THE DETERMINANTS OF LIQUIDITY AND ITS IMPACTON PROFITABILITY OF COFFEE TRADE UNION IN ETHIOPIA COMMODITY EXCHANGE (ECX) IN CASE OFJIMMA ZONE

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Internal Examiner	Signature

DECLARATION

I, the undersigned, declare that this study entitled ‗'The Determinants of Liquidity and its Impact on Profitability of Coffee Trade Union in Ethiopia Commodity Exchange (ECX) in the case of Jimma Zone'' is my original work and has not been presented for a degree in any other University, and that all sources of materials used for the study have been duly acknowledged.

Declared by:

Name: **Hahbtamu Mamo**

Signature: _____

Date: _____

CERTIFICATE

This is to certify that this study, 'The Determinants of Liquidity and its Impact on Profitability of Coffee Trade Union in Ethiopia Commodity Exchange (ECX) in the case of Jimma Zone'' undertaken by Habtamu Mamo for the partial fulfillment of Master of Science Degree in Accounting and Finance at St. Mary University, is an original work and not submitted earlier for any degree either at this University ot any other University.

Research Advisor: <u>Mr. Mohammed Seid (Assistance Professor)</u>

Signature: _____

Date: _____

DEDICATION

This study work is dedicated to my savior and protector Almighty God, to my wife and my son all of my parents for their constant physical, emotional and financial support throughout my educational career and life and also my dedication was goes to my advisor for his approach and priceless guidance during my education and preparation of this research at St. Mary University College of Business and Economics, department of Accounting and Finance.

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ABBREVIATION

ECX	:	Ethiopian Commodity Exchange
ECEA	:	Ethiopian Commodity Exchange Authority
ROA	:	Return on Assets
CR	:	Current Ratio
QR	:	Quick Ratio
GPM	:	Gross Profit Margin
NPM	:	Net Profit Margin
CCC	:	Cash & Due from Bank to total Assets
CCE	:	Cash & Due from Bank to total Deposit
CDDEP	:	Cash Conversion Cycle
CDR	:	Cash Conversion Efficiency
CDTA	:	Cash Deposit Ratio
DAR	:	Daily Sales Outstanding
DIH	:	Days Inventory Held
DPO	:	Days Payment Outstanding

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ABSTRACT

Coffee commodity exchange is one of the business activities carried out in any given country. Well-functioning of trade unions in the business and adjustment of important factors is used to get optimum profit expected from the unions. This study aimed to identify determinants of liquidity and its impact on the profitability of coffee trade union in ECX trading platform. 68 Unions which had five years duration time as a union were included in this study. The data were collected from unions' record financial statement and from NBE and ESA. Descriptive and inferential statistics analysis methods were used. From multiple linear regression model result in the liquidity model independent variables such as net profit margin, capital adequacy, loan growth rate, inventories turnover, gross, domestic product and union size were statistically significant at 5% level of significance. The result in the model showed that as the value of capital adequacy and loan growth rate of unions increased the availability of liquid asset of the unions would be increased at Jimma coffee commodity trade unions (ECX). In the first model of profitability the factors such as inventories turnover and capital adequacy were determinant of liquidity which had significant impact on profitability of the trade unions. In similar manner in the second model of profitability analysis result determinant of liquidity such as capital adequacy and inventories turnover had significant impact on profitability of the trade unions, so more emphasis should be given to the aforementioned factors in order to sustainably upgrade profitability of the trade unions in the study area.

Keywords: Liquidity, Commodity Exchange, Effect, of Profitability

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In developing countries like Ethiopia, the coffee sector is entrusted with the objective of ensuring leading the overall economic growth of the nation. In view of this, there have been sweeping policy reforms in the developing countries like Ethiopia since the 1980s towards enhancing the productivity and competitiveness of the coffee sector. Coffee market liberalization has been one of the policy reforms adopted by developing countries to promote the performance of the agricultural sector. However, the impacts of market liberalization are mixed and associated with problems of price risk and instability. In addition the participation of the private sector in marketing activities has generally been limited because of poor market infrastructure and high transaction costs (MoFED, 2009).The underlying rationale for setting up the ECX to address information asymmetries among market actors, liquidity constraints due to weak credit and insurance markets, and high transaction costs associated with inadequate infrastructure and search costs of finding buyers and sellers was not unique to Ethiopia. There are two main reasons behind the ECX's success in attracting such a high level of attention. First, the ECX is the only functioning commodity exchange in the Least Developed Countries (LDCs). The other reason the ECX has garnered such attention is because it has been very effective in communicating its early success stories.

The **Ethiopia Commodity Exchange** (**ECX**) is a commodities exchange established April 2008 in Ethiopia. In Proclamation 2007-550, which created the ECX, its stated objective was "to ensure the development of an efficient modern trading system" that would "protect the rights and benefits of sellers, buyers, intermediaries, and the general public."[1]

The ECX is set up as a private company owned by a partnership of the market actors, members of the exchange, and the Ethiopian government, a former economist for the International Food Policy Research Institute and the World Bank. As of July 2011, the physical presence of the ECX consists of 55 warehouses in 17 regional locations. It has grown from trading 138,000 tons in its first year to 508,000 tons in its third year, with nearly equal shares of coffee and oilseeds and pulses. The value of the ECX rose 368% between 2010 and 2011 to reach US$1.1 billion.[2] As of November 2010, the trading floor in Addis

Ababa handled 200 spot contracts in commodities such as coffee, sesame, navy beans, maize and wheat.[3] It was assessed in July 2011 that membership equaled 243 with clients, who trade through members, about 7,800. Farmer cooperatives represented 2.4 million smallholder farmers, which make up 12% of the membership.[4]

Currently, the ECX is the only stock or commodity exchange in Africa to have streamlined payment transfers down to "T+1" (ext day payment after a trade) from its clearinghouse to its partner commercial banks. Market data reach is expansive. "Push" price date is transmitted in real time to outdoor electronic ticker boards in 32 rural sites, the ECX website, 256,000 mobile subscribers via instant messaging, the radio, TV and print media. "Pull" market data is available through a toll-free phone-in service. The service received more than 1 million calls in September 2011, 70% coming from rural callers.

A commodity exchange is a centralized location where buyers and sellers carry out transactions, with or without physical commodities, under a set of clearly defined rules and regulations. In theory, commodity exchanges can contribute to market development by reducing transactions costs, improving price discovery, and reducing price risks. Coordinating through a centralized exchange reduces the costs associated with identifying market outlets, physically inspecting product quality, and finding buyers or sellers. In fact, commodity exchanges have historically evolved through private initiatives to address the high cost of doing business in spot markets (Black, 1986; Garcia and Leuthold, 2004). Exchanges can be privately profitable when market actors are willing to pay for three important services: (i) improving price discovery, (ii) increasing market liquidity, and (iii) helping price risk management. Price discovery improves because true scarcity value of a commodity is revealed through bidding of buyers and sellers that exchanges bring together at their floors. Liquidity constraints are eased through well-functioning warehouse receipt system (WRS) or inventory credit systems, which are generally integral parts of commodity exchanges (Larson et al, 2004; and Coulter and Shepard, 1995).

The establishment and development of commodity exchange in an integrated manner, where key factors such as market information, grades and standards, contract enforcement, regulations, warehousing and others are also developed, is considered to be one of the institutional interventions that would enable the marketing system to function efficiently. Accordingly, the already established ECX is expected to help develop an efficient marketing system in the country. The anticipated efficient market is expected to be one in which risk is

pooled, transaction cost is low, price discovery is efficient and transparent, and contracts are enforced, with positive impact on incentives for private sector participation. Through serving as a hub for exchange, ECX is expected to provide market based mechanisms to manage some of the problems prevailing in the agricultural marketing system such as price risk, counterparty risk, high transaction cost, information asymmetry, and lack of transparency.

In order to find the profitability level of firms, return on asset is used, whereby it can clearly be examined that where the firm stands in terms of profitability. Liquidity and profitability has got tremendous importance in the corporate world. Liquidity refers to the management of current assets and current liabilities of a company. Due to its dire importance, it is used for firms to maintain a reasonable amount of their assets in the form of cash in order to meet their short term obligations. Balanced liquidity level is necessary for the effectiveness and profitability of a firm. Therefore, firms need to determine the optimum level of the liquidity in order to ensure high profitability. Liquidity should neither be too low nor too high. Whereas, profitability refers to the revenues earned by firms, against their operations and incurred expenses. This research focused on how liquidity impact on the profitability of coffee trade union those trade in ECX trading platform as members through the use of different ratios.. There are 68 trade unions that have seats and trade in Jimma zone for their own and behalf of their client are 5000 that trade through ECXs. As the market transformed in to new era and the trading system is efficient and transparent.

Liquidity refers to the company's ability to meet its short-term obligations. Liquidity management ensures that the company has the ability to meet current obligations. Companies with high liquidity have a **low profitability risk**; therefore companies must accept low profits. Liquidity and profitability are two of your business's most important key performance indicators. In their own way and together, they demonstrate whether your business currently is or can be successful and they indicate your potential for growth and sustainability. Your liquidity has an impact on your profitability and your profitability will have an impact your liquidity—so while the two are not one-in-the-same, they do go hand in hand.

Simply explained, liquidity measures the time and ability it takes to convert your assets, such as accounts receivables, into cash to manage immediate and short-term financial obligations and/or emergencies. It is calculated by a set of liquidity ratios, most commonly the Current Ratio, Quick Ratio, and Cash Ratio. Profitability is how well your business is actively generating financial revenue relative your business size, calculated by profitability ratios such

as profit margin ratios, operating margins/operating ratios, asset return ratios as well as Return on Equity and Return on Investment. Both are measures to help business owners to assess and analyse their ability for growth and sustainment. Since the start of trading commodities from 2008 in ECX platform around 30 officially registered trading members tries to buy and sell their commodities on behalf of millions of coffee supplier and farmers union who can't direct access to come and trade in ECX platform. It is through these limited members that every household farmer and the union brings their product in ECX platform and sold in an open outcry format and also through this channel the money transferred back to each farmer or union. As the Ethiopian government follows Agricultural Development Led Industrialization (ADLI) policy to attain the development goal there should be surplus market oriented production as well as efficient and effective marketing system that was enable farmers or other producers to gain the actual profit from what they produce.

1.2 Statement of the Problem

In Ethiopian farmers do not receive the right profit due to inaccurate information about market price, intermediary middle men, low bargaining power, low product grading and quality standards. This has resulted in loss of motivation for the coffee trade union to produce surplus which leads to low household income and the export earnings of the country (MoFED, 2009).

This study mainly focused on market members financial data and tried to investigate whether trading in ECX is profitable or not, at the same time tried to assess the impact of liquidity management on profitability. This study was also seek to clarify what the relationship is between liquidity and profitability as current literature presents mixed results.

1.2.1 Research Questions

This research is seeks to assess determinant of liquidity and its impact on profitability of business organizations those trade in ECX trading platform as members unions through the use of different ratios.

Specifically, the study was wants to addresses the following four main questions:

• What are the determinant of trader's liquidity and its impact on profitability of coffee traders ECX platform Jimma zone.

• How liquidity impacts on profitability of coffee trade union in ECX plat form.

• Identifying the challenges that Ethiopian commodity exchange at Jimma coffee trade unions is facing related to liquidity and measuring their adverse impact on their profitability based on financial position.

1.3 Objectives of the Study

1.3.1. General Objective

The main objective of this study is to examine determinants of liquidity and its impact on the profitability of coffee trade union those trade in ECX trading platform as members through the use of different ratios at Jimma coffee trade unions.

1.3.2. Specific objectives

The specific objectives of this research proposal include:-

• To analyze the determinants of liquidity at Jimma coffee trade unions

• To analyze the impact of liquidity on profitability at Jimma coffee trade unions using different financial positions.

• To identifying the challenges that Ethiopian commodity exchange is facing related to liquidity the union which are traded in ECX trading platform in Jimma zone.

1.4 Research hypotheses

There is an inverse relationship between the Profitability Ratio and Liquidity Ratio of a firm. As a firm decreases its liquidity ratio, it's profit boost up and firm reaps a huge amount of profit from its investments (long term investments) and when a firm needed to liquidize it's assets for the payment of its obligations it has to reduce its profit, which cause to bring a decline in the Profitability Ratio. But on the other hand liquidity also proved fruit full when it saves the firm to flop or close. Based on the above statement of the problems and objectives of the research, the following hypotheses are formulated.

H_1: Union liquidity has significant effect on unions' profitability

H_2: Capital adequacy has significant effect on liquidity

H_3: Union size has significant effect on unions' liquidity

H_4: Sales volume has significant effect on unions' liquidity

H5: Interest rate has significant effect on unions' liquidity

H6: Gross domestic product has significant effect on unions' liquidity

1.5 Significance of the study

Research has its special significance in solving various operational and planning problems of business and industry. This study was used for as an input for decision makers on issues related to liquidity and its impact on profitability of coffee traders on ECX plat form and additionally the overall operation, the market profitability and trust worthiness, the reliability of trading commodities in ECX and the ECX trading liquidity problems of cost minimization or of profit maximization or what can be termed as optimization problems. Market profitability and reliability is the basic pillar that the whole trading system stands on it, without profitability and reliability ECX history, there was not be trading.

1.6 Scope of the study

The overall goal of this study is to examine determinant of liquidity and its impact on profitability coffee trade union those trade in ECX trading platform as members through the use of different ratios. Those traders provide different kinds of coffee types at large. These studies evaluate liquidity and its impact on the profitability of the traders those trade on ECX platform based on ECX service. Coffee plays a significant role on countries economic activities, so that the scope of this research is limited to the only coffee traders those exchange coffee through ECX trading platform in Jimma zone.

