



**ADDIS ABABA UNIVERSITY
SCHOOL OF MANAGEMENT, INFORMATICS AND ECONOMICS
DEPARTMENT OF ECONOMICS**

**MARKET STRUCTURE AND NATURE OF COMPETITION IN THE
ETHIOPIA'S BEER INDUSTRY**

**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF ADDIS
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By

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*A thesis submitted to the school of graduate studies of Addis Ababa
University in partial fulfillment of the requirements for the degree of
masters of Arts in Economics.*

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Statement of Certification

This is to certify that Fekadu Mekonnen Bezabih has carried out his research work on the topic entitled “Market Structure and Nature of Competition in the Ethiopian Beer Industry”. The work is original in nature and is suitable for submission for the reward of the MA Degree in Economics.

Advisor: Adane Tufa. (PhD):  12/06/12

ABSTRACT

Market Structure and Nature of Competition in the Ethiopia's Beer Industry

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Competition in the economy creates a positive prospect for economic growth and development. However, many developing countries are not in a position to develop efficient competition law due to complex nature of market, limited capacity and lack of experience.

Though Ethiopia has only recently developed anti-trust law, the prevalence of anti-competitive conducts is widespread. The market structure of the Ethiopia's beer industry is duopoly type, and there is a dominant firm in the beer market i.e. BGI, though in it practices has not been engaged in practices through abusing its dominant position. The alleged dominant firm has not engaged in anti-competitive agreements except exclusive dealing & full-line forcing. There are unfair trade practices which should be corrected. such as giving hotel hostes uniforms, giving refirigrators for their costumers and the like.

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TABLE OF CONTENTS

ABSTRACT.....	i
ACKNOWLEDGEMENTS	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES	vi
LIST OF ACRONYMS.....	vii
CHAPTER ONE - INTRODUCTION.....	1
1.1. Background of the Study.....	1
1.2. Statements of the problem.....	3
1.3. Objectives of the Study	4
1.4. Research Design, Approach and Methodology.....	5
1.5. Significance of the Study.....	5
1.6. Data Analysis and Interpretation	9
1.7. Scope and Limitation of the Study	9
1.8. Organization of the research paper	9
CHAPTER TWO - LITERATURE REVIEW	10
2.1. Introduction	10
2.2. Market Definition.....	10
2.2.1. Concentration as a Measure of Market Structure	12
2.2.2. Relation between Market Concentration and Performance	15
2.3. Establishing Dominancy	17
2.3.1. Dominance of the Sector in Different Countries.....	18
2.3.1.1 Kenya Beer Market.....	18
2.3.1.2. Zambia Beer Market.....	19

2.3.1.3.	Ghana Beer Market	19
2.3.1.4.	Vietnam Beer Market.....	19
2.4.	Abuse of Dominancy	20
2.5.	Ant- Competitive and Unfair Trade Practices	21
CHAPTER THREE - RESEARCH METHODOLOGY		23
3.1.	Introduction	23
3.2.	Research Method.....	23
3.3.	Data and Data Sources	23
3.4.	Data Analysis	24
3.5.	Measuring Concentration	24
3.5.1.	Direct Method.....	24
3.5.1.1	Lerner Index	24
3.6.	Indirect Method	25
3.6.1.	Number of Companies in the Relevant Market	25
3.6.2	Market Share.....	25
3.6.3.	Concentration Ratio	26
3.6.4.	Herfindahl-Herschman Index (HHI).....	26
CHAPTER FOUR - EMPIRICAL RESULTS AND DISCUSSIONS		28
4.1.	Beer Industry.....	28
4.1.2.	Defining the Relevant Market	28
4.2.	Beer Market Behavior	32
4.3.	Determine Dominancy in Beer Mrket	33
4.3.1.	Market Share	35
4.3.2.	Market Concentration Analysis.....	36
4.4.	Abuse of Dominancy	39
4.5.	Anti- Competitive Practices.....	40

4.5.1.BGI Ethiopia Acquisition of Share Raya Brewery(Merger).....	41
4.3. Unfair Trade Practices.....	44
CHAPTER FIVE - CONCLUSIONS AND RECOMMENDATIONS.....	46
5.1. Conclusions.....	46
5.2. Recommendations.....	46
REFERENCES.....	47

LIST OF TABLES

	PAGE
Table 4.1: Price of Bottled and Drought Breweries	32
Table 4.2: Annual Sales Volume and Market Share of Breweries	35
Table 4.3 Herfindahl- Herschman(HHI) iIndex.....	36
Table 4.4: Annual Sales Volume and Market Share of Breweries (Future).....	42

LIST OF ACRONYMS

HHI	Herfindahl-Hirschman Index
CR	Concentration Ratio
MES	Minimum Efficient Scale
MPC	Monopolies and Price Commission
UNDP	United Nation Development Program
ZCC	Zambia competition Commission
MC	Marginal Cost
SSNP	Small but Significant Non-Transitory Increase in Price

Chapter One: Introduction

1.1. Back Ground of the Study

Beer has been part of the social fabric of cultures around the world for many years. All malt beverages are referred to as “beer”, but there are two distinct types: ales and lagers. Ales are top fermented while Lagers are bottoming fermented (Global Beer Industry Guide, 2009). Lager beer is the most commonly produced and consumed, while Barley is more preferred for brewing beer as it consists of strong enzymes capable of breaking grain sugar into maltose necessary in beer fermentation.

The Global Beer Manufacturing industry buys barley, malt, sugar, yeast and other ingredients which are processed into various beer products, including draught, bitter, heavy, light and cold filtered lager, as well as ale and stout. The beer, ale and stout is packaged in kegs (barrels) for sale to pubs, bars and hotels and also packaged in cans and bottles for sale to wholesale and retail alcoholic beverage distributors.

Even today, it ranks as the third most popular beverage in the world, only next to water and tea. To add spice on this trend, the beer industry is on the rise especially in the developed countries mostly due to high level of economic growth, technological advancement and improved quality beer products. Moreover, the beer market did not grow in the developed countries alone; globalization of markets and a better economic index that was and is recorded in developing countries, for instance, in Asia and Latin America are contributing to the growth of the beer market. Now almost every corners of

the world is getting this beverage which is brewed in almost 200 styles with more than 20,000 brands (Global Beer Industry Guide, 2009).

