**1294**	**1742**
	Standard Deviation	**14**	**15**	**364**	**621**
1999	Tannery	46	65	790	1748
	Leather Footwear	75	87	1655	2383
	Leather Garments and Products	60	62	1205	1640
	Mean	**60**	**71**	**1217**	**1924**
	Standard Deviation	**14**	**14**	**433**	**401**
2001	Tannery	43	60	682	1469
	Leather Footwear	75	87	1655	2383
	Leather Garments and Products	58	59	1162	1523
	Mean	**58**	**68**	**1166**	**1792**
	Standard Deviation	**16**	**17**	**486**	**513**

2003	Tannery	38	56	641	1352
	Leather Footwear	75	87	1655	2383
	Leather Garments and Products	58	59	1162	1523
	Mean	**57**	**67**	**1153**	**1753**
	Standard Deviation	**18**	**17**	**507**	**552**
2005	Tannery	65	56	641	1352
	Leather Footwear	65	81	1369	2108
	Leather Garments and Products	54	55	1065	1203
	Mean	**61**	**64**	**1025**	**1554**
	Standard Deviation	**6**	**15**	**366**	**485**
2007	Tannery	37	54	613	1303
	Leather Footwear	55	72	1124	1733
	Leather Garments and Products	52	51	952	1025
	Mean	**48**	**59**	**896**	**1354**
	Standard Deviation	**9**	**11**	**260**	**357**
2008	Tannery	37	54	613	1303
	Leather Footwear	53	70	1045	1633
	Leather Garments and Products	48	50	896	995
	Mean	**46**	**58**	**851**	**1310**
	Standard Deviation	**37**	**50**	**613**	**995**
2009	Tannery	37	54	613	1303
	Leather Footwear	53	70	1045	1633
	Leather Garments and Products	47	50	860	901
	Mean	**45**	**58**	**839**	**1279**
	Standard Deviation	**37**	**50**	**613**	**901**

Source: Own calculation based on data from LIDI and Ministry of Industry

Table 3.2 suggests generally declining concentration levels of dominant leather's industry firms share, specifically; CR4 and HHI for all sub-sectors are decreasing but a high market concentration in leather footwear sub-sector is still observed compared to tannery and leather garment and products. The decline in concentration levels in footwear sub-sector is faster than in the tannery and leather garment and products, implying a more strong penetration of private investor into the leather footwear manufacturing. The private investors penetration into the tannery and leather garment and products, are less than the leather footwear, as evidenced by a fall in CR4 largest footwear firms share in production capacity from 75% to 53% compared to a fall in CR4 based on production capacity 47% to 37% and 75% to 65% for tannery and leather garment and products sub-sector respectively. Therefore, the footwear sub-sector is moving

towards more competition faster than the tannery and leather garments and products sub-sectors, although, the concentrations figures in these sub-sectors indicate better competition situation than the footwear sub-sector.

Leather footwear and leather garment and products sub-sectors are more concentrated than the tannery sub-sector. Higher levels of market concentration are generally related to economies of scale and high levels of product differentiation. According to Kohls and Uhl (2001) strongly oligopolistic industries have a four-firm concentration ratio of at least 50 percent (; a 33-50 ratio denotes a weak oligopoly; and unconcentrated industries have ratios of 33 percent or less). Therefore, the leather footwear and leather garment and products sub-sectors without doubt belong to strongly oligopolistic market structure but the tannery sub-sector fit in to weak oligopoly market structure.

Despite the use of concentration as a signal for degree of competition, recent literature casts doubt over its propriety in serving as a proxy for competition. Instead, the Lerner (1934) index, commonly used as an indicator of the degree of market power, is considered more robust in capturing competition. This is discussed below.

Learner Index as a Measure of Market Power for Leather Industry

From section 3.3 analyses we find that leather industry market power possessed by a few largest firms, particularly, in footwear and leather garment and products sub-sectors. To investigate the market power exercised by these few largest firms in the industry we need to find the gap between price and marginal cost (p – MC). If we can measure MC of a firm, we can directly know how much market power this firm exercises i.e. the ability of a firm to raise price above marginal cost.