1.7 Limitation of the study

The study may be more important if it was in the dimension of both the ECXs and coffee supplier points of view but given difficulty of analyzing, organizing, and interpreting the data gathered by the researcher's capacity, and the time given for the study, it confined itself to the coffee supplier through ECX. In other way the liquidity and profitability can be measured with different economic measurements, but, this study use return on asset as the profitability measurement. Moreover, in spite of the researcher's efforts to gather the necessary information as objective as possible, the analysis of this study was based on the organizations yearly financial report, so the report may not present properly as a result this was lead to interrupt the result.

1.8 Organization of the Research

This study organized with five chapters. The first chapter describes the background of the study, the research problem, research question, objectives, and significance of the study, scope and limitation of the study, research hypothesis and organization of the study. Chapter two reviews disclose the literature which leads to the development of theoretical and conceptual framework. Chapter three dealt about the methods of data analysis, sources of data and variables narrated in this part. Chapter four dealt on result and discussion, Whereas, Chapter five discuss on conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Review

A commodity is defined as "an intermediate good with a standard quality, which can be traded on competitive and liquid global international physical markets" (Clark et al., 2001, p. 3). Some authors include carbon emissions, interest rates or other economic variables in the definition of commodities. However, for the purposes of this paper, only physical commodities with supply constraints, transportation costs and storage costs are considered. ECX Linkage with other Organizations ECX has strong linkage with other organizations which are very essential for the work/service provided by ECX. (1) ECX Authority: these are the legal responsible body controlling ECX based on the rules. (2) Coffee and Tea Development Authority: These area governmental body works on quality and productivity of coffee and tea. (3) Woreda Agricultural Offices: The Woreda agricultural office is responsible for the registration and identification of the owner of the commodity. (4) Banks: ECX works with over 11 international banks.

ECX quality certification is based on a modification of the existing quality grading system, with a new crop classification based on classes, types and grades of the commodity. Currently ECX has over 20 warehouse branches at different regions; namely Hawassa, Dilla, Wolyita Sodo, Gimbi, Asossa, Nekemte, Adama, Gonder, Dansha, Metema, Hummera, Abirhajira, Shiraro, Dire Dawa, Kombolcha, Bedelle, Bonga, Jimma, Bure, and Pawi. The major roles of these warehouses are arrival, sampling, coding and decoding, grading, weighing, deposit, reconciliation, and reporting. For the transaction to be applied at the exchange, primary depositors should bring their commodity to their nearby branch so that the load shall be sampled, graded and weighted. Trade/price is determined based on the information given on the grade, the weight and the location of inventory.

Bäckman (2009) studied Fair Trade's impact on development in Ethiopia from a qualitative perspective and concluded that "Fair Trade has achieved what it is aiming to do" in the specific area studied. Fair Trade contributed to development by increasing profits to farmers and securing rights to producers.

The Ethiopian Trademarking and Licensing Initiative is an Aid for Trade initiative that has strong trade development and poverty reduction foundations: it aims to increase Ethiopia's coffee export income while ensuring a higher and more predictable income for Ethiopian coffee farmers and their households, by ...Additionally, we used the current ratio (CR) as WCM to measure of liquidity of coffee wet mills. Firms are constantly faced with the dilemma of liquidity and profitability as they exhibit an inverse relationship, i.e., as profitability increases, liquidity decreases (Ponsian, 2014; Wahogo, 2014). Balancing between profitability and liquidity is pertinent for enhancing firms' performance.

2.1.1 Background

Of the Study Of the various products traded in an international market, coffee is one of the most valuable agricultural commodities next to petroleum (Arslan and Reicher, 2011). Coffee in today's time is one of the most valuable sources of export for the East African nations of Ethiopia, Uganda, Kenya, and Tanzania. Ethiopia is known to be the birthplace and the primary center of diversity of coffee Arabica (Labouisse et al., 2008). The intrinsic quality of the beans ranks Ethiopian coffee high and this is due to the diverse agroecological zones and immense genetic diversity (Kufa, 2011). Ethiopia is the largest coffee producer and ranks fifth in the world after Brazil, Vietnam, Colombia, and Indonesia, accounting for about 4.5 percent of global coffee production and first in Africa followed by Ivory Coast and Uganda by its yearly production (Tefera et al., 2016). Coffee has been the leading cash crop in Ethiopia for the last three to four decades. In Ethiopia, coffee is produced under four broad production systems, i.e. forest coffee (10%), semi-forest coffee (30%), cottage or garden coffee (50%) and modern coffee plantation (10%). Considering the country's suitable altitude, rainfall, temperature, and fertile soil, the potential for coffee production in Ethiopia is very high. It employs more than 20% of the economically active population and contributes more than 25% of the country's foreign exchange earnings (Kufa and Burkhardt, 2013). Coffee production is almost exclusively positioned in the administrative zones of Keffa, Sidamo, Ilubabor, Wellega, Gedeo and Harerghe, which correspond to Oromia and the Southern Nations, Nationalities, and People Regions (SNNPR) that are found in the west and south of the country respectively (Minten et al., 2014). There are around four million estimated small holder coffee farmers in Ethiopia producing 95% of coffee on less than one hectare of land farms (Gemech and Struthers, 2007)

It is observed that free market economy created many challenges for businesses particularly for smallholder farmers like coffee growers that have limited bargaining power, skills, and

capacity. Consequently, many disadvantaged groups have chosen communal efforts through cooperative organizations as a means of accessing the benefits associated with a liberalized market system. Thus, several different types of cooperatives have been established to meet different objectives over the years (Emana, 2009). Cooperative according to International Cooperatives Alliance (1995) is defined as an autonomous association of people united willingly to meet their common social, cultural and economic requirements and goals through a jointly owned and democratically controlled enterprise. In order to manage the coffee export business for the smallholder coffee farms that lacked human resource and logistical capacity, the government of Ethiopian took the initiative in establishing Coffee Farmers Cooperative Unions. Therefore, with the issuance of Proclamation No. 147/1998, six coffee farmers' cooperative unions were established. These were Oromia Coffee Farmers Cooperative Union (OCFCU), Sidama Coffee Farmers Cooperative Union (SCFCU), Yirgacheffe Coffee Farmers Cooperative Union (YCFCU), Tepi Coffee Farmers Cooperative Union, Kafa Forest Coffee Farmers Cooperative Union (KFCFCU), Bench Maji Forest Coffee Producer Farmers' Cooperative Union (Kodama, 2009) and the same are currently active and in operation. Of these cooperative unions, OCFCU and SCFCU are the strongest and high performing cooperatives (Kormelinck, 2015). OCFCU was founded on June 1, 1999, and its operation is exclusively in Oromia Regional State, which accounts for more than 65 % of the country's total coffee growing land. Currently, OCFCU consists of 360 primary cooperatives representing 332,393 household farmers. On the other hand, SCFCU was founded in 2001 representing coffee producing cooperatives situated throughout the Sidama Zone of Southern Ethiopia. Today, SCFCU represent 47 primary cooperative societies and over 70,000 smallholders, making SCFCU the second largest coffee producing cooperative union in Ethiopia next to OCFCU. SCFCU produces approximately about 10,000 tons of high-quality Organic Arabica beans per year, 95% of which is washed (Kormelinck, 2015). Taking this growth and performance of Sidama Coffee Farmers Cooperative Union (SCFCU) into account, the researchers are interested to investigate whether the individual members of primary cooperatives are satisfied by the services offered by their cooperatives. Members' satisfaction is 3 recognized as an important measure to ensure the business success of cooperatives. The goal is to meet the objectives through offered services. Harris & Harrington (2000) argue that customer satisfaction can be achieved by understanding the needs of their customers and effectively provide goods and services. Kodama (2009) underline that the role of cooperatives in promoting business is not only focused on the profit, but priority to their members' needs should also be emphasized. Members who are satisfied

with the quality of services offered by their cooperatives will form a basis of cooperative business success. Therefore, members' satisfaction with their cooperative becomes the variable of critical importance to determine the possibilities of the cooperative success. This study, therefore, explores the antecedents of members' satisfaction with their cooperatives.

Commodity spot markets originated from trading in agricultural products. They have developed from local, medieval fairs into regional – sometimes global – liquid markets. The gradual organization of supply and demand through commodity exchanges has brought several advantages to producers, consumers, and to the world economy in general. First, the prices available on commodity exchanges provided information on fundamental market conditions, informing future decisions about production and consumption. Moreover, prices quoted on commodity exchanges supplanted prices set by monopolistic producers, which contributed to an increase in the competitiveness of commodity markets. Second, commodity exchanges lowered transaction costs by reducing intermediaries and facilitating the matching of buyers and suppliers. Third, they provided storage facilities and clearing services, thereby further increasing the liquidity and efficiency of commodity cash markets. (PieroCinquegrana , 2008). In spite of these advantages, international market integration has allowed producers to increase their market power.

2.1.2 Characteristics of commodity spot markets

Transactions following the stipulation of commodity contracts take place generally with a lag because the goods must be physically delivered. The contract specifies the exact terms of the execution and delivery. At one end of the spectrum, there is Free on Board (FOB) contracts whereby the *buyer* pays for shipping and freight insurance; at the other end of the spectrum, there is a Carriage, Insurance and Freight (CIF) contract whereby the *seller* pays for these costs until the goods arrive at a determined location. Many other types of contract specifications exist, but the explanation of these goes beyond the scope of this paper. In some instances, intermediaries can play a role in the process with a resulting fragmentation of commercial responsibility. (Geman, Héliette, 2005).

The *actors* in commodity markets are very diverse, and players vary according to the commodities being traded. In general, producers (e.g. farmers, oil producers, refiners, electric utilities, mining companies and others) and consumers (e.g. food industry, wholesalers, airline industry, transportation networks operators, shipbuilding industry and others) of commodities are the main actors of commodity spot markets. In some commodities, however,

especially agricultural and metals, traders may play an important role in connecting producers and consumers, sometimes accumulating stocks to clear the market at all times

2.1.3 Evolution of ECX in Ethiopia

The underlying rationale for setting up the ECX to address information asymmetries among market actors, liquidity constraints due to weak credit and insurance markets, and high transaction costs associated with inadequate infrastructure and search costs (costs of finding buyers and sellers) was not unique to Ethiopia. All other exchanges in Africa were founded on the same grounds. However, the forces behind the initiation of the ECX and the approach to setting it up were different from all other exchanges in Africa. Ethiopia conducted a series of consultations, starting in early 2005, to align key stakeholders and to ensure commitment from the highest levels of political leadership. The highlights of the initial consultations were presented in Gabremadhin and Goggin (2005) policy report, produced under the Ethiopia Strategy Support Program (ESSP) of the International Food Policy Research Institute (IFPRI) and the Ethiopian Development Research Institute (EDRI). However, it took more than two years to develop the policy framework for the ECX to be established.

The consultation and continuous persuasions finally paid off when the Ethiopian Parliament passed a landmark proclamation (Proclamation No-551/2007), which paved the way for the ECX. The ECX was formally launched in April 2008, with an initial focus on trading cereals and pulses. However, the launch of the ECX coincided with the global food crisis, and trading on the ECX floor fell far short of expectations. Between April and December 2008, the ECX traded only 935 tons of maize, ninety tons of wheat, and 570 tons of beans. The corresponding traded values of these three commodities were about $794,000, which, at a commission rate of 0.2%, generated a total gross revenue of $1,588, equivalent to $144 per month. So it became clear to the government that the exchange would not be viable if it had to rely on cereals and beans, as envisioned in the report that made the case for setting up the exchange.In a strategic move, the exchange turned its focus to export crops. In order to ensure that the ECX obtained large enough market shares, the government suspended the age-old coffee auction floor in Addis Ababa and made it mandatory to trade all coffee through the ECX in December 2008.

Following these policy actions, the volume of coffee traded in the ECX floor increased rapidly from 64,000 tons in 2008/09 to more than 200,000 tons in 2010/11, representing 57% of the total value of transactions in the ECX by 2012/13.8 This important growth presented several challenges for the ECX, but the exchange has generally been regarded as successful in managing this growth. The exchange ensured a (t þ 1) payment method (in which sellers get paid within a day after the transactions), disseminated market information, and arguably promoted export growth. The implementation of the payment addressed the age-old problem of defaults and dispute resolution, which in turn contributed to reducing transactions costs. The establishment of price tickers in thirty-two rural sites, real-time access to price information, and subscription for instant messaging brought about transparency in price information. However, as already discussed, the ECX also imposed restrictions on all actors along the value chain, increasing the costs of coffee trading within the country.

2.2 Overview of Ethiopian Coffee Sector

Ethiopia is the birthplace of coffee and is the fifth-largest coffee-producing country in the world. According to official statistics, annual production averaged more than 358,000 tons between 2005 and 2013.A 99% of the total production concentrated in two major coffee-growing regions, Oromia and Southern Nations, Nationalities, and Peoples (SNNP); the other 1% was produced in Gambella, which is not included in the analysis. Ethiopia is also well-known for the diversity of its coffee production and marketing. All Ethiopian coffee is grown in three agro-climatic zones—namely, southwestern, southern, and eastern Ethiopia Wollega) is sold dry and does not go through much processing. On the other hand, farmers in the southern region (e.g., Sidama, Yirgachefe, and Wolayeta) sell their beans to processors for washing, sorting, and final marketing. The eastern coffee-growing zone, which includes West and East Hararghe (Harar), produces both dry and washed coffee beans.

Coffee plays an important role in the Ethiopian economy. Production and marketing are the primary means of livelihood for millions of smallholders in the country. In 2012, over 4.2 million smallholders were engaged in coffee production, accounting for 95% of total production (Ethiopia Central Statistical Agency 2013). Given that the majority of these smallholders are poor, any public policies/institutions that contribute to increasing farm gate prices can also contribute to reducing poverty and improving the well-being of the poor.