Production of beer worldwide has been increasing at the annual growth rate of 2.3% since 2005 (Access Capital, 2009). But this rise in production is expected to be contributed by favorable demand in Asia and Eastern Europe due to quick economic recovery, expanding population, rising disposable income, improvement in beer quality, efficient distribution systems and rising popularity of beer at the expense of traditional beverages.

In Ethiopia, beer has traditionally been produced in home-brewed forms as there was excess supply of sorghum both at the rural and urban parts of Dega and Woinadega of central, south eastern and south western Ethiopia. Though many years has passed since the realization of industrial beer production, the beer market showed only modest growth until recently, where it exhibited an upsurge in demand with increased urbanization, population growth and rising national income.

At present, there are five major breweries in Ethiopia that produce bottled beer and drought beer, namely Meta Abo, Harar, Bedele, Dashen and BGI Ethiopia. The first three were state owned before Heineken group acquired both Harar and Bedele brewery two months ago at the total cost of 2.7 Billion Birr. Dashen Brewery is owned by TIRET of Amhara regional state while BGI is owned by private investors with French roots. Almost all companies relied on inputs from Assela Malt Factory, which is now unable to meet the whole market demand and due to this Dashen Brewery is forced to set up its own malt factory in Gondar town in two years time.

1.2. Problem Statement

As it is agreed everywhere, all competition authorities design laws to protect and enhance competition in the markets. But putting the competition law into effect does not necessarily ensure firms will behave in such a manner that their conducts are consistent with the law. Competition authorities should always be on alert to prevent the anti-competitive practices of firms and/or the creation of market structures which are conducive to anti-competitive practices. Literature suggests a relationship between competition and efficiency and between market structure and performance. These relationships have generated competing hypotheses. On one hand, the traditional collusion hypothesis, also called the structure-conduct-performance hypothesis (Bain, 1951), proposes that market concentration lowers the cost of collusion between firms and results in higher than normal profits. On the other hand, the efficient structure hypothesis (Demsetz, 1973) postulates an alternative explanation for the existence of positive correlation between concentration and profitability, affirming that the most efficient firms obtain greater profitability and market share and, consequently, the market becomes more concentrated.

In this case, the positive observed relationship between concentration and profits is spurious and simply proxies for the relationship between superior efficiency, market share, and concentration.

Therefore, this study is particularly relevant for Ethiopia's brewery factories given the high degree of concentration in its brewery factories. It is important to determine the level of competition and how this is linked to concentration, and whether the structure of the brewery factories does affect profitability. For instance, if the current trends in market

structure and performance reflect collusive or other forms of non-competitive behavior of Ethiopia's brewery factories, the policy that has permitted the Heineken group to acquire both Harar and Bedele brewery factories and BGI acquires share of the newly established Raya brewery factory is likely to lead to a reduction in market competition, raise costs and may lead to welfare losses due to unfair competition.

Broadly, the knowledge about brewery factories behavior, pricing, efficiency and competitiveness in Ethiopia is limited. This study attempts to analyze the market structure and the nature of competition in the Ethiopia's brewery industries.

1.3. Objectives of the Assessment

The main purpose of the research is to identify the market structure of the Ethiopian beer industries and the prevalence of anti-competitive practices which could hamper competition and if any to suggest possible remedies for the problem.

Thus, the specific objectives of this research paper are:

- ✓ To identify the market structure of the beer industry and its possible impact on competition of brewery industries
- ✓ To examine the competitiveness of Ethiopia's beer industries and hence dominance
- ✓ To assess anti-competitive and unfair trade practices in the market
- ✓ To draw a possible conclusion & recommendation for interested parties about the beer market

1.4. Significance of the study

Recently, most countries are developing & enacting competition laws hoping to safeguard the healthy functioning of the market and promote economic development. Creating organized, functional and fair competition regime in the market not only triggers the economic growth of the country but also protects and enhances the social welfare of the population. So, assessing the competitiveness of beer market will help to provides would be potential entrants a guarantee that their investment decision is based on facts and will yield positive results. In addition to indicating the nature of competition in the Ethiopia's beer industry, the research project will contribute some valuable inputs for managers and board of directors, academicians, industries in the field and for the competition authorities, etc, to have additional inputs in the existing stock of marketing knowledge.

1.5. Research Design, Approach and Methodology

A/ Theoretical background

For many years was the rate of return – the measure of how much is earned per dollar of investment - was considered as the most appropriate measure of performance. However many studies have shown that accounting measures like the rate of return may fail to measure the economic profits or costs accurately, especially when long-lived capital assets are present. To avoid the problems with calculating rates of return, many economists use a different measure of performance, the Lerner index or price-cost

margin, $(p-MC)/p$, which are the difference between price, p , and marginal cost, MC , as a fraction of price.

Unfortunately, because the price-cost margin is rarely available, many researchers use the Herfindahl-Hirschman Index (HHI).

Concentration as a Measure of Market Structure:

In general concentration refers to the size distribution of firms that sell a particular product or collection of products (Curry, George, 1983). It is usually regarded as significant dimension of market structure because it plays an important part in determining of market power and hence business behaviour and performance.

There are a number of indexes attempting to explain concentration as a measure of market power. Hall and Tideman (1967) suggested the several properties of the desirable measure of concentration:

1. The index should be one-dimensional.
2. Concentration should be independent of the size of the industry.
3. Concentration increases when the share of any firm increases at the expense of the smaller firm.
4. If all firms are divided by some K the concentration index should be reduced by a proportion of $1/K$.
5. Concentration is the decreasing function of the number of firms.

The other set of properties was designed by Hannah and Kay (1977):

1. An increase in cumulative share of the i^{th} firm for all I , ranking firms 1, 2... i ... N in the descending order of size, implies an increase in concentration.
2. The principle of transfers should hold (#3 in Hall and Tideman's classification).
3. The entry of new firms below some arbitrary significant size should reduce concentration.
4. Mergers should increase concentration.
5. Random brand switching by consumers should reduce concentration.
6. If the s_i is the share of a new firm, then as s_i becomes progressively smaller so should its effect on a concentration index.
7. Random factors in the growth of firms should increase concentration.

