THE PERFORMANCE OF COFFEE MARKETING IN ETHIOPIA: THE CASE OF ILLUBABOR AND JIMMA ZONES.

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By

Solomon Tesfay

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The Performance of Coffee Marketing in Ethiopia: The Case of Illubabor and Jimma Zones

By
Solomon Tesfay
Faculty of Business and Economics

Approval by Board of Examiners:

Dr. Wolday Amha — Advisor — Signature

Dr. Getachew Diriba — Examiner — Signature

Dr. Mulat Demeke — Examiner — Signature

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ABSTRACT

During the era of Derg, there had been state monopoly in the coffee trade. The state coffee marketing parastatal (Ethiopian Coffee Marketing Corporation) was operating based on fixed price arrangements. Once the state parastatal is in place entry to the coffee trade was difficult. The system has also reduced competition among traders. The long term effect of such a move was suppression of producer incentive and production. Hence it was apparent to the transitional government of Ethiopia to liberalize the coffee market at all levels.

The main objectives of this study are: i) to describe the coffee marketing system in Illubabor and Jimma zones, ii) to assess the structure of coffee marketing in the study area, iii) to measure the efficiency of the coffee marketing system, and iv) to assess the effect of the reform on performance of coffee marketing and to provide basic information which assist policy analysis. The analysis was carried out by using S-C-P approach.

The results show that the liberalization policy adopted has achieved certain improvements in the structure and efficency of the coffee trade. The reform have lifted the licensing barrier and reduced tax levied on coffee trade and license issuance fees. It has also abounded the restrictions imposed on licensing. The reform have also resulted in the free movement of prices. The bivariate correlation analyses shows that prices in the selected markets are highly integrated with the central market. The Timer's indices and the cointegration test also show the same result.

There are, however, a lot of shortcomings in the structure and inefficiencies in the coffee marketing. There are high market concentration, lack of capital and credit, and restrictions on areas of operation. In some markets there is also poor market information flow among traders. In view of the efficiency, there appears to be significant seasonality and inter-temporal price inefficiency.

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CHAPTER ONE

INTRDUCTION

1.1. Statement of the Problem.

For most least developed countries, 1970s and 1980s have been a period of almost continuous recession, high rates of inflation, overvalued exchange rates, and unsustainable deficits in the balance of payments and budget (Scarborough and Kydd, 1992). The structural adjustment programmes have been adapted by most of these countries in response to the crises and domestic market liberalization has been one of the most important and widely implemented element of the structural adjustment policies (Scarborough and Kydd, 1992). To this effect the domestic coffee marketing system in Ethiopia has been also liberalized since 1992.

Coffee historically dominated Ethiopia's export trade and remained the country's major determinant of economic activities[1] (see appendix 2). Because of its significant role in the country's economy the government attempts to improve the efficiency of coffee marketing system. This study attempts to investigate the impact of the reform on efficiency of coffee marketing.

Before the coffee market liberalization, there were various factors which hindered the efficient performance of coffee marketing. The Provisional Military Administrative council (PMAC) systematically reduced the role of the private coffee traders and the coffee marketing parastatal took over

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[1] Jammo Shifferaw, An Overview of Macroeconomic Development in Ethiopia, 1941-1974(forthcoming), Addis Ababa, Ethiopia.

80% of the internal coffee market (Akalu, 1993). The Ethiopian Coffee Marketing Corporation,ECMC (which is now disentangled in to two enterprises: the Coffee Purchases and Sales Enterprise, CPSE, and Ethiopian Coffee Export Enterprise, ECSE) had been operating based on fixed price arrangements. Once the state purchasing agency was in place, entry to the coffee business was made difficult. Although the system managed to extract surplus from coffee sub-sector, the long term effect was the suppression of producer incentive, production and the creation of parallel/illegal market which diverted coffee from the official marketing channel. The system also reduced the level of competition among traders in the domestic market. Hence it became apparent to the Transitional Government of Ethiopia (TGE) to liberalize the coffee market at all levels.

Following the 1992 reform, exchange has been conducted on the basis of free market pricing. The coffee marketing parastatal, CPSE, is supposed to compete with private coffee traders.

The main objectives of the reform are :

1. To decrease the role of coffee marketing parastatal
2. Increasing the efficiency of the coffee marketing through private sector participation.

Given these objectives, the questions to be addressed are:

a) What effect does liberalizing the coffee market have on the efficiency of domestic market?

b) Have producers benefited from the reform? i.e. are higher prices transmitted to the farmers?

c) Is there monopoly in the coffee trade?

d) Are the markets integrated spatially?

e) What does temporal price movements in the coffee market look like?

It is apparent that private traders play an important role in assembling coffee from the producing areas. These traders, however, have been facing a number of problems in coffee marketing. The questions that arise here are:

a) Is there any barrier to entry in the coffee trade?

b) What are the problems encountered in coffee storage and transport?

c) How strong is the market transparency?

1.2. Objectives

The main objective of the study is to analyze the performance of coffee marketing in Ethiopia with particular emphasis on Illubabor and Jimma Zones.

The specific objectives of the study are:

i. To describe the coffee marketing system in the region. Special attention will be given to intermediaries involved in coffee marketing.

ii. To assess the structure of the coffee marketing system in the study area.

iii. To measure the efficiency of the coffee marketing system.

v. To assess the effect of the reform (1992) on the performance of the coffee marketing system.

iv. To provide basic information on the marketing system which assist policy analysis.

1.3. Hypothesis to be tested

The hypotheses to be tested are directly related to the objectives of the study. The following hypotheses are to be tested.

i. There are substantial barriers to entry in the coffee trade. Capital, Legal restraints and other constraints limit entry into the coffee trade.

ii. There is monopoly in the coffee trade. As a result, coffee trade is controlled by few traders.

iii. There is low degree of market transparency.

iv. There is high seasonal price variability in the coffee trade.

v. The coffee markets are not integrated. That is the prices of coffee in different areas do not exhibit similar patterns of price behaviour due to market imperfections.

1.4. Scope and Limitations of the study.

This study is limited in both space and time. All coffee markets in the country were not covered given resource and time constraint.

A sample of coffee markets in coffee producing areas, which are assumed to be representatives of the whole coffee markets, had been selected from two zones (Illubabor and Jimma Zones). In some part of the analysis a major coffee market outside the two zones (that is, Addis Ababa) had been considered.

A primary data set includes the information on most of the structure of the market collected from 50 respondents using a questionnaire. The main problem faced in collecting information on the market structure was that some of the traders were very suspicious of the objective of the study. For instance it was difficult to obtain information on the amount of traders' capital. This problem was anticipated before starting the data collection and in order to get reliable information and to avoid suspicion , staff members of the agricultural development assisted in explanining traders about the purpose of the study (purely for academic purposes).

The secondary data set includes the information on monthly coffee prices. These coffee prices had been collected for limited period of time (1990-1995). The data were mainly collected from the Zonal Offices Agriculture Development, Central Statistical Authority (CSA), CPSE, and MCTD. Some of the information on coffee structure had also been collected from secondary sources, including the Zonal Offices of Ministry of Finance and Agriculture Development.

1.5. Organization of the Study.

This introductory part has discussed the importance of coffee in Ethiopian economy. It has also reviewed the problems facing the marketing intermediaries and the limitations of the study. The objective of the study have also been set out as: the description of the coffee marketing system, the assessment of coffee market structure and efficiency; and examining the impact of the reform on the performance of coffee market. This section has also highlighted the hypotheses that will assist in the assessment of the competitive nature and efficiency aspects of the coffee marketing system.

The rest of the study has been divided in to six chapters. Chapter two reviews the coffee marketing policies that have taken place over the years in Ethiopia. Chapter three discusses the analytical framework that is used in most Agricultural Marketing research and the framework that has been adopted in this study. Chapter four discusses the methods used in analyzing data and data collection. Chapter five describes several studies on Agricultural Marketing that have been carried in several countries. Chapter six presents the results of the study on market structure and performance. It analyses the competitive nature of the marketing intermediaries by looking at the coffee market concentration, conditions of entry and market transparency. The effect of market structure on efficiency of the marketing system is assessed using the resource allocative criteria which include Temporal and Spatial Pricing Efficiencies. Lastly, chapter seven summarizes the major findings of the study and gives possible policy recommendations for the improvement of the coffee marketing system.

CHAPTER TWO

COFFEE MARKETING POLICY IN ETHIOPIA

This short review covers the marketing system under the Imperial Government; coffee marketing system under the Military Government (1974-1991) and the process of transition of coffee marketing to market oriented system under the Post Military Government.

2.1. Coffee Marketing System under the Imperial Government

The National Coffee Board of Ethiopia (NCB), established in 1957, but subsequently reorganized[2] was a regulatory body of internal marketing, quality control and export but never involved in direct marketing.

The coffee sub-sector was left to the private sector but with strict purchasing, processing, cleaning, grading, inspections, movements and export regulations.

Under the National Coffee Board Regulations (Legal notice No.218 of 1959), licences from A to E[3] were issued for specific coffee trading activities. There were also licences to supply domestic markets which include wholesalers, roasters, and retailers. Later regulations classified coffee trading licenses into nine types categorized in three groups: a) licensed to

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[2]Imperial Government of Ethiopia; Proclamation No.178, A Proclamation to Provide for the Establishment of the National Coffee Board, Negarit Gazeta No 1, 21st year, september 25th, 1961, Addis Ababa, Ethiopia.

[3]License A=Export License, B=Purchasing in the Internal Market, C=Drying Stations License, D=Pulping Stations, E=Cleaning and Grading Coffee

export b) Coffee Board Regulations[4] which is sub-grouped into four operations c) Licensed to wholesale, retail and roast coffee for domestic consumption.

The performance of coffee marketing system in the Imperial period can be assessed in terms of coffee arrival to the central market (averagely 89,000 tons/year)[5]/ (see appendix 3).

Despite the above positive achievements, though the coffee marketing structure was market oriented in nature, it operated imperfectly(Akalu, 1993). Coffee traders at the market centres had monopolistic power and colluded to set prices for coffee. These coffee traders had a good link with coffee wholesalers and coffee exporters in terminal market and in fact, most of them were their agents (Akalu, 1993). Within the chains of the coffee marketing structure there were no mechanisms to protect the interest of smallholder in all coffee producing areas. Hence farmers were not paid fair prices for their coffee produces; and this dis-incentive affected both coffee production and quality (MCTD Studies,1987). This was further aggravated by the government policy towards peasantry in credit and extension vis-a-vis commercial farms and land tenure and tenancy. The land issue finally lead to the 1974 Ethiopian Revolution.

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[4]Ministry of Commerce, Industry and Tourism, Imperial Government of Ethiopia; Legal Notice No.441 of 1973, Coffee Board Regulations, Negarit Gazeta No.30, August 31st,1973.

[5]Coffee and Tea Development Authority, the Ethiopian Coffee Marketing Corporation (ECMC) are the sources of these data.

2.2. Coffee Marketing System under the Military Government

Under this regime the National Coffee Board (NCB), in addition to its regulatory duties, was made to directly engage in the coffee marketing and was empowered to process, possess, store, transport, purchase, sell and export coffee (proclamation No.57 of 1975). During its short period of operation (1975 - 1978) the NCB intervened through regulatory responsibilities and that of direct involvement in the coffee marketing system. As a result, the Coffee and Tea Development and Marketing Authority was established (which was later replaced by Ministry of Coffee and Tea Development,MCTD) to under take regulatory responsibilities[6]. At the same time Ethiopian Coffee Marketing Corporation (ECMC) was established with the responsibilities to purchase, store, process, possess, transport, sell and export coffee; and develop Ethiopia's coffee marketing[7]. The objective of the military government was to take over all coffee marketing though it allowed the private sector in a more restricted way. To this effect a proclamation (proclamation No.263 of 1984) classified coffee licences into seven groups as follows[8].

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[6]The Provisional Military Council; Proclamation No.134 of 1978. A Proclamation to Provide for the Establishment of Coffee and Tea Development and Marketing Authority; Negarit Gazeta No.4, January 11, 1978, Addis Ababa, Ethioipia.

[7]Ministry of Agriculture and Settlement, Legal Notice No.59 of 1978, Regulations to Provide for the Establishment of the Ethiopian Coffee Marketing Corporation. Negarit Gazeta No.5,January 11, 1978, Addis Ababa, Ethiopia.

[8]The Provisional Military Administrative Council, Proclamation No.263/1984: A Proclamation to Provide for the Regulation of Coffee Trade, Negarit Gazeta No.14; June 27,1984, Addis Ababa, Ethiopia.

a) Coffee Collector (sebsaby): Licensed to buy coffee from producers at the price fixed and at the area specified by MCTD; and sell his coffee based on auction at the terminal market.

b) Wholesaler/supplier (akraby): Licensed to buy coffee from coffee collector (sebsaby) at the fixed price and within a specified area by the MCTD;and sell his coffee to either private exporters or ECMC based on auction.

c) Coffee exporter: Licensed to buy coffee from wholesaler/supplier at auction hall at a price fixed by MCTD; process and export coffee. They are not allowed to purchase coffee in the domestic market and wholly depend on wholesaler/supplier delivery.

d) Coffee wholesaler: Licensed to buy coffee from either ECMC or EDDC at price fixed by the MCTD and deliver it to retailers assigned to him in the domestic markets.

e) Coffee retailer: Licensed to buy coffee only from a wholesaler or government organizations assigned to him; sell to domestic consumers according to the MCTD directives.

f) Coffee roaster: Licensed to buy coffee from the government organizations assigned to him; and pack the coffee he roasted.

g) Coffee cleaner: Licensed to clean, grade and issue certificate.

The private coffee traders were forced to pay higher license fees and issuance fees in order to prevent them entry into the market. For instance, the license renewal and issuance fee for wholesaler/supplier (akraby) were 1,500 birr and 10,000 birr, respectively (License issuance and renewal fees and the capital requirements are given on appendix 4). The number of private exporters, collectors/sebsabies and wholesalers/akrabies on average were 14, 195 and 1480,respectively (Akalu,1993).

ECMC was a parastatal organization that played a leading role in coffee marketing. It had monopolistic power in the coffee trade through: (i) 55 internal purchasing stations as well as receiving coffee from collectors/sebsabies and wholesalers/akrabies. (ii) Dominating the distribution in the domestic market. The ECMC was well organized with sufficient manpower, capital, transport and other facilities. It had two mill and warehouses known as Keffa 1 and Keffa 2. The ECMC's monopolistic power helped the government to extract surplus from coffee farmers. The volume of coffee arrivals at the terminal market from 1974/75 to 1994/95 averaged 88,000 tons. The peak arrivals were in 1982/83 and 1988/89 with 116,500 and 115,800 tons, respectively (Akalu, 1993).