2.2.1 Exchange Structure

The starting point is the exchange itself. Exchanges have been traditionally set up as associations of traders/trade bodies to the benefit of its member brokers. However there is now a growing recognition globally that a demutualized corporate structure may be more desirable. This is especially so in the world of stock exchanges where a number of exchanges have or are in the process of demutualizing their structures. This arises from the understanding that exchanges are required to cater the interest of not just intermediaries (brokers) but also to other constituencies issuers/producers and investors/consumers. Indeed in the stock exchange world there is now a trend to merge the cash and derivatives markets under one umbrella in the interest of market efficiency. Under such a structure the ownership of the exchange is separated from trading rights as a broker. This removes potential conflict of interest between managing the exchange and market integrity versus trading interests as a broker. In the current context this becomes even more important if the market is to be expanded to draw larger participation from across the country. And since ECX has already a demutualized corporate structure it is exploiting all the benefits discussed above, which are related with having a demutualized corporate structure.

The other desirable and necessary feature related with the exchanges is a tax paying corporate structure. A corporate structure imposes certain discipline on the exchange. Any exchange should be a commercially viable proposition and should not have to depend upon subsidies and tax shelters to survive in a competitive environment. This requires professional management of the exchange. NMCE is also set up as a tax paying company where management is in the hands of professionals. Currently ECX is almost being fully financed by the Ethiopian government where in all profits are reinvested to strength the exchange. Also the exchange does not pay taxes. Thus these things are hindering the exchange from seeing the commercial viability of its service.

2.2.2 Trading and Contracts

Though ECX's back office activities are automated, the basic ingredient of the exchange that is trading is not automated. Besides currently ECX does not introduced futures. Lack of automated trading and commodity futures create incompetence in the work of the exchange. Because as a nation−wide exchange it must provide equal access from across the country and this in itself eliminates a trading floor and suggests an automated trading mechanism. Typically such systems provide matching on price time priority. In addition, since ECX did

not offer automated trading and futures to the exchange, there is no order book that is visible to the market. Thus there is no dissemination of prices on real time basis. Not only price dissemination advantage is lost in ECX but also that arbitrageurs and hedgers are not there and did not take a good position to be fully advantaged in the price discovery process. Besides since there is no as such transparent price discovery process users/consumers are not too encouraged to participate with a higher degree of confidence − thus an essential element if the market has to be expanded and bring in greater retail participation is lost. In the context of trading it may be mentioned that contract design have a significant impact on liquidity.

ECX's contract design starts with determining the liquidity. Then to determine the liquidity of the contract the basic determining factors taken in to account is production that is the marketable surplus and for most commodities traded usually marketable surplus is 35% and for others most of times less than 35% since the Ethiopian producers consume most of their produce. In addition to production the other factors accounted are grades and standards and the market players' structure. However, the ECX practice suggests that there is no an independent product committee to advice on contracts for products traded in the exchange. Since there is no an independent department, which is devoted to continually identifying the contracts that are need to be offered to the market, it can be said that proper attention is not given to contract designing. Also the factors taken in to account are limited for designing a contract that is liquid. This is because the factors considered by the ECX do not allow to fully assessing the liquidity of the contract; for such factors like seasonality, product life, extent of international markets, size of contract etc. are not considered. Though an automated trading system in itself is no guarantee of a successful exchange it is one of the necessary preconditions for a successful exchange.

2.2.3 Settlements

Efficient settlements are an absolute essential for a successful exchange. It is not enough to provide efficient trading platforms. Efficiency of settlement processes has a direct bearing on the ability of participants to effectively use commodity exchanges. Commodity settlement represents one of biggest challenges to NMCE. (T.S.Jagadharini & RaghavanPutran)

How is the commodity settlement going in ECX?

The rest of the problem analysis part is mainly devoted to raising some of the key issues regarding the same. Final settlement can either be (a) cash settled or (b) settled though

physical delivery if commodity derivatives have been used. But since ECX uses only spot trading there is only physical settlement.

2.2.4 Physical Settlement

The issues faced in physical settlements are enormous. The quality of warehouses leaves much to be desired and the process of taking physical delivery is very cumbersome. This in itself is a major impediment to enhanced liquidity in the commodities markets as the link between an under developed spot price discovery mechanism and futures prices becomes even more tenuous preventing effective arbitrage in the future when commodity futures are introduced. The process flows in the event of physical settlement of commodities are different from that of other underlying. It may therefore be worth outlining the process flow.

2.2.5 Delivery Notice Period

The process starts when the exchange gives a delivery notice. The 'delivery notice period' (DNP) is ten days. Typically as in all commodity exchanges, delivery notice is required to be supported by a warehouse receipt. The warehouse receipt is the proof for the quantity and quality of commodities being delivered. Some of exchanges have certified laboratories for verifying the quality of goods. In these exchanges the seller has to produce a verification report from these laboratories along with delivery notice.

2.2.6 Assignment

Whenever delivery notices are given by the seller, the clearing house of the exchange identifies the buyer to whom this notice may be assigned. This is the case in exchanges where futures are involved and delivery notices can be given by the seller. This mechanism has its own advantage to the participants that is both to the buyer and the seller. Currently in ECX the practice is it is only the exchange that can give the delivery notice to the buyer. This practice in the exchange has its own advantages and disadvantages and its better to see the disadvantages. The disadvantages are related with that the exchange does not provide wide variety of choices to the participants to close positions at the end of the day since futures trading is not there. In addition because futures contracts are not placed there is again no assignment process. Since ECX vision is to become an exchange of choice in the world it has to provide competitive services, at least competitive services compared with those of developing countries exchanges like NMCE. However without futures and without giving a chance for the sellers to give delivery notice, letting buyer bid for taking delivery and add a new feature to the

exchange, and playing a role in assignment process it is difficult though not impossible to achieve its vision.

Delivery After the deliver notice, clearing house/exchange issues a delivery order to the buyer. Exchange also informs the respective warehouse about the identity of the buyer. The buyer is required to deposit a certain percentage of the contract amount with the clearing house as margin against the warehouse receipt. The period available for the buyer to take physical delivery is stipulated by the exchange. Buyer or his authorized representative in presence of seller or his representative takes the physical stocks against the delivery order. Proof of physical delivery having been affected is forwarded by the seller to the clearing house and the invoice amount is credited to the seller's account. In the case of commodities the actual physical settlement dates is different for different commodities and there is no effort to harmonize them. This process of physical settlement also makes it difficult for professional arbitrageurs to fully participate.

2.2.7 Ware Housing System

ECX implemented a settlement which has electronic links with designated clearing banks for efficient funds movements. Typically the exchange was require its members to open designated accounts with specified clearing banks. The exchange have the right to debit/credit such accounts directly through electronic interface with the clearing banks. For the purpose of commodity settlements ECX entered into an arrangement with designated warehouses to handle settlements. If a physical settlement system is to be in operation it is better to have all open positions at the end of the contract to be settled through delivery.

The ability to settle commodities efficiently, of course, depends to a great extent upon the warehousing systems available. The effectiveness of ECX is dependent on how effectively the system of warehousing and warehouse receipts work. The first requirement in this direction is to have good standards and quality assurance/certification procedures. A good system of grading allows commodities to be traded by specification. Currently there are neither any various agencies that are responsible/specify grades for commodities nor any system of designated surveyors to inspect and certify delivery. Besides, there is no a central notification agency for standards and grades including sampling and testing techniques for agricultural commodities. This is an area where much work is required to be done to improve both standards and testing/certification methods. . The Indian case shows that for example,

the Bureau of Indian Standards (BIS) under Ministry of Consumer Affairs specifies standards for processed agricultural commodities whereas AGMARK under the department of rural development under Ministry of Agriculture is responsible for promulgating standards for basic agricultural commodities. Apart from these, there are other agencies like EIA which specify standards for export oriented commodities.

2.2.8 Warehouse Receipts and Commodity Futures Issues

The warehouse receipts currently in use are not used for lending. Thus the benefits lost are many because the receipts cannot be used for lending and borrowing purposes. In the following sections the benefits that could have been exploited if warehouse receipts could be used as collateral by various sectors is discussed.

2.2.9 Farmers

At the time of harvesting, farmers usually sell a substantial quantity of produce at lower prices. Since prices rise as the season progress farmers should be benefited from the risen price. But unfortunately farmers do not have any ware houses that can store their produce until price advantage is perceived and they do not have any mechanism to accomplish their short term finance need to cover their living cost. Thus with this circumstances they obliged to sell their produce at lesser prices though they know that prices was rise soon. The situation is, even when farmers want to store their produce they store it in their traditional stores commonly known as "gotera". The stored commodity in "gotera" faces a quality or generally value deterioration since this storage does not have quality. Thus farmers fearing that the worst was happen to them, that is they was sell below the price offered at time of production, since for sure their stored production exposed to quality deterioration if they let it to stay with them until price rises sell their surplus at lower prices and get disadvantaged.

2.2.9.1 Private Limited Company and Corporate

There are many Private limited Company and corporate who are in the business of procurement of agri-commodity on large scale. These Private limited Company and corporate are blocking their capital at the time of procurement. Commodities kept by them in warehouse could have been taken as collateral and loan given to them.

2.2.9.2 Commodity Futures

The legally binding agreements, futures contract, are agreements to buy or sell a commodity which are standardized according to the quality, quantity, and delivery time and delivery location for each commodity. These standardized commodity derivatives are not present in the ECX. This situation creates in efficiency on the services delivered by the exchange. Besides the exchange fails to perform the main economic functions of price risk management and price discovery efficiently since the exchange does not have futures. Moreover, since commodity futures are not there in ECX the two important participants of exchanges hedgers and speculators are not present to play their invaluable role in creating liquidity to the market.

Futures markets exist primarily for hedging, but since there are no futures there is not any way available for participants to hedge price risks inherent in the ownership and transaction of commodities. This implies that there is no way to counterbalance investment involving a position in the futures market that is opposite one's position in the cash market. Since the cash market price and futures market price of a commodity tend to move up and down together, any loss or gain in the cash market roughly offset or counter-balanced in the futures market.

2.3 Spot Price Conundrum

The other important issue arising from the above is the state of the spot market and spot price discovery process. It is difficult to develop a good commodities market without adequate spot price discovery. This also becomes extremely important in the context of physical settlement of commodities. Currently the spot price in ECX is determined by the market in an open outcry. This method is chosen by the exchange for it is thought that it is on the trading floor where true demand and supply meet and as a result true price is determined. There is no problem as to using demand and supply in the exchange floor in determining the true price of the commodity if the market is very liquid for that specific commodity traded.

2.3.1 Trading in Commodity Exchange practical operation

In Cash or Spot trading the seller delivers the commodity to the buyer immediately after transaction however sometimes at a specified later date. Sellers are usually the producers and dealers, whereas the buyers are usually processors and exporters. There are two types of futures contract those which provide physical delivery of a particular commodity and those

which require cash settlement. This kind of trading is called futures because it requires delivery of standard quantity of a commodity during a stated month in the future. Buyer of the futures contract is obligated to accept delivery at the agreed-upon price at a specified place during the stated month. However, settlement of a contract by actual delivery is rare because most contracts are liquidated before the maturity date or before the contract expires.

2.3.2 Red cherry Coffee Production and processing

Full process description from entering of the organic raw materials till the outgoing products, indicating all process-phases step by step (e.g. capacity, processing time, losses, temperatures etc,) Identify equipment, machinery, grading stations and storage areas where ingredients are added or processing aids are used. Receiving the arrived Red cherry- Pulp and grading – fermenting –washing- drying- store separately according the lots- process according to the order based on lots- store separately till it is loaded to Addis Ababa for export processing. Load on clean truck and send with all necessary documents.

Flow charts 1showsred cherry coffee production and processing
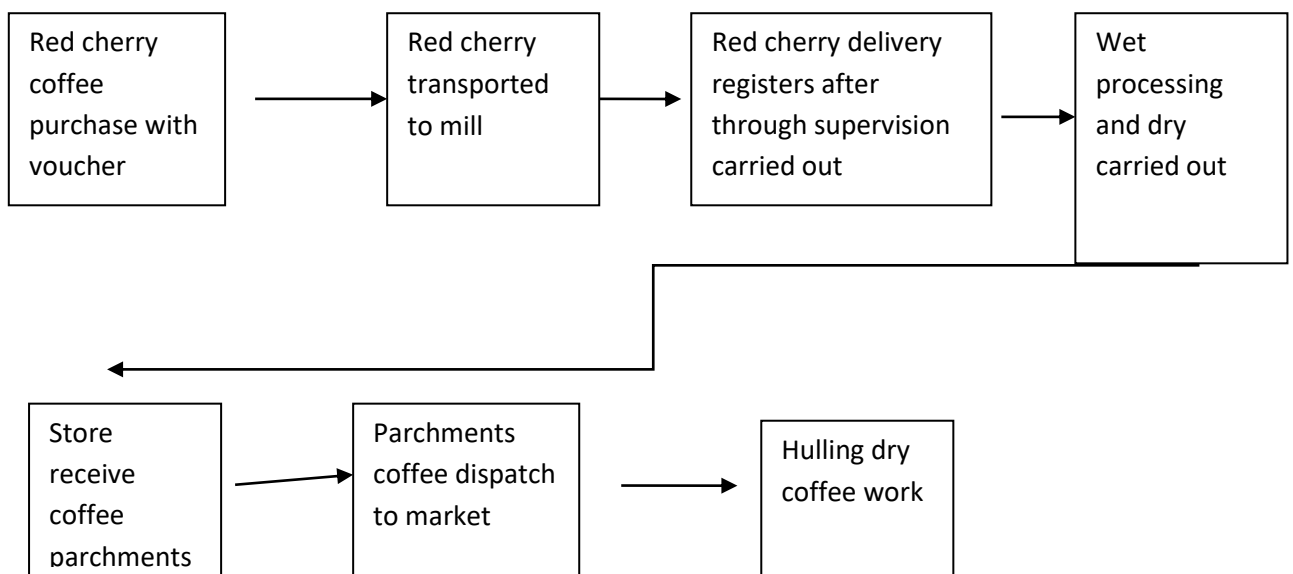
Source: UTZ certification 2019

2.3.3 Dry coffee Production and process

Full process description from entering of the organic raw materials till the outgoing products, indicating all process phases step by step (e.g. capacity, processing time, losses, temperatures etc,). Identify equipment, machinery, grading stations and storage areas where ingredients are

added or processing aids are used **.**Receiving the arrived dried coffee for- milling-grading and packing for Addis- store separately according the lots- process according to the order based on lots- store separately till it is loaded for export processing.

