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Effects of Personalized Transactions and Institutional Interventions on the Performance of Coffee Markets in Ethiopia

Thesis submitted in fulfillment of the requirements for the degree of
Doctor (PhD) in Applied Biological Sciences: Agricultural Economics

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Abbreviations

ADF	Augmented Dicky-Fuller
AIC	Akaike Information Criterion
AO	Appellation of Origin
APT	Asymmetric Price Transmission
BIC	Bayes's Information Criterion
BSE	Bovine Spongiform Encephalopathy
CQIAC	Coffee Quality Inspection and Assurance Center
CTM	Community Trade Mark
DO	Denomination of Origin
ECSA	Ethiopian Central Statistical Agency
ECX	Ethiopian Commodity Exchange
ECEA	Ethiopian Commodity Exchange Authority
FAO	Food and Agricultural Organization
FE	Fixed Effect
FOB	Free on Board
GI	Geographic Indications
IAD	Institutional Analysis and Development
ICO	International Coffee Organization
ITC	International Trade Centre
LCM	Latent Class Model
MNL	Multinomial Logit
MoE	Ministry of Education
NBE	National Bank of Ethiopia
NIE	New Institutional Economics
OECD	Organization for Economic Cooperation and Development
PA	Peasant Administrations
PDO	Protected Designated Origin
PGI	Protected Geographic Indication
RE	Random Effect model
SAP	Structural Adjustment Program

SSA	Sub-Sahara Africa
TCE	Transaction Cost Economics
UNCTAD	United Nation Conference on Trade and Development

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'The curious task of economics is to demonstrate to men how little they really know about what they imagine they can design.'

Friedrich Hayek

Chapter 1 Introduction

1.1 Background

Can institution evolve in a closed economic system? Classical development theories emphasized the pervasive influence of factor endowment and accumulated stock of capital and technology on the development of economies (Domar 1970; Lewis 1956). In effect, reducing financial constraints, promoting research and development, and disseminating technology were seen as the crucial development strategies. But since recently, development is being viewed as a far more fundamental transformation of society (World Bank 2003; Stiglitz 1995) including a change in attitudes, culture, and an abandonment of many traditional ways of thinking (Stiglitz 1995). Institutions not only summarize attitudinal, cultural and traditional behaviors, but future behavioral patterns can be shaped by, among others, institutional change.

In the past four decades, partly by drawing upon the experience of the Asian green revolutions (Dorward *et al*. 2009) and partly based on the existing realities, Sub-Sahara African (SSA) countries have experimented with different development approaches and have implemented various programs to curb the pressing poverty and to step into a sustainable development path. These countries desperately tried different approaches such as export promotion, import substitutions, collectivization, liberalization (through Structural Adjustment Program), integrated rural development, poverty reduction strategy (Burke *et al*. 2007), and recently growth and transformation plans, to mention few. Despite these attempts, the performance of Sub-Sahara African (SSA) countries, when compared to developing countries in Asia, was generally disappointing (Rodríguez-Pose and Tijmstra 2005; Haber *et al*. 2003; Osuji *et al*. 1998; Chaudhry 1993; 1994).

Generally, economists, including critics of neoliberalism, recognize the crucial roles of a well-functioning market for economic development. The major difference lies on how to

get well-functioning markets in developing countries. Neoclassical economics contend that institutions play frictional roles in the development of the market. Even if there exist market failures, neoclassical economist takes these as short-term phenomena. When markets are set free, the competitive pressure in the long-run is believed to lead to efficient markets. The above explanation implicitly assumes that the market exists. For some economic activities, the market may not exist at all. But even if markets exist, setting them to operate freely in itself requires political commitment. Furthermore, even if markets are set free, nothing guarantees the automatic development of efficient markets. Institutional economists argue that the socio-cultural, political, physical milieu matter for markets to emerge. Yet, even if markets emerge and are set free, they may not always converge into efficient markets. The neoclassical assumption of the spontaneous emergence of efficient markets is based on the implicit assumption of costless transactions (Williamson 2010). In a real world with positive transaction costs, the emergence and efficiency of beneficial exchanges will depend on the efficiency of institutions in reducing transaction costs. Transaction costs not only can be so high as to block beneficial exchanges, they can also confine transactions within certain social/geographic entities.

1.2 Personalized transactions

Nowadays the role of institutions in determining the development of well-functioning markets is recognized. Institutions by structuring behavioral patterns organize economic exchanges in different forms (North 1990). North (1990) identifies three forms of exchanges: personalized exchange, impersonalized exchange without third party enforcement (i.e. through kinship ties, bonding, exchange hostages, or merchant codes of conduct) and impersonalized exchanges with third party enforcements. While the last form of exchange requires an effective judicial system and other supporting institutions, the other two can be achieved through a combination of self-enforcement and other bilateral arrangements, as can be evidenced from historical accounts (Greif 1998).

Third party enforcement is considered as an important institution in allowing complex and large-scale exchanges. Unlike the guild system in Medieval Europe (Greif 1989), institutions that facilitate impersonalized transactions without third party enforcement

have not emerged in SSA countries. On the other hand, even if judicial system was introduced in these countries, it has not evolved to handle complex exchanges. Thus, transactions through third party enforcements remain limited to a few large transactions such as the purchase of real estate, rental of a building, contractual agreements involving a large sum of money. But in some cases, even if strong legal institutions that treat everyone the same exist, they may still impose high transaction costs on almost everyone. For instance, the socialist-orientated institutional arrangements of the past regime imposed numerous bureaucratic administrative rules that limit participation of private economic agents, private acquisition of land and other properties, private wealth creation and accumulation, the free mobility of factors of production including labor and more importantly imposed tax rules on trade that are prohibitive and extractive. Thus, the presence of rules that treat everyone the same may not alone expand economic opportunities. The incentive compatibility of the institutions and their capacity of economizing information and enforcement costs also matter for efficient performances of institutions. However efficient a newly introduced institutional arrangement can be in its own right, its performance will eventually depend on the suitability of the broader environment. The socio-economic, political and physical environment needs to be conducive to allowing the specific institutional arrangements to exploit their potential. The broader environment should be such that that incentivize productive activities rather than distributive ones; wealth creations rather than wealth sharing; fair competitions rather than collusions; that allow freer mobility of resources rather than restricting them and more importantly that protects property rights. We postulate that the broader environment in a context where transactions are limited to personalized transactions will be different from the context where impersonalized transactions are prevalent.

We conceptualized impersonalized transactions in line with Wallis (2011). He refers impersonalized transactions when two transacting parties interact in a way that does not depend on their personal identity which requires a situation that treats parties the same. The main idea about impersonalized relationships is the irrelevance of the personal identity of the transacting parties for the transactions. Such transaction requires an institutional environment that not only allows agents to freely choose a transacting party, but that also treats transaction parties the same. It is not about the knowledge of

transacting parties about each other personal identity, but about the blindness of the institutional environment to the personal identity of the transacting parties. This not only requires impartial, unbiased and fair legal system, but it also needs social norms that are founded on what Plateau (2000) called 'generalized morality'. The basic point is personal identity-related attributes of agents should have no role in determining the matching of transacting parties. Such ideal impersonalized transaction can only arise in a world of complete information.

In reality, institutions impose some degree of discriminations between members of different social groups. This arises when different social groups use rules and norms that are specific to group members. Such discriminatory rules impose what can be called *identity tax* on those transacting parties who are outside the social group. Practically, impersonalized exchanges may still prevail even in the presence of some form of implicit or explicit discriminatory treatments in as long as the potential gains from the exchange outweighs the transaction costs that are associated with the *identity taxes.* Personalized transaction becomes pervasive when these transaction costs are so high as to block impersonalized exchanges. In such condition, transactions will be fully confined to the social group upon which the identity is constructed upon. For instance, transactions will be confined to an ethnic group if the rules and norms impose high *identity-taxes* on parties outside the group. In such context, transactions will be segregated along ethnic groups. But even then, impersonalized transactions can arise depending on the scale of the social boundary. When the social boundary is confined to a small group such as village/community or extended family, then transactions will be personalized. When this becomes the rule of the game everywhere, the resulting institutional environment will leave all agents with no other options but to transact only with the narrow social group.

North (1990) noted that the history of the world is dominated by personalized transactions. But while some countries evolved toward impersonalized transactions with third-party enforcements, transactions in SSA countries remained predominantly personalized. Granovetter (1985) considers personalized transactions as a general phenomenon that occurs in any society irrespective of the stage of market developments. But this observation seems to suffer from the fallacy of continuum in that while in market-based economies many transactions can be made without having

personal connections, this is not the case in non-market societies such as SSA countries.

There are two viewpoints about personalized transactions. The neoclassical economic theory views personalized transactions as a strategic response of actors to market failures (caused by high information and enforcement problems). In such cases, individuals attempt to bundle different transactions in personalized and reciprocal long-term relationships. Others, especially social capital theorists, view the personalized relationship by itself as a valuable asset, just like any other physical and human capital, that help individuals to promote mutual economic interests. While the first assume self-interested individuals, the second assume other-regarding (specifically those members of certain groups) and less self-regarding individuals which are (naturally) distinct from self-interested actors. It constructs a different human being whose behavioral patterns are different from those conceptualized in *homo-economicus*. The two importantly differ in their view on the observed outcomes. While neoclassical theory implicitly assumes outcomes of personalized transactions as sub-optimal, social capital theories take personalized transactions as practically superior to impractical outcomes assumed by efficient markets. They pragmatically take the observed arrangement as efficient arrangements. While the first predict personalized transactions to disappear as efficient impersonalized transactions emerge, the second considers it as an arrangement that would even exist in the presence of such alternative. These views also suggest different institutional interventions. While the first suggest liberalization measures that help for the personalized transaction to gradually decline, the second suggest a deliberate intervention that help to expand the existing personalized transactions. In terms of policy prescription, while neoclassical economics prescribe liberalization to remove all sorts of barriers that help local markets to become open and competitive, the later suggest policies that further localize the markets. In the specific case of the coffee supply chain, while neoclassical economists suggest policy intervention to make the local markets competitive and impersonalized, adepts of the social capital theory suggest the creation of a bridging capital (Woolcock and Narayan 2000; Woolcock 1998) that expands the local network into the central market.

1.3 The cases under consideration

Even institutional interventions through third party enforcement were not successful in the past. For example, the old central auction market for coffee was introduced in Ethiopia in 1955. The main purpose was to create impersonalized and competitive transactions in the central coffee market. Even after continued attempts for more than half a century to impersonalize coffee transactions, transactions are still *de facto* personalized as buyers (exporters) and seller (supplier/traders) just come to bidding floor merely to formalize the informal agreement they made at the back door. Since all parties know the rules of the game, no party offers a higher bid than offered by the implicitly known client. It was mainly in an attempt to fix this problem, that the government in 2008, abolishing the age-old central auction center, enacted a rule that enforced all transactions to be made at the newly established Ethiopian Commodity Exchange (ECX). The main purpose was to create impersonalized and competitive transactions at the central coffee markets of Addis Ababa and Dire Dawa. However, although transactions at the ECX center are impersonalized, one cannot attribute the impersonalization to the efficiency of ECX. This is because transactions outside ECX are legally blocked. This will have important implications for the sustainability of the system.

The main purpose of the introduction of ECX in Ethiopia was to provide an impersonalized, reliable and competitive trading environment for agricultural products in the country by providing assurance to quality, quantity, payment and delivery. Innovative approaches and technologies were adopted and huge investments were made to reduce transaction costs related to the trade of selected agricultural products such as coffee, wheat, maize, sesame, and beans. The introduction of a standardized and technology intensive commodity exchange system and of stringent and well-articulated rules, regulations and procedures made theoretically personalized transactions impossible. However, transactions in the local markets remained predominantly traditional and personalized. Not only rivals outside the locality are legally blocked, the local market is also geographically and socially segmented. The personalized transactions are confined to narrow social circle connected by family lineage, acquaintance, kinship and patron-client relationships (Tadesse and Shively 2013; Meijerink *et al*. 2014). The restraint against potential rival traders outside the locality, the segmentation of the market along

social networks, the near-absence of credit, insurance and factor markets, the high inefficiency in other markets (especially input markets) coupled with the small size of individual transactions, farmers may not have other option than to embed their transactions in personalized transactions, however such arrangement may be inefficient.

Theoretically, markets can perform better when transactions are impersonalized. But this can be valid when impersonalized transactions emerge as a natural selection of an evolutionary process. Deliberate interventions may not only be effective, their interaction with other institutions is not known. Specifically, we examine the impacts of the interventions on price transmissions between central and local markets. On the one hand, the introduction of ECX can help to assess the impacts of institutional interventions in improving the efficiency of central markets. The persistence of the traditional personalized transaction in the local markets, on the other hand, provide the opportunity to examine the interplay between formal and informal institutions. Since the ultimate goal of the institutional interventions is to improve the supply chain so as to benefit producer farmers, interest arises to evaluate the impacts of institutional interventions such as ECX on the performance of the supply chain as a whole and on producer prices.

In addition to the introduction of ECX, a specific intervention was also introduced in the coffee market. Through the Ethiopian Coffee Trademarking and Licensing Initiative, the Ethiopian government attempted to differentiate the Ethiopian fine coffee from the commodity coffee. After a lot of efforts, the Ethiopian government, with the help of Oxfam advocacy, succeeded to get trademark protection for three geographic origins Sidama, Harar and Yirgacheffe coffee in many importing countries. Given these coffee origins were identified by their geographic origins even before the formal trademark protection, the introduction of the initiative has the potential to improve the coffee prices in the world market. But the effectiveness of the trademarking depends on the effectiveness of existing arrangement in incentivizing reputations. GI protection is usually done by creating a governance structure that monitors and control geographic origin at all levels of the value chain. But to what extent GI protection will be effective when the product faces a market-oriented arrangements is unknown (Moschini *et al*.

2008). The reality now is that both trademarked and non-trademarked coffee are sold in markets where there are various independent actors in the chain.

1.4 Problem statement

Especially transactions in the local markets are not only personalized, they are also confined to a narrow social group (North 1993b; World Bank 2002; Fafchamps 2004; Dorward *et al*. 2009; Dorward and Omamo 2009). Family lineage, acquaintance, kinship and client membership determine the pairing of transacting parties (Geertz 1987; Tadesse & Shively 2013). The problem is not just the pervasiveness and persistence of personalized transactions, but also their confinement to narrow social and geographic entity. One critical limitation of such personalized transactions is thus the scale, scope, and complexity of economic activities will be limited. The situation is specifically bad in Ethiopia (Osborne 2005). Since the available legal institutions impose high transaction costs (Gabre-Madhin 2009; Easterly and Levine 1995), only those large-scale transactions made at the national level can justify the high transaction costs. As will be shown in this dissertation later, transactions in the rest of the markets are virtually personalized.

While the negative economic effects of such personalization of transactions in limiting market opportunities are clear, the solution for the problem is not clear. In addition to the personalization of transactions, institutions that limit the prevalence of free markets are ample due to the socialist-orientated institutions of the past regime. Even if a quarter of the century had elapsed since the country made liberalization reforms, socialist-orientated institutions are still pervasive. Given the effective time period under which the country stayed under socialist system was only about 15 years, it took more time to eliminate the institutions than to create them. Even if interventions are made to improve institutions that support the market, the success seems limited.

After the liberalization reforms made in 1992, two institutional interventions are made to improve the upstream markets: ECX and trademarking. In both cases, the interventions are made at higher level markets with no meaningful interventions to improve transactions at the local markets. Given that transactions outside ECX are totally prohibited, the two interventions seems to be incompatible. While the economic rationale

for ECX interventions is to generally reduce information and enforcement problems through commoditization, the economic rationale of GI-protection is to reduce information asymmetry for consumers through branding. While both interventions attempt to reduce information asymmetry, the two uses opposite mechanism to achieve the purpose. Their effect on the market is also contradictory in that while GI-protection provides producers/processors market power, ECX attempt to create a competitive market. While the success of GI-protection depends on the efficiency of institutions in incentivizing actors for their reputation on certain quality attributes, the success ECX depends on the effectiveness of commoditization of the product. While GI-protection requires a traceable value chain, ECX's commoditization system eliminates traceability.

While the efficiency of impersonalized transactions is widely contested, the efficiency of personalized markets is controversial. Whether the personalized transactions at the local market are institutional responses of agents to missing markets (credit and other markets) and to transaction costs and risks or not require understanding the motive behind the personalized transactions. This can be tested by observing the preference of sellers and buyers in an ideal institutional environment. If agents in the absence of these institutional constraints (missing markets and transaction costs) still prefer to embed their transactions within a social network, then we can conclude that the existing personalized transactions are efficient and no intervention is needed at the local markets. Instead, extending this personalized transaction into higher level markets may even help. Otherwise, we can conclude that the observed personalized transactions are a rational response of agents to the existing institutional constraints. We tested this through a choice experiment that examines the preference of producer farmers in an ideal institutional environment. In order to complement the result, we also examine the preference of buyers for personalized transactions vis-à-vis impersonalized markets. But the intervention by ECX gives us also another opportunity to evaluate the effects of impersonalized transaction on the performances of markets. Since transactions at the central markets were in reality personalized, comparing the performance of the central markets before and after ECX can indicate the effects of impersonalized transactions. But in addition to the question of the sources of personalized transactions, another issue is the interaction between personalized markets and impersonalized market. This can be

evaluated in terms of the efficiency of the supply chain in transmitting prices between the different market levels.

The critical questions are thus: why personalized transactions are still pervasive and persistent? Why they remained confined to narrow social and geographic entity? Why did they fail to evolve? To what extent institutional interventions at higher levels of the market be effective in improving the performances of the coffee value chain? To what extent the institutional interventions - ECX and trademarking - are compatible? In this thesis, these questions will be addressed using the coffee market chain in Ethiopia as a case.

1.5 Objectives of the study

Given these question, the primary objectives of this study are:

- To examine the historical origin of the persistence of personalized and less competitive markets in the country;
- To identify the sources of personalized transactions at the local coffee markets;
- To evaluate the impacts of ECX interventions on the performances of the value chain; and
- To evaluate the impacts of trademarking intervention on the performance of the value chain.

1.6 Outline of the thesis

The broader aim of this study is to understand the effects of personalized transactions and institutional interventions on the performance of markets using coffee supply chain as a case. Chapter two develop a conceptual framework and reviews literature that guide the study in general. The conceptual framework is designed to examine the effects of historical trajectories in determining the relative dominance of personalized-impersonalized transactions. It conceptualizes the historical trajectories as to affect the institutional environment that shapes the extent of personalized transactions by changing the broader socio-economic, physical and political environment. Based on the effect of the change in the broader environment induced by the historical trajectory, the

change in the environment can favor either personalized or impersonalized exchange. But the resulting change in the relative dominance of personalized or impersonalized transaction will also crucially determines the future path of the broader environment by changing the social landscape. Literature that generally guides the whole study is also reviewed under sub-Section two of this chapter. The review of literature focuses on transaction cost economics, institutions, and institutional changes. It reviews the process and driver of institutional changes. Chapter three analyses the effects of key historical trajectories that occurred in the country over the past one and half centuries on institutions. More specifically, this chapter examines the implications of the changes in the broader environment on the dominance and persistence of personalized transactions over the past periods and the factors underlying them. It then assesses the feedback of the relative dominance of personalized transactions vis-a-vis impersonalized transactions on the broader environment and institutional environments. This part attempts to draw the implications of these on the development and performances of markets. Before it assesses the impacts of institutional interventions on the performances of markets, Chapter four analyzes the behavioral origin of personalized transactions under. It investigates the sources of personalized transactions by analyzing the preference of transacting parties (traders and producer farmers) to embed their transactions in personalized relationships. The central question here is whether it is due to the free will of producer farmers to embed their transactions in personalized relationships or is because the institutional environment locked them into personalized transactions. The interest here is to understand the behavioral motives behind such personalized transactions in the local markets and to assess their effect on the performances of coffee value chain specifically on quality. In order to support the results of the choice experiment, Chapter five compares the results of the experiment with the observed and stated preference of farmers using survey data. The remaining parts will analyze the impacts of institutional interventions made to improve the performances of the value chain. Chapter six analyze the impacts of ECX by tracking its effect on price transmission across the various markets along the supply chain using time series data. Using threshold autoregressive and threshold error correction model, it measures the impacts of ECX intervention on the price transmissions. But in addition to ECX

interventions, we also examine the effects of other policy measures taken in the coffee markets, specifically the removal of price fixation and export taxes. In order to compare the results, Chapter seven examine the perceptions of traders and exporters (the two major actors in the central markets) on the impacts of ECX interventions using survey data. Finally, Chapter eight analyzes the impacts of another institutional intervention: trademarking of Ethiopian fine coffees. Using disaggregated time series data it compares the impacts of trademarking on the magnitude and stability of prices between trademarked (GI-protected) Ethiopian fine coffees (Yirgachefe, Sidama, and Harar coffee origins) and non-trademarked Ethiopian coffee origins (Jimma and Wellega). In order to capture effects of impersonalization of transactions associated with ECX on the trademarking, we control ECX interventions in the fixed-effect regression.

Chapter 2 Conceptual and theoretical framework

The following sections develop conceptual framework and reviews literature surrounding institutions and institutional changes.

2.1 Conceptual framework

This section develops a conceptual framework that guides the remaining chapters of the thesis.

2.1.1 Introduction

The purpose of this chapter is to provide the conceptual and theoretical framework that guided the study. It develops a conceptual framework by combining the conceptual suggested by Dorward and Omamo (2009) with the three-level schema suggested by Williamsons (1995) in a way they fit specific contexts governing the coffee markets in Ethiopia. Dorward and Omamo (2009) developed a framework that helps to analyze institutions and institutional changes in the specific context of African economies by drawing from two approaches of New Institutional Economics (NIE) and Transaction Costs Economics (TCE). They developed their framework by incorporating the elements emphasized in the TCE framework into the Institutional Analysis and Development (IAD) framework developed by Ostrom *et al*. (1994) to accommodate wide ranges of economic activities. The study thus first modify the three-level schema suggested by Williamson (1995) to fit the specific context of the coffee markets in Ethiopia. Since hierarchies and other modes of governance structure that are commonly discussed in the organizational theories are nearly absent, we focus on two institutional arrangements: personalized and impersonalized transaction arrangements.

We thus conceptualize Williamson's (1995) three-level schema as the choice between these two institutional arrangements is influenced by the attributes of institutions from above and the interaction of the attributes of sellers and buyers from below. We thus replace the action domain in Dorward and Omamo (2009) framework with this modified version of the three-level schema to develop our model. We further extend this model to reflect the connection between the various market levels along the coffee value chain. The framework is used to understand the origin of the pervasive personalized

transactions governing almost every transactions in the country in general and the coffee markets in particular. We use this framework to analyze the historical elements that shaped the institutions in general and the coffee markets in particular in Ethiopia. It also uses the framework to analyze the preference of coffee farmers in the choice of buyer traders. Finally, the frameworks are used to analyze the effects of deliberate institutional changes made at different levels along the coffee supply chain.

In addition, the chapter reviews literature that generally guides the overall study. Two fields of studies are reviewed in the broader areas of NIE: TCE literature pioneered by Williamson and historical analysis of institutions pioneered by North. Chapter 3 uses to explain the historical changes of institutions in Ethiopia both from evolutionary and revolutionary perspectives: how the historical trajectories induced by revolutionary changes affects the transaction domain and how the gradual changes in the transaction domain in turn gradually affects historical trajectories.

2.1.2 Comparative analysis of institutions: across time and space

Many suggest comparative institutional analysis in order to understand the evolution of markets (Aoki 2001; Greif 1998; North 1990, 2005). In this analysis, the implication of non-economic factors; the historical, cultural, social, and political aspects of the particular society needs to be considered in the market game (Greif 1998). The attention goes to the factors underlying the development of efficient institutions that maximize the potential gains from economic exchanges, given other things (e.g. technology, transportation costs).

Williamson (1995) provides a three-level schema that helps to analyze choices of governance structures. According to this framework, institutions of governance are affected by the institutional environment from above and the behavioral attributes of individuals from below. Changes in the institutional environment are treated as shifting parameters which affect the comparative costs between alternative governance structures. We adapted this framework in order to explain the choice between personalized and impersonalized transactions in the coffee markets in Ethiopia. But in order to see the effect of the broader socio-economic, political and physical environment on the specific transactions we also adopt the framework suggested by Dorward and

Omamo (2009). They provide a unified framework that helps to analyze a wide range of institutions in the African context. They synthesize their framework from two branches of New Institutional Economics (NIE): the Institutional Analysis and Development (IAD) approach developed by Ostrom *et al*. (1994) and the key elements emphasized in the field of Transaction Cost Economics (TCE). The IAD framework conceptualizes the exogenous variables (community attribute, physical/material conditions and rules in use) to determine action arena and the feedback of outcomes to the exogenous variables and action arena is mediated through patterns of interactions and evaluative criteria (Dorward and Omamo 2009). In the TCE economics, the institutional environment, characteristics of goods being exchanged and the characteristics of transacting parties determine the choice of institutional arrangement and outcomes (Williamson 1985; North 1990). In the Dorward-Omamo (hereafter D-O) framework, the broader environment sets in and affects the action domains where institutions, activities, and actors interact each other to produce outcomes that would, in turn, affect the broader environment. This is consistent with the mainstream economic theoretical framework of treating the firm as an entity separately from the owner. But when the production decision unit is at the same time a consumption decision unit as in the case of small-holder households (Singh *et al*. 1986), it is difficult to separate the activity from the actor. In order for this framework fit our specific purpose of analyzing the sources of personalized transactions and the impacts of institutional interventions, we use modified form of Williamson's (1995) three-level schema in the action domain. We thus conceptualize the action domain as the interaction of attributes among three entities: seller-farmers and their activities, buyer-traders and their activities and local institutions. We then superimpose the modified three-level schema of Williamson into the D-O framework to obtain our framework (Figure 2.1).

The broader environment is the result of the interactions of the physical, socio-economic and policy and governances. We conceptualize that given the broader environment, the choice of institutional arrangements between personalized and impersonalized transactions is determined by the attributes of institutions in the action domain and the attributes of transacting parties, mainly sellers and buyers. In our specific case, given the local institutional environment, transaction parties are assumed to choose between

two alternative arrangements: personalized and impersonalized transactions. The attributes of local institutional environment impose constraints on the choice of transacting parties and the outcomes of the transactions. Changes in the attributes of institutional environment will change the comparative costs of alternative institutional arrangements (Williamson 1995) and hence change the relative prevalence of the two institutional arrangements. Exogenous or spontaneous changes in the broader environment affect the action domain by changing mainly the local institutional environment with some effects on the attributes of sellers and buyers (the type of actors, their relative bargaining power, and even their behavioral patterns).

Williamson (2000) takes informal institutions (traditions, customs, norms and codes of conducts) embedded in the social environment as given. How informal institutions arise and are maintained is less clear. But historical analyses (North's 1990; 2005; Greif 1998) show considerable differences in the evolution of institutions. However informal institutions are generally considered as persistent and durable, there have been differences in the evolution of institutions across different societies. That means, the degree of persistence of informal institutions also differs from society to society. The embeddedness of the informal institutions in social environment implies that anything that disturbs the social environment directly disturbs the medium under which informal institutions are communicated and maintained.

Changes in the broader environment shift the comparative costs of the two alternative institutional arrangements and hence the relative frequency of personalized and impersonalized transactions. But the prevalence of either personalized or impersonalized transactions across all the action domains in turn not only affects the levels of outcomes, but they crucially determine the nature of the broader environment. That is a broader environment that arises from a situation where personalized transactions are highly pervasive will be different from that where impersonalized transactions are also not uncommon. In the extreme ideal case, a broader environment that arises from the purely impersonalized transaction will be considerably different from the above two. The degree of personalization of transactions across the action domains thus determines the type of broader environment and its future dynamics.

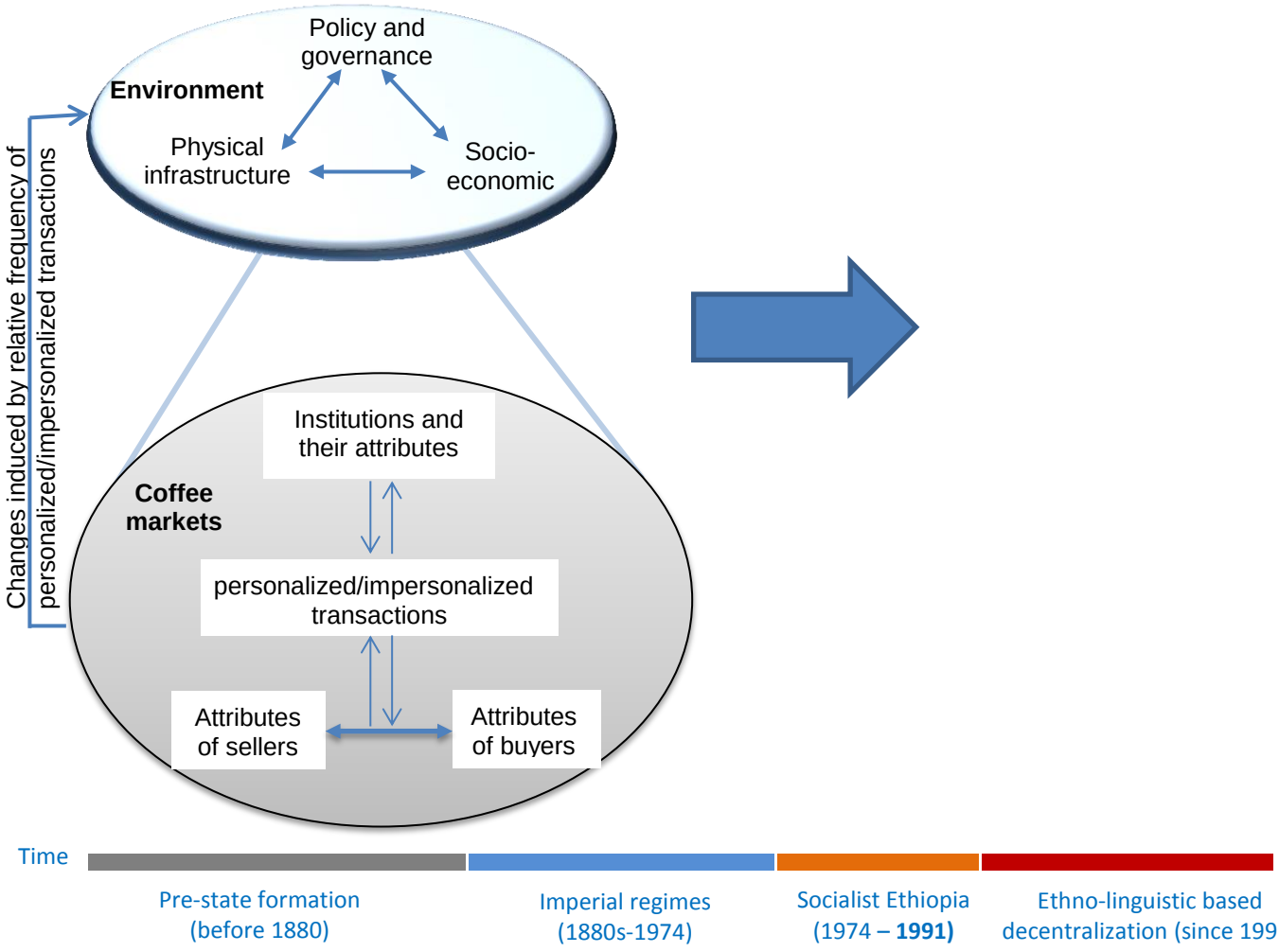

Figure 2.1 Conceptual framework for analyzing historical changes of institutions

We conceptualize that while personalized transactions perpetuate the existing social environments (and hence informal institutions), impersonalized transactions changes the social environment by bringing new player: players with a different culture, belief, preference, experience, ideology, capacity, etc. The resulting social environment becomes more complex than it was before. The result will be that old informal institutions tend to be less effective and less efficient. Agents in their attempt to minimize transaction costs gradually revise informal institutions. But the scope of such revision depends on the extent of change in the social environment. Depending on the degree of

change in the social environment, some transactions which were easily handled by informal institutions will now be hardly handled. The costs of transactions will thus increase. The increase in transaction costs could be high so as to block some transactions. The situation could push society either to rediscover the previous social environment or attempt to learn to live with it. If the society is forced to move forward, not only the informal institutions gradually evolve to continue to handle some transactions, but formal institutions become more necessary and feasible than ever before.

We conjecture that the nature of the broader environment that arise from the purely personalized transactions will be characterized by closed and segregated (along with the attributes the personalization is embedded in) socio-economic and political units. But each unit in its attempt to preserve the closed structure the broader environment tends to be stagnant until the friction among the different groups eventually results in a sporadic revolutionary change. Such revolutionary change can arise either from exogenous changes or from cumulative outcomes of long-lasting internal frictions among the segregated units. But on the contrary, changes that are induced by the expansion of voluntary impersonalized transaction tend to be evolutionary instead of revolutionary. Thus, institutional interventions that encourage voluntary impersonalized transactions induce the social environment upon which the economic, political, cultural, and religious intercourses are embedded in to gradually change and hence informal institutions to evolve.

The broader environment can change either as a result of the cumulative effect of changes in the degree of personalization in the action domains or as a result of exogenous shocks. Unlike other economies whose institutional changes are characterized by gradual evolutionary changes, the changes in the overall environment in Ethiopia were marked by historical trajectories - historical trajectories caused by revolutions that changed the political regimes often through military forces. Depending upon the type of change in the broader environment, the relative effectiveness of personalized and impersonalized transactions will change. It is this change that determines the future path of the change in the broader environment and institutional environments.

While “institutional environment” describes property rights, enforcement mechanisms, human behaviors, and power relations in an economy, institutional arrangements, describe the sets of rules and structures governing the allocation and exchange of resources through specific transactions (Dorward *et al*. 2009). Actors not only differ in their attributes, the local environment also imposes different constraints on different actors. Each party, given its own attributes and the attributes of its activities, will choose a mode of transaction that maximizes its own perceived gains. Multiple equilibria of transaction arrangements will exist when actors that differ in their attributes and level of constraints attempt to align transactions in transaction costs reducing way. They can either make impersonalized exchanges, embed their transactions in a long-term relationship or a hybrid of the two. The institutional environment, by providing incentives and constraints structures the actions of each party and by determining the feasible set of activities each can do, determines the distribution of different arrangements in the action domain.

We use this framework to explain the history of institutional changes. In the relatively stable economies characterized by gradual changes in the institutions, interaction of various factors determines the evolutionary path. When the system is highly integrated within and with the outside world, shocks such as technological innovations, relative price changes, and new information can have significant effects on the evolutions of institutions. But in a non-market society, these shocks generally exert little force in changing the broader environment and hence institutions. Instead, the accumulated endogenous factors manifest themselves in the form of revolutionary changes. Such revolutions could induce institutional changes, but the direction of changes could depend on the effect of the revolutions in changing the underpinnings of economic institutions and markets. Thus we assess the effects historical trajectories that occurred in the past on institutions and institutional arrangements. Major historical trajectories in the country can be explained in terms of the change in political regimes that came through revolutionary movements. Particularly we focus their effect in promoting or discouraging personalized transactions and their implications on widening or narrowing markets and trade. We also assess the feedback of the change in the degree of personalization to the broader and local environments.

When every economic, social and political transaction are confined to the group, the social structure tends to be more collective than it would otherwise be when there is some degree of impersonalized transactions. We contend that degree of personalized transactions crucially determine the social landscape. In a situation where impersonalized are exceptions, social structure tend to be fragmented and segregated along numerous small groups. The life of the group tends to be then collective. Collectivist-individualist dimension remained the most important dimension in explaining cultural differences (Triandis 2001). Greif (1994) characterizes the social structure of collectivist societies as "segregated" along religious, ethnic, or familial group and cooperation across different groups is limited. Since the relation is based on fixed identity, it is difficult for individuals to shift from one group to another. Economic relationships are confined to such narrow group and cooperation across groups are limited. The situation in individualist society is the exact opposite of this. The dominance of collective life affects the culture of the group in a specific way.

The complex interdependence of people in the group naturally results in a specific shared-belief and culture and institutions that support them. The resulting dominant shared believe will be that that undermine private property acquisition, wealth accumulation, competition, innovation and the like Instead, institutions that favor communal ownership and expropriation of properties; that promote wealth sharing and distributive activities; that fail to encourage, if not discourage, productive ones. Thus, not only institutions who treat everyone the same will be rare due to the segregated nature of the socio-political environment, the resulting share-belief will also undermine the development of market institutions. In sum, the resulting situation will be that that undermine economic opportunities and that limit markets and trades instead of expanding them. It will be dominated by a socialist-like ideology.

The effects of the local environment in the shared-belief or cognitive model or just mental model is drawn from recent works (World Bank 2015; Schlüter 2009; North 2005; Kahneman's 2002; 2003; Hodgson 1998). The idea is the socio-cultural environment provide subjects a specific mental model that cause subjects to interpret the environment they are in a particular way. Our hypothesize that the mental model that arise in dominantly and persistently personalized transactions would be different from

that that could arise in an environment where impersonalized transactions are prevalent. If experience is crucial in determining our worldview, the purely personalized transaction exposes individuals only to a narrow physical and social world. One can imagine the mental model one can have if the individual's transactions in the labor, goods, financial and capital markets are confined to small social group living in a small geographic location. But in addition its effect in limiting exposures, the closed and communal social environment naturally gives subjects a specific mental model which are markedly different from a relatively open and less communal society. In the case of the former, subjects are likely to develop a mental model that view market and monetary exchanges, private property rights, wealth accumulation and competitive behavior as bad for the survival and prosperity of the group. As a result, norms and codes of conducts tend to undermine these activities.

Not only the dominant mental model considerably differ, the speed of learning also differ between the two environments. This will have important implications for institutional change. The main problem in this respect is while humans find it relatively easy to revise the beliefs they have about the physical world, they find it difficult to revise their beliefs about the human world.

Our hypothesis is that while impersonalized transaction provides better chance for learning by exposing subjects to a different social and physical world and hence a chance to revise their mental model, the personalized transaction limits the chance for learning by perpetuating the existing mental model. Instead, subjects in the case of the latter tend to conserve the mental model they inherited from past generations.

Historical analysis could be made in two ways: comparison of institutions across time and across space or market levels. In this study, we use both frameworks to analyze the impacts of personalized transactions on institutional changes and performances of markets.

2.1.2.1 Institutional analysis across time

We assume historical trajectories induced by revolutionary changes in the political regime primarily affect the broader environment to change. Historical trajectories caused by regime change will have substantial effects on the overall social and economic

environment and more importantly the development of markets (Greif 2006). It can reconfigure the structure of economic, social, and political structure and relationships.

As shown in Figure 2.1, the big arrow at the right-hand side shows the historical changes in the broader and local environment along time. Three major historical trajectories have occurred over the past one and half centuries in the country: namely, the formation of modern state at the end of 19th century, the socialist revolution in 1974 and the 'collapse' of the socialist regime. We conceptualize that these historical trajectories create shock on the broader environment by substantially changing the relationship between socio-economic, political and physical environments. These changes will be transmitted to the action domain. However every element has a bearing in the functioning of a system, changes in some factors can have more implications on the action domain than others, depending on the specific context (Dorward *et al*. 2009). They will primarily change the relative bargaining power of actors, their feasible set of activities and strategies and in effect change the relative efficiency of alternative arrangements (North 2005; Aoki 2001).

Based on their enforcement pattern, many divide institutions of exchanges into (Wallis 2011; Greif 2004; North 1990) personalized exchange (bilateral- and self-enforcement) and impersonalized exchange (with or without third party enforcements). We use this theoretical framework to understand the forces driving the change in relative prevalence of personalized and impersonalized transactions at various levels of the markets.

In our specific case, the changes in the environment change the relative efficiency and suitability of personalized and impersonalized transactions and the type of activities handled by them. The change in the local environment could either provide a chance to actors to experiment transactions with actors outside their social circle or it could incentivize them to restrict their transactions within their social circle. If the change incentivizes them to deal with actors outside their social circle, they experiment diverse strategies to reduce potential information and enforcement problems. This provides actors the opportunity to revise old beliefs about transacting parties from other groups, design new strategies and broaden their worldview. The feedback of the learning process gradually causes the local environment to change. This strategic response

could be decentralized or coordinated depending on the overall context. For instance, in the case of seller-farmers, this strategic reaction will be decentralized. But buyers especially both in the local and central markets can take explicitly (implicitly) coordinated actions. Thus, the relative frequency of personalized and impersonalized transactions will change in the action domain. This change will have a crucial bearing on the local institutional environment. But the cumulative effects of such small change at the numerous action domains will gradually change the broader environment by affecting mainly the social environment and even economic, political and physical environments. Since the degree of personalization is central our framework, the historical analysis focuses on how this changed over time. We do this by examining the effects of key historical trajectories that occurred over the past one and about half centuries on the broader environment.

We attempt to trace the effects of these changes on the broader environments, institutional environments in general and the coffee markets in particular. Accordingly, we focus on technological and infrastructural factors, territorial structure, the social structure and the degree of closure, cultural diversity and cross-cultural interactions, ethnic composition, diversity of economic activities, level of domestic markets and their integration with foreign markets, degree of mobility of factors (labor and capital) and livelihood structure, composition of the public-private sector in the economy, property right structure (especially of land), foreign trade policies, political system of representation, centralization-decentralization of the governance structure, political ideology, and the strength of judicial system in enforcing property rights and contracts. We assume changes in these key environmental elements will have important implications on the relative prevalence of the two institutional arrangements: personalized and impersonalized transactions. The analysis helps us to identify the factors underlying the persistence of personalized transactions at various levels of the economy. But it also help us in understanding the implications of the relative dominance and persistence of the personalized transactions on the type of changes in the broader environment. It not only help us to trace the origin of the existing institutions, but it also helps to explain the deep sources of the revolutionary changes that occurred the past periods. It provides a cinematic picture of institutions of the country.

We use historical trajectories that substantially changed the environment (physical, socio-economic and policy and governance) of the country as a focal point in our analysis. Accordingly, we start by reviewing the context before state formation to understand the situation during state formation. We then examine the two main regime changes made: the communist revolution in 1974 and the recent regime change made by ethnic liberation fronts in 1991. But given this historical analysis, we also want to further assess the behavioral attributes behind the current prevalence of personalized transactions. Here we primarily focus on identifying attributes driving the choice of farmers in the action domain in order to get insight the reason behind the personalization of transactions in the local markets. We assess the implications of the local institutional environments in shaping the choice of farmers at the local markets. But in addition to the identification of the attributes and assessing the environments shaping the choices, we also further examine the implication of the choices on the broader environment.

2.1.2.2 Institutional analysis across market levels

The above framework helps to provide a general picture on the historical changes in the economy as a whole and institutions in particular. At a point in time, a product may face different institutions along the supply chain. Figure 1 can be replicated to show the links between different levels of the markets along a supply chain. Figure 2 is thus produced to replicating the whole link between broader environment and action domains to represent the different levels of the markets along the supply chain. Thus, the local coffee market represented by the bottom circle in Figure 2 represent the whole relationship between the broader environment in the local markets and institutions that specifically govern the coffee transactions and feedbacks on the broader environments. Similarly, the middle circle that represents the central markets shows the relationship between the broader environment at that level and the action domains that specifically govern the coffee transactions. The framework, by systematically modeling the relationship between the various levels of markets, helps us to analyze the potential impacts of institutional interventions made at different levels of the markets. Chapter 4 to Chapter 8 use this framework to analyze both the impacts institutional interventions on key parameters and the perception of actors about the institutional interventions.

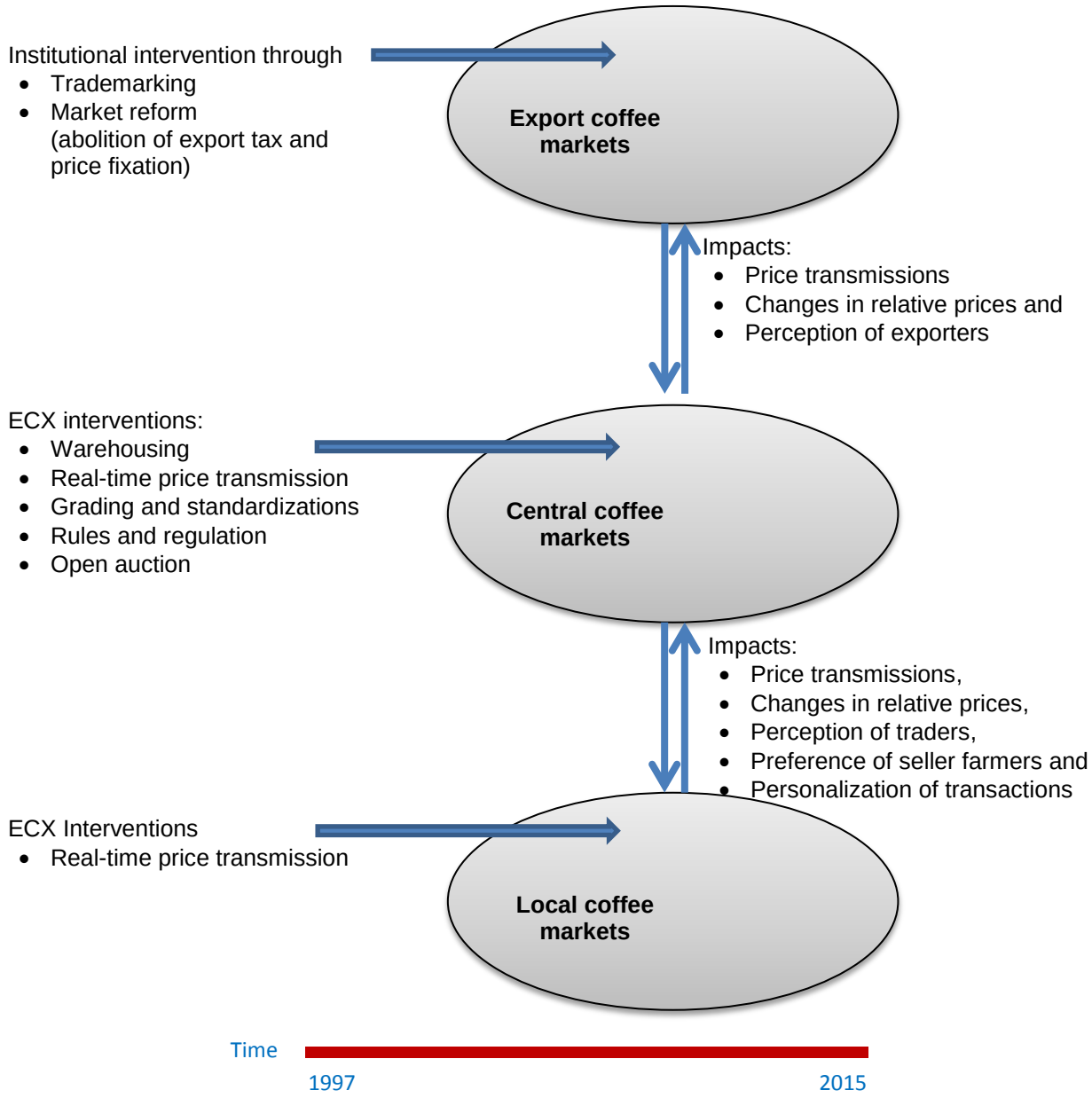

Figure 2.2 Institutional interventions across time and spaces

As described in Figure 2.2, the study considered the following institutional interventions:

1. Export markets – the trademarking initiative made around the year 2007 to differentiate selected Ethiopian coffee origins from commodity coffee; and the market reforms made to abolishing of coffee price fixation and export taxes made in the year 2004.

2. Central markets – the introduction of ECX in 2009 in the coffee markets. Key interventions such as the introduction of warehousing, real-time price transmissions, the introduction of grading and standardization system at the central markets, open-outcry auction system, and the introduction of stronger supportive rules and regulations, and the intensive use of information technologies.
3. Local markets – the introduction of real-time price transmissions about central markets.

Specifically, the impacts of these deliberate institutional interventions are measured in terms changes in asymmetry of price transmissions, in the relative price levels of different coffee origins, and the perception of market actors at each level of the three markets on the institutional interventions. In addition, the study also assesses the impacts of the interventions on the degree of personalization of transactions at each level of the markets. These analyses are made for the time period between 1997 and 2015.

The remaining chapters examine the impacts of institutional and policy interventions made to improve the performance of coffee supply chain. Chapter 7 evaluates the impacts of ECX intervention on the performance of the chain on price transmissions. To supplement the results of this analysis, in Chapter 8 examines the perception of exporters and traders – the two main players in the central markets – to further understand the impacts of ECX on the performance of the markets. Finally, Chapter 9 evaluates the impacts of anther institutional change, introduction of trademarking, on prices of the different origin-designated Ethiopian coffees at different levels of the markets. We also examine the complementarity of the two interventions (ECX and trademarking) by assessing the effects of ECX on the performance of trademarking.