Although mentioned axioms are rather convincing, the concentration indexes constructed by researchers do not always fit all the properties.

Indexes:

The oldest and the most commonly used index is the K -firm concentration ratio, defined as the cumulative share of the K^{th} firm:

$$\text{CRC} = \sum_{i=1}^k s_i$$

Where s^i is the share of the i^{th} firm:

It is very simple to calculate; however the choice of K is arbitrary. Miller (1967) introduced the concept of marginal concentration ratio – the combined market shares of fifth to eighth largest firms.

The most popular index is the so-called Herfindahl-Hirschman Index (HHI), defined as the sum of the squared values of firms' shares. This index satisfies all of the above-mentioned axioms, and, unlike the concentration ratio, depends on the share of firms. The squaring of shares means that smaller firms contribute less to the value of the index. The theoretical support for HHI as an index of market concentration is provided by Cowling and Waterson (1976). In their model they have shown that HHI is directly related to price cost margins. In this research paper Herfindahl-Hirschman Index (HHI) will be employed.

This research will be a descriptive research that covers the analysis of five brewery industries using the industrial organization approach of market analysis

This approach asserts that market performance is determined by the structure of an industry and conducts of firms, and it was adopted to understand the characteristics of the firms under study. The research used both secondary data only.

C. Secondary Data: Different literatures and documents in the beer factories, data from privatization and public supervising agency, Central Statistical Agency, Trade Practice and Consumer Protection Authority, Ministry of Trade and company reports was used to build the basis of this project.

1.6, Data Analysis & Interpretation

The data collected from different sources were tabulated. In addition to percentiles and averages methods, indirect quantitative measure of market power; market share, concentration index (CR) and Herfindahl-Hirschman Index (HHI) were used to support the qualitative argument.

1.7. Scope and Limitation of the Study

Although analyzing every firm-specific factor that might the market structure and nature of competition of firm is equally important for all type of organizations, this research is conducted mainly with a focus on firms in Ethiopia's Brewery factories.

Every research study faces a certain limitations till its end. While conducting this research study, a number of limitations were occurred. The first challenge occurred in this study were getting all necessary data. Therefore, such a limitation may adversely affect the findings of the study.

1.8. Organization of the Assessment

The research paper will be organized in to five chapters. The first chapter deals with introduction and background of the beer industry and market worldwide and nationwide. The second chapter will deal the literature review. The third chapter will deal with the methodology. The fourth chapter deals with the discussion part. Conclusions and Recommendation parts of the study are dealt at the fifth part of this project.

CHAPTER TWO - LITERATURE REVIEW

2.1. Introduction

This chapter deals with the concept of Brewery industry, their market structure and provides investigations on market structure or factors which affect their nature of competition i.e. anti-competitive practices that hinder their way of competition. The review of related literature is divided in to three sections; the first section deals with the concept of identifying the relevant market of the particular product. The second section presents previous investigations on the market structure of the beer industry. The third section presents previous investigation on the nature of competition and assessing any anti- competitive practices conducted by different researchers.

2.2. Market Definition

Market definition is an important aspect of many cases that authorities are asked to consider. This is true because it is not possible, for example, to say that a market has few firms if we don't know what that market is. Economists generally agree that a market has both a product and a geographic dimension. To illustrate, one can ask if the relevant product market is draft beer, beer, alcoholic beverages, or drinks and if the geographic market is local, regional, national, or worldwide. The way in which one chooses to define a market will determine the number of firms in that market, with broader definitions leading to more firms. One normally presumes that, unless proven otherwise, firms that operate in markets with few rivals have more market power than firms in markets with many competitors.

A product market is usually determined by the ease of substitution among products (e.g., brands of beer), with those that are in the same market being close substitutes and those that are outside being very imperfectly substitutable with those that are inside. Of course, this is rarely a cut-and-dry issue. For this reason, any choice will almost surely be disputed by some. In particular, the firms in the industry usually argue for a broad definition, whereas competition authorities often argue for a narrower choice.

A geographic market is also determined by the ease of substitution among products that are inside and outside the market, and some of the same considerations apply. However, with geography substitution is spatial (i.e., within and across geographic regions). Furthermore, whereas product - market substitution often depends on product characteristics (e.g., alcohol content and product type -lager, ale, and so forth), geographic -market substitution often depends on transport costs relative to value. For this reason, for example, the geographic market for spirits is apt to be larger than that for 'real' or cask -conditioned ale.

Once one has chosen a market, which often pertains to the manufacturing stage (e.g., brewing), that choice also determines the suppliers, wholesalers, and retailers that are in the market. With respect to brewing, a convention that is often adopted is that the product market is beer and the geographic market is national. However, the choice is not clear cut, and some would argue, for example, that on and off license trade constitute separate markets, and that, within on-license, draft and packaged products are separate. Furthermore, others might argue that, due to differences in tastes across regions within a country, beer markets are not national but are regional or local. Finally, it is also possible that brewing is a national market, since products can easily be shipped throughout the

country, whereas retailing is local, since consumers don't travel far to purchase a six pack of beer or to find a pub.

2.2.1. Concentration as a Measure of Market Structure:-

In general concentration refers to the size distribution of firms that sell a particular product or collection of products (Curry, George, 1983). It is usually regarded as significant dimension of market structure because it plays an important part in determining of market power and hence business behavior and performance.

There are a number of indexes attempting to explain concentration as a measure of market power. Hall and Tideman (1967) suggested the several properties of the desirable measure of concentration:

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The level of concentration varies among different industries. Many studies have been done in order to determine what defines concentration. Economic theory hypothesizes that inter-industry variations in concentration can be explained by a combination of explanatory variables such as scale economies, barriers to entry and the size of the market. Pashigian (1968) argues that there is a unique optimum number of firms which in turn determines concentration.

Almost all researchers agree that scale is one of the most powerful determinants of concentration. A number of studies, Weiss (1963), Strickland and Weiss (1976) and Hart and Clarke (1980) follow the suggestion of Florence (1933) that a reasonable estimate of the minimum efficient size of plant (MES) is given by the mid point of the first moment distribution of plant sizes, often referred to as the Florence median: The Florence median

is a hypothetical plant of a size such that half of an industry's output or employment comes from larger plants and half from the smaller ones.