Add flow chart 2 shows dry coffee production and process

Source: UTZ certification 2019
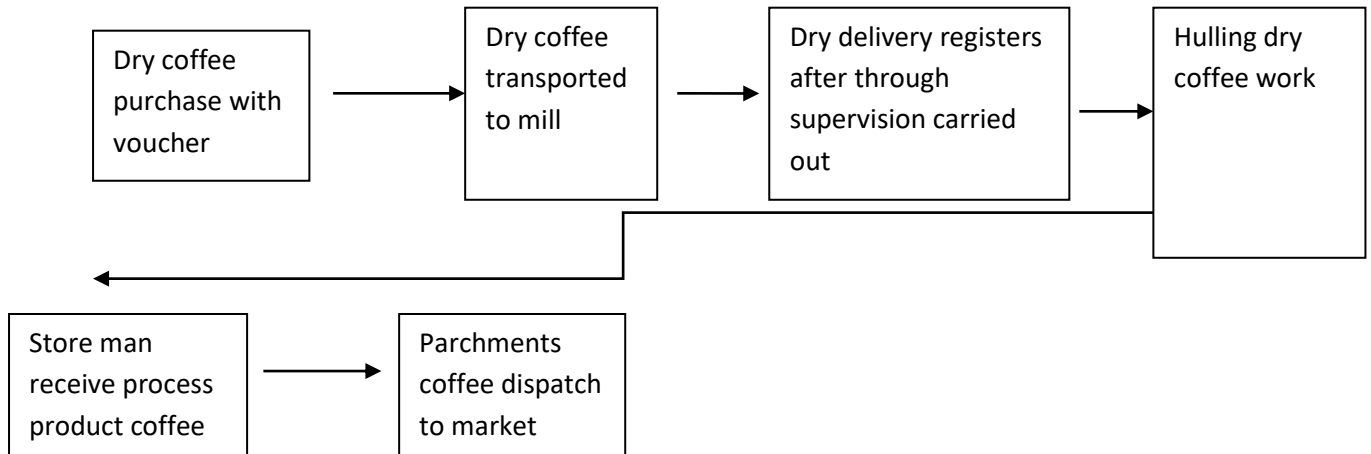
```
┌──────────────┐      ┌──────────────┐      ┌──────────────────┐      ┌──────────────┐
│ Dry coffee   │      │ Dry coffee   │      │ Dry delivery     │      │ Hulling dry  │
│ purchase with│ ───► │ transported  │ ───► │ registers after  │ ───► │ coffee work  │
│ voucher      │      │ to mill      │      │ through          │      │              │
│              │      │              │      │ supervision      │      │              │
│              │      │              │      │ carried out      │      │              │
└──────────────┘      └──────────────┘      └──────────────────┘      └──────────────┘

┌──────────────┐      ┌──────────────┐
│ Store man    │      │ Parchments   │
│ receive      │ ───► │ coffee       │
│ process      │      │ dispatch     │
│ product      │      │ to market    │
│ coffee       │      │              │
└──────────────┘      └──────────────┘
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The mere setting up of a commodity exchange does not result in a vibrant and liquid commodities market. There are a host of issues which need to be addressed along with the setting up of a commodity exchange in order to develop the markets. The key to success is liquidity and the challenge is to create this liquidity? In this context it may be worthwhile to go back to first principles. Who are the players that drive any commodities markets? Typically they are hedgers, arbitrageurs and speculators. In the absence of these categories of players, especially the latter, it is unlikely that any derivatives market very liquid. So do these categories of players exist in ECX? A cursory examination of these markets and interview results shows that there are limited arbitrageurs scattered across the various markets. No hedgers and no speculators since in the beginning there is no open and favorable field that let these bodies to participate in the exchange and create the desired level of liquidity. Beside there is no professional body of arbitrageurs participating in commodity markets; the lack of well-developed organized spot markets and price discovery mechanism is a major impediment to arbitraging. Typically there are traders and trade bodies in the distribution chain that take advantage of lack of price discovery and arbitrage the same. However these are restricted to small set of traders and are not wide enough to drive liquidity especially to the commodities traded on the exchange other than coffee. Arbitraging with the spot market is done to a limited extent. Wider participation by arbitrageurs and speculators is ruled out as there are too many impediments and it is not attractive enough. The other key constituent is the hedger. Today the scope to hedge positions in a commodity is non-existent because there

is no mechanism to do so. Smaller and retail level participation is not possible because of the closed door nature of existing exchanges. The exchange suggests that the minimum quantity that can be traded is 50 quintal which is more than what the majority of the Ethiopian society could afford even when organized as a group.

Liquidity plays vital role in determining the effectiveness of firms. Thus it is necessary for firms to maintain a balanced liquidity ratio in order to meet their short term liabilities. Due to its relationship with the day to day operations it is imperative for both internal and external analysts to study liquidity (Bhunia, 2010). The purpose of liquidity management is maintaining tradeoff between liquidity and profitability (Rahemanet, 2007). Qasim Saleem & Ramiz Ur Rehman (2011) examined the relationship between the liquidity ratio and profitability. The study is conduct between the years 2004 and 2009 and later than collecting data about the financial positions as a result of annual activities and the related ratios of 26 enterprises per year which is traded on the Pakistan.Wang (2002) investigated the relationship between liquidity and operating performance and using the sample firms for the period of 17 years it was found that liquidity management would improve the firm worth and its operating performance. They examined the association between profitability and the information system taking the sample. Performance was measured by return on assets and the author found that information system did not enhance the performance of the firm. (Zhang, 2011).A study had been done to investigate impact of working capital management on profitability and market valuation of Pakistani firms. The author found that there was a positive relationship total debt to total assets and profitability but negative relation between cash conversion cycle and profitability (ROA) (Alam, *et al.*, 2011). Nosa and Ose (2010) examined the relationship capital structure and performance. The sample period was 15 years. Statistical analytical tools had been applied. Author concluded that there is negative relationship between capital structure and performance.

What are the other key issues faced by ECX? If the ECX is to attract participation by a larger body of investors and arbitrageurs it has to ensure that the safety and integrity of the market. Unless and until participants are convinced that the exchange provides fairness, transparency and efficiency they was not be drawn into the market. This has several elements − the structure and management of the exchange itself, the trading facility and distribution, efficiency of settlements, risk management.

Liquidity can be quantitatively measured by several indicators, we start discussing liquidity by concerning working capital first, as working capital is crucial in measuring liquidity. Working capital can simply means the cash one company needs to support its daily operation. Sharma (2008, p. 26), mentions 2 different concepts of working capital regarding their purpose, gross working capital means current assets, while net working capital means the difference between current assets and current liabilities. Net working capital = Current assets-current liabilities The normal terms of working capital for companies when considering working capital include cash, short-term financing, receivables, inventory, payables, prepaid expenses and so on. (Sagner, 2010, p.3)

Thus WCW (Working Capital Management) is important issue for financial managers to consider, which include cash inflow and outflow management; inventory management; trade receivable management, short-term finance, and so on. Working capital management is vital because it plays important role on financial management and it's closely linked with sales growth (Dhiraj Sharma, 2008, p. 26). Good financial managers are obliged to control working capital because either too much or too little working capital remaining in company was doing harm to company's profit maximization. Too much working capital may result in inefficient use of funds, more control and supervision needs, bad debt loss and low profitability. While too little working capital was cause inevitable interruption or termination of business operation, damage of reputation, missing business opportunities, difficulties in dealing with sudden crisis and so on. Although working capital plays such important role in the survival and development of company, it is still ignored for several reasons (Dhiraj Sharma, 2008, p. 27). As one factor to measure liquidity, theoretically, high net working capital means high liquidity for a company. But one thing to mention is that, although all the terms mentioned in the category of working capital can account for working capital, they have different level while considering their liquidity. For example, the risk-bearing securities and treasury bills have different levels in terms of liquidity, although they all belong to current assets. Thus, pay attention to the detained category of working capital is needed when measuring liquidity. Besides, the most direct way of measuring it is cash flow from operations, Cash flow from operations can be calculated as profit after tax adding changes in working capital and plus depreciation and amortization. It can be easily understood that one company must generate positive cash flow from operations to meet its liquidity needs, and more cash flow from operations means stronger liquidity of one company. Another indicator to measure liquidity is

CCE (cash conversion efficiency), which shows the companies' efficiency to transfer revenues into cash flow from operations. CCE cash flow from operations/sales.

The first component of cash conversion period is DIH (Days inventory held, also called Days in inventory), DIH measures the number of days between the inventory is received and the inventory is finally sold. The calculation of DIH is inventory divided by daily cost of sales. In general, high DIH indicates high liquidity, which means the company is efficient in dealing with business cycle concerning selling inventories. DIH=inventory/(cost of goods sold/365) The second component cash conversion period is DSO (Daily sales outstanding), which measures the efficiency of receivable collections. It can be calculated by the average days from goods sold to payments received. The calculation of DSO is payment receivables divided by daily sales. Normally, the higher the DSO is, the stronger liquidity ability the company has.

DSO is given by payment receivables / (annual sales/365). The third component of Cash conversion period is DPO (Days payment outstanding, also called days in payables), which measures the efficiency of payable payments. It can be calculated by the average days from inventory purchase to cash payment for inventories. The calculation of DPO is trade payable divided by average daily cost of sales. Higher DPO shows the company has higher efficiency in repayment of payables, which is not a good signal for the company's liquidity because of the cash outflow to producers of inventory. DPO=Payables / (cost of sales/365) The forth indicator of measuring liquidity is CCC (Cash Conversion Cycle), the concept of CCC (Cash Conversion Cycle) is introduced by Gitman in 1974.which measures the time period between inventory purchase and money collection from selling goods. The formula of calculation is DSO (Days sales outstanding) plus DIO (Days Inventory Outstanding, then minus DPO (Days payable outstanding).

CCC is regarded as a comprehensive factor including DSO, DIO and DPO, thus, it's often widely used by some research to act as the representing factor to measure liquidity. Normally high CCC shows the company has high liquidity. For the relationship between liquidity and profitability, a lot of researches mention the trade-off between them. The return of one financial instrument is determined by its risk, in other words, the higher the risk it bears, the higher profitability it was gain, there is a positive relationship between risk and profitability. While the liquidity of one company influences negatively on the risk, as we mentioned before, efficient liquidity management enhances the efficiency of investments and other

business operations, reduces extra cost caused by lack of liquidity, thus reduces liquidity directly and other risk like default risk. By discussing the role of risk on profitability and the relationship between risk and liquidity, we connect the concept of liquidity and profitability. It can be assumed that there exists a negative relationship between them the high liquidity was result in low profitability.

Three independent components to define liquidity were amount, time and cost. Amount means how many resources the company has to fulfill its financial obligations; time means how long the company takes to transfer assets into cash; cost means if the company can transfer assets into cash without much costs.

2.5 Concept of profitability

Profit is defined as the difference between revenue generated from the sale of output and the full opportunity cost of factor used in the production of that output (Aburime, 2008). Profitability maximization is the ultimate goal for banks because of their for-profit essence, through previous definition; two aspects are concerned with profitability, the revenues generated and the cost. Thus, the ways of improving profitability includes enhancing revenues and managing cost. In general, there are several ways of improving profitability, like breakeven analysis, cost controls, ratio analysis. (Ibe, 2013, p.41). Although profitability maximization is the common goal for all the commercial banks, it's not easily being achieved since so many variables are concerned. Tsomocos (2003), points out survival of companies should be taken as priority before concentrating on its profitability, which connects the concepts of liquidity and profitability. If one company expects to improve profitability by increasing revenues, then it should manage liquidity at first to seize the proper investment opportunities and make most use of available funds; If cost control is the approach one company use to achieve wealth maximization, then liquidity management is equally important to avoid extra cost generation caused by lack of profitability.

Profit is the main goal for establishing a business concern. Profit is the primary motivating force economic activity. Profits have to be earned and they have got to be earned on a regular or continuous basis. Profits are needed not only to remunerate capital but also to finance growth and expansion. "Profit are the record card of the past, the inventive lode star for the future. If an enterprise fails to make profit, capital invested is eroded and in this situation prolongs the enterprise ultimately ceases to exist. Profit is a measure of surplus wealth

generated by a business concern from its operations. The measurement of profits in a continuing business concentrates place on periodic basis. The word profit implies a comparison of the operations of business between two specific dates, which are usually separated by an interval of one year.

Profit is a single for the allocation of resources and a yardstick for judging the managerial efficiency. To the financial management, profit are the test of efficiency and a measure of control, to the owners, a measure of the worth of their investment, to the creditors, the margin of safety, to the employees a source of fringe benefits, to the government a measure of taxable capacity and the basis of legislative action, to the country profit are index of economic progress, national generated and rise in the standard living importance of profit to different parties Weston and Brigham pointed "To the financial management, profit is the test of efficiency and a measure of control, to the owners; a measure of the worth of their investment, to the creditors, the margin of safety, to the government a measure of taxable capacity and basis of legislative action; and the country profit is an index of economic progress, national income generated and rise in the standard of living. Prof. Robbins "Profit are the motivating force for economic activity." Profit is defined in a number of ways by economist, accountant and others according to its use and purpose. The survival of any business depends upon its earning capacity. Thus if an enterprise fails to make profit capital invested is eroded and if this situation prolongs, the enterprise ultimately ceases to exist. In fact profit is the soul of business without which it is lifeless. Indeed the efficiency of a business concern is measured by the amount of profits earned. The larger the profits the more efficient and profitable the business is demand to be. According to R.R.Gilchrist, the profit is the ultimate measure of effectiveness a profitable company is likely to after not only security of employment but also promotion prospects, job opportunities and the intense personnel motivation the comes from being associated with success