The performance of coffee marketing system in post revolution was poor. The following factors were the major constraints in the coffee market.

a) During the military rule, the Birr was overvalued and adjusting it would have increased coffee producer prices which would make production more profitable.

b) Coffee taxation (surtax, transaction tax) was high and ranged between 40-50 percent of FOB price[9]. Hence coffee farmers usually got only about 40 percent of FOB price(MCTD Studies,1987).

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[9]Ministry of Finance, Provisional Administrative Council, Legal Notice No.46 of 1976; Regulations Issued to the Customs Import and Export Proclamation, 1943; Negarit Gazeta No.6, November 18, 1976, Addis Ababa, Ethiopia.

c) Entry to the coffee trade by private traders was made difficult for the following reasons.

i) Internal coffee purchasing was taken by ECMC and all private traders were made either to reduce their activities or sell their coffee to ECMC.

ii) The license issuance and annual renewal fee were increased dramatically. For instance issuance and renewal fees for wholesalers/akrabies which was birr 100 and 30, respectively under the imperial government were increased to 10,000 and 1,500 birr, respectively under the military government.

In a nutshell the National Coffee Board was converted into state purchasing parastatal. In subsequent years it took over 80 percent of the coffee market. In short and medium terms the system managed to extract surplus coffee from the sub-sector, hence maintained the volume of coffee arrival to the terminal market. It also resulted the suppression of producer incentive which stagnated coffee production and created illegal trade (both in domestic and international). Moreover, the system prevented free competition of private traders and the ECMC eventually became inefficient in coffee marketing.

2.3. The Coffee Marketing System in Post Derg

The coffee marketing parastatal, CPSE, still operates through its 55 purchasing stations as in the past but is being pressurized under active participation of the private traders. Entry to the coffee trade has been eased and the number of private traders has increased at every level (see table 3).

The liberalization policies of the Transitional Government had created an environment for the private sector to participate in the coffee market. These include:

(i) Farmers are now free to sell their coffee in a free market system.

(ii) License issuance and renewal fees have been reduced to encourage entry to the sub-sector.

(iii) The exchange rate adjustment has increased producer prices of coffee in terms of birr and producers have increased their supply through the official channels.

In line with the reform and devaluation there is an interest of the government to protect coffee prices and improve producer prices. To this effect the TGE has established minimum producer prices for different coffee types in producing areas.

Table 1. Minimum producer prices(1992)

coffee type	minimum price
Jimma Five	4.20/kg
Wellega	6.00/kg
Sidamo	6.50/kg
Hararghie	9.20/kg

Source: Unpublished documents of Ministry of Coffee and Tea Development.

The fluctuating international coffee prices is, however, seriously affecting the effort of the government to improve the producer prices.

CHAPTER THREE

CONCEPTUAL FRAME WORK

The marketing of agricultural products can be considered as a tool of development policy and as an instrument for regulating and executing development process. The marketing system has a guiding and stimulating impact on the production and the distribution of the produce. In developing countries, marketing of agricultural products is of a fundamental importance for the development of the whole country.

Emphasis of development policy is usually placed on increasing production to serve as a base for rural development. But in the absence of well-functioning markets, agricultural production can experience severe draw-backs. If the surplus resulting from increased production can not be marketed, neither the farmer nor the country will benefit. If costly resources must be used to produce output that can not be sold, it might have a reverse effect on development. Time and experience have shown that an efficiently operating marketing system is a necessary condition to support economic development (Cloudis and Muller, 1961).

Economists have indicated two schools of thought on the relationship between marketing and development (Wolday, 1994): i) The determinist school ii) The activist school. The determinist school believes that marketing responds to the environment and plays an essentially passive role in development. The role and function of marketing depends on the size and density of the population, the size of the served area, the level of development of transport and communication, and the volume and variety of goods produced. The activist school believes that marketing influences the environment and plays an active role in development. Marketing is considered as stimulus, multiplier of economic development since marketing involves in economic integration, optimising the use of assets, increased competition, creating standards, developing entrepreneurs and managers, technological transfer, knowledge of international market, learning opportunities and rewarding innovations, efficient distribution and changing values and ideas. The activist school is divided in two groups. Those who emphasise the effect of marketing on strictly economic development (activist economic school) and those who have a broader scope that includes social and economic aspect (activist socio-economic school).

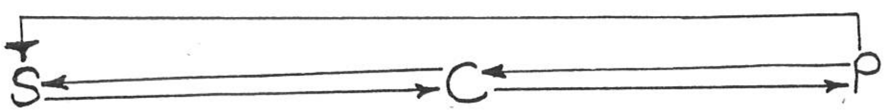
The awareness that agricultural markets have a positive impact on the economic development was already an important step by policy makers. This recognition evokes the necessity of an analytical tool that evaluates the performance and efficiency of marketing systems. The construction of such a tool, implies first a method of how to analyze marketing systems. Second, performance indicators need to be defined in order to measure the efficiency of a marketing system.

This study attempts to examine the efficiency of coffee marketing in Ethiopia employing the activist school thinking. Thus the S-C-P approach is used as a theoretical framework to analyze the coffee marketing system.

3.1. Structure-Conduct-Performance

S-C-P is one of the most common and pragmatic methods of analyzing a marketing system. It analyses the relationship between functionally similar firms and their market behaviour as a group and is mainly based on the nature of various sets of market attributes, and relations between them and performance (Scarborough and Kydd, 1992). This analytical method is based on the theory that market structure and market conduct determines the performance of a marketing system.

Fig 1. The relationship between the Structure-Conduct-Performane parameters.



-Buyer and seller concentration	-price policy	-allocative efficiency
-product differ-ntiatio	-output policy	-Technical efficiency
-Barriers to entry	-legal tactics	- equity
e.t.c.	-advertising policy	e.t.c.
	e.t.c.	

Source: Quoted in Wolday, 1994.

All the three parameters do not have unidirectional movement, but rather have an interdependent relationship as shown in the above figure. Hence market structure does not only influence market performance but also has an impact on market conduct. Furthermore, the performance also affects the development of market structure and market conduct. The latter emits a similar effect on the structure of the marketing system.

The request for the efficiency of marketing systems necessitates to define the attribute "efficient". The perfectly competitive market theory in the neo-classical model is considered as a bench mark measure of efficiency although the perfect market does not exist in real world where a range of oligopolistic markets exist between the perfectly competitive and monopolistic markets. The perfectly competitive market assumes that there is a large number of sellers and buyers. This would imply that the product handled by each seller or buyer is too small to affect the price level. It further assumes the product's quality is similar; consumers have no preference for particular sellers; market information on supply, prices, standards and quality is perfect; and all participants have equal access to market facilities. The implication is that if all the buying and selling is carried out at a particular point in space and at a single instant in time, then uniform price will prevail in the market. If the above conditions characterize a marketing system, the market will perform efficiently with no opportunity for excess profits.

3.1.1. Market Structure: Market structure should be defined as the organizational characteristics which determine the relations of the sellers in the market to each other, of the buyers in the market to each other, of the sellers to buyers, of the sellers established in the market to other actual or potential suppliers of goods including potential new participants which might enter the market (Clodius and Mueller,1961). In other words, market structure for practical purposes is defined through organizational market characteristics which seem to strategically influence the nature of competition and pricing within the market. Market structure includes:

a) The degree of buyer and seller concentration, defined by the number of buyers and sellers in the market.

b) The degree of market transparency which refers to the availability of relevant market information, its distribution among buyers and sellers, and its adequacy in terms of price sharpening-quality comparisons and of risk reduction or uncertainty about the feature.

c) The conditions of entry to the market, referring to the relative ease or difficulty with which sellers may enter the market. This is generally determined by the advantages that established sellers have over potential entrants (Cloudis and Muller, 1961).

Thus from market structure perspective, in an efficient market there should be sufficient number of firms in an industry given the size of the over all market and the firms of appropriate size needed to fully capture the economies of scale; there are no barriers to entry to the market; and firms have full market information.

<u>3.1.2. Market Conduct</u>: Market conduct refers to patterns of behaviour which firms follow in adapting or adjusting to the markets in which they buy or sell (Bain, 1968). Significant dimensions of conduct include (Clodius and Muller, 1961).

a) Methods employed by single market participants or groups of them in determining price and output.

b) Market participants' product policy

c) The sales promotion policy

d) The presence and the extent of predatory or exclusionary tactics directed against established or potential entrants.

"Acceptable conduct" includes the aspect that there are enough firms in the market to create some uncertainty in the minds of firm managers regarding whether price changes both up and down will be followed by competitors; there is no unjustified price discrimination; there is no collusion among different firms on pricing or other matters (Wolday, 1994).

3.1.3. Market Performance: Market performance is defined as the way in which markets and marketing contribute to various aspects of economic performance. Performance criteria are here divided into two categories, i.e., those respectively related to economic efficiency and other performance objectives.

Table 2. Performance Criteria

ECONOMIC EFFICIENCY OBJECTIVES	OTHER PERFORMANCE OBJECTIVES.
-Techinical efficiency -Operational efficiency -Exchange efficiency	-Innoviation -Inter-sectoral resource transfer -Equity -Employment -Food security -co-ordination efficiency

Source: Scarborough and Kydd (1992), Economic Analysis of Agricultural Markets.

Bain (1959) states the following criteria as the basic dimensions of market performance.

a) The height of price relative to the average cost of production

b) The size of sales promotion costs relative to the cost of production.

c) The product characteristics, including the level of quality, and variety of product within the market.

d) The rate of progressiveness of the participants and industry in developing both products and technology, relative to evidently rates of the attainability and relative to the cost of progress.

3.2. Efficiency of Marketing

The efficiency of marketing (Economic efficiency objectives) is mainly concerned with the cost of performing several marketing functions such as purchasing, transportation, storage, processing, exchange e.t.c. It relates to the amount of marketing cost required to effect a certain level of agricultural commodities. Marketing efficiency is usually measured in the following ways: i) Technical efficiency ii) Operational efficiency iii) Allocative (Exchange efficiency).

3.2.1.Technical efficiency: refers to the efficiency with which resources are used in marketing, in terms of physical input and output ratios. A technically efficient firm, or market, produces the maximum possible output from the inputs used, given locational and environmental constraints, and it minimizes resource inputs for any given level of output. (Scarborough and kydd, 1992)

3.2.2. Operational efficiency: It is usually defined as the provision of goods, or services, at least cost and at a level of output, or combination of inputs, which ensures that the value of marginal product equals marginal factor costs. Operational efficiency is also sometimes referred to as firm level allocative or pricing efficiency. (Scarborough and Kydd, 1992)

3.2.3. Exchange efficiency: refers to market-level allocative, pricing or economic efficiency and is both dependent on, and influential in, the above two efficiency criteria. Although debates on definition and measurement continue, the economic efficiency of the market usually refers to the combined effect of the productive (technical plus operational) efficiency with which marketing services are undertaken, and the degree to which the prices provide incentives to producers and consumers that are consistent with resource availabilities and demand (Scarborough and Kydd, 1992). In this study this marketing efficiency criteria is evaluated using i) seasonal price variation or temporal pricing efficiency. ii) spatial market integration where price movement in one market is considered to be closely related to price movements in other markets.

In summary performance mainly refers to productive and allocative efficiency. Bain (1968) explained performance as the economic results that flow from the industry and how well it performs in terms of efficiency and progressiveness given its technical environment. These results can be measured in terms of prices, profits, product or service volumes, product qualities, product innovation and technical progress among others (Hays,1978).

Hays asserted that the concept of the market is also expanded so that spatial and temporal price differences reflect transfer and storage costs, respectively. Firms would earn some profits in the short run to reward the enterprenuer's risk and management but excessive profits in the long run would act as a sign of unworkable/unacceptable competition. This workable competition theory also suggests that firms would be able to attain technical efficiency in use of capital resources.

Hays however cautions that the analysis of market performance using the structure-conduct-performance approach has several limitations. It is argued that structural analysis of competition without regard to structural interrelationships between production, exchange and distribution does not completely explain the marketing system. He also cautions that concentrating attention on behaviour of the commodity market without studying the inter-relationship between several commodity markets and between circulation of commodity and that of money, may limit the conclusions arrived at. These are essential to an understanding of the role that agricultural markets play in economic development fields like technological change in agricultural production, among others.

CHAPTER FOUR

METHODOLOGY

4.1. Sampling methods and Data collection.

4.1.1. Sampling methods

The sampling method employed for the selection of the markets is two stage purposive sampling. The list of coffee producing districts in the study area was obtained from the zonal offices of Agriculture Development (see appendix 5). Based on traders concentration, volume of marketable surplus; and constraints of time and logistics, Kersa, Goma, Kosa, Mana and Metu districts were chosen. Further five markets, which are assumed to be representatives of all markets in the study area, were selected (one market in each district). The selected market centres are Jimma, Agaro, Yebu, Limu genet and Metu. A total of 50 coffee traders (selected at random) were interviewed using a questionnaire (see appendix 1) in the five selected markets. The frame used in selecting coffee traders is the list of traders capital. The sample coffee traders in each market varied with the number of marketing intermediaries and the coffee supply to terminal market in order to reflect the relative magnitude of number of traders and coffee handled. Based on this, the number of respondents in Agaro, Jimma, Limu genet, Yebu, and Metu were 20, 10, 7, 5, and 8, respectively. Viewed against the scale of trade, out of the 50 respondents 31 were akrabies (wholesalers) and 19 were sebsabies (collectors). However, illegal traders (e.g. petty traders and farmers) were not included in the sample (due to time and resource constraint) despite their significant participation at all levels of the market. The five markets were also chosen on the knowledge that the coffee traded in all the markets have similar quality.