Comanor and Wilson (1967), however, use as a measure of MES, the average size of plants producing more than Florence median. They argue that this measure is more closely related to engineering estimates of MES, which are the most appropriate, but the less accessible.

2.2.2. Relation between Market Concentration and Performance:-

Industrial economists for many years have been studying the relationship between performance and concentration indexes using the cross-industry samples. The main outcome of those studies can be expressed in one sentence:

With few exceptions, market concentration and industry performance are positively correlated (Clarke, Davies, Waterson, 1984).

This interrelation can be shown as follows.

Lets consider the oligopolistic marked consisting of n identical firms that produce a homogenous product. Each firm i choose its output, q_i to maximize its profits:

$$\Pi = p(Q)q_i - m q_i$$

Where m is the constant marginal (and average variable) cost for each firm, and p, the price, is a function of total industry output, $Q = n q_i$.

The firms play Cournot, so each firm's first-order condition - which is obtained by setting the derivative of profits with respect to q_i equal to zero - is that marginal revenue equals marginal cost:

$$MR = p + q_i p' = m = MC$$

Where p' is the derivative of price with respect to Q . This equation can be expressed in terms of the Lerner Index:

$$L = \frac{p - m}{p} = \frac{pQq_i}{pQ} = -\frac{si}{\epsilon} = -\frac{1}{n\epsilon},$$

Where $si = q_i/Q = 1/n$ is the output share of Firm i and $\frac{1}{\epsilon} = \frac{(pQ)}{p}$ is the reciprocal of the elasticity of demand. Because all firms are identical, the last equation holds for every firm in the industry. As Cowli and Waterson show, the industry average of firms' price-cost margins using share weights is

$$\sum i s_i \frac{p - m}{p} = -\frac{\sum s_i^2}{\epsilon} = \frac{HHI}{\epsilon}$$

Where HHI is the Herfindahl- Hirschman Index, That is, the HHI divided by the absolute value of the market demand elasticity equals the weighted average of the firms' price-cost margin (Carlton, Perloff, 1998).

2.3. Establishing Dominance

Once the relevant market has been defined, it can still be quite difficult to establish whether a firm is dominant. High market share is generally considered a necessity, but not a sufficient condition to establish market power. Besides, as debate exists on what metric best reflects potential market power, even the measurement of market share is subject to controversy. For example, market share can be measured by current sales, historic sales or even capacity. Current sales may not provide a meaningful reflection of market share or influence, where a product's sales are very low or fluctuate significantly over time (Cuts Centre for Competition, Investment and Economic Regulation, 2006).

Similarly, measuring market share by capacity can be complicated by factors such as capacity that is subject to long term contracts, capacity of vertically integrated competitors or capacity currently being utilized for sales outside of the market. Some jurisdictions have established *de facto* or *de jure* benchmark market shares above or below which market power is presumed to exist or not exist. Yet, it is not clear that there is an economic justification for pre-determining the existence of market power at any given market share. Alternatively, administrative efficiency concerns sometimes justify market share 'safe harbors' below which market power is deemed not to exist (Cuts Centre for Competition, Investment and Economic Regulation, 2006).

According to economic theory, important factors that must be considered in establishing market dominance other than market share include:

- Number and market shares of competitors;
- Nature of the relevant product;

- Countervailing power of other market participants;
- Market characteristics such as regulatory environment, rate of technical change, existence of potential or poised competitors; and, perhaps most importantly,
- Barriers to entry and expansion.

In markets with low barriers to entry and expansion, any attempt by a firm (even an apparent monopolist) to exercise market power will theoretically be disciplined by the entry of potential competitors, or expansion of existing competitors in response to the increased price levels. This entry or expansion presumptively draws sufficient customers from the firm attempting to exercise market power to make the price increase unprofitable. Frequently observed barriers to entry and expansion include the nature of the product, market characteristics such as access to distribution networks, regulatory, and statutory barriers, sunk costs, and strategic behavior of incumbent firms.

2.3.1. Dominancy of the sector in deferent countries

2.3.1.1. Kenya beer market

As Karen, E and Rohit, S (2010) state that the Kenya's, beer market is essentially a monopoly, with one player holding over 90% market share, and with some small, high end players and imported premium beers accounting for the rest of the market.

2.3.1.2. Zambia beer market

As Karen, E and Rohit, S (2010) Zambia, beer market is effectively a monopoly, as one firm holds around 85-90% market share of the clear beer market. One other firm operates in the market, importing beer, but does not produce it domestically.

Although there are no legal barriers to import, high import taxes do limit the amount of competition faced. However, market players believe that smuggled cheap clear beer as result of tax evasion reduces their ability to compete (Karen, E and Rohit, S, 2010).

2.3.1.3. Ghana beer market

As Karen, E and Rohit, S (2010), the Ghana beer market is a duopoly of two firms, the largest with an estimated market share of around 60%. There appears to be fairly strong competition between the two companies in the domestic market in terms of advertising and competition for market share, which may explain why beer prices are considerably lower in Ghana than in Kenya and Zambia, which both have markets which are in effect monopolized by one firm.

2.3.1.4. Vietnam beer market

As Karen, E and Rohit, S (2010), in Vietnam, there are seven major formal beer producers. The top three players account for over 60% of market share. Two of these three were once fully state-owned firms which have now been partially privatized.

Vietnam appears to be the most highly contested and competitive of the beer markets being studied. There has been both new entry (through high profile international players forming joint ventures with domestic companies) and expansion in capacity by existing players in recent years, and both domestic demand and exports (largely to East Asian and South East Asian nations) have grown considerably (Karen, E and Rohit, S, 2010).

No beer company in Vietnam has a dominant position, although the top 3 have a combined market share of 60% which is reasonably close to the threshold specified by Vietnam's Competition Law of 65% for the top 3 firms. Whether these firms would be in a position to exercise their potential dominance in the market is unclear (Karen, E and Rohit, S, 2010).