2.5.1 Accounting profit

The excess of revenue over related costs applicable to a transaction, a group of transactions or the transactions of an operating period is profit. In accounting terminology "The profit of a business during given period is the excess of income over expenditure for the period" (M.C. Gupta profitability Analysis, 1989:1) The general meaning of the profit is difference between the sale price and the cost of producing and selling that production is its profit. Accounting profit is classified into three categories:

Gross Profit: The excess of total gross revenue over the revenue expenditure is the gross profit. Operating Profit: The excess of the total operating revenue over the total cost of operation is the operating profit.Net Profit: The excess of the total gross revenue over the total cost of operation is the net Profit. Profitability is the net result of a large number of policies and decisions. The ratios examined thus provide some information about the way the firm operating, but, the profitability ratios show the combined effect of liquidity, assets management and debt management on operating results. In this fieldwork ROA is used as the profitability ratio. It tells about the ability of the company to use its assets to create profit. A company should be able to create value for the resources that it holds. Like, ROE, ROA can be compared to returns of risk-free investments. If ROA is higher than the risk-free return, the company has managed to add value (Balance Consulting, 2015). Profitability is a measure of firm's efficiency (Khan and Jain, 1998). It is also a control measure of the earning power of a firm as well as operating efficiency. Weston and Copland (1998) described profitability as net result of a large number of policies and decisions. Ratios are used to measure profitability and these give final answers about how effectively the firm is being managed. Therefore, management, creditors and owner of the company are also interested in the profitability ratio of the firm (Pandey, 1995.

2.5.2 Ratio analysis

Ratio Analysis is the principal technique used to measure the profitability of a business enterprise. The growth development and the present position of a business in terms of profit can be analyzed through the calculation of various ratios. The term accounting ratio is used to describe significant relationship which exist between figures shown in financial statement Profit and Loss Account and Balance Sheet. In financial analysis a ratio is used as an index or yardstick for evaluation of the financial position and performance of a firm. The technique involves four steps determining the accounting ratio to be used computation of the ratio comparison of ratio with the standard set and interpretation. The interpretation of ratio required careful and detailed study and sound judgment on the part of the analyst.

2.5.3 Gross margin analysis

Gross margin is defined as the difference between the value of an enterprise's gross output and variable costs (Ergano and Nurfeta, 2006). Gross margins were calculated for dairy farms practicing improved dairy production and those farms using local dairy production practices. At test was used to test differences in gross margins

2.5.4. Factors affecting to profitability

The following two factors which affected the profitability of any organization

• The Operating Profit Margin

• The Rapidity of Turnover of Capital Employed. Profitability is the product of two factors and therefore maximum or operating profit can be earned only by maximizing them. In technical terms the combination of these two factors is known as the Triangular Relationship. Its significance exits not only in its use as an analytical tool but also because the profitability ratio can be calculated directly from the specific earnings and investment data.

2.6 Risk Management

A key element of settlement and safety of the market is guaranteed settlements. This eliminates counterparty risk as exchange/clearing house becomes counterparty to transactions. The exchange/clearing house, besides providing clearing and settlement services, manages market risk and guarantees completion of settlements. This encourages wider participation by all sections of investors and traders. This requires effective risk management systems and a legal framework which supports the same. Currently ECX uses different tools to manage operational and market risks. To manage the market risks the main tools which are in use by the exchange are settlement guarantee fund, member audit, market analysis. But currently, the method which is mainly used is marker surveillance. This method enables the exchange manage its risk by identifying whether two specific parties are engaged in buying and selling only among themselves or are offering only specific prices that can manipulate the market.

The current risk management of ECX did not cover adequately the scope and importance of the commodity price risk problem. Besides the risk management techniques(specially the mainly used market surveillance) fails to provide ways for assessing, monitoring, and managing the price risks faced by individual producers, producer groups, banks, trading companies, and other firms operating in commodity markets. It is clearly known that as in most developing countries in Ethiopia too, production and marketing of primary commodities play a dominant role in the country's economies and unpredictable fluctuations in commodity prices cause various problems for actors throughout the supply chain

2.7 Related Empirical Studies in Ethiopia

As to the author's knowledge, the first study was conducted by Tseganesh (2012). She studied the determinants of banks liquidity and their impact on financial performance on commercial banks in Ethiopia including both public and private banks. Her study focused on two stapes; first, to identify determinants of commercial banks liquidity in Ethiopia and then to see the impact of banks liquidity up on financial performance through the significant variables explaining liquidity. The data was analyzed by using balanced fixed effect panel regression model for eight commercial banks in the sample covered the period from 2000 to 2011 and the result of her study indicate that capital adequacy, bank size, share of non-performing loans in the total volume of loans, interest rate margin, inflation rate and short term interest rate had positive and statistically significant impact on banks liquidity. Whereas, Real GDP growth rate and loan growth had statistically insignificant impact on banks liquidity.

2.8. Related Empirical Studies in Canada and U.S

Empirical studies made by Bordeleau and Graham (2010), presented empirical evidence regarding the relationship between liquid asset holdings and profitability for a panel of Canadian and U.S. banks over the period of 1997 to 2009. In short, results suggested that a nonlinear relationship exists, whereby profitability was improved for banks that hold some liquid assets, however, there was a point beyond which holding further liquid assets diminishes a banks" profitability, all else equal. Conceptually, this result is consistent with the idea that funding markets reward a bank, to some extent, for holding liquid assets, thereby reducing its liquidity risk. However, this benefit is can eventually be outweighed by the opportunity cost of holding such comparatively low-yielding liquid assets on the balance sheet. At the same time, estimation results provide some evidence that the relationship between liquid assets and profitability depends on the bank"s business model and the risk of funding market difficulties. The researchers recommended that adopting a more traditional i.e., deposit and loan-based business model allows a bank to optimize profits with a lower level of liquid assets.

Shen et al. (2009) empirically investigate the causes of liquidity risk and the relationship between bank liquidity risk and performance. The study aimed to employ alternative liquidity risk measures besides liquidity ratios (i.e. financial gap measures provided by (Saunders and

Cornett 2006)). The study further aimed to investigate the determinants of bank performance in terms of the perspective of the bank liquidity risk (bank liquidity risk and performance model). The study used an unbalanced panel dataset of 12 advanced economies commercial banks over the period 1994-2006. The panel data applied to instrumental variables regression, using two-stage least squares (2SLS) estimators to estimate bank liquidity risk and performance model. The researchers classified countries as bank-based or market-based system, and investigate the difference of causes of liquidity risk in different financial systems. The empirical results indicated that the bank specific variable had the same effect on bank liquidity risk in two financial systems and liquidity risk was the endogenous determinant of bank performance. There are also other researchers investigated the relationship between bank liquidity risk and financial performance by taking liquidity as an endogenous variable. For instance, we can find that the effect of liquidity risk on bank profitability is mixed. Some studies found out the positive effect (e.g. Molyneux and Thornton 1992; Barth et al.2003); others found out the negative effect (e.g. Bourke 1989; Demirgüç-Kunt and Huizinga 1999; Kosmidou et al. 2005; Kosmidou 2008). Besides, previous studies found that banks with high liquidity have lower net interest margins. (e.g. Demirgüç-Kunt and Huizinga 1999; Shen et al. 2001; Demirgüç-Kunt et al. 2003; Naceur and Kandil

2.9. Related Empirical Studies in Nigeria

An empirical study made by Fadare (2011), on the banking sector liquidity and financial crisis in Nigeria with the aim of identifying the key determinants of banking liquidity in Nigeria, and assessing the relationship between determinants of banking liquidity and financial frictions within the economy. It was employed a linear least square model and time series data from 1980 to 2009. The study found that only liquidity ratio, monetary 32 policy rate and lagged loan-to-deposit ratio were significant for predicting banking sector liquidity. Secondly, it showed that a decrease in monetary policy rate, liquidity ratios, volatility of output in relation to trend output, and the demand for cash, leads to an increase in current loan-to-deposit ratios; while a decrease in currency in circulation in proportion to banking sector deposits; and lagged loan-to-deposit ratios leads to a decline in current loan-to-deposit ratios. Generally, the result suggested that during periods of economic or financial crises, deposit money banks were significantly illiquid relative to benchmarks, and getting liquidity

monetary policies right during these periods is crucial in ensuring the survival of the banking sector

2.10 Conceptual framework

The following figure depicted how liquidity related to different factors and how determinants liquidity has impact on profitability at Jimma zone coffee commodity exchange. All of the factors of liquidity were not listed in the diagram for visibility purpose.
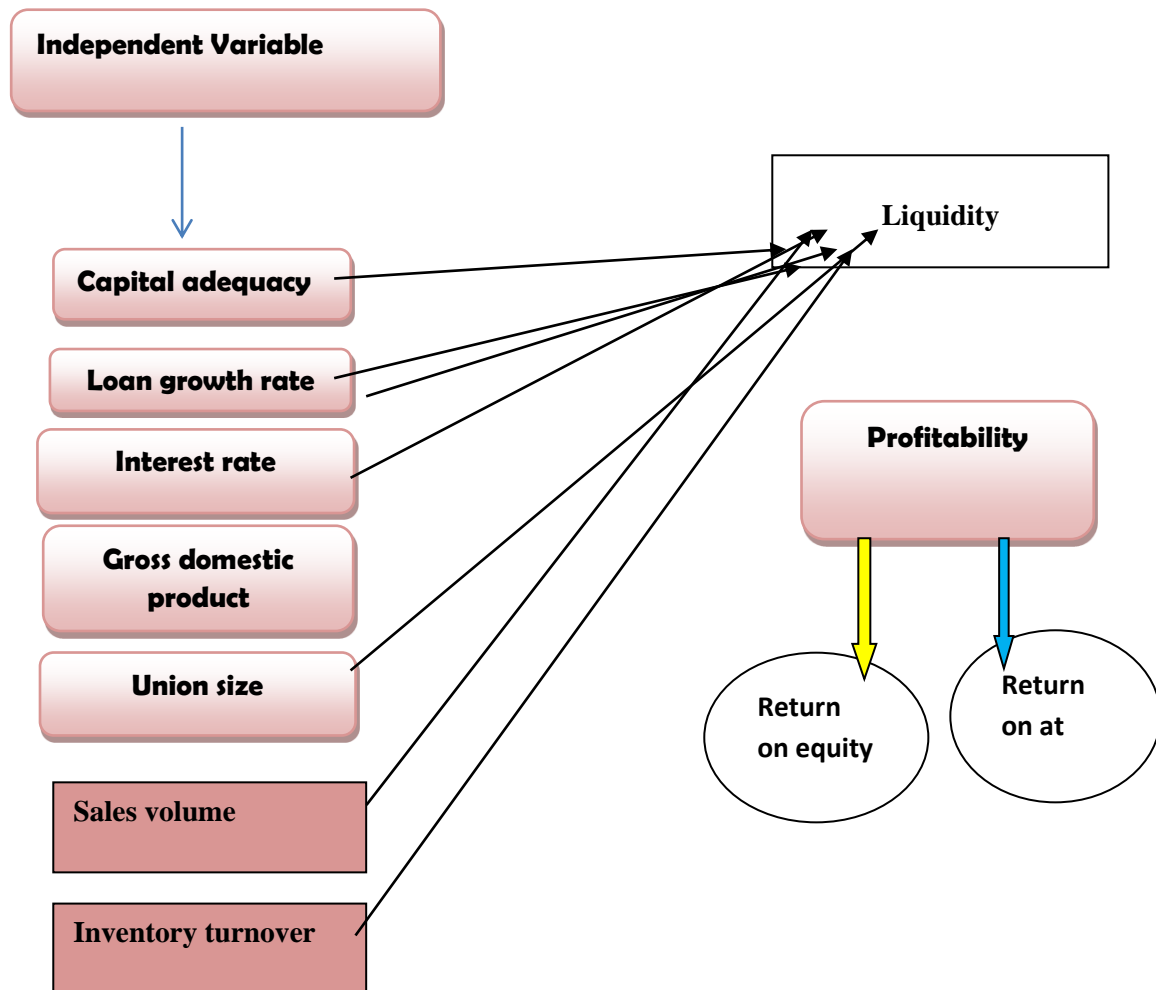
Fig.2.1 conceptual framework

The return of one financial instruments is determined by its risk, in other words, the higher the risk it bears, the higher profitability it will gain, there is a positive relationship between risk and profitability. While the liquidity of one company influences negatively on the risk, as we mentioned before, efficient liquidity management enhances the efficiency of investments and other business operations, reduces extra cost caused by lack of liquidity, thus reduces liquidity directly and other risk like default risk.

Some researches argue that profitability can be enhanced by efficient liquidity management, which shows the positive relationship between them. Although current assets are less profitable than fixed assets, holding proper liquidity may prevent companies from other extra cost, thus improve the profitability through this way. For example, promising investment opportunities requiring in-time money inputs can be seized by banks with adequate liquidity reserves, sudden financial needs due to mismatch of cash outflows and inflows can be met through enough liquidity reserves, otherwise the company will face risk of default and other costs from generating liquidity.

2.11. Summary

Liquidity is important to all businesses and commodity exchange since their purpose is to meet their working capital requirement and their immediate and short term obligation in order to sustain their business. The participant of the private sector in the market activities has generally been limited because of poor market infrastructure high transaction and searching cost (MoFED, 2009). Liquidity constraint due to weak credit access, information asymmetry among market actors, high transaction cost associated with searching cost of finding buyer and seller were a strange in the study area. Different studies done previously suggest that liquidity is determined both by union specific factors (such as size of the union, profitability, capital adequacy and factors describing risk position of the union), but in this study predictors such as profit, net working capital, cash conversion cycle and so on were used as factors. There are also very limited number of studies appears to include liquidity as an explanatory variable for profitability, this relationship is not the focus of those papers and the empirical results were mixed. To the knowledge of the researcher there is very small number of empirical studies done regarding to determinants of liquidity and their impact on financial performance in Ethiopia regarding commodity exchange. Therefore, this study investigated some of ECX specific factors affecting Jimma zone coffee commodity exchange based data obtained from 68 trade unions.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3. 1 Introduction

In this research under this section a detail discussion of the research method that are applied in the study were presented. Topics related to research design and study area, data type and source, target population, data collection procedure and method of data analysis used were discussed. In any study research methodology is the backbone of the research since objectives of the research get their answer using the methodology used in the research.

3.2 Research Design

With the intention of the research objective is to complete its plan for the data collection in an empirical research the design had been applied accordingly. The study used quantitative type of research. In order to identify and describe the factors affecting liquidity and its impact on the profitability of, Jimma coffee commodity exchange, cross sectional designs was suitable. Thus, the survey method gathers data from a relatively large number of cases at a particular time; it is essentially cross-sectional over time series client financial position. Furthermore, a research strategy is help researchers to provide data that can answer the research questions or achieve the research objectives. In fact, there are many types of research strategies depending on the types of data that the researcher wanted to collect and analyze, such as experiment, survey, case study, action research and grounded theory.