4.1.2. The Data Collection Process

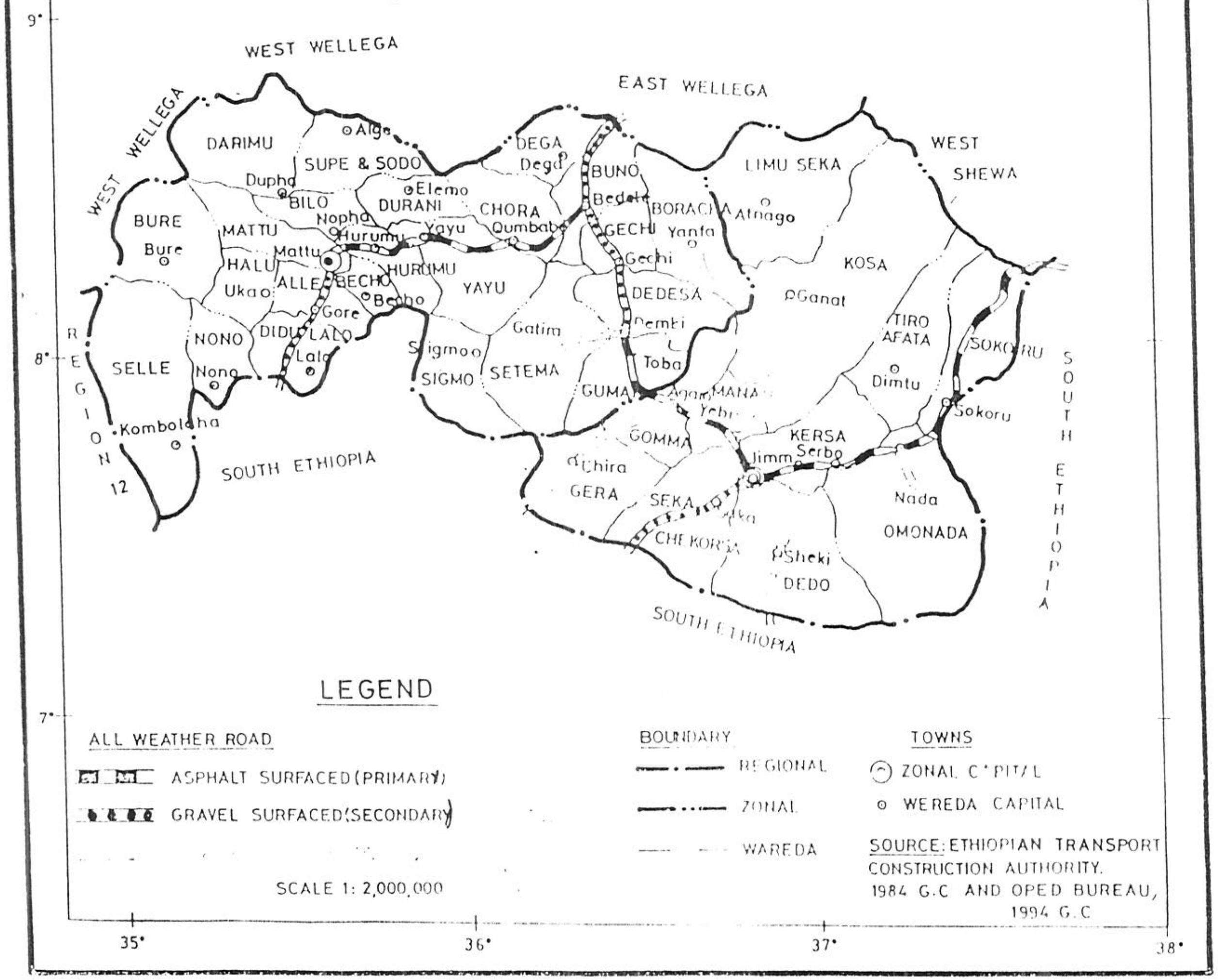
4.1.2.1. Method of collecting data on market structure: Data on market transparency and barriers to entry were obtained using the structured questionnaire. Seller's concentration was calculated based on information from secondary sources which include published and unpublished documents of the regional bureau of Agriculture Development, and local branch offices of finance.

4.1.2.2. Method of collecting price data: The price data used to assess the efficiency of marketing, particularly allocative efficiency, is obtained from secondary sources which include:published and unpublished records of the Zonal Offices of Agriculture Development, the CPSE, the Ministry of Coffee and Tea Development and Central Statistical Authority.

4.2. The Study Area: The Study area, Illubabor and Jimma zones, is located in the Western Ethiopia. It is bounded by West and East Wellega in the North. To the south it is bounded by South People Administration. In the east and west it is bounded by South People Administration and Region 12 Administration (partly West Wellega), respectively (see fig.2)

It is one of the regions in the country which receive high rainfall. Annual rainfall ranges between 1700mm to 2200mm.

Fig 2. JIMMA & ILUBABOR ZONES



Wild coffee grows in great abundance in the broad leaved forests which is found at an altitude of approximately 1500 to 1800 meters.

According to the results of the study by H.F.Murphy (cited in Tarekegn, 1985), the dominant soil in the area is reddish brown to dark reddish brown clay. Some samples of soil in the forest coffee areas showed that the soils were acidic ranging from strongly acidic (PH 4.5-5.0) to slightly acidic (PH 6.2-6). This is suitable for coffee production.

The region is selected for this study based on the following criteria.

a) It is one of the major coffee producing area in the country. The region also have a potential of surplus production.

b) It is one of the surplus producing regions for which entry of the private coffee trade was difficult due to high capital requirement set by government, license issuance and renewal fees. It is one of the coffee producing regions in the country in which the coffee marketing parastatal (ECMC), monopolised coffee purchases through its 20 purchasing stations.

c) The region is suited to investigate the performance of coffee marketing system given the presence of large urban consuming centres such as Jimma, Agaro and terminal market, Addis Ababa. It is known that the region has a substantial share of coffee arrivals at the terminal market.

4.3. Methods of Analysis

The main tools and methods employed in data analysis are descriptive statistics, correlation, regression analysis and cointegration method. The coffee marketing system is evaluated by describing the coffee marketing channels and marketing intermediaries.

4.3.1. Market Structure

In assessing market structure, three indicators of competition are used, namely: coffee market concentration, the conditions of entry in the coffee market and market transparency.

4.3.1.1. Coffee market concentration

Coffee market concentration is used to establish the level of market control. It gives an indication of the existence or absence of potential monopoly power. The method used in assessing market concentration is the percentage of the volume of coffee handled by traders: With regard to this the first largest 4 and 8 of traders are examined. If a high percentage of the coffee volume is handled by a small percentage of traders, this normally indicates that the marketing system has monopolistic tendencies and hence poor market competition.

4.3.1.2. The conditions of entry to the market

The conditions of entry are assessed by examining managerial know how, legal restraints and capital requirements.

i) Managerial know how : The enterprenural ability is measured by the traders' educational level and experience in business. The level of education and the number of years a trader has been in business is expected to increase the entrepreneurial ability of the trader due to accumulated practical knowledge. The number of years one has been in business and the level of education is examined using simple cross tabulation.

ii) Legal restraints : Legal restrictions like obtaining trading license and restrictions on areas of operation may act as a barrier in the market. If these are imposed on marketing system, they may affect traders' competitive level and hence marketing efficiency. Simple proportions of traders having problems in obtaining licenses and restriction in operating areas is assessed.

iii) Capital requirement : Lack of capital constitutes a barrier to entry in a market. Capital is required for purchasing or hiring of physical facilities and to purchase and market coffee.

Capital required by traders is assessed using mean values and its range distribution. The standard deviation gives an indication of the variability, and hence, the inequality in the amount of capital possessed by traders. Higher value of standard deviation calls for an investigation into possible factors causing variability. The coefficient of variation (given by S/Mean X 100) is also used. Closely related to capital possessed by traders is the possibility of traders who do not have their own capital to borrow from other sources, the availability of transport and storage, and lastly the case with which traders obtain these facilities. The availability of these are examined using simple proportions.

4.3.1.3. Market Transparency

Markets may not be integrated due to low degree of market transparency i.e. lack of market information flow to encourage arbitration. In this study market transparency is examined by participants awareness of their competitors' source of coffee supply and their buying price, and their competitors' market outlets and prices fetched in these markets. These are examined to determine whether market information flow affected the intensity of competition. The other important elements of market transparency are traders' knowlege of prices at terminal market and the speed and the means of obtaining market information.

4.3.2. Market Conduct.

Market conduct relates to firm's policies towards its product market and towards marrketing moves made by its rivals. The behaviour of the firms thus have the following major components(Cloudis and Muller,1961):-

i) The methods (the firms use) of determining price and volume of sales or purchases.

ii) The methods which the firms use to determine product's quality and

iii) The methods which the firms use in order to react to moves made by their rivals.

Therefore, qualitative approach is used to assess the conduct of coffee traders.

4.3.3. Market Performance

In assessing the performance of coffee marketing system the market integration and spacial price efficiency measures are used.

4.3.3.1. The Market integration: To examine market integration, correlation and regression analyses are used. Moreover, cointegration tests are conducted between pairs of regional markets and the central market in the country.

4.3.3.1.1. The correlation coefficient: The correlation coefficient "r" is usually the pearson product moment correlation coefficient[10].

The interpretation is that higher values of r imply high market integration and as such we have efficient marketing system and vice versa. However, correlation coefficients as a measure of spatial price efficiency are criticized on several grounds inclu-
ding the unreliability of secondary data and hence inference from the coefficients are questioned (Scarbourough and Kydd, 1992).

4.3.3.1.2. Linear Regression approach: Studies of market efficiency based on bivariate correlations are acknowledged as providing limited information. Due to this a number of

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If the price of coffee in one market is A; and B in another then the correlation coefficient "r" is given by

$$r=\frac{\sum AB-\frac{\sum A\sum B}{N}}{\sqrt{[\sum A^2-\frac{(\sum A)^2}{N}]\,[\sum B^2-\frac{(\sum B)^2}{N}]}}$$

methodological improvements have been developed to analyze the information contained in market price movements. For example Ravallion (1986) extended the bivariate correlation analysis in to a dynamic context.

The structure of the approach is that, there is a central market, denoted by subscript 1, the price of which is a function prices in a number of n-1 other markets as well as a vector of seasonal and policy variables (X).

1 is the central market:

$$P_1=f_1(P_2,P_2,.......P_n,X_1)\,................(1)$$

Prices in the feeder markets are functions of prices in the central market as well as policy and seasonal factors.

$$P_i=f_i(P_1,X_i),(i=2,N)\,...............(2)$$

$$X_i=(i=1,........,N)$$

The model of estimation can be provided as :

$$P_{1t}=\sum_{j=1}^{n}a_{ij}P_{1t-j}+\sum_{k=2}^{n}\sum_{j=0}^{n}b_{1j}^{k}P_{kt-j}+X_{1t}+e_{1t}\,..............(3)$$

$$P_{it}=\sum_{j=1}^{t}a_{ij}\,p_{it-j}+\sum_{j=0}^{t}b_{ij}\,p_{1t-j}+\gamma_iX_i+e_{it}\,..........(4)$$

Ravallion (1986) concentrates on equation (4), recognising that in many circumstances equation (3) is under identified. If $b_{ij} = 0$ for all values of j in equation (4) then the i^{th} market is segmented from the central market. On the other hand, if $b_{io}=1$,

then prices are immediately transmitted. Moreover, if markets are integrated in the long run then

$$\sum a_{ij}+\sum b_{ij}=1$$

While this model allows one to test various hypothesis about market efficiency, it does not provide an easy accessible summary statistic about the degree of integration between polar cases. Timmer (1987) and Heytens make modifications and developed a more profound unrestricted short run (dynamic) model of the following form:

$$(P_{it}-P_{it-1})=\alpha_0+(a_i-1)(P_{it-1}-P_{1t-1})+\beta_{io}(P_{1t}-P_{1t-1})+(a_i+\beta_{io}+\beta_{i1}-1)(P_{1t-1})$$

$$+\gamma X_i+U_i$$

The above equation can be rewriten as

$$(P_{it}-P_{it-1})=b_0+b_1(P_{it-1}-P_{1t-1})+b_2(P_{1t}-P_{1t-1})+b_3P_{1t-1}+b_4X_i+U_{it}\ldots\ldots\ldots(5)$$

where

$\alpha_0 = b_0$, $b_1 = a_i - 1$, $b_2 = \beta_{io}$, $b_3 = a_i + \beta_{io} + \beta_{i1} - 1$

With this expression, one sees that the temporal change in a peripheral market is a function of the spatial price spread in the last period, the temporal change in the central market, and the price level in the central market in the last period.

The Timmer's index of market connection (IMC) can then be calculated as:

$$IMC = \frac{(1 + b_1)}{(b_3 - b_1)}$$

IMC lies between zero and infinity and the closer is to zero, the greater the degree of market integration. Unity is used as a cut-off point.

4.3.3.1.3. The Cointegration approach

I. The Model

The method used in the analysis of cointegration among spatially differentiated markets is that developed by Engle and Granger (cited in Alexander and Wyeth, 1994). If markets are efficient then the prices in different markets must be cointegrated. To examine the price relation between two markets, consider the following basic relationship,

$$lnP_{it}=\alpha_o+\alpha_1 lnP_{jt}+e_t \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

where P_i and P_j are price series of specific commodity in two markets i and j and e is the residual term assumed to be distributed identically and independently. The test of cointegration proceeds if the variables are stationary. Often, however, economic variables are non-stationary in which case the conventional tests are biased towards rejecting the null hypothesis. Thus before proceeding to further analysis, it is important to check for stationarity of the variables.

We employed the Augmented Dicky-Fuller test (ADF) to determine the stationarity of a variable. The test is based on the T-statistic of $ß_1$ given by the following equation:

$$\Delta lnP_t = ß_o + ß_1\ lnP_{t-1} + \sum_{k=1}^{n} \delta \Delta lnP_{t-k} + \phi t \ldots\ldots\ldots\ldots\ldots (7)$$

In estimating equation(7), the null hypothesis is Ho:P_t is I(1), which is rejected (in favour of I(0)) if $ß_1$ is found negative and statistically significant.

The above test can be carried out for the first-difference of the variables. As a matter of fact Nelson and Ploser, 1982(cited in Alexander and Wyeth, 1994) indicated that most macroeconomic variables are I(1) processes, that is, the variables achieved stationarity after differencing once.

Having established that the variables are stationary after differencing once, we may then test for cointegration. Only variables that are of the same order of integration may constitute as potential cointegration relationship. The definition of cointegration used here is that of Engle and Granger and is defined as follows. Consider pair of variables P_i and P_j, each of which is integrated of order d. Their linear combination, that is,

$$e_t = lnP_{it} - \alpha lnP_{jt} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

will generally be I(d). However, if there is a constant α, such that e is I(d-b), where b>0, then P_j and P_i are said to be cointegrated of order d, b and the vector(1,-α) is called the cointegrating regression. The relation $P_i=\alpha P_j$ may be considered as long-run or equilibrium relationship and e is the deviation from the long run equilibrium. When P_i and P_j are cointegrated, the long run relationship $P_j-\alpha P_i=0$ will tend to be re-established after a stochastic shock, that is, they move together in the long run

Before proceeding to market integration P_i and P_j must be integrated of the same order. Testing wether the variables are cointegrated is merely another unit root test on the residual on equation(9). The test involved regressing the first difference of the residual series on residual lagged level and lagged dependent variable is as follows.

$$\Delta e_t = \Omega\ e_{t-1} + \sum_{k=1}^{n} ok\Delta e_{t-k} + u_t \ldots\ldots\ldots\ldots\ldots (9)$$

The test statistic is the T-statistic of Ω. The null hypothesis is H_0:P_i and p_j are not cointegrated.