2.4. Abuse of Dominance

Being dominant is not, by itself, anti-competitive and may simply result from a firm being the most efficient competitor in a market. Care, therefore, must be taken to avoid punishing firms merely for possessing high market shares or even dominant market positions. Instead, competition regimes should more properly focus on the conduct of dominant firms, which is abusive of the competitive process (*e.g.* conduct which improperly maintains a firm's market power), or illegal.

Conduct may be identified as abusive through specifically enumerated lists of deemed abusive conduct or may be determined to be abusive based on an analysis of its effects. For example, conduct, which is predatory, exclusionary or disciplinary, may be found to be abusive due to its interference with the competitive process. Such conduct may include refusals to deal, raising rivals' costs, vertical restraints and predatory pricing. CIEM (forthcoming), for example, mentioned an example of such conduct in Vietnam. In 1998, the local producers of Coca-Cola and Pepsi in Vietnam controlled approximately 70-80 percent of the relevant beverage market. These producers drove all competing producers out of business with substantial price reductions. Once all competitors had been eliminated, prices were increased substantially – in one case to over 150 percent.

It is also important to consider the goals and objectives of the competition law in question, when determining what conduct should be defined as abusive. For example, if an objective of the law is efficiency, then welfare-reducing actions might be considered abusive. If an objective is promoting fair trade, then taking advantage of a better bargaining position may be considered abusive. (Van Sichen, 1996, p.9)

2.5. Anti- competitive and unfair trade practices

As Kenya's Monopolies and Prices Commission (MPC) and UNCTAD/UNDP (2005) found evidence of a number of anti-competitive practices taking place in the beer market in Kenya, including:

- territorial allocation (where each distributor operates only within a specific area precluding direct competition);
- exclusive dealership (preventing dealers from contracting with any other beer producers); and
- Price fixing (whereby the wholesale price of beer which distributors must charge is fixed by the producer).

There is also evidence that the incumbent beer monopolist provided coolers to bars, as long as they are only used for their own products. In fact, some sources suggest that bar owners faced automatic withdrawal of the facility if they were found to put rival products in the coolers.

As ZCC, in September 2005, the beer producer asked for authorization to implement a recommended retail price for the distribution of its clear beer. ZCC considered that this behavior was likely to lessen competition in the clear beer market.

The beer producer notified their exclusive distributorship and cooler usage arrangement with the Commission. ZCC determined that the company was a monopoly, controlling 95% of the clear beer market in Zambia, and that the object of the exclusive arrangements was anti-competitive by foreclosing market access of competing products.

Chapter Three: Research Methodology

3.1. Introduction

This study examines the previous findings in the literature, though not in Ethiopia and applies the results in current practical settings of the beer industry in the country. Therefore, this chapter provides the detail steps and procedures used to conduct the analysis of the market structure and nature of competition of the Ethiopia's beer industry. It includes the approach adopted to examine the market structure and nature of competition, the type of data used and the techniques employed to collect the data, the methods utilized to manage and analyze the data, and the process of constructing both quantitative and qualitative model with identification the market structure and nature of competition

3.2. Research Method

The methodology of carrying out this research is based on the objectives of the paper and the availability of relevant information. To comply with the objective of this research, the paper is primarily based on both quantitative and qualitative research, which constructed to identify and measure the market structure and nature of competition in Ethiopia's brewery industries.

3.3. Data and Data Sources

To comply with the research objectives, the researcher focused on secondary data, which are obtained from annual reports of individual companies and ministry of industry. The principal secondary data sources for this paper are individual companies' annual sales,

Ministry of Trade, Trade Practice and Consumers Protection Agency and Central Statistical Agency, which can provide comprehensive database for all insurance companies.

3.4. Data Analysis

Data analysis section of this study is based on quantitative figures like Percentage, Tables, and qualitative theories.

3.5. Measuring Concentration

The “least competitive” industry structure is monopoly: there is only one firm in an industry. The “most competitive” industry structure is perfect competition: lots and lots of very small firms, each with a very small share of the market.

But in most countries most industries lie somewhere between these two extremes: more competitive than monopoly but less competitive than perfect competition. It would be useful to have some measure of how competitive an industry is. "More concentrated" means less competitive. So a monopoly is the most concentrated kind of industry, and a perfectly competitive industry is the least concentrated. There are direct and indirect measures of how competitive an industry is, and these are called “concentration indices”.

3.5.2. Direct measure

3.5.2.1. Lerner index

From the different measure of performance that many economists use, is the Lerner index or price-cost margin, $(p-MC)/p$, which is the difference between prices, p , and marginal cost, MC , as a fraction of price.

Unfortunately, because the margin cost is rarely available, especially in developing countries like Ethiopia the following indirect measures of concentration were used in this paper.

3.6. Indirect measures of concentration

3.6.1. Number of companies in the relevant market

This is the one simple | but not very good | measure of how concentrated an industry is would be simply to count the number of firms in an industry. A monopoly has only one firm, a “duopoly” has 2 firms; a perfectly competitive industry may have thousands of firms.

3.6.2. Market share

.A slightly better idea of measuring concentration is to look at the share of the market which the largest firms have.

But determining the market concentration using only market share have the following problems:-

- The researcher may look at one company under investigation but not the whole market share.
- It ignores the power of competitors
- It may ignore the power of buyer.
- It ignores market entry barriers.
- It doesn't tell the development of market power over time.

So just looking at the market share to determine market power is too narrow and risky, and study should aim the following further methods.

3.6.3. Concentration ratio

The sum of the market shares of the top four firms in the defined industry. Letting S_i denote sales for the i th biggest firm and ST denote total industry sales

$$C4 = \frac{s1 + s2 + s3 + s4}{ST}$$

3.6.4. Herfindahl-Herschman (HHI) Index

The most commonly used measure of concentration is an index called the Herfindahl-Hirschman index (sometimes just referred to as the "Herfindahl index"). This index is calculated by (1) taking the percentage of sales of each firm; (2) squaring this percentage, and then (3) adding up these squares over all firms.

This is:
$$HHI = \sum_{i=1}^n S_i^2$$

Where s_i is market share of firm i .

The most concentrated industry is a monopoly. In a monopoly, 1 firm has 100 percent of sales, so that the HHI is $(100) (100) = 10000$. The highest possible HHI, indicating the most concentrated industry possible, is 10,000 which arise under monopoly.