Lerner (1934) index, a more effective indicator of market power, is used to determine the extent of competition. Unfortunately, the researcher does no have detailed information about a firm's

marginal cost and price to calculate Lerner's measure. But, according Carlton and Perloff (1999) the relationships between price, marginal cost, and the existence and the persistence of economic profits depends on the market structure. Therefore, we can predict in monopoly or oligopoly, price exceeds marginal costs, profits in the short run are either positive or negative, and long run profits are either zero or positive. From section 3.3 analyses on leather industry sub-sectors markets structure we found that three of them categorized under oligopolistic market structure. Therefore, there is some degree of market power which can potentially limits competition in the industry.

3.4 Leather Industry Concentration and Trade Performance

International competitiveness is a term fraught with ambiguity. According to Kim and Marion (1997) "international competitiveness is the sustained ability of a nation's industries or firms to compete with foreign counterparts in foreign markets as well as in domestic markets under conditions of free trade." In this study, the export revenue of Ethiopian leather industry firms in global markets is used as an indicator of their competitiveness in global market; their success in turn is replicated in their revenue in home and foreign markets.

In this study export revenue is a useful measure in terms of presenting a key feature of the trade data. If leather industry concentration has had any bearing on trade performance over the period under investigation, this would be apparent in such a table, and indeed the correlation between CR4/HHI and export revenue in each year are increasingly strong and meaningful. This shows that better export revenue can be linked with decreasing levels of leather industry concentration.

Within the leather sector, the CSA distinguishes two broad categories. The first one is the tanning/dressing of leather, manufacture of luggage and handbags, while the second concerns the manufacture of footwear. From CSA statistical survey report on 80 leather industry firms' permanent employee and capital used to measure HHI and CR4. The footwear enterprises are

more plentiful, but smaller in terms of employment and size of capital than the former category. For example, in 1999/2000 out of 53 leather establishments, 38 (72%) were in footwear, employing only 49% of the total persons engaged (CSA, 2002). Since the downfall of the Derg, a rapid expansion has been taking place in the tannery sub-sector. In 1990 there were only eight tanneries, consisting of six public and two private plants. But, in 2010, 22 tanneries were registered for ELIA: 18 private and 4 public ones. Table 3.3 presents trends of leather industry concentration levels and export revenue for the industry.

Table 3.3: Leather Industry Concentration Trends and Exports Revenue, 1998-2009

Year		**1998**	**2000**	**2002**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Leather Industry CR4	**Employment**	55	51	48	44	40	39	38	37	36
	Capital	54	48	44	41	41	40	38	37	36
Leather Industry HHI	**Employment**	1011	949	801	706	634	605	552	525	516
	Capital	1038	913	746	621	586	563	499	477	466
Leather Industry Export Revenue		11.4	10.7	19.2	44	67.1	75.2	89.5	101.3	75.7

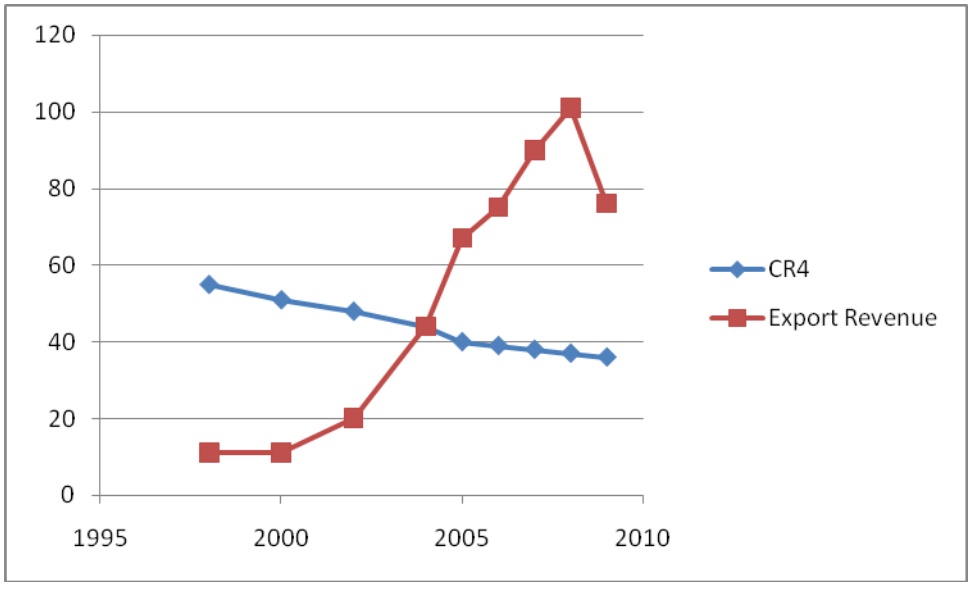
Source: Own calculation based on data from CSA and ECA