2.2 Review of literature

This section reviews two set of theories in the NIE. The first part reviews theories of Transaction Cost Economics specifically in the context of developing countries agricultural sector. The second part reviews theories around institutions and institutional changes again with specific reference to developing countries context. It deals with both deliberate and spontaneous institutional changes.

2.2.1 Transaction cost economics and institutions

As analytical tool, the perfectly competitive market assumes a frictionless model to generate insight about the real economic world just as frictionless model in physics describes some important phenomena in the physical world (Varian, 1992). While a competitive market is an ideal market which is hardly found in reality, it serves as a counterfactual against which we can judge performances of observed markets. Such comparison may not be practically useful if the assumptions used to construct the counterfactual are considerably far from reality. This by itself doesn't pose a serious problem if appropriate modifications are made to capture the departure of the real world from the world constructed by the simplified model (Simon 1955). It, however, poses a serious problem when the same stringent assumptions used to construct the ideal world is also used to explain real world phenomena. One of such problems is the issue of frictionless transactions or zero-cost transactions.

The neoclassical theory postulates that economic agents make rational choices in that, given the information available to them, they make economic choice decisions in a self-interest seeking way. The theory assumes that individuals know what is in their self-interest and act accordingly (North 1994) which requires not only stable and well-organized preferences but also the necessary computational skill (Simon 1955). The implications of these are that economic agents can agree to exchange without incurring additional cost for the agreement (Stigler 1992).

Like other 'heterodox' economic theories, neo-institutional economics depart from competitive markets by primarily attacking the frictionless transactions implicitly assumed in the competitive markets. By taking a friction-fraught real-world economic

transaction, neo-institutional economists provide sophisticated explanations to real world economic phenomena: Williamson (1979) from organizations perspective and North (1994) from a historical perspective. In both cases, the starting point of neo-institutional economics is the abandonment of frictionless markets and the consideration of non-zero transaction costs as a cornerstone to the explanation of economic phenomena.

Following the traditions of theoretical developments in economics, neo-institutional economists attack some of the assumptions neoclassical economic theory was founded on. One of these is the instrumental rationality that assumes that subjects possess the cognitive system that provides them with a *true* model about the real world and even if this model may be incorrect at the beginning, a correction process enables them to arrive at the *true* model (North 1991). Institutional economists on the other hand explicitly take cognitive and computation limitations as an inherent problem of subjects. As a result, their model may not highly depart from the *true* model, their model may not even converge to the true model due to information problems. Subjects are thus assumed to have a bounded rationality due to cognitive limitations and information problems. However subjects are intendedly rational, their realized decision is bounded rational due to cognitive bias (Kahneman 2003), computational limitations and information problems (Stiglitz 2002). But taking bounded rationality as a behavioral assumption and at the same time taking the observed arrangements as a rational response to transaction cost problem is inconsistent. Moreover, the implication of behavioral differences in the comparative analysis cannot be captured if bounded rationality is assumed as a general human behavior (Gregory 2011).

The other modification is the inclusion of possible opportunism into self-interest. If institutions have the power to frame the capacities and behavior of agents in fundamental ways (Hodgson 2006), it follows then that such behavioral assumption ignores the possible effects institutions have in shaping the opportunistic behavior of individuals. Williamson (1995) defends that unless we recognize the danger of opportunism, we will not be able to minimize it. This may suggest for the decision maker to deal only with those who are expected to be trustworthy and avoid those who are expected to act opportunistically. But by reason of bounded rationality, the decision maker cannot identify *a priori* who is opportunistic or who is trustworthy. Moreover, even

if one can deviate from an agreement, we cannot know whether the action is motivated by 'guile' or self-interest, given the cognitive and computational limitation of the subject. Since opportunism has negative moral connotation inclusion of 'guile' into self-interest requires a moral standard to judge whether the observed behavior is motivated by self-interest with or without guile. Williamson's (1995) inclusion of 'guile' is based on his self-supposition that the self-interest assumption held in the neoclassical economics as fair, guileless and frank. The problem arises from one's attempt to attach moral judgment on self-interest motive. In addition, once we accept opportunism as a possible behavioral deviation from 'frank' self-interest, there is no reason to deny altruism as a similar possible behavioral deviation.

Due to the information and enforcement problems coupled with cognitive limitations, transactions and contracts will involve a lot of costs. Williamson, describes the *ex-post* and *ex-ante* contracting costs. *Ex-ante* costs include those incurred in drafting, negotiating, and safeguarding the contract. The *ex-post* costs can take several forms: *maladaptation* costs (costs incurred when transactions drift out of alignment); haggling costs (costs incurred if bilateral efforts are made to correct misalignments); the setup and running costs associated with the governance structures; bonding costs of effecting secure commitments and risk cost that arises from defection that may not be recovered after the court (Williamson 1985). A great deal of time, knowledge and other physical resources are utilized to reduce information and enforcement costs. The overall implications of these modifications on behavioral assumptions are that transactions involve positive costs. In fact, the neoclassical view that markets exist in an institutional vacuum is widely refuted by institutional economists.

Viewing a competitive market just as one institutional arrangement, Transaction Cost Economics (TCE) explains how generic institutional arrangements come to existence to align transactions in a discriminating way (Williamson 1995). A governance structure is defined as the set of institutional arrangements within which a transaction is organized (McFetridge 1994). The prediction is based on the argument that each governance structure, that differs in costs and competence, aligns transactions, that differ in attributes, in a cost-minimizing way. In the absence of a reference against which we judge the performance of the observed governance structure, such teleological

argument can justify every observed mode of governance as an efficient strategic response of actors given the overall institutional environment. However the efficiency of institutions can be judged by the magnitude of transaction costs, the comparison becomes difficult if there is no reference as which is the most efficient one. Those institutions that assume a frictionless competitive market can be considered as efficient. But unlike neoclassical economics that takes the competitive markets as an ideal reference against which to judge other markets, institutional economics prefer to take a pragmatic approach. In effect, institutional economist suggests a comparative analysis between alternative arrangements. This can take various forms: between the observed and other feasible alternative arrangements or between observed alternative arrangements (across time and space). Given that institutional analysis involves an understanding of the complex interactions various factors such as economic, social, legal, political, organizational and technological factors, not only the comparison become methodologically difficult, but the external validity of the results will be limited. As North (1991) noted market exchange, franchising, or vertical integration are conceived as efficient solutions to the complex problems confronting entrepreneurs under various competitive conditions. Unlike the neoclassical economist's tradition of using a formal model of competitive market as an ideal standard for a *socially* efficient outcome, transaction cost economics rely heavily on comparative analysis between feasible alternative arrangements. However the hypothetical ideal can be used as a reference (Williamson 1995), such approach is operationally irrelevant (Williamson 1979). Such reasoning could comfort policymakers to rationalize the observed institutional arrangement as efficient and socially desirable. In the absence of a reference against which the observed transaction is judged, any mode of arrangement could be justified. However the frictionless market of the neoclassical economics can still be used as a reference, TCE doesn't provide a formal approach on how to attain such outcomes.

According to North (1994), the crucial connection between institutions, transaction costs, and the neoclassical economic theory was made by Ronald Coase (1960). According to Williamson, two articles have made important contributions in successfully refuting the zero transaction costs assumption of neoclassical economics: Coase (1960) in relation to externalities and Arrow's (1996) in relation to vertical integration (cited in Williamson

2010). While these authors revealed the need to make provisions for positive transaction costs, they haven't formalized positive cost transactions as a theory (Gibbons 2010). Williamson (2010) caution that full formalization of TCE is a work in progress. Though initially TCE economics was viewed as a heterodox mainstream economics, it begins to get momentum when economics started to become more pluralistic and along with the efforts made by many researchers to conceptualize the idea of "costly exchanges" (Coase 1992).

The costs of exchange depend on institutions that embrace such as legal, political and social systems (Coase 1998). North (1993a), defines institutions as humanly devised formal constraints (e.g., rules, laws, constitutions) and informal constraints (e.g., norms of behavior, conventions, self-imposed codes of conduct) that structure human interactions. In addition, it also includes organizations that make, modify, interpret, and enforce the rules (World Bank 2003). The rule system provided by informal and formal institutions and organizations defines the incentive structure of societies (North 1994). There are two sets of theories of institutions: institutions as rules and institutions as repositories of shared belief (Brousseau *et al*. 2011). Hodgson (2006), provides a wide definition of institutions as 'systems of established and embedded social rules that structure social interactions'.

From an economic point of view, institutions determine transaction and production costs and hence the profitability and feasibility of engaging in economic activities and therefore define the choice set (North 1990). Institutions, by providing subjects a decision model, by limiting their choice sets and constraints (North 2005), determine economic activities and their outcomes. The evolution of institutions thus shapes the direction of economic change towards growth, stagnation, or decline (North 1990). Thus, efficient institutions are key for development (North 1991; World Bank 2003; Fafchamps 2004; Haber *et al*. 2003).

While institutions in some society evolved to promote economic progress, institutions in most developing countries and particularly in SSA countries are largely weak and inefficient. The important aspect of institutions for development is understanding the factors underlying institutional changes and their evolutionary path. The historical

accounts of developed countries suggest that the development of efficient markets in developing countries requires conducive political, and institutional environments (Chaudhry 1994; Khan 2004) and hence this calls for stronger and more state interventions than envisaged by neoliberal consensus (Khan 2004). Yet history showed that not only the governments of those countries lack the political commitment to work for the market to flourish, government failures are especially high in these countries.

2.2.2 Institutional change

According to the early observation of Adam Smith, the absence of maritime navigation was the main reason for the near absence of long-distance commerce in Africa:

> " There are in Africa none … great inlets …. to carry maritime commerce into the interior parts of that great continent: and the great rivers of Africa are at too great a distance from one another to give occasion to any considerable inland navigation" (1776, p. 40).

Maritime transport had been the primary means of transport for long distance and bulky trades (since Africa had to trade bulky products). It can partly explain the near absence of trade in those early times. But it cannot explain the persistence of very weak long distance trade even after the invention of other efficient alternative means of transportations. More importantly, it cannot explain the near-absence of potentially beneficial exchanges that would have existed among communities in the region.

The role of institutions for economic performance was even recognized long ago. For instance, the role of rule of law and good governances in economic exchange was recognized in the early writings of Adam Smith:

> *'Commerce and manufactures can seldom flourish in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law, …' (1776, p. 1227).*

Even Adam Smith underscores the role of institutions for promoting trade and commerce. According to him, once society begins to reap the gains from such trades, this will provide society the incentive to improve institutions undergirding this long

distance trade. The role of long-distance trade for the development of societies has long been recognized and well described by Adam Smith. Contrary to NIE, Smith (1776) conceive institutions as an outcome of trade and commerce.

NIE provides detailed historical explanations on how societies in their attempt to capture the gains from trade improved institutions. Unlike the Early Modern Europe, the near absence of such long distance trades in African countries can explain why these countries fail to create 'the fundamental underpinning of institutions that would make voluntary organizations viable and profitable' (North 1991); but it does not provide the deeper incentive mechanisms that stagnated – i.e. the reasons for the near absence of long distance trades (limited to slave trade – a 'self-transporting being' and some easily portable) in the past history of most SSA countries. It cannot explain the currently limited trade with the outside world and more importantly the limited markets within a region where diverse opportunities and alternative means of transportations exist. It thus fails to provide a better explanation of the reasons that discouraged those societies from capturing potentially beneficial exchanges. However, evidence on how the evolutions of institutions in transaction cost reducing ways improved economic performances, are rare.

The framework of North, on the other hand, explains the role of institutions in determining economic development path of countries by considering the trade, especially long-distance and cross-society, as endogenous whose level is determined by the strength of institutions underpinning economic exchanges. Such approach leaves out the possible feedback effects of such long-distance trades, especially long-distance trades across fundamentally different societies, in providing societies with the incentive to make cooperative efforts towards improving institutions undergirding the trades by increasing complexity of the trading environment and consequent high transaction costs.

North (1990), by viewing institutions as a constraint that structure human interactions, uses path dependence as a key conceptual framework and analytical tool for understanding and explaining long-run economic and institutional changes. Historical analysis of institutions show how institutions, undergirding long distance trade, when evolved in transaction reducing way, gave rise to the current western developed

countries (North 2005, 1990; Greif 1989, 2006). North (1990) contends that institutional changes are generally incremental; not discontinuous. The reasons, according to him, are economies of scope, complementarities and network externality systematically affect changes to be consistent with the costs and benefits of the existing institutional framework. Even those institutional changes that were induced by political revolution or war can even be viewed as continuous due to the embeddedness of informal institutions. While formal institutions largely change following a revolution or war, this may not dramatically change the institutional environment owing to the durable nature of informal institutions. In this framework, informal institutions play important roles in explaining historical changes and in determining the direction of its future path.

North (1990) argues that informal institutions, by connecting the past with the present and the future, play key roles in determining the direction of institutional changes. The past thus determines not only the present but also the future. Even if sometimes exogenous factors could trigger revolutionary changes, spontaneous and gradual changes in the institutional environments not only induce revolutionary changes but they also determine the type and timing of the revolutionary change. For instance, revolutionary changes arise due to the lack of institutions that mediate peaceful bargaining among conflicting parties (North 2005). Moreover, not only informal rules are much more durable than formal rules, they also determine the feasible set of formal rules and their degree of enforcement. The informal constraints embedded in the custom, tradition, and codes of conduct determine the effectiveness of alternative formal institutions and deliberate policies. That is the role informal institutions play in the overall institutional matrix, their complex interaction with formal institutions coupled with other aspects of the economy (such as technological level, physical environment, etc.) crucially determine the historical path of economies. The framework enables one to trace the origin of institutional changes from past institutions. The implication is that not only those deliberate institutional changes made under normal circumstances but even those changes that appear induced by events such as war and revolution can also be traced from past institutions. Accordingly, the socialist revolutions that swept many countries should have had their origins in the past institutions but the pre-existing

institutional matrix should also have shaped the type of institutional changes characterizing the socialist reforms.

Hobbs (2003) argues that institutions evolve, in transaction costs reducing way, when an economy undergoes exogenous shock. Exogenous shocks of various kinds create new institutions and eliminate others and may also change some of the already existing ones. Changes in relative prices, technological innovations, the emergence of new market opportunities and new information (e.g. Aoki 2001; North 1990) can induce institutional changes. The idea that these factors induce institutional changes implicitly assumes that the society is well-integrated, in terms of market exchanges, with the outside world. But if the society is isolated from the outside world, changes in these variables may have little, if any, effects on institutional changes. Unless these changes motivated the outside world to encroach into the society, as in the case of colonization, these exogenous factors are not likely to disturb the social status quo and hence are not likely to induce institutional changes.

It is difficult to imagine all formal institutions as entirely exogenous. The polity itself is not a machine that uses standard calculations. The polity, as any other group of actors, determines the feasible sets together with their perceived potential gains with a mental model. Unless those rules are purely imposed by external power, as in the case of colonial power, the formal institutions are partly the results of the shared belief and dominant ideology. Even if specific formal rules are imposed exogenously, the shared belief (or the dominant mental model) crucially determines the level of their enforcements. The enforceability and sustainability of those exogenously determined rules depend on the degree of their compatibility with the shared belief and the overall social-cultural environment. In effect, even if the rules may exist on paper, they may not be realized and hence may not be considered as institution (Hurwicz 1996). Even if all change in the rules may not be the results of free choice of society, the shared belief can selectively make some set of rules more attractive and easily enforceable than others.

Posner (1973) insists on the central role of legal institutions in structuring social interactions and in resolving disputes that arise in the process and their effect on economic performances. Historical perspectives of institutional analysis (Greif 1998,

2006, North 1990) also show that efficient institutions mostly evolve with economic and technological progresses and political changes that moved toward the rule of law. The presence of an effective legal structure and court system to enforce contracts and property rights is the fundamental underpinning of institutions and their development depends on the development of political institutions (North 1990). While modern legal systems are crucial, their spontaneous emergence and their effectiveness seem to be contingent upon the socio-cultural environment. Emergence and changes in formal institutions are understood as an outcome of political bargaining between different groups, which involves strategic alliances, conflict, bargaining, and lobbying (Acemoglu and Johnson 2005; North 1990): frictions between those groups who want to maintain the status quo and those who want to change it. In this sense, the nature of the group, the power balance among them and the interest of each group can matter for the type of change.

Setting aside the origin of legal institutions, most developing countries adopted modern legal codes from Western nations long ago. But their justice system remains ineffective and inefficient. Unlike past institutional changes observed in developed countries, institutions in most countries of SSA have not evolved incrementally. Instead, one of the distinguishing features of institutions in these countries is that the capacity of communities, governments, and markets to articulate and enforce consistent rules of the game is frequently quite limited (Nabli and Nugent 1989). World Bank (2002) takes incentive compatibility as an important criterion for the effectiveness and sustainability of a given institutional arrangement. Although the incentive compatibility of an institution is a necessary condition for its effectiveness and sustainability, it is not sufficient for the institutions to promote economic progress and social development. The type of incentives the institutions are compatible with matters as some institutions, instead of incentivizing productive activities, may incentivize corruption and counterproductive activities. It is when institutions incentivize such activities as productive efforts, innovations, wealth accumulation, and learning that they provide sufficient condition for development. Thus, while the incentive compatibility of institutions determines their effectiveness and durability, the type of activities they specifically incentive determines the direction of economic changes.

An alternative approach is to consider institutions as a set of shared-beliefs and analyze institutional evolution in terms of the dynamics of the shared-beliefs. In their attempt to endogenize institutional changes, (Aoki 2001; Greif 2006) by viewing institutions as 'play of the game' –strategies agents create over repeated interactions – provide a conceptual framework for understanding institutional change. In their framework, shared beliefs shape the behavioral pattern of agents (expectations and strategies), the mode of the game and its outcomes. Here experimentation and imitation can endogenously trigger institutional changes. But their scope in inducing institutional change depends on the level of competition which is also a function of private property rights, the structure of society and composition of economic and non-economic organizations. Alchian (1950) hypothesized that institutions evolve when the ubiquitous competition weeds out inefficient institutions. But for the surviving institutions to be efficient, the selection process must occur in an ideal competitiveness environment. Otherwise, firm's that reduce transaction costs by capturing higher rents continue to survive.

Informal institutions are considered as a slow-moving institution (Ronald 2004) because they are the result of unintentional and decentralized patterns of behaviors and process of learning. The speed of evolution of informal institutions thus depends on the dynamics of this decentralized behavior and the learning process. The evolution of informal institutions, therefore, is driven by the dynamics of the decentralized interpersonal relationships. In this line Brousseau *et al*. (2010) and Wallis (2011) attempt to explain the nature of and impetus for evolution from informal institutions (based on interpersonal relationships) to formal institutions (based on the impersonal guarantee of rights to all) in a (mostly) "institutions as rules" framework in which impersonal orders yield superior outcomes, while the evolutionary process can be trapped in inefficient equilibria. In this case, the mode and structure of interpersonal relationship play a central role in shaping the way beliefs are constructed and shared among subjects. Thus the evolutions of shared-beliefs are shaped by the dynamics of the interpersonal relationships. In a closed primitive society, the socio-cultural milieu is designed to maintain stability by conserving the long-standing culture and preserving the ascriptive relationships (Posner 1980). It will take centuries for shared beliefs to evolve. In the absence of something that disturbs

the socio-cultural milieu, society continues to perpetuate the long-standing shared-beliefs.

For understanding of institutional evolution, informal institutions seems to play more important role than formal institutions. The idea that informal institutions emerge spontaneously and once emerged they tend to impermeable to deliberate interventions is well recognized (North 1990). In addition, scholars argue that formal institutions imposed from outside are less viable than endogenously emerged one. Then the key issue for understanding of institutional change must start from those factors that are driving society to abandon the long standing institutions in search of alternative one. Some views this as a process of selection just in similar way conceptualized in biological evolution (Alchian 1950). However this may be sound, it started on the process without giving the impetus driving the process. Even if society/state must select among feasible alternative, what stimulate the selections. In the case of biological evolution, it is the competition among organisms for survival behind the evolution. But when it comes to society, human being as a society has strong instruments to tame competition and its potential outcome which are behind biological evolution. Thus, social evolutions thus diverge from the path expected in a purely competitive evolutionary process. As a result human evolution is nonergodic (Brousseau et al. 2011).

The very existence of a given community or tribe is obviously an evidence for its *fitness*, it cannot be evidence for the efficiency of its institutions. However imperfect, the performance of society must be judged relative to other society and relative to its past. How many society have become extinct due to its inability to evolve to overcome the adverse effects of avoidable hazards such as disease, flood, drought, etc. There is a clear difference between developed and developing nations in this respect. The resilience of society to natural and manmade calamities can be a minimum criteria to judge the efficiency of institutions. The mere existence of society is cannot be an evidence for its fitness in the present world where there are no various humanitarian aids and different non-market supports from the Western countries. The unidirectional influx of people in some society, in the form of migration, can also be an indicator of inefficiency of the institutions.

The role of informal institutions for institutional change seems clear. Informal institutions, which summarize the complex interaction of shared-belief, ideology, social structure and economic structure, play an important role in determining the type of economic and political institutions that arise and their performances. But what is less clear is the socio-political conditions under which those informal institutions that specifically promote economic progress emerge. Understanding the complex relationships informal institutions have with other socio-economic and political spheres seems important.

Historical accounts of institutional changes use long-distance trade as a starting point (North 1991; 1993, Greif 1998). In these studies, society in its attempt to capture the gains from trade improves institutions in a transaction cost reducing way. But such arguments implicitly assume that the society had already started long-distance trades and commerce. In a condition where there was no meaningful trade and commerce, the society may not have the incentive to improve institutions. Instead, it can perpetuate those institutions and organizations that foreclose trade and commerce as Eggertsson (2005, 1996) showed how restraints on free trades and commerce within and with the rest of the world crippled Iceland's fishery industry for one thousand years. The critical issue is to understand the key factors underlying society's attitude and ideology toward trade and commerce. Even in the presence of marginal trade, the perceived gains may not be sufficient enough to induce institutional changes. Hence, the important issue under such circumstances is how to induce society to expand freer trade and commerce so that interest groups that pressurize the polity can emerge. This requires a deeper understanding of social, economic, physical, political and institutional contexts that take such society away from the long-standing closed communal way of life and reciprocal-based exchange system. Despite the existence of profitable opportunities, some society even discourages monetary exchanges within the community much less to encourage trade and commerce with culturally different and distant societies.

The reason why institutions fail to evolve especially in SSA seems less clear. North (1990) noting the difficulty of understanding the reason, he indicates the missing appropriate political institutions as the primary cause. But the development of effective political institutions itself must be the long-term outcome of the society's gains from expanded long-distance trade. TCE theory does not provide a clear explanation as to

why weak institutions persist in most developing countries. The TCE frameworks provided by both North and Williamson fail to account the unique institutional environments of developing countries (Saravia and Dietrich 2006). As North himself indicated, the reason why inefficient forms of exchanges, such as the 'Suq' continue to exist in North Africa and the Middle East is not clear (North 1990). A variety of similar other forms of exchanges is still common in most SSA countries. Perhaps understanding the reason why such forms of traditional trade continue to exist can provide insights on reasons why institutions did not evolve in these countries.

The dynamics of informal institutions in a society where the interpersonal relationship is confined within arm's length network will not be the same as in a society where complex impersonalized relationships define the behavioral patterns of individuals. It is difficult to expect institutions that promote economic progress to evolve in a non-market closed tribal society. The reason is that most customary institutions and even deliberate policies may focus on preserving these relationships. As long as there is nothing that frees individuals from interpersonal relationships and the resulting informal institutions that induce behavioral conformity whose effect on freedom of choice, innovation, wealth accumulation, productivity and so on is largely negative. While institutional economists have gone far toward demonstrating the effects of other non-economic institutions on the levels and outcomes of economic activities, they are generally silent about potential 'feedback' effects of the prevalence of open and competitive economic system on institutional changes. One of the problems of institutional analysis is that the causal relationship runs only from institutions to markets, not the other way round. Instead of taking the scope of the market as a factor determining institutional change, institutional economics take markets themselves as institutions. The heavy attacks of institutional economists on the liberalization reforms made through Structural Adjustment Program (SAP) imply a one-way causal relationship that runs from institutions to markets (Poulton *et al*. 2006; Dorward *et al*. 2005a, 2005b; Easterly 2005). In addition, institutional economics emphasis on potential positive roles of informal institutions without seeing their adverse implications on the long-term development of markets (Jackson *et al*. 2012; Karayiannis and Hatzis 2012; Baliamoune-Lutz 2011; Ahlerup *et al*. 2009; Grootaert 1998; Coleman 1988). Moreover, the increased discourse about localization

and revitalization of local tradition, culture, etc. undermines the potential feedback of markets in inducing changes in informal and formal institutions. The main issue is the persistence and pervasiveness of informal norm based personalized transactions undermine institutional transformations primarily by undermining markets exchange (Kranton 1996). If once the required institutions allowed markets, the market itself can provide society with strong incentives for the institution to change incrementally. The market endogenously induces institutional change by changing the preferences (Bowles 1998) and more broadly the behavioral patterns of actors (Hodgson 1988). It can crucially determine the magnitude and direction of incremental change. In addition, institutional analysis is largely silent about the socio-cultural and ideological contexts that generally prevail in a non-market and closed societies and their feedbacks on market

One possible reason for institutional stagnation in SSA could be that the limited gains from inefficient trade may provide little incentive and resources to improve institutions in a cost reducing way. For instance, the feedback effects of the smallness of transactions, for historical, political, physical and so on reasons, characterizing most of the current societies of SSA countries (Fafchamps and Minten 1999), provide the society little incentives to expand trade and, consequently, to improve institutions, including political institutions, in a transaction costs reducing way. But the potential of expanding the scale of economic activities could also be a function of the transaction costs and other critical elements such as the property rights on land. In a condition where property rights on land are either limited to possession/use rights or most lands are communal in African countries (Posner 1980; Ensminger 1997), the scale of economic activities could continue to be small.

Institutional analysis must be comparative and historical (Aoki 2001; Williamson 1995; North 1991). We thus examine the overall environment under which the revolutions occurred and explain the roles informal constraints have played in determining the subsequent formal institutions and deliberate policies. To be specific, we focus on those elements that have a bearing particularly on agricultural markets and more specifically in the coffee supply chain. We explain the origin of the current institutional environment and economic and political setting and more specifically the existing pervasive

personalized transactions. Our main objective is to identify key elements driving the historical paths of institutional changes. We focus on the impacts of long-distance trades and, especially, that go beyond the boundaries of small geographic/social entities in shaping the behavior of individuals and on the evolution of market institutions.

2.3. Description of the coffee markets and institutions in Ethiopia

An exploratory study was made to understand the functioning of the whole value chain from local market to the export market. Informal discussion was made with various actors and supporting institutions. Accordingly, discussions with experts of ECX, ECEA, (a separate organization established in order to supervise ECX), marketing experts of district Agricultural Development Offices, exporters, traders and some community leaders. In addition, various websites were also consulted. The following sections thus describes the institutional contexts the various markets are operating and the relationships of the different markets along the supply chain.

2.3.1 Description of the coffee market

Coffee in Ethiopia is produced mainly by about 1.2 million small-scale farmers, who cultivate less than two hectares. The average productivity is about 670 kg per hectare. Coffee produced by the small-scale farmers is supplied to village assemblers, cooperatives or local coffee traders. The village assemblers (which sometimes serve as an agent of local traders) in their turn sell to local traders. While cooperatives can either directly export coffee or sell it at the central auction markets located in Addis Ababa or Dire Dawa, the local coffee traders can sell only at the central auction markets.

In 2008 Ethiopia tried to improve the functioning of the central auctions by establishing the Ethiopian Commodity Exchange (hereafter ECX). This encompassed various regulatory, institutional, and organizational innovations (Gabre-Madhin 2009), including the introduction of new grades and standards, warehouse clearance and delivery and information dissemination systems. While coffee transactions at the central markets became modern, they remain poorly organized, traditional and personalized in the rest of the markets. Traders collect dried coffee cherries from thousands of farmers who supply very small quantities of dried or wet coffee cherries (often less than 50 kg at a

time) and transactions are made face-to-face and predominantly among known individuals.

Quality assessments

Quality assessments are made at each stage of the market chain, at the local market, at central markets and export markets. The quality assessment at the local level in the transactions between coffee selling farmers and local traders is subjective and unstandardized. Traders do this by asking the seller about the specific origin of the coffee and by making arbitrary visual inspections. Some traders draw a handful of coffee from the sack and hull the sun-dried or wet coffee cherries by crushing them between their fingers or their teeth. They do this to judge whether the cherries are well-dried or not, to visually inspect the body of the beans, to check the presence of foreign materials such as *wanza*[1], and to judge other quality attributes. Yet the method of assessment at this level is quite subjective. In some conditions, traders simply buy the coffee without making any visual examination. The practice differs from trader to trader and the market context.

The other quality assessment made at this stage is an assessment of the moisture content. This is done by local marketing experts in the Agricultural Development Offices. This is done when the coffee is ready for transporting to the ECX warehouses. Once it is processed, an amount of coffee with a net weight of 80kg will be packed in an labeled ECX sack. Then the expert measures moisture content by randomly drawing a sample from the loaded truck. If the moisture content doesn't exceed 11.5% by weight, the expert provides approval by sealing the loaded truck.

The other stage of quality assessment is made at ECX level. Here the grade level and brand type will be assessed using detailed standard criteria. This is described in detail in section 2.3.2.

The final quality assessment is made at the two Coffee Quality Inspection and Assurance Centers (CQIAC) located in Dire Dawa and Addis Ababa. Here, unlike the 10-level grading system, the CQIAC uses 6-label grading system that ranges from Grade 1 to Grade 5 and under-grade. The coffee which is below grade 5 will be

[1] A dry fruit of tree called *cordia abysinica* which resembles dried coffee cherries.

classified as under-grade and will be rejected. In addition, the origin of coffee, the net weight (60 kg), the name of the exporting company, date of certification and other information will be described in the labeling.

The traditional nature of the transaction provides the opportunity for both buyers and sellers to commit various kinds of frauds. Experienced and better-informed traders can downgrade the quality of coffee or cheat on its weight. In addition, traders can use their economic and political power to constrain farmers' free choice of traders and even manipulate contracts. But the traditional nature of the transactions also allows farmers to take some opportunistic actions. They can mix high-quality coffee origins with inferior coffee origins produced elsewhere. In order to gain from increased weight, they can also add foreign materials such as grains of cereals, stones, wanza, water and the like. This behavior is possible firstly because the actual quality of the dried coffee cherries which the farmers sell is only known after hulling and secondly since the amount of dried coffee bought from a single farmer is so small that traders hull the coffee collected from hundreds of farmers together making the task of tracing individual quality difficult even after processing.

Possibly, anchoring their market transaction around personal relationships is seen as a response to the transaction risks and challenges which both farmers and traders face (for an overview of the local markets in Ethiopia refer to Gabre-Madhin 1999; Musebe *et al.*, 2011; Tadesse and Shively 2013). Generally, it is believed that the basic social structure for the personalized transactions could be provided by the social networks of family, clan, ethnic, religious, and other social groups. But in addition to this, long-term transactions also lead to clientele relationships. The transaction context is such that a trader cannot operate without a well-established network. While it is generally less costly for an insider to establish such networks, it is almost impossible for an outsider to enter into the coffee trade.

In practice in Ethiopia, traders organize their clienteles around the social structure of their village and clan. In this way, village and clan provide the social network and the clientele relationship provides the personalized relationships.

Traders must make continuous investments to maintain, strengthen and expand their networks. They do this by investing in influential individuals and local leaders. But they also invest in individuals, especially in those whose production volumes are higher. More importantly, they engage village assemblers. They invest time and efforts to gather information, coordinate penalties, enforce contracts, provide gifts to influential farmers, offer 'interest-free' production or consumption loans, participate in social events and mediate in conflicts. In sum, maintaining and building social capital is not costless (Grootaert 1998). But to minimize these costs, traders also cooperate to avoid competition, and to deter potential new entrants.

2.3.2 Institutional changes in the coffee sector

Coffee has been the single most important source of foreign exchange earnings in the Ethiopian economy contributing more than 50% to export earnings in the past. While this figure declined over recent years (from 53.9% in 2000/01 to 21.9% in 2013/14), coffee still contributes a lot to the country's export earnings (NBE 2014).

The export coffee virtually follows a single value chain: it moves from the local/village market to the auction/central markets to the export market and finally to the world markets. The main agents in the above chain are farmers, local traders, exporters, foreign importers and processors. Farmers sell dried or red coffee cherries to local traders also called *suppliers (akrabis)* in the village/local markets. Suppliers after collecting dried/red cherry coffee from hundreds of small-scale farmers, undertake pulping/hulling[2], drying, sorting and packaging activities before they bring the product to the ECX warehouse. ECX grades, labels and certifies the product before it is offered for sale at the auction center. Exporters buy coffee at the auction center and transport it to their own warehouse. They undertake secondary processing: sorting and packaging before they bring it to CQIAC for grading, labelling and certification. Exporters then sell the certified coffee to foreign importers.

The institutional context of coffee marketing and trading in Ethiopia can be divided into two major phases: the pre- and post-reform period of 1992. While the pre-reform period

[2] Pulping/wet-processing/washing is a process of removing the outer cover of red/wet cherry to produce parchment coffee and hulling is the process of removing the outer cover of dried cherry coffee.

is associated with a socialist economic system, the pre-reform period is associated with a 'market-based' economic system. The period after the reform can be further divided into two phases: the period before the introduction of ECX and after ECX.

2.3.2.1 Before ECX

Until 1992 the Ethiopian Coffee Marketing Corporations (ECMC) monopolized the coffee market in Ethiopia, capturing about 86% of the volume in 1990/91 (Berhe 2010). Individual growers were obliged to supply assigned amounts of quota at a fixed price. But in 1992, following the liberalization reform, the ECMC was made to compete with private traders. In effect the participation of traders which was below 10% before 1992 grew to more than 75% (González 2007).

Several studies identified problems related to the old auction system that was run by the government (Renkow and Slade 2013; Kulkarni 2011). First, there were few exporters and there was suspicion of collusions among exporters. Second, the trader incurred a lot of transaction costs in order to sell coffee at the auction market. As there were no warehouse services, traders/suppliers had to transport the coffee to the compound of the auction center and leave the truck loaded until they found a buyer. Exporters (buyers), knowing the high costs trader face (car rental, guard, handling, etc.), have the incentive to cut prices during the auction. But the problem was bigger. When they agreed on a price, the exporter signed a check against delivery of the coffee at the exporter's warehouse. The problem was that after the trader transported the coffee to the warehouse, the exporter often refused to sign the delivery confirmation based on quality and quantity terms (Kulkarni 2011). At that time, the trader, locked in a hold-up problem, would have to accept a discounted payment to get the delivery forms signed as trying to find another buyer would involve even more additional costs. Third, fraudulent actions such as payment failures, forgery, contract breach, adulteration, subjectivity of the quality assessments were the common problems of the old auction system (Gabre-Madhin 2007). The legal and regulatory environments were too weak to discipline market actors. Finally, there were large numbers of brokers at various stages of the

value chain. The presence of a large number of brokers was by itself an indication of the inefficiency of the central auction market.

Figure 2.3 Coffee market chain before ECX

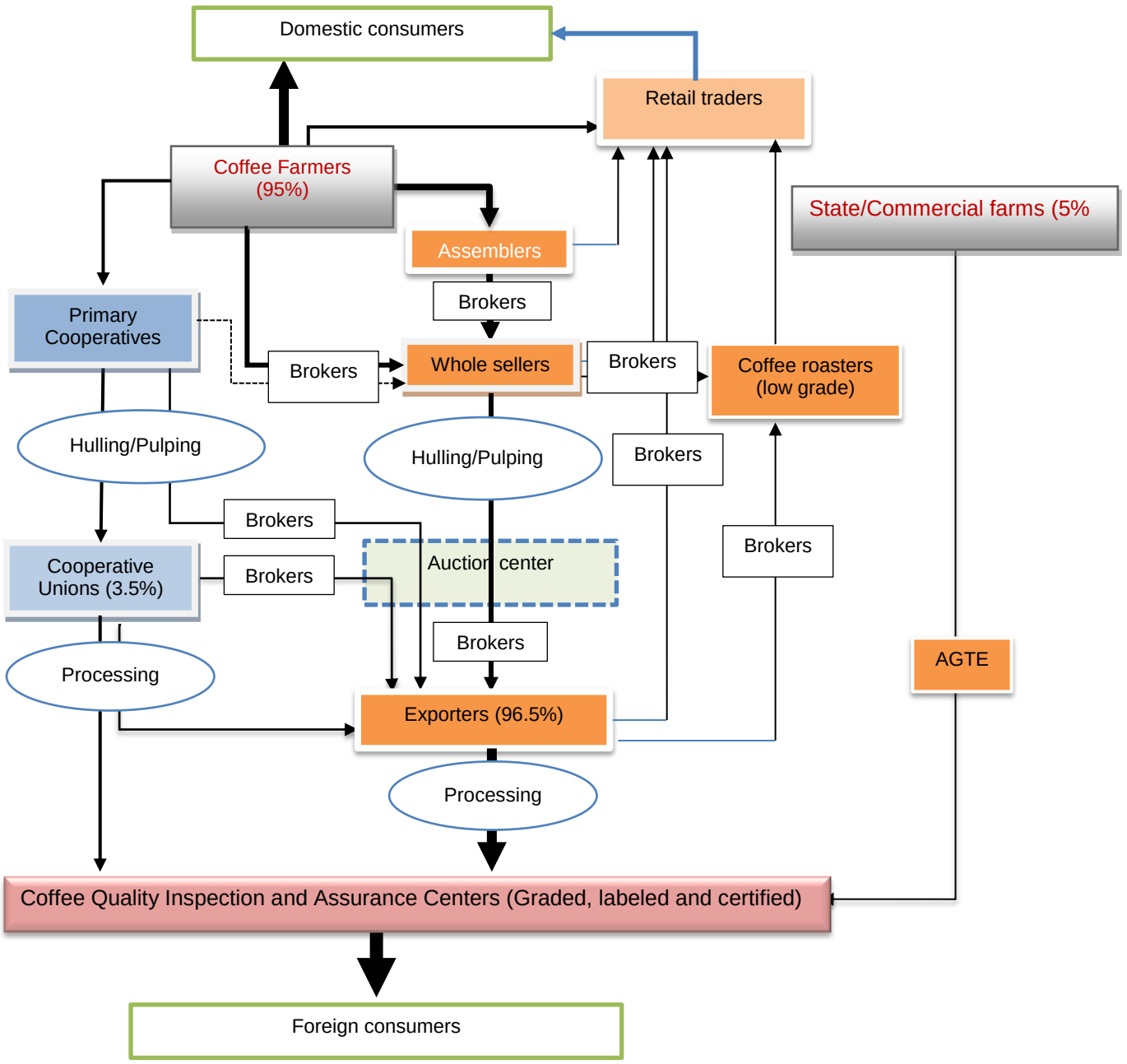

Figure 2.3 shows the relationship of actors in the coffee chain before the establishment of ECX. Farmers sell coffee to assemblers, consumers, local retailers, and primary cooperatives. One of the important features of this chain is that there are brokers that bring sellers and buyers together at every level of the chain. The transactions between

assemblers and whole sellers, whole sellers and exporters, cooperatives and exporters and whole sellers and traders were all made through the mediation of brokers. Here grading and labeling were made only at the end of the chain when the coffee is prepared for export. Since the central auction occurred before the coffee was graded and labeled, the broker draws a handful of coffee grain as a sample in order to find potential buyers. Even if the central auction was to create a marketplace where buyers and sellers transact in competitive ways without needing the brokers, the information and enforcement problem characterizing the market forced sellers and buyers to make personalized transactions with the mediation of brokers.

After the Structural Adjustment Program but before the introduction of ECX two other changes occurred in the coffee market. First there was the abandonment of price fixation in July 2002 and secondly the trademarking of Ethiopian coffee in the international market in 2007 (Arslan and Reicher 2011; DePass 2011). The latter happened, following a dispute between Ethiopian government and Starbucks with the help of lobbying and publicity by Oxfam and major Ethiopian coffees (Harar, Sidama, and Yirgachefe) obtained their own trademarks. This was considered as a big success for improving the bargaining power of Ethiopian coffee exporters (Arslan and Reicher 2011).

2.3.2.2 After ECX

ECX was established in April 2008 to facilitate and coordinate exchanges of selected agricultural products including maize, wheat, and beans. Coffee was not the primary target of ECX at the beginning . But in July 2008, ECX succeeded in convincing the government to pass a law that not only replaced the old auction system with the ECX but also that prohibited trading outside ECX (FAO 2014)[3]. As a result since 2009, coffee became the primary commodity in the ECX auction system.

Figure 2 represents the coffee market chain under the ECX system. Farmers, as usual, can sell coffee to consumers, suppliers (directly or through agents/assemblers), retailers, and cooperatives. But the export standard coffee has only two channels: suppliers or cooperatives. While suppliers can sell coffee only through ECX, cooperatives can sell either through ECX or can directly export to foreign buyers. But the

[3] In the old auction system, trading at the central markets outside the auction floor was permissible.

participation of cooperatives in direct export is still low. For instance, of the total volume of coffee 189,648.7 tons exported in 2014, only 6.3 percent of it was exported by cooperatives and the remaining 93.7 percent was exported by private exporters.

The main goal of ECX was to reduce the high transaction costs and risks and collusive behavior of exporters that characterized the central coffee market (Gabre-Madhin 2007). Although government ownership of ECX is a concern (Renkow and Slade 2013), ECX has generally changed the way coffee was transacted at the central/auction markets. Among the many regulatory and legal changes made by ECX, the following are most important:

First, ECX, in order to reduce the unnecessary number of middlemen and shorten the market chain, rules out village assemblers (*sebsabies*), who in the past were the primary buyers of coffee from farmers. Under the ECX system, farmers are expected to sell coffee directly to local traders who are locally called *akrabis*. The intention was to reduce transaction costs by reducing intermediaries. Despite the new rule, in reality, we observed that assemblers are still functioning. Traders reported that instead of dealing with hundreds of farmers individually, they prefer to establish long-term relationships with assemblers. As shown in Figure 2.4, although the new system rules out assemblers, in practice they still operate; some as a legal agent of the supplier or in the disguise of a producer-farmer. We thus represent in the figure with a broken box to differentiate their role from their role before ECX. The reason may be that assemblers are likely to have better information about the behavioral patterns and the product quality of each farmer within their village than a trader living in town. They play a key role in reducing information and enforcement problems.

One of the critical problems in the old auction system was that once traders transported their coffee to the central market, they incur a lot of transaction costs before finding a buyer. Traders are now only required to transport coffee to one of the 12 warehouses located in the towns of major coffee producing areas. As shown in the figure, suppliers after they made the necessary processing, they deliver their coffee to ECX warehouses. Traders can store it for a small storage fee for a maximum of one month[4]. This can

[4] The limit of maximum of 30 days was to discourage speculations.

reduce transaction costs and risks associated with the hold-up problems discussed above. It also avoids the potential costs appropriated by the diverse brokers that were operating at various levels between farmers and exporters. Under ECX, only a few agents are allowed to represent sellers at the auction floor with a pre-determined commission fee.

ECX also established a grading and standardization system at the warehouse level. It introduced its own grading and standardization system that accommodates wide grade levels and product differentiations. The new coffee standard divides Ethiopian coffee into ten grade levels: from Grade 1, Grade 2, Grade 3, down to Grade 9 and UG or under-grade. The grading level is determined based on two main criteria: raw quality and cup quality that constitute 40 and 60 points, respectively. The raw quality is determined based on four criteria when the coffee is washed coffee. The raw quality of washed coffee is thus determined based on defect level, shape and make, color, and odor respectively constituting 20, 15, 5 and 5 points. When the coffee is unwashed or dry processed the raw quality is determined based on two criteria: defect level and odor constituting 30 and 10 points respectively. The cup quality is determined for both washed and unwashed coffee based on four criteria: cup cleanness, acidity, body, and flavor each scored at 15 points.

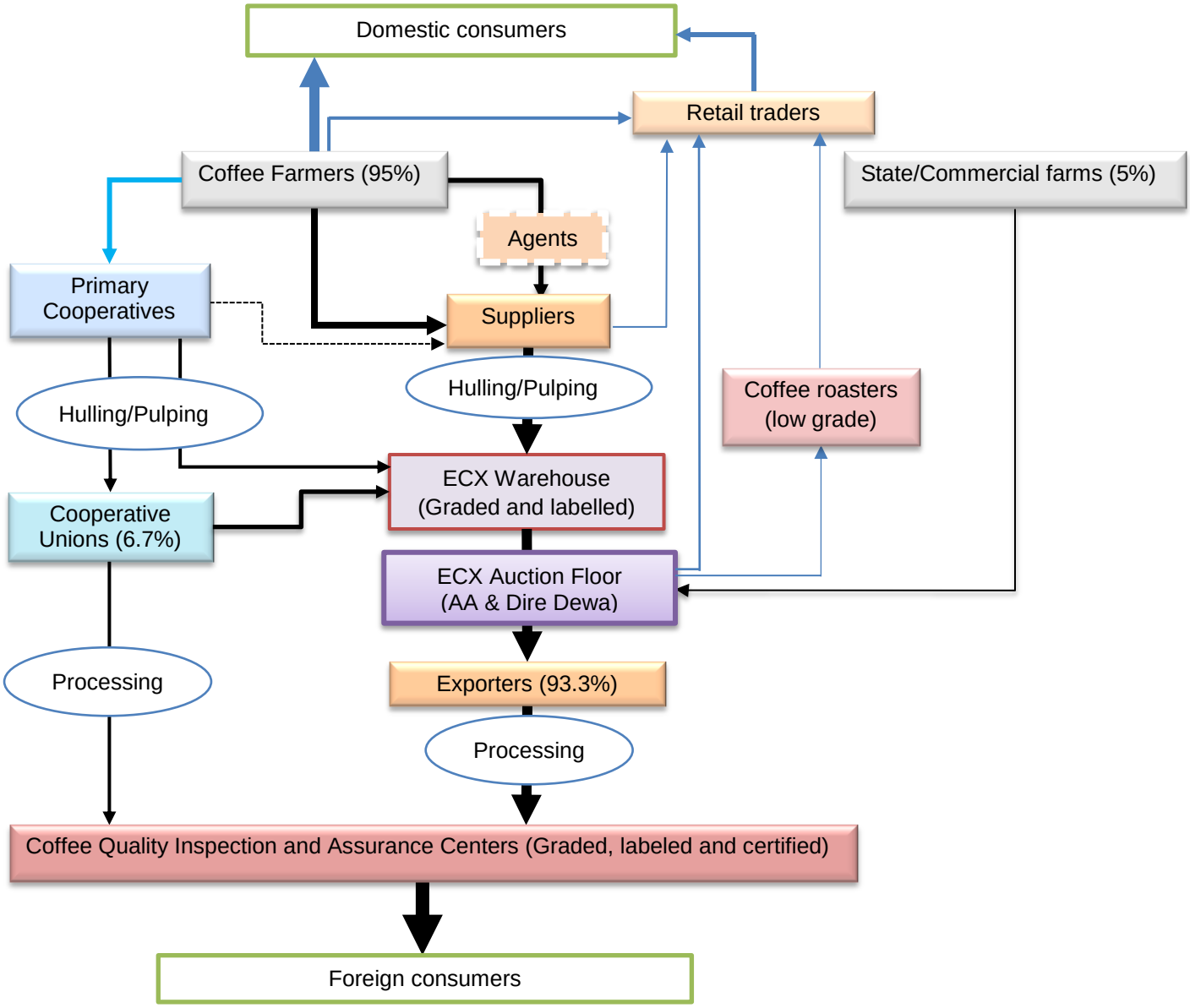

Figure 2.4 Coffee market chain after ECX

In order to determine the raw quality, 300 gram of sample coffee is drawn from different parts of the truckload. The coffee beans then will be examined for the number of defective beans, shape and make, color, and odor. The point level is then determined based on an objective assessment procedure set for each criterion. For instance, the defect level will be determined by counting the number of defective beans counted from the 300 gm coffee beans. The number of immature, black, white and broken beans; and the number of foreign material such as stone, soil, grains, and *wanza* seed.

In order to determine cup-quality a professional tasters tests brewed coffee in order to score the acidity, body, and flavor, and to detect defects and characters. Then expert will assign points for each criteria using a structured grading scale.

The scores obtained from raw and cup quality assessment then will be summed up to arrive the total score out of 100 points. The grade levels will be determined based on 10 points score, e.g. Grade 1 for scores greater than 90, Grade 2 for scores between 81 and 90, Grade 3 for scores between 71 and 80, Grade 4 for score between 63 and 70, Grade 5 for score between 58 and 63; and so forth up to Grade 9. Coffee with a score below 20 will be assigned Grade 10 or under-grade. Finally, coffee with Grade 1 to Grade 3 can further compete for specialty coffee. Based on further cup quality assessment, coffee that satisfies a minimum score of 85 points will be awarded Q1 specialty level and those that satisfy a minimum of 80 points will be awarded Q2 specialty level.