3.3 Research approach

There are three common approaches to conduct a research project in the area of natural and social sciences such as quantitative, qualitative and mixed research approaches. Therefore, in order to achieve the objectives of this study and thereby to give answer for its problems, quantitative research approach used by the researcher. There are compelling reasons why the researcher opted to use quantitative approach. The adoption of positivist paradigm entails that measurement remains an essential element since its basic assumption is social and economic phenomenon can be measured. So, to gain deeper insights on the issue, to significantly

strengthen the analyses and thus enhance confidence in the conclusions this approach is valuable

3.4. Target Population and survey types

The target populations were all commodity suppliers those supplied commodity to ECX within the years of 2015-2019 G.C at Jimma coffee commodity exchange. According to the information obtained from ECX there are 68commodity suppliers in the years from 2015 to 2019 that only trade in ECX without having sister company out of ECX. Therefore, the target unit of this study had been selected suppliers who have full file and financial statement was included in this study. The inclusion criterion tells about suppliers those trades only in ECX who have full financial statement. Due to the entire population are finite, census survey technique had been used. Primarily, select the commodity suppliers who supply commodity for ECX within the past five consecutive years. In that regard the providers those have five years and more experience included in this study. Population is the total group of people or entities from which information is required. The total population of the study consists of 68 ECX unions members, which were categorized as full members and private limited members of the Ethiopian commodity exchange, engaged in selling, processor, and wholesaler and exporting of commodities in jimma zone with in ECX. According to the information earned from ECX, currently 68 unions or suppliers are supplying coffee commodity for the exchange. All of those experienced service providers had included in this study. They have different business other than commodity which consolidated their financial statements at the end of the year. Therefore, these organizations which are not included under this study did not give the true and fair view of financial position as well as profitability of trading in ECX Platform.

3.5. Methods and tools of data collection

Since secondary data analysis is a convenient and powerful tool for researchers looking to ask broad questions at a large scale. While it has its benefits, such as its cost effectiveness and the breadth and depth of data that it provides access to, secondary data analysis can also force researchers to alter their original question, or work with a data set and therefore ssecondary source of data had been used. The data has quantitative in nature and encompasses five years commodity suppliers audited financial report, i.e., balance sheet and income statement. It is collected from Ethiopian Commodity Exchange Authority (ECEA) who is appointed as a regulatory body. The data is collected directly from the listed member union balance sheet

and Income Statements of the traders. Macroeconomic data were collected from National bank of Ethiopian (NBE) and Central Statically Agency (CSA).

3.6. Validity Test

In order to reduce the possibility of getting higher errors attention was given. Hence, validity tests, which help to detect the presence or absence of those errors, have taken place to reduce the problems. Validity is the extent to which collection methods accurately measure what they were intended to measure and concerned whether the findings are really about what they appear to be about. Therefore, the variables were carefully selected as per the theoretical review of other literatures. It was also reviewed, commented upon, modified, and finally approved by the advisor and experts those have experience with in the research area.

3.7. Method of Data Analysis and Presentation

After data were collected, data processing was carried out. The raw data was converted into suitable form for analysis and interpretation. This was achieved through sequences of activities including coding, entry, and tabulation. The objectives were to check the completeness, internal consistency and appropriateness of the answers to each of the hypostases. Statistical analysis was carried out using Statistical Package for Social Science (SPSS) software version 20.0 has used to analyze and present the data through the statistical tools for the study, namely descriptive analysis. Both descriptive and inferential statistics such as frequency distribution, measures of central tendency and measures of dispersions (minimum, maximum, mean, and standard deviation) and regression model were used as a method of data analysis.

In fact, the study would use panel/longitudinal regression specification model which involve the pooling of observations on the cross sectional over several time periods random effect observation. Brooks (2008) stated the advantages of using panel data set; first and perhaps most importantly, it can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time series or pure cross sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change dynamically over time. Third, by structuring the model in an appropriate way, the researcher can remove the impact of certain forms of omitted variables bias in regression results.

3.7.1 Description and Measurement of variable

Quantitative research approach and secondary data collection method were used for our population ECX coffee supplier member unions. Different similar studies checked before settling on the reliable measures for the variables in the study, both independent and dependent. The reliable measures are to be the proxies for our main concepts liquidity and profitability. In studies conducted on liquidity and profitability trade-off, multiple yet similar measures have been used to achieve this goal. In this study the liquidity was measured using two expressions. The first method of expression was in terms of liquid asset to the total asset for each of 68 unions. The second expression was using liquidity in terms of liability over capital plus retains earning. In similar manner profitability of the unions was also expressed using return on asset and return on equity. Return on asset is given by net income over the total asset whereas return on equity is net profit before tax/shareholder equity. In a study conducted by Raykov (2017) focusing on the liquidity-profitability trade-off in Bulgaria used the quick ratio and return on current assets to measure liquidity and profitability respectively. However, their measures were solely focused on working capital management effects and not the entire operations of firms. Rasul's (2013) study on Islamic banks and liquidity opted to use ROA, ROE and ROD to measure profitability, and cash asset ratio, cash deposit ratio, investment asset ratio and investment deposit ratio. To achieve the research objectives developed and to answer research questions, the researcher selected the following core variables as dependent and independent.

3.7.2 Correlations

The correlation analysis is used to assess the nature and strength of the linear relationship between two variables (Kothari, 2004, p.138). For purposes of this research the Pearson's coefficient of correlation used to highlight the linear relationship between the variables credit receive ratio, deposit asset ratio, inventory turnover ratio, return on assets and return on equity. The correlation coefficient scale ranges from -1 to +1 where -1 entails perfect negative correlation and +1 perfect positive correlation. Positive correlation means there exists an association between the variables such that as one increases the other increases as well. On the one hand, negative correlation means the association is such that when one variable increases the other decreases and vice versa. A correlation of zero means the variables are dissociated (Saunders et al., 2009, p. 459). Although correlation coefficients

denote the nature of the relationship between variables, they cannot for certain indicate a causal relationship which can only be established by means of a regression analysis (Kothari, 2004, p.138).

3.7.3 Dependent variable

In this study there were two dependent variables; liquidity and profitability

Liquidity of coffee trade unions-: Coffee trade unions liquidity is the amount of cash and cash equivalent asset ability to meet daily operation from the sales of goods (inventories), current assets and additional investment from shareholders and liability. Liquidity can be measured by using two main methods: liquidity gap and liquidity ratios. The liquidity gap is the difference between assets and liabilities at both present and future dates.

Liquidity ratios are various balance sheet ratios which should identify main liquidity trends. These ratios reflect the fact that coffee trade unions should be sure that appropriate, low-cost funding or cash is available in a short time. This might involve holding a portfolio of current assets that can be easily sold (cash reserves and minimum required receivable) and maintaining credit lines with other financial institutions. In this study we used the dependent variable, liquidity which is expressed in the form of balance sheet liquidity ratios were expressed.

Dependent variable liquidity was expressed using liquid asset over total asset. This method is the ratio of cash and cash equivalents to total assets (L) which tells about the general liquidity change absorption by coffee trade unions. The higher the L indicates the more liquidity. It indicates what percentage of the volatile repayments of the unions is tied up in liquid liability.

The second dependent variable was profitability, which was defined using two proxies: Return on assets (ROA) & Return on equity, return on asset is given by net income over the total asset whereas return on equity is income before tax divided by share holders' equity trade unions.

3.7.4 Independent Variables

The candidate independent variables affecting liquidity and the dependent variables were listed in the following table.

Dependent Variable	Formula
Liquidity (L)	Liquid asset/total asset
Return on Asset (ROA)	Net income before tax /Total Assets
Return on Equity (ROE)	Net profit before tax/shareholder equity
Independent Variable	**Formula**
Net Profit Margin(NPM)	Net profit/income or sale
Interest rate	NBE lending rate
Inventory turnover	inventory/(cost of goods sold)
Capital adequacy	ratio of equity to total assets
Gross domestic product	GDP growth rate
Return on investment	Net profit before tax/investments
loan growth rate	The amount of loan
Sales volume	Annual amount of sales
Union size	Number of each union members
Legal reserve	The total amount of reserved deposit
Liability	Total amount of borrowed cash

3.8. Model specification

In order to meet the objective of the research i.e. to determine the impact of liquidity on profitability, multiple linear regression analysis was employed by finding the causal relationship of the independent variables affecting liquidity and profitability. Gross profit margin (GPM), net profit margin (NPM), current ratio, quick ratio, inventory turnover, liability, loan growth rate, gross domestic product capital adequacy sales volume, capital adequacy, union size, legal reserves and liability were the independent variables. The dependent variables was liquidity, the ratio of liquid asset to total asset (L) and the second dependent variable was profitability of coffee trade unions at the study area which by given return on asset (ROA or P_1) and defined as the ratio of net income before tax to total assets

and return on equity (ROE or P_2) which is given by the ratio of net profit before tax to shareholder equity.

Multiple linear regressions enable calculation of the relative weightings of the independent variables on a dependent variable (Cohen, 2007, p. 665). Subsequently, the performed regression utilized in making a decision with regards to the hypotheses of the study. The regression coefficients are representative measure of the change in the dependent variable that can be described statistically to the independent variables. The multiple regression coefficients' probability of occurring established to facilitate the process of rejecting or not rejecting the hypotheses. If the significance value of the coefficient is lower than the significant level (α=0.05 in our analysis) then it is improbable that the coefficient happened by chance and if the significance value is above the significant level, then the converse is true (Saunders *et al.*, 2009, p. 461-462). This research is evaluating the determinants of liquidity and its impact on profitability by examining the financial data of private coffee suppliers unions of ECXs by selecting 68 coffee trade union registered under jimma zone ECXs during the period from 2015-2019 by applying linear regression using (SPSS) software version 20.0)

Our research regression Models is as follows

$$y_i = \beta_0 + \beta_1 x_{1i} + \cdots \ldots \ldots \ldots + \beta_k x_{ki} + \varepsilon_i i = 1,2 \ldots \ldots \ldots \ldots n$$

Where:-

y_i is the dependent variables i.e. liquidity (L) and profitability (P_1 and $P_{2)}$

Xi's are the independent variables in the multiple linear regression models

β_1's are the regression coefficients and

$\varepsilon_i i -$ is the random error term in the model.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter presents the results of the data analysis using both descriptive and inferential statistics methods. In the first section of the chapter descriptive statistics like mean and standard deviation and Pearson correlation analysis were briefly described. The second part of the chapter dealt on multiple linear regression models and its assumption were analyzed to check whether candidate independent variables have significant effect on liquidity of the unions' asset and the impacts of determinant factors of liquidity on profitability. In this chapter the linear regression model used for liquidity analysis was expressed in terms of the ratio of liquid asset to total asset by considering different related predictors of liquidity and the significant of independent variables in liquidity model used as independent factors for the two linear regression model of profitability; profitability model using return on asset and return on equity as dependent variables.

4.2. Descriptive statistics analysis

Descriptive is part of statistics used to see the overall characteristics of the data included in the study. In this study the descriptive statistics analysis result on independent factors like capital adequacy, gross profit margin, net profit margin, operating cash flow, loan growth, interest rate, inventory turnover, union size, sales volume, legal reserve ratio and gross domestic product were depicted. In the table below the total number of observation, the minimum and maximum values of each predictors, and the mean and standard deviations were depicted.