Table 3.3 indicates that there is a persistent decline in leather industry concentration levels for both employment and capital base since 1998. This shows that competition and thereby competitiveness in the sector improved as well. As it turns out, the Ethiopian leather industry with less concentration have dramatically more exports revenue. This observed by a decrease in

concentration levels from 55% to 36% and 10.11% to 5.16% for CR4 and HHI employment based respectively and a decline in concentration from 54% to 36% and 10.38% to 4.66% for CR4 and HHI capital based respectively. For the same period from 1998-2009 export revenue is dramatically increased from 11.1 to 101.3 million dollars. This shows that domestic market structure have influence for increasing export revenue in leather sector.

In the above analysis measures of concentration is used due to the ability to serve as a proxy for state of competition in Ethiopian leather industry and the declining concentration levels indicate an increase in domestic rivalry and this push firms in the industry to expand their production capacity (expansion investment in very high in the industry), upgrade (to produce finished leather), reduce costs, enhance quality, and create new products and processes[26]. In turn, these lead the firms in the industry to enhance their competitiveness i.e. to export more and get more foreign currency. Figure 3.1 and 3.2 present supplementary illustration on the trends of concentration level and export revenue in the industry.

Figure 3.1 Graphical Representations of CR4 and Export Revenue Trends



[26] To preserve and penetrate new markets these are very decisive, particularly, in leather footwear manufacturing sector.

From table 3.3 we can conclude that the CR4 based on employment and CR4 based on capital are both declining almost at the same rate. Therefore, CR4 based on employment is selected for illustration. From figure 3.1 we can learn that from 1998-2009 periods CR4 for leather industry is consistently declining which demonstrates a move towards more competition while export revenue for the industry increases dramatically.

Figure 3.2 Graphical Representations of HHI and Export Revenue Trends

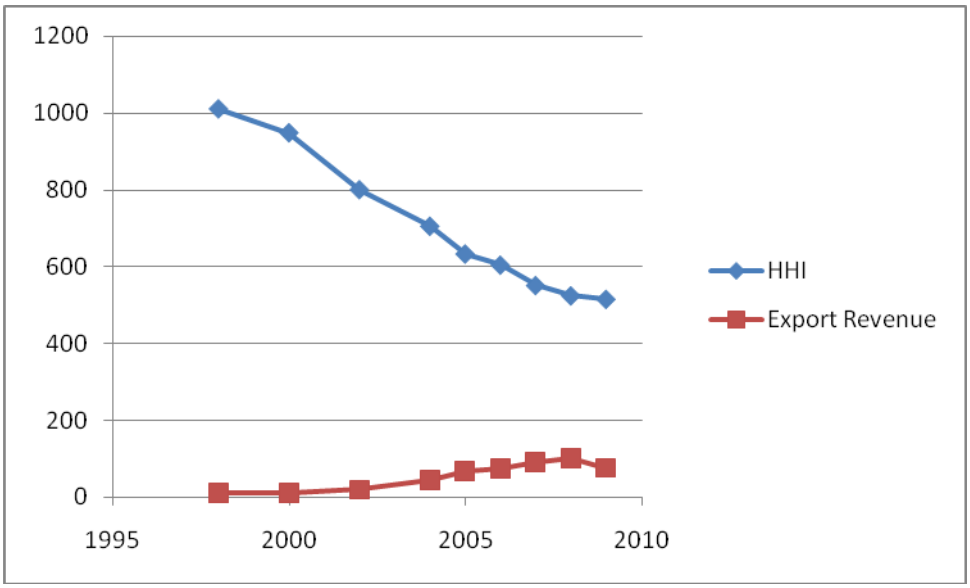


Table 3.3 confirms that the HHI based on employment and HHI based on capital are both declining almost at the same rate. Therefore, HHI based on employment is chosen for illustration. We can find out from the graph that from 1998-2009 periods HHI for leather industry is declining without fail as the number of firm's increases which reveals a move towards competition despite the fact that export revenue for the industry increases noticeably.