In addition, a contract system was developed that differentiates Ethiopian coffee based on processing method, geographic origin, and production method. Accordingly, the wet-processed or washed coffee are divided into 25 specialty coffee types and 11 origin-based commercial coffee types. The dry processed or unwashed coffee is further divided into 26 specialty coffee types and 17 origin-based commercial coffee types. It also identifies 15 types of coffee designated for domestic consumption only. Yet the product differentiation was made largely following administrative boundaries, instead of geographic boundaries[5]. For instance, the unwashed coffee originating from East Hararghe, West Haraghe, and Arsi Administrative Zones were classified under Harar A, Harar B, and Harar C, respectively.

As described above in the old system, the auction was based on a quality assessment made using visual inspection of a handful of coffee drawn from the truckload. Grading and labeling were made *ex post* the transaction to certify exports. As a result, there were disputes between sellers (traders) and buyers (exporters) on quality. Under the ECX system, traders anonymously sell standardized and labeled coffee. ECX introduced an electronic warehouse receipt system to eliminate the payment and delivery disputes and

[5] While the branding was to symbolize geographic origin of the coffee, in some cases the geographic differences may not follow the administrative boundaries.

frauds that were common in the old auction system. Payments are now secured and mediated through clearing banks and ECX. There is no direct contractual agreement made between sellers and buyers.

The other important procedural change is that transactions become impersonalized under the ECX system. In the past, while the transactions at the auction were *de jury* impersonalized, the transactions *de facto* were personalized as transacting parties made the agreement before they came to the auction. They came to the auction to formalize the informal agreements they made privately. The old system also provided room for exporters to collude. Under ECX, exporters buy coffee in an impersonalized bidding system. As shown in the figure below, all sellers with the exception of cooperatives must deliver their coffee to the warehouse. There, the coffee will be graded and labeled before it is offered for sale anonymously on the auction floor. Once exporters bought coffee at the ECX auction floor, they make further sorting in order to improve the quality of the coffee. Then, the coffee will be graded and labeled again by Coffee Quality Inspection and Assurance Center (CQIAC) before it is certified for export.

Although the impersonalization of the transactions can eliminate potential collusions and increase competitions, the anonymity of the transaction also makes traceability of the seller impossible. It was reported that this raised a lot of complaint from exporters and foreign buyers who want to directly buy from certain suppliers and cooperatives (Gabre-Madhin 2012).

Finally, ECX established a real-time market information dissemination mechanism. Information dissemination of coffee price has long been a tradition in Ethiopia well before ECX. Auction price of coffee has always been part of the daily news on the national radio and television. But, ECX introduced detailed and accessible real-time price information dissemination through mobile SMS, electronic price display boards, the internet and a free call-in telephone services. Price discovery is now almost costless for traders. In sum, ECX has transformed the old auction system into a modern commodity transaction scheme. All these interventions directly affected traders and exporters, but not farmers. Virtually all coffee producers are small and cannot individually access

ECX's facilities. The only intervention that directly reaches individual farmers is the dissemination of price information.

While Fafchamps and Minten (2012) and Bassolet and Lutz (1999) found no significant impact of information dissemination through mobile texting on price transmissions, Courtois and Subervie (2014) found significant impacts. The main purpose of price information is to improve the bargaining powers of farmers. But to realize this potential, the local market should be competitive and efficient enough to respond to price changes at the central market. However traders in the market have segmented the market through social networks. In effect, a farmer has limited alternative buyers, who have great monopsonic power. Local markets continue to be governed by informal institutions (Meijerink *et al.* 2014; Getnet 2008) and transactions remain traditional, less competitive and personalized (Gelaw *et al.* 2015). The transaction is traditional in the sense that there is no grading, standardization or labeling. Quality assessments are made subjectively through visual inspection. It is not economical for an individual farmer to transport small quantities of coffee (usually not more than one hundred kg) to find an alternative buyer elsewhere. Trading coffee between regions is also illegal in the country. ECX did not offer new alternative buyers for farmers nor did it change the rules governing the local markets. According to the rule, farmers at all levels can sell only coffee cherries in wet or dried form, not beans. Meaningful quality differentiation can be made only after primary processing, after pulping/hulling.[6] A recent experimental study showed how, despite the preference of farmers to make impersonalized trade, the institutional context forces them to embed their transactions in personalized relationships (Gelaw *et al.* 2015). In such conditions, whether farmers benefit or not, depends on the efficiency of the market in transmitting prices. In this case, the impacts of ECX will only change the distributions of benefits between traders and exporters. It is therefore questionable whether these interventions have changed the performances the coffee market chain and more specifically at the local market.

[6] In some areas, farmers hull coffee using some local instrument but the government discourage such traditional activities to maintain quality. Pulping/hulling is done by traders.

'No tribe unites with another of its own free will.'

Arthur Keith

Chapter 3 Historical analysis of institutions in Ethiopia

Abstract

This chapter examined the history of institutional changes. We found that the main origin of early civilizations observed in the northern region of Ethiopia was trade and commerce. We also found that the rise and fall of the strong empires and the associated emergence and decline of extended orders throughout the history of the country were all associated with the rise and fall of trade and commerce. But society's willingness to expand and contract trade was highly circumscribed by the degree of protection of private property rights. While we found that the emergence of the limited private ownership of land contributed to the emergence of extended orders in the Abyssinian empire and in the different kingdoms in the southern parts of the country, the communal ownership of land was the principal cause for the persistence of a closed tribal society in the rest of the country. The origin of the segregated social structure observed in the country was thus attributed to the confinement of transactions to a narrow community which was a function of private property rights regime. The dominance of socialist-orientated beliefs can also be associated with the confinement of socio-economic transactions to narrow communal social system.

3.1 Introduction

As Greif (1998) noted, the question of why societies evolve along distinct institutional trajectories is among the fundamental questions of institutional economics. Such analysis can help to identify the key elements that determine the emergence, persistence, and changes of institutions. It not only help us to understand the origin of the existing institutions, it also provides important lessons to design and evaluate institutional interventions. Before I evaluate the behavioral aspects of agents (farmers and traders) toward the institutions governing personalized transactions, in this chapter I examine the origin of historical trajectories that crucially determined institutional changes over the past centuries. The main purpose of this chapter is thus to examine the effects

of historical trajectories in changing the socio-economic, physical and political landscape of the country and their implications for the evolution of institutions and shared-mental model. The roles are two-fold: first, it helps us to trace the historical origin of the existing contexts, particularly personalized transactions, and socio-economic fragmentation; and second, it helps us to identify key elements that shaped the historical paths of the country. I selectively discuss the evolution of markets, trade, and commerce, personalized transactions, property rights, the social and the political landscape that shaped the existing dominant shared mental models.

The chapter is organized as follow. The first part introduces the role of history in explaining the evolution of institutions and economic performances. The second part describes the key historical trajectories that defined institutional changes in Ethiopia. I examine four historical periods: the period before imperial expansion, the period of imperial powers; the period during socialist system and the period after the 'collapse' of the socialist system.

3.2 Historical trajectories that cause institutional changes

Ethiopia was not colonized, with the exception of the Italian occupation of the country for about five years. This means Ethiopia is one of the two African countries which were not colonized by Europeans. Yet Eritrea, which had been part of the Abyssinian empire, was colonized by Italians from 1882 to 1947. Most historical analyses about Africa use the colonial legacy as a framework. But more fruitful historical analysis of institutions can be obtained by taking the situation before the colonial periods as a starting point. If colonization was to explain the current Africa, the continent should have evolved in a way similar to many other colonized Asian and Latin American countries. Using colonization as a starting point for historical analysis amounts to denying the existence of society before the colonization. Colonialism can have a lot of bearings in the current institutions, but a robust understanding of the current institutional and other problems of the continent can be gained by taking the situations well before the colonization as a starting point. The issue which needs to be examined is what institutional, socio-economic and technological aspects enabled some societies to be powerful and sophisticated to colonize vast society and others naïve, negligent and weak to avoid or

be resilient to the shocks of colonization. What specific conditions made Africa's colonial legacy worse than that of other colonized societies? Analyses that go beyond the colonial legacy would not only help to better understand the deep source of the current predicaments of Africa, they can also help for building a society which is resilient to various kinds of exogenous shocks including colonization. Hjort (2010) shows how the unique pre-colonial culture of Tswana vis-à-vis the neighboring regions shaped the post-colonial success of Botswana differently from its neighboring Southern African countries. Colonization is just one threat among the many exogenous shocks that can upset the smooth functioning of society.

Setting aside the capacity of the colonial legacy framework in explaining institutions in the rest of Africa, it cannot be relevant in the specific case of Ethiopia since the country has not been colonized by any external force. While some take the expansion of the former Abyssinian empire into the southern regions to form the current Modern Ethiopia as an internal colonization (Asafa 1996; Holcomb and Sisai 1990), such framework cannot explain the problems of the country as a whole. We therefore use the situation before the period of the formation of Modern Ethiopia in order to make a positive analysis about the historical origin of the current institutions.

3.2.1 Pre-imperial expansion

Levine (2011; 2012), Burstein (1998 cited in Kebede 2006) and many others contend that the history of Ethiopian nationhood extends back to the sixth century and before. But many also argue that such reference does not apply to the current Ethiopia but to the former Abyssinian empire. The current modern Ethiopia was established as a result of the territorial expansions of Emperor Menelik II in 1889 (Bahiru 2001; Levine 2012; Marcus 1994) from the empire historically known as Abyssinia to the rest of the country. Menelik II, in an attempt to realize the pivotal moments of his predecessor Tewodros to create a larger unified country, expanded to the southern parts of the country (Levine 2012).

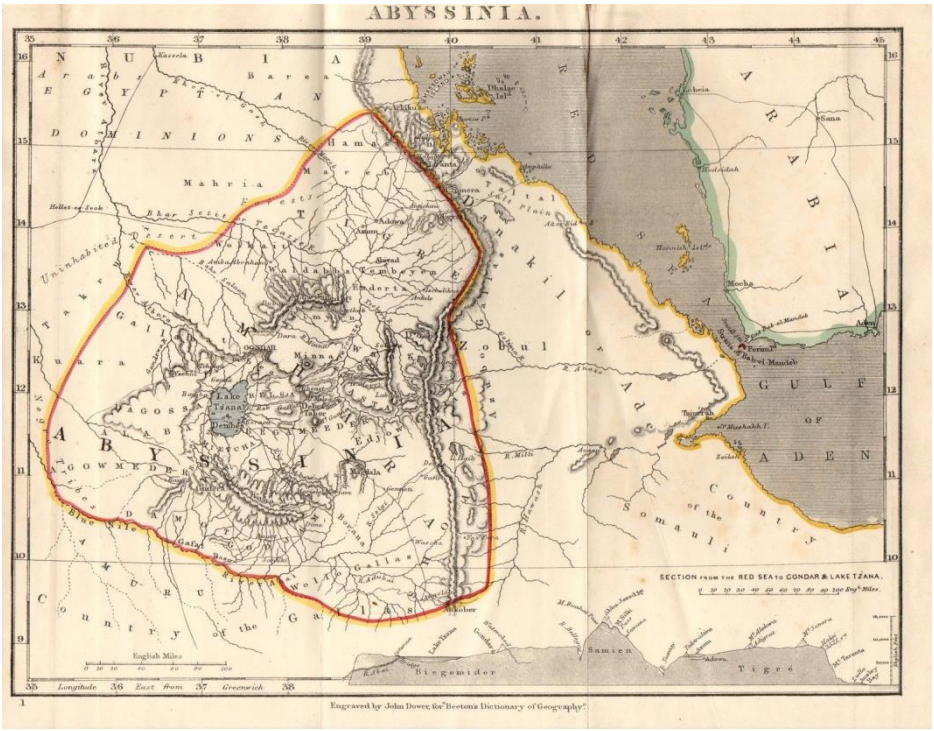

Figure 3.1 Abyssinian empire (Beeton's Dictionary of Geography)

I thus make our analysis by comparing the evolution of the former Abyssinian empire (northern part hereafter) with the rest part of the country (southern part hereafter) in the periods before the imperial expansion. The history of the northern part is the history of the *Abyssinian* empire whose origin is traced from the *Axumite* kingdom. Figure 3.1 shows the map engraved by Dower (1868) of the Abyssinian empire. It should, however, be noted that the geographic areas of this empire were quite flexible over time (Clapham, 2002). The map should, therefore, be taken only as indicative.

Many historians (Meyers 2007; Clapham 2002) equate the ancient civilization and traditions of the *Abyssinian* empire with that of China or Persia. The origin of the *Abyssinian* empire was the *Axumite* kingdom. The *Axumite* kingdom had strong trade relations with Mediterranean-Red Sea regions (Gillespie 2003). It exchanged ivory, tortoiseshell, rhinoceros horn, gold, silver, and slaves for cloth, tools, metals and jewelry (Marcus 1994). The kingdom facilitated trade by minting coins from bronze, silver, and gold (Adejumobi 2007).

Given that the early transportation system was maritime navigation and that the *Axumite empire* was near to the Red Sea, the kingdom had great advantages for trade. Historical

analyses show the intimate link between long-distance trade and evolution of institutions (North 1990; Greif 1989). But after Islam expansion controlled the coastal areas of Red Sea including the port of *Adulis*, the kingdom followed what historians call *a closed door* policy (Adejumobi 2007; Marcus 1994) in order to defend Christianity against foreign religion (Baykedagn 1995). Given the church, state and culture had been highly intertwined with each other, Christianity was the raison d'être of people (Kebede 2006). The civilization not only came to halt with the stop of the trade, the kingdom was even not able to maintain a large army, complex administration, and urban amenities (Marcus 1994). The *Axumite* civilization which was once at its pick around 4th century quickly became history with the closure of the trading routes. This was a major downturn in the development path of the kingdom; a turn from the *golden* age to *dark* age (Clapham 2002).

With no revenue derived from external trade, the subsequently emerging political powers always had to virtually rely on taxes derived from domestic economic activities. But in the absence of external trade, the existing agricultural sector could not generate a revenue sufficient enough to maintain a strong state that can establish what Hayek (1988) called extended order even within its territory. In the absence of extended order, the domestic trade will, in turn, be limited. In the absence of domestic trade, the agricultural sector cannot grow to generate sufficient revenue. Such situation will lead to a vicious circle of low trade, poor economic sectors, weak state, weak institutions and low trade. The emerging powers had to exploit the subsistent peasants to their limits.

The emergence of *Abyssinian* empire was a very long process of gradual expansion of the *Axumite* kingdom from the top northern part into the southern and western areas interrupted by contractions, disintegrations, and shift of powers from one group to the other.

The Abyssinian empire possessed all the essential elements of ancient empires with some impressive archaeological remains, a monarchy, ancient Christianity, money-based trade and most important of all, an indigenous written language[7] (Clapham 2002).

[7] The only indigenous written sub-Saharan language known as Ge'ez have been used since Axumite kingdom and still being used in the Orthodox church. *Ge'ez,* a local Semitic language, is also the ancestor of the modern Amharic and Tigrinya languages spoken in Ethiopia today (Clapham 2002).

Axumite was the first empire in the world to introduce Christianity (Meyers 2007). As early as the third millennium B.C., the region cultivated thirty-six crops that make Ethiopia either the primary or the secondary source of many crops (Marcus 1994). There was also a very complicated tenure system in the Abyssinia empire among which a customary land tenure system called *rist* was the dominant one. *Rist* was a "sacred hereditary property" right on land acquired through inheritance (Donham 1986) and could neither be abridged nor abrogated (Markakis 1974). However *rist* and variant forms of it were largely private in principle, there were customary rules that restricted transfer of land to individuals outside the kinship. However the system was reported to have resulted in few landless farmers, it also led to perpetual fragmentation of holdings (Alula and Fassil 1983). But private transactions of land in the form of sale, mortgage, will, and gift were not uncommon (Habtamu 2015). In addition, there also was a relatively advanced court system (Kleiner 2009).

The rise and fall, expansion and contraction of the subsequent kingdoms can all be associated with their ability to expand trade and commerce with the outside world (Gillespie 2003; Marcus 1994) and with their ability to create an extended order that facilitates both foreign and domestic trade.

This being the situation in the Abyssinian empire, the other parts of the country, with few exception, were characterized by diverse fragmented small communities. A collection of small groups each of which was geographically, economically, and socially isolated from others. Generally, each group can be characterized by what Taylor (1982) called a 'chiefdom' community.

The prevalence, till this day, of the clan system in most parts of the country, the dominance of pastoralist and hunter/gatherer types of livelihoods, the lack of cultural homogeneity (even within same ethnic groups such as Gurage) and the heavy reliance on customary institutions provide a clearly show the historical differences between the two parts of the country. Even within the same ethnic group, the clan-based communal structure is very strong in those pastoralist areas and it is loose in the agriculturalist areas.

Levin (2012) considers Ethiopia as an apt place to apply the evolutionary perspective to understand the history of the country. We thus follow the evolutionary perspective in our attempt to understand the origin of the current socio-economic, political and institutional realities. The basis of our analysis of Ethiopian history is the presence of visible distinctions, vivid till this day, between the northern region and the southern regions. The first distinction is that while tribal-like hereditary-based (real or perceived form) social organizations such as clan are prevalent, until this days, in many parts of the south, they are nearly absent in the northern region (Lewis and Jewell. 1976). In the absence of a state power, it is this types of social organizations that organize and coordinate economic, social and legal activities and that defend the group from aggressions by neighboring group. Most activities such as economic exchanges, contracts enforcements, assignment and protection of property right, dispute resolutions, and territorial defenses are all organized and coordinated by this apparatus. The important features of this state-like apparatus, for economic analysis, is that it naturally confines socio-economic transactions to narrow homogenous and cohesive social groups. Communal ownership, especially of land, and the resulting communal livelihood structure are key in sustaining cohesiveness and homogeneity (perceived or real) of the group and the social organizations such as clan. This can be evidenced from the history of some kingdoms in the southern region.

What is prominent in this history of the southern region is the Oromo expansion around the 17th century from the southern part of the country in Borena and Bale into the northern, western and eastern regions (Gillespie 2003; Bahiru 2001; Marcus 1994). As some of the Oromo group that occupied the high plateau started farming and settled life, their social and political system also changed from z egalitarian communal social system of administration called *gada* into a monarchical system (Bahiru 2001). We argue that the transformation from the *gada* into a monarchical system in the highland areas (e.g. Jima Aba Jiffar) was the spontaneous outcome of changes in the socioeconomic landscape that arise due to the changes in livelihood system (from pastoralism to crop-livestock mixed farming), property rights regime (from communal to private land) and lifestyle of the people (from mobile to settled life). Levine (2012) characterizes this as a transition from communal to archaic society. The reason why the Oromo kingdoms didn't

further expand might be due to the dominance of pastoralist livelihood in neighboring areas and their limited access to external trade.

We argue that such transition from a traditional clan-based communal structure to a monarchy is the natural outcomes of, mainly, the change in ownership of land from communal to private. The complex and gradual effects of this transformation will be that communal bonds loosen, homogeneity of people declines, livelihood structure diversifies and assignment of statuses tends to allow merit and the clan institutions become less effective. In such condition, people in order to get economic and social protection, tend to submit to a powerful lord (Platteau 2009) which can gradually grow up into a monarch depending on the scope of economic transactions. To maintain the cohesion, the society develops more inclusive collective symbols than the communal one (Levin 2012). Along this, the degree of personalization of transactions will take a different shape with the expanded collective symbol. The overall economic implications of such transformations will be that economic space of society tends to expand. The scope for expansions of the economic transactions will, however, depend on the strength of institutions in reducing transaction costs and the scope for profitable trade with neighboring regions.

The fact that the former *Abyssinian* empire was not that different in the last centuries from the rest of the country was because trade with the external world was limited which in turn limited domestic trade. In effect, the emerging power had to depend on the exploitation of subsistent peasants. But it should also be remembered that their power was also limited by the level of trade. It was the expansion of trade at the end of the 20th century that gave Menelik II the opportunity to expand further towards the south (Marcus 1994).

3.2.2 After imperial expansion

Although there were previous attempts, it was the expansion of Menelik II in 1889 to the rest part of the country that formed the current modern state (Crewett *et al.* 2008; Marcus 1994; Markakis 1975). The gradual expansion of the Abyssinian empire to the southwest coupled with the increased trade with European countries in the later periods provided Menelik II the incentive and the power to expand further to the rest of the country. The consolidation of the central power and the associated mobility of people

into the southern part allowed the development of towns, the expansion of capitalistic agriculture, the development of infrastructure and expansion of trade and commerce (Bahiru 2001; Marcus 1994; Markakis 1975). These, in turn, enabled the emperor to consolidate his power.

The expansion being sweeping and forceful, it involved disfranchising the native people (Mohammed 1996) through tenancy, land alienation and expropriation, cultural imposition and exclusions in the political power. As a result, there was no mutual cultural assimilation. Instead, the culture of *Abyssinian* became dominant. The Amharic language became the official language. This gave the imperial expansion a 'colonial' appearance as revisionist historian such as Holcomb and Sisai (1990) claim. One important aspect of this process was that the level of disenfranchisement differs from region to region. The evidence in Markakis (1975) shows that while disenfranchisement was severe in other areas, it was relatively lower in areas such as Wellega, Jima, and Shewa where a comparable monarchical structure had already developed. Similarly, while the participation of native people in the newly established towns in these archaic societies (Levin 2012) was considerably high, the towns in the rest were nearly exclusively occupied by people who came from central and Northern parts of the country (Markakis 1975), especial people from Shewa who dominated the imperial power (Levin 2012; Young 1996). Those that transformed into archaic society were able to leverage the external domination. The emperor also expanded Orthodox Christianity and made Amharic the language of the central power. Although such domination and impositions could be the main source of the current ethnic cleavage, the emperor's expansion created a consolidated power. The modern state of Ethiopia begins here.

The consolidation of power and the establishment of bureaucracy enabled the country to expand economic activities. The country constructed, with the help of the French, a railroad from Djibouti to Addis Ababa. Many of the current towns and cities, manufacturing industries, large private farms, telecommunication services, schools, etc. started during this time. Trade with the rest of the world considerably increased. The economic policy was quite along the line of capitalism. Even the few manufacturing and service sectors were entirely owned by private firms. Yet royal lineage also played important role in capturing economic opportunities. Thus while the political governance

was autocratic and characterized by feudal land ownership patterns, it also laid the foundations for a comparatively strong bureaucracy (Altenburg, 2010).

The agriculture, transport, banks and other small- and medium-scale enterprises were private, and the level of restrictions both in domestic and foreign trade was minimal. While ownership was in principle private in the northern parts of the country, the right to sell and transfer land was highly limited by the traditional land ownership system called *rist*. While the *rist* system provided a sacred and secure right to individual owners, the customary rule also highly constrains the right to sell or transfer the land without the permission of all family members. The limited commodity market coupled with the absence of a modern law that protects property rights caused this customary rule to persist for millennia. As a result, the level of tenancy in this region was nearly absent (Kebede 2006). It is the tenure security and 'private' nature of the *rist* system that is behind the relatively individualistic and conservative culture of the Northern region (Brietzke 1976; Levine 2011) compared to the communal and collective culture of the Southern region. This is also the main reason for the low rate of land alienation and tenancy in the Northern region compared to the Southern region.

In the newly incorporated areas, however, there had been no private land before the imperial expansion (Cohen and Weintraub 1975). Instead, land was generally a communal or open access resource. After the expansion, however, diverse ownership forms emerged. Private land ownership that equates freehold ownership emerged through expropriation, occupation of free lands and loosely defined communal lands and through purchasing (Srur 2014; Grover and Anteneh 2006; Belay and Manig 2004; Cohen 1973). In addition, government and church land also constitutes large parts and played important roles in the expropriation of land in the southern regions (Jema 2004; Markakis 1975). In effect, large private farms emerged in many areas of the southern regions. Yet, land also remained communal in many pastoralist and hunt/gather-like societies.

Although the scope of markets was generally limited by the poor road network and the socio-cultural fragmentation, it was flourishing rapidly. In general, the involvement of the government in the economic sector was limited to the expansion of infrastructure (road),

justice, health and education services. Private firms were even emerging in the health and education sector. There were even many foreign medium scale firms.

The expansion of *Abyssinia* into the southern parts and its consolidation of power enabled also Ethiopia to repulse the Italian attempt to expand their colonial territory from Eritrea and Somaliland to mainland Ethiopia (Levin 2011; Garson 2009). It enabled emperor Menelik II to mobilize a large native army of about 80000 from all parts of the country (Quinin 2009). While the military was untrained and armed with nothing more than spears and bows, it was able to defeat the relatively mechanized and trained military of Italy. But when it comes to markets, the cooperation of the society in the economic market was not as strong as it was to defend the country against foreign aggression. The problem was that the processes of incorporation of the diverse communal and archaic societies were made through force and sweeping occupation instead of by gradual and voluntary socio-cultural assimilations. On the one hand, such a forceful and sweeping integration naturally leads to domination of one group over the others at the risk of future disintegration. On the other hand, closed and communal societies never come together on their own as they had not come together for many millennia. As anywhere in the world, the incorporation of the diverse small communal societies into the Abyssinia empire was a long process of forceful integration and disintegration. The problem is that in an environment where the communal bonds are strong and personalized transactions are highly pervasive, the need for external state protection is less. As discussed earlier, people succumb to external protection when the collective bonds loosen and traditional institutions become less effective in protecting property rights and enforcing contracts. The main problem was that most societies were largely communal and archaic.

It was at this early stages that the Marxist-Leninist ideology preoccupied the mindset of the elite. The reason is that the Marxist-Leninist ideology exactly fits with the naturally dominant beliefs and ideologies of collective non-market societies. Freeman (2004) touches this issue in his discussion of the history of Gamo. The socialist revolutions in the world swept overwhelmingly those non-market and segregated societies; not the integrated and market-based economies. Even though a proletariat group did not emerge and the exposures of the existing elite were limited to the western world, the

Marxist-Leninist ideology fascinated nearly every group, especially the elite (Adejumobi 2007). Despite the liberalist ideology implied by their curriculum, students became the front runner of the socialist revolutions. This gave rise to the first African socialist revolution in 1974, a revolution that turned avid adherents into its primary victim: the elites, the students and even the peasants (Kebede 2001; Chege 1979).

3.2.3 Socialist experimentation

The military took power in 1974 ousting Emperor Haile Selassie I. The emerging market and private sector were strangled at its' infancy. The government switched over to 'command economic system' which can be thought as an act of reinventing the old communal system in a modern way. Various studies described the various economic measures taken after the 1974 revolution (Marcus 1994; Chole and Manyazewal 1992). The government took various sweeping measures. The first major reform was the land reform that turned every piece of land into state ownership in the name of distributing land to the tiller. The government also nationalized private enterprises, commercial farms, real estates and even extra individual houses. It introduced various measures restricting voluntary markets transactions. It introduced price control, quota and rationing systems for every market commodity, financial and foreign exchange markets. It introduced a ceiling on individual wealth accumulation (Birr 500,000) and diverse rules and regulations that restrain and discourage private business activities. It fixed the currency exchange rate at 2.07 Birr per Dollar. It also aggressively and coercively established various forms of cooperative organizations. In addition, it established diverse state enterprises and farms in the production and service sector. Private traders were replaced by marketing parastatals in the domestic and foreign markets. Such wider economic policy could be conceptualized as an attempt to organize the whole economy into a single firm or hierarchical central planning of socialist economies (Hobb 2003). The political system was changed into a one-party system and forced mass mobilization through campaign become the principal in the implementation of development programs. Rebel groups emerged everywhere in the north, west, and east (Henze 1990). The average annual GDP growth rate which was about 4.0 percent per annum in the years

1965-1973 declined by half in the years 1974-1990 (Chole and Manyazewak 1992). This was another turning point in the historical path of the country.

Though the regime has tried to restructure the economy along socialist lines, there had been some small-sized private firms. Although *de jure* there were many restrictions that were intended to discourage private ownerships, *de facto* not only many firms were able to operate underground but some were able to capture rents by obtaining monopoly license on trading activities.

Although the Marxist-Leninist ideology is still a captivating program for many, it particularly conforms best with the belief common shared-belief that arises in communal non-market societies. Nowhere else the socialist ideology fits as best as with the belief widely shared by the communal societies. It was due to this, against the Marxist-Leninist prediction, the socialist revolution swept non-market agrarian societies more than it did market-based industrialized capitalist societies. The Marxist-Leninist ideology nicely dovetails with the tribal shared-belief. This coupled with the captivating promises of communism motivated an overwhelming majority to embrace socialist revolution without a backward glance. Even after the *Derg* (military junta) regime proclaimed socialism as the economic policy of the country, various groups arose following the refusal of the *Derg* to share power. However, all the emerged political groups except one were socialist. Despite their common ideology, they were not able to create a coalition. Instead of cooperating against a common oppressor *Derg,* they started to fight each other.

So each went guerrilla fighting in their sheer interest to bring heaven in the 'resourceful' earth of their people (ethnic group). With the exception of the conservative and pro-monarchy Ethiopian Democratic Union (EDU), the ideology of all the rest of opposition parties was Marxist-Leninist. The military government, unwilling to share power, annihilated all opposition parties through a military campaign called *red terror* (Chege 1979). This later gave rise to numerous ethnic liberation fronts: Eritrea Liberation Front (ELF), Eritrea People's Liberation Front (EPLF); Tigray People Liberation Front (TPLF), Oromo Liberation Front (OLF), Ogaden People Liberation Front (OPLF); Islamic Front for Liberation of Oromia (IFLO), Afar Liberation Front (ALF) and many others (Adejumobi

2007). There were even two and more rebel parties for same ethnic group – separated mainly in terms of religion and location.

After a long struggle, 'coalition' of rebel groups (largely dominated by the Tigrean ethnic group), with the decisive support of the well-organized ELF, took power in 1991 by military force – a relay from one military government to another. That gave rise to the Ethiopian People Revolutionary Democratic Front (EPRDF) a 'coalition' of four main Ethnic groups alliances: Tigray, Amhara, Oromo and a group that represents many ethnic groups existing in the south.

The collectivist tribal mental model coupled with Marxist-Leninist ideology brought a separation agenda at the top of their struggle. The complete conformity of the Marxist-Leninist ideology with the shared-belief that naturally emerged in the narrow tribal social settings provided youngsters strong motives to sacrifice their life for the aim of bringing a miracle to their people through centralized planning. It is the deep socialist ideology that not only triggered the revolution then but that is also shaping the current economic, political and social institutions. Even after the disastrous failures of the past socialist experimentation, the ideology still dominates the thinking of the majority (Renkow and Slade 2013).

3.2.4 After the 'collapse' of socialism

After the EPRDF took power in 1991, it established a transition government until it was constitutionalized in 1993. The first step taken in the political arena was the establishment of ethnic-based federal states. In addition, it took important steps in the economic arena to take the mixed-economy the *Derg* regime proclaimed in 1990. supported by foreign donors, the government undertook Structural Adjustment Program (SAP) to liberalize the market. The liberalization included trade liberalizations (lifting trade restrictions; loosening licensing requirements; abolishing of official price control, quota system and input subsidies; downgrading the role of state-controlled agricultural marketing boards); privatization of state- and public-owned enterprises, and liberalization of the financial sector to domestic investors (Getnet 2008; Dercon 2001). In addition, the exchange rate which had been fixed at 2.07 Birr per USD for 17 years was devalued to 5.0 Birr per USD. While the liberalization was sweeping in some ways, it

was not as sweeping as in other African countries. Not only the reforms were limited, there had been even reversals in Ethiopia on some of the reforms already made during the structural adjustment (Jayne *et al.* 2002; Kherallah *et al.* 2000). Particularly, the reform excluded key economic sectors.

For instance, land continued to be state-owned and farmers only got use rights. The government took a strong stand against privatization of land and stubbornly continued to reaffirm the state ownership land policy of the *Derg* regime (Crewett and Korf 2008). Moreover, key economic sectors such as telecommunication, media, sugarcane plantations, sugar factories, power generation, and the like stayed government monopolies. In addition, what is unique in Ethiopia is that many medium and large-scale business enterprises are owned and run by the leading party (Altenburg 2010). The five largest microfinance institutions are owned by the governing political party. According to NBE (2014), more than 50 percent of banking activities are held by the government banks. In addition, many enterprises such as banks, insurance companies, publishing houses, cement factories, beer factories and heavy metal industry are owned and run by the governing political party – TPLF/EPRDF (Tigray People Liberation Front/Ethiopian People Revolutionary Democratic Front)[8]. Even the supply of key agricultural inputs such as fertilizer is run by party owned enterprises. Such enterprises are even growing at a rapid rate to include nearly all economic activities. Finally, the role of government even in the service sector is so dominant as to crowd out the participation of the private sector. For example, in the education sector of the 294,357 students enrolled in higher

[8] Even if EPRDF is a coalition of four Ethnic-based political parties: TPLF, APRDM (Amhara People Revolutionary Democratic Movement), OPDO (Oromo People Democratic Organization) and SPRDM (Southern People Revolutionary Democratic Movement). Among these TPLF is the powerhouse of the coalition as the other three member parties were crafted by TPLF. The origin of the coalition party is that TPLF was able to free its ethnic territory in 1989. Once the front achieved the primary purpose it was established for – 'liberating' its people, it had to come with a new identity in order to extend its fight beyond the 'freed' ethnic territory. Thus, TPLF established a coalition party in the pretext of supporting efforts of other ethnic groups for achieving similar goals. However this strategic cooperation justifies the coalition to through the then government, it cannot as-is generate cooperation for economic and social development. Instead, the coalition should have given way to the formation of many sovereign ethnic nations or should be reformed to generate the required cooperation for economic development. It cannot also directly give the coalition a legitimate national political power. As Hayek (1988) noted, the conception that what has worked in time of war can also work in time of peace is mistaken. The coalition used to coordinate war cannot be used for coordinating national development; while the purpose of the former is temporary, the purpose of the later goes beyond a generation. It may be in the interest of the creator to maintain its power on the coalition to remain as 'Revolutionary Fronts' even after a quarter of a century in power.

education in 2012/13, 92.1 percent of students were enrolled in shoddily expanded public universities (MoE 2013).

The foreign currency is rationed by the government. Tariff and non-tariff barriers are prohibitively high. For instance, the total tariff and non-tariff import taxes on a used personal car reach up to 500 percent. The government has significant monopsony power in the labor market (e.g. according to MoLSA (2013), ignoring the domestic workers and self-employed, the government employs 56.8% of the workforce). If we deduct those professionals employed by NGOs, the government becomes the sole employer of professionals.

In sum, the government controls the key factors of production: land, labor, finance and hard currency. This coupled with the various restraining fiscal and monetary policies, creates a *heavy and visible hand* of the government in the market. The fundamental socio-economic system and the institutions and policies of the current government can be considered as natural extensions of the socialist system of its predecessor. The major difference is in the political arena. While the former used a unitary party and centralized government, the current government uses ethnic-based federalism with vaguely defined, nominal and inconsistent power sharing system (Abbik 2011).

3.3 Elements defining the institutional environments

3.3.1 Socio-economic landscape

The primitive tribal social structure still exists in many parts of the country. While we find few culturally closed ethnic groups in the former *Abyssinian* empire, we find a lot of diverse groups in the rest of the country. According to a population census (CSA 2010), from the 82 ethnic groups currently found in the country, only five ethnic groups are found in the former Abyssinian empire. The remaining 77 ethnic groups, each occupying their own distinct geographic territory, are found in the rest of the country. It is due to this that the eminent Ethiopia specialist Carlo Conti-Rossini (1929) described this part of Ethiopia as *tutta un museo* (a museum of extraordinary ethnic diversity)' (cited in Levine 2012).

The economy is dominated by subsistence farmers. According to MoLSA (2013), 88.0% of the population lives in rural areas and 80.2% of the total population depends on subsistence agriculture with little or no marketable surplus. The rural population which had been 92 percent in 1957 (Markakis 1975) declined only by about four present within half a century. The livelihood structure is generally either mixed-farming, agro-pastoralism or pastoralism with very little off-farm and non-farm activities. The situation is even worse in some regions of the country such as Benshangul Gumuz, and Gambela. People in these areas are still largely hunter-gatherers with little farming and livestock rearing activities. In sum, Ethiopia is rural and poor even by African standards (Osborne 2005).

Ethiopia had undergone a profound political and economic swing from one polar to another. Yet the informal institutions, the social settings, and the shared beliefs remain persistent. For many reasons markets are extremely thin in Ethiopia even by African standards. There are almost no big foreign companies in the country. The mindset of the vast majority is dominated by socialist ideology (Renkow and Slade 2013) and more prevalent among the polity and elite. Although ‘undoubtedly, markets can be considered as one of the most salient institutions that human beings have ever produced’ (Aoki 2001), society’s attitudes toward it are specifically negative in Ethiopia.

In the past, in the absence of state power that provided protection against external attack customary institutions and social organizations such as clan might have been essential. But in the presence of the state, the question becomes how to get an organ that provides impartial protection to the various groups. This is where politics come in. The recent political move of the country toward ethnic-based federalism can be considered as a response to the unfair and unequal protection of groups observed in the past.

The government constitutionalized the right of ethnic groups to self-determination up to secession under Article 39. Brietzke (1995) takes such extended constitutional protection as an innovative response to democracy and ethnic nationalism. However the right to secession and self-determination is implicit in any society, such explicit constitutional provision, in the ethnically segregated fragile society, can lead to

disintegration (Clapham 2002; Abdullahi 1998). The recitation of divisive counter-narratives on the history of the Ethiopian state promoted by the government is further aggravating the potential to dismember the state (Assefa 2012). The political movements that were established to liberate their ethnic group remained revolutionary and military parties even after 25 years in power. Moreover, the Marxist-Leninist ideology is still highly reflected in their economic and political programs.

The alignment of the political powers along ethnic lines may protect groups against potential suppression. However, it also bears the risk of disintegration of society into diverse small communities. This risk will be especially high given the high political rent that the socialist-oriented economic system naturally creates. Oppositely, creating an inclusive political and more market-oriented economic system can help society to gradually integrate and to form a unified country.

3.3.2 The dominant mental model and institutions

The concept of shared beliefs or mental/cognitive model has become an important element for a better understanding of informal institutions (World Bank 2015; Schlüter 2009; Bollier 2007; Greif 2006; North 1994, 2005; Denzau and North 1994). However a unified theory about the mental model is not yet developed (North 2005), its role in shaping informal institutions has become widely recognized (World Bank 2015). The mental model defines the way individuals perceive the world around them (North 2005) and the way they respond to contextual cues (Schlüter 2009). We conceptualize it as the mental architecture that decisively determines the way people perceive, interpret and understand the environment around them and that determines their behavioral patterns. In this thesis, I use the terms “shared-belief” and “mental model” interchangeably.

As described above, the ideological background of the current government is Marxist-Leninist. In fact, ‘socialist-like’ institutions render the government more direct powers over resources than markets do. This could provide the government the incentive to promote non-market institutions. But this alone cannot be a reason for the institutions to be socialist oriented. The socialist ideology must also conform with the dominant shared-belief. In a situation where markets are thin, transaction relationships are reciprocal, resource ownerships are communal and the social composition is homogenous (in terms

of livelihood structure, ethnic and religious identity, etc.), the dominant belief will be socialist orientated. It is not difficult for the people to consign with the demand of government.

We argue that the dominant shared belief that emerges in such socio-economic environment will be that which undermines wealth accumulation, asset acquisition and private ownership of property. It takes wealth accumulation as an object of greed and work as a burden (Kebede 1999) and develops norms that incentivize distributive activities more than it does productive ones. It is a mental model that interprets hard work, profit motives, competitive behavior, wealth accumulations as irrational behaviors. It wants everyone to be selfless. As a result, it assigns social status based on generosity. In effect, individuals are strive to demonstrate (or at least pretend to show) their commitment for wealth sharing and rationalize their actions around this. All these behavioral patterns arose as a result of a lack of markets.

For instance, Ethiopians take hospitality as culture unique to Ethiopian society. It may occur to a handful of people that hospitality is a strategic response to a lack of markets. It can rather be considered as a reciprocal exchange. The problem is that in a situation where markets are nearly non-existent, the marginal value of surplus products become nearly zero. In such circumstances, it becomes rational for a person to use the surplus product for hospitality-related activities – exchanging a product whose value would otherwise be near zero for increased social status and future reciprocal exchange. The social status increases the person's economic space in the community and beyond. It is not in regard for others, as it is generally believed, but in regard for the self. Adam Smith already called such activity as 'rustic hospitality' – a rational action whose economic return could be positive:

> *'A family which exercised great hospitality would be taxed much more lightly than one who entertained fewer guests.' (Adam Smith 1776, p. 1178)*

Also, most developed countries have had such culture at the early stage of their development and this declined along with the rise of markets. The heavy reliance on wealth sharing and other similar cultural traits in many societies is the manifestation of a lack of markets. It certainly declines when markets flourish. For instance, milk was a free

good in most rural areas until its market expanded recently. It is the dominance of such activities in every economic sphere and the social organizations and institutions that facilitate the activities that in turn render people the shared mental model.

However they seem hospitable to outsiders, they are deeply hostile to them. In effect, people widely share beliefs that view own culture as superior to anyone else and their resource endowment the richest of all others. They view all transacting parties outside the society invariably as exploiters instead of potentially beneficial partners. They tend to view neighboring people more as an enemy or rival than potential transacting party. They avoid cultural assimilation with neighboring people. Instead of promoting economic organizations they focus on preserving social and cultural organizations. This coupled with the communality, in use and ownership, of resources, the system inevitably tends to undermine economic activities internally and discourage cooperation with neighboring regions. It was due to this, the society remained fragmented and closed even until this day. It is also due to this reason, the nation formation impossible, as in most other society in the world, without the sweeping military expansion. It was this, so to speak, that made the African society more vulnerable to exigencies of nature and human aggression such as colonization then and even now. Such segregated social structure does not guarantee that a similar domination will not occur in the future.

The main origin of the mental model seems to be the experience obtained in the process of the interaction of individuals with their physical, social, economic and institutional environment. Changes in this environment could gradually change the mental model of people. Bernard *et al.* (2014), by exposing subjects to new perspectives using documentary videos, found a change in fatalistic belief in Ethiopia. While such evidence indicates the role of exposure, it appears to oversimplify the mechanism through which the mental model shapes behaviors of people. Such snapshot exposure hardly changes the mental model that forms the whole architecture of the mind. Instead, individuals need tangible, repeated, and consistent experiences in order to revise their mental model. In an environment where the society has been excluded from the outside world for millennia, it is difficult for people to revise the long-standing beliefs.

In the past, the elaborate system of reciprocity embedded in the social relationships cushioned people against the exigencies of natural hazards. In the absence of state power, these institutions provided protection from potential external attacks. But one important feature of such social organizations and institutions is that they can be effective only in a *closed* system (Coleman 1988). Such closure will be easy when many key resources are communal in both ownership and use. In addition, members have to be continuously fed stories or myths about 'we' and 'they'. While these strengthen the cohesion of the group, they also isolate the group from the rest of the world. In effect, people view others not as potential transacting parties but as a treat. The situation thus hinders socio-cultural and economic transactions between neighboring communities as it had been so for many millennia. This is why we still find diverse ethnic groups and communities even within narrow geographic areas.

This mental model, for instance, considers traders' motivation as grubby and opportunistic as opposed to the self-regarding motivations held in the mainstream economy. It is one thing to consider their actions as a ploy, rigging and cajole, it is another thing to consider them as treacherous, faithless and perfidious. It is one thing to denounce 'opportunistic' behaviors but it is another thing to wish them to be altruistic. Wishing traders to be altruistic is more selfish behavior than self-interestedness itself. It may be in response to this public perception that traders utter a lot of words by swearing in the name of Gods in order to convince buyers that their action is altruistic. The sad thing is that every time inflation becomes a serious problem, the government scapegoats traders and the public believes this. In effect, the government even expropriates the properties of some traders in the name of speculative behavior. Since it is consistent with the mental model, the public cherishes these actions of the government.

It is the Marxist-Leninist ideology behind most policies and institutions in the country. The prohibitively protective foreign trade policies, the restrictive policies in the exchange rate, credit and finance and capital markets; the restriction on foreign companies; the various restraints on free mobility of labor and capital are all deeply intertwined with the mental model. The state ownership of land and direct involvement of the government in many economic activities are also related to the dominant shared mental model. The

authoritarian political system and weak justice system are inextricably linked to the socialistic mental model.

The public debate thus is not on how to constrain the government from intervening in the market nor is it on what the government should do for the market to flourish, rather the debate is on how to get a government that can *grow* the economy. The discussion is not on how to get a well-functioning and competitive market, rather it is how the government controls the market. These conceptions are not limited to the lay people, rather widely shared even by scholars in the social sciences, including economists. In effect inefficient, unproductive, extractive and counterproductive institutions and organizations continue to crowd out the market. It is difficult to expect institutions that promote markets to evolve soon.

The recent attempt of the government to identify itself as 'developmental state' is not only to rationalize the extended power of government but it can also be seen as an attempt to align its policies and programs with the dominant mental model. This enabled the government to gradually narrow the economic space of the private sector, the political space of rival parties and the social space of civil organizations and trade unions. One of the goals of the GTP is to 'establish a stable democratic and *developmental state*' (IMF, 2011). As IMF staff commented, the GTP is founded much on the heavy role of the state and the role envisaged for the private sector is limited (IMF 2011). Not only the private sector has limited space relative to other comparable economies, the space of the private sector has still decreased over time in the past two decades.

3.3.3 Personalized transactions: the dominant institutional arrangement

Even a century after the emergence of the national state, the dominant transaction in the country remains personalized around dense social networks organized within the small and homogenous community, with limited inter-community transactions. Since the emergence of the modern state, there had been encouraging steps to protect the rights, encourage free mobility of labor and resources across different groups. This trend changed when the current government set a decentralized and ethnic-based federal system in the country. Conflicts between ethnic and cultural groups have become a

common phenomenon again. This is not only constraining the free mobility of labor and capital, it is also making distant trades difficult (Gabre-Madhin 2001). The country seems to be moving back to pre-state socio-economic structure.

Of course, this is not to mean that the colonial legacy doesn't have any bearings in the present institutions in Africa. Certainly, the colonial legacy has increased this complexity and the degree of the problems, but it is the above phenomenon that carried over the colonial legacy to this generation. For the colonial legacy to be the main framework to explain the current problem of Africa, either one of the following propositions should be valid. African societies should have been less fragmented and segregated before the colonization or the fragmentation and segregation should have been declining since the independence as Europe is much more unified than it was before the second world war. Nation building is not about putting a country on the world map, rather the development of impersonalized transactions and extended order, regardless of the identity of the citizen.

The fact that most African communities had more or less similar cultural and physical appearances may compel us to view Africans as unified people. In the un-colonized soils of Ethiopia, there were limited exchanges (economic, social, etc.), even up to date, among groups whose cultural and biological identities are hardly differentiated. Cattle raiding, from neighboring community, was considered as a heroic act in almost all parts of the country in the past and it even still exists now in some areas. Killing a man that does not belong to the tribe/group was not seen as an immoral act in many parts of the country until recently (Freeman 2004). Reducing transaction costs requires not just efficient formal rules, it requires developments of what Platteau (2009) called 'generalized morality' – morality that is not restricted to a reference ethnic/clan group but that applies to all people.

Given the fact that markets have remained stunted because of various policy, institutional, infrastructural and social factors, people continue to transact within the bounds of kith and kin. When every locality is characterized by such transaction, not only the market will be small, but it will be difficult for a society to evolve. Particularly, through the land policy – communal and state ownership of land – the personalized transactions

and the tribal mental model are perpetuating. One of the great difficulties in learning is to draw experiences from ideas. Drawing experience from those ideas concerning the physical world is relatively easy as experimentation provides prototype experiences. But drawing experience from those ideas concerning society is very difficult for many reasons. It was due to this that many countries, in their attempt to bring heaven on earth through socialism, mired in insurmountable economic, political and social problems for decades.

3.4 Conclusion

The foregoing historical review primarily shows the origin of the present weak institutions and their persistence. It shows how the complex interrelationships of economic, social and political institutions shape the dominant mental model underpinning the weak and inefficient institutions. The dominance of socialist-orientated beliefs is also associated with the confinement of transactions to narrow communal social system. Communal property rights seem to be at the heart of this social environment. We found that while the emergence of 'private' land ownership contributed to the evolution of extended order in the northern parts of the country, the communal ownership of land and other resources was the key factor behind the persistence of closed tribal societies in most other parts of the country. Not only the socialist system of the past weakens the emergence of efficient economic institutions, but the socio-cultural and political environment that arises from pervasively personalized transactions in the closed communities also supports socialist-oriented institutions. Thus, the system, instead of expanding markets and trade, tends to limit them.

An important implication is that the emergence of efficient formal institutions in Ethiopia requires more open and liberal market policies. It requires drastic measures that transform the currently closed and segregated social structure into an open and accommodative society. Finding a safe exit for the 85% of the population from small-scale and subsistence farming is one thing, expecting to bring economic, social and political development by promoting policies that preserve the small-scale farmers with all its archaic culture and tradition is a chimera.