The null hypothesis is rejected if estimated Ω is negative and found to be significantly different from zero.

<u>II. Test of Granger Causality</u>: There is strong connection between cointegration and causality in that at least one causal

relationship must exist in a cointegrated system (Madalla, 1992).

Causality test assumes that the information relevant to the prediction of the respective variables, in the present case $\ln P_i$ and $\ln P_j$, is contained solely in the time series data on these variables. It can be assumed that the test involves estimating the following regressions (Gujarati, 1988).

$$\Delta \ln P_{it} = \sum_{j=1}^{t} a_{ij}\Delta \ln P_{it-j} + \sum_{k=1}^{t} b_{ij}\Delta \ln P_{jt-k} + U_{1t}\ldots\ldots(10)$$

$$\Delta \ln P_{jt} = \sum_{j=1}^{t} a_{ij}\Delta \ln P_{it-j} + \sum_{k=1}^{t} b_{ij}\Delta \ln P_{jt-k}+U_{2t}\ldots\ldots\ldots(11)$$

According to Gujarati (1988) four cases of causality are distinguished.

1) Unidirectional causality from P_j to P_i is indicated if the estimated coefficients on the lagged P_i in equation (10) are statistically different from zero as a group.(i.e.the sum of a_{ij} in equation (10) not equal to zero) and the set of estimated coefficients on lagged P_j in equation (11) is not statistically different from zero, i.e.sum of b_{ij} in equation (11) as a group not equal to zero.

2) If the unidirectional causality is from P_i to P_j then the above situation will then be reversed.

3) Feedback, or bilateral causality are when the sets of P_i and P_j coefficients are significantly different from zero in both regressions.

4) Independence is suggested when the sets of P_i and P_j are not statistically significant in both the regressions.

III. An Error Correction Model i.e. The restricted short run (dynamic) model.

A regression on time has serious consequences when, in fact, the time series is not I(0) type and, hence, needs further test. The cointegration of the long run is confirmed by The Error Correction Model i.e. the restricted short run (dynamic) model. The specification of the model is the first difference of the variables together with the lag residuals obtained form the long run model. The ECM model is thus:

$$\Delta \ln P_{it} = \alpha + \beta \Delta \ln P_{jt} + e_{t-1} \ldots\ldots\ldots\ldots\ldots (13)$$

where

P_{it} = regional market retail price

P_{jt} = central market retail price

e_{t-1} = lagged residuals obtained from equation (6)

The coefficient on e_{t-1} is called the ECM term and shows the speed of adjustment. In a cointegrated system this coefficient should be negative and significant, i.e. the long run model is valid if the ECM term is negative and significant.

4.3.3.2. Temporal Pricing Efficiency: Temporal pricing efficiency is usually examined by seasonal analysis of monthly prices. This analysis seeks to sort out repetitive seasonal variations in the data series, from which behaviourial inferences and other conclusions can be drawn.

The series of monthly price observations is decomposed into four conceptual parts according to the following model (Goetz & Weber, 1986), It indicates that each of the four components on the right hand side is uniquely related to the actual observation on the left hand side.

$$Y(i) = T(i)\ L(i)\ S(i)\ R(i)$$

where

Y(i) = the time series observation in month i on the coffee price .

T(i) = the trend component in month i

C(i) = the cyclical component in month i

S(i) = the seasonal component in month i and

R(i) = a random disturbance in month i not caused by any of the 3 above factors.

4.3.3.2.1. Trend: The trend factor is calculated by performing an ordinary least square regression of the raw observations on time (dummy variable) which is increased by 1 for each consecutive time period (month). This gives the mathematical relationship.

$$Y = a + bTIME$$

Where Y= the actual observation

a= the intercept

b= slope value

TIME = the time dummy variable.

The slope value shows by how much the Y-value increases or decreases from one month to the next.

Estimation of the trend component is useful to determine the direction in which the series has been moving in the past, how it is likely to move in the future, and this also allows point estimates to be made for future values of the dependent variable.

4.3.3.2.2. Moving Averages: (M.A) The moving averages are important in removing some of the short-term fluctuations in the series, which in turn allows the analyst to focus on important long term factors such as cycles and trends.

A 12 month moving average is calculated by summing the 1^{st} through 12^{th} months and the 2^{nd} through 13^{th} months, adding these two averages and then dividing by 24.

4.3.3.2.3. Seasonal Index: The natural seasonality of supply of agricultural products induces seasonal movements in prices. It is obvious that if the seasonal fluctuations can be discerned and measured, it will be easier to predict about prices and to understand their behaviour over the year (Goetz and Weber, 1986).

Seasonal index is calculated as

$$\frac{Y}{M.A.} = \frac{TCSR}{TC} = SR$$

4.3.3.2.4. Cyclical Index: A cycle may be defined as a pattern which reappears with some regularity over time (Gotez and Weber, 1986).

A commonly used technique for calculating the cyclical index, C, is that of dividing the moving average by the trend.

$$\frac{M.A.}{TREND} = \frac{TC}{T} = C$$

To the extent that the moving average still contains random components, C also contains these disturbances and it can not be a "pure" cyclical index.

And finally the random disturbance is isolated as:

$$Random\ Component = \frac{TCSR}{TCS} = R$$

4.3.3.2.5. Grand Seasonal Index: This shows how prices behaved over the period of analysis in the different months under study. It is calculated by finding the average seasonal index for each month over the period of analysis and then adjusting those averages so that they sum to 1200. A confidence interval of GSI plus or minus two times the corrected standard error is used to establish whether or not seasonal pattern in the index series is statistically significant (Goetz and Weber, 1986). If this calculation show that the index value plus or minus two times its standard error for a single market was greater than or less than 100, the pattern would be statistically significant at 5% level.

4.3.3.2.6. Seasonal Price changes and Storage Efficiency: To evaluate storage efficiency the study bases on the theory that the rate of increase in the post harvest prices is equal to the cost of storage from one period to the next plus normal profit of traders; in competitive markets. A price rise more than the costs of storage provides the opportunity for traders to make excessive profit.

Using the method of Hays and Macoy, (cited in Wolday, 1994) the expected seasonal increase consistent with a competitive market is estimated as follows.

$$P_{es} = P_h + t(R + I + L + D)$$

where, P^e_s= expected price of stored coffee

P_h= price of coffee at harvest

R= rent per month per quintal of coffee

I= interest on capital per unit of coffee stored

L= depreciation on sacks used in storing a unit of coffee

t= time in months

CHAPTER FIVE

LITERATURE REVIEW

Maritim (1982) used the market structure,conduct and performance to assess the inter-regional commodity flow pattern in maize marketing in Kenya. Features of the maize marketing system were described using availability and costs of transport and storage. Market structure was assessed using market concentration and the observed levels of inequality were explained using conditions of entry in the market and market transparency.

Maritim (1982) found that maize marketing was relatively concentrated and this was attributed to legal restrictions on maize movement between regions, low market transparency and high capital requirement in the maize trade. This formed part of the basis for his conclusion that market imperfections in the maize marketing existed. Maritim (1982) established that price differentials among markets were more than accounted for by transport and related handling costs. This was attributed to both market structure and government, through National Cereals and Produce Board, controls imposed on the system, like price fixing and issuing of inter-regional maize movement permits.
To assess the pricing efficiency among markets, Maritim (1982) used a bivariate correlation of 8 weeks moving averages of prices in 62 markets from central,eastern, rift valley, western and Nyanza provinces in Kenya. The results showed that there was high market integration between western and eastern; and least between rift valley and western.

Jones (1972) did a study of grain marketing system in Sierra Leone and Nigeria by assessing market structure, conduct and performance. Jones(1972) looked at the organization of the marketing system, the trader's margins, seasonality of price variations and competition. In southern Nigeria seasonal price variations between rice, cassava, cow peas, maize and yams in various markets were analyzed. Seasonal price and storage costs and inter-market price correlations were also assessed. Where as in Sierra Leone, he studied the marketing systems of rice, palm oil, pea nuts and cassava. In grain marketing the main features observed were lack of market intelligence with respect to prices, seasonal price changes accompanied by lack of seasonal stocks stored by farmers or traders. Jones (1972) observed that the markets have rare collusion, easy entry and minimum cheating in Nigeria.

Hays (1975) also studied the marketing and storage of food grains in Northern Nigeria. Hays (1975) used market structure conduct and performance approach supported by other characteristics that lead to progressiveness of the marketing system to enable him assess the efficiency of the millet and sorghum markets in northern Nigeria. Hays (1975) assess structural characteristics that determine market imperfections like storage, capital and credit, managerial level of traders and market information flow. Hays (1985) also assessed pricing efficiency using marketing margins, price correlations between 15 spatially separated markets and temporal pricing efficiency. Price correlations between the 15 separated markets were obtained for both millet and sorghum. Spatial pricing was analyzed by comparing monthly retail prices in the grain supplying areas with the parity price in the consuming markets. It was found that none of the correlation coefficients between any two markets were above 0.9 and only 1% were above 0.8 for both crops. These low correlations between various markets convinced him to conclude that imperfections existed in the marketing system. Hays (1975) observed that these made effective arbitrage response to spatial price differentials difficult. Hays (1975) observed that the average price spread or price differentials between two markets less transfer costs were negative most of the times for both millet and sorghum. Positive price spreads only came from erratic nature of supply, inadequate dissemination of information on prices and supply in various markets and lack of experience and specialization in trade on the part of traders taking part in arbitrage between these markets. This lead him to conclude that it is possible to accept that the markets for millet and (sorghum) are inter-related.

With respect to temporal pricing efficiency, Hays (1975) analyzed the 1969-71 seasonal price variations in relation to costs of storing grain and found that average net rise in price per month were most of the times positive and thus traders have the opportunity of earning more than normal profits. However, since other characteristics related to storage show that storing was normally done by farmers, the traders could not have gained from these seasonal price rises and any profit could have been used to reward the risk involved in this trade. This lead him to conclude that there was no evidence to suggest that the temporal pricing was not inefficient.

Schmidt (1979) studied maize and beans marketing in Kenya with regard to interaction of the formal (controlled) and the informal subsystems. Market structure was analyzed using market concentration, market transparency, and entry conditions. It was found that the informal system was with large number of traders having low barriers to entry. There, however, was lack of market transparency. The controlled subsystem was a monopoly of Maize and Produce Board which uses fixed prices at which it sold and bought. Schmidit (1979) conclude that the informal subsystem was more competitive than the controlled subsystem. Market performance was assessed by evaluating the operational and pricing efficiencies. Costs incurred in performing the various marketing functions were used to assess the operational efficiency and found that some of the costs were unnecessary and could be reduced if the controls imposed in the marketing system were relaxed. To test whether the private market traders were exploitive, Schmidt (1979) regressed maize selling price on buying price. The results led him to conclude that traders worked with fairly constant profit margins and if any excess profits were earned, this could not resulted from the exploitive nature of traders, but due to other imperfections in the maize trade.

Thakur (1973) and Lele (1965) utilized price correlations among markets as an indictor of pricing efficiency in India. Lele's (1965) study of sorghum marketing in India found 46% of correlations to be above 0.8 with only about 10% less than 0.7. Thakur also analyzed the pricing efficiency of marketed apples in wholesale markets of New Delhi, Calcuta, Madras and Bombay;and found that correlation coefficients ranged from a low of 0.72 (between New Delhi and Bombay) to a high of 0.86 (between calcutta and Madras). These high correlations between prices in various markets led him to conclude that the markets were competitive.

The study by Ngumi (1976) on seasonality of supply patterns and pricing efficiency for slaughter cattle in Kenya also, showed that market distortions are brought about by market controls. Ngumi (1976) observed that the Kenya Meat Commission fixed meat prices without regard to seasonal fluctuations or market forces of demand and supply.

Oloya and Poleman (1972) examined whether market imperfections existed in the food marketing systems in Kampala (Uganda) by analyzing retail price movements over time for bananas sweet potatoes and fresh cassava. The prices of those commodities in Mulago and Nsambya markets were used in the regression model and the results obtained used to determine the existence of market imperfections. A coefficient of determination of less than 0.5 was taken to imply that the two markets were not well integrated. The results suggested that the variation in prices in one market did not vary directly with the prices of the same commodity in the other market. These low coefficient of determination suggest that the allocation of commodities between the two markets was less than the optimal and this convinced him to conclude that the two markets were not closely integrated. Other studies on marketing are brefiely reviewed below.

The application of the model of perfect competition in Haiti for testing the efficiency of Haitian agricultural marketing system showed that there is low profit margins among the intermediaries and no barriers of entry in the system. The result also depicted the possibilities of short-cuts in the marketing chains and high degree of price and non-price competition among intermediaries (Lundahil and Peterson, 1982).

William, O.J (1984), in his work on economic tasks for food marketing boards in Tropical Africa, summarized his findings that although private marketing systems are rarely exploitative, their economic efficiency could be much improved by marketing boards capable of overcoming the combination of natural and cultural circumstances that make inter-spatial and inter-seasonal arbitrages difficult.

Haim S. and Rafi M (1985), developed an econometric model of the market for tomatoes in Israel to take into account the distortion brought about by the marketing board and intermediaries. In their result they hypothesized the existence of monopoly power by analyzing the middleman's optimal behaviour.

Nadda C., (1984), by analyzing price spread and marketing margin for Himachal apples, concluded that the marketing system, besides the creation of utilities, serves as guidelines to the allocation of resources in production and marketing. Also, the price spread as a measure of efficiency of marketing system rests on the assumption that prices are reflectors of consumer's choice which may not always be valid. In the present marketing system, particularly for Himachal apples, most of the benefits are reaped by the effluent growers. It is suggested that an attempt should be made to strengthen the marketing system by organizing cooperative societies particularly for small growers.

The impact of cereal market liberalization in Haiti was analyzed by Dembele N.et.al., (1989). The summary of their results is that most consumers, including food deficit farmers, private grain traders have benefited from the liberalization. Efforts to tie the minimum support price for farmers failed because the state lacked the resource to guarantee the support price. Furthermore, the ability of different types of farmers and traders to respond to opportunities created by the liberalization has varied widely, depending on their access to productive resources, improved technologies, information, and credit. Economy wide constraints, such as the insecurity of contracts and liquidity constraints resulting from the failure of the government to pay salaries on time, have further limited the impact of the liberalization.

Berg E., (1989), in his study on the liberalization of rice marketing in Madagascar (1985-1988) found that there were many obstacles in the way of effective deregulation of agricultural markets: the resistance of ambiguous regulation, continuing limits of free entry, attempts at cartelization, and tenacious resistance of existing stockholders and institutions. At the same time, the experience show the ability of higher prices and freer markets to overcome much of this resistance, and to stimulate production even in the presence of so called structural constraints such as poor roads, week extension services,inadequate credit system, and input supply arrangements.