From the two graphical depictions we can note that as CR4 and HHI decreases for the specified period of time which used as a proxy for domestic rivalry trade performance i.e. expert revenue increases significantly. This indicates an inverse relationship between domestic market structure and export performance. This study confirms that a move towards competition the better trade

performance is observed in Ethiopian leather industry. However, exports performance in leather industry is not only determined by domestic market structure and there are other variables which can determine international competitiveness. This specific question can be answered using regression analysis. However, due to inadequacy of data for some major determinants this study does not capture the effects of other variables.[27] But, in order to minimize this limitation of the paper the author conduct interview with ELIA and LIDI to capture other factors that constraint and influence the competitiveness of Ethiopian leather industry firms in the global market.

3.5 Hindrances to Competitiveness of Leather Industry in Ethiopia

The enormous population of livestock provides ample opportunity for the development of the leather industry in the country. Despite abundant livestock and cheap labor force advantages, a number of problems hinder the productivity and competitiveness of Ethiopian leather industry. Specifically, the major factors contributing for low level of productivity and subsequently competitiveness in the international market are: shortage and poor quality of hides and skins, lack of administrative and technical skilled personnel, inadequate levels of technological development, and undeveloped marketing system. The researcher conducted interview with ELIA and LIDI on the above main problems and detail explanations of them presented as follows.

Shortage of Raw Materials: The trade performance of the Ethiopian leather industry in international market depends on the availability of raw materials and relative cost of hides and skins used as inputs. Although the country is endowed with largest livestock population in Africa the supply of hides and skins is not satisfactory for the exiting leather factories. In Ethiopian cattle, sheep and goat are primarily used for meat and agricultural activities not for their hides and skins which is considered as a by-product. The low consumption of meat and poor treatment of

[27] The impact of domestic market structure on export performance can be reexamined using econometric analysis.

livestock's and hides and skins due to lack of awareness on the advantages of hides and skins leads inadequate supply of hides and skins in the market. This creates shortage of raw materials for the tannery sub-sector and this causes the leather factories to operate below their full capacity. This is evidenced by the exiting 22 tanneries and about 850 leather manufacturing enterprises which function below their capacity due to shortage of raw materials. While tannery sub-sector are operating respectively at 45% and 81% of their skins and hides processing capacity, leather manufacturing factories function at about a half of their full capacity (Tesfaye et al…, 2008).

If firms are not utilizing their full capacity they may lose economies of scale. Cost reduction by large scale production is crucial to increase productivity and penetrate the international market there by earn more profit. This reflects the importance of hides and skins inputs to different leather industry firms and the relative competitiveness of the Ethiopian in the production of those leather inputs.

Poor Quality of Raw Materials: Production of good quality leather depends on the quality of raw material. Good quality raw material, in turn, implies good quality leather, law cost of production, high selling price and total growth of the industry. Nevertheless, our country lost the more share of the leather market exchange from the world market due to the damage and defects on hides and skins.

In Ethiopia quality of hides and skins depends on the health history of the livestock, slaughtering method and transportation and storage aspects. Poor husbandry practices, recurrent drought and livestock's diseases in the country affect the quality of raw hides and skins. In addition, the slaughtering method is not modern and professional and these causes tear on the hides and skins. This is evidenced by 80% of livestock slaughtered in household level.

Lack of Administrative and Technical Skilled Personnel: Managers' (owners') education level there by innovation determines the technological competitiveness; hence the export performance

of a sector. Formal education and training is behind the essence of innovation, and enables firms to produce sophisticated and enhanced quality products (Berihu, 2008). LIDI has been established with the objective to improve the shortage of skilled labor in the sector through building capacity for new trainee and actual workers in different programs. Although this institution is doing well to alleviate the shortage of technical expert still there is a lack of skilled man power in the sector. Most of administrative and technical workers in the industry are doing by experience and they should be trained or replaced by highly educated managers and technical workers.

Inadequate Levels of Technological Development: is another bottleneck of the sector competitiveness in international market. It connotes technological activities, such as R&D undertaken by factories in leather industry. Innovative ability enables a firm to improve existing products and develop new products and processes. It enables the firm to produce internationally competitive products and gives it at least a temporary monopoly on its production and sales (Berihu, 2008). The underlying ability to innovate depends greatly on R&D activities carried out and is widely conceived as a critical factor in exporting. Although, there is progress on modification of the exiting machine and equipments in Ethiopian leather industry, still up gradation is remains. Some of the existing technology and equipments is not modernized due to inadequate investment and skilled labour that can apply the new technology. These problems contribute for low productivity of the sector.