Chapter 4 Local coffee markets and quality improvement: Evidence from a choice experiment among coffee producers in Ethiopia[9]

Abstract

This study investigates transactions in the local coffee markets in Ethiopia. While the Ethiopian Commodity Exchange, which was established in 2008, introduced regulatory, institutional, and organizational innovations in the coffee market, informal norms and conventions remain the primary institutions governing transactions in the local markets. Based on a choice experiment, we found that for coffee farmers the characteristics of the traders are more important than the price offered when anchoring their transactions into personal relationships. This is, however, an institutional response of farsighted calculative farmers to poorly organized coffee markets and to lacking credit and insurance markets. Contrary to the concept of embeddedness, that claims economic transactions to be embedded into social relationships, social relationships are observed to be embedded in economic relationships. One of the perverse effects of these personal relationship-based transactions is that farmers are insufficiently incentivized to maintain and improve coffee quality.

4.1 Introduction

Transactions in the local markets in Ethiopia are highly personalized (Meijerink *et al.* 2014; Gabre-Madhin 2001). Making impersonalized transactions without incurring substantial costs is hardly possible. Despite many interventions made in the past, personalized transactions in the local markets remain persistent and pervasive. In addition, these personalized transactions are confined to narrow social circle connected by family lineage, acquaintance, kinship and patron-client relationships (Tadesse and Shively 2013; Meijerink *et al.* 2014). This paper attempts to critically examine the behavioral factors underlying personalization of transactions and its implications on the performance of the coffee value chain. The purpose of the study is therefore to identify

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the behavioral attributes of traders that determine the choice of coffee selling farmers to personalize their transactions.

Three possibilities can be hypothesized. First, traders may not have any other option but to transact with only those whom they know. This can arise if, for instance, traders collude to share the market. For few dozen of socially connected traders in a given district markets, reaching and sustaining such 'cartel' agreement may not be difficult. As described in Section 2.3.1, traders buy unprocessed coffee which is much difficult to judge quality ex ante transactions. This will create information asymmetry between traders and farmers about the quality of coffee: the farmer knows the quality of coffee much better than the trader. Given this information asymmetry about the quality of coffee, traders will have the motive to collude not just to capture monopoly prices but to restrain opportunistic actions of farmers through various strategies. This provides traders additional incentive to collude and to sustain the collusions. Such collusion will leave farmers with a monopsony buyer. But here, the source of segmentation is not personalization. Attributes of the trader should not be important here as the decision problem is whether to sell or not; not to which trader to sell. In this case, the farmers accept the monopoly price regardless of whatever the attributes of the trader are

The other hypothesis is that segmentation is caused by voluntary choices of farmers to embed their transaction to a fixed trader. Two things must be fulfilled for transactions to be personalized: first the transactions need to be repeated and second the repeated transaction need to be among the known. The issue is what embed transaction parties into repeated transactions. in a personalized. The first is transaction costs and risks associated with information and enforcement costs. These costs can arise for various reasons.

One straightforward reason could be proximity. A buyer located near the transacting party reduce a lot of costs associated with transportation. When everyone does so, the transaction becomes only among the neighbors. However this gives the transaction a socially structured appearance, the reality is just transportation cost. This requires controlling other transaction cost attributes such as search cost. The other reason is a buyer may take opportunistic actions during the transaction. Given that the transaction is

spot-market transactions, no opportunistic actions can arise in terms of enforcement costs. But even then, some costs can arise due to information problems. A trader may do different disloyal activities during transactions: cheat the weight, under-grade the quality, provide wrong information and so many other tricks. Especially in a condition where there is no strong rule of law, a trader may have the incentive to take advantage of the context in order to capture gains through disloyal activities. But such behaviors are usually difficult to known transaction *ex ante*. The seller attempt to infer it from observed personality attributes of the buyer. But the buyer will also signal its trustworthiness through different actions. Even then, attributes such as trustworthiness are difficult to infer. The seller will have learned through repeated transactions. The other problem is in a situation where markets are limited, finding a buyer may take a lot. In order to minimize these costs, a farmer may prefer a reliable buyer whose availability is known in terms of time and place. In a social environment where everyone knows every other and in order to limit the competitions from opportunistic buyers, the buyer may also discriminate loyal sellers from those who sell to opportunistic buyers. The reliability of trader then become a valuable attribute that incentivizes repeated transactions.

The above is about markets for the product under discussion: coffee. But in addition to the coffee markets, markets for other products and services could be missing. Especially in rural areas markets are thin and many markets simply do not exist. For instance, credit, insurance, inputs and capital markets are generally missing. In such circumstances, a seller may prefer its coffee transactions with, for instance, credit transactions. One strategy is the seller to demonstrate its commitment through repeated transactions. Coupled with other mechanisms, seller's commitment to repeated transaction can serve as a guarantee and a means of collecting the debt. However the above factors justify the preferences of a seller for repeated transaction, they cannot justify the preference for personalized transactions. Controlling all the above possible factors, a seller must prefer a socially closed buyer.

The third hypothesis could be that all farmers in a social circle could cooperate to personalize their transaction with a fixed buyer. This needs a mechanism that incentivizes such collective actions. A buyer can do this by investing in communal

goods. Suppose there is no such investment. The other option is to keep the reputation of the community's coffee by being strict in his quality assessment. However this is unlikely, we hypothesize as one possibility that should be critically assessed vis-à-vis the reality on the ground.

The above potential attributes are identified as factors that can potentially determine the preference of farmers for alternative traders. But the preference of farmers can also vary depending on the personal characteristics of the subjects. For instance, a person who is member of a cooperative may not have preference to the various attributes as that of a non-member of cooperative. Similarly, a person who was cheated before may not have the same preference for the various attributes as the one who have had no such incidences. We thus expect cooperative membership, client relationship, incidence of cheating, and owning mobile telephone are hypothesize to explain preference heterogeneity among sample households.

By giving a hypothetical context to subjects, we measure the preference of sellers toward each of the above attributes. Controlling all other attributes, the preference of sellers for a personalized transaction will be measured by social membership. Otherwise and given some other factors, the observed personalized transaction is a strategic response of farmers to different transaction cost related factors. The primary objective of this paper is thus to analyze the factors behind the personalized transactions taking the case of coffee seller farmers. It wants to identify the attributes of traders that are preferred by coffee seller farmers. In order to differentiate the preference of farmers to embed their transactions into long-term relationships from personalized relationships, we provide subjects a hypothetical environment where alternative traders are the same except in those attribute described in the choice set.

Choice Experiment (CE) enable us to construct such choice situations. But for such results to be practically useful, the result of the CE need to be further assessed in relation to the reality on the ground. Taking coffee producers in Ethiopia as a case, the study thus systematically identifies important attributes of traders that are preferred by coffee selling farmers and assess the implications of choice results on the performance

of the local markets with a particular emphasis in incentivizing quality improvements and maintenance.

To our knowledge, the study is the first of its kind in systematically disaggregating the attributes underlying the personalized transactions which is characterizing most local agricultural markets of sub-Sahara African and other similar countries. However some studies considered personalized transactions as an alternative arrangement to reduce transaction costs (Meijerink *et al.* 2014; Gabre-Madhin 2001), no study has put personalized transaction at the center of analysis in order to assess the behavioral attributes underlying personalized transactions and examine the implications on the efficiency of the transaction. It provides important insights constraining most rural communities in these countries. We believe that the study will provide important insights for policy interventions to improve institutional contexts.

The remaining part of the paper is organized as follows. It starts with a brief review of theories surrounding informal institutions (norm-based constraints) facilitating economic transactions. Particularly, the paper challenges the arguments surrounding social capital theory. A description of the choice experiment conducted and the econometric models used to analyze the data is presented in the second part. The third part presents and discusses the results. The implications of the findings are summarized in the final part.

4.2 Personalized transactions

Generally, two sets of viewpoints can be identified on the roles of personalized transactions: social-capital theories and new institutional economics. Both theories accept that informal institutions of norms, codes of conducts and customs that arise from the personalized relationships reduce transaction costs by structuring the behavior of transacting parties. But they differ in important respects. The social capital theory conceptualizes social relationships as an important ingredient of economic relationships and takes their effect on economic performance as always positive; by definition, they are ‘capital’. New institutional economics on the other hand explicitly recognizes the roles social relationships play in determining economic relationships but view them, within the neoclassical economic theories, as institutional responses of agents to transaction problems.

Social capital theorists view personalized relationships as an important input in facilitating and coordinating economic transactions. They construct causal relationships between social relationship and economic progress (Coleman, 1988; Putnam 1993). Social relationships being defined as 'capital', their presence and denseness always imply better economic (and political) outcomes.

The theory contends that individuals rapidly learn the benefit of reciprocity, loyalty, trustworthiness, reputation and commitment from past feedback. They thus see dense social networks as an important milieu where cooperative behaviors emerge and collective actions are coordinated. But if the dense network of social relationships is considered as *capital*, whose deployment always produce positive outcomes, societies of SSA countries would then be the richer in the world. Social capital theory attributes failures of such societies exclusively to external factors as constraining the well-functioning of social capital (Levien 2015).

For social relationships to produce the 'capital', they require a *closed* social structure that has continuity over time (Coleman 1988). The *closed* social structure provides the organizational structure and the social means to facilitate information exchange and to continuously observe behavioral conformities and to sanction deviations. The critical issue then is on its requirement of a *closed* social structure. The continuous social interactions in the *closed* social structure are believed to create norms of trust and commitment (Granovetter 1985; Ostrom 2005; Coleman 1988) and reduce information, monitoring and enforcement costs (Greif 1989; Stiglitz 2002). Clearly, a sustained interaction of people in *closed* social system spontaneously produces informal institutions structure and constrain/incentivize transacting parties. What is less clear is their outcomes on the economy as a whole. Portes and Landolt (2000) identified four important adverse effects of social capital: exclusion of outsiders, excess claims on group members, restriction on individual freedoms and downward leveling norms. Precisely, these negative effects are consequential of the *closed* social system. Yet the magnitude and severity of these negative effects depend on the context (Levien 2015).

Especially in non-market primitive societies, the situation can produce an institutional environment that severely impedes economic progress. It is widely recognized that

networks of social relationships in non-market societies are formed based on ascriptive ties, largely based on fixed identity traits such as family lineage, ethnic/clan membership, or other socially assigned statuses (Arrow 1972; Posner 1980; Granovetter 1985; Geertz 1987; Levien 2015). When the social ecosystem is dominated by such identity-based fragmented social structures, economic cooperation between the rival factions will be difficult and costly. But the beliefs and value system that emerge from such *closed* social system will also be that that consider wealth accumulation as an object of greed and work as a burden (Kebede 1999) and, as Granovetter (1985) acknowledged, that suppress the development of private properties. The resulting institutions will be that that incentivize distributive rather than productive activities and that limit economic opportunities rather than expanding them (North 1990; Posner 1980).

Unless one assumes a *social-interest* maximizing agent, its societal welfare impact can be adverse. Social capital can be thought as exclusive ownership of a key resource that provides its owner a monopolistic power. By excluding outsiders, network owners can earn monopoly profits. The mechanism is the same opportunistic action that is considered as immoral in the transactions within network members will be considered as natural and morally acceptable if the transaction is with outsiders. As stressed by Platteau (1994, 2009) and echoed by Tabellini (2008) the norms and codes of conducts in such social settings lack 'generalized morality'. As a result, transaction costs outside the networks could be higher (Kranton 1996; Durlauf 1999). Social relationship can thus have negative externalities by buffering members against outside competitions (World Bank 2002). Thus, in geographically or ethnically fragmented societies, the situation can further compartmentalize the social and economic spaces into rival factions (Platteau 1994). However this can be a fact, its appeal to generalized morality require a behavioral assumption that depart from self-interest.

New institutional economists on the contrary view personalized transactions as institutional response of agents to transaction problems and risks. In an institutional environment where there are no strong formal institutions that reduce information and enforcement problems, agents embed their transactions in personalized relationships (Posner 1980; Geertz 1987; Knack and Keefer 1997; Kherallah and Kirsten 2002; Hobbs 2003). When formal institutions that reduce information problem and enforce contracts

and property rights are weak, agents use informal institutions by embedding their transactions with personalized relationships. They can be thought as a strategic response of far-sighted calculative agents to information and enforcement problems (North 1990; Williamson 1993; Durlauf 1999; Portes and Landolt 2000). This line of argument accepts rationality and self-interest seeking behavioral assumptions of neoclassical economics, however with qualifications by allowing bounded rationality and opportunism.

To avoid the functionalist fallacy (Granovetter 1985) of going from the observation that an institution arises to reduce transaction costs to the conclusion that they do (Field 1981; Stiglitz 2002), it is important to examine as to what extent they reduce transaction costs and their external effects on other transactions. Comparative assessment can be done, at least theoretically, with other feasible institutional arrangements.

One line of explanation provided within the neoclassical economic theory is associated with missing markets. In response to missing markets (such as credit and labor markets) agents embed bundle of exchanges (goods and credit/labor) in long term personal relationships. Similarly, in response to enforcement problems and by valuing future benefits, agents can also embed their transactions in long-term relational contracts (Baker *et al.* 2002). Shapiro (1982; 1983) show how a firm, by 'demonstrating' its commitment to quality, obtains reputation that will enable it to capture long-term gains in the form of price premiums. When the information feedback is efficient, this can lead to an efficient outcome. But it can also lead to what Banerjee (1992) called 'herd behavior' – a behavioral pattern that arises when decision makers, instead of using their own information, follow the decision of others. He showed that such behavioral patterns lead to a socially inefficient outcome.

Setting aside the internal efficiency of personalized transactions and its behavioral consistency, transactions need to go outside the social border if the community has to integrate with the rest of society. As Menard (2005) mentioned, '…all [transactions] have to go through or be confronted to markets at some point". In such groups, incentivizing trustworthiness and conformity will be easier. For the personalized markets to effectively

perform, the nature of the transaction needs to be fully personalized all along the value chain.

Complex transactions that go beyond the boundaries of dense networks of kith and kin require impersonal and impartial formal institutions that effectively enforce property rights and contracts (North 1990). According to North (1993) and World Bank (2002) in order for village markets to be effectively integrated with higher level markets, the informal institutions need to be replaced by formal institutions. Even though both informal and formal institutions coexist in advanced market economies, the development of formal institutions is seen as crucial (Fafchamps 2004). Hakey (1988) take the issue further to show the crucial roles of institutions that promote the formation of what he calls 'extended order' - as opposed to relationship confined within the kith and kin - as the foundation of Western civilizations. In a similar way and contrary to the cooperative game theory that predicts cooperation tends to be successful in repeated game played among small and known players, Seabright (2004) in his book 'the company of strangers' provides excellent historical accounts on how transaction with strangers expanded economic opportunities in the western world.

Human motivation is much more complex than described by the rationality as maximizing individual utility (RMIU) model described in the mainstream economics (Vatn 2009) . The complexity arise not because human being has a different motive other than maximizing utility, but on the way of our understanding of it. The difficulty is we know little on how the complex factors shape the way human agency maximizes individual utility. The fact that players in ultimatum or dictator games were found to offer positive value, however can be a sufficient evidence to reject the narrowly framed utility maximization model, it is not sufficient to conclude that the motive of subjects is different from self-interest.

Generally, primordial social relationships are established around narrow and fixed identity traits such as family lineage, clan membership and the like (Greif 1994). When market opportunities arise, the transaction will be embedded into the existing informal institutions regardless of the institutional arrangement the transaction specifically demands. Since these institutions have not evolved within a complex market, they are

likely to accommodate only few transactions even if many transaction opportunities exist out there. Thus, individuals in such institutional environment will either cut the shoe to fit with the small leg provided by the informal institutions or pick those shoes that fit only the small leg. The cumulative outcome will be that economic opportunities will be narrow and their outcome sub-optimal. Since competition is likely to be low in such identity-based networks, a sub-optimal transaction will continue to persists. It also closes the possibility for the development of efficient formal institutions that widen the economic spaces of a vast majority of members.

The informal institutions that emerge in market-based societies will be different. There are different possibilities. First, people after repeated transactions may develop social relationships to expand their economic activities. In this case, since the resulting norm is the product of the transactions, the emerging norm will be naturally transaction-compatible because only when members develop suitable norms through repeated economic transactions, the social relationships comes to scale economic cooperation up the transaction to a higher level. The other alternative is individual can embed with the existing social relationships. Unlike the case in primordial organizations, individuals form social networks in such economies through self-selections. Members are likely to remain in the network as long as they willingly demonstrate the expected behavioral patterns. The institutional arrangement will likely to be incentive compatible and efficient. Given the competitive pressure in the system, the development of the network is contingent upon development of strong norms of cooperation, trust, and commitment that are implicit in the social capital theorists. It may be due to this fact that while empirical evidence about positive benefits of social capital in market economies are relatively large, they remained scanty in non-market societies (Działek 2014).

One of the argument in favor of informal institutions is based on their exclusive role in handling some transactions that can hardly be handled by formal institutions. For many (largely for technology) reasons, some transactions can still be better handled by informal institutions. But this argument cannot automatically call for deliberate actions for their preservations. Due to the complementarity nature of institutions, the performance of informal institutions can be contingent upon the presence of alternative efficient formal institutions.

In an environment where formal institutions are weak or missing, the informal institutions may tend to be less efficient, biased and unfair. In addition, the evolution of informal institutions can also be shaped by the evolution of formal institutions and vice versa. Unfortunately, empirical evidences on the systematic effect of formal institutions on informal institutions and vice versa is scanty. A recent study by Melesse (2015) found that introduction of a costly legal fallback induced the decision of customary judges to be closer to the formal law. Similarly, Baker (2013) finds some reinforcement between informal and formal justice system in Ethiopia.

The adoption of legal plurality in Ethiopia was a response to inefficiency and limited capacity of formal legal system and seems to improve justice within localities, the formalization of customary justice principles would also mean incentivizing transactions to be limited within locality. In a country where about sixty distinct customary law systems exist (Baker 2013), formalizing customary institutions, in strict sense, mean imposing some barriers on domestic trade. This coupled with the infrastructural, technological, political (ethnic-based Federalism), trading within the country becomes like 'international trade'. It somehow constrain the development of value chain and other forms of hybrid governance structures that necessarily goes beyond the locals. In such institutional contexts, the existing thin market tend to persist even if they may not be conducive for economic progress.

Thus the limitations of informal institutions is not just their inability to expand the scale, scope and complexity of exchanges. They also impede the potentials for the development of formal institutions. The pervasive functioning of informal institutions systematically foreclose the development of efficient formal institutions.

The paper thus attempts to identify what is behind personalized transactions. Do farmers embed their transactions in a personalized relationship because the social network provides the appropriate institutional structure as the social capital theorists claim? Or is it just an institutional response of farmers to transaction problems: missing markets, information and enforcement problems? What are the implications of their preference for institutional intervention?

4.3 The data and the design of the experiment

Data was collected from 227 coffee selling farmers from the Oromia region in Ethiopia. First two zones were selected: East Hararghe and West Hararghe. Then two districts were purposively drawn from each administrative zone based on their volume of coffee production. Subsequently, within each district, two Peasant Administrations (PAs) were randomly selected from the coffee producing PAs. Finally, 26-31 coffee producer farmers from each PA were randomly drawn, with replacement[10], in proportion to the relative size of their population. Then eight trained enumerators interviewed the farmers using structured questionnaire containing the choice sets, socio-economic characteristics of households and other relevant questions. In addition, two supervisors for each zone were also recruited to closely supervise the data collection.

In this research, we use a choice experiment to reveal the preferences of coffee selling farmers for characteristics of local coffee traders in Eastern Ethiopia. Data about choice decisions of farmers can be obtained from revealed preference or stated preference data. While revealed preference data have the advantage of capturing actual choice decisions, important variables that are driving the decisions might remain unobservable. Therefore a stated choice experiment is used here. One of the appealing features of choice experiments, given their limitations, is they offer control over many variables that no real life observations can give. It provides us freedom to include attributes that would otherwise be difficult to observe or combinations that are missing in the real markets (Carson *et al.* 1994) including the context under which the choice is made (McFadden 1986; Jaeger and Rose 2008).

In order to identify relevant attributes and their levels, a preliminary survey and pre-test were executed. Based on the feedback from this survey and in view of the purpose of the study, the following 7 attributes were selected (see appendix for a template of the choice profile):

[10] Every peasant administration has full list of households living in the areas. We used this list as a sampling frame. When the randomly selected farmer was found to have no sufficient coffee trees, he/she would be replaced by the next person on the list taken.

1. Additional price on top of the prevailing market price - 0; 1; 2 and 3 Birr per kg of dried coffee cherries. This is respectively 0; 4; 8 and 12 percent higher than the current average market price of 25 birr/kg (1.2 USD/Kg) for dried coffee cherries.
2. Trustworthiness: a binary variable indicating whether the buyer/trader is trusted both in his words and actions or not. This refers to providing correct market information and correctly measuring quantity and quality (through inspection).
3. Strictness of the trader in assessing quality: a binary variable indicating whether the buyer trader was strict in the sense that he/she meticulously examine the quality of the coffee or not.;
4. Social relationship: a binary variable comprising that the trader is member of the farmer's social group (family, clan/ethnic, and other social groups) or not;
5. Location: a binary variable representing if the buyer is buying in the village or outside of the village;
6. Reliability of the trader: a binary variable indicating whether the trader is permanently available for purchase or is an opportunistic buyer and
7. Dependability of the trader: again a binary variable reflecting whether the buyer is easy in helping the farmer in time of social and economic crisis or not.

Once the attributes and their levels are identified an appropriate design should be constructed. This involves combining the attribute levels in choice profiles (or alternatives) and grouping the profiles in choice cards. In this way, information can be collected in the most efficient way and the reliability of the parameter estimates can be improved (Carson *et al.*, 1994). Minimizing D-error (D-optimality)[11] is the most common way to construct efficient linear choice designs (Carson *et al.* 1994; Zwerina *et al.* 1996; Rose *et al.* 2008; Louviere *et al.* 2010). Following Kuhfeld (2010), for this study, a computer generated fractional factorial design was obtained. A potential problem of choice experiment is that subjects, instead of considering the trade-offs between all attribute that characterize the alternatives, consider a subset of attributes, ignoring the differences in other attributes (Hensher *et al.* 2005; Collins *et al.* 2013). Several studies found that respondents can evaluate trade-offs between a limited combination of

[11] D-efficiency – is a criteria used to measure the efficiency of the design by maximizing the determinant of the Fisher information matrix (Johnson et al., 2006).

attributes at a time (Bunch *et al.* 1996; Lagarde 2013; Collins, *et al.*, 2013). Therefore to simplify the choice tasks, we impose as a restriction to our design that randomly 2 to 4 attributes should stay constant across alternatives within a choice set. In any choice contexts, alternatives naturally do not completely differ.

Accordingly, an efficient and balanced design with a D-efficiency of 43% was generated with 32 choice sets of 2 alternatives. Furthermore, to reduce cognitive burden, the 32 choice sets were randomly blocked into two blocks of 16 choice sets. Consequently, a total of 3632 choice observations (227 times 16) were obtained. Bekker-Grob *et al.* (2010) also found that inclusion of a brand name significantly reduces the attention of respondents for the attributes. Therefore this study uses generic alternatives. Finally, an opt-out option was added to each choice set. The inclusion of an opt-out helps: (1) to mimic the real market context and avoid violation of the Independence of Irrelevant Attributes (IIA)[12]; (2) to estimate potential market penetration (Carson *et al.* 1994; Haaijer *et al.* 2001) and (3) to increase the efficiency of the design (Brazell *et al.* 2006). We included 'none' option to minimize violation of IIA associated with forced choice. One of the possible problems of including this alternative is that subjects tend to choose 'none' as a soft means of avoiding the cognitive burden when they face difficult choices (Carson *et al.* 1994; Haaijer *et al.* 2001).

Detail description of each level was provided to enumerators. In addition, concise local terms were used in local language to precisely describe each level. For instance, farmers use terms such as 'our person' or 'my person' to describe social relatedness to a person. Similar languages were used to specify all other attribute levels as precisely as possible. Furthermore, in order to help respondents imagine each attribute independent of the others and to enable them to properly evaluate the trade-offs, enumerators provided brief explanations to each respondent about the attributes by using the written context description prepared for the purpose.

[12] IIA – implies addition or deletion of an alternative doesn't change the ratio of choice probabilities of alternatives (Carson, et al. 1994). In generic alternative, inclusion of 'none' make the choice complete so that violation of IIA will not be an issue.

4.4 Choice modeling: Multinomial logit and latent class specifications

The theoretical foundation of choice experiments is random utility theory. The models were originally developed to analyze the choice preferences of consumers. But they can also be used to analyze the preference of farmers as sellers see e.g. Roe *et al.*, 2004; Blandon *et al.*, 2009. The data obtained through CEs have traditionally been analyzed using multinomial logit (MNL) models (e.g. Lusk *et al.* 2003). In discrete probabilistic models, an individual's utility is represented by systematic and random components (Manski 1977). The multinomial logit estimates an individual's utility (Adamowicz *et al.* 1998; Lusk *et al.* 2003) as:

$$U_{jit} = V_{jit} + \varepsilon_{jit}$$

The utility that the decision maker *i* obtains from alternative *j* in choice situation *t* is decomposed into (1) a part labeled V_{jit} that is observed by the researcher, and (2) an unknown part ε_{jit} which captures variations in choice due to within- and between-individual variance, omitted variables and measurement errors (Batsell and Louviere, 1991) and which is treated by the researcher as random.

The probability that a decision-maker *i* chooses alternative *j* in choice situation *t* is

$$P_{jit} = Prob\left(V_{jit} + \varepsilon_{jit} > V_{kit} + \varepsilon_{kit} \quad \forall\, k \neq j\right)$$

$$= Prob\left(V_{jit} - V_{kit} + \varepsilon_{jit} > \varepsilon_{kit} \quad \forall\, k \neq j\right)$$

Assuming that the systematic utility component V_{ij} is a linear function of the attributes and follows a generalized regression specification leads to:

$$V_j = \beta_1 X_{j1} + \beta_2 X_{j2} + \cdots + \beta_n X_{jn} N = 1, 2, \ldots n$$

where X_{jn} is the n^{th} attribute value for alternative j and β_n is a vector of preference parameters associated with the n^{th} attribute of the j^{th} alternative.

The above specification assumes that all respondents share the same preferences for each attribute. Although the socio-cultural settings in our sample seem to be more or less homogenous, slight differences in institution-related variables can exert significant impacts on the preferences of farmers. To capture preference heterogeneity, a latent

class approach classifies respondents into relatively homogenous groups. Through a latent segment classification mechanism, the membership likelihood function determines the latent segment to which an individual belongs (Swait 1994). This segmentation uses information about the respondents and their decision context: socio-demographic, psychographic characteristics of decision makers as well as their sensitivity to the relevant attributes of the choice object (Swait 1994).

Boxall and Adamowicz (2002) developed a model that jointly estimates the latent class segment membership and the choice preferences. That is, individual *i*'s choice among *J* alternatives at choice situation *t* given that individual *i* is in class *c* is the one with maximum utility, where the utility functions are (Greene 2005)

$$U_{jit|c} = \beta_c' X_{jit} + \varepsilon_{jit}$$

where $U_{jit|c}$ = utility of alternative *j* to individual *i* in class *c* in choice situation *t*

X_{jit} = union of all attributes that appear in all utility function

ε_{jit} = unobserved heterogeneity for individual *I* and alternative *j* in choice situation *t*

β_c' = class specific parameter vector

Within the class, choice probabilities are assumed to be generated by the multinomial logit model given by

$$P(Y_{it} = j|class = c) = \frac{\exp(\beta_c' X_{jit})}{\sum_{j=1}^{J} \exp(\beta_c' X_{jit})}$$

Class probabilities are specified by the multinomial logit form,

$$P(class = c) = Q_{ic} = \frac{\exp(\theta_c' Z_i)}{\sum_{c=1}^{C} \exp(\theta_c' Z_i)}, \theta_c = 0$$

where Z_i is preference heterogeneity explanatory variables which are situation invariant characteristics.

The joint probability of a specific choice of an individual is the expected value (over classes) of the class specific probabilities (Green 2005)

$$P(Y_{it} = j) = \sum_{c=1}^{C} P(class\ c) \left[\frac{\exp(\beta_c' X_{jit})}{\sum_{j=1}^{J} \exp(\beta_c' X_{jit})} \right]$$

The latent class model thus is the product of the conditional distribution (probability farmer's choice conditional on being in a specific segment) and the probability of being in a segment where the segments are the finite analogue to the random parameters distributions (Boxall and Adamowicz 2002). This model allows choice attribute data and individual consumer characteristics to simultaneously explain choice behavior.

4.5 Result and discussions

The following two sections describe and discuss the results. The first part is intended to provide a brief picture of the choice context and the characteristics of the sample households. It describes the attributes that are examined in the choice experiment and the variables that are hypothesized to explain the preference heterogeneity of sample farmers. The second section discusses the model results.

4.5.1 Descriptive results

Before analyzing the choice experiment data, it is interesting to look at the socioeconomic characteristics and actual selling decisions of farmers. Table 4.1 describes the socio-economic characteristics of sample respondents. Of the total sample respondents of 227 households, 205 (90%) of the respondents were male. The average of the respondent was about 35 years with a minimum of 17 and a maximum of 70. The average size of households was 6.6 of which 3.6 are male and 3.0 are female. On average a farmer owned 420 coffee trees with 12% of the farmer having less than 100 trees and about 5% of farmers having greater than 1000 coffee trees. The average land size per household was found to be 0.87 hectares. The productivity of coffee is small. While the average productivity per tree for dried and red cherries is 0.9 and 1.9 kg, respectively, the average productivity per hectare is 1023.3 and 1592.5 kg. The average local market price was found to be 45.2, 30.6 and 102.6 Birr per kg for the dried cherries, red cherries and green coffee beans respectively. While there seems to be price variation among farmers, this was not the difference in terms of quality or other

attributes but difference in the timing of their sales. If we take the prices at a given point in time and marketplace, the price is generally uniform.

Table 4.1 Description of household characteristics

Variables	N	Mean	SD	Min.	Max.
Age of respondent	227	34.5	10.	17	70
Male household members	227	3.6	1.7	0	10.0
Female household members	227	3.0	1.7	0	9.0
Land size	227	0.87	0.7	0.1	5.0
Number of coffee trees	227	420.4	428.18	52	3500
Productivity of dried cherries kg/tree	186	0.9	1.1	0.0	7.4
Productivity of red cherries kg/tree	40	1.9	2.0	0.1	7.5
Productivity of dried cherries kg/ha	186	1023.3	1111.8	20.0	9600.0
Productivity of red cherries kg/ha	40	1592.5	1470.1	60.0	7200.0
Local price of dried cherries Birr/Kg	186	45.2	26.5	30	50
Local price of red cherries Birr/Kg	40	30.6	9.4	20	40
Local price of green beans Birr/Kg	195	102.6	10.1	75	120

Farmers in the study area can sell their coffee to assemblers in their village, primary cooperatives or to local traders (also called suppliers as they supply coffee to central market). But not all options are available to all sample farmers.

Of the 198 farmers who already sold their coffee by the time the survey was made, about 59 percent reported that they sold their produce to village assemblers (Table 4.2) who in turn sell to suppliers. So although the local market suppliers are accessible in most of the sample PAs, a large proportion of farmers sell their produce to village assemblers.

In addition, farmers were asked to identify the reason for their outlet choice. For this, the seven attributes of the choice experiment were considered. Price, trustworthiness, and dependability of the trader were found to be the most important attributes for about 71% of the farmers. The remaining 29% reported the presence of close social relationships, reliability and village membership as the main reasons for their outlet choice.

Table 4.2 Distributions of choices of farmers on selected institutional parameters

Description	Levels	Freq.	per cent
Selling decision	In the village	106	59.2
	Outside village	92	40.5
Primary reasons for outlet choice	Price	49	27.7
	Social relationship	16	9.0
	Reliability	16	9.0
	Trust	47	26.6
	Dependability	29	16.4
	Within village	7	4.0
	Other reasons	13	7.3
Clientelization	Yes	144	63.4
	No	82	36.6
Degree of client-relationship	Never sell to others	97	67.4
	Rarely sell to others	20	13.9
	Sometimes sell to others	27	18.8
Social relationship	Social group member	40	27.8
	Family member	10	6.9
	Outsider	94	65.3
Cooperative membership	Yes	80	35.2
	No	147	64.8
Incidence of cheating	Yes	54	23.8
	No	167	76.3
Mobile access	Yes	91	40.1
	No	136	59.9

The degree of clientelization in the study area was observed to be high. About 63 % of the farmers have a clientship with a particular trader. The fact that 67% of the respondents reports that they ‘never’ sell to other traders (Table 4.2) suggests that this relationship is strong. Of the remaining respondents, 19% and 14% reported respectively to sell ‘rarely’ and ‘sometimes’ to other traders.

Contrary to the expectation that clientships are established with socially closely related individuals, it is found that about 65% of these relationships were made with individuals outside the own social group (family, clan, ethnic or any other social group). Only 28% of the farmers established such relationship with members of the same social group and even less (7%) with family members. These results seem to be in contradiction with the

social capital theory that emphasizes the role of social relationship in economic relationships (e.g. Coleman 1988; Grootaert 1998).

Of the total number of respondents, 35.2% were found to be member of cooperatives. But unlike cooperative unions, most primary cooperatives are weak and only work as buying centers of their cooperative unions. Finally, access to mobile phone and incidence of cheating were found to be 23.7% and 40.1%, respectively

Table 4.3 Reasons for establishing relational contract

Attributes	**Freq.**	**Per cent**
Price	16	11.1
Social group member	9	6.3
Trusted	72	50.0
Dependable during crisis	39	27.1
Reliable buyer	8	5.6

Finally, farmers were asked why they stick to a specific trader for transactions. From the farmers who sell their coffee to a specific buyer, 50% indicated that trustworthiness was an important attribute for choosing the trader (Table 4.3) while 21% of them rated dependability of the trader in times of economic crisis as their main attribute and 11 percent reported price. Finally, reliability and social relationships were each identified as important attributes by 6 percent of farmers. In a similar study, Tadesse and Shively (2013) found that farmers, instead of embedding economic relationships into social relationships, they anchor their client relationship after repeated tests for trustworthiness. Their findings implied that incidence of cheating can determine the preference of farmers for alternative traders. Of the total 219 respondents, 23.7% claimed to have been cheated in the past by traders.

4.5.2 Results from the choice experiment

Using choice experiment data first a traditional Multinomial Logit model was estimated. In addition, a Latent Class model was run. Based on the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), an LCM with four latent classes was selected.

5.2.2.1 Results of MLM

The estimation results of the multinomial logit model show that the selected attributes (trustworthiness, strictness, social relationship, village membership, reliability, and dependability) all are significant determinants of the choice of farmers for a particular trader (Table 4.4). A farmer thus considers many transaction attributes, in addition to price, when he/she decides to choose a particular buyer.

The expectation was that buyers who are trustworthy, reliable, dependable, not strict, members of the same social group and living in the same village would be preferred. Except for the result concerning the strictness attribute, the results are consistent with this expectation.

The significance of price is straightforward: sellers were found to prefer a trader that offers a price higher than the prevailing market price. Trustworthiness of the trader (as perceived by the farmers) was also found to be a significant determinant of the choice. In a market characterized by information problems, farmers rely on their personal judgment and on their experience with the trustworthiness of traders in providing market information, in measuring the quality and quantity and in keeping promises and complying with contracts. Since objective quality measurement is absent at the local market levels, the honesty of the trader in providing genuine quality assessment is a crucial behavioral attribute for the farmers. In sum, a buyer is considered to be trustworthy if what he/she does and says is credible. The results indicate that farmers prefer to deal with trustworthy traders.

Another important determinant of the preference of farmers was the presence of a social relationship. Unlike in the impersonalized markets, economic relationships in local markets are expected to be embedded in some sort of social relationships. The results of the MNL shows that the presence of social relationship has a significant effect on the preference of farmers.

Table 4.4 Latent class estimation results of sample coffee seller-farmers

Utility parameters	MLM		LCM							
			Class I		Class II		Class III		Class IV	
	Coeff.	z	Coeff.	z	Coeff.	z	Coeff.	z	Coeff.	z
Price	.442***	14.9	9.64**	2.25	0.21	0.53	.50***	2.95	1.63***	4.14
Trust	.526***	15.3	7.20	0.00	.51**	2.36	.94***	7.53	.76**	2.19
Quality assessment	.724***	18.7	68.55	0.00	.74***	4.34	.93***	6.01	.39**	2.34
Social relation	.132***	3.8	4.50	0.00	0.14	0.72	-0.02	-0.15	.39**	2.24
Location	.392***	10.9	2.05	1.05	0.43	1.33	.78***	3.67	.52*	1.88
Reliability	.239***	6.8	18.69	0.01	.44***	2.79	.49***	3.41	-0.32	-0.96
Dependability (during social and economic crisis)	.450***	14.2	26.29**	2.46	0.015	0.1	1.13***	7.9	.46***	2.67
Constant			0.77	0.42	0.94	0.54	2.59	1.52	0	
Cooperative membership			-1.56	-0.72	-3.59*	-1.85	-3.56*	-1.67	0	
Being cheated			-36.29	0	-3.43	-1.07	-3.21**	-2.09	0	
Have specific client			0.35	0.23	1.84	1.34	1.35	1.25	0	
Have mobile telephone			1.29	0.48	2.91	0.99	1.89	0.8	0	
Average class probabilities			7.6%		23.3%		51.8%		17.4%	
Number of obs.	3152				3152					
Log likelihood function	-1378.3				-574.73					
AIC	2770.6				1235.5					
BIC					-1299.9					
R-sqrdAdj (Constants only)	0.288				0.702					

Note: ***, **, and * show significance at 1%, 5% and 10% level, respectively

Another attribute considered was the dependability of the trader in times of economic and social crisis. The positive and highly significant coefficient of this attribute indicate that farmers prefer a dependable trader. Mujawamariya *et al.* (2013) found long-term relationships with a trader in other transactions such as credit and consumption goods as a significant determinant in the choice of coffee farmers for alternative buyers. Coffee traders provide farmers with various types of support especially when their client-farmers face economic and social crises. This transaction resembles the gift exchange of primitive society (Kranton 1996; Dorward *et al.* 2009 and Ponser 1980). The norm is that if a farmer has requested a trader for some help or accepted some gifts from him/her, he has implicitly agreed to sell his/her coffee to that trader. From the traders' point of view, the gift exchanges are a strategic response to future market risks; from the farmers' point of view, it appears an adaptive response to the missing financial markets and legal protections.

Table 4.5 Average marginal effects of multinomial logit estimation

Utility parameters	**Coeff.**	**z**
Price	0.006*	1.82
Trust	0.094***	16.07
Quality assessment	0.129***	21.9
Social relation	0.029***	5.05
Buying in the village	0.055***	9.52
Reliability	0.046***	7.92
Dependability (during social and economic crisis)	0.079***	13.52

Note: ***, **, and * show significance at 1%, 5% and 10% level, respectively

Finally, traders are expected to differ in their strictness in quality assessment style. Some traders are strict and meticulous in measuring quality before they decide to buy coffee at a particular price while others rely more on the words of the farmers and hence make little assessments. In the MNL regression, strictness in quality assessment was found to strongly and significantly determine the preference of farmers for alternative traders. The positive sign of the variable implies that farmers prefer a 'strict' trader to a 'non-strict' one. The expectation would be that a rational seller prefers a 'non-strict' trader to 'strict' one. Our result thus seems to deviate from the self-interest rational

behavioral assumption held in mainstream economics. In the discussion section, we analyze this result in more detail and try to explain its meanings and implications.

As presented in Table 4.5, the average marginal effect of the attributes ranges between 0.006 and 0.129. Contrary to our expectation, price plays a relatively smaller role in affecting choice decisions of farmers, while strictness in quality assessment plays a relatively much greater role. For instance, a trader that offers one birr additional price (a 4% higher than the market price) is 0.6 percent more likely to be chosen than a trader that offered the market price. Similarly, a trader who is strict in quality assessment is 13 percent more likely to be chosen than a trader who is less strict.

5.2.2.2 Results of LCM

The multinomial logit model assumes that respondents have homogeneous preferences. But in reality, the preference may vary. To capture this, an LCM was estimated. While the LCM provide a microscopic view of the preferences of the different group of respondents (grouped according to their preference homogeneity), the MNL provide a macroscopic view of the preference of respondents in general. In other words, while the LCM show which attributes are important to which group, the MNL shows which attributes are important for the study areas in general. A four-class model was found to fit the data best. In this model 7.6%, 23.3%, 51.8% and 17.4% of the sample households belong to class I to IV, respectively.

Members of the first class, which is limited in size, appear to rely on only two attributes in their choice decisions: price and dependability. Trustworthiness of traders, strictness of traders in assessing quality, location, reliability, and social relationship do not significantly determine the decision for this class. This class of farmers chooses a trader on demonstrated behavioral patterns. We can call this group of farmers as *self-interested but miss some markets*. Their preference for reciprocal relationships might be a response to the missing capital and insurance markets. They could easily enter into impersonalized markets if these market constraints are removed. For the farmers of class 2, trustworthiness, strictness, and reliability were found to significantly determine

the choice. Price, social relationships, village membership and dependability, on the other hand, were found to be insignificant. These farmers seem to prefer to transact with an honest, trusted and reliable trader. They seem to be committed to forgo short-term economic gains to build long-term relationships with a reputable trader. They also did not show preference with respect to social group or location. As long as the trader is ethically reputable, they are willing to make impersonalized transactions. We call them *reputation-oriented agents.*

About half of the sample, farmers belong to class III. Again social relationships were found to be an insignificant attribute. All other attributes nevertheless were found to be significant determinants of their choice. This group of farmers takes into account many attributes in their decisions. We can call these farmers *self-interested and sophisticated agents.* Contrary to embeddedness argument, they have no special preference for social group members.

Finally, the remaining 17% of the respondents belongs to class IV. For this class of farmers, all attributes except reliability were found to be significant determinants of their choice. What makes this class of farmers different from the above is that in addition to economically relevant attributes, they also value the social relationships. They seem to have no problem in finding a buyer. But they also prefer to limit their transactions within their social group. They may be less responsive to institutional interventions intended to create impersonalized transactions. We call these group of farmers *sophisticated but closed*.

Four variables were hypothesized to determine the preference heterogeneities of the respondents: cooperative membership, clientship, incidences of cheating and access to mobile telephone. While cooperative membership was found to be a significant determinant of preference heterogeneity of farmers of class II and III, incidences of cheating was found to be a significant determinant of class III only. The negative signs for both variables indicate that non-members of cooperatives and those with no incidence of cheating are more likely to belong to the respective classes. Contrary to the expectation, preference heterogeneity among farmers could not be explained by

difference in access to mobile telephone or clientele relationships . Table 4.6 presents the profile of respondents across the classes.

Table 4.6 Profile of respondents of the different classes

Variable		Class I	Class II	Class III	Class IV
Zone	West Hararghe	1.7	12.0	74.4	12.0
	East Hararghe	16.7	42.9	26.2	14.3
Sex	Female	0.0	20.0	65.0	15.0
	Male	8.8	25.4	53.0	12.7
Education	Illiterate	7.8	27.0	54.8	10.4
	Literate	8.1	22.1	53.5	16.3
Wealth status	Rich	0.0	18.8	68.8	12.5
	Medium	8.4	25.9	52.4	13.3
	Poor	10.5	21.1	57.9	10.5
No. of coffee tree		256	273	561	447
Family size		7.8	6.7	6.5	6.8
Coffee land size		0.18	0.23	0.39	0.32

In addition to the above preference heterogeneity variables, we also assess class membership of farmers against some socioeconomic characteristics of the respondents. We find difference in class membership of farmers between West Hararghe and East Hararghe. While majority of farmers (74.4%) in East Haraghe tend to be in the class III, large proportion of farmers in West Hararghe tend to fall in class II (Table 4.6). This may be due to that the level of market access and the complexity of social environment is better in the sample districts drawn from West Hararghe. We find little differences in the class distribution among female and male. The same is for the distribution between literate and illiterate respondents. Concerning those farmers with large number of coffee trees and hence more production tend to be in class III and class IV. The sophistication of farmers to combine diverse attributes of traders in choice thus increase as the stake increases with the volume of the transactions. A similar pattern is observed for land size. Concerning the wealth status measured in terms of self-identification, the rich seems to differ in the distribution of class from the rest of farmers. Finally, regarding the family size, those will large family size tend to be more in class I than the rest of others.

4.6 Discussion of key findings

Overall subjects were found to conform to our priori expectations for all attributes except strictness of trader. Contrary to our priori expectation, all except class I, were consistently found to prefer a trader who strictly assesses quality. The fact that a farmer chooses a strict trader implies that he is willing to commit the resources that maintain quality requirements. This actually contradicts the basic behavioral assumptions. Moreover, this result will have important implications in quality issue. It is, therefore, important to assess if there exist circumstances that can incentivize farmers to prefer a strict trader to a less strict trader.

Four possible explanations will be discussed. One explanation can be the reputation effect that emerges in repeated transactions discussed in Shapiro (1982; 1983) and McCluskey and Loureiro (2005) and Carriquiry and Babcock. (2007). The idea is that farmers may want to demonstrate their commitment to quality and may prefer a trader that values individual commitments. This can make sense if traders can measure individual commitments, at least ex-post of the transaction. But as explained above, the current transaction condition is such that a trader collects coffee from many farmers each selling very small quantities. Given that traders buy dried cherries (not coffee beans), it is difficult to measure quality *ex ante*. In addition the hulling will be made in bulk, making almost impossible even to trace quality problems much less measuring the commitments of individual farmers for quality ex-post of the transaction.

The second possibility is that when farmers in a given location collectively build reputations, the reputation could be translated into a price premium and reliable market. Farmers may simultaneously believe that choosing a less strict trader will encourage some farmers to take opportunistic actions that will eventually damage potential benefits of building collective reputations. But such shared-belief cannot emerge in a vacuum. The majority of farmers can theoretically agree on its potential benefits. But this idea can become shared-belief only when it is deeply entrenched in the mind of the majority. It is not enough for the majority to share the belief, the ‘shared-belief’ has to be transformed into an effective norm in order to influence behavioral patterns. Such a norm comes

about after continuous reconfirmation and reproduction through strategic acts of market players (Aoki 2007). The transaction being personal, there is no strategic game that binds farmers and that provide them the incentive to monitor conformity to the belief. Owing to the nature of the commodity (dried coffee cherries), it is difficult for a trader to measure quality during the transaction. Neither it is easy to trace individual quality problems even after the transaction. Therefore not only identifying defectors and metering levels of defections is very difficult, but the overall social environment also makes collective action on defectors unlikely. Even if nested social networks exist at the village level, their role in coordinating collective action is quite limited. In effect, cooperation in economic matters is weak in the area. Thus collective actions theorized by Ostrom (1998; 2005) and others seems implausible. Such collective actions may be possible if the transactions were organized collectively as in marketing cooperative.

The other proposition may be the one used to explain the spontaneous emergence of traffic convention – when the majority sticks to the right-hand side of the road, it is rational for others to follow (Hodgson, 1998). Likewise, when a farmer maintains quality (say for a reason of reciprocity), others may follow the trend provided that they find conforming individually beneficial or deviating costly. Unlike the traffic, the actions of farmers are unobservable, there is no reference point to measure deviations and thus one can act opportunistically without being detected by other farmers. Even in the case of traffic, the convention may create order at the beginning, but in the course of time and at some points, traffic rules are necessary to sustain the order (Schotter, 1981). The fourth explanation is that farmers actually prefer the not-strict trader but they pretend to conform to the shared belief. Even if farmers may well understand the collective benefits of choosing a strict trader, they may still find it costly to conform to it in a situation where prices are more or less uniform and in a condition where they cannot be sure that others will also conform. Instead, everyone may prefer to capture some gains by choosing a trader that allows opportunistic actions. In this situation, they should prefer the ‘not strict’ trader. But when they are asked to state their preference, they may not feel comfortable to openly express opinions that are against the shared belief. Instead, they may prefer to *pretend to conform*. Moreover, respondents may think that choosing a ‘not-strict’ trader

can create a bad self-image. In addition to the assumed shared belief, other factors can also compel farmers to pretend to conform. The actual context in the area is that government and non-governmental organizations highly insist farmers in every occasion to improve export earnings by ensuring and improving coffee quality. Rural people in the country might perceive all elites, including enumerators as government actors. Thus, instead of revealing their true preference, they may tell what they think the interviewer would like them to say. We believe this is the most likely explanation for the result obtained.

Maintaining and improving the quality of coffee and ensuring compliance with international food safety requirements is crucial to maintaining the sustainability of agricultural trade and to upkeep better terms of trade (World Bank, 2000). But quality problem remains the main challenge of agricultural markets in general and of the coffee markets in particular (Dadi *et al*. 1992; Gebremeskel *et al*. 1998; Gabre-Madhin and Goggin 2005; Bitzer *et al*. 2008; Gabre-Medhin 2009; Musebe *et al*. 2011).