Table 4.1: Descriptive statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Capital adequacy	68	0.024	0.996	0.33408	0.23362
Net profit margin	68	0.012	0.986	0.35727	0.204707
operating cash flow	68	0.013	0.37	0.24758	0.087622
loan growth	68	0.095	0.874	0.4008	0.198163
Interest rate	68	0.115	0.735	0.39766	0.170223
Inventory turnover	68	0.114	0.736	0.31001	0.143368
union size	68	2	23	10.32	4.631
sales volume	68	0.11	0.65	0.2738	0.15185
liquid per total Asset	68	0.024	0.985	0.44157	0.237835
Liability	68	4	98	13.265	15.7486
legal reserve	67	2	25	6.179	3.133

4.3 Correlation analysis

As it was described in chapter three the correlation analysis is used to assess the nature and strength of linear relationship between two variables. In this research the Pearson's coefficient of correlation was used to highlight the linear relationship between the variables. The correlation coefficient value ranges from -1 to +1 where -1 entails perfect negative correlation between two variables and +1 perfect positive correlation. Positive correlation implied there exist association between the variables such that as one increases the other increases as well and On the negative correlation means the association is such that when one variable increases the other decreases and vice versa. A correlation of zero means the variables are dissociated (Saunders et al., 2009, p. 459).

Table 4.2 showed the correlation coefficient of independent factors with each other considered in this study. Since the variables included in this research were continuous in nature the Pearson's correlation coefficient should be used to analyze the data. As the result in the table showed most of the variables had no significant correlation and the values of Pearson correlation were less than 0.8 so there was no multicollinearity problem in the multiple linear regression model. The variables like operating cash flow and gross domestic product had significant correlation with each other. Inventory turnover and loan growth had also significant correlation with each other and there were also other significantly correlated

factors even if the correlation coefficients were small (see table 4.2 below). The diagonal elements in the table were 1 since the correlation of any variable with itself is equal to unity.

Table 4.2: Pearson correlation Analysis

Variable & PC		NPM	OCF	CA	LG	IR	ITO	US	SV	L	LR	GDP
NPM	PC	1	0.127	0.019	-0.099	-0.134	0.151	-0.16	-0.178	0.022	-0.131	0.127
	Sig.		0.301	0.876	0.424	0.276	0.22	0.194	0.146	0.857	0.292	0.301
OCF	PC	0.127	1	-0.163	-0.021	-0.209	0.176	-.284*	-0.121	0.008	-0.023	0.68**
	Sig.	0.301		0.185	0.864	0.087	0.152	0.019	0.327	0.949	0.855	0
CA	PC	0.019	-0.163	1	.278*	0.087	-0.139	-0.008	-0.106	-0.014	-0.18	-0.163
	Sig.	0.876	0.185		0.022	0.48	0.258	0.952	0.389	0.907	0.145	0.185
LG	PC	-0.099	-0.021	.278*	1	0.054	-.288*	0.091	-0.107	-0.162	0.029	-0.021
	Sig.	0.424	0.864	0.022		0.661	0.017	0.461	0.383	0.187	0.819	0.864
IR	PC	-0.134	-0.209	0.087	0.054	1	-0.027	0.002	-0.072	0.139	.285*	-0.209
	Sig	0.276	0.087	0.48	0.661		0.826	0.99	0.559	0.259	0.019	0.087
ITO	PC	0.151	0.176	-0.139	-.288*	-0.027	1	-0.074	0.084	0.076	-0.081	0.176
	Sig.	0.22	0.152	0.258	0.017	0.826		0.551	0.498	0.537	0.514	0.152
US	PC	-0.16	-.284*	-0.008	0.091	0.002	-0.074	1	0.135	-0.003	-0.028	-.284*
	Sig.	0.194	0.019	0.952	0.461	0.99	0.551		0.274	0.982	0.825	0.019
SV	PC	-0.178	-0.121	-0.106	-0.107	-0.072	0.084	0.135	1	0.086	-0.075	-0.121
	Sig.	0.146	0.327	0.389	0.383	0.559	0.498	0.274		0.485	0.548	0.327
L	PC	0.022	0.008	-0.014	-0.162	0.139	0.076	-0.003	0.086	1	0.052	0.008
	Sig.	0.857	0.949	0.907	0.187	0.259	0.537	0.982	0.485		0.674	0.949
LR	PC	-0.131	-0.023	-0.18	0.029	.285*	-0.081	-0.028	-0.075	0.052	1	-0.023
	Sig.	0.292	0.855	0.145	0.819	0.019	0.514	0.825	0.548	0.674		0.855
GDP	PC	0.127	0.68**	-0.163	-0.021	-0.209	0.176	-.284*	-0.121	0.008	-0.023	1
	Sig	0.301	0	0.185	0.864	0.087	0.152	0.019	0.327	0.949	0.855	

4.4 Linear regression model analysis

The main purpose of linear regression model is to determine how the average value of the outcome variable, y varies with the variation in the value of a predictor variable x. Regression analysis allows us to assess how accurately an independent variable predicts a dependent variable. Specifically, it enables us to determine the proportion of the variation in the dependent variable that can be accounted for by the variation in the independent variable. Regression analysis can also tell us whether or not a particular relationship is statistically significant. In other words, it can tell us the probability that the relationship that we observe between two variables in a given sample also obtains in the population as a whole.

4.4.1 Linear regression model using liquid asset per total asset as dependent variable (L)

4.4.1.1 Assumptions of Linear Regression Model

An essential first step in regression analysis is to draw appropriate graphs of the data. Linear relationship between the dependent variable (y) and explanatory variable (X's), the outcome variable (y) should be normally distributed for each value of explanatory variable (X's), standard deviation of y should be approximately the same for each value of x, and all the observations should be independent. In this study the dependent variable was liquidity as asset which was had expressed using liquid asset per total asset (L) and the two linear regression models for profitability models were fitted using return on asset and return on equity as dependent variables by taking the determinant factors liquidity. The variables, both dependent and independents in this linear regression model were ratio scale variable so the first assumption of linear regression model already satisfied.

4.4.1.2 Normality model assumption

Before the linear regression model fitted in order to identify significant factors of liquidity (L) the assumption of linear regression must be checked. To test and check normality assumption, histogram and predicted probability plot (P-P plot) can be used. If normality assumption criteria are fulfilled we can estimate the parameter of the population using sample data values. The following charts showed p-p plot and histogram which were applied to check validity of normality. The following charts depicted the histogram and p-p plot to confirm the assumptions of normality and both of the charts showed the assumption of normality using p-p plot and histogram validity as the dots were on or around the line.
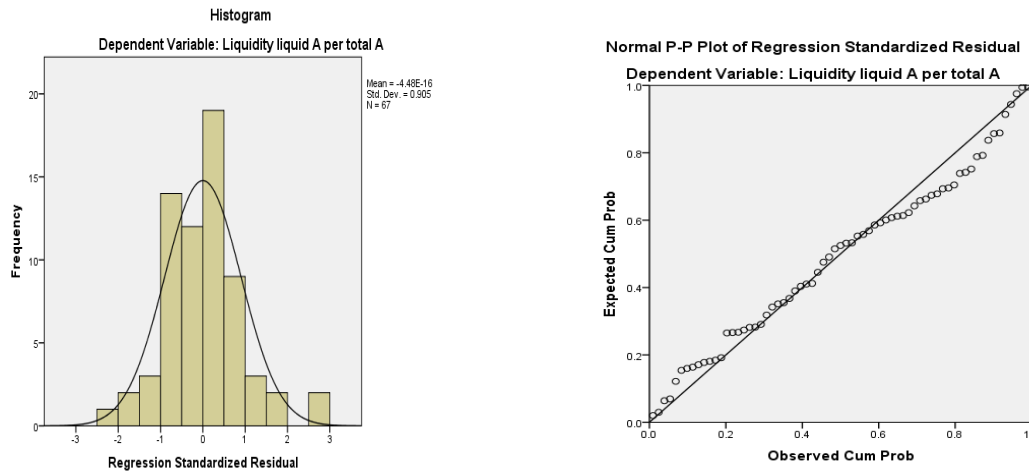
Fig 4.1: Histogram and predicted probability plot

4.4.1.3 Multi collinearity test

If there is a high degree of correlation between independent variables, then a problem of what is commonly described as the problem of multi collinearity Kothari, C.R. (2004). If Collinearity is discovered, (e.g. if correlation coefficients between variables are higher than 0.80) then one can either remove one of the two variables or create a new variable that combines the previous two that were highly inter-correlated (Cohen et al., 2007). Multicollinearity is significant association among the independent variables. The following table depicted the multicollinearity diagnosis analysis result and result showed that there was no multicollinearity problem between any two independent variables. The problem of multicollinearity can be also checked using variance inflation factor (VIF), if the value of VIF is less than ten (10) then there is no problem of multicollinearity, absence of significant relation between any two independent variables. If two independent variables had significant correlation then only one of them would be included in the linear regression model since they had the same information for the dependent variables. Since all VIF values were less than ten there was no multicollinearity problem as a result all the predictor variables included in the multiple linear regression models.

Table 4.3 : Multicollinearity diagnosis

Variables in the model	Collinearity Statistics	
	Tolerance	VIF
Net profit margin	0.782	1.279
capital adequacy	0.767	1.304
loan growth	0.827	1.209
Interest rate	0.764	1.308
Inventory turnover	0.789	1.268
union size	0.867	1.153
sales volume	0.886	1.129
Liability	0.896	1.116
legal reserve	0.852	1.173
Return on Investment	0.873	1.145
gross domestic product	0.786	1.273

4.4.1.4 Linearity test

Linearity test is used to check whether the predictor variables in the regression model have a straight-line relationship with the outcome variable. Scatter plot of dependent variable against independent variables is used to check linearity. Linearity is important test that has to be checked in linear regression model since unless there is linear relationship between dependent and independent variables, one cannot fit the linear regression model and estimate the model parameters. The following scatter plot chart depicted the existence of linearity between dependent and independent variables. As the chart depicted there was linear relationship between dependent and independent variables since the dots had some linear pattern rather than having random pattern so the linear regression can fitted (see fig. 4.2 below).
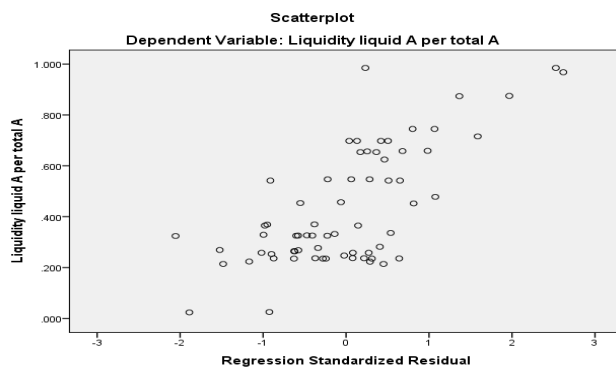

Fig. 4.2: Scatter plots

4.4.1.5 The linear regression model

In the following tables the ANOVA table and model summary results were depicted. Result showed that the overall model was significant and the summary table showed that R-square was 0.499 (499%) implied that about 49.9% of the variation in dependent variable was explained by the variation in the independent variables and the rest 50.1% of the variation in dependent variable was because of other factors. So the model was adequate to fit the data.

Table 4.4: ANOVA and Model Summary

Model		SS	df	MS	F	Sig.
1	Regression	1.751	12	0.146	4.483	0.000
	Residual	1.758	54	0.033		
	Total	3.509	66			
DV: Liquidity						
Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.706	0.499	0.388	0.1804		

The multiple linear regression model result in table 4.5 below showed the independent variables such as cash conversion cycle, days payment outstanding, days of inventories held, net working capital, quick ratio and net profit margin were statistically significant at 5% level of significance since the p-values were less than 5%, which implied that the independent variable had a significant effect on the availability of liquidity

Table 4.5: Multiple linear regression model liquidity as dependent variable

	Unstandard. Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	SE	Beta			Tolerance	VIF
(Constant)	0.401	0.169		2.373	0.021		
Net profit margin	-0.257	0.124	-0.225	-2.065	0.044	0.782	1.279
capital adequacy	0.266	0.115	0.255	2.321	0.024	0.767	1.304

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loan growth	0.412	0.124	0.352	3.324	0.002	0.827	1.209
Interest rate	0.213	0.151	0.155	1.406	0.165	0.764	1.308
Inventory turnover	0.467	0.175	0.289	2.663	0.01	0.789	1.268
union size	-0.011	0.005	-0.227	-2.198	0.032	0.867	1.153
sales volume	0.103	0.154	0.068	0.666	0.508	0.886	1.129
liability	0.002	0.001	0.124	1.214	0.23	0.896	1.116
legal reserve	0.007	0.008	0.099	0.949	0.347	0.852	1.173
ROI	-0.25	0.163	-0.158	-1.535	0.131	0.873	1.145
GDP	-0.931	0.284	-0.357	-3.281	0.002	0.786	1.273

The first independent variable in our multiple linear regression model was net profit margin and it was statistically significant at 5% level of significance as p-value was 0.044 was less than 5%, so the net profit margin had significant effect on liquidity in negative direction since the coefficient of the linear regression model was negative (-0.257). Based on linear regression analysis result as net profit margin increases the liquidity of the asset would be decreasing. The other significant factor was capital adequacy as the p-value, 0.024 was less than the level of significance. The capital adequacy had positive beta coefficient (0.266), which implied that as the capital adequacy increasing the liquidity of the asset also increased. But the study finding conducted by Berhanu stated capital adequacy ratio that determines the risk taking behavior of banks, identified statistically insignificant and negative impact of capital adequacy ratio on liquidity.

The coefficients of net profit margin in the regression model output was -0.257 which can be interpreted as when the value of the net profit margin increasing by one unit on its given range the liquidity s decreased 0.257 times keeping the effect of all other factors in the model constant so the effect of net profit margin was negative on the liquidity of asset at Jimma coffee trade unions. The other significant factor in the model was capital adequacy and the coefficient was positive, 0.266 which implied that as the capital adequacy increased by one unit on its range the availability liquidity asset at the unions increased 0.266 times keeping all the effect of other independent factor in the model constant. The result obtained from net profit margin above in the model showed negative coefficient which might contradict with the existing reality (especially net profit margin) but the researcher took it as a finding of the study and it might be because of chance variation and the unions might unreliable data

recording system and the result from capital adequacy was positive so in with different research findings.

The other independent variables in our multiple linear regression mods which were statistically significant were loan growth and Inventory turnover as the p-values 0.002 and 0.01 and 0.412 and 0.467 beta coefficients respectively were less than the level significance at 5% level of significance with positive beta coefficients both. The result showed loan growth and inventory turnover had direct effect on the availability liquidity asset on the unions since the regression coefficients depicted positive values with statistically significant test result. This finding is not in line with other research finding in banking industry such as the work done by Berhanu. In his the model, loan growth has statistically significant and negative influence on the liquidity of commercial Banks. Liquidity is decreasing with increasing the rate of loan growth. This negative sign indicates an inverse relationship between loan growth and liquidity position measured by liquid asset to total asset. Thus, it implies that for one percent change in the loan growth rate, keeping other thing constant had resulted 0.412 unit adjustments on the levels of liquid asset to total asset in the portfolio in opposite direction which is based on the argument of taking loans as illiquid assets of banks. According to this argument when the amount of loans provided by banks increase, the amount of illiquid assets in the total assets portfolio of banks increase and lead to the reduction in the level of liquid assets held by banks. But finding are different from study findings this might be because of our study was on trade exchange area as result having large amount of loan might highly support our competition in the business. So the trade unions and other concerned bodies should give especial attention to these two factors in order to increase and more improve capital adequacy and inventory turnover so that the unions are more successful in their business.