- If $HHI < 1000$ the market is deemed not concentrated.
- If $HHI < 1800$ the market is said to be moderately concentrated.
- If $HHI > 1800$ the market is said to be highly concentrated.

The researcher used the above qualitative indirect methods of measuring concentration and other qualitative approaches to investigate the market structure and nature of competition of Ethiopia's brewery industry.

CHAPTER FOUR - EMPIRICAL RESULTS AND DISCUSSIONS

4.1. Beer Industry

4.1.2. Defining The Relevant Market

The prior task in conducting market assessment on particular product is to define the relevant market of that particular product. The argument behind this is that only market shares, Concentration Ratio (CR) and Herfindal-Herschman Index (HHI) was calculated from correctly defined relevant market provide, reliable information about the extent of firm's market power. In most cases, relevant market is defined with respect to both its product and geographic dimension.

With regard to the product market, the relevant market refers only to the products which directly compete with the products in the investigation. (Massimo Motta) has put the issue of relevant market as follows

“The relevant market should not be a set of products, which resembles each other on the basis of some characteristics, but rather the set of products and geographical areas that exercise some competitive constraint on each other.”

The rationale for determining the relevant product is that firms face various types of constraints: demand substitutability, supply substitutability and potential competition if they are going to raise price of their products.

A useful conceptual framework for the identification of substitute products and alternative suppliers located in other geographic areas which constitute immediate

constraints on the involved firm's conduct is to look at the possible reaction of customers following small increase in the prices of the involved firm's products. The relevant market will be considered to include all substitute products and all alternative areas to which consumers could turn to following the price increase. Based on this the key instrument used to identify the relevant market is hypothetical monopolist test (SSNIP – Small but significant non-transitory increase in prices).

In this research paper, the core idea of the SSNIP test is the following question which says that by assuming the existence of hypothetical monopolist (BGI Ethiopia) in the beer industry,

“Would it find profitable to increase the price above the current level in a non-transitory way by a small but significant amount?”

The answer to this question is that, BGI Ethiopia would not be profitable following the price increase. Because there are competitors and competing brands in the market where consumer could switch following the price raise. But after accounting for other substitutable products (existing brands & imported beer), low supply substitutability, high entry barriers and price parallelism ensure profitability. Therefore, the relevant market for beer industry includes all existing domestic brands (alcoholic – excludes Harar Sofi) and imported beer.

This means that beer industry does not face significant competitive constraints from other substitute products like wine, vodka, liquors, cordials and traditional drinks due to the fact that past consumption trend did not show that consumers could switch to traditional or imported alcoholic beverages following the price raise. Rather, following an almost

astonishing 50% rise in the price of beer compared to its five year average level, the demand for beer is still rising even registering a gap in demand. Moreover, first of all beer market is blossomed at the expense of traditional drinks and cannot be substituted either.

To support that beer market is a relevant market for beer products with empirical evidence, own-price elasticity value is calculated for the two major breweries (Dashen and BGI).

On June, 2004, BGI and Dashen brewery combined sales volume was 752,364HL with an average price of 2.10 Birr and on June, 2009 combined sales volume was 2,250,000 HL with an average price of 4.55Birr. From this own-price elasticity of demand is calculated as follows

$$\epsilon_d = \frac{\Delta Q * P}{\Delta P * Q} = \frac{1,497,636 * 4.25}{2.3 * 2,250,000} = \underline{\underline{0.296}}$$

This shows that the elasticity is moderate and for 5% increase of price, it shows that 1.48% of reduction in quantity demanded but this can be argued that beer industries often charge the highest profitable price level and further increase in the price will not be profitable because the current market situation might be one of dominance i.e. the current prices charged may be close to monopoly price and definition of relevant market should not be widened to an inappropriate level – the so called cellophane fallacy. The current

price level is close to monopoly price and further increase will only erodes revenue and profit and we should not be tricked to widen the relevant market further.

Moreover considering

Supply Substitutability – because almost all breweries are operating currently at full capacity and if there would be excess demand due to the rise in price, all of them could not supply the market as it would require huge fixed investment – unlikely in the current context. There is low supply substitutability and hypothetical monopolist would be profitable with a price rise.

Entry Barriers – the existence of high fixed cost, sunk costs, brand loyalty, economies of scale and scope, first mover advantage and switching costs associated with refrigerator for wholesalers and distributors make it hard for new entrants to break in the market and hence monopolist would be profitable following the price rise.

Price Correlation – looking at the development of price overtime, all beer brands show similar trends and hence are in the same relevant market.

Table 4.1: Price of Bottled and Drought Beer (2009/10)

No	Name of Brewery	Price of Bottled Beer	Price of Drought Beer
1	BGI Ethiopia	4.54	285
2	Dashen	4.56	280
3	Meta Abo	4.43	285
4	Harar	4.54	270
5	Bedelle	4.58	200

Similarly, when the SSNIP test on hypothetical beer monopolist is done on the national market and the result showed that beer being profitable due to the existence of preferential treatment for local production, brand loyalty from many customers and a lot of shipments all over the country show that beer market constitutes similar geographic markets.

4.2. Beer Market Behavior

Though many years have passed since beer is produced industrially, there is almost stagnation in the entry of new firms in the industry. Currently there are five fully operational breweries and additional four are on way to join the club (Ministry of Industry). Their products i.e. bottled beer and drought beer is less differentiated based on the native ingredients available. There is non-price competition on the industry because of the product can easily substitute each other. The entry condition in beer industry is

relatively difficult in Ethiopia due to lack of finance and raw material. Moreover, high sunk cost, limited power supply and high initial investment barred investors from setting up plants. Based on the above facts, the beer industry can be generally categorized under oligopolistic competition, since breweries can independently set price.

4.3. Determining Dominancy in Beer Market

In free-market economic order, competition and its pressures most often generate incentives for firms to operate in the most efficient manner. They are forced to minimize costs and to offer their goods and services at the lowest possible prices and best quality levels in order to maintain/increase their share of the market. In addition, competition can be expected to contribute to advance technological innovation and to promote the introduction of new products and services to the benefit of industrial users and final consumers. However, due to many reasons the platforms of competition are obstructed and create inefficiency on the economic system due to conducts and creation of market structures by firms.