Since the quality of coffee is a function of all pre- and post-harvest activities (Bertrand *et al*. 2006; Vaast *et al*. 2006; Wintgens 2009; Sualeh *et al*. 2014;), maintaining and improving it involves substantial resources. In situations where the local markets do not incentivize quality, farmers may be reluctant to invest their time and energy to maintain and improve quality. Instead, taking actions that compromise quality seems to pay for farmers. For instance, traders reported that farmers (including village assemblers) mix inferior coffee brands (such as Bale) with superior ones (such as Harar A, Harar B or Harar C). This particularly occur in those villages located around areas bordering other regions. Assemblers and farmers from inferior coffee producing regions sell their coffee to assemblers and farmers located neighboring villages located in the superior quality producing region. They then mix the inferior coffee with their own coffee and sell it in the name of superior quality to traders located in their region. Traders have also reported that adding stones, soil, wood and water to increase the weight and supplying without sorting out defective cherries are common actions.

As a result, traders have to invest in sorting and cleaning before they supply to the auction market. But even then, the grade level in the study area remains poor (Musebe *et al.* 2011). For instance, of the coffee sold in the first 6 months of 2013 at the auction market, only 0.6% was above grade 4. To put in a nutshell, instead of incentivizing coffee quality the current institutional context in the study areas seems to provide room for opportunistic actions that compromise quality.

The irony is that while traders receive different prices for different grade levels and brands at the ECX auction market, they pay undifferentiated prices at the local markets. However, this is partly attributable to lack of objective quality standards at the local level (Gabre-Madhin 2009). In fact, quality levels at the local market are solely determined by visual inspection (Dadi *et al*. 1992). Having long experience in the coffee markets, traders are expected to make good judgments on quality. But they may still find such subjective judgments difficult to apply on personally and socially connected farmers. Traders also reported that they offer similar prices except for situations where serious quality problems are observable. Knowing that they will receive the same price irrespective of the quality, farmers primarily focus will be on increasing the volume. At least, they will have no incentive to improve quality. In such conditions, agents have no choice but to live with the prevailing Akerlof's (1970) lemons' market. We argue that even in an institutional environment where transactions are dominated by personal relationships, markets are prone to fraud and deceit if the transactions especially involve valuable attributes that are costly to measure.

Another important variable was social relationships. While social relationships positively and significantly determine the choices of farmers as the MNL model result shows, the results of LCM shows that this is true for only 17% of the farmers (class IV). In other words, for 83% of the responding farmers, no evidence was found that they prefer a trader who is a member of their social group. Also, the descriptive results concerning the actual transactions showed that farmers sold more to members outside their social group, a result consistent with (Fafchamps 2004). These results, therefore, do not

support the claim that in many developing country markets economic relationships are embedded in social relationships.

Farmers establish long-term client relationships based on the economic merits of the trader. Once established, the relationships will continue as long as the trader fulfills the desired economic attributes – trustworthiness, dependability, reliability, location (buying in the village), and offering satisfactory prices. Perhaps such long-term economic relationship may expand into social dimensions. In this sense, social relationships are embedded in economic relationships rather than the other way round. Consistent with this finding, Tadesse and Shively (2013) found that farmers, instead of just relying on social connections, continue to learn through repeated transactions and based on the feedback of their neighbors, until they gain the required trust level that anchors their long term relationship. Similarly, Meijerink *et al*. (2014) found that social relationship declined after the informal institutions that were governing the sesame exchange in Ethiopia were replaced by formal institutions.

The mere fact that transactions are infused in personal relationships alone cannot lead to the conclusion that transacting parties prefer to embed their economic relationship with members of a close social group. Individuals may embed economic transactions into social relationships because the wider institutional environment locked them into social relationships without providing alternative institutional arrangements that allow impersonalized transactions. The context is that farmers have to take Hobson's choice of embedding their transaction in personal relationships. We argued that personal relationships are natural responses of boundedly rational self-interest seeking agents to transaction problems posed by the institutional environment.

If trust, reputation, and reciprocity are circularly interrelated and are products of strong social bonds, and if they are crucial for economic cooperation, then it implies that no society can be more cooperative and productive than primitive tribal societies of African countries (the most primitive tribal societal system can be found in the pastoralist society of sub-Sahara). But the reality is that such types of societies are not only the least productive and inefficient, they also devote a large proportion of their scarce resources

on redistributing the meager wealth (North 1994; Posner 1980; Popper 1966; Seabright 2004). Recent studies found a negative relationship between social 'capital' and economic performance (Egbert and Sedlarski 2011).

4.7 Conclusions

The local coffee markets in the study areas are personalized and segmented along social networks. We asked as to what underlay behind such personalized and segmented markets. We found transaction costs related attributes are behind such personalized transactions. Even if the institutional environments locked farmers in personalized relationships, we found that farmers differ in their preferences. Four classes of coffee producers are identified: *self-interested, reputation-oriented agents, self-interested & sophisticated, and sophisticated but closed*. For all groups of farmers except class IV (17.4%), economic rather than social motives seem to influence these preferences. The direction of the preference for all attributes was as expected, except for the strictness in quality assessment. In total contradiction to our expectations, farmers were found to prefer strict traders to non-strict ones. Given the experiment was made under an ideal choice contexts, we found no reason that justifies this result. Even if we tried to test the plausibility of the result under the real choice situations on the ground, we only found little explanations in relation to reputability. Rather we found their choice inconsistent both under an ideal and real choice contexts. We thus strongly believe that farmers have pretended to conform to some abstractly constructed desirable behavioral patterns.

The study also showed the adverse effects of personalized transactions on coffee quality. In a condition where there are no alternative institutional arrangements that incentivize quality, farmers are not likely to invest their resources in improving quality. However the unique natural quality of the coffee produced in the areas provides ample market opportunities for farmers (Petit 2007), they could not even capture these opportunities let alone expand economic opportunities beyond. The efforts to improve quality in the study area through intensive advice cannot have a meaningful impact if the existing transaction system continues to be governed by the inefficient informal

institutions the personal relationships offer. Finally, we suggest further study in order to assess the implications of these results in the local markets on the performances of higher level markets along the coffee value chain. In addition, assessment of the traders' side on their choice of sellers will greatly supplement the study.

Contrary to the arguments of social capital theorists, the LCM shows that only 17% of the farmers were found to prefer to transact with members of their own social group. Indeed, coffee transactions are embedded in personal relationships. Yet, the reciprocal relationships continue as long as it ensures long-term economic benefits. Given the experimental results of farmers' choice under ideal choice contexts, we found little evidence that supports the argument that agents prefer to embed their transactions in social relationships. Rather the preferences of most classes of farmers can be interpreted as a far-sighted calculative response to institutional problems. Contrary to embeddedness argument, it rather seems that social relationships are embedded in economic relationships. Given there are no alternative formal institutions, the observed personal relationships can be interpreted as adaptive responses to missing markets and legal protections. For that matter, 'oversocialized' (Granovetter 1985) relationships are the principal embodiment of most developing countries. It can probably be the Pandora box of the weak performances of such society. Whether it can work in 'under socialized word' or not, the proof of the pudding is in the eating.

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Chapter 5 Preference of local traders to coffee sellers

Abstract

Using survey data collected from sample farmers, this chapter assesses the preference of traders for alternative seller farmers. While the result indicates that the preference of farmers to embed their transaction within social relationships is little, the institutional environment locked farmers into personalized relationships. With the exception of strictness, we found traders' ranking of attributes most preferred by farmers as more or less consistent with the results of the choice experiment. Despite the presence of personalized transactions, the results also indicate high and increasing transaction risks associated with incidences of fraud.

5.1 Introduction

In Chapter 4 using a random utility theory framework, we analyzed the preference of farmers to the various attributes of traders. The central aim was to understand the source of personalized transactions and its implications on quality. By controlling attributes of the traders that have strategic importance for farmers, we found that social relationship is a valuable attribute only for small segments of the sample farmers. But embedding transactions with personalized relationships does not arise only from farmers choice of traders but it can also arise, for many reasons, from the preference of traders to transact with a particular group of farmers.

First, traders, in order to minimize transaction costs and risks associated with information and enforcement costs, may prefer to embed their transactions in long-term relationships with a particular group of farmers. In order to avoid potential transaction risks that may give rise to possible opportunistic actions of farmers such as adulterating coffee, mixing different brands of coffee and the like, traders may prefer to embed their transactions in long-term relationships. Traders can also establish long-term relationships with farmers to avoid competition from other rival traders and to obtain a reliable seller. Traders can do this by signaling their reputations in terms of trustworthiness, reliability, and dependability. For instance, traders can signal their

dependability by responding quickly to the social and economic crises farmers are facing by providing loans, by selling food grains in times of food shortage, by partly covering their medical expenditures and the like. They can also demonstrate their alliance by actively participating in social ceremonies such as wedding and funeral ceremonies and other social gatherings. Traders can also use their social status to resolve disputes and conflicts their clients may have with other parties

All this can enable traders to obtain a loyal customer, not only in the coffee markets but also in other markets. Since coffee trading is seasonal in the area, most coffee traders also trade other products or inputs. They can thus extend the clientele relationship they have in the coffee markets into their other business activities. That is, traders can bundle the various economic transactions together. All this can lead to long-term relationships, but not necessarily to the identity-based personalized transactions that we conceptualized in this study. However, if the social landscape is already segmented in terms of some identity attributes such as ethnicity, religion or clan, the resulting economic relationship will also be segmented. This condition can provide traders the opportunity to take advantage of the segregated social structure in order to sustain their monopoly. But if the social landscape is already diverse and mixed, the trader will have to demonstrate its reputation continuously to each client individually. The trader can also sustain and expand his economic relationships by strengthening his social relationships. In such condition, the transaction may not be considered as personalized. In this sense, social relationships can be thought of as embedded in economic relationships instead of the other way round.

Another possibility is that the trading context could be such that it leaves farmers with no option except transacting with a fixed trader. In our particular context where there are several traders in each local market, traders can acquire such monopsony power among a specific group if they collude to share the market. But in addition to the monopsony power which a trader may have in the coffee markets, he can also have monopsony/monopoly power in other markets e.g. manufactured goods market, agricultural inputs market and grain markets. In addition, traders can also have political

and even social power. In a less complex social environment where traders and farmers personally know each other and know each other's actions and transact in multiple markets, traders can have more power to constrain the free choice of farmers in the coffee markets. They signal their power through various actions. In an environment where multiple transactions are interlinked and intertwined with the personal identity of the transacting parties, transactions will be complex and beyond comprehension. But the situation will obviously leave farmers with little options other than transacting with a fixed trader.

The purpose of this chapter is thus to identify the attributes determining the preference of traders for alternative coffee selling farmers and to understand the behavioral patterns of traders. The aim is to critically examine the implications of the results of the descriptive statistics vis-à-vis the overall transactions contexts characterizing the personalized transactions in the local markets.

5.2 Methodology and data

The study uses survey data collected from 43 traders in the four sample districts, namely Dara Lobu, Boke, Melka Bello and Bedeno. The first two are located in Western Hararghe and the other two in Eastern Hararghe. Since the number of traders in each local market is small, our sample contains nearly all of them. The data was collected using structured questionnaires. In addition, details informal discussions took place with local traders, farmers and coffee marketing experts of the local Agricultural Development Offices. Given the small sample size, we analyze the data using descriptive statistics.

5.3 Results and discussions

The following subsections present and discuss the results of the descriptive statistics. To draw useful conclusions, we try to critically examine the relationships between the various results of the descriptive statistics and confront these with the context of the local coffee markets which were described in Section 2.3.3 of Chapter 2.

5.3.1 Perception of traders about the preference of coffee selling farmers

We first asked traders to rank attributes, that according to them will attract coffee selling farmers. We take the following attributes: price, trustworthiness, dependability, social relationship and strictness in quality assessments. We assign five points for those attributes ranked first, four points for the those ranked second, three points for those ranked third and so on. We then take the sum of the calculated weighted value of the rank levels for each attribute.[13] We calculated the weights for each cell in the attribute-rank matrix as a product of three ratios: the ratio of rank value to the sum assigned values, the ratio of observation to the sum of observations for the attribute under consideration and the ratio of observation to the sum of observation of the specific rank level under consideration.

Table 5.1 Attributes of trader in terms of their rank in attracting farmers

Rank	Social relationship	Dependability	Price	Strictness	Trustworthiness
1st	6	5	10	0	21
2nd	6	14	10	4	8
3rd	14	11	9	2	6
4th	13	9	10	8	2
5th	3	3	3	28	5
Weighted index	4.8	5.5	5.1	3.7	9.8

The result in Table 5.1 show the index values and the distribution of ranks per attribute. Accordingly, in descending order of importance, trustworthiness, dependability, price, social relationship and strictness in the quality assessment were believed to attract farmers. The relative importance of trust seems very strong as the weighted index value is considerably higher than that of other attributes. This is more or less consistent with the result in Chapter 4, where the preferences of the farmers were assessed. The

[13] The weighted values for each rank is calculated as: the ratio of the value assigned to each rank to the total value assigned to the rank (5+4+3+2+1=15) multiplied by the ratio of the number of observation in the rank to the total responses in the attributes multiplied again by the ratio of frequency of the rank in the total choices of the rank multiplied by 100). For instance, if 10 respondents of the 41 ranked attribute A and if the number of total respondents that chose first rank are 41, the weight will be calculated as (5/15)*(10/41)*(10/43)*100=1.89. The calculation is made for the rest of the ranks and the total value will be summed up to arrive at the weighted rank of each attribute.

ranking of the strictness attribute is however in contradiction with the results in chapter 4. Contrary to the results of stated preference by farmers, the traders rank strictness in quality assessment last. This substantiates the argument we provided to justify the result in Chapter 4.

As we described in the Chapter 2 and Chapter 4, the local markets are segmented through social networks. Our interest is to understand the source of this segmentation. One possibility is that when traders, in their attempt to reduce information and enforcement problems, embed their transactions into repeated relationships through clientelization or other means. But whether the clientelization is personalized or impersonalized depends on the social environment. If the social environment is itself segmented, the market structure that emerges from such clientelization will be personalized.

Our field observations confirm the presence of a segmented market. The detailed discussions which took place with the district coffee marketing experts and with selected traders revealed this fact. They reported that each trader has a specific geographic territory surrounding the native village of the trader's extended family and that traders know each other's segments and implicitly avoid intrusions. They also reported that disputes sometimes arise when one trader buys coffee from farmers/assemblers who come from outside their own territory. As described in Section 2.3.1, traders themselves reported that they visit the villages when the main harvest approaches. Traders know that farmers usually face financial liquidity problems at this time and they ask farmers if they need money or other help. Farmers usually accept such offers and this is considered as a promise not to sell coffee to other traders. Sometimes traders even influence locally powerful individuals who can put pressure on farmers not to sell coffee to other traders. Informants reported that in the past locally powerful individuals even physically forced farmers to sell to a specific trader. While such forceful measures are reported to be more rare, locally powerful individuals still constrain the free choice of farmers, especially weaker farmers.

5.3.2 The level of competitions among traders

We first examine whether these elements provide traders competitive advantages in the local coffee market. From the total sample respondents of 43 traders, respectively 16.3 and 30.2 percent reported that social network and clientelization to be the source of their competitive advantage, (Table 5.2). 41.9 and 4.7 percent of the respondents believe that working capital and ownership of essential facilities such as pulping/hulling machine, store and truck are the primary sources of their competitive advantage, respectively. Here the segmentations seems to have come through deliberate investments of traders in social networks and clientelization.

Table 5.2 Source of competitive advantage of traders

	N	%
Presence of sufficient working capital	18	41.9
Presence of strong social network	7	16.3
Presence of necessary facilities	2	4.7
Capacity of client management	13	30.2
Total	40	93.0

Economies of scale, entry barriers (formal or informal) and other strategic actions of agents could result in geographically/socially segmented markets. However, while there are entry barriers for traders outside a locality, there is no formal entry barrier within district markets. But some institutional environments sometimes restrict entry even in the absence of legal restrictions. Besides, the social environment could be conducive for the traders to segment the market through some collusive acts.

In order to assess the presence of collusion, we directly asked farmers if they made some agreements to avoid competition. We furthermore also asked trades in what trading activities they collaborate. As Table 5.3 shows, 79.1 percent of the respondents reported that there is no agreement among them. Only 18.6 percent of traders reported the presence of some types of agreements that can limit competition.

Table 5.3 Terms of collusion and extent of interdependence among traders

Types of agreements among traders	N	%
Not to compete for price	6	14.0
Not to compete for clients	1	2.3
Not to inter into one's trading territory	1	2.3
No agreement	34	79.1
Total	42	97.7
Share marketing costs	5	11.6
Share facilities	15	34.9
Credit collaboration	3	7.0
Using uniform buying price	3	7.0
No collaboration	15	34.9
Total	41	95.3

Neoclassical economic theory predicts that competition exists when the firms are large in number and when each agent can act independently of others. In such conditions, not only making collusive agreements but also maintaining them will be difficult. However, in our case, the number of traders is not so large as to make collusive agreements difficult. Nevertheless, such collusion could be less effective when members operate independently. One of the main inherent problems of cartel arrangements is that members will have the incentive to cheat. Thus, such agreement could only be effective if members can monitor each other's actions. In order to judge the level of independence of traders, we ask if there are trading areas that create some interdependencies. We found that 65.1 percent of traders use shared facilities, share marketing costs and collaborate in other trading activities. While in a narrow social environment not only every trader is likely to know the actions and statuses of every other trader, the situation also forces them to be interdependent in the social, cultural and political spheres.

Moreover, traders in the local markets are tightly knit. They not only know each other's actions, but they also have several social instruments to constrain each other. The social environment is thus not only conducive to make tacit or explicit agreements, but it is also conducive to monitor deviations and cheating. In such social environment, collusive outcomes can naturally emerge even in the absence of explicit agreements. Thus, with the evidence on the use of shared facilities and other means of collaborations coupled

with the conducive social environment, it is hard to expect the trading pattern to be competitive. Moreover, as discussed in the previous chapters, in the social environment norms that undermine competitive behavior are pervasive.

Traders were furthermore asked about their pricing strategies and their reactions to changes in price in general and to changes in the price by rivals. The pricing strategy is dominated by markup pricing.65 percent of traders reported the central auction price as their reference for their pricing (Table 5.4). The remaining 18.6 and 16.3 percent of the traders reported the prevailing market price and their personal judgment as a basis for their pricing decisions, respectively. The use of auction price has significant implications for the price transmission. This will be analyzed in Chapter 6. The analyses there try to see the level of price transmission over extended time periods before and after the establishment of ECX. While the descriptive results seem to suggest that the speed of price transmission is high, they do not show the symmetry of the transmissions between price decline and price rise. But when all traders follow a similar pricing strategy, the level of competition also declines in the local markets which can have a significant effect on the level of mark-up.

Table 5.4 Distribution of pricing strategy

	N	%
Based on the price prevailing in the market	8	18.6
Based on the auction market price	28	65.1
Based on personal judgment	7	16.3
Total	43	100.0

To shed more light on the price competition, we asked them as to when they compete more. About 70 percent of the respondents reported that the level of competition increases when prices in the auction market increase and only 30 percent reported it to increase when prices decline. This seems to point towards asymmetric price transmissions.

5.3.3 Transaction costs and risks posed by farmers

Another important issue in the marketing of coffee we discussed in each of the chapters is the issue of coffee quality. We asked traders if they encountered considerable loss due to opportunistic actions such as adulteration problems. As discussed above, 53.5 percent of local traders reported that they had faced substantial losses due to farmers' adulteration of coffee.

Social capital theorists emphasize the role of personalized transactions in reducing malfeasance and in increasing trust. Despite the fact that the transaction is largely personalized, the incidence of opportunistic actions was reported to be high. Given the institutional constraint, the personalization of the transaction could be a strategic response of sellers to missing markets and buyers to limit opportunistic actions. This may depend on the traceability of the transaction *ex-post*.

Traders were asked as to what extent they can trace such adulterations. About 67 percent of traders reported that they could fully trace the adulterator (Table 5.5). Given the transaction context discussed in Chapter 4, it is difficult to believe that traders find the task of tracing adulterators easy. These traders might be able to trace this through assemblers. Since assemblers are not allowed to operate under the new ECX regulation, they work in the guise of an agent of traders. Without them reducing information problem and segmenting the market can be difficult.

Table 5.5 Traceability of adulteration problems

	N	%
Fully	29	67.4
Partly	3	7.0
Rarely	5	11.6
Not at all	6	14.0
Total	43	100.0

Finally, we asked local traders whether the personalized transactions, compared to the past, have increased or decreased. Consistent with our historical analysis which was discussed in Chapter 3, the personalized transaction seems to be on the rise as 79.1

percent of the respondents reported increment in the personalization of transactions (Table 5.6).

Table 5.6 Trend of personalized transactions

Type of change	Frequency	Percent
Increasing	34	79.1
Decreasing	7	16.3
No change	2	4.7
Total	43	100.0

Whether this is a good trend for the efficiency of the market or not depends on the trend in the incidence of fraudulent actions. About 81 percent of traders reported that the extent of adulteration and other fraudulent actions are increasing. If fraudulent actions are traceable and personalized transactions are increasing, then we would hypothesize the incidence of fraud to decline. But on the contrary, traders reported that it is increasing.

This result shows the inefficiency of the personalized transactions as an institutional arrangement. It is also a good evidence for functionalist arguments that emphasize on the roles of informal institutions and organizations. But in the absence of efficient institutions that discipline sellers, the personalized transaction will continue to exist as a second best alternative. The problem is that there is no easy way out.

5.4 Conclusion

We examined important transaction aspects that we hypothesized to have bearings with personalized transactions. The descriptive results suggest that the environment is not only conducive for traders to collude in order to corner farmers into personalized transactions, the personalized transactions can also arise as a strategic response of traders to reduce transaction risks. These results coupled with the results of our broader historical analysis of institutions in Ethiopia suggest that the personalized transactions are induced by the social environment in the local markets. The efficiency of personalized transactions particularly depends on the existing social environment and its historical origin. The result also suggests that the personalized transactions are an

inefficient institutional arrangement. But these inefficiencies are also inextricably and strongly linked with the broader socio-cultural, economic and political environment. The implication is that in as long as the broader environment forecloses other alternative impersonalized arrangements, these inefficiencies seem to persist.

Chapter 6 Impacts of institutional intervention on price transmissions, case of ECX in Ethiopia [14]

Abstract

In the aftermath of the liberalization reforms, policy intervention in developing countries shifted from towards building market institutions. One of such institutional intervention is the introduction of commodity exchanges. The general claim is that commodity exchanges provide the institutional means for reducing information and enforcement problems that are largely inherent in agricultural markets. But to what extent these potential gains are transmitted to the various markets along a value chain is not known. Particularly whether these potential gains are transmitted to the highly fragmented thousands of village markets is an empirical question. By taking the Ethiopian Commodity Exchange (ECX) as a case, this chapter examines the impacts of the introduction of the commodity exchange in transmitting price signals along the world-export-auction-retail/producers coffee value chains. We found that both the speed and symmetry of transmission remains weak even after the launch of ECX. In a context where local agricultural markets remain traditional and export markets less competitive, the introduction of the commodity exchange will have limited impacts in improving the performance of markets in transmitting price signals. It suggests that for institutional interventions to benefit farmers require more than just introducing commodity exchange at the central market. It requires transforming local markets and liberalizing the export markets.

Key words: Asymmetric price transmission, TAR, Commodity Exchange, ECX, Institutions

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6.1 Introduction

Before the liberalization, the widely adopted policy goal in the agricultural commodity markets was reducing price volatility (Subervie 2011; Bellemare *et al.* 2013). This was done in the coffee sector through the International Coffee Organization (ICO 2015) and by the marketing boards of the respective member countries. But after the abolishment of these institutions that controlled the market in the framework of the liberalization reforms, a need for institutional support arose. ECX was established to provide such support. But the central question remains to what extent such intervention can improve the performance of the market . The main aim of this chapter is to assess the impacts of ECX on the performance of markets in terms of transmitting prices. Next to this the study also examines the impacts of some other measures associated with the liberalization reforms, namely the removal of price fixation and export taxes.

Several studies have analyzed the impacts of the liberalization reforms on the performance of agricultural markets (Worako *et al.* 2008; Getnet 2007 for Ethiopia; Kilima et. al. 2008; Winter-Nelson and Temu 2002 and Coulter and Golob 1992 for Tanzania; Mofya-Mukuka and Abdulai 2013 for Tanzania and Mozambique; Fafchamps and Hill 2008 for Uganda; Subervie 2011 for El Salvador, India and Indonesia; Valdes *et al.* 2015 for Brazil). These studies generally attribute increases in market integration (esp. horizontally), increases in the participation of private traders and the rise in producer prices to the liberalization reforms. However, despite these positive impacts, agricultural markets in SSA countries, when compared to other developing countries, remain poorly organized, thin and less competitive even decades after the liberalization (Fiamohe *et al.* 2013; Osborne 2005; Coulter and Onumah 2002; Winter-Nelson and Temu 2002; Barrett 1997b). In addition, price volatility becomes a new important challenge (Fiamohe *et al.* 2013; Worako *et al.* 2011; Arslan and Reicher 2011; Barrett 1997a).

Some attribute the poor impacts of the liberalization to its partial implementation, to wrong execution and to policy reversals (Jayne, *et al.* 2002; Dorward *et al.* 2005a) or to poor infrastructural settings (Kydd 2009). Many, however, attribute it to the institutional

environments which are considered hostile for private businesses (Poulton *et al.* 2006; Dorward *et al.* 2005b; Fafchamps *et al.* 2005; World Bank 2002). The relative poor performances of agricultural markets in SSA countries brought institutions to the forefront in the subsequent reform agenda (Subervie 2011; Easterly 2005). High transaction costs, coordination problems and some adverse consequences of the liberalization (volatility, inequality, etc.) can provide a rationale for institutional interventions (Sitko and Jayne 2012). But the outcomes of such interventions may not be second-best if the intervenor faces no less information and incentive problem than the private market (Stiglitz 1989). Institutional capture may also impede the future development of efficient markets (Laffont and Tirole 1991).

Even though the coffee market received various institutional supports[15], it was no more efficient than other agricultural product markets. Instead, the newly created institutions enable the government to control the coffee markets (ICO 2015; Gabre-Madhin 2012). Furthermore, studies indicated a lot of problems associated with the state-run old auction system. The collusion of exporters, the personalization of the transactions, the rigging behavior of brokers, the presence of a large number of intermediaries, the bureaucratic auction system and the high contract risks were critical problems of the old auction system (Hernandez *et al.* 2015; Renkow and Slade 2013; Gabre-Madhin 2012). In addition, the grading system at the CQIAC was not transparent and the government was using this institution to fully control the coffee market (ECEA 2008).

However experiences of other African countries is disappointing (Sitko and Jayne 2012), Ethiopia launched the widely acclaimed commodity exchange[16] in 2008 with the help of foreign donors. Subsequently, a law was passed that fully prohibited coffee trading outside ECX. As described in Section 2.3.3, a lot of interventions and investments[17] has

[15] Unlike other agricultural products, diverse institutions support coffee markets in Ethiopia. Grading, standardization and certifications, dissemination of price information, research and developments and enforcement of contracts have been provided by specialized organizations for the past five to six decades (Berhe 2010).

[16] It has been acclaimed for its success on high volume of trade within short time volume of transactions and for its IT excellence

[17] The financial resources devoted to establish Ethiopian Commodity Exchange (ECX) was variously estimated to reach $55 million (Jayne et al. 2014).

been made by ECX in a way that dramatically changes coffee transactions at the central auction markets.

Despite these interventions to improve the central auction markets, no meaningful intervention was made to improve downstream (export markets) and upstream (local) markets. Especially the local coffee markets remain traditional and less competitive as described in Section 2.3.3. Besides, the legal framework limits competition by prohibiting traders to buy coffee outside the district they are licensed to trade. This restriction will leave farmers with few local coffee traders. It is especially bad for farmers that sell red-cherries as they cannot wait until price improves. Coffee for them is a *perishable* product. Finally, ECX being owned by the government (Renkow and Slade 2013) coupled with the stringent rule that entirely prohibits transaction outside ECX (Rashid *et al.* 2010) and past experiences of government controls, there is no guarantee that ECX does not distort the market instead of supporting it. Besides, the legal framework entirely prohibits trading of export-standard coffee for domestic consumption; a policy intended to ensure a continued flow of the country's foreign exchange earnings but which can have negative consequences on producer prices.

Currently, the entire volume of export-standard coffee and sesame are exclusively traded through ECX. Many studies take this as an indicator of the effectiveness of ECX (Mbeng-Mezui *et al.* 2013; UNCTAD 2009). But in a condition where traders are not allowed to trade outside ECX, the observed trade volume[18] hardly indicates the performance of ECX. More importantly, the effects of the intervention on the rest of market are unclear. What is striking in many reports is that they consider ECX as a platform where individual smallholder farmers directly participate in the trading (Mbeng-Mezui *et al.* 2013). In reality, no farmer directly sells coffee at the ECX auction center. Nevertheless, ECX could potentially benefit farmers if it would improve the efficiency of local markets in transmitting changes in auction prices and of the auction market in transmitting changes in Free-On-Board (FOB) prices. It is, therefore, interesting to investigate whether the interventions improved the performance of the supply chain. The

[18] For instance, in 2014, ECX traded 26.2 Billion Birr ($1.3 Billion) (Bloomberg, 2015)

main purpose of the study, therefore, is to analyze the impacts of the introduction of ECX on the linkages between the various levels of markets along the coffee supply chain. We evaluate the impacts in terms of changes in the capacity of downstream markets in responding to price changes at upstream markets.

Recently, Andersson *et al.* (2015) and Hernandez *et al.* (2015) have analyzed the impacts of ECX; the former on spatial price dispersion and the latter on market interdependence and volatility transmission. To our knowledge, no study has examined the impacts of institutional interventions through commodity exchange. More importantly, one of the limitations of these and other studies on coffee prices is that they use local (farm-gate) price of green coffee *beans* as producer price. But the traditionally processed green coffee *beans* are sold only for domestic consumption and therefore their price cannot reflect the local prices of export-standard coffee. For export-standard coffee, traders only buy sun-dried or wet coffee *cherries* and do the processing themselves using a standard pulping/hulling technique. The price farmers receive for their export standard coffee is thus the price of sun-dried or wet/red coffee-cherries. This distinction is particularly important because the transaction of coffee cherries involves information asymmetry as the quality of coffee-cherries is not as readily evident as that of green coffee beans. The risk of perishability is higher for farmers selling red coffee cherries than for farmers that sell traditionally pulped green coffee beans. Therefore analyses that use the local price of coffee beans cannot capture the transaction costs associated with the information problem and other problems related to storage and processing. We thus use the price of coffee *cherries* to capture the effects of ECX on smallholder coffee producers.

Analysis of Price Transmission (hereafter APT) is an important way to measure the performance of markets (McLaren 2015; Meyer and von Cramon-Taubadel 2004). The impacts of ECX can be reflected in terms of improving the speed and symmetry of price transmissions along the chain. Export-standard coffee has a single supply chain:

local/village market to auction markets to export market to world markets.[19] It thus provides an ideal chain to measure impacts of institutional/policy interventions. Using monthly time series data spanning from January 1997 to June 2014, we investigate the speed and asymmetry of price transmission at each stage along the export chain.

The remaining of the chapter is organized as follows. The first part describes the sources of data and methods of aggregation. We then describe the methodology used in part two. The results of the model are presented and interpreted in part three. Finally, key findings of the research and conclusions are presented in part four.

6.2 Sources and type of data

The study uses four sets of data collected from different sources. The first one is producer prices. Producer prices were compiled and aggregated from a CSA data set. CSA collects monthly data of agricultural products from more than 400 enumeration areas across the country. The raw price data of coffee (coffee dried/red coffee cherries) collected from major coffee producing areas, were aggregated to generate monthly time series price data that ranges from January 1997 to June 2014.

The second time series data is the auction price data. This time series data was collected from two sources. For the periods before the establishment of ECX was obtained from Ministry of Agriculture. The price series for the remaining years was generated by aggregating the weighted (by the volume of transactions) daily auction prices obtained from ECX database.

The other price data consisted of the export price data series. The export price data was obtained from Ethiopian Custom and Revenue Authority. Similarly, the monthly price series was generated by aggregating weighted daily export data.

Finally, the world price series was obtained from the ICO website. We used the monthly price index of Brazilian coffee as a proxy for world price of Ethiopian coffee.

[19] Trading export-standard coffee for domestic consumption is legally prohibited. We can thus ignore the domestic markets as it is for non-export-standard coffee. However cooperatives are allowed to directly export, bypassing ECX, we assume this doesn't affect the result as their participation in the direct export is relatively small as described in Section 2.3.3.

6.3 Modeling price transmission

Major changes occurred in the coffee sector even after the liberalization reform made in 1992: the removal of the export tax and price fixation in 2002, the introduction of trademarking around 2007 and the introduction of ECX from the beginning of 2009. These interventions and policy changes, if effective, must have a bearing on the speed and asymmetry of price transmission between the different market along the value chain.

Perfectly competitive market assume that co-integrating markets will be at equilibrium. Any price shock in one market will be automatically and fully transmitted to the other co-integrated market. A departure from this transmission process indicates inefficiency in the market. This can be manifested in terms of partial, lagging and asymmetric transmissions of the shocks. Measuring the magnitude, speed and asymmetry of the adjustment process can thus indicate the inefficiency of co-integrating markets (Hassouneh *et al.* 2010). Different factors are suggested as reasons for Asymmetric Price Transmission (APT). Meyer and von Cramon-Taubadel (2004) identify market power, adjustment and menu costs and various forms of price interventions as potential sources of asymmetric price transmission.

But the transaction costs and level of market inefficiency can also change due to other factors outside ECX interventions. For instance advances in the information technology could increase the speed of price transmission and the level of asymmetry. Especially the rapid growth of mobile and internet technologies can make information transmissions very easy, fast and less costly. For instance, the mobile telephone penetration rate which was 5.4 in 2009, increased to 33.3 in 2014 (NBE 2014). Price transmissions could thus increase independently of the introduction of ECX's. While such gradual changes, can affect the speed and asymmetry of price transmission, they cannot cause structural breaks. Moreover, in our analysis, we introduce a trend parameter to control for the effect of gradual changes such as technology and infrastructural improvements. Demand or supply shocks can affect the level of integration. But such phenomena will have similar effects along a value chain. Perhaps one important change that can

disproportionately affect the performance of the coffee market is a change in the foreign exchange regime. We, therefore, normalize all prices using the official exchange rates.

Many studies use APT to analyze impacts of institutional/policy changes on the efficiency of markets in transmitting prices. The impacts of Bovine Spongiform Encephalopathy (BSE) outbreak (Hassouneh *et al.* 2010; Saghaian 2007), impacts of the end of coffee export quota system (Lee & Gomez. 2013) and impacts of the liberalization reform (Mofya-Mukuka and Abdulai 2013; Subervie 2011). We followed the methodology used by the last two studies. We measure impact in terms of improving the ability of downstream markets in transmitting changes in prices at upstream markets.

Suppose the long run relationship between two markets along the coffee value chain can be given by:

$$P_t^1 = \alpha + \beta P_t^2 + \varepsilon_t \quad (7.1)$$

where P_t^1 and P_t^2 are (n x 1) vectors of co-integrating prices of two markets along a value chain, α intercept parameter, β parameter coefficients, and ε_t is (n x 1) vector of normally distributed disturbances which should be stationary if any long-run relationship exists between the two price series. Eq. (1) holds if β and α are time invariant. The trend parameter may not capture such structural breaks. Gregory and Hansen (1996) developed three model forms: a model with only a level shift, a model with a level and a trend shift and a model with what they called a 'regime shift' (change in slope with trend shift). We specify a more general model that helps to analyze a structural break with regime shift as:

$$P_t^1 = \alpha' + \alpha'\varphi + \beta' P_t^2 + \beta'\varphi P_t^2 + \gamma t + \mu'_t \quad (7.2)$$

where φ is a dummy indicating the period and γ a trend parameter and

$$\varphi = \begin{cases} 0 & if\ t < t_m \\ 1 & if\ t \geq t_m \end{cases} \quad (7.3)$$

where t_m is the period at which the change occurred. If t_m is known *a priori*, φ will take a value of 0, the rest a value of 1 and the usual Augmented Dicky-Fuller (ADF) and Phillips test will apply. But since other policy changes have also occurred in addition to

ECX and even if we know the timing of the three institutional/policy changes, we cannot know which policy affects which co-integrating prices.

Gregory and Hansen (1996) developed a test procedure that does not require a priori information about the timing of the change. The procedure tests the null hypothesis of no co-integration against the alternative of co-integration in the presence of a single shift at an unknown time t_0 of eq(2).[20] We therefore identify timing of structural breaks for each co-integrating price along the single dominant coffee value chain. We then correspond known periods with the breaks identified by the test. Even if our primary interest is to assess the impact of ECX, we cannot ignore the other two changes: abandonment of minimum price fixation and abolishing of export taxes and trademarking.

Since the country takes a small share of the world market, we take the export market as exogenous. To be sure about this assumption, we test for direction of causality. Following Subervie (2011) we can use the following co-integrating prices:

$$P_{it} = \alpha_k + \beta_j P_{jt} + \gamma_k t + \mu_{kt} \qquad \text{with } i \neq j \qquad (7.4)$$

where P_{it}, is $I(1)$ variables for the *i*th price (producer, retail, auction, export or world prices); and β_i is parameter coefficient for the *j*th price (producer, retail, auction, export or world prices); *k* the number of co-integrating equations and α_k is intercept terms and γ_k trend parameter and μ_{kt} $I(0)$ disturbance terms corresponding to the *k*th equation.

The standard error correction model can be derived from the residuals of the above estimations as

$$\Delta\mu_{kt} = \rho_k \mu_{kt-1} + \varepsilon_{kt} \qquad (7.5)$$

Where ρ_{ik} measures the speed of convergence and ε_{kt} is a white-noise disturbance term for the *k*th co-integrating prices.

The co-integration equation above assumes a linear relationship and symmetric price adjustment. But if the adjustment process is asymmetric, eq. (7.5) needs to be modified as

[20] This procedure first obtains ADF and Phillips test statistic for regressions of all possible values of t_0. It then takes the value of t_0 that produced the smallest value as a plausible breakpoint.

$$\Delta\mu_{kt} = I_{kt}\rho_{1k}\mu_{kt-1} + (1 - I_{kt})\rho_{2k}\mu_{kt-1} + \varepsilon_{kt} \quad (7.6)$$

where I_{kt} is the Heaviside indicator function such that

$$I_{kt} = \begin{cases} 1 & if\ \mu_{kt-1} \geq \tau_k \\ 0 & if\ \mu_{kt-1} < \tau_k \end{cases} \quad (7.7)$$

where τ_k is the value of the threshold. The conditions $\mu_{kt-1} \geq \tau_k$ refers to positive deviations from the threshold and $\mu_{kt-1} \geq \tau_k$ refers to negative deviations from the threshold and *d* indicates the lag length and ϑ_{kl} parameter coefficients for the changes corresponding to the *d*th lag. Traditionally the appropriate lag length is determined based on AIC or BIC. Chan (1993) provides an estimation procedure that yields a 'superconsistent' value of τ_k[21] (Subervie 2011). Many studies set the value of τ to zero. If τ is zero, as in most practical cases (Enders & Siklos 2001), I_t denotes positive discrepancies and negative discrepancies. But there is no reason to set the value of τ_i to zero.

The idea of a threshold error correction model is that due to transaction and adjustment costs, deviations should exceed some level - the threshold – before the markets respond to the shocks (Mofya-Mukuka & Abdulai 2003). This means that if transaction costs are zero or nearly zero, the value of τ_k must approach to zero. It thus somehow measures the change in transaction costs before and after the interventions. We estimate the value of the threshold together with the adjustment parameters. Chan (1993) provides an estimation procedure that yields a 'superconsistent' value of τ_i. This will provide the Threshold Auto-regression (TAR) model provided by eq. (7.6) and eq. (7.7). Enders and Siklos (2001) suggest the need for augmentation of eq. (7.6) with lagged changes in the $\Delta\mu_{kt}$ in order to better represent the dynamics of the adjustment process as:

$$\Delta\mu_{kt} = \rho_{1k}\mu_{kt-1} + (1 - I_{kt})\rho_{2k}\mu_{kt-1} + \sum \vartheta_j \Delta\mu_{kt-d} + \varepsilon_{kt} \quad (7.8)$$

[21] The procedure is that the estimated residual series will be sorted in ascending order and the highest and lowest 15% of the observation will be discarded and the remaining will be taken as possible thresholds. Then series of regressions will be estimated in the form of eq(10) and eq(11) for each value of the remaining 70% of the residuals. That estimated threshold that yields the lowest residual sum of square will be taken as appropriate estimates of the threshold value.

where *d* indicates the lag length and ϑ_j parameter coefficients for the lag changes. Traditionally the appropriate lag length is determined based on AIC or BIC.

Enders and Granger (1998) provide another alternative specification to determine I_{kt} as:

$$M_{kt} = \begin{cases} 1 & if\ \Delta\mu_{kt-1} \geq \tau_k \\ 0 & if\ \Delta\mu_{kt-1} < \tau_k \end{cases} \quad (7.9)$$

Instead of taking the previous period's disturbance term, taking its first difference will yield the Momentum Threshold Autoregression (M-TAR) model. Enders and Siklos (2001) note that the above adjustment is specifically useful in an institutional environment where policy makers attempt to smooth large positive short-run changes without affecting the long-run relationships. Subervie (2011) suggest that the above representation doesn't have a direct meaning for economic interpretation.

Petrucelli and Woolford (1984) showed that the necessary and sufficient condition for the stationarity to μ_{kt} in eq. (4) is $\rho_{1k} < 1$, $\rho_{2k} < 1$ and $(\rho_{1k} + 1)(\rho_{2k} + 1) < 1$ for any value of τ_k. If two prices were found to be co-integrated, the standard F-distribution for the test of equality of adjustment parameters (i.e. $\rho_{1k} = \rho_{2k,}$) can be valid (Enders & Siklos 2001). If the F-test accepts the null hypothesis, then the standard error correction representation of eq. (3) will be correct and the Engel-Granger test valid. While the test of $\rho_{1k} = 0$ and $\rho_{2k} = 0$ is done using the conventional statistics, the necessary condition for the test of convergence ($\rho_{1k} < 1$ and $\rho_{2k} < 1$) can be done using the *t-max* procedure suggested by Enders & Siklos (2001) and used in several applications (Asane-Otoo and Schneider 2015; Subervie 2011; Abdulai 2000). The necessary condition is that *t-max* (the smallest of individual *t* statistics associated with ρ_{1k} and ρ_{2k}) should be significant. Enders & Siklos (2001) note that the F statistic is used only when the point estimates of ρ_{1k} and ρ_{2k} imply convergence.

The consistency of eq. (7.6) and eq. (7.7), with a wide variety of error correction models allows an error correction representation for the system (Enders & Siklos 2001) as

$$\Delta P_{it} = \gamma^{+} I_{kt}\mu_{kt-1} + \gamma^{-}(1 - I_{kt})\mu_{kt-1} + \sum_{d=1} \delta_i \Delta P_{it-d} + \sum_{d=0} \delta_j \Delta P_{jt-d} \quad i \neq j \quad (7.10)$$

where δ_i and δ_j are the long term relationships between co-integrating *i* and *j* prices and γ^+ and γ^- are adjustment parameters for positive and negative deviations of the *k*th co-integrating equation, respectively.

6.4 Results and discussion

6.4.1 Price trend

The five price series show a co-movement, although the pattern of co-movement differs from period to period (Figure 6.1). The gap between price series which seems large at the beginning declines until 2001 and rises later around 2009/10. While all other prices represent prices of coffee beans, the pink line represents the producer price of coffee cherries. It lies far below the other prices and is relatively stable. While we see a narrowing of the gap between the other prices, the gap between other prices and producer price remains relatively wide. Especially there was no proportional growth in producer price during the time when the price of coffee reached its peak in all other markets.

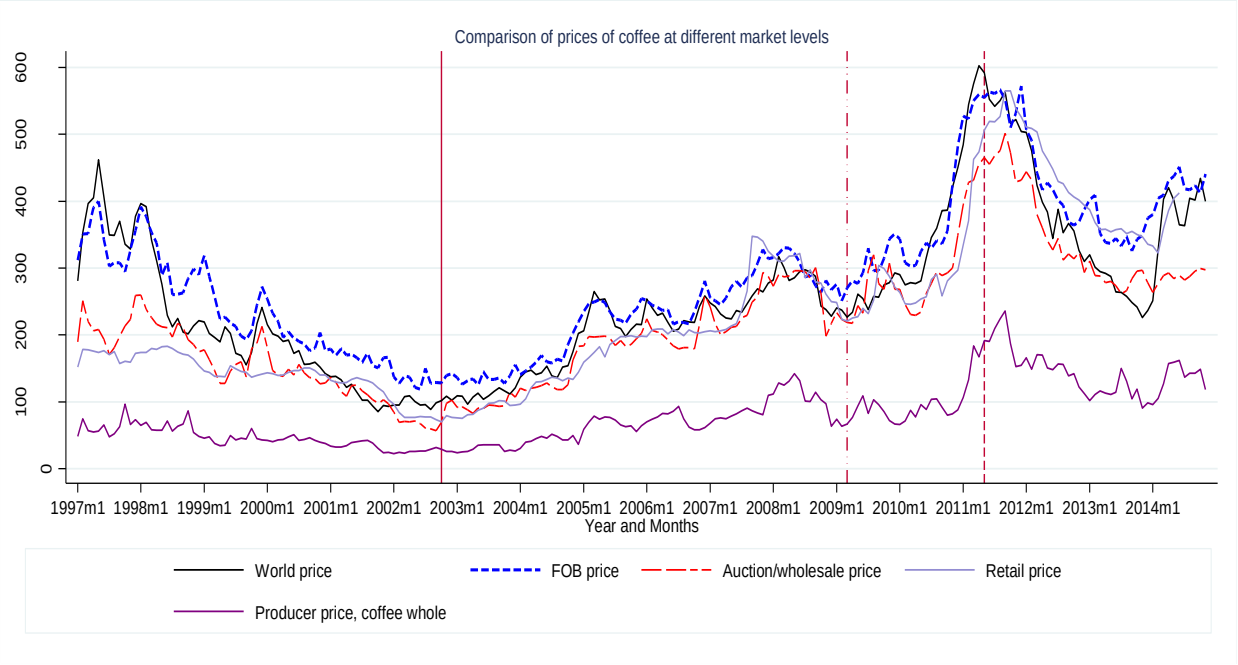

Figure 6.1 Price trend with breaks identified by Gregory-Hansen (1996) test

While there have been some improvements in the share of producer price in the export price since 2008, the share of producer prices remains well below 40%. In the relationship, the retail prices appear to fall above auction price in some periods and fall below auction prices in others. The reason may be that retailers buy coffee both from local markets and at the auction market. The reasons that the retail price falls below the auction price is that: first, the retail price refer to lower grade coffee which does not qualify export standards; second, the auction market involves additional costs than local retail markets. The retail prices are average of the very large number of local markets distributed all over the country.

Despite the usual expectation that the world price will be higher than the FOB prices, it sometimes falls below it. The reason for this is that we used Brazilian natural average prices to represent the world price. But most Ethiopian coffees receive premium prices that are higher than the average prices of Brazilian natural in the world markets. Yet the FOB price of Ethiopian coffee shows a strikingly similar pattern with the average world price. Close examination of the relationship between FOB and world price shows that world price lags about 3 months behind the export price. This is because the price data obtained from Ethiopian Custom and Revenue Authority reflects the price during the export time. However, exporters ship the coffee they already 'sold' sometime before (i.e. the agreement is made before the time of shipping). Examination of the graphs by pushing the FOB price three months forward or by lagging the world price by three months gives a good overlap between the two prices. We, therefore, shift use by forwarding the FOB price by three months.

6.4.2 Tests and identification of breakpoints

The first step in time series analysis is to test for stationarity. A test for unit root was conducted following the step-wise procedures suggested by Enders (2004). All of the five price series were found to be insignificant when the ADF test for unit root was done on levels and all were found to be significant at 1% level when the test was made on first differences of the price series (see Appendix A Table 6A). The results indicate that all the five series are nonstationary on levels and stationary on their differences. The

evidence of stationarity for producer price might be because it was relatively stable. The same test made separately for sets of prices before ECX and after ECX also shows similar results.

The Granger causality test shows that we find strong causality from world price to FOB prices, but we also find a weak causal relationship from FOB to world prices. This may be due to the unique quality of Ethiopian coffee. This causal relationship has also slightly increased after 2009. This may be due to the trademarking measure taken around 2007. We also find Granger causality from FOB to auction price but not the other way round, which is consistent with our priori expectations. Similarly, we find auction price to influence producer price but not the other way round, which is also consistent with our expectation. Perhaps a little deviation from our priori expectation was on the relationship between retail prices and auction prices where we found two ways causal relationships (see Table 6B of Appendix A).