Gross domestic product (GDP) was also independent variables included in the multiple linear regression models which statistically significant at 5% level of significance since p-value was 0.002 with negative beta coefficients. The result in the model showed that as the value of gross domestic product increased the availability of liquid asset would be low as a result the unions can purchase enough amount of coffee and can compete with other unions which have high capacity of purchasing. The result was similar with most studies which assumed the negative link between business cycle and liquidity, the results show that the approach of Moore (2010) is true for Ethiopia banking sector. Moreover, this finding is not consistent

with philosophy that during expansionary phases, companies (which have higher profits) and households (which have higher income) might prefer to rely more on internal sources of finance and reduce the relative proportion of external financing and might reduce their debt levels. In recessions, households and corporations may increase their demand for bank credit in order to smooth out the impact of lower income and profits (Calza et al., 2001) which reduced the liquidity position of banks.

The union size was also the other significant variable in the linear regression model with negative beta coefficients which is in line with Berhanu's work in which bank size was one of explanatory variable which has statistically significant and negative influence on the liquidity of bank as his study hypothesized was that, bank size has no significant impact on banks liquidity. This negative sign indicates an inverse relationship between bank size and liquidity position measured by liquid asset to total asset. The result was also consistence with (Vento and Ganga, 2009), Large banks would benefit from the decrease cost of funding and allows them to invest in riskier assets through implicit guarantee, Therefore, "too big to fail" status of large banks could lead to moral hazard behavior and excessive risk exposure. If big banks are seeing themselves as "too big to fail", their motivation to hold liquid assets is limited. In case of a liquidity shortage, they rely on a liquidity assistance of Lender of Last Resort. Thus, large banks are likely to perform higher levels of liquidity creation that exposes them to losses associated with having to sale illiquid assets to satisfy the liquidity demands of customers (Kiyotaki and Moore, 2008). Hence, there can be positive relationship between bank size and illiquidity. The coefficient sign of bank size in this equation was similar to hypothesis and in line with also the findings of Czech commercial banks analysis (Vodova 2011).

The multiple regression model obtained from analysis of the five significant independent variables on liquidity obtained in the model is given below by:

$$y_i = -0.401. -0.257x_1 + 0.266x_2 + 0.467x_3 + -0.011x_4 + -0.931x_5$$

Where:-$X1$ is net profit margin, X_2 is capital adequacy, X_3 is inventory turnover, X_4 union size, and X_5 is gross domestic product.

In general the multiple linear regression models applied to see the effect of six independent variables listed above on liquidity of 68 unions at Jimma coffee trade unions commodity

exchange using SPSS software. The rest five independent variables were not statistically significant at 5% level of significance so they had no significant effect on liquidity according to our model and data analysis result.

Table 4.6: Multiple linear regression models on profitability (P1)using first model (L)

Variable	Unstandard. Coefficients		Standard. Coefficients	t	Sig.	Collinearity Statistics	
	B	SE	Beta			Tolerance	VIF
(Constant)	0.42	0.136		3.091	0.003		
capital adequacy	0.404	0.111	0.405	3.65	0.001	0.891	1.123
loan growth	-0.478	0.134	-0.407	-3.57	0.001	0.846	1.182
Inventory turnover	0.36	0.181	0.222	1.991	0.049	0.887	1.127
union size	0.0001	0.006	0.01	0.088	0.93	0.905	1.104
gross domestic product	-0.157	0.299	-0.059	-0.525	0.602	0.866	1.154
DV: Return to Asset							

As it was described earlier only the significant variables in the liquidity model taken as independent variables and since only six variables were significant in the liquidity model (L) so include these six statistically variables in the model. The first independent variable in the following multiple linear regression models was capital adequacy and it was statistically significant at 5% level of significance since p-value was less than 5%, and with positive beta coefficients, so the capital adequacy had significant positive impact. Based on linear regression analysis result as capital adequacy increases the profitability of the unions were also increased which means that capital adequacy had positive impact so the concerning body must take part in order to the availability of capital so as increase profitability. The other significant factor in the model was loan growth with negative coefficients implied that loan growth had significant impact on the profitability of the unions. As one can see from table 4.6 above the regression coefficient of loan growth was negative which implied as the unions loan size increase their profitability would be decreasing. The impact of bank size on profitability is certain a prior for the fact that on the one hand union size implies increased diversification and hence less risk with low return, on the other hand, bank size ensures economies of scale contributing positively for profitability through reducing costs and also

large banks in large market take riskier investments resulting higher returns. The coefficient sign of bank size in the case of liquidity equation as well as profitability equation were opposite to each other and statistically significant.

The other significant variable in the model was day inventory turnover since the p-value was less than the level of significance, 0.048. Inventories held had significant positive impact on the profitability of unions since the beta coefficients was positive. In general the multiple linear regression models applied to check the impact of six independent variables on profitability of the unions shown in the linear regression above on profitability of 68 unions at Jimma coffee trade unions commodity exchange using SPSS software. All the result discussed above shown here under the table.

4.5.2.3 Linear regression on profitability (P_2) using equity as dependent variable

Table 4.7: Multiple linear regression model profitability using second model (P2)

Variable	Unstand. Coefficient		Standard. Coefficient	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.041	0.09		0.46	0.65		
Capital adequacy	0.324	0.11	0.266	2.45	0.03	0.866	1.154
Union size	0.148	0.15	0.111	0.99	0.33	0.905	1.104
Inventory turnover	0.061	0.12	0.062	2.32	0.02	0.887	1.127
Gross domestic product	0.059	0.196	0.037	2.78	0.75	0.846	1.182

Under this sub-topic a linear regression model based on the liquidity model (L) was analyzed and discussed. The significant variables from linear regression of liquidity model used to investigate the impact of determinant of liquidity on the profitability of unions in the study area. As the previous models the entire model assumptions were checked and confirmed to be satisfied the requirement and results were presented at the end of the document (appendix 1). As depicted in table below all the significant variables in the linear regression model for liquidity which were statistically significant were taken. The two independent variables

which were significant in this model were capital adequacy and inventories turnover and all the rest predictors were statistically insignificant. Capital adequacy was statistically significant at 5% level of significance as p-value 0.03 which less than the level of significance and had positive beta coefficients, so it had significant positive impact on the profitability of the unions at Jimma coffee commodity trade. The inventories turnover was the other statistically significant factor affecting profitability of the trade unions working at Jimma zone coffee trade unions since p-values was 0.02 which is less than the alpha level of significance.

Based on linear regression analysis result as capital adequacy increases the profitability of trade unions were also increased which means that capital adequacy had positive impact on the profitability of the unions, in similar manner the inventory turnover had positive impact on the profitability of trade unions, so the concerning body should enhance the capital adequacy and inventory turnover in order to increase profitability of unions. All the other significant factors in the liquidity model were statistically insignificant in profitability model implied that they had no impact on the profitability of coffee trade unions at Jimma coffee commodity exchange.

CHAPTER FIVE

SUMMARYR OF FINDINDS, CONCLUSION AND RECOMMENDATION

The main objective of this study was to assess determinants of liquidity and its impact on the profitability of coffee trade union on trade unions at ECX trading platform as members through the use of different linear regression models. This part of the research contains summary of findings, conclusion and recommendation of the study:

5.1 Summary of findings

The main findings of the study by comparing them with some previous done related research findings were displayed here in this topic.

✓ The result obtained from net profit margin above in table 4.5 showed negative coefficient which might contradict with the existing reality (especially net profit margin) but the researcher took it as a finding of the study and it might be because of chance variation and the unions might unreliable data recording system and the result from capital adequacy was positive so in with different research findings.

✓ Liquidity is decreasing with increasing the rate of loan growth. This negative sign indicates an inverse relationship between loan growth and liquidity position measured by liquid asset to total asset. According to this argument when the amount of loans provided by banks increase, the amount of illiquid assets in the total assets portfolio of banks increase and lead to the reduction in the level of liquid assets held by banks. But finding are different from study findings this might be because of our study was on trade exchange area as result having large amount of loan might highly support our competition in the business.

5.2 Conclusion

✓ As a conclusion from the linear regression model analysis result on determinants of liquidity and also the two model of profitability result were addressed in this study and significant factors were identified.

- ✓ The multiple linear regression model result in the liquidity mode showed the independent variables such as capital adequacy, unions size, net profit margin, inventory turnover and loan growth rate were statistically significant at 5% level of significance. The significant result implied that such independent variables had a significant effect on the availability of liquidity asset at the unions at the study area.

- ✓ In multiple linear regressions model net profit margin was statistically significant at 5% level of significance with negative regression coefficient, so the net profit margin had significant effect on liquidity in negative direction and as net profit margin increased the liquidity would be decreasing according to the data analysis result.

- ✓ The other significant factor in regression model are capital adequacy and loan growth rate with positive coefficient, Since both have a positive coefficient and as they increased the availability of liquidity asset at unions also goes parallel.

- ✓ Inventories turnover was statistically significant factor in multiple linear regression models with positive beta coefficients so as inventories increased availability of liquidity asset at the trade unions increased.

- ✓ Union size was also independent variables included in the multiple linear regression models which statistically significant result at 5% level of significance The result in the model showed that as the value of union size increased the availability of liquid asset would be decreased meaning that as the unions size increased liquidity would be decreased.

- ✓ The multiple linear regression model result in liquidity model also showed the independent variables gross domestic product was determinant factors for the availability of liquidity.

- ✓ In the first model of profitability the factors such as inventory turnover, loan growth rate and capital adequacy statistical significant factors which had significant impact on profitability of the trades unions.

- ✓ In the second model of profitability model, capital adequacy and inventory turnover were statistically significant with positive coefficients which implied these determinant factors of liquidity had significant impact on profitability of the unions.

5.3 Recommendation

Based on the conclusions given above the following recommendations were forwarded

- ✓ The multiple linear regression model result in the liquidity model depicted that the independent variables such as capital adequacy, unions' size, net profit margin, and inventory turnover and loan growth rate were statistically significant at 5% level of significance. So the management each union, labor union and creditors should give due attention for these determinant factors in order to up scale the success of the trade unions.

- ✓ In multiple linear regressions model net profit margin was statistically significant at 5% level of significance with negative regression coefficient, so the concerned body should take action to balance the net profit margin so that it will not upset the liquidity level of unions' asset.

- ✓ The loan growth rate was significant factor with positive coefficient in the liquidity model analysis, so the concerned body should work hard to facilitate and increase loan growth rate for the unions in order to increase the availability of liquidity asset.

- ✓ Similarly adequate capital must be budgeted for the unions in order that the unions are successful in their business since as capital adequacy increased the liquidity of asset also increased based on the linear regression model coefficient.

- ✓ ITO was statistically significant factor in multiple linear regression models with positive beta coefficients so access of inventories should be fulfilled for the trade unions.

- ✓ Union size was statistically significant result at 5% level of significance The result in the model showed that as the value of union size increased the availability of liquid asset would be decreased meaning that as the unions size increased liquidity would be decreased so the trade unions at Jimma zone coffee commodity trade should increase the members of their unions so they can increase the liquidity of their assets as a result their profitability increased.

- ✓ In the first model of profitability the factors such as inventory turnover, loan growth rate and capital adequacy were statistical significant factors which had significant impact on profitability of the trades unions so due attention should be given for such factors to maximize profitability of the trade unions.

- ✓ In the second model of profitability capital adequacy and inventory turnover were statistically significant with positive coefficients so they were the determinants of liquidity which had significant impact on profitability of the unions so the concerned bodies should give due attention regarding to equity related issues of the unions in reaction to individual share of capital contribution and inventories.

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