Phillips A., (1976), in his work on a critique of empirical studies of relations between market structure and profitability indicated that very little about their relationship is known from the empirical studies. He argues that market concentration may be the cause of high profits, or, conversely, market concentration and high profits may be the results of superior performance of a few firms.

Brett A., (1989), in his analysis of the choice between states and markets and the private power in developing world concluded that the viability of potentially open market sphere is itself a function of the state system within which it must operate, and that the integrity of this system can not be seen as a mere reflection on an underlying production structure.

Wolday (1994) conducted a study on food grain marketing development in Ethiopia after the march 1990 reform using the S-C-P approach (a case study in Alaba Siraro District). The main objective of the study was to examine the problems of producers and traders after the reform, and evaluate the efficiency of the food grain sub-system in the district. The study indicated that about 40% of the sample farmers had no specific time of selling their food grain, 27% sold their food grain immediately after harvest in order to pay taxes and about 26% sold during off season. The quantity of market supply was found to be the most important factor for farmers to decide on the time of their sales. According to this study poor market information flow was observed among farmers.

Wolday (1994) also found out that although the licensing procedure had improved after the 1990 reform, lack of working capital and credit, and the non-existence of land markets were the main constraints in the wholesale trade. In shashemene, for instance, 20% of the licensed food grain traders controlled 48% of wholesale trade. While in the rural markets, the wholesalers colluded, the well-off wholesalers in the towns offered higher prices in market days which the rest of traders are unable to bid.

Wolday pointed out that transport charges of small-scale trucks transporting food grain for rural roads were three times the charges for all-weather roads. A high seasonal price variability was seen particularly in the maize market. The price of food grain was 57 to 82% higher compared to the harvesting season. Although market integration was found to be weak as a whole the dynamic spatial integration models, correlation coefficients and the coefficient of variations among the markets showed mixed results.

Wolday (1994) concluded in his findings that the food grain marketing was inefficient after the reform; as there were evidences of high market concentration, barriers to entry, collusion in the rural market, high marketing margin and high seasonal variation. Nevertheless, there were positive improvements in developing new marketing institutions, such as the removal of the licensing barriers and the elimination of Agricultural Marketing Corporation trade monopoly. These measures resulted in an increase in the number of food grain traders after the march 1990 market liberalization. Wolday further concluded that the food grain marketing had been improving and functioning better by market structure standards (S-C-P) despite a number of problems.

Bekele (1995) examined the impact of the 1990 reform in Ethiopia on the functioning of grain markets using the S-C-P approach in Arsi catchment. The results showed that the reform succeeded in lifting up the licensing barrier of the private sector and free movement of prices as compared to the pre-reform periods. Despite this positive achievements, however, Bekele noted that there were significant irregularities in the structure and considerable inefficiencies of the marketing system. He found significant seasonality, inter-temporal price variation, high market concentration, capital and risk barriers to enter into the food grain trade, and lack of product differentiation. In addition, the rural-urban spatial price arbitrage was found to be weak which resulted from imperfect market information and poor road network.

Although there had not been detailed S-C-P studies some of the studies done on coffee marketing in the country are discussed below.

A study by the Ministry of Coffee and Tea Development (1987) on coffee marketing, processing, transport and storage examined the domestic coffee marketing (from producing regions to terminal market). The study identified policy issues regarding the domestic market including the need to classify the roles of the private trade, the service cooperatives and the ECMC in procurement marketing, the need to define a replacement programme for hulling capacity in the interior, including issues of management and control, the need to have appropriate pricing policy and related issues to increase the supply and quality of coffee. The coffee pricing policy of Derg was inefficient and had a dis-incentive effect on producers. The study has recommended higher producer price by raising FOB value through increased marketing effort,reduction in tax incidence on coffee,reduction in marketing costs and exchange rate devaluation. The 1987 MCTD study identified that many farmers were not provided with adequate choice of convenient outlets for their produce and service cooperatives were faced with a range of management problems. The study also surveyed the state of hulling industry in the domestic market and concluded that the majority of the hulling installation in the interior are operating below their capacity. In addition in most cases it was observed that working conditions are unacceptable by any standard, and buildings and facilities are inappropriate. Most hullers operate limited shift for a relatively short season a year.

Tarekegn (1985) identified heavy tax burden on producers of coffee in the study area and due to this the peasant farms operated at a profit margin of only birr 0.96/kg and the state plantations incur a marginal loss of birr 0.97/kg. If only the surtax was eliminated both sectors would have made a higher return. As a common practice the farm gate price (mostly by the state parastatal) was arrived at by starting from FOB price and making the relevant deductions such as duties, taxes, transport costs, processing costs, distribution margins etc. Under such pricing arrangements the peasant sector was operating at a net return of birr 0.85/kg while the state sector incurs a loss of birr 0.97/kg. Tarekegne described the average share of the Ethiopian coffee producers from the unit export value reduced to about 32% from its previous level of about 66% particularly after 1970's.

Mezmure (1989) indicated that washing stations whose break-even output levels above their produce were few in number. They were 4,1,3 and 7 in 1985, 1986, 1987 and 1988 years, respectively. The cooperatives managing these washing stations should have endeavoured to increase their volume of processed coffee at least upto the break-even volume. The other alternatives were to reduce the average variable cost or/and to up-grade the quality of coffee processed in order to get higher average price for coffee.

CHAPTER SIX

RESULTS OF THE STUDY

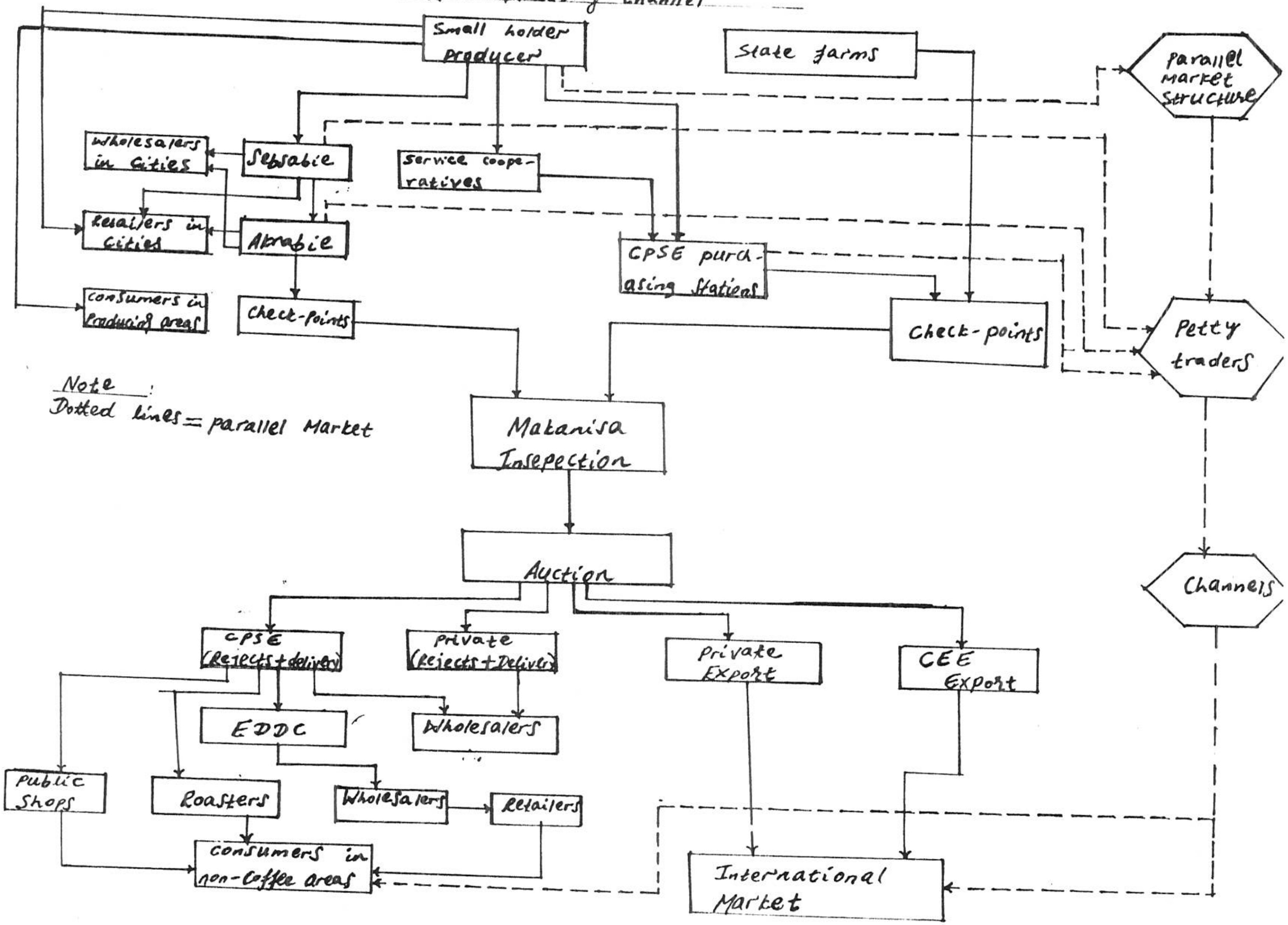
This section assesses the results of the study on coffee market structure and performance. These results are presented in the following three sections.

6.1. The Coffee Marketing Channel

The current coffee marketing system is depicted in chart 1 (see next page). The chart starts with two production units: small holder and state farms. The main coffee marketing channel is CPSE, with large share in the market. The CPSE purchasing stations buy coffee from all producers directly or indirectly through service cooperatives, sebsabies (collectors) and akrabies (suppliers). In general, however, coffee collectors are the major purchasing agents at market places where either they deliver their coffee to CPSE purchasing stations or to wholesalers (akrabies). Coffee purchased, cleaned and graded at the CPSE purchasing stations is then sent (passing through regional and Addis Ababa-Mechanisa-inspection points) to Addis Ababa CPSE stores for further cleaning and grading.

The second channel in coffee marketing is the private sector represented by collectors (sebsabies), wholesalers (akrabies)/suppliers and private exporters. Collectors sell their coffee to private wholesalers (akrabies) and the wholesalers/akrabies in turn take it to terminal market for auction sell.

Chart 1- Current Coffee Marketing Channel



The third channel of the coffee marketing is the illegal/parallel market. All legal participants of the coffee trade are even involved in the parallel market. The operations of the parallel market is either to supply the unsatified domestic demand in non-producing areas or to international market. This operation is not as strong as it used to be and there is a felling that it is declining.

In the domestic coffee marketing structure there are three marketing intermediaries. First, coffee consumers in coffee producing areas has several access to coffee. Consumers can buy coffee from producers in small quantities. The collectors and the akrabies/suplliers also supply coffee to consumers in producing areas. On the other hand, CPSE as a supplier and EDDC as a wholesaler dominate the official domestic market channels in non-coffee producing areas. Both coffee delivery and rejects from the export are channelled through ECMC to the domestic market. CPSE distribute both the delivered and its rejects to EDDC, licensed wholesalers, licensed roasters, and public shops like Urban Development Associations (UDA). The wholesalers can buy coffee either from EDDC or CPSE and then distribute to retailers, and the retailers to consumers. The third channel was the parallel market where petty traders, collectors, wholesalers and CPSE employees, etc. fully participate in this trade.

6.2. Structure

The first instrument used to assess coffee market structure is market concentration. The second part explains the conditions of entry to the coffee trade by discussing

i) Managerial knowhow

ii) Lack of capital

iii) Legal restraints

iv) policy and associated risk barriers

The third part of this section investigates information flow within the market.

6.2.1. The degree of market concentration

Analysis of the degree of concentration (for wholesalers/akrabie) was carried out for the coffee markets of Jimma, Agaro and Metu. The market concentration is measured by the percentage of coffee handled by the largest 4 and 8 traders, in 1994 and 1995.

Results showed that in most cases, coffee tended to be concentrated in a few hands. For instance in 1995 in Agaro the first 4 largest traders controlled 19 percent of coffee handled while the first 8 largest traders controlled 29 percent of the coffee.

In Metu the first 4 largest traders handled 34 percent of the volume of coffee trade while the first 8 largest traders share about 53 percent of the coffee.

In 1994, in Jimma the first 4 largest traders handled about 20 percent of the total trade and the first 8 largest traders accounted about 26 percent of the volume of coffee trade.

Table 3. Percentages of coffee handled by the first 4 and 8 largest traders.

Market	1994 (a)	1994 (b)	1995 (a)	1995(b)
Limu Ganet	53	-	44	-
Agaro	31	45	19	29
Yebu	22	-	32	-
Jimma	20	26	-	-
Metu	51	74	34	53

a=largest 4 traders. b=largest 8 traders.
Source: Zonal Agricultural Development Offices.

Hence in all the markets there is unequitable market share of traders. This implies that there could be market imperfections in the markets enabling a few big traders to monopolize coffee trade.

6.2.2. Conditions of entry in the coffee trade

6.2.2.1 Managerial know-how

Managerial know-how was examined using formal education and business experience.

i) Formal education: survey results showed that, about 35 percent had no formal education, 55 percent had primary education and only about 10 percent had junior and secondary education.

Table 4. Educational background of traders

level of education	percent
Illiterate	35
1-6 Grade	55
8-12 Grade	10

Source: Own survey.

But it was observed that formal education does not serve/function as a barrier to enter the coffee trade.

ii) Business experience

Business experience may guide a businessman in a decision making based on accumulated practical knowledge. It was found that majority of the traders interviewed had been in business for more than 5 years. Out of the sample traders 26, 37, 24, 13 percent had business experience of 1-5 years, 6-10 years, 11-20 years and more than 21 years,respectively.

Table 5. Business experience of sample traders

Business experience	Percent
1-5 years	26
6-10 years	37
11-20 years	24
More than 21 years	13

Source: Own survey.

The traders who stayed in business for more than 10 years are mostly found in Agaro and Jimma. This is the zone which seemed to have high competition. Business experience, however, did not seem to be a major element in the competition since most traders could easily know what was involved in trade within a short time.

6.2.2.2. Legal restraints.

a) Licensing

Before the reform licensing had acted as a major barrier of entry to the coffee market. During this period coffee traders were required by law to possess a trading license. As discussed in the background, under the Derg regime coffee trade license issuance and renewal fees were high and coffee trade control had been tight. For most of the respondents it was difficult to obtain license. Asked why these traders never obtained licenses, the majority of them reported it was too expensive. Apparently, the lack of license acted as a barrier to traders and they suffer from psychological fear of being arrested if found trading illegally.

Since the reform, the government had taken various measures, including reduction of renewal and license issuance fees, to encourage private sector participation in the coffee trade.