The first step in analyzing structural break is to identify the period at which major structural changes occur in the series. Even if our main goal is to assess the impacts of ECX and the time of its introduction is known, we want to identify a breakpoint for each pair of markets along the coffee value chain. We identified the breakpoints using the test procedure described above developed by Gregory and Hansen (1996).

Table 6.1 Results of Gregory-Hansen test

Pair of prices	AIC/ BIC	Break Date	ADF	Break Date
FOB – World price	-98.85***	2002m10	-7.64***	2002m10
Auction – FOB	-85.95***	2007m12	-5.95**	2007m12
Producer – Auction	-127.10***	2011m3	-9.49***	2011m3

We find three breakpoints (Table 6.1). We find November 2002 as a breakpoint FOB-world prices. This breakpoint can be associated with the abandonment of minimum price fixation and removal of the export tax. The other structural break for auction-FOB prices was found to be December 2007 which was one year before the beginning of ECX. This break can be associated with the Coffee Trademarking and Licensing Initiative to obtain

Geographic Indication (GI)-protection for the three coffee origins: Sidama, Yirgacheffe and Harar. The country obtained GI-protection around 2007 (see Arslan and Reicher 2011). Finally, the break for the relationship between producer and auction prices was found to be March 2011 more than two years after the introduction of ECX. This last breakpoint also becomes a breakpoint for all co-integration of all the four prices. Given the considerable changes made by ECX to change the way coffee is exchanged at the central markets and given that other alternative arrangements are entirely blocked, we did not expect its effect to lag this long. In order to compare the results, we also use the actual intervention period of December 2008 as the main breakpoint to analyze the impacts of ECX. We use this to assess the impacts of ECX on the entire supply chain.

In all cases, there is a time lag between the period of the actual change and the timing of break identified by the test. In developing countries where informal institutions govern every walk of life of people, formal institutional interventions may take some time before they bring meaningful impact. Even if ECX began its operation on coffee in December 2008, the full realization of its activities such as warehousing, price dissemination, and other activities was not fully implemented across all coffee producing areas. In the absence of evidence for any other major policy change after the introduction of ECX, breakpoints identified after 2008 could be associated with the introduction of ECX.

6.4.3 Analysis of price transmission

We first estimate the price transmission for each pair of prices using the above breakpoints. But before that, we estimate the speed of convergence parameter ρ_{1k} and ρ_{2k} for the whole period using Eq. (4) and Eq. (5). We first search a consistent estimate for the threshold (τ_k) using the procedure developed by Chan (1993) and applied by others (e.g. Enders and Silkos 2001; Subervie 2011). Following this procedure, we trim out 30% of the observations and run series of regressions for the remaining 70% of the μ_{kt}. Then the regression with the lowest residual sum of squares will be taken as the appropriate TAR and the corresponding value as a threshold value. Accordingly, we found threshold values in US cents of 24.5, 25.7, 8.1 and 20.7 for the price relationships

of FOB-world, auction-FOB, producer-auction and producer-FOB prices, respectively (Table 6.2).

For instance the value of τ and the point estimate ρ_1 and ρ_2 in the FOB-world price regression show that 87% (ρ_{11} = -0.87) of the discrepancies in FOB price that are greater or equal to 24.5 US cents ($\mu_{kt-1} \geq \tau_1$ i.e. $\mu_{1t-1} \geq 24.5$) above the equilibrium and 57% (ρ_{21}= -0.57) of discrepancies in FOB price that are less than 24.5 US cents ($\mu_{1t-1} < \tau_1$ i.e. $\mu_{1t-1} < 24.5$) above the equilibrium decay within one month. This implies that the positive discrepancies from the estimated threshold decay faster than the negative ones. This is in favor of foreign importers. The same interpretation applies to the rest of co-integrating prices. The point estimate adjustment parameters for auction-FOB prices (ρ_{12}= -0.73 & ρ_{22}= -0.47) show that positive discrepancies from the threshold of τ_2 = 25.7 US cents decay faster than negative discrepancies. This is in favor of exporters. Similarly, the corresponding figures for producer-auction prices are ρ_{13}= -0.87 & ρ_{23}= -0.57, indicating that positive discrepancies decay faster than negative ones. This is against producers in that negative discrepancies persist more than positive discrepancies.

In order to test whether the transmission is not different from a symmetric adjustment, we test the null hypothesis that $\rho_{1k} = \rho_{2k}$. The sample F-statistics shows that the null hypothesis is strongly rejected, evidencing the presence of asymmetric adjustment. The results show that the negative discrepancies do not decay as fast as positive discrepancies at all market pairs.

Table 6.2 Results of TAR model for the whole period

$\Delta\mu_{it} = I_{kt}\rho_{1k}\mu_{kt-1} + (1 - I_{kt})\rho_{2k}\mu_{kt-1} + \varepsilon_t$				
	FOB-World price	Auction-FOB price	Producer-Auction prices	Prod-FOB prices
k	*1*	*2*	*3*	*5*
ρ_{1k}	-0.87***	-0.73**	-0.87***	-0.95***
	(-12.12)	(-9.61)	(-9.99)	(-9.91)
ρ_{2k}	-0.57***	-0.47***	-0.57***	-0.45***
	(-9.72)	(-7.32)	(-9.73)	(-7.26)
τ_k	24.5	25.7	8.1	20.7

$\rho_{1k} = \rho_{2k}$	11.0***	7.2***	13.0***	19.5***
F-stat	120.7***	73.0***	97.3***	12.4***
N	149	149	148	149

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

The above evidence suggests that at each stage of the chain, buyers are favored more than sellers: the export market favor importers; the auction markets favor exporters and the local markets favor traders. The ultimate negative effect of all these asymmetric adjustments will be on the producers. The last regression (Producer-FOB prices) shows that 95% of positive discrepancies and 45% of negative discrepancies decay within one month. In all these pairs of markets, the point estimates $\rho_{1k}$and ρ_{2k} suggest convergence.

The next step is to see if situations have changed due to institutional and policy changes. We estimate the threshold co-integration model using the breaks presented in Table 6.1. Looking at the point estimate in the relationship between FOB-World prices (Table 6.3), there was no APT before the break. But there is weak evidence of APT after the break. The point estimates show that after the break, 104% of the positive discrepancies from the long-run relationship decay within one month (ρ_{11}= -1.04). But the corresponding figure for negative discrepancies was only 60% (ρ_{21}= -0.60). This may be due to the fact that the removal of export tax and the abolition of the minimum tax may play little role compared to the various distortions existing in the world markets. Note also that the magnitude of the asymmetry, in fact, does not reflect the true relationship as the world price refers to the average price of Brazilian natural coffee, not specifically of Ethiopian coffee.

Perhaps more relevant for our analysis is the co-integration between auction and export markets. We associate this break with the trademarking that took place around 2007. The result provides no evidence of APT both before and after the trademarking initiative. The point estimates also show no substantial improvement in the speed of adjustment. The export market is dominated by few exporters most of which work as agents of foreign companies. Unless exporters partly or fully appropriate the potential increase in

prices of trademark/GI-protected coffee, they may lack the commitment to maintain the quality reputation related with geographic origin. In effect, the increase in price may not be transmitted to the rest of downstream markets.

Table 6.3 Results of the TAR model before and after the breaks

$\Delta\mu_{kt} = I_{kt}\rho_{1k}\mu_{kt-1} + (1 - I_{kt})\rho_{2k}\mu_{kt-1} + \varepsilon_{kt}$						
	FOB-World (*k=1)*		Auction-FOB (*k=2)*		Producer-Auction (*k=3)*	
	Oct. 2002		Dec. 2007		Mar. 2011	
k	Before	After	Before	After	Before	After
ρ_{1k}	-0.62***	-1.04***	-0.33***	-0.71***	-0.97***	-0.86***
	(-4.89)	(-10.98)	(-3.52)	(-6.00)	(-13.11)	(-4.14)
ρ_{2k}	-0.89***	-0.60***	-0.52***	-0.48***	-0.60***	-0.60***
	(-4.64)	(-7.98)	(-5.54)	(-3.21)	(-9.22)	(-4.32)
τ_k	-24.9	13.8	-10.9	-19.0	9.5	25.9
$\rho_{1k} = \rho_{2k}$	1.61	3.14*	2.08	1.42	14.71***	1.07
F-stat	22.7***	92.2***	21.6***	23.1***	128.5***	17.9***
N	47	101	91	58	117	30

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

The other break observed between auction and producer prices and producer and FOB prices was March 2011. Since we couldn't find any other institutional/policy changes that can be associated with this break, we attribute it to ECX. The point estimates for the periods before this break shows substantial asymmetry in the speed of decay between positive and negative discrepancies. While 97% of positive discrepancies decay within one month, only 60% of the negative discrepancies decay within the same period of time. The situation has changed little after the break. After the break, the point estimates show that respectively 86% and 60% of the positive and negative discrepancies decay within one month. The above analyses were made using different breakpoints for each pair of co-integrating prices along the coffee market chain. They are thus not comparable across the coffee market chain.

The interest of this paper being the analysis of impacts of ECX on the coffee market chain, we want to do a similar analysis using the actual timing of ECX intervention, December 2008. Table 6.4 shows the results of threshold TAR model.

Table 6.4 Results of TAR model before and after ECX (Dec. 2008)

$\Delta\mu_{it} = I_{it}\rho_{1i}\mu_{it-1} + (1 - I_{it})\rho_{2i}\mu_{it-1} + \varepsilon_t$						
	FOB-World (*i=1)*		Auction-FOB (*i=2)*		Prod.-Auction (*i=3)*	
	Before	After	Before	After	Before	After
ρ_{1i}	-0.51***	-0.92***	-0.76***	-0.78***	-1.00***	-0.49***
	(-7.12)	(-9.29)	(-6.35)	(-6.94)	(-10.36)	(-4.36)
ρ_{2i}	-0.69***	-0.69***	-0.39***	-0.21	-0.61***	-0.75***
	(-6.97)	(-5.41)	(-5.85)	(-0.75)	(-8.23)	(-4.45)
τ_i	-21.3	13.9	23.5	-37.0	9.5	-15.7
$\rho_{1i} = \rho_{2i}$	2.04	2.13	11.0***	3.6*	10.1***	1.5
F-stat	49.6***	57.8***	37.2***	24.4***	87.6***	19.4***
N	99	49	99	49	98	49

Significance levels *** p<0.01, ** p<0.05, * p<0.10; t-value in parenthesis

The point estimate of positive discrepancies which was 51% before ECX in the TAR model for FOB and world prices increased to 92% after ECX. But the corresponding values for negative discrepancies remain same at 69%. Yet, the test result of the TAR model shows no evidence of asymmetry nor before or after the introduction of ECX. The observed slight improvements in the point estimates of positive discrepancies are however against the country's export earnings. While the institutional interventions by ECX are largely to improve the domestic markets, the auction is based on real-time price information at the New York commodity market. Contrary to our expectation we found no evidence of the improvement in the performances of the export market in transmitting world prices to FOB prices. It seems that the interventions by ECX may not be so strong to affect the relationships between world and export markets.

If ECX has improved the performance of the markets, its impacts must be directly reflected in the co-integration between the remaining pairs of domestic markets: auction prices and FOB prices and producer prices and auction. The result of the threshold analysis between FOB and auction price shows that there were no considerable improvements both in the speed and asymmetry of adjustments.

Before ECX, even if there was strong evidence of APT, there was convergence (*t-max* is significant). The point estimates of $\rho_{12} = -0.76$ and $\rho_{22} = -0.39$ suggest convergence and the test for the null hypothesis that $\rho_{12} = \rho_{22}$ is strongly rejected suggesting the presence of APT. Positive discrepancies decay faster than negative discrepancies suggesting that the adjustment process favors exporters. No evidence of improvement was found after ECX. Instead, while the point estimate indicates a similar rapid adjustment for positive discrepancies, no evidence of adjustment was found for negative discrepancies. The point estimates $\rho_{12} = -0.78$ indicates that 78% of the positive discrepancies decay within one month and the point estimates of ρ_{22} for negative discrepancies was found to be not different from zero. The results suggest that while the auction market eliminates positive discrepancies, it fails to do so with negative discrepancies. The *t-max* value of -0.75 is below the critical value suggesting no evidence of convergence. The problem may be that the export market is not competitive and monopolized by few exporters.

Finally, the result for the relationship between producer and auction prices show some improvements after ECX. Before ECX, the point estimates of $\rho_{12} = -1.00$ and $\rho_{22} = -0.61$ indicates that positive discrepancies fully decay within one month, only about 61% of negative discrepancies decay within one month. The situation improves after ECX. The point estimates of $\rho_{12} = -0.49$ and $\rho_{22} = -0.75$ indicate that positive discrepancies are more persistent than negative discrepancies which are in favor of producers.

The above analysis shows how discrepancies from the equilibrium decay. It may not clearly show price responses. Table 6.5 show the results of the threshold error correction model estimations.

We found that dropping other lags doesn't reduce the explanatory power of the model. We thus use only first difference and one lag of the first difference to capture the dynamic adjustment. The value of γ_i^+ and γ_i^- capture positive and negative short-run adjustments and δ_j captures the long-run relationship. In all the above regressions except the co-integration between producer and auction prices, we found significant long-run relationships between the pair of markets.

Table 6.5 Results of error correction model before and after ECX (Dec. 2008)

$\Delta P_{it} = \gamma_k^+ I_{kt}\mu_{kt-1} + \gamma_k^-(1-I_{kt})\mu_{kt-1} + \sum_{l=1}^{l}\delta_{ik}\Delta P_{ikt-d} + \sum_{l=0}^{l}\gamma_{jk}\Delta P_{jkt-d}$ & $\tau_i = 0$						
	FOB-World (*1*)		Auction-FOB (*2*)		Producer-Auction (*3*)	
k	*1*		*2*		*3*	
	Before	After	Before	After	Before	After
γ_k^+	-0.48***	-0.87***	-0.66***	-0.59***	-0.95***	-0.47***
	(-6.73)	(-8.14)	(-6.11)	(-4.80)	(-9.45)	(-4.18)
γ_k^-	-0.62***	-0.71***	-0.27***	-0.37	-0.55***	-0.59***
	(-6.13)	(-5.62)	(-4.20)	(-1.41)	(-6.82)	(-3.32)
δ_{1k}	0.01	0.12	0.17*	0.08	-0.08	-0.04
	-0.14	-1.34	-1.94	-0.81	(-1.36)	(-0.33)
γ_{0k}	0.66***	0.54***	0.34***	0.31**	0.25***	0.14
	-9.72	-6.15	-4.58	-2.66	-6.52	-1.17
γ_{1k}	0.12*	-0.06	0.14*	0.09	0.02	0.06
	-1.68	(-0.78)	-1.71	-0.77	-0.43	-0.53
$\gamma_k^+ = \gamma_k^-$	1.34	0.99	9.85	0.66*	10.47***	0.01
F-stat	35.62***	23.58***	17.31***	10.35***	31.95***	5.96***
N	99	49	98	49	97	49

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

First, the FOB price was found to adjust at greater speed after ECX for both negative and positive discrepancies from long-run relationships and no evidence of asymmetry was found. Before ECX the auction price was found to adjust faster to positive discrepancies than to negative discrepancies. The situation became even worse after ECX. After ECX, the auction market adjusts prices to eliminate about 59% of the positive discrepancies from long-run relationships but fails to adjust prices to eliminate negative discrepancies. This suggests that negative deviations from long run equilibrium persist indefinitely. This is obviously against local traders. No evidence of convergence was found between auction and FOB prices after ECX.

Finally, before ECX the local market was found to adjust producer prices to eliminate positive discrepancies almost fully but to only eliminate almost half of the negative discrepancies. After ECX, the local market was found to adjust producer prices to eliminate positive discrepancies no differently from negative discrepancies. While there was no evidence of asymmetric adjustment, the speed of adjustment was slower than it was before. In almost all cases, the point estimates suggest that downstream markets

adjust prices in a way that eliminates positive discrepancies more rapidly than negative discrepancies. The results were robust when the analysis is made with balanced data.

Diverse problems could be responsible for these poor impacts. The first is there are almost no interventions made to transform local markets. In addition, coffee especially for those farmers who sell red cherries (20-30% of farmers), cannot be stored. A ripe coffee has to be harvested and should be sold within 2-3 days even if the price in the market is low. In addition, transactions are personalized and segmented through social networks (Gelaw *et al.* 2016). Traders in the local markets are few. The social environment is also conducive for collusion. Traders can, therefore, enjoy monopsony power. Oligopsonic traders thus may not have the incentive to increase prices when the price of the central market increases but have the incentive to reduce price when prices at the central market decline. Price declines are likely to persist more than price increases, leading to positive. Unlike asymmetric price transmission caused by other factors that generate asymmetry with respect to the speed of transmission but not with respect to the magnitude (Meyer and von Cramon-Taubadel 2004), monopoly/monopsony power can cause asymmetry in both speed and magnitude. In addition, the export market is dominated by few exporters and distorted by various trade policies. Increase in FOB prices may not fully and rapidly transmit to auction markets.

In general, local markets remain favorable to traders, auction markets favorable to exporters and export markets favorable to importers even after ECX. For interventions such as commoditization, trademarking and fair-trade policies to benefit smallholder farmers markets at the upstream of the chain must be efficient enough in transmitting prices. We conclude that interventions at the higher level markets such as the introduction of commodity exchange system, export promotion, trademarking or fair-trade cannot reach farmers if the value chain is not efficient enough in transmitting price changes all the way down to farmers rapidly, fully and symmetrically. Otherwise, price improvements from these interventions dissipate in between.

6.5 Conclusion

The high transaction costs and risks that arise due to information and enforcement problems are considered to be responsible for the poor performances of agricultural markets in Ethiopia. These problems, if real, provide strong justifications for institutional interventions through the introduction of a commodity exchange system. The introduction of ECX was an attempt to reduce transaction costs and risks which were constraining the central market. Its primary goal was to create a market that works for millions of smallholder farmers.

We evaluate the impacts of ECX and other interventions on price transmission along the world-export-auction-local coffee market chain. We first compare price transmissions between each pair of markets using each of the three institutional interventions as breakpoints. In most of the cases, we found an increase in the speed of adjustments for positive discrepancies but not for negative ones between pairs of markets. These results suggest improvements in favor of buyers at the upstream markets. Specifically, we found no improvements in the speed of adjustment between local and auction market.

We finally compare the price transmission from upstream to downstream markets using the actual ECX intervention period of December 2008. The results indicate that the speed and symmetry of price transmissions have not changed considerably after ECX. Specifically, downstream markets adjust prices to eliminate positive discrepancies more rapidly than negative discrepancies. The primary aim of the sweeping reform made by ECX was to benefit smallholder coffee producers which are, according to FAO (2014), more than four million. There is a wide perception that ECX revolutionized agricultural markets (Mbeng-Mezui *et al.* 2013; UNCTAD 2009 and the media) and Gabre-Madhin (2012) claims ECX to be a market that works for the farmers. Contrary to these popular views and claims, we found little improvements in the speed and symmetry of price transmissions along the coffee chain. Hernandez *et al.* (2015) also found a limited impact on price integration between the different markets.

ECX envisaged that providing price information will increase the bargaining power of farmers. But in a situation where local markets are less competitive, knowing at what

price coffee is being sold at the central market gives the selling farmers no more than a hint about the potential gains of their buyer. After all, the price information is about processed and graded coffee *beans*, what farmers sell is unprocessed and unstandardized coffee *cherries*. We conclude that as long as the local markets remain traditional and personalized and the export market little competitive, farmers will continue to receive a small share of the final price for their produce. All the evidence imply that improving the market to benefit farmers requires more than just institutional intervention through commodity exchange. Further liberalization reforms and infrastructural investments can better transform local and export markets. Particularly the various restraints that limit competition need to be removed. Traders should be allowed to trade across regions. In addition, other institutional support should be made to improve the local markets.

Chapter 7 Perception of traders and exporters about ECX

Abstract

The old auction system was fraught with information and contract enforcement problems. The central purpose of the intervention of ECX was to reduce these transaction problems by structuring the behavioral patterns of the primary transacting parties (exporters and importers) and by providing supportive services. Gabre-Madhin (2012) claims that ECX was effective in meeting these objectives. To check this claim a survey was thus made to examine the perception of traders and exporters about the impacts of the intervention. The results show that there was a considerable improvement regarding securing payments and delivery, two issues which were big problems of the previous auction system. However, the institutional efficiency of ECX in improving competition and providing efficient services was reported to be limited. Finally, most traders perceive the transaction fees charged by ECX as excessive.

7.1 Introduction

As described in Section 2.3.3 of Chapter 2, ECX has made a number of interventions that transforms the central auction market into a modern type of commodity market. A lot of interventions have been made that dramatically changed the playing field and the rules of the game. But how do the players view the playing field and the rules of the game? Our interest here is to know the perception of traders and exporters about the changes in reference with the old auction system. We evaluate the impacts of the interventions at the backdrop of the broader institutional environment in the country.

The primary purpose of the intervention was to reduce the transaction costs and risks that were constraining the central markets. The assumption was that these transaction costs are not only transferred to the farmers but also that the high transaction cost reduces the efficiency of the central markets. So by reducing the transaction costs at the central markets the performance of the central markets could be improved and that this would be transferred to the farmers. In the previous chapter, we found little evidence that supports the improvement in the efficiency of markets. We found there that the change

in the performance of the markets in transmitting price changes from the upstream markets to the downstream markets was not only limited but also not symmetric. Here we are interested to further examine the perception of the transacting parties about the impacts of the intervention on different transaction-related attributes: transaction costs and risks, effectiveness and efficiency of the auction operations and the level of competition and impersonalization of the transactions. We thus describe perceptions of traders and exporters concerning these aspects and examine the validity of their evaluation in terms of the reality on the ground.

7.2 Data type and sources and method of Analysis

The study uses data collected from 43 traders described in Section 6.2 and 10 exporters found in Dire Dawa city. Even if the numbers of exporters operating when the survey was made in December 2013 were 15, for various reasons we were able to interview only 10 of them. The data was collected using structured questionnaires. But in addition to this, informal discussions with exporters and experts of the Dire Dawa Coffee Quality Inspection and Assurance Center, ECX experts, ECEA, traders, Woreda coffee marketing experts of Agricultural Development Offices were also made.

7.3 Results and discussions

The following sections describe the results of the survey data. Due to the small size of the sample, we only use simple descriptive statistics. Two transacting parties usually will have competing interests on a given institutional arrangement. We, therefore, compare and construct the perception of traders and exporters in order to get a better understanding of the issues.

7.3.1 Impacts of ECX on transaction costs and risks

Payment and delivery failures were the main problems of the old auction system. While delivery failure is a transaction risk for exporters, payment failure is a risk for traders as described in Sub-Section 2.3.2.2. The introduction of an electronic payment system, in collaboration with partners banks, has made this activity easier and certain. The other

side of the transaction activity is transaction risks associated with delivery. However 74.4% of traders reported improvement in delivery failure (Table 7.1), their result may not count as this action concerns them less. What counts more here is the perception of exports as it is them facing the problem. Regarding the delivery, only 40% of the exporters reported improvements in the delivery system. Exporters raise a lot of issues associated with ECX delivery system. Exporters once they paid the money, they collect the product from the warehouse located at different places in the country. They reported that there are a lot of delays, failure to deliver the specified quality and quantity, and a lot of inconveniences in the place of delivery. They reported that after they incurred a lot of transportation costs, they are rerouted to collect the coffee from another warehouse. Given these problems, the impact of ECX in eliminating payment risks cannot be exaggerated as the risk is simply a transfer of part of the transaction risks from traders to exporters.

Table 7.1 Perception of traders and exporters about transaction costs and risks

	Traders						Exporters					
	Improved		Worsen		No change		Improved		Worsen		No change	
	N	%	N	%	N	%	N	%	N	%	N	%
Delivery failure	32	74.4	9	20.9	2	4.7	4	40.0	6	60.0		0.0
Payment failure	35	81.4	8	18.6		0.0	7	70.0	1	10.0	2	20.0
Adulteration and fraud	23	53.5	19	44.2	1	2.3	6	60.0	3	30.0	1	10.0
Taxes and service fees	24	55.8	18	41.9	1	2.3	5	50.0	3	30.0	2	20.0

Source: own computation

Concerning transaction risks associated with adulteration and fraud again this is a transaction risk faced by exporters. Of the total ten exporters, 60% reported improvements in adulterations and other fraudulent activities. Exporters said that they sometimes receive below the grade level they agreed during the transactions. The problem seems to be associated with the grading and standardization system of ECX. During our visit of exporters have even shown us a pile of stones and other foreign materials sorted out from the coffee they purchased. Despite the efforts to improve the problem, the improvement was not considerable. Traders have even seemed to have admitted this problem in that only 53.4% of the traders reported improvements. It may be

an attempt of the traders to transfer the transaction risks they face in the local markets onto the exporters. Even if ECX established a legal system to resolve disputes associated with delivery and other contract problems, exporters reported that the dispute settlement and arbitration system is costly and less efficient. Finally, the majority of both traders and exporters agree that the transactions costs associated with taxes and transaction service fees have not decreased much. Both exporters and traders reported that the various fees are excessive and the restrictions (especially the limit on storage periods) are restrictive.

7.3.2 Impacts of ECX on efficiency of key transaction activities

Both traders and exporters reported an improvement in the efficiency of key transaction activities carried out by ECX. We asked both traders and exporters about the efficiency of the various operations made by ECX to facilitate the transactions. Except for the inefficiency of the delivery system reported by most exporters, the majority of both traders and exporters (greater than 70%) reported improvements in the efficiency of facilitating the transactions (Table 7.2).

Table 7.2 Efficiency of key transaction activities

	Traders						Exporters					
	Improved		Worsen		No change		Improved		Worsen		No change	
	N	%	N	%	N	%	N	%	N	%	N	%
Clearing	40	93.0	2	4.7	1	2.3	6	66.7	1	11.1	2	22.2
Handling	41	95.3	1	2.3	1	2.3	8	80.0		0.0	2	20.0
Auction system	35	81.4	7	16.3	1	2.3	7	70.0	2	20.0	1	10.0
Payment	34	79.1	9	20.9		0.0	9	90.0		0.0	1	10.0
Delivery	32	74.4	11	25.6		0.0	3	30.0	7	70.0		0.0
Grading	28	65.1	15	34.9		0.0	7	70.0	2	20.0	1	10.0

7.3.3 Impacts of ECX on competition

The other issue is the degree of competition and the presence of collusion in the market. While 50% of the exporters do not agree about the increase in competition in the local market, the vast majority (90.7%) of traders reported that the level of competition has increased in the local markets (Table 7.3). Given there is little intervention made by ECX

to improve the local market, observation of most exporters seems reasonable. With regard to the degree of competition at the auction floor, the majority of both traders and exporters believe competition at the auction market has increased with ECX. A similar observation was reflected both by the majority of traders and exporters about the impersonalized nature of the transaction. There is here a clear evidence that the degree of impersonalization and the level of competition has increased with ECX than without ECX.

Surprisingly, almost half of traders and exporters believe that collusion increased with ECX than without ECX. This result was unexpected and contradicts the result reported about the level of competition. Both collusion and competition may exist if the traders are segmented into different groups. In such condition, there could be collusion among group members on each side of traders and exporters, but there could be completion between these various groups. In an environment where individuals are socially connected and less independent, it is always difficult to avoid collusion of various sorts. Despite the interventions made to make the transactions impersonalized, collusion apparently remains a problem. However ECX introduced various IT-based technologies that make the transactions impersonalized, the technology may not break the sophisticated human relationship if the social environment is knit with dense social networks. The social environment plays an important role here.

Table 7.3 Extent of collusion of seller and buyers

Actors relationships	Traders						Exporters					
	Increased		Decreased		No change		Increased		Decreased		No change	
	N	%	N	%	N	%	N	%	N	%	N	%
Competition (local market)	39	90.7	3	7.0	1	2.3	4	40.0	1	10.0	5	50.0
Competition (auction market)	38	88.4	2	4.7	3	7.0	6	60.0	1	10.0	3	30.0
Impersonalized transaction	41	95.3	2	4.7	0	0.0	6	60.0	2	20.0	2	20.0
Collusion among buyers	22	51.2	15	34.9	6	14.0	6	60.0	4	40.0	0	0.0
Collusion among sellers	24	55.8	13	30.2	6	14.0	6	60.0	4	40.0	0	0.0
Extent of Illegal trading	22	51.2	19	44.2	2	4.7	3	30.0	5	50.0	2	20.0

Finally, we asked both parties two interesting questions. Who benefits due to ECX interventions? Exporters, traders, farmers or agents? In order to check the consistency, we also asked them the counterfactual of the above question: who would have benefited if there was no ECX intervention i.e. if the old auction system had continued to this day? The result was surprising but consistent – each party construes the other party as benefited more both with the intervention and without the intervention.

Table 7.4 Distribution of gainers and losers with ECX interventions

Market actors	With ECX				Without ECX			
	Traders		Exporters		Traders		Exporters	
	N	%	N	%	N	%	N	%
Producer/farmers	27	62.8	7	63.6	6	14.0		
Middlemen	1	2.3	1	9.1	5	11.6	1	9.1
Suppliers	3	7.0	2	18.2	12	27.9	6	54.5
Exporters	12	27.9	1	9.1	20	46.5	4	36.4

As presented in Table 7.4, in both scenarios, the exporters take suppliers as benefited more with ECX intervention and even without ECX. But they both agree on one thing; the farmers benefited more due to ECX interventions. The intervention clearly changed the rule of the game of the central market. If it affects, it should affect the situation at the central market than it does the local markets. On the contrary, no deliberate intervention was made to alter the rules of the game between local traders and farmers except for delivery of information about auction prices. As discussed in Chapter 5, the role of this price information is minimal. Perhaps the rise in the level of export, the number of exporters and the level of competition coupled with the rise in domestic prices might have enabled farmers to benefit more now than they were before

7.4 Conclusions

Generally, the perception of both traders and exporters on the impacts of ECX was positive. We conclude that ECX intervention has eliminated the transaction risks associated with payment failure. But given the different delivery problems exporters are facing, the impact of ECX in eliminating payment risks cannot be exaggerated as the effect was simply a transfer of part of the transaction risks from traders to exporters.

Even if there are undeniable improvements in the transaction risks associated with delivery and payment failures, ECX should still improve the efficiency of its delivery system. Concerning the impacts of ECX in reducing the level of collusions and increasing the level of competitions, we found that both collusion and competition existed even with ECX. This is surprising given the transaction at the auction market is impersonalized. We suspect that there are factions in both traders and exporters side. However ECX introduced various IT-based technologies that make the transactions impersonalized, the technology may not break the sophisticated human relationship if the social environment knit with dense of social networks. Finally, while both perceive farmers as gainers ECX, each views the other as gainers both with and without the interventions. In all cases, there seems to be lack of objective judgment of the impacts of ECX.

Chapter 8 Impacts of trademarking on export and producer prices

Abstract

Like some developing countries, Ethiopia, with the help of a public campaign by Oxfam, managed to obtain trademark protection in many Western countries for three of its fine coffees: Yirgachefe, Harar and Sidama coffees. The main goal of the trademarking initiative was to help smallholder producers to capture price premia for their fine coffee. We analyze the impacts of trademark protection on the relative Free on Board (FOB) and producer prices of trademarked coffee in comparison with non-trademarked Ethiopian coffee. We found that the trademarking has positive impacts in improving the level and trend of FOB prices. However, producing farmers capture only small portion of this price premia. Besides, we also found that the trademark protection is not compatible with the non-traceable transactions system of Ethiopian commodity exchange.

8.1 Introduction

The increasing demand for food offered by the globalized trade incentivized firms to use not only yield-increasing intensive technologies but also made the use of processing and preservation technologies necessary in the agri-food sector. Potential adverse impacts of the modern production and processing systems on health and the environment have increasingly become a public concern. As a result quality of food products has become an important variable in determining the direction of trade and export performances of countries. Moreover Curzi & Pacca (2015). The unobservable nature of most quality attributes has led society to generalized indicators of quality, especially in the food sector. One of such indicators has become geographic origin. In response to this shift in taste and preference, firms in the agri-food sector have come to increasingly use product differentiations as an important strategic instrument (Bramley *et al.* 2009). Among others, “geographic origin” has become an important tool for product differentiations.

Geographic Indication (GI) is an umbrella term whose overall purpose is to distinguish the identification of a product's origin (ITC, 2009). It ranges from labeling the origin[22] (without conveying any information about quality-origin relationships) to the protection of origin as a property for having a distinct quality to certification of origin and quality. GIs are legally implemented in different forms such as Appellation of Origin (AO), Denomination of Origin (DO), Protected Designated Origin (PDO), Protected Geographic Indication (PGI), and Marks.

The economic reason behind a shift to GIs is the information problem. While for consumers the shift to GIs is an attempt to reduce information problems, for firms' product differentiation through GI is a strategic response to supply the information consumers need. But in a globalized world, this does not only lead to product proliferation and differentiation, it also creates an information burden, because the reliability of the information can become a major concern.

Neoclassical economic theory claims that the pricing mechanism, in the long run, incentivizes firms to supply reasonably reliable information. On the contrary, institutional economics argues that information asymmetry is an inherent failure of the pricing mechanism that limits the development of the market itself. Institutional interventions should correct these market failures. Given the potential adverse effects of 'short-run' information asymmetries in the agri-food sector on public health and the environment, this provides a strong argument. As a result, institutions that define and enforce quality standards have become an important component of the agrifood markets (Bramley *et al.* 2009).

Effective product differentiation through GI protection creates a niche market (Rangnekar 2004) that confers farmers some monopolistic power and motivates their market participation (Josling 2006). Many studies in EU and US markets found that consumers are willing to pay price premia for GI-protected products including coffee (e.g. WTO 2004; Teuber 2010; Barjolle *et al.* 2009; Loureiro and McCluskey 2000). Whether this price gain is sufficient to cover the additional marketing costs (GI-

[22] Unless mentioned when necessary, origin in this document refers to geographic area where the product is produced

protections administration and promotion costs) is less known. But even if the premium is sufficient to cover these marketing costs, producers may have to incur additional costs, compared to standard products, in the production of GI products. The two-fold concern is thus how much of the price gain reaches producers which are located at the bottom of the value chain and whether that gain is sufficient to justify additional production costs.

Developing countries have increasingly become interested in obtaining legal protection for their agricultural products in the world markets. Examples include Blue Mountain coffee of Jamaica (Schroede 2009) and Kona coffee of Hawaii (Giovannucci and Smit 2009). With the help of Oxfam, Ethiopia also launched a trademarking initiative to register its fine coffee. As a result, in 2008 many European countries, United States, Japan, and other western countries signed the agreement to register three Ethiopian coffees namely: Harar, Yirgachefe, and Sidama coffees under a Community Trade Mark (CTM), with the government being the owner of the trademark (Teuber 2010). Each coffee type occupies distinct regions. Yet the demarcation of the boundaries is not strictly geographic in that it follows administrative boundaries. Even though no legal protection was provided in the foreign markets before the trademarking, these origins were legally designated already long ago. Through the country's Legal Notice No. 196 of 1955 which amended the Coffee Cleaning and Grading Regulations of 1952, the origin of coffee was designated to be "Harar," "Sidamo," "Jimma" and "Lekemti" (broadly called Wellega) (Berhe 2010). Since then, these names were used in the domestic as well as in the export transactions. The trademarking is only meant to obtain legal protection in the foreign markets.

The primary motive for this move is to improve rural livelihood by capturing some lucrative markets. To what extent the trademarking improves price and increases market access depends on how the process is implemented, protected and exploited (Bramley, 2011). In addition, there is nothing in the system that guarantees that the rural poor ultimately benefit from such institutional interventions.

The implicit assumption behind GI-protection is that the market is efficient to distribute the price gain according to their marginal contributions in the process of GI-related value additions. One of the concerns here is that there are increased instances of exploitation and misappropriation especially in the export markets (Bramley *et al.* 2009) as upstream actors have better access to the channels and the different modes of exploitation of the reputation of the product (Belletti 1999). In addition, various market distortions at each level along the market chain could also erode the producers' share of the price premium.

Teuber (2010) studied the impacts of trademarking on the world price. He found that GIs is an important determinant of the price paid by importers and roasters. But he also noted that in spite of the increasing reputation in consuming countries, the price premium of Ethiopian fine coffee is not as large as that of GI coffee of other countries such as Colombia. Notwithstanding how effective the trademarking may be in improving the relative prices of Ethiopian coffee in the world market, it does not guarantee that exporters fully capture the price gains. Using FOB price data of Ethiopian coffee for the periods between November 2005 and February 2009, Arslan and Reicher (2010) also analyzed the impacts of the Oxfam campaign for trademarking of Ethiopian coffee on export prices. They found positive impacts of the campaign on export prices. But two years after the trademarking, Ethiopian Commodity Exchange (ECX) took a step that potentially curbed the potential positive impacts of the trademarking by changing the auction system in a way that erodes traceability of coffee. In a condition where transactions are not traceable, traders may have the incentive to mix products of less reputable origin with reputable ones. This will negatively affect the price premium of coffee of reputable origins. Leung (2014) estimated the negative impacts of this erosion of traceability on the export prices of Ethiopian coffee to be equivalent to 26% of the income a farmer gets from the coffee.

For the eroded traceability to have no effect on coffee export, there must be a system that provides assurance to buyers about the quality. Ubilava and Foster (2009) found that quality certification and traceability are substitutes in consumers' quality evaluation. Even though the Speciality Coffee Association America (SCAA) strongly suggested to

go for certification, the Ethiopian Government chose trademark protection over certification (Arslan and Reicher 2010). But while certification gives better guarantees to foreign buyers about quality, trademarking doesn't really give such guarantees.

The efficiency of the trademark-protection in ensuring quality thus depends on the efficiency of the system; on what Belletti (1999) called "the institutionalization of reputation". Studies indicate that trademarking works best in incentivizing reputation when a single firm controls the value chain or when there are strong coordination and control among the diverse parties along the chain (Barcala *et al* 2007). Such coordination is possible when farmers' cooperatives control the value chain (Moschini *et al.* 2008). But the participation of cooperatives in the coffee export is limited as described in Section 2.3. Thus coffee transaction involves millions of producers, thousands of small local traders and hundreds of medium-sized exporters and importers, such coordination is hardly possible. In such a case , it is not clear how the GI-protection impacts on price along the chain.

Given that the primary goal of GI-protection, especially in the case of developing countries, is to create a niche market for farmers, there is increased interest to analyze the impacts of GI-protection specifically on producers (Arslan and Reicher 2010; Bramley *et al.* 2009; Teuber 2010). Even if producers capture a substantial portion of the price gains, the sustainability of the gains depends on the strength of institutionalizations in incentivizing reputation. Particularly of concern in the case of developing countries is the lack of strong local institutions that incentivize collective reputation all along the value chain (Bramley, 2011). When the "institutionalization of reputation" is weak, the GI-protected product will finally become generic as in the case of Yemen's Mocha coffee (Giovannucci 2005).

Unlike previous studies, we are interested in the long-term impacts of the GI-protection (through trademark protection) on both export and producer prices. We, therefore, analyze the impacts of trademark protection both on the level and trends of export (FOB) and producer prices of trademarked coffee in comparison with non-trademarked Ethiopian coffee. Moreover, we are also interested in the interaction between two

institutional interventions: trademarking and EXC. Studies in the areas of coffee use producer prices of coffee beans. However, farmers sell coffee to local traders either dried or wet coffee cherries, not coffee beans. Since quality assessment is less evident for coffee cherries than for green coffee beans, we conjecture that selling coffee cherry involves additional transaction costs. Thus, to capture such transaction costs, we use two sets of producer prices: the price of dried and wet coffee cherries and the price of green coffee beans. In addition, the study also compares the volatility and price divergence between the trademarked and non-trademarked coffee.

8.2 Institutional aspects surrounding GI-protection

The economic arguments around Geographic Indication (GI) schemes are founded on the economic theories of information and reputation. Generally, distinctive quality traits of food products are not readily observable. Thus verifying the exact origin of a product before purchase is very difficult. Nor do such traits become evident by a single consumption. Verifying quality of a product thus involves what Nelson (1970) called 'experience' costs. In order to minimize these costs, consumers, after repeated consumptions, identify some quality attributes (Carriquiry and Babcock 2004). It may be due to this Van der Lans *et al.* (2001) found the preference for origin label products specific to the consumers who are residents of the product's region of origin. Although these attributes can be imperfect, and sometimes wrong indicators of quality, consumers' valuations will depend on these attributes. For example, after using in-depth surveys and research, Cenicafé has successfully identified 36 out of 1,050 chemical components that enable buyers to determine the origin of coffee in Colombia (Giovannucci and Samper 2009). The question, of course, is how these quality differences lead to geographic origin. Empirical evidence on the link between *terroir* and quality is mixed (Deconinck and Swinnen 2014).

Under natural production circumstances, there is a logical reason to believe that the agro-ecological milieu will have a lot of bearing on the quality of the product such as the nutritional content, flavor, color, texture, etc. But production processes can also distort these natural relationships.

In a modern production environment where producers use diverse 'imported' organic and inorganic inputs and sophisticated production and processing technologies, the correlation between quality attributes and geographic location of the production is likely to be small. But in an environment where producers use traditional production systems that approximate hunting-gathering, most of the quality attributes will be substantially determined by the specific agro-ecological milieu and the associated indigenous production practices. In such conditions, obviously many of the quality attributes will be coded in the geographic origin of the product. Attributes that make up the *terroir.* It is precisely this biological-ecological interaction that underlies the GI regulation (Deconinck and Swinnen 2014). Naturality being an important attribute for GI-protection scheme (van Ittersum and Candel 1998), origin in such environment becomes an important indicator of quality. As a result, geographic origin has become one of the most important attributes, especially in the agri-food sector.

In Ethiopia diverse agro-ecological zones exist, with a wide range of altitudes from 125 m below sea level in the Afar Depression to 4550 m above sea level at the Ras Dejen Semen mountains. This agroecology provides an ideal environment for many types of crops. This coupled with the centuries old cultivation practice made the country the birthplace of many crops (Marcus 1994). Coffee is one of them. The traditional nature of the production system furthermore gives many crops in the country distinctive quality. Thus, by virtue of its diverse agroecology and the traditional nature of its production system, specific locations in the country are reputable for specific products. The primary information buyers demand in Ethiopia often is the origin of the product. This applies to almost all types of crop and livestock products - cereals, honey, beef, mutton, etc. Every location is reputable at least for one agricultural product. Consumers use such reputable origins (or origins that approximate them) as an important indicator of quality. Cognizant of this, traders and service providers such as hotels, restaurants, butcheries and groceries commonly use the names of reputable geographic locations as a strategic means to promote their products. This is not different for coffee .

The link between geographic origin and quality seems to be evident especially when the production assumes the ideal natural environment. The problem is how to incentivize firms to provide reliable information about true origins. Because the market fails to do so there is room for institutional interventions to correct the existing information asymmetry. However this alone does not justify GI protection. Like the information asymmetry in any other market, the institutional interventions through a combination of labeling, standardization and the like would suffice to correct the information problem. The goal of institutional interventions through GI protection seems to be broader than correcting information asymmetries.

GI and trademarking are the protection of goodwill against free-riding and they reduce search costs associated with information problems faced by consumers . Trademarks are used to differentiate products and do not necessarily indicate quality. GI-protection can be viewed as a process whereby reputation is institutionalized to reduce information asymmetry and to discourage potential free riding on reputation (Bramley *et al.* 2009). It provides protections for both consumers and producers; consumers by reducing information asymmetry and producers by protecting reputation as an asset (OECD 2000).

Like other market failures, GI-protection systems can also suffer from institutional failures. First, knowledge of the designer about consumers' valuations of geographic origins is limited. Second, the political process involves many interest groups (Deconinck and Swinnen 2014) and its design could be distorted. This occurs especially when the GI-protection is used more to create lucrative markets for producers than to correct information asymmetry. Third, reputation rewards commitment only with a lag, it works only imperfectly (Shapiro 1982). While there are potential benefits both for consumers and producers, GI-protections are still controversial (Bramley *et al.* 2009) as evidenced by the divisive debate in trade negotiations which Josling (2006) called a 'war on *terroir'*. Much of the concern on GI-protection is that it can limit competition (e.g. Hassan *et al.* 2011) and that it can be a non-transparent trade barrier. Hassan *et al.* (2001) for example showed undesirable effects of PGO cheese on competition. The controversy on

GI increased due to a range of cases that arose concerning the precise relationship between geographic location and quality and the different unintended outcomes of alternative public interventions (Josling 2006).

When the transactions are organized along a vertically integrated value chain, enforcement of standards will not only be easier, it will also match commitment with incentive. The problem is that when chains of several independent actors trade a product for which it is costly to verify the origin, enforcement will not only be difficult but the GI-protection may not align incentives with commitment.

Even before the trademarking initiative, the reputation of Ethiopian coffees can be evidenced by the price premia they receive in the world market (see Chapter 6). Ethiopian government initiated the trademarking project when Starbucks wanted to start a trademark under the name 'Sidamo' (one of the Ethiopian fine coffees). The Ethiopian government with the support of Oxfam, America took the issue to court. Finally, the government succeeded to obtain trademark protection. The source of the initiative and the important events that have led to the trademarking initiative are extensively described in Arslan and Reicher (2010).

The primary target of the trademarking initiative was to improve the export earnings of the country and increasing the bargaining power of exporters. Thus, it should primarily have effects in the international market. But the ultimate goal of the trademarking initiative was to improve the magnitude and the stability of coffee prices at the producer level. The idea is that providing legal protections to the already recognized unique qualities of Ethiopian fine coffee in the world market will not only reduce the information asymmetry which foreign buyers face but it also incentivize Ethiopian exporters to maintain quality reputations.

In an environment where there are no institutions that protect the use of trademarks by others, other traders will have the incentive to cash in on the names of origins reputable for quality in specific product attributes (Josling 2006). In such a case consumers cannot take full advantage of origin as an indicator for quality. In the long run, information asymmetry will drive prices of reputable origins to the prices of marginal quality. It can

even drive reputable origins out of markets if the production costs in the reputable origin are higher than in the less reputable origin. This is similar to the case of Akerlof's (1970) used car markets. This may require strong legal protection from the public. Unfortunately, the costs of these activities tend to be prohibitively high as the market environment is such that individuals buy from millions of smallholder farmers, who sell very small proportions in widely scattered village markets. It might be due to this reason modern hybrid varieties entirely replaced many indigenous varieties of crops and livestock breeds that have unique quality attributes.

8.3 Conceptual framework: A case of small-holder farmers

Theoretically, an exporter choosing between trading GI-protected and GI-unprotected coffee will equate the relative marginal costs of buying GI-protected coffee (relative to GI-unprotected coffee) with the relative marginal benefits of selling GI-protected coffee. To simplify our analysis, let us take the export market as a starting point. Let us assume that the market is perfectly competitive and marketing costs between GI-protected and GI-unprotected coffees are equal. For the latter to be plausible, the transportation, handling, and other marketing costs should depend on the volume of coffee, not on its monetary value. However although transportation costs usually depend on volume, other costs such as handling, service fees, etc. depend on the value of coffee. The implicit assumption here is that the transaction costs of trading differentiated products are equal. Curzi & Pacca (2015) noted the magnitude of the relationship between price and quality of food exports to differ according to the level of product differentiation. Given the products are close substitutes, we can safely assume that the differences are small enough to be ignored.

Let us suppose these costs are negligible. Thus, an exporter will pay for GI-protected coffee until its domestic price premium equals its FOB price premium. Since exporters usually buy coffee after they make the contractual agreement with the importer, they fully know the FOB price. In effect, the price margin between GI-protected and GI-unprotected coffee in the domestic market will be equal to FOB price premium of GI-protected. By taking FOB prices, we omitted those freight, insurance, import tariffs and

other costs that depend on value. If we consider insurance, import duties and other trading costs that vary with the value traded, thus FOB price premium will be less than the price premia importers receive in the world markets. The FOB price premium will thus be less than the price premium the importer receives. If there are distortions like taxes and other distortions in the foreign market a similar difference will exist between the world market price premium and the price premium that final consumers pay. Since our interest is to see the impact of trademarking on the relationship between export and domestic price, we can ignore the above distortion.

Since GI-certification is based on the origin of the product and the scheme inherently requires that products of another geographic origin cannot be traded within GI-protected territories, there are no trademark-protection costs.

The above hypothesis is based on perfectly competitive export and domestic markets. In the real domestic and export markets, not only the level of competition is limited especially in the export markets (Gelaw *et al.* 2016), there are also a number of failures in the domestic markets. One of the critical issues, in this case, is the information asymmetry on the true origin of the coffee.

The context is such that very large number of farmers naturally produce a reputable coffee in a geographically wide territory. Also, the overall context is such that it is difficult to organize and coordinate collective marketing. The dominant supply chain is that traders buy coffee from farmers and sell graded and origin-labeled coffee to exporters at the central auction market. The grading and labeling are made by ECX. Even if the transaction at the central auction market is impersonalized and non-traceable, information problem will not arise if the origin-labeling is perfect.