Assessing the competition level in one relevant market requires determining the market power of the significant actors. Why the need to determine market power to assess dominance? This is due to the recognition that market power implies acting unilaterally without the fear of competitive constraints and if one acts like this, the actor should have some dominance over the market.

Since dominance is defined as a particular type of market power, its definition requires

- The measurement of market power and

- The establishment of a level or threshold of market power on or above which a firm can be considered as dominant, in the Ethiopian competition law – in 2010 Trade and Consumer Protection proclamation there is no limit in threshold and let say council of ministers adopts South African law of

“A firm is dominant in a market if it has at least 45% of that market; it has at least 35%, but less than 45%, of that market, unless it can show that it does not have market power; or it has less than 35% of that market, but has market power”.

Due to the limited availability of cost function to calculate marginal cost, the researcher used the traditional indirect ways of measuring market power like market share, concentration ratio (CH), Herfindahl- Hirschman Index (HHI) and number of companies in the relevant market. But, since market share does not fully describe the market power, additional; qualitative factors such as market position of competitors, market entry conditions, buyer power and others are used to analyze dominance.

4.3.1. Market Share

It is possible to look at the market share of the firm under investigation and determine whether it has market power or not. But it has many drawbacks and additional instruments were used.

Table 4.2 Annual Sales Volume and Market share of Breweries (2009/10)

No	Brewery Name	Annual Sales (HL)	Market Share (CH)
1	BGI Ethiopia	1,500,000	41.67%
2	Dashen	750,000	20.28%
3	Meta Abo	600,000	16.67%
4	Harar	450,000	12.5%
5	Bedelle	300,000	8.32%
6	Imported	148	0.01%
Total		3,600,148	100.00%

N.B. 1HL = 100L

Source: Access Capital

From the above table we can see that BGI Ethiopia has the highest market share of 41.67% followed by Dashen and Meta Abo which have a market share of 20.28% and 16.67% respectively.

The market power of breweries can be determined based on the assumption that the council of ministers adopted South Africa regulation, which puts 45% as quantitative threshold and for market shares below 45% and above 35% need qualitative factors. To conclude the market dominancy of the Ethiopian beer market the following further investigation is required.

4.3.2. Market Concentration Analysis

Table 4.3: HERFINDAHL-HIRSCHMAN (HHI) INDEX BASED ON 2009/10 SALES:

No	Brewery Name	Market Share	HHI
1	BGI Ethiopia	41.67%	1736.389
2	Dashen	20.28%	411.2784
3	Meta Abo	16.67%	277.8889
4	Harar	12.5%	156.25
5	Bedelle	8.32%	69.2224
6	Imported	0.01%	0.0001
Total			2651.029

Source: Ministry of Trade

Four- Firm Concentration Ratio (CR₄) = 41.67% + 20.28% + 16.67% +12.5% = 91.12%

From the summation of the four firm concentration ratio we can see that 91.12% of the market is covered by four firms, even if the local beer producers are five and around 10 active importers according to Ethiopian Customs Authority. So, from these 15 firms 11 have a market share of only 8.88% and the HHI index for the beer industry is 2651.029. From this the researcher got that the Ethiopian Beer Sector is highly concentrated. Because According to (UNCTAD) “the market is highly concentrated if the Herfindahl – Hirschman Index (HHI) is above 1800”.

To conclude the above the researcher tried to assess the following supportive qualitative factors as follows:

- **Existence of Powerful Competitors** – obviously the market power of the firm depends on the market power of competitors. Both the number and size of competitors play a role in this regard and CR and HHI measures are helpful to analyze these situations.

CR₄ = 91.12% and HHI = 2,651.029, both measures of competitiveness of rivals shows the existence of dominance in the Ethiopian beer market and there are less powerful competitors in the beer market

- **Barriers to entry** – there is shortage of raw material and lack of viable and modernized financial market to support the beer industry in Ethiopia (ministry of Industry). For instance, any attempt by the incumbent to raise price above the competitive level can be expected to attract expansion of capacity by existing competitors and entry by new undertakings but due to lack of finance and willingness from the government to exit the business make it unlikely that plant

expansion would occur and new competitors will enter the market and constrain the activities of the incumbent within short period time as beer industry requires longer period to set (Ministry of Trade). Looking at the recent history of the beer industry and concluding that there was no new entrant for the last six years, it is possible to presume there are high barriers to entry. Moreover the high profit levels that existing firm are reaping can be a sign of high entry barriers. Though beer market has been the fastest growing market in Ethiopia; frequent entry has not been observed which clearly indicated the existence of barriers to entry.

- **Buyer power** – intuitively speaking no one in Ethiopia would cry for an increase in the price of beer. There is no strong association of consumer in basic consumer goods let alone beer, viewed as luxury in Ethiopia.
- **Vertical Integration** – in our case it can be inferred that the alleged dominant firm (BGI) is vertically integrated with wholesalers and many bar and restaurants all over the country through providing its brand refrigerator and machine so that entry by new firms may be made more difficult due to existence of switching costs from the distributors' point of view. Currently BGI control a strong distribution network not accessible to rivals which can be replicated only through major investment costs.

Combining the above both the quantitative indicators of market power with qualitative factors, the researcher concludes there is dominance in the beer market potentially by BGI Ethiopia.

4.4. Abuse of Dominance

After the holding of a dominant position by BGI Ethiopia is appraised by defining the relevant market where it operates, evaluation of its impact on market functioning is needed. In this section, abuse of dominance practices if any by dominant firm is examined. The dominate firm is said to be abused its dominancy, if it uses the following prohibited things by the Ethiopian- 2010 trade practice and consumers protection proclamation.

- **Excessive pricing** - dominant firms may be able to charge “excessively high” prices after beating competitors but in this case BGI charges comparable or even lower prices than its competitors and can be concluded there is no excessive pricing.
- **Price Discrimination** – BGI did not practice price discrimination as wholesale and retail price are equal at its distribution center.
- **Predatory Pricing** – similar price of all brands shows that there is no predatory pricing exercised by the dominant firm.
- **Refusal to Deal and Denial of Access to essential facility** – there is no way that BGI will prevent conducting business with its rival former customers because it increased its share by doing business with Metas’ previous customer.
- **Tie-ins** – there is no indication that BGI forced buyers to purchase unrelated products together as it had related products.