During the Military regime there had been a decline of licensing, both at wholesale/akrabie and collector/sebsabie trade. Since the reform, however, there has been a sharp rise in the number of licenses issued. For instance in Jima the number of licensed collectors/sebsabies rose from 37 in 1990 to 76 in 1995; and 53 in 1990 to 419 in 1995 in Agaro. In the same period, the number of wholesalers/akrabies had increased from 9 to 104 in Agaro. Thus, currently licensing is no more a significant barrier to enter the coffee trade in the study area.

Table 6. The trend of licensing in the study area.

Ma	2(a	2(b)	3(a)	3(b)	4(a)	4(b)	5(a)	5(b)	6(a)	6(b)	7(a)	7(b)
Li	3	37	3	36	3	36	7	53	8	76	10	76
Ji	9	8	8	5	8	7	19	22	25	31	40	56
Ye	2	50	2	51	3	53	8	85	8	137	6	135
Ag	9	53	8	51	8	60	19	134	53	210	104	419

Note Li= Limmu, JI= Jimma , Ye= Yebu, Ag= Agaro, 2= 1990, 3= 1991, 4= 1992, 5= 1993, 6= 1994, 7= 1995(E.C.), a= Akrabies, b= sebsabies.
Source: Unpublished documents of Zonal Office of Trade.

However, many traders operate illegally without a license in both rural and urban areas; and the licensed traders complain that there are no constant law enforcers to mitigate the activities of such traders.

b) Restriction on area of operation.

An inquiry into whether traders were confined to particular areas of operation was done. More than 90 percent of the respondents reported restriction on area of operation. A trader is not thus free to operate in every of the market centres in the region. It appears that restriction on area of operation constitute a barrier to entry.

Table 7. Percentage of traders having restriction on area of operation in the region.

Market centner	Problem(%)	Not a problem(%)
Jimma	90	10
Agaro	95	1
Metu	88	12
Limmu	100	_

Source: Own survey.

6.2.2.3. Lack of capital

Aspects of capital requirement considered in this section include amount of money capital and traders accessability to credit. The total amount of money required by a trader to start the business was investigated to determine whether this constituted a barrier of entry to the coffee trade. By law the initial money capital requirement for collectors/sebsabies and wholesalers/akrabies is 5,000 and 100,000, respectively. In the area surveyed, the respondents had different money capital. The mean working capital for the wholesalers/akrabies was 355,900. The capital is unevenly distributed among these (wholesale/akrabie) traders. This is confirmed by the wide range of working capital of traders where the minimum and maximum money are Birr 100,000 and birr 1,200,000, respectively. The standard deviation and the coefficient of variation are estimated to be 296749 and 0.83, respectively. Large amount of capital is a prerequisite for more larger scale operations and could thus act as a means by which traders would compete with each other by trying to handle more volume of coffee.

Lack of capital constitutes a significant hinderance of entry in the coffee trade. 30% of the sample coffee traders reported shortage of capital and credit as the main problem. About 20% of the interviewed traders reported their problem to be inadequate market supply and 12% complained about too many traders. 33% percent of the traders responded high coffee prices to be their main problem.

Table 8. Traders' main problem in the coffee trade.

Problem	Percent
Lack of Capital	30
Inadequate Supply	20
Higher Coffee Prices	33
Too Many Middle Men	12
No Response	5

Source: Own Servey.

Hence, it could be said that lack of capital constitutes a significant barrier to enter in the coffee trade. The main problem in getting institutional credit was the collateral requirement. This had been even worse before the adoption of the revised lending policy of the National Bank of Ethiopia.

Inspite of the problem with collateral, 42% of the traders reported that they receive bank credit. 27% of the sample traders indicated that the main source of credit is coffee traders. About 12% reported that they obtain credit from relatives and only 7% took credit from individual money lenders (informal money lenders). 12% of the traders had no access to credit.

Table 9. Traders main source of credit.

Source of credit	Percent
Banks	42
Relatives and friends	12
coffee traders	27
Individual money lenders	7
No credit access	12

Source:Own survey.

On the other hand, about 30% of the traders provided credit to producers. This group of traders, usually are sebsabies and collect their loan in exchange of coffee after harvest. 61% (mainly wholesalers/akrabies) extended credit to other coffee traders (usually sebsabies) (table 10). Access to such informal credit demanded no collateral. Unwritten agreements are usually sufficient for borrowing. In most of the cases those credits given to traders (usually) are free of interest, short-term and small size. These type of credits are usually extended to clients and acted as a security of obtaining coffee.

Moreover, it was observed that 85 percent of the trade to be personally owned (sole ownership) while 15 percent were in partnership.

Table 10. Credit extended by coffee traders

Extended to	Percent
Producers	30
Traders	61
None	9

Source:Own survey.

a) Transport

Roadnet work is an important element in connecting the producer to the final consumer. This section of analyses was based on the responses of the wholesalers/akrabies.

Table 11. Rural road condition and the traders response(%)

Centner	Problem	Not a problem
Agaro	75	25
Limmu	100	_
Manna	75	25
Metu	83	17

Source: Own survey.

In Metu, 83 percent of the traders complain that the rural roads are bad. The problem in Limmu was even worse, all traders reported bad rural roads as main constraint in the coffee trade while in Agaro and Yebu 75 percent of the traders reported the same problem. At times the traders are even forced to use donkeys and horses. This explains why small sized and four wheel derive vehicles are mostly used in the rural areas which charge higher freight rates. Most traders did not complain about vehicle availability. The problem lies on the high frieght rate particularly in the rural areas (due to bad road conditions).

An inquiry into whether traders used hired or their own vehicles showed that 84 percent of them used hired vehicles, 6 percent use their own vehicles and 10 percent mainly bought and sold coffee at their premises, usually to the state parastatal, CPSE.

b) Coffee storage.

Another problem of the marketing intermediaries is storage. It was observed that 68 percent of the traders reported that they had no problem in storage. This is because, most of the collectors/sebsabies sell immediately to the wholesalers and many wholesalers/suppliers used the processing plants without bothering to store it themselves. Out of the traders who have storage problem, which is about 32 percent, the stores were found to be small and poor quality. Most coffee stores are uncemented though few traders had managed to put timber on the floor to prevent direct contact of sacks with the floor. Some of the traders simply store coffee outside the store (if the store was full) and covered the sacks with plastic. On the other hand, according to the key informants, the stores of the parastatal are of improved type and are not optimally used.

6.2.2.4. Policy and associated risk barriers

Some studies on coffee production and marketing in the Derg regime (such as Akalu, 1993) revealed that there had been state monopolistic power in the coffee marketing system. This state monopoly had affected private traders in the coffee trade and forced some to enter other alternative activities. Due to the socialist marketing policy, coffee trade had not been attractive during the military regime. Asked about the impact of reform on the volume of coffee handled (individually), demand, and price, 53% percent responded increase in volume handled. This could be due to

a) The reduction of the parastatal coffee purchases

b) The devaluation of the Ethiopian currency which had lead to a higher producer prices. This could have acted as incentive to producers to deliver more coffee through official/legal channels by diverting from the illegal/parallel trade. Further the farmers might expand their plantations as a result of the price incentive.

On the other hand 26% of the traders have reported (specially collectors/sebsabies) decrease in volume of coffee handled in the post coffee market reform. According to these respondents this is due to:

a) Too many licensed traders, that have joined after the reform.

b) Too many unlicensed traders both in the urban and rural areas. According to the respondents, the second group of traders constitute the main participants of the illegal/parallel market; hence divert coffee from official channels.

About 71% of sample traders reported that prices have increased. This could be due to

a) The devaluation of the Ethiopian birr which has increased the producer price.

b) Some of the respondents reported that the abundance of intermediaries in the coffee trade had intensified competition and pushed prices up.

c) Possibly the increased cost of production (eg. fertilizer) might be the other factor for higher prices of coffee.

44% of the traders responded a rise in demand. 26% responded decrease in demand and only 15% reported demand to be the same.

As to the profit, 35% reported decrease in profit. Majority of these traders are the collectors/sebsabies as they handled low quantity of coffee due to the existence of unlicensed traders. These illegal traders do not pay taxes and hence can narrow the gross margin by the amount of the tax. This made the tax payers not to generate adequate profit after having covered the necessary costs. Besides, as mentioned above the reduced producers supply to the collectors/sebsabies would mean reduced profit as they can not enjoy higher profits from large volume of sales. On the background the current decline of world coffee prices (after 1995) contributes to the narrow or negative profit margin of the traders.

Table 12. Traders' response on the impact of the Reform.

	Increased (%)	Decreased (%)	The same (%)	No response (%)
Volume-handled	26	53	9	12
Demand	44	15	15	26
Price	71	3	3	24

Source: Own Survey.

6.2.3. The degree of market transparency

The market information held by market participants (buyers and sellers) permit them to make informed decisions in the market environment in which they operate. The existence of larger number of traders will not guarantee competition and efficiency unless the participants have proper knowledge of the market.

Important element of market transparency considered was whether the market participants were aware of the activities of their competitors, that is, knowledge of the competitors' source of supply and their buying prices fetched in the markets. 57 percent of the traders reported they were aware of their competitors' marketing activities.

Asked whether the traders are informed about the prices in the terminal market, that is, Addis Ababa, 76 percent of the traders responded that they are informed and only 15 percent responded they are not. The later group of traders are mostly the sebsabies.

Table 13. Knowledge of traders about Treminal Market(A.A.)

Response	Percent
Yes	76
No	15
No response	9

Source: Own survey.

Out of the traders who had access to information 39 percent, which are usually the suppliers/wholesalers, used the telephone. About 47 percent reported to be informed through mass media which they complained to be irregular. The remaining (18 percent) reported they had other source of information.

Table 14. Source of price information.

Source	Percent
Mass Media	43
Telephone	39
Other	18

Source:Own survey.

6.3. Market Efficiency.

6.3.1.Temporal Pricing Efficiency

The behaviour of price movement could be analyzed using two time periods. One is the period before the reform and the other after the reform. For this part of analyses Agaro producer price is utilized, a market with substantial marketable surplus and high concentration of traders.

In the first period prices were more stable (see the standard deviation on table 15). They were also lower than the post reform period. This could be explained by the then inappropriate pricing policy and state monopoly in the coffee trade. This could have forced prices to stay stably low.
After the reform coffee prices grow at a dramatic rate. This could be explained by:

1) The devaluation of the Ethiopian Birr in early 1985(E.C.)

2) The Ethiopian coffee had enjoyed a good premium in the world market in 1986 (E.C.).

3) Possibly the excessive number of traders in the producing areas (both legal and illegal) may have pushed coffee prices up.

The results of decomposing price in to seasonal, cyclical and trend components are discussed below. A 12 month moving average is employed to smooth the price series. Hence, one could focus on long-term oscillations: seasonal, cyclical and trend components. Irregularities, therefore, are not discussed.

6.3.1.1. Trends

Three OLS regressions were estimated using the observed prices as dependent and dummy value of time as explanatory. These regressions are:

a) For the whole period of analysis

b) Before the reform

c) After the reform.

The results of the chow test for the stability of regressions show that at less than 5% level of significance the pre-reform is different from the post reform. Thus, the pooled regression is ruled out.

Table 15. Results of linear trend model of producer price at Agaro

Period	Con	Time	S.D	F-Statistics	R^2	N
Before the reform	1.95 (7.3)	.045 (2.59)	0.73	F(1,24) =6.69	0.22	26
post reform	-14.83 (-8.00)	0.60 (14.4)	6.65	F(1,33) =206.8	0.86	35

Note: T-ratios are in brackets. S.D.=Standard deviation of the dependent variable. R^2=Coefficient of determination.

The standard deviations of the dependent variable and the coefficient of determination exhibit different results in the post and pre-reform periods. The trend coefficients of the pre-reform is lower than the post reform. The standard deviations and R^2 also exhibit similar behaviour(i.e. lower in the pre-reform period). The higher trend coefficient in the second regression could be explained by the higher coffee prices in this period. The higher standard deviation of the dependent variable in the post reform regression implies that prices are not stable in this period.

6.3.1.2. Seasonality

Seasonality is assessed by looking in to seasonal variability of coffee prices. This seasonal variability of prices is usually analyzed using seasonal index (SI). Seasonal index is the ratio of observed prices to moving average. The Grand Seasonal Index was then calculated by correcting for an index of 100 for each month in a year that make up 1200 in total. Together with GSI the underlying corrected standard error was estimated. To test the significance of seasonality at 5% level, a confidence interval of GSI+2CSE and GSI-2CSE was utilized. This provided a 95% of confidence of the test given the null hypothesis that GSI is different from 100. The test showed that, at 5% level of significance there is seasonality of coffee price (see table 16).

The months of lowest price are February followed by March and April. The months of highest price are September and August. Such seasonality of coffee prices arises due to seasonality in coffee supply. The biological nature of coffee production and climatic factors would entail seasonal price variation. In this regard prices are expected to be lower during and for some months after harvest. As mentioned above the months with the lowest prices are periods of harvest in which supply is heavy. Starting from August supply decreases dramatically and hence prices would rise (see table 16 and fig.3).

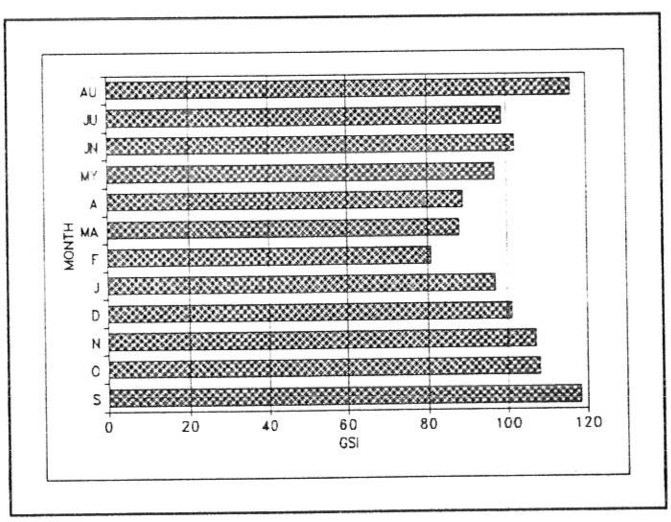
Some of the reasons for a significant price variation could be farmers' sales to earn cash, for debt payment and meeting immediate needs right after harvest. And some of the farmers fear shrinkage of coffee beans.