Undeveloped Marketing System: in Ethiopia the number and production capacity of the tannery factories are increasing and the footwear sub-sector has been targeting only the domestic market for a long time. These two issues require additional sales channels to sell the increased number of products. But the exiting marketing system is very poor to reach the international market due to lack of knowhow on marketing development, information, and international marketing experience.

4. Conclusion and Recommendations

It is evident from global trade pattern that resource endowment is not sufficient for competitiveness in international market. Taking in to account this fact this study evaluates the effect of market structure on export performance in Ethiopian leather industry. In past few years, although, there is some progress in quality and quantity of production in the industry, this industry remains least competitive in both domestic and international market irrespective of the availability of abundant livestock resource and cheap labor force. Achieving international competitiveness requires high productivity and effective utilization of the available natural endowments. Moreover, in today's competitive global market, competition is not only about price but also about supplying quality and differentiated products.

This paper explores two competing hypotheses on the effect of domestic market structure on international market performance. The empirical result supports the view that less market concentration via stronger domestic competition enhances export performance. Accordingly, when leather industry experience substantial domestic rivalry it tends to perform better in export markets. This shows the importance of domestic market structure for international trade has strong implications for competition policy, predominantly policy towards the number firms in the industry, alliances, horizontal and vertical linkage among firms, and anti-competitive practices.

In general, Ethiopia's problem in leather sector includes shortage and low quality of hides and skins, lack of modern technology and skilled labor, small size and number of firms and how they compete and restrain competition. These microeconomic makeups's reduce productivity and lower the return on new investment. As I have discussed in introduction part, productivity is the root cause of a nation's standard of living. This requires improvement and innovation in exiting industry and the capacity to compete successfully in new industry.

Antitrust law is one of external factor which influence the international competitiveness of Ethiopian leather and leather products. Ethiopia instituted the fair trade practice proclamation in 2003. This trade practice proclamation No. 329/2003 was legislated with a purpose of regulating trade practices. However, this proclamation appears with the issues of anti-competitive practices: such as agreements on joint price fixing, collusive behavior, allocation by quota of production and sales, market segmentation, concerted refusal to deal, sell and render services as exhaustive within Articles 6 and 11 of the proclamation. However, enforcement has been proceeding far too slowly. This antitrust law enforcement is decisive to enhance rivalry and excel the advantage of competition in the sector.

One of the tools for unleashing competition in Ethiopia leather industry is privatization. The current government has embarked on a program of economic reform, including privatization of state enterprises and rationalization of government regulation. Hence, privatization of stated owned leather firms should be accomplished in a way that enhances competition rather than eliminates it. While there has been progress in privatization, vigorous domestic rivalry among competitors creates firms who can compete globally and this is decisive for sustainable competitive advantages.

In sum, from the empirical result and the present challenges of Ethiopian leather industry, the following recommendations addressed to improve the export performance of the sector in global market.

- Quantity and quality problem can be improved by creating awareness on the advantages of hides and skins, by modernizing the animal husbandry practices and slaughtering method. In addition, veterinary services should be improved and accessible for all to improve the present livestock's health status. If the current low quality and supply enhanced it will facilitate the tanning and footwear sub-sector to fully utilize their production capacity and increase product

quality. If the firm's begin to operate at full capacity they can enjoy economies of scale i.e. low cost production and this determines the price of final products which is directly related to competitiveness.

- Domestic and international demand for Ethiopian leather and leather products will not be effective unless quality and differentiated products are available at attractive prices. This can be achieved by promoting private investors and creating a competitive environment in the sector. Therefore, a more flexible market with fair taxation and less bureaucracy and competition which is open for new investors will increase productivity and create new business opportunities.
- Application of antitrust policies to encourage competition and discourage horizontal and vertical linkage among firms in the sector can create greater efficiency in production, improved quality and enhanced product development through innovation and in turn, these will step up the firm's international competitiveness.
- To enhance the present R&D activities, leather quality, and productivity of the industry highly educated entrepreneurs and technical workers are essential. Therefore, Leather Industry Development Institute should be prompted to create more skilled labor in quality and quantity. This will assist to introduce new ideas on product design and production methods, to enhance marketing system, and transform and disseminate technologies to penetrate the international high value-added leather market.
- Still there are firms that exports low value added hides and skins in the industry. These manufacturers must be put off by policies that encourage new investment and the formation of new companies that produce high value-added finished leather to penetrate and sustain in the global market.