If trade across the different *terroir* is effectively blocked, the labeling can easily be done at the warehouses. In this case, there is no information problem at the auction market. Whether they pay quality premium or not depends on the efficiency of the export market in incentivizing reputation. This is because, once exporters buy coffee at the auction market, they can mix different brands. The export market for Ethiopian coffee is such that it provides trademark-protections for some of the geographic origins: for three

origins among the dominant five. Since the geographical designations are protected by trademarks and there is no origin-certification, the trademarks become a common property for exporters and importers. Thus free-riding can be a potential problem. Exporters can also export genuine origin in order to build a reputation. But such commitment arises from the motives of the firm to build the reputation. For this to occur, it is necessary that the firm must capture a certain portion of the price premium as a reward for its commitment. But the reputation will only be rewarded partially because information on who is reputable is imperfect. Thus there will be some deadweight loss in the premia. Anyway, a certain portion of the premia will be absorbed by the exports.

The willingness of exporters to transfer the realized premia to local traders will depend on the competition between exporters at the auction market. If the auction market is perfectly competitive, the premia that remain after compensating commitment will be transferred to local traders. If the competition is imperfect, the exporter still captures the premia above the amount used to compensate commitment. This further erodes the portion of premia that goes to traders.

Furthermore, the portion of the price premia that is transferred from traders to farmers will depend on the efficiency of the local markets. Traders can also capture a certain portion of this. The premia that go to farmers will thus only be the total export premia minus the premia used to compensate the commitment of the exporter minus the extra premia the exporter gain due to market imperfection in the auction market minus the portion appropriated by the local traders.

In addition all this is based on the assumption that origin labeling is perfect. In a situation where traders buy from a large number of sellers the true origin of coffee is less evident before the transaction *(ex-ante)* and is less traceable afterward (*ex-post).* In addition, the context is such that blocking trade between different *terroirs* is achieved only partially. Producers themselves sell coffee of mixed origin. Since farmers sell coffee cherry identifying the true origin is much more difficult (Gelaw, *et al.* 2015). The same holds for local traders when they sell in the auction market. But in all these cases, actors at all stages may refrain from taking such opportunistic actions when the long-term benefits of

building a reputation are high (Shapiro 1982). Unfortunately, reputation will not always be an effective strategy at all stages and detecting brand-mixing is never easy. It is the dynamic interaction of a seller's commitment to quality and consumers' learning of that commitment that determines the level of equilibrium reputation (Shapiro 1983). Institutions that reward both seller's commitment and consumers' learning thus increase the level of equilibrium reputation.

A study found Ethiopian traders to be little trustworthy on the origin of coffee and other quality attributes that are not easily verifiable (Thomas and Minet, 2015). Thus, exporters that buy coffee from local traders face information problems from two sources: the risk of brand-mixing made by producers and passed over to exporters and the same risk caused by local traders. Exporters will then have to take this risk premium in their buying decision if the brand-mixing is detectable at higher level markets. Thus in addition to the portion of the price premia required to reward exporters' reputation, the exporter will also have to use part of the price premia to cover the above risk premium. This further erodes the potential price premia that can trickle down to producers.

Moreover, the act of blocking inter-terroir trade has another disadvantage in that it creates monopolistic rent by limiting competition in the local market. In a particular political environment where ethnic identity provides special political privilege to trade in the region and the social environment is such that one needs identity-based social networks to trade in the *terroir* (Gelaw et al, 2015), the GI scheme increases the monopoly power by further limiting competition. This, in addition to the compensation required to reward exporter's commitment and the risk premium of the exporter and local traders, the monopoly rent captured by local trade further erodes the potential gains of farmers. We thus hypothesize that farmers will capture only a portion of the FOB price premia.

If there is a significant change in the magnitude and/or trend of price differences between the trademarked and non-trademarked Ethiopian coffee, the changes can be attributed to the trademarking initiative as all coffee shares the same institutional environment. Since only three among the five origin-known Ethiopian coffee obtained

trademark protection, the context provides an ideal experimental environment for testing the impacts of trademarking (legal-protection) on the change in the relative prices and on its stability. We hypothesize that relative FOB prices of trademarked coffee, compared to non-trademarked coffees, will not only be higher but also more stable than they were before. But both of these relative premia will be substantially lower in the case of producer prices.

8.4 The data

The study used panel data of prices obtained from two sources. The first one use FOB price data obtained from Ethiopian Customs Authority. This data contain FOB prices, the volume of export, geographic origin of coffee, destination country, grade level and exporting company. Discarding observations of unknown coffee origin and unknown grade levels, the study used 39637 observations, running from November 2004 to June 2014. The other type of data were producer price data. This data were obtained from the Ethiopian Central Statistical Agency (ECSA). ECSA undertakes monthly producer price survey in 463 selected Peasant Administrations (PAs) located across the country. These data contain farm-gate prices of two forms of coffee: coffee cherries and green coffee beans. Since farmers usually sell coffee cherries, not green coffee beans, the price of coffee cherries reflects the actual price farmers receive. But for comparison, we also use farm-gate prices of green coffee beans. Following the geographic locations of the sample PAs, we categorize each PA under the five geographic coffee origins. Accordingly, each coffee origin contains different prices of PAs located within each coffee origin. Discarding price data collected outside the five geographic origins, we obtain a panel data set containing monthly prices of 14503 observations for coffee cherries and 4983 observations for green coffee beans for the time periods ranging from January 2002 to June 2014. One issue surrounding the trademarking is under the current ECX system, it is made through labeling. All coffee that comes from a specific region will be given the label of the region. Given brand-mixing is a possibility, the potential impact of the trademarking depend on the credibility of the labeling.

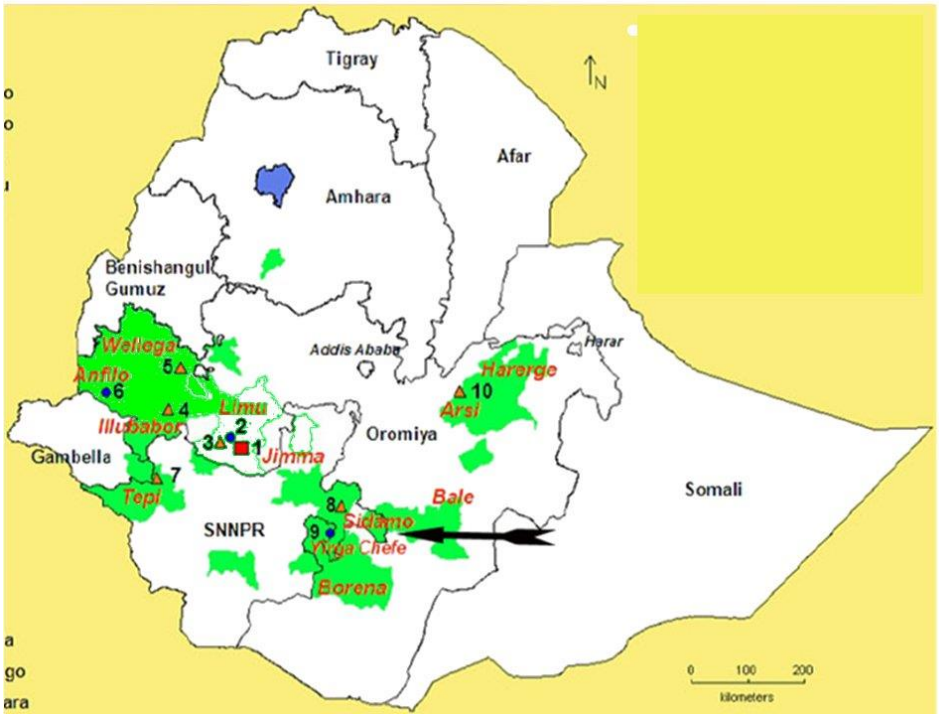

Figure 8.1 Coffee producing regions of the country

Figure 8.1 shows the different coffee producing areas in the country. Even if the government strictly prohibit cross-border trade between the coffee producing regions, and this was, partly to control the transaction and partly to reduce avoid mixing of different coffee origins, there is still problem especially in those areas bordering two or more coffee producing regions. But even if the government is effective in blocking cross-border trade at the local markets, there is nothing that controls this at exporters level.

8.5 Method of analysis

Studies often estimate price premia from consumers' survey using hedonic pricing, conjoint analysis, multinomial logit (Bramley *et al.* 2009). But it can also be estimated from market data if there was a perfectly substitute commodity. As we have no consumer-based data, we estimate price premia based on the comparison with non-trademarked coffee. As described above, the particular context permits us to do so. We take the price premia offered by importers as a starting point. While this may not show the full story of the GI-scheme, it serves our purpose.

Although we followed the methodology used by Arslan and Reicher (2010), our analysis differs from them in a number of ways. First, the purpose of their analysis is to analyze the impacts of publicity for trademarking. They attributed the permanent change in price to the publicity. We argue that such price changes can persist due to the trademark-protection, not just a one-time publicity for trademarking. In addition, we simply assume that the GI-protection was applied on all the five coffee origin for two reasons. First, only a few countries (The USA, Japan and EU countries) agreed to provide GI-protection. In addition, destination countries may differ in the mode and timing of implementations. Second, we don't know whether they were exported as GI-labeled or not even in those countries. We thus multiply all origins by a trademarking dummy (DL =1 for the period after 2008 and zero before that) and trademarking time (DT = t-2008 for the period after 2008 and zero before that). We furthermore multiply each origin by the three categories of destination countries (West, Middle East and the rest of the world).

To separate the effect of trademarking, we control the following variables. One of the changes that, can support or counteract the effects of trademarking is the introduction of ECX. We, therefore, multiply each geographic origins by a dummy for ECX. First, the different types of coffee origin differ in their distribution of grade levels. We assign five for first grade, four for second grade, three for third grade, two for fourth grade, one for fifth grade and zero for under-grade. We then multiply each coffee origin by the respective grade level. To capture the transaction costs we take the inverse ratio of the volume of each export transaction. In addition, we weight each origin by their export share (the ratio of the amount of each origin to total monthly export). We finally include origin and month interactions to capture any origin specific seasonality. Given this, if the GI-protection has positive impacts, it has to improve the relative prices of trademarked coffees compared to non-trademarked coffees (Jimma and Wellega).

Moreover, to capture the effect of trademarking on the long term trend of the various coffee origins, we include the interaction of trademarking as a continuous time with the different coffee origins. This will help us to see how prices evolve after the introduction of GI-protection

The following FE regression is specified to capture the effects of time-invariant characteristics, in this case, different coffee origin on the dynamics of prices. The FE model is specified as:

$$lnP_{it} = \alpha + \beta_1 IW_{it} + \beta_{2j} C_{ij} * ECX + \beta_{3j} C_{ij} * TM_l + \beta_{3j} C_{ij} * TM_t + \beta_{4j} C_{ij} * Gr_{it} + \beta_{5j} C_{ij} * Ms_{it} + \beta_{6j} C_{ij} * West + \beta_{7j} C_{ij} * RoW + \vartheta_{mj} C_{ij} * Month + \varepsilon_{ij} \quad (8.1)$$

where

lnP_{it} is the price for the i^{th} observation for the period t $n = 1, 2, 3, \ldots, N; t = 1, 2, 3, \ldots, T,$

IW_{it} is the inverse of the volume for i^{th} observation for the time period t

C_{ij} is a dummy for the i^{th} observation for j^{th} coffee types $j = 1, 2, 3, 4$ and 5 for Wollega, Sidama, Yirgachefe, Harar and Jima, respectively

ECX is the dummy for *ECX*, 1 for the period after ECX and 0 otherwise

TM_l is the dummy for Trademarking 1 for the period after Trademarking and 0 otherwise

TM_{t*} is time 1, 2…T* for the period after the Trademarking and 0 otherwise

Gr_{it} is grade level 1, 2, 3, 4 and 5 for the i^{th} observation for the period t

Ms_{ij} is the market share of the i^{th} observation for the j^{th} commodity

$West$ is a dummy which is 1 for coffee exported to western countries and 0 otherwise

RoW is a dummy which is 1 for coffee exported to the rest of the world and 0 otherwise

Month is month, *m* - 1 to 12 for the months January to December

β_{nj} parameter coefficients for the j^{th} coffee type

ε_{ij} disturbance terms

A similar regression can also be run on the monthly producer data set collected across the various locations of the country. The only difference here is that some of the above variables cannot be included due to a lack of data. Grade level, market share and the inverse of the volume does not appear in the producer and retail price data. The regression was made on two types of producer data: price data on coffee cherries and coffee beans.

$$lnP_{it} = \alpha + \delta C_{ij} + \beta_{1j} C_{ij} * TM_l + \beta_{2j} C_{ij} * TM_t + \beta_{3j} C_{ij} * Month + \varepsilon_{it} \quad (8.2)$$

The next step is to assess the stability of the relative price of trademarked coffee relative to non-trademarked one. An ADF-type of the equation can help to test the presence of price convergence/divergence. By taking the difference of prices of various trademarked coffee from a reference price (non-trademarked coffee), it is possible to test the stationarity of the price differentials as

$$\Delta x_t = \alpha + \delta x_{t-1} + \sum_{i=1}^{p} \delta_i \Delta x_{t-i} + \varepsilon_t \quad (8.3)$$

where x_t is price differential between price of a given trademarked brand ($P_{TM(t)}$) with reference price ($P_{NTM(t)}$) in logs

$$x_t = lnP_{TM(t)} - lnP_{NTM(t)} \quad (9.4)$$

If the null hypothesis $\delta = 0$ in (eq. 9.3) is rejected, the price differential is non-stationary, meaning that there is no convergence between the various trademarked and non-trademarked Ethiopian coffee.

8.6 Results and discussions

The following sections describe and discuss the results obtained from a fixed effects model analysis. Before we analyze the panel data, we describe the evolution of the export price data.

8.6.1 Trend of export prices

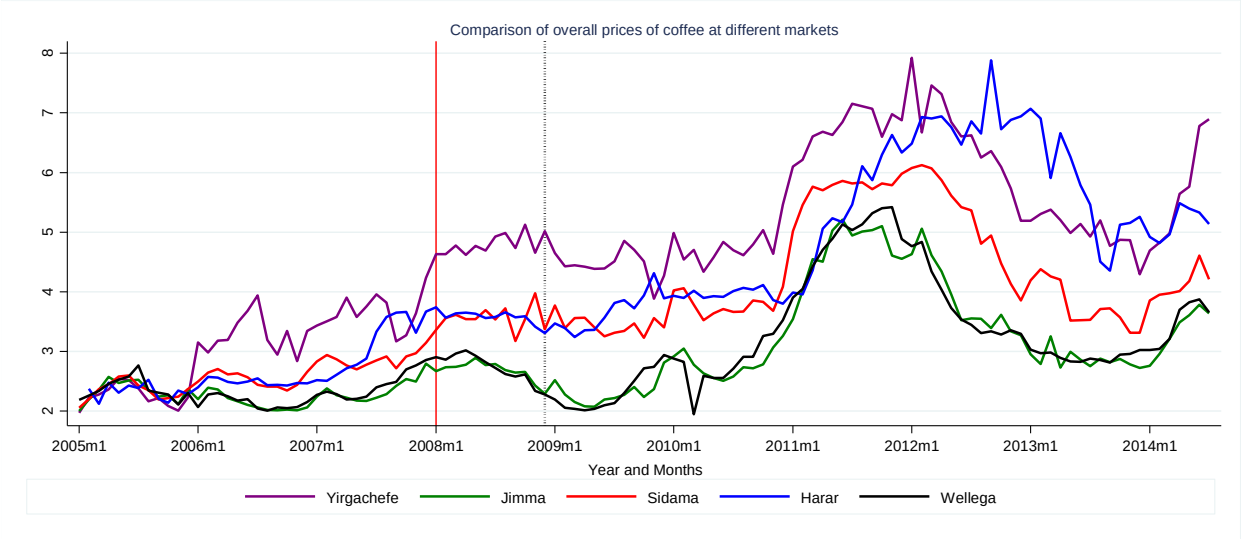

Figure 8.2 Comparison of overall prices of different origin of coffee

Figure 8.2 shows the trend of the five coffee price series. Export data disaggregated by geographic origin covers only the period starting from November 2004. Although the applications of Ethiopian government for trademarking the three coffees started in March 2005, the registration in many countries was implemented since 2008. We, therefore, take January 2008 as a starting point. We can see from Figure 8.2 that there were price differences between the various geographic origins even before the trademarking. But the price differences seem to have become more pronounced after the trademarking initiative.

8.6.2 Result of the Fixed Effects model

Table 8.1 shows the fixed and random effects regression on FOB prices of the five origins of Ethiopian coffee.[23] The model represented by eq. 8.1 is semi-logarithmic. All the coefficient of the FE regression shows the response of the dependent variable in terms of percentage change in price (after transformed)[24] for a unit change in the independent variable, obviously holding other variables constant. Also, the result for

[23] For the sake of convenience, we present part of the regression results on coffee specific seasonality separately in Table 8.1a and Table 8.2a of Appendix A.

[24] The value of $b^* = exp(b) - 1$

dummy variables should be interpreted with reference to Jima coffee. We also present the results of the RE model for comparison.

Controlling for the effects of grade level, destination region, market share, the effect of trademarking on the relative price level and trend and origin-specific seasonality, the first four rows show the average prices of the different coffee origins in reference to Jimma coffee (the baseline). The result shows that there was a significant decline in prices of Harar, Yirgachefe and Sidama coffee by 13.6, 25.8 and 15.5 percent relative to the price of Jimma coffee (Table 8.1). Wellega coffee was dropped due to collinearity. This may be because we controlled all the key variables that are expected to determine price differentials.

Table 8.1 FE and RE regression results of export data (2004-2014)

Variables	Fixed Effect (N=41259)				Random Effect (N=41259)	
	b*	b	sd	t	b	t
Cons	1.541***	0.930***	1.167	91.50	0.89***	51.84
Inverse of volume	36^{10}***	29.158***	0.023	24.97	29.19***	24.93
Harar	-0.136***	-0.146***	0.040	-6.35	-0.15***	-6.58
Sidama	-0.257***	-0.297***	0.022	-7.44	-0.30***	-7.58
Yirgachefe	-0.153***	-0.166***		-7.57	-0.05	-1.64
Wellega	0.000	0	0.012	-	-	-
Harar*ECX	-0.234***	-0.266***	0.008	-21.94	-0.26***	-21.65
Sidama*ECX	-0.012	-0.013	0.012	-1.59	-0.01	-1.23
Yirgachefe*ECX	-0.172***	-0.189***	0.009	-16.07	-0.19***	-15.78
Wellega*ECX	-0.002	-0.002	0.014	-0.20	0.00	0.11
Harar*D_L	0.056***	0.055***	0.014	4.05	0.06***	4.33
Sidama*D_L	0.121***	0.114***	0.024	8.35	0.12***	8.70
Yirgachefe*D_L	0.326***	0.282***	0.013	11.65	0.29***	11.83
Wellega*D_L	0.012***	0.012	0.000	0.98	0.02	1.30
Harar*D_T	0.007***	0.007***	0.000	24.65	0.01***	24.59

Sidama*D_T	0.000	0	0.000	1.12	0.00	1.06
Yirgachefe*D_T	0.004***	0.004***	0.000	15.15	0.00***	15.08
Wellega*D_T	0.000**	0.000**	0.005	2.33	0.00**	2.30
Harar*Grade	0.090***	0.086***	0.001	17.17	0.09***	17.13
Sidama*Grade	0.099***	0.095***	0.002	80.88	0.09***	80.63
Yirgachefe*Grade	0.033***	0.032***	0.004	15.00	0.03***	14.96
Wellega*Grade	0.076***	0.074***	0.001	17.65	0.07***	17.61
Jimma*Grade	0.115***	0.109***	0.009	102.11	0.11***	101.79
Harar*MS	-0.085***	-0.089***	0.007	-10.34	-0.09***	-10.29
Sidama*MS	-0.062***	-0.064***	0.008	-9.71	-0.06***	-9.65
Yirgachefe*MS	-0.108***	-0.114***	0.006	-15.13	-0.11***	-15.08
Wellega*MS	-0.090***	-0.094***	0.009	-14.82	-0.09***	-14.76
Jimma*MS	0.007	0.007	0.013	0.92	0.01	0.99
Harar*Western	0.064***	0.062***	0.011	4.67	0.06***	4.64
Sidama*Western	0.032***	0.031***	0.021	2.81	0.03***	2.85
Yirgachefe*Western	0.181***	0.166***	0.011	7.81	0.17***	7.82
Wellega*Western	0.044***	0.044***	0.012	3.86	0.04***	3.84
Harar* RoW	0.005	0.005	0.023	0.41	0.00	0.36
Sidama* RoW	-0.103***	-0.108***	0.015	-4.77	-0.11***	-4.79
Yirgachefe* RoW	0.050***	0.049***	0.012	3.19	0.05***	3.19
Wellega* RoW	-0.033***	-0.034***	1.167	-2.81	-0.03***	-2.79

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis
MS – Market share

The other important variable was the introduction of ECX in the coffee market. Since ECX change the previous transaction system that somehow allow personalized transactions and which was easier for tracing the origin of coffee (Gelaw *et al.* 2016), it is expected to affect the relative change in prices between the various coffee origins. It was found to have a significant negative impact on Harar and Yirgachefe coffee. No significant effect was observed on Sidama and Wellega coffee. Prices of Harar and Yirgachefe were found to have fallen by 23.4 and 17.2 percent compared with Jimma

coffee after the introduction of ECX. But the result could have been different if ECX, in addition to its current impersonalized transaction system, allows an alternative arrangement that is compatible with the trademarking protection. This can be done for instance if exporter or importer are allowed to directly buy coffee from traders/cooperatives. Such arrangement can be beneficial even for those cooperatives that could not directly export. The result was consistent with our expectation that the ECX mandatory single transaction arrangement contradicts with the trademarking arrangement that requires a traceable transaction system.

The other variable of interest was the impacts of trademarking on the relative change in prices. We found that the trademarking initiative significantly increased the average prices of trademarked Ethiopian coffees relative to Jimma coffee. The result shows that the average change in prices of Harar, Sidama and Yirgachefe coffee was found to be 5.6, 12.1 and 32.6 percent higher than Jimma coffee after the trademarking. As expected, no change was observed for Wellega coffee after the trademarking.

In addition to the effects of trademarking on the relative average prices of the four coffee origins, we also analyzed the effect on the price trends. The price of Harar, Yirgachefe and Wellega coffees were found to have an average monthly growth rate of 0.7%, 0.4% and 0.05% in reference to Jimma coffee, respectively. No difference in the relative average growth rate of prices of Sidama coffee was observed after the trademarking.

Since the distribution of grade levels differ between the different coffee origins, we controlled the effects of origin specific grade levels. The results on grade show that improvement of the grade by one level apparently increased the average prices of all coffee origins. Moving from one grade level to the next higher grade level significantly increased average prices of Harar, Sidama, Yirgacheffe, Wellega and Jimma coffee by 9.0%, 9.9%, 3.3%, 7.6% and 11.5% respectively. The return on grade improvement was smallest for Yirgacheffe coffee. The reason is that Yirgacheffe coffee already attained the highest grade level as 83% of Yirgacheffe coffee were of first and second grades. On the contrary, those coffee origins whose average grade levels were below that were found to have a higher return, in terms of percentage increase in price, for improvements

in grade by one level. Whether this return is attractive for sellers or not depends on the cost of improving the grade level. Given the marginal costs of improving grade, the return could also increase as the efficiency of the market in rewarding quality improves.

With regard to the effect of market shares on prices, the price elasticity of the market share was found to be negative for all coffee types except Jimma coffee, where its price elasticity of market share was found to be insignificant. The percentage change in prices for a unit change in market share of Harar, Sidama, Yirgacheffe and Wellega were found to be -8.5%, -6.2%, -10.8% and -9.0% respectively. No significant effect of market share on prices was found for Jimma coffee.

The prices of the four types of coffee received price premia when they are exported to the western countries compared to Jimma coffee. Yirgacheffe coffee was found to receive the highest price premia of 18.1% in reference to Jimma coffee, Harar and Sidama were found to obtain price premia of 6.3% and 3.2% respectively. The non-trademarked Wellega coffee was however also found to receive a price premia of 4.5 % in comparison with Jimma coffee. The result is slightly different for the coffee exported to the rest of the world. While Yirgachefe and Wellega received negative price premia of 10.3% and 3.3% in comparison with Jimma coffee, only Harar coffee received a positive price premium. No evidence of premium price was found for Sidama coffee exported to non-western countries .

The result indicates that in the markets where the trademarking obtained institutional protections (Western markets), the relative price premia are more or less conform to the trademarking. This is not the case when the destination country is a non-western country. The market outside Western countries seems to discriminate Ethiopian coffee differently and in contrary to the reputation of geographic indications. That is while Yirgachefe, Harar and Sidamo coffee were given trademark protection, it is non-trademarked coffee that received a significant price change in the non-western countries. In general, the result indicates that exporters that have access to western markets enjoy higher relative price premia for trademarked coffee, compared to those

traders that export trademarked coffee to non-western countries. Except for Harar coffee, it is also desirable for other types of coffee to be exported to western countries.

The result also shows that there was significant origin specific seasonality for all coffee origins (Appendix A Table 8.1A. Finally, the inverse of the lot size of individual export was found to have a strong positive effect on the percentage change in the price of Ethiopian coffee. This coefficient can be interpreted as a negative relationship between average fixed cost and percentage change in prices (Arslan and Reicher ,2010).

8.6.3 Producer prices

Two types of producer price data were used in the analysis. Producers in the major coffee producing areas sell dried or red coffee cherries to local traders. Local traders then undertake dry processing or hulling of dried coffee cherries or wet processing of red coffee cherries. To see the actual effects of any interventions on coffee prices, producer prices of coffee *cherries* is the most appropriate one as it reflects the price coffee farmers actually received. Most studies use the price of green coffee beans as producer price data. To our knowledge, no study used the price of coffee *cherries* as producer price. Our analysis focuses on producer prices of coffee cherries (called coffee whole) but we also make a similar analysis on producer prices of coffee *beans* for comparison purpose.

The result in Table 8.2 shows that while the changes in prices for Harar, Yirgachefe, and Wellega coffees were higher, relative to the change in the baseline price of Jimma coffee, of the opposite was true for Sidama coffee . Given this the effect of the trademarking on change in relative prices of Harar coffee was found to be positive and significant. But no evidence was found for the effect of trademarking on the change in the prices of Sidama and Yirgachefe coffees. Instead, the change in relative prices of Wellega (non-trademarked) coffee was found to be positive. After the trademarking, the change in average prices of Harar and Wellega coffees was found to be 11.2% and 16.2% higher than that of Jimma coffee. In addition to the above effect of the trademarking on the level, we also analyzed the effect of the trademarking on the price trends of each coffee relative to Jimma coffee. We found that prices of Harar and

Sidama coffees grew at an average monthly rate of 0.31% and 0.09% above the growth rate of Jimma coffee. On the contrary, the price of Wellega coffee grew at an average monthly rate 0.16 % Jimma coffee. No effect on the relative growth rate of Yirgachefe coffee was observed after the trademarking.

The effects of the trademarking on the relative average level and trend of producer prices of green coffee beans was slightly different from coffee cherries. The effect of trademarking on relative average price levels of coffee beans were higher than its corresponding effect on producer prices of coffee cherries. After the trademarking, the change in relative prices of Harar, Sidama, Yirgachefe and Wellega coffees was found to be 14.0%, 23.5%, 58.6% and 37.0% higher than average prices of Jimma coffee, respectively. On the other hand, the average price trends of Sidama, Yirgachefe and Wellega were found to grow at average monthly rate of 0.3%, 0.7% and 0.3% below Jimma coffee. No significant difference was observed in the monthly growth rate of prices of Harar coffee beans.

These two sets of results show that the trademarking was found to have a higher positive effect on producer prices of green coffee beans than on coffee cherries both relative to the respective Jimma coffee. But these price gains are being eroded by the negative growth rate in prices. This is a good evidence that the higher gains in the price of the trademarking that we saw at the export market share being captured by exporters and traders before they reach the local markets. Moreover, the negative growth rate in the local market shows that the effect of trademarking erodes over time.

Table 8.2 FE and RE regression results of producer prices (2002-2014)

Variables	Producer price of coffee cherries (N=14503)					Producer price of coffee beans (N=4983)				
	FE			RE		FE			RE	
	b	sd	t	b	t	b	sd	t	b	t
Harar	0.333***	0.106	3.15	0.33***	3.09	0.490***	0.054	9.01	0.47***	8.8
Sidama	-0.136***	0.040	-3.38	-0.55***	-14.7	0.038	0.066	0.58	0.01	0.17
Yirgachefe	0.568***	0.033	4.45	0.39***	3.05	0.132	0.181	-0.63	0.11	0.58
Wellega	0.203***	0.128	6.1	0.19***	5.64	0.180***	0.058	3.12	0.16***	2.81
Harar*D_L	0.106*	0.054	1.96	0.12**	2.13	0.131***	0.033	3.93	0.15***	4.47
Sidama*D_L	0.025	0.026	0.94	0.04	1.52	0.211***	0.043	4.92	0.23***	5.32
Yirgachefe*D_L	0		.	-	.	0.460***	0.104	4.42	0.48***	4.55
Wellega*D_L	0.150***	0.025	6.1	0.16***	6.6	0.315***	0.037	8.49	0.33***	8.96
Harar*D_T	0.003***	0.001	2.7	0.00***	2.76	0	0.001	0.05	0.00	0.94
Sidama*D_T	0.001*	0.000	1.85	0.00*	1.88	-0.003***	0.001	-3.76	-0.00***	-3.03
Yirgachefe*D_T	0	-	.	-	.	-0.007***	0.002	-3.87	-0.01***	-3.5
Wellega*D_T	-0.002***	0.000	-3.49	-0.00***	-3.27	-0.003***	0.001	-4.36	-0.00***	-3.48
Cons.	-0.367***	0.005	-72.84	-0.34***	-10.86	0.291***	0.007	42.2	0.29***	9.91

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

8.7 Prices convergence

Table 8.3 compares the dynamics in the relative price of trademarked coffee in relation to non-trademarked coffee before and after the trademarking.

Table 8.3 ADF test for convergence between trademarked and non-trademarked coffee

Trademarked_Non-trademarkd coffee	FOB			Producer prices		
	Whole period	Before TM	After TM	Whole period	Before TM	After TM
Harar_Jimma	-2.08	-0.45	-1.95	-3.26**	-1.88	-2.77*
Harar_Wellega	-1.91	-0.69	-1.88	-3.80***	-2.79*	-2.55
Sidama_Jimma	-2.52	-0.30	-2.88**	-5.62***	-3.26**	-4.45***
Sidama_Wellega	-2.87**	-0.96	-2.80*	-7.25***	-4.76***	-5.16***

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis
TM – Trademarking

Before the trademarking, the FOB price of trademarked coffee relative to non-trademarked coffee was found to be stable without showing any tendency of convergence or divergence for all combinations of prices. But contrary to our expectation, the relative price of Sidama coffee in reference to both Wellega and Jimma coffees shows converge after the trademarking. Although there was no evidence of divergence in the relative FOB price of trademarked coffee, there was also no evidence of convergence. But the situation is different when it comes to producer prices. The relative producer prices of trademarked coffee (Harar and Sidama) in reference to non-trademarked coffee (Jimma and Wellega) showed evidence of convergence both before and after the trademarking. The result indicates that relative producer prices of trademarked coffee are more convergent than FOB prices. It suggests that the trademarking was more effective in keeping relative FOB price of trademarked coffee stationary.

8.8 Discussion of key findings

The results of the Fixed Effect regression revealed positive effects of the trademarking on the level and trends of relative FOB prices of trademarked Ethiopian coffee. After the trademarking, the change in average FOB prices of trademarked and other non-trademarked coffee in comparison with the numeraire (Jimma coffee) was substantially and significantly higher. One of the interesting results of the study is that it shows the negative effects of ECX on the change in relative prices of the different geographically designated coffee. The result is consistent with the findings of Leung (2014). This may be due to the impersonalized and non-traceable nature of the transaction introduced by ECX. The implication is that for GI-protection to meet its goal, it requires a traceable transaction system, however, it may not necessarily be personalized. It provides important evidence that the mode of transaction introduced by ECX is not compatible with the trademark-protection initiative. Consideration needs to be made on the relative gains from a non-traceable ECX transaction system vis-à-vis the trademark-protection. Theoretically, the trademarking initiative initially can increase prices by promoting the product. For this price premium to continue to rise, the trademark-protection needs to be efficient in building the institutions of reputation. If the institution of reputation is strong, the relative demand for trademarked products is expected to shift to the right as more buyers learn the quality differences and tend to become more inelastic as consumers develop a special preference for the products. But when buyers fail to find quality differences, not only the demand will fall, it can even become more elastic as consumers view the product as a commodity. Thus, long-term effects on the relative prices depend on the ability of the market in maintaining the reputability of the trademarked products. But the non-traceable transaction system of ECX does not provide a room for the institution of reputation.

The result of the price elasticity of market share can suggest the structure of market Ethiopian coffee faces in the world market. If all Ethiopian coffee equally competes in the world market as other commodity coffee, the price elasticity of market share would be near zero as the share of Ethiopian coffee in the world markets will be negligible in this

case. But price elasticity of market share should be higher if Ethiopian coffee (individually or collectively) has its own segment of the world market. The higher price elasticity of market share suggests that Ethiopian coffee has a segment in the world market.

8.9 Conclusion

Using a large number of observations of export transactions recorded over 11 years and producer price data collected over a wide range of areas of the country, we analyzed the impacts of trademarking on producer and export prices using a Fixed Effect model. We found that generally, trademark protection significantly and considerably increases the levels and growth rate of export prices. However, this gain was counterbalanced by the introduction of non-traceable and impersonalized trade by ECX. Given the institutional context of the country, the introduction of impersonalized transactions in the coffee market can have far-reaching effects in improving the performance of the coffee market. But the commoditization also undermines the potential price gains from product differentiation through trademark protections of Ethiopian fine coffee. This may require institutional arrangements that provide alternative channels for both trademarked coffee and commodity coffee.

The study also estimated the percentage price gains that can be achieved by improving the grade-level of the different coffee. For most of the coffee origins, there is substantial price gain from improving the grade level. We also found that Ethiopian exporters can benefit more by exporting to western countries than the rest of the world.

Chapter 9 Conclusions and policy implications of the thesis

This chapter discusses key conclusions and their policy implications. The first section draws key conclusions from the various chapters of the thesis. Based on these conclusions, the key policy implications of the results are demonstrated. This can provide policy makers important insights for future interventions.

9.1 Conclusions

The study made a comparative analysis of institutions between the northern and southern regions of the country in the early centuries. It revealed that the emergence and decline of powerful empires and early civilizations were highly correlated with the scope of private property ownership of key resources and the associated level and scope of commerce and trade. While the presence of private (in limited sense) ownership of land and the associated trade and commerce in the early periods helped the northern region to create extended order going beyond the narrow kith and kin, the poorly defined communal ownership of land and other key resources in the southern region did not only limit the scope of trade and commerce, but also confined sociocultural transactions to the bound of kith and kin. As a result, while in the northern region an empire was created, the southern region remained for many years a conglomerate of diverse small communities.

But the study also revealed that in the northern regions the various restrictions imposed by the *rist* system on private rights not only limited the scope of trade and commerce but also limited the scope and stability of the empire. In effect, the northern regions evolved through a rough historical path frequented by anarchy. In contrast, the communal (or open access) types of ownership of key resources in the southern region caused the diverse groups to evolve through relatively stable collective egalitarian communities occasioned by clan/tribal wars. In sum, we found the scope of private property rights and the associated scope of trade and commerce to be key determinants of the institutional path of the country.

The dominance of socialist-orientated beliefs is also associated with the confinement of transactions to the narrow communal social system. Communal property rights seem to be at the heart of this social environment. Property rights, trade and commerce determine the social-economic space which in turn determines the degree of personalization which defines the widely shared mental model. Although we see some differences in the dominant mental model between the northern and southern regions, the dominant mental model can be generally characterized as collective and socialist-oriented. We claim that this socialist-oriented dominant model not only determined the various economic institutions but it also shaped other institutions in the social and political spheres. Particularly, the mental model undermined competition, wealth accumulation, creativity and commercial behavior. It seems that the greater tendency of the current and past governments toward socialist-oriented policies emanates from the widely shared mental model. However, this mental model does not offer a different motive other than self-interest. The degree of social interdependence affects the actual behavioral patterns of individuals. Contrary to the embeddedness theory, the result from a choice experiment done with farmers strongly suggests that the preference of subjects to personalize transactions is dominantly driven by economic reasons.

We found the social environment to be segregated along ethnic/clan and religious identities. In effect, we find personalized transactions to be the most ubiquitous institutional arrangement in the country. But the personalization is also confined to kith and kin. Although individuals are willing to make impersonalized transactions, the social environment locked them into a too narrow social environment. Analysis of the preferences of farmers revealed that farmers embed their transactions in personalized relationships in order to reduce transaction costs and also as a response to the lack of credit markets. So this is not merely due to their affiliation with their social group. Even though subjects were found to have no specific preference for their social network, the segregated social environment left them with no other option but to transact with the kith and kin. This segregated social landscape was highly shaped by the historical evolution of communal ownership of property rights and limited trade and commerce. Thus the

pervasiveness of personalized transactions depends not only on the current broader environment, but it is also deeply rooted in the history of the society.

Even though the results of the choice experiment in itself do not imply inefficiency of the transaction, critical examination of the results within the framework of the existing institutional and broader environment suggest inefficiency of the personalized institutional arrangement. Particularly, it fails to incentivize coffee quality. The detailed examination of the impacts of personalized transactions also shows far-reaching and diverse effects that go beyond the coffee market. The descriptive results also suggest that such social environment is not only conducive for traders to collude in order to patronize farmers into personalized transactions, the personalized transactions can also arise as a strategic response of traders to reduce transaction risks.

Intended to reduce transaction costs and risks, ECX introduced new transaction arrangements that eliminate personalized transactions at the central markets. The analysis of the impacts of this intervention found it to impersonalize the transactions, but its effects on improving the market linkage between the local, central, export and world markets were found to be limited. Specifically, downstream markets adjust prices to eliminate positive discrepancies more rapidly than negative discrepancies. Contrary to these popular views and claims, we found little improvements in the speed and symmetry of price transmissions along the coffee chain. We conclude that as long as the local markets remain traditional and personalized and the export market remains little competitive, farmers will continue to receive a small share of the final price for their produce.

Concerning the impacts of ECX on reducing the level of collusions and increasing the level of competitions, we found that both collusion and competition existed even with ECX.

We also conclude that ECX has made important contributions in eliminating transaction risks associated with payment failures. However, given the different delivery problems exporters are facing, the impact of ECX on payment failure cannot be exaggerated as

the effect part of the transaction risks simply seems to have been transferred from traders to exporters.

Although the government of Ethiopia was able to secure trademark protection under the legal scheme of GI-protection, it took, at the same time, a measure that fully contradicts GI-protection by precluding coffee transaction outside ECX. Examination of the institutional interventions made through trademarking shows a considerable impact on export prices. Not only total percentage change in export prices was higher following the introduction of trademarking, but there was a positive change in the monthly growth rate of prices. But these gains were also counteracted by the introduction of a non-traceable trading system at ECX. We conclude therefore that the two interventions are incompatible. Legally proscribing the use of alternative arrangements is a measure that is contrary to the purpose of the trademarking initiative. The study also revealed that the gains from improving quality are high for all coffee types. The gains were also found to be higher when the trademarked coffee was exported to Western countries than non-Western countries. But unfortunately, only a small portion of these changes was captured by coffee producing farmers. Finally, finding a safe exit for the 85% of the population of small-scale and subsistence farmers is one thing, expecting to bring economic, social and political development by promoting policies that preserve the small-scale farming with all its' archaic culture and tradition is a chimera.

9.2 Policy implications

The irony about the economic and political ideology is that a country that experienced the sordid failure of past socialist experimentation still dares to re-experiment it again and again. The historical path of the country, with the exception of the imperial periods, has been the history of a closed socio-economic system. History has not only demonstrated that expanding trade beyond the narrow tribal system is the source of civilization, it has also demonstrated time and again the consequence of confining transactions within locality leads to stagnation and weakening of society. Instead of promoting policies that segregate society into small communities, policies that encourage gradual cultural assimilation among different groups are needed. Protection

of property rights, free mobility of labor and capital and privatization of land are crucial components of such policy. No society has ever developed by preserving a segregated and fragmented society.

The result also suggests that the personalized transactions are an inefficient institutional arrangement. But these inefficiencies are also inextricably and strongly linked with the broader socio-cultural, economic and political environment. The implication is that in as long as the broader environment forecloses other alternative impersonalized arrangements, these inefficiencies seem to persist.

One of the key misunderstanding in the development thinking of Africa in general and Ethiopia, in particular, is the underestimation of the role of market, trade, and commerce. It should be fully recognized that market, trade and commerce are key necessary requirements without which no meaningful development can be achieved. Furthermore, the role of these economic activities is not limited to their direct contributions to the wealth of the nation, much more comes from the second-order effect of stimulating institutional progress – political, social, and economic. However, it should also be recognized that these economic activities cannot emerge in an institutional vacuum.

One important implication of the study is that the structure of property rights, especially of land, crucially determines the resulting social landscape and institutions and the historical path of the country. The study, therefore, suggests a move away from the current state-owned and traditional communal land system into a private ownership system. We recommend a careful and gradual transformation of the current ownership system into a private ownership system

Privatization of key resources especially land will gradually change the socioeconomic landscape which breaks the existing narrowly confined social bonds and give chance for people to revise their mental model. Thus, unless deliberate and gradual measures are taken to privatize land and other key resources and to liberalize the domestic and foreign markets, institutional progress will remain limited. The liberalization measures should transform the currently closed and segregated social system into an open and accommodative society. Otherwise, the country could regress back into fragmented and

segregated socioeconomic and political structure, as the historical path of the Abyssinian empire showed us. In line with Berhanu Abegaz (2006), we thus suggest for strong measures to be taken to liberalize markets. However, this cannot come without deliberate reforms in the judicial and political system, because that is key for efficient performances of the institutions.

Although currently, personalized transactions are the only institutional arrangement, the good news is that the majority of the farmers are willing to use impersonalized transactions if there would exist efficient product, input and credit markets. The implication is that policy measures should be taken for markets to flourish.

The study also showed the limits of deliberate institutional interventions. The impact of an institutional intervention tends to be more limited when the intervention is confined to the central or export market; as ECX in the case of the former and GI protection (trademarking) in the case of the later. Not only incentive compatibility is crucial for the effectiveness of institutions, but the compatibility between different institutional interventions is vital. The current intervention by ECX is not incentive compatible in that it forced transacting parties to use the ECX platform by legally prohibiting the use of other alternative arrangements. In addition, ECX is not compatible with the institutional arrangements that GI-protection requires. The use of the ECX platform must be on a voluntary basis. Thus transacting parties must be free to choose any institutional arrangement outside ECX.

But the commoditization of coffee by ECX also undermines the potential price gains from product differentiation through trademark protection of Ethiopian fine coffee. The study showed that even though there is a potential to exploit the long term benefits of GI-protection, the gains are counteracted by the intervention of ECX. The study also revealed that the current attempt to maintain the reputation of GI by blocking cross-border trade was not effective as brand-mixing is still a problem. Allowing traders and exporters to use alternative institutional arrangements can better incentivize exporters and traders to build the reputation by which the country could benefit from GI-protection.

Moreover, given the overall context, the current GI-protection through trademarking seems to be not a suitable instrument as it undermines the role of producers in adding value through product differentiations. Alternative ways of GI-protection that increase the role of farmers such as through certification can work better; both in improving the confidence of foreign buyers and in increasing the bargaining power of farmers.

ECX introduced various IT-based technologies to impersonalize the transactions at the central markets. The introduction of IT technology has made important contributions. But the technology alone is not sufficient enough to fully break the sophisticated human relationship if the society is closely-knit with dense of social networks. The implication is that creating impersonalized transactions requires more than investment on IT technology.

The study also found that the price gains from improving the grade-level of the different coffees were high. But the study also identified different inefficiencies in the operation of ECX particularly in the grading system and the mode of delivery. Thus, ECX should improve its operations in these areas.

The study also found that Ethiopian exporters can benefit more from exporting to western countries than to the rest of the world. Export promotion that direct exports to areas where they can fetch the highest foreign exchange earnings can help.

All the evidence implies that improving the market to benefit farmers requires more than just an institutional intervention through a commodity exchange. Further liberalization reforms and infrastructural investments can better transform local and export markets. Particularly the various restraints that limit competition need to be removed. Traders should be allowed to trade across regions. In addition, other institutional support should be made to improve the local and export markets.

The other important implication of the study is that the diverse formal and informal rules that restrict domestic and foreign trade and commerce do more harm than they benefit the society. They also put a lot of restraints on the development of efficient institutions. A series of measures needs to be done to further liberalize the market.

In a condition where land is communal, the social landscape tends to be closed and homogenous. In such social landscape, social organizations such as clan, tribe and the like determine the economic, social and political life of people. The historical origin of this social systems was to provide collective protection against external threats and to promote reciprocal exchange and mutual supports. They thus served as 'state' organ in the past. But such social structure inevitably undermines transactions with outsiders and even constrains the diversification of livelihood within. They thus create a closed system that in turn undermines private property, wealth accumulation, specialization and monetary exchanges. In the past, in the absence of state power these customary institutions and social organizations might have helped the society to survive, if not progress, from the exigencies of nature and human aggression. But these institutions create only limited order; not extended order that expand socioeconomic opportunities. Using them in the process of creating extended order by the state is one thing, preserving them as the only desirable institution is something else, that perpetuates a segregated society. The major misconception emanates from the failure to understand the far-reaching adverse consequences of these institutions on every walk of life.

These institutions and social organizations should be viewed, not as an end themselves, but as a means toward creating extended order and an open society. But it should also be emphasized that the process of creating an open and integrated society can be achieved more through the gradual fulfillment of market fundamentals than through excessive conscious design that resembles command system.

9.3 Limitations of the study and direction for future research

We used a framework where transacting parties choose between personalized and impersonalized transactions. Our study assessed the preference of farmers using choice experiment data in order to identify the attributes of alternative transacting parties that are more preferred by farmers. That helped us not only to identify the factors that determine the personalization of transactions but also indicated the factors that are required for impersonalized transactions to develop. But the result would have been robust if a similar analysis was made on the choice of the other side of players - buyer-

traders. We suggest a study that compares and contrasts the preference of both sides of players – sellers and buyers.

While our historical analysis of institutions in the country provided us important insights on the origin of institutional constraints observed in the country, a separate in-depth historical analysis on the origin of institutions is very important given the unique (compared to other sub-Saharan African countries) history the country passed through. A cross-country comparative analysis of the history of institutions will add further value.

References

Abbik, J. 2011. Ethnic-based federalism and ethnicity in Ethiopia: reassessing the experiment after 20 years. Journal of Eastern African Studies 5(4): 596-618.

Abdulai, A. 2000. Spatial price transmission and asymmetry in the Ghanaian maize market. *Journal of Development Economics 63*: 327–349.

Abdullahi, A. M. 1998. Article 39 of the Ethiopian constitution on secession and self-determination: A panacea to the nationality question in Africa? *Verfassung und Recht in Übersee / Law and Politics in Africa, Asia and Latin America 31*(4): 440-455.

Acemoglu, D. & S. Johnson. 2005. Unbunding institutions. *Journal of Political Economy, 113*(5): 949-995.

Adamowicz, W. L., J. Louviere, & J. Swait. 1998. Introduction to attribute-based stated choice methods. Final Report to Resource Valuation Branch, Damage Assessment Center, NOAA, U.S. Department of Commerce. Pp. 1-44.

Adejumobi, S. A. 2007. *The History of Ethiopia*. Greenwood Press. USA.

Ahlerup, P., O. Olsson & D. Yanagizawa. 2009. Social capital vs institutions in the growth process. *European Journal of Political Economy 25*: 1–14.

Akerlof, G. A. 1970. The market for “Lemons”: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics 84*(3): 488-500.

Alchian, A. A. 1950. Uncertainty, evolution, and economic theory. *The Journal of Political Economy 58*(3): 211-221.

Altenburg, T., 2010. Industrial Policy in Ethiopia. German Development Institute, Discussion Paper 2/2010.

Alula, A. and Fassil, G. K. (1983) Agrarian Reform, Structural Changes and Rural Development in Ethiopia**.** In: Ghose, A. K. (Ed.), *Agrarian Reform in Contemporary Developing Countries*, London: Croom Helm Ltd., p.p. 144-184.

Andersson, C., M. Bezabih and A. Mannberg. 2015. The Ethiopian Commodity Exchange and spatial price dispersion. Working Paper No. 204.

Aoki, M. 2007. Endogenizing institutions and institutional changes. *Journal of Institutional Economics* 3(1): 1–31.

Aoki, M., 2001. What are institutions? How should we approach them? The institutional foundations of a market economy. WDR 2001/2

Arrow, K. J. 1972. Gifts and exchanges. *Philosophy and Public Affairs 1*(4): 343-362.