Table 16. Tests of seasonality in producer prices in Agaro market

Month	GSI(a)	CSE(b)	a-2b	a+2b
Sept	118.28	15.15	87.98	148.58
Oct	108.19	12.12	83.95	132.43
Nov	107.16	9.09	88.98	125.34
Dec	101.10	7.07	86.98	115.24
Jan	97.05	9.09	78.87	115.23
Feb	80.88	6.06	68.87	93
Mar	87.95	8.08	71.79	104.11
April	89	10	69	109
May	97.05	10.10	76.85	117.25
June	102.11	12.12	77.87	126.35
July	99.07	13.13	72.81	125.33
Aug	116.18	13.13	89.92	142.44

Source: CSA, CPSE and Zonal Agriculture Development Offices.

Fig 3 Grand Seasonal Index(GSI) in Agaro.



6.3.1.3. Cycles

Cycle is a pattern which reappears with regularity overtime. A commonly used technique to calculate the cyclical index is to divide the moving average by the trend i.e. Cyclical Index, CI=MA/TREND. As seen in the figure below, in the beginning prices had been kept low and after the reform prices rose which can be explained by the market liberalization, devaluation of Ethiopian Birr and later the favourable prices since 1986 (E.C.). (see fig.4

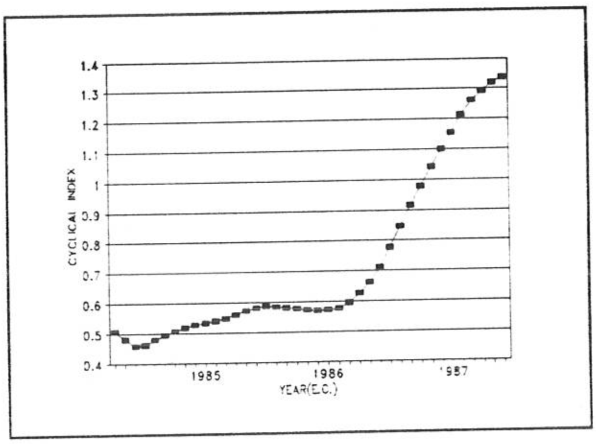


Fig 4. Cycle in producer price in Agaro.

6.3.1.4. Seasonal Price Changes and Storage Efficiency

Here an attempt is made to calculate the storage costs in order to measure temporal pricing efficiency. The technique employed is that of Hays and Macoy (cited in Wolday, 1994) and include the following cost components.

a) Dry weight losses of coffee beans

b) Storage rent

c) Depreciation of sacks

d) Interest on investment

According to an interview with the Zonal Agriculture development experts in Agaro average storage losses is about 1.5kg/qt. These losses include dry weight loss and spillage in storing. The monthly average storage rent per/qt is about birr 0.25. The 16% interest rate per annum of the official bank credit was considered. As to depreciation of sacks, most traders reported that they use sacks for three years. Hence annual depreciation of sacks is estimated to be birr **1.80** (considering the current price of a sack= birr 5.50).

Table 17. Seasonal retail price changes, storage costs and storage efficiency in Agaro Market(1987E.C.). (Storage period 5 months).

Description	Amount(birr)
Price of coffee at harvest/qt	1700
Value of annual storage losses/qt	28.90
Depreciation of a sack	1.80
Storage rent/qt(for 5 months)	1.25
Interest on capital/qt	136
Expected price of coffee(a)	1867.95
Observed price increase(b)	2150
(b) as percentage of (a)	115

The findings therefore, revealed that the seasonal price increase that arises from seasonality in coffee supply and marketing exceeds the cost of storing coffee, implying excess profit for the coffee traders involved in storing.

6.3.2. Spatial Price Integration

6.3.2.1. Results of the Bivariate Analysis:

Spatial arbitrage of the regional markets(Jimma, Agaro and Metu) with the central market (Addis Ababa) was examined by calculating a correlation coefficient.

The correlation coefficients were interpreted using the cut- off points of Gotez and Weber, 1986. That is, >60=strong connection, 20-60=medium connection and less than 20=weak conection. The results of the bivariate correlation coefficients reveal that in all the cases, the regional markets are highly integrated with the central market (Addis Ababa).

Table 18. Estimated Correlation Coefficients of Retail Prices (1983m1-1987m12(E.C.)

	Jimma	Agaro	Metu
Addis Ababa	0.92	0.94	0.90

6.3.2.2. The results of estimation of the unrestricted short run (dynamic) model i.e. equation (5)

Because of the limitation of the bivariate approach as a method of analyzing spatial price integration a more profound technique of the unrestricted short run (dynamic) model was estimated to look in to spatial market integration between three markets in the study area and the central market, Addis Ababa. The three markets in the region include Jimma, Agaro and Metu. Monthly retail price data were collected from the Zonal Agriculture development office, CPSE and CSA. The price data covered a period of 35 months. (1985m2-1987m12(E.C.)).

In this period of analysis a dummy variable was employed for the months starting from April 1986 (E.C.) where retail prices shoot up due to favourable prices in the world market. The assumption that central market price determine price formation in the peripheral markets is accepted. Therefore a total of three regressions were estimated.

The types and levels of market integration were determined by the significance of the regression coefficients and the Timmer's indices. The results of the regression are presented in table 19.

Table 19. Results of the unrestricted short run coffee market integration with market2 Addis Ababa(dependent variable=$\Delta P_{1t)}$.

Description	Market Center		
	Jimma	Agaro	Metu
Con	-0.95 (-0.8)	-0.99 (-0.87)	-0.27 (-0.26)
$P_{1t-1}-P_{2t-1}$	-0.60 (-3.85)	-0.63 (-4.45)	-0.58 (-3.26)
ΔP_{2t}	0.45 (3.5)	0.55 (4.2)	0.43 (3.17)
P_{2t-1}	-0.28 (-4.7)	-0.31 (-5.00)	-0.31 (-4.04)
D2	4.5 (4.9)	4.8 (5.34)	3.9 (4.15)
IMC	1.25	1.16	1.60
R^2	0.57	0.64	0.49
F-Statistics	$F(4,30)=10.09$	$F(4,30)=13.23$	$F(4,30)=7.29$
DW-Statistics	2.39	2.4	2.1

T-ratios of the coefficients of the variables are in brackets, IMC= Index of Market Connection

Higher order tests were used to test for violations of statistical assumptions i.e. serial correlation, functional form and heteroscedasticity. The F-Statistic of the regressions were in general significantly high.

The regression results revealed that the selected regional markets are highly integrated with the central market. This could be due to the awarnees of the traders about central market prices and the accessibility of the urban centres to transport and
communication.

These market centres have an asphalt road and digital telecommunication network with Addis Ababa. Hence, Prices in the central market are, nowadays immediately transmitted to the regional markets.

6.3.2.3. The results of the estimation of the Cointegration Model.

The cointegration technique was applied for three satellite markets in the region i.e. Jimma, Agaro, and Metu. Addia Ababa is considered as a central market similar to the unrestricted short run (dynamic) model. The period of observation spans from the first month of 1983 (E.C.) to the last month of 1987 (E.C.), yielding a total of 60 observations per series of prices. The data were collected from the same sources of the data utilised in the unrestricted short run (dynamic) model.

The results of the unit root test (ADF) for the hypothesis that coffee retail prices for Addis Ababa, Jimma, Agaro and Metu were each individually integrated of order one, against the alternative that they are integrated of order zero, are reported in table 20.

As it is presented in table 20 the price series in all the markets are not integrated of order zero and hence need differencing. The results of the first-difference of the variables show that all the price series in the markets individually appear strongly to be I(1) and clearly suggest that the price series are non-stationary in level.
In all the cases the null hypothesis $p_t \sim I(2)$ is rejected, implying that the series do not require second-differencing to achieve stationarity.

Table 20. Unit root tests of retail coffee prices.

Coffee market	Level (ADF) Test	Lag	1^{ST} Difference (ADF) Test	Lag
Addis Ababa	-0.21(-2.9137)	3	-4.21^{*}(-2.9127)	1
Jimma	-0.07(-2.9137)	3	-4.63^{*}(-2.9127)	1
Agaro	-0.29(-2.9137)	3	-4.72^{*}(-2.9127)	1
Metu	-0.19(-2.9137)	3	-5.13^{*}(-2.9127)	1

Critical values are in brackets.
*Significant at 5% level.

We conclude that retail coffee prices in all the markets are stationary after differencing once, that is, they are all I(1) processes.

Given that all coffee prices are I(1), we then preceded to test with cointegration analysis. Cointegration requires that the residuals obtained for each regressions of equation (6) to be stationary; that is integrated of order zero. In estimating equation (6) dummy variables D1 and D2 were introduced to capture the price increases due to devaluation (for the period 1985m2-1988m12(E.C.)) and rise in international coffee prices (86m8-87m12 (E.C.)), respectively.

Table 21. Results of regressions of regional market retail prices on central market retail prices(log linear estimation). 1 = Dependent variable, i.e. regional market retail price, M2 = central market retail price(independent variable), D1 and D2 = Dummy Variables

Description	Regional Market Center		
	Jimma	Agaro	Metu
Con	-1.06 (-5.14)	-1.08 (-4.71)	-1.05 (-3.51)
M2	0.88 (10.27)	0.87 (9.06)	0.80 (6.90)
D1	0.49 **(13.88)**	0.52 **(13.03)**	0.56 **(10.79)**
D2	0.67 (13.41)	0.70 (12.67)	0.59 (8.09)
R^2	0.94	0.96	0.91
Serial Correlation	F(12,44)=1.44	F(12,44)=1.038	F(12,44)=1.59
Functional Form	F(1,55)=0.31	F(1,55)=0.31	F(1,55)=2.50
Heteroscedasticity	F(1,58)=0.22	F(1,58)=0.22	F(1,58)=2.54

T-ratios of the coefficients of the variables are in brackets.

The residuals for each of the above regressions were then tested for stationarity. Table 22 summarizes the results of the tests for the three markets. In all of the cases the absolute value of ADF statistics for testing the null hypothesis that p_t and p_j are not cointegrated at 1 percent level is greater than the absolute value of the critical value. Thus the null hypothesis that prices are not cointegrated is rejected in all the cases for the sample period 1983M1-1987M12 (E.C.).

The results imply that the regional coffee prices are spatially cointegrated, that is, the markets are integrated in the long run.

Table 22. Results of Cointegration test.

Market	ADF	Lag
Jimma	-3.44(-2.9)	1
Agaro	-4.12(-2.9)	1
Metu	-3.37(-2.9)	1

Critical values are in brackets.

<u>6.3.2.3.1. The results of the test of Granger Causality</u>: The test for a causality between individual regional market retail prices (P_{it}) with the central market retail prices (P_{jt}) has been performed and the results are reported on table 23. To determine the lag period a regression of residuals, obtained from regressions of equation (10) and equation (11), on lagged residuals and lag dependent variable has been applied for different lag periods. The decision on the null hypothesis (accepting the lag period) is based on the significance of the coefficient on the lagged residual. That is, the chosen lag period is accepted if the coefficient on the lag residual is insignificant. This test had been applied and a lag period of three is accepted in all of the regressions.

In accordance with the method of causality test (Gujarati, 1988), a standard F test on null hypothesis of Granger Causality from the central market to the regional market retail prices (i.e. sum of a_{ij} is not equal to zero in equation (10)) has been tested at 10 percent level of significance. Similarly Granger Causality from regional market retail prices to the central market retail prices has been examined by testing the null hypothesis that the sum of b_{ij} in equation (11) is not equal to zero (at 10% level of significance). Examining the results presented on table 23, in Agaro market there is granger causality on both of the variables, that is, there is causation effect from the central market prices to the Agaro market prices and this regional market prices also determines price formation in the central market. On the other hand coffee retail prices of Jimma and Metu markets Granger Causes retail coffee prices in the central market. Both of the results are consistent with the theory in the literature, that is, in a cointegrated equation there should be at least one causation.

Table 23. Granger Causality Test Results(P_{it}=regional market retail price, P_{jt}=central market retail price. F-Sta.=F(7,48) Statistics, F-Tab.=F(7,48) Tabulated.

Market	F-Sta. ΔlnP_{it} to ΔlnP_{jt}	F-Tab F(7,48)	Decision	F-sta. ΔlnP_{jt} to ΔlnP_{it}	F-Tab. F(7,48)	Decision
Jimma	1.88	1.84	accept	1.27	1.84	reject
Agaro	2.37	1.84	accept	2.10	1.84	accept
Metu	2.86	1.84	accept	1.72	1.84	reject

<u>6.3.2.3.2. Results of the restricted short run/dynamic model i.e. the Error Correction Model.</u>

The results of the regression estimates of the ECM for the three markets in the region confirm that the estimates of the long run model are valid. In all of the regressions the ECM term is found to be negative and significant. The coefficients on the differenced independent variables in all the regressions are significant. The coefficients are elasticities and indicate high market integration which is confirmed by the higher values. A 10% change in the retail price of central market will entail 7.8%, 7.9% and 6.8% change in retail prices of Jimma, Agaro and Metu markets, respectively.

Table 24. The results of the Error Correction Model (short run model) regressions. Dependent variable= ΔlnP_{it} where P_{it} is the regional market retail price. Independent variable= ΔlnP_{jt} where P_{jt} is the central market (Addis Ababa) retail price. D_1 and D_2= Dummy variables as explained in the long run model.

Description	Jimma	Agaro	Metu
con	0.005 (0.2371)	0.005 (0.24)	0.018 (0.99)
ΔlnP_{jt}	0.78 (3.69)	0.79 (3.48)	0.681 (2.35)
D_1	0.034 (1.13)	.031 (0.98)	0.014 (0.49)
D_2	-0.005 (-0.169)	-0.0014 (-0.04)	0.0039 (0.131)
e_{t-1}	-0.61 (-1.88)	-0.65 (-1.99)	-0.57 (-1.79)
R^2	0.42	0.43	0.45
F-Test	F(4,54)=4.33	F(4,54)=3.8	F(4,54)=4.03
DW Test	1.74	1.89	1.91

The T-ratios are in brackets.

CHAPTER SEVEN

SUMMARY AND POLICY RECOMMENDATIONS

The main objective of this study has been to analyze the extent of coffee market imperfections existing in Jimma-Illubabor Zone. Special attention was given to the assessment of the market structure and performance in the transfer of coffee from the producer to the main urban centres in the region and the terminal market, Addis Ababa.

The main techniques employed to analyze market structure were the degree of market concentration, barriers to entry, and the degree of market transparency. Legal restraints (restriction on area of operation and licensing), managerial knowhow and lack of capital of coffee traders are examined in order to assess the main barriers to enter in the market. The methods used to analyze the performance of the coffee trade are the resource allocation criteria of efficiency which mainly include temporal and spatial pricing efficiency. Temporal pricing efficiency is examined using trend, seasonal, and cyclical analyses of the price series. In addition an attempt is made to look into seasonality and storage efficiency. The spatial market integration is examined by the bivariate correlation analyses, the unrestricted short-run (dynamic) model, and the cointegration method.