References

Alison Dressler, Mohammed Garad, and Ron Layton (2008). Finding New Space for Ethiopia's High Caliber Sheep and Goat Leather in the International Fashion Goods Market.

Berihu Assefa Gebrehiwot (2008). Determinants of the Performance of the Garment Industry in Ethiopia. Ethiopian Development Research Institute (EDRI).

B. Curry and K.D. George (1983). Industrial Concentration: A Survey, the Journal of Industrial Economics, Vol. 31, No. 3, pp. 203-55.

Bienvenido S. Cortes (2006), Competition and Export Performance in Japan, International Journal of Economic Policy Studies, Vol.1, pp. 71-82.

Bo Sodersten and Geoffrey Reed (1994). International Economics, Third Edition.

Das, Satya P. (1982). Economies of Scale, Imperfect Competition, and the Pattern of Trade, the Economic Journal, Vol.92, pp. 684-93.

Dennis W. Carlton and Jeffrey M. Perloff (1999). Modern Industrial Organization, Third Edition.

Donghwan Kim and Bruce W. Marion (1997). Domestic Market Structure and Performance in Global Markets: Theory and Empirical Evidence from U.S. Food Manufacturing Industries, Review of Industrial Organization, Vol. 12, pp. 335–354.

Elhanan Helpman and Paul R. Krugman (1985). Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy.

Ethiopian Economic Association (EEA)/ Ethiopian Economic Policy Research Institute (2005). Industrialization and Industrial Policy in Ethiopia.

Hamilton, R.T. (1997). A Note on Industry Concentration and Trade Performance: New-Zealand Manufacturing 1985–1995. Australian Journal of Management, Vol. 22 (1), pp. 99-

105.

Henry Thompson (2006). International Economics: Global Markets and Competition, 2nd Edition.

Hongxin Zhao and Shaoming Zou (2002). The Impact of Industry Concentration and Firm Location on Export Propensity and Intensity: An Empirical Analysis of Chinese Manufacturing Firms, Journal of International Marketing, American Marketing Association, Vol. 10, pp. 52-71.

James R. Markusen, James R. Melvin, William H. Kaempfer, and Keith E. Maskus (1995). International Trade: Theory and Evidence, McGraw-Hill, Inc.

Jean-Paul Azam, Marie-Françoise Calmette, Catherine Loustalan, and Christine Maurela (2000). Domestic Competition and Export Performance of Manufacturing Firms in Côte d'Ivoire.

Jeffrey M. Perloff (1991). Econometric Analysis of Imperfect Competition and Implications for Trade Research, Department of Agricultural and Resource Economics, University of California, Berkeley.

John R. Baldwin (1995). The Dynamics of Industrial Competition: A North America Perspective.

Joseph A. Clougherty and Anming Zhang (2008). Domestic Rivalry and Export Performance: Theory and Evidence from International Airline Markets.

Leather and Leather Products Technology Institute (2010). Semi-Annual Bulletin, Vol. 1, No. 2.

Leather Industry Development Institute (2010). Proceeding of National Workshop on Enhancing the Ethiopian Leather Industry and its Market Competitiveness, Adama.

Mariko Sakakibara and Michael E. Porter (2000).Competing at Home to Win Abroad: Evidence from Japanese Industry, Review of Economics and Statistics.

Michael E. Porter (1998). The Competitive Advantage of Nations, the Free Press, New York.

Mulualem E. Zewdie (2002). The Performance and Determinants of the Ethiopian Leather Export Sector, School of Graduate Studies, Addis Ababa University.

Richard L. Kohls and Joseph N. Uhl (2001). Marketing of Agricultural Products, Ninth Edition, PHI.

Tesfaye Kumsa, Zegeye Yigezu, Itana Ayana, Muluneh Tafesse (2008). Livestock Resource Potentials: Constraints and Opportunities for Intervention by the Private Sector, Private Sector Development Hub No. 2.

White J. Lawrence (1974). Industrial Organization and International Trade: Some Theoretical Considerations, American Economic Review, Vol. 64, pp. 1013–1020.

Winston Chang (1995). Imperfect Competition in International Trade, Kluwer Academic Publishers, USA.