Though BGI Ethiopia is a dominant player in Ethiopian beer market, it is acting lawfully and there is no indication that it abused its dominant position in the market.

4.5. Anti-competitive Practices

In this section the behavior of the dominant firm is explored in terms of its conduct in the market. The purpose is to protect competition. Usually two kinds of anti-competitive practices are found: Vertical restraints and horizontal agreement (cartel). The existence of horizontal agreement between the alleged dominant player and one its competitor is analyzed by taking in to account different tools.

- **Price fixing** – where the dominant player colludes with its competitors to set higher prices, but there is no indication that BGI set prices in cooperation with others rather it set its own price independently like when there was a price increase of malt by 35%.
- **Market Allocation** – firms collude to divide up geographic or product market, but in this case there is of course regional dominance by each breweries but did not come through agreements rather due to proximity to market, brand loyalty, preferences, lower cost, etc... hence no indication that breweries are operating in such a way that enable them to consider each geographic area as their domain.
- **Quantity fixing** – as current production level is not satisfying the ever increasing demand there is no way that these firms will collude to reduce output hence raise retail price.

- **Merger** – BGI acquisition of 25% share in Raya Brewery could be argued as strategic investment to deter the entrance of Heineken Group, but Heineken itself entered the market by acquiring both Harar and Bedelle – implying a merged company itself.
- **Information-sharing** – there is some suspicion that all competitors might engage in sharing information about input prices, market conditions and even prices.

Therefore, there is no indication in the Ethiopian beer market that the alleged dominant firm i.e. BGI has practiced horizontal agreements with its competitors to raise prices and earn higher profit.

4.5.1. BGI Ethiopia Acquisition of Shares in Raya Brewery (Merger)

BGI Ethiopia acquisition of 25% shares from one of its potential competitors raises concern for any anti-trust authorities. This strategic investment might be proved to be a deterrent against new entrants and requires thorough review. In this case, since BGI Ethiopia would have an influential role in determining economic variables, both breweries sales volume is counted as one and market share is calculated accordingly. Moreover, following the annexation of both Bedelle and Harar breweries by Heineken and agreement with Kangaroo Plast to work together, both breweries potential sales volume is counted together. In addition, the expected annual sales of potential competitor Habesha is also included.

Table 4.4: Annual Sales Volume and Market share of Breweries (future)

No	Brewery Name	Annual Sales (HL)	Market Share
1	BGI Ethiopia*	2,000,000	50.00%
2	Raya Brewery**	600,000	
3	Dashen	750,000	14.42%
4	Heineken Group	750,000	18.27%
5	Kangaroo Plast	200,000	
6	Meta Abo	600,000	11.54%
7	Habesha Brewery	300,000	5.77%
8	Imported	520	0.01%
Total		5,200,520	100.00%

*- Built new plant in Hawassa in June, 2010

** - when completed

Source: Industry Expert

It is possible to look at the market share of the firm under investigation after the merger and determine whether it has market power or not. From the above table, the market power of breweries can be determined assuming that the council of ministers adopted South Africa merger control regulation which puts 45% as quantitative threshold and for

market shares below 45% and above 35% need qualitative factors. Therefore, in this case without looking on other qualitative factors, we can say that BGI Ethiopia would be automatic dominant player and the competition authority should not approve the acquisition as unlike before acquisition, the dominant firm would engage in anti-competitive practices.

The existence of vertical restraints agreement between the alleged dominant player and downstream firms is analyzed by taking in to account different tools.

- **Resale Price Maintenance** – implies that dominant firm restricts downstream firms freedom of pricing but no indication because the price of beer varies between 6Br to 50Br in retailing shops indicating that the dominant firm did not influence the wholesalers, distributors, etc... pricing strategy.
- **Exclusivity Clauses** – in this case there is some evidence big distributors only store one brand of beer implying that they may enter in to agreement with the dominant firm not to supply other brands.
- **Quantity-restraints** – no way that the dominant firm limits the quantity of beer anyone would like to buy.
- **Tie-ins** – no

Though it is believed that the dominant firm force distributors not to supply competitors' brand, it is not that much harmful as competitors also could lure new distributors to supply their products.

4.6. Unfair Trade Practices

These are practices which do not require any degree of market power and usually do not aim at reducing competition but at damaging specific competitors or at increasing own profits. One example of such practices is:

Provision of misleading information about own or competitors product – there is allegation the dominant firm is engaged in disseminating rumors coordinated to attack the quality of competitors' product, giving bonuses to servicemen, in big bar only to serve St. George beer.

There is evidence and argument which shows that the dominant firm is engaged in unfair trade practices to increase the profits but not necessarily to deter competition.

Chapter Five: Conclusion and Recommendation

Competition in the economy creates a positive prospect for economic growth and development. However, many developing countries are not in a position to develop efficient competition law due to complex nature of market, limited capacity and lack of experience.

But as we have seen in the previous section, though Ethiopia has only recently developed anti-trust law, the prevalence of anti-competitive conducts is widespread. The market structure of the Ethiopia's beer industries is duopoly type, and there is a dominant firm in the beer market i.e. BGI, though it had not been engaged in practices through abusing its dominant position. The alleged dominant firm does not either engaged in anti-competitive agreements except exclusive dealing & full-line forcing. There are unfair trade practices which should be corrected. Therefore, the government should design laws so as to encourage firms to enter the market by working hard to avoid entry barriers.

The alleged dominant firm tries to strength its dominant position in the beer market through acquisition of shares from one of its direct rivals. But as we can see from the above description, this not only ensures dominance but also brings anti-competitive conducts. Therefore, the authority should be on alert to prevent such acquisition and should be validated.

But if emphasis should be given consumer welfare, the ever-increasing demand will continue to put pressure on the price of beer to rise and will need government intervention to avoid entry barriers to make the beer industry more competitive.

So to avoid such interference making the market competitive is essential and choice-less solution to increase the consumer welfare.

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