It was found that the liberalization policy adopted has achieved certain improvements in the structure of the coffee trade. It has lifted the constraint on licensing and the Government has reduced tax levied on coffee trade and li issuance fees. It has also abandoned the restriction imposed on license issuance and the number of licensed traders have increased at every level. For instance the number of licensed traders have increased from 171 in 1992 to 846 in 1995. As a result the coffee marketing parastatal is forced to compete with private traders.

Nevertheless, there still remain a lot of inefficiencies in the structure of the coffee marketing system.

First, the volume of the coffee traded was concentrated in the hands of a few large traders who controlled bigger share of the traded coffee. Indeed in some of the markets the first four largest traders handled more than 50 percent of the coffee traded.

Second, in the study area a large amount of capital was a prerequisite for larger operations and significant percentage of the traders face lack of capital. Although the problem of capital has been reduced after the revised lending policy of the National Bank of Ethiopia, it still constitutes a significant hinderance of entry to the coffee trade. Thus, thirty percent of the respondents reported shortage of capital and credit and many of them complained on the procedures and collateral requirements of credit from institutionalised sources. Only about 40 percent of the traders receive bank credit. Hence many traders in the study area seek credit from alternative sources, such as, coffee traders, relatives, friends and other individual money lenders. No significant business partnership, however, was observed as a solution to the shortage of capital. On the other hand many of the traders extend credit to producers, usually at a higher lending rate, in periods of the year when supply is at its minimum. The repayment of the loan is usually in kind (coffee) and highly exceeds the amount of the loan. These loans are usually acquired to meet immediate needs.

Third, traders are forced by law to operate in specified areas. A trader, therefore, can not freely operate in any area of his choice. In some cases this has limited traders not to fetch low prices and high quality coffee which will enable them to successfully compete in the coffee trade.

Fourth, the investigation of transport facilities indicates the existence of poor rural road infrastructure. More than 70 percent of the traders responded that they face problems of poor rural road network. The problem is even worse in some of the districts such as Limmu. Due to the poor rural road conditions most of the traders incur high transport cost; as most of them reported that they use hired vehicles.

Fivth, many of the traders (32 percent) face problems of storage. The stores were found to be small and of poor quality. On the other hand, the relatively improved type storage facilities of the CPSE are not optimally used.

Six, examination of the degree of market transparency reveals that substantial percentage of the traders are unaware of the activities of their competitors and the price they fetch. Lastly, quite a substantial percentage of the traders reported decrease in the volume of coffee individually handled and the profit generated from the coffee trade after the reform. They attribute this to the existence of many unlicensed traders in the rural and urban areas. These unlicesed traders do not pay taxes and can narrow the gross margin by the amount of the tax. There is no constant law enforcement to mitigate the activity of such traders. This made the tax payers not to generate adequate profit after having covered the necessary costs.

With regard to the performance of coffee trading after the reform substantial achievements are observed. Trend analysis of the producer price shows that prices have increased substantially. This could be explained by the devaluation of the Ethiopian Birr, higher competition among the intermediaries, particularly in rural areas, and good international prices in the year 1994. Hence, it can be judged that the producer is the beneficiary of higher prices.

The bivariate correlation analyses shows that the regional markets in the selected main urban centres (Jimma, Agaro, and Metu) are highly integrated with the central market, Addis Ababa. The estimates of the unrestricted short run (dynamic) model also shows the same result. The types and levels of market integration were determined by the significance of the regression coefficients of the historical central market price and Timmer's indices. All of the regression results revealed that the selected three markets in the region are highly integrated with the central market. That is, prices in the central market are immediately transmitted to the selected three big regional markets. But, likely, this is not to be true for the remote markets since there is low degree of market transparency in rural markets.

Results of the cointegration tests of the selected regional urban markets (Jimma, Agaro and Metu) with Addis Ababa (as terminal market) reveal that the regional market prices are cointegrated with the central market prices. This would imply that the regional markets are integrated with the central market.

Despite the positive achievements, however, there are some inefficiencies in the performance of the coffee trade.

First, though higher, prices are not stable in the post reform period. This is partly explained by the fluctuation of international coffee prices. While the government wishes to improve producer prices, as doministrated by the establishment of floor producer prices, the fluctuating international coffee prices is seriously affecting this effort.

Second, the analysis od seasonality revealed that there is seasonality of coffee prices. This has been explained by the biological nature of coffee production and climatic factors. In this regard prices are lower during and for some months after harvest in which supply is heavy. This is supported by the high liquidity constraint of the farmers and hence large sales after harvest.

Third, the analyses of seasonal price changes and storage efficiency, using the method of Hays and Macoy, revels that the price increase which arises from seasonality in coffee supply and marketing exceeds the cost of storing coffee, implying excess profit for those some traders who manage to store coffee.

Based on the findings of this study, the following policy recommendations are suggested for the improvement of the efficiency of coffee marketing in the region.

First, the government have to encourage the banking sector to finance the coffee trade and remove unnecessary impediments (such as higher collateral and long lending procedures) in obtaining bank credit.

Second, the government should improve rural roads, specially in Kosa, Manna and Metu districts to achieve easier transfer of the produce.

Third, since the traders have poorly constructed stores, the CPSE could offer storage services to private traders when these facilities are not being optimally utilized.

Fourth, there is a need for the creation of market intelligence division in the Agriculture Development Office to collect market information and disseminate it through the media for different centres or districts so that producers, marketing intermediaries and consumers are aware of daily prices in all centres.

Fivth, the government should abandon the restrictions on areas of operation being imposed on traders. This would enable the traders to fetch better prices and quality, and improve their competitiveness in the coffee trade.

Sixth, the Government should attract and even force the illegal traders to have a trading license since they are believed to lift up coffee prices and narrow profits of licensed traders.

Seventh, there is a need of increasing the efficiency of storage as some of the traders, who store coffee, earn excess profit. One of the possibilities is to extend short-term institutionalized credit to the producers who sell their produce immediately after harvest.

Finally, to alleviate the problem of capital in coffee trading the government should encourage the formation of credit associations and marketing cooperatives. Cooperatives may enable traders to raise adequate capital and can facilitate the assembly of coffee from rural areas.

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APPENDICES

Appendix 1. Questionnaire Used in Servying Sample Traders.

Name of enumerator ____________________

Name of trader ____________________

District____________________

Town____________________

Date____________________

1. Age ______________
2. Sex 1. Male 2. Female
3. Marital Status 1. Married 2. Unmarried 3=Widowed
4. Religion ____________________
5. Ethnicity 1. Oromo 2. Amhara 3. Gurage

   4. Others (specify) ____________
6. Education 1. Illiterate 2. 1-6 grade 3. 8-12 grade

   4. above 12 grade
7. Business Experience 1. 1-5 years 2. 6-10 years 3. 11-20 years 4. Above 21 years
8. Organization of trade 1. Partnership

   2. Sole proprietorship
9. Scale of trade : 1. "Akrabie" 2. Sebsabie
10. Name the place you usually buy coffee and list the buying price of coffee (per Kg).

Market	Price/Kg
1. ____________	____________
2. ____________	____________
3. ____________	____________
4. ____________	____________

11. Are you forced by law to operate in specified areas?

12. What is the reason for price difference in qustion 10?

    1. Transport 2. Few buyers 3. Others specify ________

13. Who does the purchasing of coffee for you ?

    1. Myself 2. Brockers 3. Agents 4. Others (specify) ____________________

14. What type of arrangements do you have to ensure that you get coffee from your suppliers ?

    1. None 2. Agree on quantity 3. Other ____________

15. How do you pay for the coffee you buy ?

    1= Cash on delivery 2= credit 3= Transfer payment through the bank 4 . Other (specify) ________________

16. What was the amount of money capital that did you start this business with ?____________________. And how much capital do you have now ?______________________.

17. Where did you get the money from ?

18. Main source of credit 1. Banks 2. Traders 3. Relatives 4. Informal lenders

19. Do you provide credit ?

    1. Yes 2. No

20. If yes, to whom 1. Producers 2. Coffee traders 3.Others Specify_____________

21. Main problem of trader

    1. Lack of capital and credit 2. Supply 3. Higher prices of coffee 4.Too many producers

    5. No response

22. Do you know the sources of supplies and outlets of other business competitors and their buying prices ?

    1. Yes 2. No

23. How do you obtain information on you competitors ?

    ____

24. Do you have social contact with traders ?

    1. Yes 2. No what type of contact (specify) ___ _______________

25. Do you mind if other people entered this business ?

    1. Yes 2. No

    If yes, what do you do in such a case ?__________________

26. How are you normally paid ?

    1. cash on delivery 2. contract basis

    3. others specify ________________________

27. Are you aware of the prices in central market(A.A) before coming to the market ?

    1. Yes 2. No

28. How do you get information on central market prices?

    1. Telephone 2. Radio 3. Others Specify______ __________________

29. How do you determine the price to buy at ?

    1. Accept seller price 2. Agree with seller

    3. I fix the price 4. Others (specify)________________

30. How do you determine the price to sell at ?

    1. Fixed by buyer   2. Agree with buyer

    3. I fix the price

31. What is the average selling price per kg in the last two weeks ?______________________________

32. Do you actually increase price when you demand more coffee?

    1. Yes   2. No

33. How do you compare your price with that of your competitors

    1. Below   2. Same as   3. above

    4. 1,2 or 3   5. I do not know

34. Can you explain why to the above response?

    ____

    ____

    ____

35. Mode of transport   1. lorry   2= Pick-up

    3. Other (specify)________________

36. Is the vehicle hired or owned ?   1. Owned   2. Hired

37. If the vehicle is owned

    a. Full expense per trip ____________________

    b. Monthly Wages (Driver & Turn-boy) _________

    c. Average Monthly Repair & maintenance expense ________

    d. Other (specify) ________________________

38. If the vehicle is hired

    a. where do you usually hire the vehicle and why do you choose this source _____________

    b. What is the total hire per qt ______________________

    c. Is the cost of hireing high for you? 1. Yes   2. No

    d. Do you encounter problem of poor rural road conditions?

1. Yes 2. No

39. do you store any coffee 1. Yes 2. No

why ? ____

40. If the answer to question 36 is yes

a. For how long do you store coffee ____________________

b. Storage capacity ___________________________ bags

c. How many bags of coffee do you usually store in two weeks ? ________________ bags.

41. Is the store owned or rented ? 1. owned 2. rented

If rented, How much rent do you pay per month per bag ___

42. If owned how much would you be willing to pay for this store if you were renting it from somebody else?__________43. Can you estimate the cost of

a. Loading & unloading per bag ______________________

b. Chemicals used in a month(kg) ___________________

c. Average monthly empty bags acquired _____________ and unit costs ______________

d. Guarding (monthly) ___________________

e.Market fee_________________

f.brooker________________

g. Other monthly expenses (specify) ____________________

44. Do you have problem of storage 1. Yes 2. No

45. If yes what type of problem? 1. Size 2. Quality

3. other specify___________________

46. Trader's perception of the market reform

a. Coffee handled 1. Increased 2. decreased

3. the same 4. No response

b. Demand 1. Increased 2. decreased

3. the same 4. No response

c. Prices 1. Increased 2. decreased

3. the same 4. No response

d. Profit 1. Increased 2. decreased

3. the same 4. No response

47. What problems do you face to get license ? ____________

____

48. Do you like to increase investment in the future 1. Yes

2.No

Appendix 2. Merchandise exports and share of coffee export, 1983-1994 (In Thousand Birr)

Year	Total	Coffee exports	
		(Value)	(Percent)
1984/85	744572	466269	63
1985/86	942700	664790	71
1986/87	809800	524328	65
1987/88	788100	439305	56
1988/89	918200	626650	68
1989/90	756860	405416	54
1990/91	**572142**	**268451**	**47**
1991/92	318387	168324	53
1992/93	949164	536982	57
1993/94	1619719	919900	57

Source: National Bank of Ethiopia, annual report, 1993/94.

Appendix 3. Average Coffee Arrivals by Regions(in ton).

Region	67-72	73-78	83-84	86-87	88-89
Kaffa	36417	25957	31618	31168	37306
Sidamo	25783	23752	30275	32444	35531
Wollega	17492	12221	11090	8934	19842
Illubabor	9025	5695	11144	9871	15398
Shoa	2898	2232	1587	334	137
Arsi	115	19	_	_	_
Gamo Gofa	1679	1651	2218	1233	2002
Hararghie	8256	7251	8850	4647	5159
Bale	_	_	98	_	_

Source: Ministry of Coffee and Tea Development, 1994/95.

Appendix 4 . Comparisions of Imperial, Millitary and Transitional Governments' License Issuance and Renewal Fees

Type of License	License Fees				
	Imperial Gov.		Millitary Gov.		TGE
	Iss	Renw	Iss	Renw	Iss&re
Export license			20,000	5,000	200
More than 100,000	1000	100			
More than 50,000	200	50			
Internal coffee trade					
More than 20,000	100	30			
More than 10,000	50	20			
More than 5,000	25	10			
Less than 5,000	free	free			
Processing washed coffee	50	15			150
Cleaning and Grading			1,000	250	150
In Addis Ababa	1000	75			
In Regions	500	75			
Storing coffee	50	25			
Transporting coffee	25	10			
Supplier			10,000	1,500	150
Collector			500	250	150
Roasting			3,000	1,000	150
Wholesalers			300	150	200
Trade Auxillary			300	150	150
Retailers			250	100	150

Source: Akalu, 1993

Appendix 5. Volume of Coffee Supply to Terminal Market (kg)

	Year (E.C.)		
	1985	1986	1987
Alle	313,083	313,487	423,689
Supe	1,064,434	893,767	625,937
Metu	1,244,485	1,845,360	1,102,697
Nopha	673,918	538,080	578,509
Hurmu	552,553	720,629	922,389
Yayu	430,166	371,355	762,644
Chora	814,999	883,338	1,221,614
Bedele	433,929	412,191	412,788
Gechi	270,240	254,045	339,693
Dedesa	684,517	447,780	922,413
Gumay	1,031,054	808,945	1,572,374
Darimu	-	93,755	62,387
Limu-Kosa	3,559,971	5,522,118	8,487,701
Mana	1,310,157	2,446,675	2,187,012
Seka-	204,008	844,645	808,243
Cherkosa	136,730	319,279	312,484
Limu-Seka	9,631,900	13,002,30	12,506,81
Goma	_	5	8
Gera	_	99,904	161,925
Kersa		1,191,446	2,020,091

Source: Jimma and Illubabor Agriculture Development Offices, 1995

DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university. All sources of material used for the thesis have been duly acknowledged.

Name Solomon Tesfay

Signature

Date 25/06/96

Place Addis Ababa