Arslan, A. & C.P. Reicher. 2011. The effects of the coffee trademarking initiative and Starbucks publicity on export prices of Ethiopian coffee. *Journal of African Economies 20*(5): 704-736.

Asafa Jalata. 1996. The struggle for knowledge: The case of emergent Oromo studies. *African Studies Review 39*(2): 95-123.

Asane-Otoo, E. & J. Schneider. 2015. Retail fuel price adjustment in Germany: A threshold cointegration approach. *Energy Policy 78*: 1-10.

Assefa Mehretu. 2012. Ethnic federalism and its potential to dismember the Ethiopian state. *Progress in Development Studies 2*(2&3): 113–133.

Bahiru Z. 2001. *A history of modern Ethiopia, 1855-1991*. 2nd ed., James Currey Ltd. UK.

Baker, B. 2013. Where formal and informal justice meet: Ethiopia's justice pluralism. *African Journal of International and Comparative Law 21*(2): 202–218.

Baker, G., R. Gibbons & K. J. Murphy. 2002. Relational contracts and the theory of the firm. *The Quarterly Journal of Economics*, 117(1): 39-84.

Baliamoune-Lutz, M. 2011. Trust-based social capital, institutions, and development. *The Journal of Socio-Economics 40*: 335–346.

Banerjee, A. V. 1992. A simple model of herd behaviour. *The Quarterly Journal of Economics 107*(3): 797-817.

Barcala, M. F., M. Gonzalez-Diaz and E. Raynaud. 2007. The governance of quality: The case of the agrifood brand names. 3rd International Conference on Economics and Management Networks, Rotterdam School of Management, Erasmus University, June 28-30, 2007.

Barjolle, D., M. Paus and A. Perret, 2009. Impacts of Geographical Indications: Review of methods and empirical evidences. Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009

Barrett, C.B. 1997a. Food marketing liberalization and trader entry: evidence for Madagascar. *World Development 25*(5), 763–777.

Barrett, C.B. 1997b. Liberalization and food price distributions: ARCH-M evidence from Madagascar. *Food Policy 22*(2): 155-173.

Bassolet, B. & C. Lutz. 1999. Information service and integration of cereal markets in Burkina Faso. *Journal of African Economies 8*: 31-51.

Batsell, R. R., and J. J. Louviere. 1991. Experimental analysis of choice. *Marketing Letters*, 2(3): 199-214.

Baykedagn, G. 1995. State and economy of early 20th century Ethiopia. T. Bogner, Trans. London: Kamak House, Original work published 1924.

Bekker-Grob, E. W., L. Hol, B. Donkers, L. van Dam, J. D. F. Habbema, , M. E. van Leerdam, & E. W. Steyerberg. 2010. Labelled versus unlabelled discrete choice experiments in health economics: An application to colorectal cancer screening. *Value in Health 13*(2): 315-323.

Belay, K. and W. Manig 2004. Access to rural land in Eastern Ethiopia: Mismatch between policy and reality. *Journal of Agriculture and Rural Development in the Tropics and Subtropics 105*(2): 123–138.

Bellemare, M.F., C.B. Barrett, & D.R. Just, 2013. The welfare impacts Of commodity price volatility: Evidence from rural Ethiopia. *American Journal of Agricultural Economics 95*(4): 877–899.

Belletti, G., 1999. Origin labelled products, reputation and heterogeneity of firms', in B. Sylvander, D. Barjolle and F. Arfini (eds.), 2000. *The Socio-Economics of Origin Labelled Products in Agro-Food Supply Chains: Spatial, Institutional and Co-Ordination Aspects*. Series Actes et Communications, 17, INRA, Paris, 1999.

Berhanu Abegaz. 2006. The case for deeper economic reform in post-election Ethiopia. *International Journal of Ethiopian Studies 2*(1/2): 33-54.

Berhe, Y. 2010. The legal regime regulating the coffee trade in Ethiopia. Addis Ababa University, School of Graduate Studies, Unpublished Thesis.

Bernard, T., S. Dercon, K. Orkin, and S. T. Alemayehu. 2014. The future in mind: Aspirations and forward-looking behavior in rural Ethiopia. Working Paper WPS/2014–16, Centre for the Study of African Economies, Oxford, U.K.

Bertrand, B., P. Vaast, E. Alpizar, H. Etienne, F. Davrieux, & P. Charmetant. 2006. Comparison of bean biochemical composition and beverage quality of Arabica hybrids involving Sudanese-Ethiopian origins with traditional varieties at various elevations in Central America. *Tree Physiology 26*: 1239-1248.

Bitzer, V., M. Francken, and P. Glasbergen. 2008. Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? *Global Environmental Change 18*: 271–284.

Blandon, J., S. Henson, & T. Islam. 2009. Marketing preferences of small-scale farmers in the context of new agrifood systems: A stated choice model. *Agribusiness 25*(2): 251–267.

Bollier, D. 2007. The growth of the commons paradigm. In Charlotte Hess and Elinor Ostrom, (ed.) Understanding knowledge as a commons: From theory to practice. The MIT Press Cambridge, Massachusetts London, England.

Bowles, S. 1998. Endogenous preferences: The cultural consequences of markets and other economic institutions. *Journal of Economic Literature 36*(1): 75-111.

Boxall, P. C., and W. L. Adamowicz. 2002. Understanding heterogeneous preferences in random utility models: A latent class approach. *Environmental & Resource Economics 23*: 421–446.

Bramley C., E. biénabe and J. Kirsten. 2009. The economics of geographical indications: towards a conceptual framework for geographical indication research in developing countries. In *The economics of intellectual property: Suggestions for further research in developing countries and countries with economies in transition*. World Intellectual Property Organization.

Bramley, C. 2011. A review of the socio-economic impact of geographical indications: Considerations for the developing world. Paper prepared for presentation at the WIPO Worldwide Symposium on Geographical Indications, June 22 – 24, 2011, Lima, Peru.

Brazell, J. F., C. G. Diener, E. Karniouchina, W. L. Moore, & V. Severin. 2006. The no-choice option and dual response choice designs. *Marketing Letters 17*(4):255-268.

Brietzke, P. 1976. Land reform in revolutionary Ethiopia. *The Journal of Modern African Studies 14*(4): 637-660.

Brietzke, P. H. 1995. Ethiopia's "Leap in the Dark": Federalism and self-determination in the new constitution. *Journal of African Law 39*(1): 19-38.

Brousseau, E., P. Garrouste, & E. Raynaud. 2011. Institutional changes: Alternative theories and consequences for institutional design. Journal of Economic Behavior & Organization 79(1-2): 3-19.

Brousseau, E., Schemeil, Y., Sgard, J., 2010. Constitution, states and development. Journal of Comparative Economics 38, 253–266.

Bunch, D. S., J. J. Louviere, & D. Anderson. 1996. A comparison of experimental design strategies for multinomial logit models: The case of generic attributes. Technical Report, University of California.

Burke, W. J. T. S. Jayne, H. Ade Freeman & P. Kristjanson. 2007. Factors Associated with Farm Households' Movement Into and Out of Poverty in Kenya: The Rising Importance of Livestock. International Development Working Paper No. 90, Department of Agriculture Food and Resource Economics, MSU.

Burstein, S. 1998. *Ancient African civilizations: Kush and Axum*. Princeton, NJ: Markus Wiener.

Carriquiry, M. and B. A. Babcock 2004. Reputation, quality observability, and the choice of quality assurance systems. Center for Agricultural and Rural Development (CARD). Working Paper 04-WP 373.

Carriquiry, M. and B. A. Babcock. 2007. Reputations, market structure, and the choice of quality assurance systems in the food industry. *American Journal of Agricultural Economics 89*(1): 12-23.

Carson, R. T., J. J., Louviere, D. A. Anderson, P. Arabie, D. S. Bunch, D. A. Hensher, … J. B. Wiley. 1994. Experimental analysis of choice. *Marketing Letters 5*(4): 351-368

Chan, K. 1993. Consistency and limiting distribution of the least squares estimator of the threshold autoregressive model. *The Annals of Statistics 21*: 520–533.

Chaudhry, K. A. 1993. The myths of the market and the common history of late developers. *Politics and Society 21*(3): 245-274.

Chaudhry, K. A. 1994. Economic liberalization and the lineages of the rentier state. *Comparative Politics 27*(1): 1-25.

Chege, M. 1979. The revolution betrayed: Ethiopia, 1974-9. *The Journal of Modern African Studies 17*(3): 359-380.

Chole, E. and M. Manyazewal. 1992. The macroeconomic performance of the Ethiopian economy 1974-90. In Mekonen Tadesse (ed.), *The Ethiopian economy: Structure and policy issues.* Ethiopian Economic Society. Addis Ababa, Ethiopia.

Clapham, C. 2002. Rewriting Ethiopian history. *Annales d'Ethiopie, Année 18*(1): 37 – 54.

Clapham, C. 2009. Post-war Ethiopia: The Trajectories of Crisis. Review of African Political Economy 36(120): 181-192.

Coase, R. 1998. The New Institutional Economics. *The American Economic Review,* 88(2): 72-74.

Coase, R. H. 1992. The institutional structure of production. *The American Economic Review 82*(4): 713-719.

Cohen, J. M. 1973. Ethiopia after Haile Selassie: The government land factor. *African Affairs 72*(289): 365-382.

Cohen, J. M. and D. Weintraub. 1975. *Land and Peasants in Imperial Ethiopia: The Social Background to a Revolution*. Assen: Van Gorcum.

Coleman, J. S. 1988. Social capital in the creation of human capital. *The American Journal of Sociology 94*: S95-S120.

Collins, A. T., J. M. Rose, & D. A. Hensher. 2013. Specification issues in a generalised random parameters attribute nonattendance model. *Transportation Research Part B 56*: 234-253.

Coulter, J. & G. Onumah. 2002. The role of warehouse receipt systems in enhanced commodity marketing and rural livelihoods in Africa. *Food Policy 27*: 319–337.

Coulter, J. and P. Golob. 1992. Cereal marketing liberalization in Tanzania. *Food Policy*, pp. 420-430.

Courtois, P. and J. Subervie, 2014. Farmer bargaining power and Market Information Services. *American Journal of Agricultural Economics 97*(3): 953–977.

Crewett, W. & B. Korf. 2008. Ethiopia: Reforming land tenure. *Review of African Political Economy* 116:203-220.

Crewett, W., A. Bogale, and B. Korf. 2008. Land tenure in Ethiopia: Continuity and change, shifting rulers, and the quest for state control. CAPRi Working Paper 91.

CSA (Central Statistical Agency). 2010. Ethiopian population and housing census. Ethiopian, Central Statistical Agency, Addis Ababa, Ethiopia.

Curzi, D. & P. Lucia. 2015. Price, quality and trade costs in the food sector. *Food Policy 55*(C): 147-158.

Dadi, L., A. Negassa, & S. Franzel. 1992. Marketing maize and *tef* in Western Ethiopia: Implication for policies following market liberalization. *Food Policy* 17(3): 201-213.

Deconinck, K. & J. Swinnen. 2014. The political economy of Geographical Indications. American Association of Wine Economists, AAWE. Working Paper No. 174.

Denzau, A. & D. North. 1994. Shared mental models, ideologies and institutions. Kyklos 47: 3-31.

DePass, D. 2011. Starbucks vs. Ethiopia: Corporate strategy and ethical sourcing in the coffee industry. Institutions in Crisis. The Kenan Institute for Ethics at the Duke. Case Studies in Ethics.

Dercon, S., 2001. Economic reform, growth and the poor: Evidence from rural Ethiopia, Working Paper Series 2001-8

Domar, E. D. 1970. The causes of slavery or serfdom: a hypothesis. *The Journal of Economic History* 18-32.

Donham, D. 1986. Old Abyssinia and the New Ethiopian Empire: Themes in Social History. In D. Donham and W. James, (eds). The Southern marches of imperial Ethiopia. Essays in history and social anthropology. Cambridge: Cambridge University Press.

Dorward, A. R. & S. W. Omamo. 2009. "A framework for analyzing institutions" In J. F. Kirsten, A. R. Dorward, C. Poulton, & N. Vink (ed), *Institutional economics perspectives on African agricultural development* (pp. 3-34). International Food Policy Research Institute (IFPRI), Washington DC, USA.

Dorward, A. R., J. F. Kirsten, S. W. Omamo, C. Poulton, & N. Vink. 2009. "Institutions and the agricultural development challenge in Africa." In J. F. Kirsten, A. R. Dorward, C. Poulton, & N. Vink (ed), *Institutional economics perspectives on African agricultural development* (pp. 3-34). International Food Policy Research Institute (IFPRI), Washington DC, USA.

Dorward, A., J. Kydd and C. Poulton. 2005a. Beyond liberalization: "Developmental coordination" policies for African smallholder agriculture. *Institute of Development Studies Bulletin 36*(2): 80-85.

Dorward, A., J. Kydd, J. Morrison and C. Poulton. 2005b. Institutions, market and economic co-ordination: Linking development policy into theory and praxis. *Development and change 36*(1): 1-25.

Dower, J. 1868. Map of Abyssinia, 1868. Beeton's Dictionary of Geography.

Durlauf, S. N. 1999. The case "against" social capital. *Focus 20*(3): 1-5.

Działek, J. 2014. Is social capital useful for explaining economic development in Polish regions? *Geografiska Annaler Series B-Human Geography 96*(2): 177-193.

Easterly, W. & R. Levine. 1995. Africa's growth tragedy: A retrospective, 1960-89. The World Bank, Policy Research Working Paper 1503.

Easterly, W. 2005. What did structural adjustment adjust? The association of policies and growth with repeated IMF and World Bank adjustment loans. *Journal of Development Economics 76*: 1– 22.

ECEA (Ethiopian Commodity Exchange Authority). 2008. Understanding commodities to be traded at Ethiopia Commodity Exchange: Analysis of coffee supply, production, utilization and marketing issues and challenges in Ethiopia Policy Analysis and Economic Research Team, July, 2008. Addis Ababa.

Egbert, H., and T. Sedlarski. 2011. *"Exploring impact: Negative effects of social networks*." MPRA Paper No. 56688.

Eggertsson, T. 1996. No experiments, monumental disasters: Why it took a thousand years to develop a specialized fishing industry in Iceland. *Journal of Economic Behavior & Organization 30*: l-23.

Eggertsson, T. 2005. Imperfect institutions: Possibilities and limits of reform. University of Michigan Press. Pp: 99-126.

Enders, W. & C.W.J. Granger. 1998. Unit-root tests and asymmetric adjustment with an example using the term structure of interest rates. *Journal of Business & Economic Statistics 16*(3): 304-311.

Enders, W. & P.L Siklos. 2001. Cointegration and threshold adjustment, Journal of Business & *Economic Statistics 19*(2): 166.

Enders, W. 2004. *Applied econometric time series*. 3rd ed. John Wiley & Sons, INC. 1-544.

Ensminger, J. 1997. Changing property rights: Eewconciling formal and informal rights to land in Africa. In *The frontiers of the new institutional economics*. John N. Drobak and John V.C. Nye, eds. Pp 165-196. San Diego: Academic Press, 1997.

Fafchamps, M. & B. Minten, 1999. Relationships and traders in Madagascar. *Journal of Development Studies 35*(6): 1-35.

Fafchamps, M. 2004. *Market institutions in sub-Sahara Africa: Theory and evidence*. MIT press, pp. 1-521.

Fafchamps, M. and B. Minten. 2012. Impact of SMS-Based agricultural information on Indian farmers. *The World Bank Economic Review 26*(3): 383–414.

Fafchamps, M. and R. V. Hill. 2008. Price transmission and trader entry in domestic commodity markets. *Economic Development and Cultural Change 56*: 729-766.

Fafchamps, M., E. Gabre-Madhin & B. Minten. 2005. Increasing returns and market efficiency in agricultural trade. *Journal of Development Economics 78*: 406 – 442.

FAO. 2014. Analysis of price incentives for coffee in Ethiopia. Technical notes series, MAFAP, by Kuma Worako, T., MasAparisi, A. and Lanos B., Rome.

Fiamohe, R., P.A. Seck, D.Y. Alia & A. Diagne. 2013. Price transmission analysis using threshold models: an application to local rice markets in Benin and Mali. *Food Security 5*:427–438.

Field, A. J. 1981. The problem with Neoclassical Institutional Economics: A critique with special reference to the North/Thomas model of pre-1500 Europe. *Explorations in Economic History 18*: 174-198.

Freeman, D. 2004. *Initiating change in Highland Ethiopa: Cases ad consequences of cultural transformation.* Cambridge University Press. USA.

Gabre-Madhin, E. Z. 1999. Transaction costs and market institutions: Grain brokers in Ethiopia. International Food Policy Research Institute, MSSD Discussion Paper No. 31.

Gabre-Madhin, E. Z. 2001. The role of intermediaries in enhancing market efficiency in the Ethiopian grain market. *Agricultural Economics 25*(31): 1-320.

Gabre-Madhin, E. Z. 2009. "Exchange, contracts, and property-rights enforcement." In J. F. Kirsten, A. R. Dorward, C. Poulton, & N. Vink (ed), *Institutional economics perspectives on African agricultural development* (pp. 115-141). International Food Policy Research Institute (IFPRI), Washington DC, USA.

Gabre-Madhin, E. Z., & I. Goggin. 2005. Does Ethiopia need a commodity exchange? An integrated approach to market development. Ethiopian Development Research Institute, EDRI-ESSP Policy Working Paper No. 4.

Gabre-Madhin, E.Z. 2007. On happiness, freedom, and unleashing the power of the market. Speech delivered at TEDGlobal Conference on "Africa: the Next Chapter" Arusha, Tanzania, June 5, 2007.

Gabre-Madhin, E.Z. 2012. A Market for Abdu: Creating a commodity exchange in Ethiopia. International Food Policy Research Institute. http://www.ecx.com.et/downloads/Briefs

Garson, A. 2009. Shawa Ethiopia's Prussia: It expansion, disappearance, partition. In S. Ege, H. Aspen, B. Teferra and S. Bekele (ed.) Proceeding of the 16th International conference of Ethiopia, Trondhiem.

Gebremeskel, D., T. S. Jayne & J. D. Shaffer. 1998. Market structure, conduct, and performance: constraints on performance of Ethiopian grain markets. Grain Market Research Project, Working Paper 8, Ministry of Economic Development and Cooperation, Addis Ababa, Ethiopia.

Geertz, C. 1987. The bazaar economy: information and search in peasant marketing. *The American Economic Review 68*(2): 28-32.

Gelaw F., S. Speelman & G. V. Huylenbroeck. 2016. Farmers' marketing preferences in local coffee markets: Evidence from a choice experiment in Ethiopia. *Food Policy 61*: 92-102.

Gelaw F., S. Speelman & G.V. Huylenbroeck. 2015. Local coffee markets and quality improvement: Evidence from a choice experiment among coffee producers in Ethiopia. A contributed paper for International Conference of Agricultural Economists, August-9-14, 2015, Milan, Italy.

Getnet, K. 2007. Spatial Equilibrium of Wheat Markets in Ethiopia. *African Development Review 19*(2): 281–303

Getnet, K. 2008. From market liberalization to market development: The need for market institutions in Ethiopia. *Economic Systems 32*: 239–252.

Gibbons, R., 2010. Transaction-cost economics: past, present, and future? *Scandinavian Journal of Economics 112*(2): 263–288.

Gillespie, C. A. 2003. *Ethiopia*. Chelsea House Publishing.

Giovannucci, D. and L. F. Samper. 2009. The case of Café Nariño, Colombia. In ITC (International Trade Centre). 2009. Guide to geographical indications: Linking products and their origins. Geneva: ITC, xix, 207 p.

Giovannucci, D. and V. E. Smit. 2009. The case of Kona coffee, Hawaii. In ITC (International Trade Centre). 2009. Guide to geographical indications: Linking products and their origins. Geneva: ITC, xix, 207 p.

González, E.K. 2007. Three essays on coffee markets. Dissertation submitted to the Faculty of the Graduate School of the University of Maryland, College Park, in partial fulfillment of the requirements for the degree of Ph.D. in Agricultural and Resource Economics.

Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. *The American Journal of Sociology 91*(3): 481-510.

Greene, W. H. 2005. *LIMDEP version 10: Econometric modelling guide*, Econometric Software, Inc. 1-1722.

Gregory, A.W. & B.E. Hansen. 1996. Residual-based tests for cointegration in models with regime shifts. *Journal of Econometrics 70*: 99- 126.

Gregory, T. 2011. Transaction cost economics and directions for relational governance research. Proceedings of the Southern Association for Information Systems Conference, Atlanta, GA, USA March 25th -26th, 2011.

Greif, A. 1989. Reputation and coalitions in Medieval trade: Evidence on the Maghribi traders. *The Journal of Economic History 49*(4): 857-882.

Greif, A. 1994. Cultural beliefs and the organization of society: A historical and theoretical reflection on collectivist and individualist societies. *Journal of Political Economy 102*(5): 912-950.

Greif, A. 1998. Historical and comparative institutional analysis. *The American Economic Review 88*(2): 80-84.

Greif, A. 2004. Impersonal exchange without impartial law: The community responsibility system. *Chicago Journal of International Law 5*(1): 10-25.

Greif, A. 2006. *Institutions and the path to the modern economy: Lesson from Medieval Europe*. Cambridge University Press, UK, pp: 1-503.

Grootaert, C. 1998. Social capital: The missing link? The World Bank, Social Capital Initiative Working Paper, No. 3.

Grover, D. K. and Anteneh Temesgen. 2006. Enhancing land-use-efficiency through appropriate land policies in Ethiopia. Poster paper prepared for presentation at the International Association of Agricultural Economists Conference, August 12-18, Gold Coast, Australia.

Haaijer, R., W. Kamakura & M. Wedel, 2001. The 'no-choice' alternative in conjoint choice experiments. International Journal of Market Research 43(1): 93-106.

Haber, S., D. C. North, and B. R. Weingast. 2003. If economists are so smart, why is Africa so poor? *Hoover Digest* 4.

Habtamu M. T. 2015. Recordmaking, recordkeeping and landholding – chanceries and archives in Ethiopia (1700–1974). *History in Africa 42*: 433-461.

Hassan, D., S. Monier-Dilhan & V. Orozco. 2011. Measuring consumers' attachment to Geographical Indications: Implications for competition policy, TSE Working Paper, No. 11-225.

Hassouneh, I., T. Serra & J. M. Gil. 2010. Price transmission in the Spanish bovine sector: the BSE effect. *Agricultural Economics 41*: 33–42.

Hayek, F. A. 1988. *The fatal conceit: The errors of socialism*, (The collected works of Freidrich August Hayek). Volume I, Edited By, W. W. Bartley, III, First published in 1988 by Routledge.

Hensher, D. A., J. Rose & W. H. Greene. 2005. The implications on willingness to pay of respondents ignoring specific attributes. *Transportation, 32*: 203–222.

Henze, P. B. 1990. Marxist disaster and cultural survival in Ethiopia: Problems of Communism; ProQuest Central 39(6): 66-80.

Hernandez, M. A., S. Rashid, S. Lemma & T. Kuma. 2015. Institutions and Market Integration: The Case of Coffee in the Ethiopian Commodity Exchange. IFPRI Discussion Paper 01464. International Food Policy Research Institute (IFPRI), Washington, DC.

Hjort, J. 2010. Pre-colonial culture, post-colonial economic success? The Tswana and the African economic miracle. *Economic History Review 63*(3): 688-709.

Hobbs, J. E. 2003. Information, incentives and institutions in the agri-food sector. *Canadian Journal of Agricultural Economics 51*: 413–429.

Hodgson, G. M. 1988. *Economics and institutions: A manifesto for a modern institutional economics*. Philadelphia: University of Pennsylvania Press, Pp. 1-365.

Hodgson, G. M. 1998. The approach of institutional economics. *Journal of Economic Literature 36*(1): 166-192.

Hodgson, G. M. 2006. What Are Institutions? *Journal of Economic Issues XL*(1): 1-25.

Holcomb, B. K. & Sisai Ibssa. 1990. *The invention of Ethiopia: The making of a dependent colonial state in Northeast Africa.* Trenton, New Jersey: Red Sea Press, Pp: 1-450.

Hurwicz, L. 1996. Institutions as families of game forms. *The Japanese Economic Review, Japanese Economic Association 47*(2): 113-132.

ICO (International Coffee Organization). 2015. *Sustainability of the coffee sector in Africa*. International Coffee Council 114-5, London, UK.

IMF (International Monetary Fund). 2011. The Federal Democratic Republic of Ethiopia: Joint staff advisory note on the growth and transformation plan 2010/11–2014/15. IMF Country Report No. 11/303.

ITC (International Trade Centre). 2009. *Guide to geographical indications: Linking products and their origins*. Geneva: ITC, xix, 207 p.

Jackson, M. O., T. Rodriguez-Barraquer & X. Tan. 2012. Social capital and social quilts: Network patterns of favor exchange. *American Economic Review 102*(5): 1857-1897.

Jaeger, S. R. & J. M. Rose. 2008. Stated choice experimentation, contextual influences and food choice: A case study. *Food Quality and Preference 19*: 539–564.

Jayne, T., S.J. Govereh, A. Mwanaumo J.K. Nyoro, & A. Chapoto. 2002. False promise or false premise? The experience of food and input market reform in Eastern and Southern Africa. *World Development 30*(11): 1967–1985.

Jayne, T.S., C. Sturgess, R. Kopicki, & N. Sitko. 2014. Agricultural commodity exchanges and the development of grain markets and trade in Africa: A review of recent experience. Food Security Collaborative Working Papers 188568.

Jema, H. 2004. The politics of land tenure in Ethiopian History: Experience from the south. Paper presented for XI World Congress of Sociology, July 25-30, Trondeihm, Norway.

Johnson, F. R., B. Kanninen, M. Bingham, & S. Özdemir. 2006. "Experimental design for stated choice studies", B. J. Kanninen (ed.), *Valuing environmental amenities using stated choice studies*, 159–202.

Josling, T. 2006. The war on *terroir*: Geographic Indications as transatlantic trade conflict. *Journal of Agricultural Economics 57*(3): 337-63.

Kahneman, D. 2002. *Thinking fast and slow*. Farrar, Straus and Giroux, New York.

Kahneman, D. 2003. Maps of bounded rationality: Psychology for behavioral economics. The American Economic Review, 93(5): 1449-1475.

Karayiannis, A. D. & A. N. Hatzis. 2012. Morality, social norms and the rule of law as transaction cost-saving devices: the case of ancient Athens. European Journal of Law Economics 33(3): 621-643.

Kebede, M. 1999. Development and the African philosophical deviate. Journal of Sustainable Development in Africa, 1(2): 39-60.

Kebede, M. 2001. From Marxism-Leninism to ethnicity: The sideslips of Ethiopian elitism. International Conference on African Development, Archives Center for African Development Policy Research. Paper 12.

Kebede, M. 2006. Gebrehiwot Baykedagn, Eurocentrism, and the decentering of Ethiopia. *Journal of Black Studies 36*(6): 815-832.

Khan, M. 2004. State failure in developing countries and institutional reform strategies. Annual World Bank Conference on Development Economics—Europe 2003. The International Bank for Reconstruction and Development/The World Bank.

Kherallah, M. & J. F. Kirsten. 2002. The new institutional economics: Applications for agricultural policy research in developing countries. *Agricultural Economics Research 41*(2), 110-133.

Kherallah, M., C. Delgado, E. Gabre-Madhin, N. Minot, & M. Johnson. 2000. The road half traveled: Agricultural market reform in Sub-saharan Africa. Food Policy Report, International Food Policy Research Institute. Washington, D.C.

Kilima, F.T.M., C. Chung, P. Kenkel & E.R. Mbiha. 2008. Impacts of market reform on spatial volatility of maize prices in Tanzania. *Journal of Agricultural Economics 59*(2): 257–270.

Kleiner, M. 2009. Ras Wäsän Säggäd, a pre-eminent lord of early 16th-century Ethiopia. In S. Ege, H. Aspen, B. Teferra and S. Bekele (ed.) Proceeding of the 16th International conference of Ethiopia, Trondhiem.

Knack, S. & P. Keefer. 1997. Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics 112*(4): 1251-1288.

Kranton, R. E. 1996. Reciprocal exchange: A self-sustaining system. *The American Economic Review 86*(4): 830-851.

Kuhfeld, W. F. 2010. *Experimental design: efficiency, coding, and choice designs.* SAS 9.2nd ed., pp. 53–241.

Kulkarni, B. 2011. *Commodity Exchange: Derivatives*. Anurag Jain for Excel Books. A-45, Nairana, Phase-I, New Delhi.

Kydd, J., 2009. A new institutional economic analysis of the state and agriculture in Sub-Saharan Africa. In: Kirsten, J.F., Dorward, A.R., Poulton, C., Vink, N. (Eds.), *Institutional Economics Perspectives on African Agricultural Development*. International Food Policy Research Institute, Washington, DC

Laffont, J. & J. Tirole. 1991. The politics of government decision-making: A theory of regulatory capture. *The Quarterly Journal of Economics 106*(4): 1089-1127.

Lagarde, M. 2013. Investigating attribute non-attendance and its consequences in choice experiments with latent class models. *Health Economics 22*: 554-567.

Leung, L. 2014. Eroded Coffee Traceability and Its Impact on Export Coffee Prices for Ethiopia. Development Discussion Paper 2014-04.

Levien, M. 2015. Social capital as obstacle to development: Brokering land, norms, and trust in rural India. *World Development 74*: 77–92.

Levine, D. N. 2011. Ethiopia's nationhood reconsidered. *Análise Social XLVI* (199): 311-327.

Levine, D. N. 2012. Revised analytical approach to the evolution of Ethiopian civilization. International Journal of Ethiopian Studies VI(1&2): 29-70.

Lewis W. A. 1956. *Theory of economic growth*. George Allen & Unwin Ltd. Great Britain, Unwin University Books.

Lewis, I. M. & P. A. Jewell. 1976. The peoples and cultures of Ethiopia [and Discussion]. *Proceedings of the Royal Society of London. Series B, Biological Sciences 194*(1114) A Discussion on Human Adaptability in Ethiopia: 7-16.

Loureiro, M. L. & J. J. McCluskey. 2000. Assessing consumer response to protected Geographical Identification labeling. *Agribusiness* 16(3): 309–320.

Louviere, J. J., D. Pihlens & R. Carson. 2010. Design of discrete choice experiments: A discussion of issues that matter in future applied research. *Journal of Choice Modelling 4*(1): 1-8.

Lusk, J. L., J. Roozen, and J. A. Fox. 2003. Demand for beef from cattle administered growth hormones or fed genetically modified corn: A comparison of consumers in France, Germany, the United Kingdom, and the United States. *American Journal of Agricultural Economics 85*(1): 16-29.

Manski, C. F. 1977. The structure of random utility models. *Theory and Decision 8*: 229-254.

Marcus, H. G. 1994. *A history of Ethiopia*. The Regents of the University of California, USA.

Markakis, J. 1975. *Ethiopia: Anatomy of traditional polity*. Oxford University Press, Addis Ababa.

Mbeng-Mezui, C. A., L. Rutten, S. Sekioua, J. Zhang, M. M. N'diaye, … B. Nekati. 2013. *Guidebook on African commodity and derivatives exchanges*. African Development Bank.

McCluskey, J. J. & M. L., Loureiro. 2005. Reputation and production standards. *Journal of Agricultural and Resource Economics 30*(1), 1-11.

McFadden, D. 1986. The Choice theory approach to market research. *Marketing Science 5*(4): 275-297.

McFetridge, D. G. 1994. The economics of vertical integration. *Canadian Journal of Agricultural Economics 42*: 525-531.

McLaren, A.2015. Asymmetry in price transmission in agricultural markets. *Review of Development Economics 19*(2), 415–433, 2015

Meijerink, G., E. Bulte and D. Alemu. 2014. Formal institutions and social capital in value chains: The case of the Ethiopian Commodity Exchange. *Food Policy 49*: 1–12.

Melesse, M. B. 2015. Institutional change and economic development: Evidence from natural and artefactual field experiments in Ethiopia. Unpublished thesis submitted in fulfillment of the requirements for the degree of doctor at Wageningen University, The Netherlands.

Menard, C. 2005. A new institutional approach to organization. In C. Menard and M. M. Shirley, *Handbook of New Institutional Economics* (ed.), Springer, The Netherlands.

Meyer, J. & S. von Cramon-Taubadel. 2004. Asymmetric price transmission: A survey. *Journal of Agricultural Economics 55*(3): 581-611.

Meyers, K. H. 2007. The ancient world: Civilization of Africa. Volume 1. E. Cline and S. Takács (ed.), Sharpe Reference, M.E. Sharpe, Inc. Pp. 19-20.

MoE (Ministry of Education). 2013. Education Statistics Annual Abstract 2005 E.C. (2012/2013) Education Statistics Annual Abstract 2001 E.C. /2008-09 G.C./, Addis Ababa, Ethiopia.

Mofya-Mukuka, R. & A. Abdulai. 2003. Policy reforms and asymmetric price transmission in the Zambian and Tanzanian coffee markets. *Economic Modelling 35*: 786–795.

Mohammed Hassen. 1996. The Development of Oromo nationalism. In Baxter, P. T. W., J. Hultin, and A. Triulzi. (ed.) *Being and becoming Oromo: Historical and anthropological inquiries*. Nordiska Afrika Institutat, Upsala, Norway.

MoLSA (Ministry of Labour and Social Affairs). 2013. Labor market dynamics in Ethiopia Analysis of seven key indicators of the labor market (KILM). The Federal Democratic Republic of Ethiopia, Addis Ababa, Ethiopia.

Moschini, G., L. Menapace & D. Pick. 2008. Geographical indications and the competitive provision of quality in agricultural markets. *American Journal of Agricultural Economics 90*(3): 794–812.

Mujawamariya, G., M. D'Haese & S. Speelman. 2013. Exploring double side-selling in cooperatives, case study of four coffee cooperatives in Rwanda. *Food Policy 39*: 72–83.

Musebe, R. O., C. A. Agwanda, G. I. Oduor, E. Negussie, & M. Mitiku. 2011. Costs and efficacy of operating coffee hand pulpers in Ethiopia: A cost- benefit analysis. *African Journal of Business Management 5*(11): 4415-4422.

Nabli, M. K. & J. B. Nugent. 1989. The new institutional economics and its applicability to development. *World Development 17*(9): 1333-1347.

NBE (National Bank of Ethiopia). 2014. Annual national report. National Bank of Ethiopia, Addis Ababa, Ethiopia.

Nelson, P. 1970. Information and consumer behaviour. *Journal of Political Economy 78*(2): 311-329.

North, D. C. 1990. *Institutions, institutional change and economic performance*. Cambridge University Press, pp. 1-152.

North, D. C. 1991. Institutions. *The Journal of Economic Perspectives 5*(1): 97-112.

North, D. C. 1993a. Economic performance through time, Prize Lecture to the memory of Alfred Nobel, The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, December 9, 1993.

North, D. C. 1993b. Institutions and credible commitment. *Journal of Institutional and Theoretical Economics 149*(1): 11-23.

North, D. C. 1994. Economic performance through time. *The American Economic Review* 84(3): 359-368.

North, D. C. 2005. *Understanding the process of economic change*. Princeton University Press, Princeton and Oxford. 1-200.

OECD (Organization for Economic Co-operation and Development). 2000. Appellations of origin and Geographical Indications in OECD member countries: Economic and legal implications. Working Party on Agricultural Policies and Markets of the Committee for Agriculture, Joint Working Party of the Committee for Agriculture and the Trade Committee, COM/AGR/APM/TD/WP15/FINAL, Paris, 2000.

Osborne, T. 2005. Imperfect competition in agricultural markets: evidence from Ethiopia. *Journal of Development Economics 76*: 405– 428.

Ostrom, E. 1998. A behavioral approach to the rational choice theory of collective action. *American Political Science Review 92*(1): 1–22.

Ostrom, E. 2005. *Understanding institutional diversity*. Princeton University Press, pp. 1-355.

Ostrom, E., R. Gardner, & J. Walker. 1994. *Rules, games, and common-pool resources*. Ann Arbor: University of Michigan Press.

Osuji, L. O. and S. O. Olowolayemo. 1998. The impact of trade liberalization policy on Sub-Saharan African countries' debt burden. African Economic and Business Review, Vol. 1(2): 59-73.

Petit, N. 2007. Ethiopia's coffee sector: A bitter or better future? *Journal of Agrarian Change 7*(2), 225–263.

Petrucelli, J. and S. Woolford. 1984. A threshold AR(1) model. J*ournal of Applied Probability 21*: 270–286.

Platteau, J. P. 1994. Behind the market stage real societies exist – Part I: The role of public and private order institutions. *The Journal of Development Studies* 30(3): 533-577.

Platteau, J. P. 2000. *Institutions social norms and economic development*. Routledge, London.

Platteau, J. P. 2009. Institutional obstacles to African economic development: State, ethnicity, and custom. *Journal of Economic Behavior & Organization* 71: 669–689.

Popper, K. R. 1966. *The open society and its enemies complete*: Volumes I and II, 5th ed., Princeton University Press. Pp. 1-794.

Portes, A. & P. Landolt. 2000. Social capital: promise and pitfalls of its role in development. *Journal of Latin American Studies, 32*(2): 529-547.

Posner, R. A. 1973. *Economic Analysis of Law*. Brown, Little.

Posner, R. A. 1980. A Theory of primitive society, with special reference to law. *Journal of Law and Economics 23*(1): 1-53.

Poulton, C., J. Kydd & A. Dorward. 2006. Overcoming market constraints on pro-poor agricultural growth in Sub-Saharan Africa. *Development Policy Review 24*(3): 243-277.

Putnam, R. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.

Quinin, J. 2009. Using cases to teach Ethiopian, African and World history. In S. Ege, H. Aspen, Birhanu Teferra and Shiferaw Bekele, Proceeding of the 16th International conference of Ethiopia, NTNU-trykk, Trondhiem.

Rangnekar, D. 2004. The socio-economics of Geographical Indications: A review of empirical evidence from Europe. International Centre for Trade and Sustainable Development (ICTSD) & United Nations Conference on Trade and Development (UNCTAD). Issue Paper No. 8

Rashid, S., A. Winter-Nelson & P. Garcia. 2010. Purpose and potential for commodity exchanges in African economies. IFPRI Discussion Paper No. 01035. International Food Policy Research Institute, Washington, DC.

Renkow, M. & R. Slade. 2013. An assessment of IFPRI's work in Ethiopia 1995-2010: Ideology, influence and idiosyncrasy. International Food Policy Research Institute, Washington DC. Independent impact assessment report No. 36.

Rodríguez-Pose, A. and S. Tijmstra. 2005. Local Economic Development as an alternative approach to economic development in Sub-Saharan Africa. A report for the World Bank.

Roe, B., T. L. Sporleder, & H. B. Belleville. 2004. Producer preferences for marketing contract attributes. *American Journal of Agricultural Economics 8*(1): 115-123.

Rose, J. M., M. C. J. Bliemer, D. A. Hensher, & A. T. Collins. 2008. Designing efficient stated choice experiments in the presence of reference alternatives. *Transportation Research Part B 42*(4): 395-406.

Saghaian, S. H. 2007 Beef safety shocks and dynamics of vertical price adjustment: The case of BSE discovery in the U.S. beef sector. *Agribusiness 23*(3): 333–348.

Saravia, S. & M. Dietrich. 2006. Emergence and impact of transaction costs in developing economies: the case of the Nicaraguan coffee industry during the Sandinista Regime (1979-1990)*. The III International Conference on Developments in Economic Theory and Policy, Bilbao, Spain, July 2006.

Schlüter, A. 2009. Institutional change and ecological economics: The role of mental models and sufficient reason. In V. Beckmann and M. Padmanabhan (ed.) *Institutions and sustainability: Political economy of agriculture and the environment – essay in honor of Konrad Hagedorn*. Springer Science+Business Media B.V. 315-340.

Schotter, A. 1981. *The Economic Theory of Social Institutions*. Cambridge University Press.

Schroede, K. 2009. The case of Blue Mountain coffee, Jamaica. In ITC (International Trade Centre). 2009. Guide to geographical indications: Linking products and their origins. Geneva: ITC, xix, 207 p.

Seabright, P. 2004. *The company of strangers: A natural history of economic life*. Princeton University Press.

Shapiro, C. 1982. Consumer information, product quality, and seller reputation. *The Bell Journal of Economics* 20-35.

Shapiro, C. 1983. Premiums for high quality products as returns to reputations. *The Quarterly Journal of Economics 98*(4): 659-680.

Simon, H. A. 1955. A behavioral model of rational choice. *The Quarterly Journal of Economics 69*(1): 99-118.

Singh, I., L. Squire and J. Strauss. 1986. A Survey of agricultural household models: Recent findings and policy implications. *The World Bank Economic Review, 1*(1): 149-179.

Sitko, N.J. & T.S. Jayne. 2012. Why are African commodity exchanges languishing? A case study of the Zambian Agricultural Commodity Exchange. *Food Policy 37*: 275–282.

Smith, A. 1776. An inquiry into the nature and causes of the wealth of nations. http://www.gutenberg.org/ebooks/3300.

Srur, M. A. 2014. State policy and law in relation to land alienation in Ethiopia. A Thesis Submitted for the Degree of PhD at the University of Warwick. UK.

Stigler, G. J. 1992. Law or economics? *Journal of Law and Economics 35*(2): 455-468.

Stiglitz, J. E. 1989. Incentives, information, and organizational design. NBER, Working Paper Series Working Paper No. 2979.

Stiglitz, J. E. 1995. *Social absorption capability and innovation*. In Bon Ho Koo and D. H. Perkins, eds., Social capability and long-term economic growth. New York: St. Martin's, pp. 48-81.

Stiglitz, J. E. 2002. Information and the change in the paradigm in economics. *The American Economic Review 92*(3): 460-501.

Sualeh, A., S. Endris, and A. Mohammed. 2014. Processing method, variety and roasting effect on cup quality of Arabica coffee. *Discourse Journal of Agriculture and Food Sciences 2*(2): 70-75.

Subervie, J. 2011. Producer price adjustment to commodity price shocks: An application of threshold cointegration. *Economic Modelling 28*: 2239–2246.

Swait, J. 1994. A structural equation model of latent segmentation and product choice for cross-sectional revealed preference choice data. *Journal of Retailing and Consumer Services 1*(2): 77-89.

Tabellini, G. 2008. Presidential address: Institutions and culture. *Journal of the European Economic Association* 6(2–3): 255–294.

Tadesse, G., and G. Shively. 2013. Repeated transaction in rural grain markets of Ethiopia. *The Journal of Development Studies* 49(9): 1172–1187.

Taylor, M. 1982. *Community, anarchy and liberty*. Cambridge University Press, New York, pp. 1-184.

Teuber, R. 2010. Geographical indicators of origin as a tool for product differentiation: The case of coffee. *Journal of International Food and Agribusiness Marketing* 22: 277-98.

Thomas, W. A. & B. Minet. 2015. Can agricultural traders be trusted? Evidence from urban coffee markets in Ethiopia. International Food Policy Research Institute (IFPRI) & Ethiopian Development Research Institute (EDRI). ESSP WP 72.

Triandis, H.C. 2001. Individualism-collectivism and personality. *Journal of Personality 69*(6): 907-924.

Ubilava, D. & K. Foster. 2009. Quality certification vs. product traceability: Consumer preferences for informational attributes of pork in Georgia. *Food Policy 34*: 305–310.

UNCTAD (United Nations Conference on Trade and Development). 2009. Development impacts of Commodity Exchanges in emerging markets. UNCTAD/DITC/Com/2009/9, Geneva and New York, UNCTAD.

Vaast, P., B. Bertrand, J. J. Perriot, B. Guyot, and M. Génard. 2006. Fruit thinning and shade influence bean characteristics and beverage quality of Coffee *Arabica* in optimal conditions. *Journal of Science Food and Agriculture* 86: 197-204.

Valdes, R., S.V. Cramon-Taubadel & A. Engler. 2015. Transaction costs and trade liberalization: An empirical perspective from the MERCOSUR agreement. *Food Policy 55*: 109–116.

Van der Lans, I. A., K. van Ittersum, A. de Cicco & M. Loseby. 2001. The role of region of origin & EU certificates of origin in consumer evaluation of food products. *European Review of Agricultural Economics 28*(4): 479-498.

Van Ittersum, K. and M. J. J. M. Candel. 1998. PGO/PDI products: Market, supply chains and insitutions. Qualitative consumer supply report, FAIR No. 1-CT95-306 Wageningen, The Netherlands, Wageningen University.

Varian, Hal R. 1992. *Microeconomic analysis*. 3rd ed. W. W. Norton & Company Inc. USA.

Vatn, A. 2009. Sustainability, institutions and behavior. In Beckmann, V. and M. Padmanabhan (eds.): *Institutions and Sustainability*. Berlin, Springer, pp. 293-314.

Wallis, J. J. 2011. Institutions, organizations, impersonality, and interests: The dynamics of institutions. *Journal of Economic Behavior & Organization 79*: 48–64.

Williamson, O. E. 1979. Transaction-cost economics: The governance of contractual relations. *Journal of Law and Economics, 22*: 233-261.

Williamson, O. E. 1985. *The economic institutions of capitalism: Firms, markets, relational contracting*. China Social Sciences Publishing House Chengcheng Books Lill. 1-450.

Williamson, O. E. 1993. Calculativeness, trust, and economic organization. *Journal of Law and Economics 36*: 453–486.

Williamson, O. E. 1995. Hierarchies, markets and power in the economy: An economic perspective. *Industrial and Corporate Change 4*(1): 21-49.

Williamson, O. E. 2000. The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature (38*): 595-613.

Williamson, O. E. 2010. Transaction cost economics: The natural progression. *American Economic Review 100:* 673–690.

Winter-Nelson, A. & A. Temu. 2002. Institutional adjustment and transaction costs: Product and inputs markets in the Tanzanian coffee system. *World Development 30*(4): 561–574.

Wintgens, J. N. 2009. *Coffee: Growing, processing, sustainable production*. A guide book for growers, processors, traders and researchers. Wiley Publishing, Inc.

Woolcock, M. 1998. Social capital and economic development: toward a theoretical synthesis and policy framework. *Theory and Society, 27*(2): 151–208.

Woolcock, M. and D. Narayan. 2000. Social capital: Implications for development theory, research, and policy. *World Bank Research Observer 15*(2): 225-250.

Worako T.K., H.D. van Schalkwyk, Z. G. Alemu & G. Ayele, 2008. Producer price and price transmission in a deregulated Ethiopian coffee market, *Agrekon, 47*(4): 492-508.

Worako, T.K., H. Jordaan & H.D. van Schalkwyk. 2011. Investigating volatility in coffee prices along the Ethiopian coffee value chain. *Agrekon,* 50(3): 90–108.

World Bank. 2000. Study of marketing and trading policies and systems in selected coffee producing countries: Ethiopia country profile. The World Bank, CFC Technical Report, No. 3.

World Bank. 2002. *Building institutions for markets*. World Development Report 2002. Oxford University Press. Pp. 1-249.

World Bank. 2003. Sustainable development in a dynamic world: Transforming institutions, growth, and quality of Life. World Development Report. 2003. The International Bank for Reconstruction and Development / The World Bank

World Bank. 2015. *Mind, society and behavior*. World Development Report, International Bank for Reconstruction and Development/The World Bank.

WTO (World Trade Organization). 2004. World Trade Report 2004. Geneva: WTO.

Young, J. 1996. Ethnicity and power in Ethiopia. Review of African Political Economy 70: 531-542.

Zwerina, K., J. Huber, & W. F. Kuhfeld. 1996. “A general method for constructing efficient choice designs.” In W. F. Kuhfeld, 1996. *Experimental design, choice, conjoint, and graphical techniques*, Marketing Research Methods in SAS, SAS 9.2 Ed., pp. 1-1139.Abdulai, A. 2000. Spatial price transmission and asymmetry in the Ghanaian maize market. *Journal of Development Economics 63*: 327–349.

Summary

The central aim of the thesis was to examine the role of personalized transactions in the development of society. The study was intended to analyzes the role of informal institutions governing personalized transactions and institutional interventions on the performance of markets taking the coffee supply chain in Ethiopia as a case. We conceptualize that personalized transaction arises when buyers and sellers, given the institutional environment, choose an institutional arrangement that suits their interest. But the prevalence of such institutional arrangement substantially determines the broader socio-economic, political and physical environment. In view of this framework, the thesis review theories about personalized transactions as an institutional arrangement and how it evolved over time. It then explored the behavioral and historical origin of personalized transactions and assesses its prevalence at different socio-economic units. It thus examines its overall effects on the broader environment.

Using these historical contexts as a background, we explained the sources of personalized transactions in the case of local coffee markets. Past closed systems and communal/state ownership of property rights and excessive state involvement in the economic sector are responsible for the current inefficient institutions. The analysis suggests the powerfulness of private property and freer market on institutional evolution. We conclude that the current communal and state property rights will constrain the development of institutions that can handle complex exchanges.

In order to identify the sources of personalized transactions, we measure the marginal effects of each attribute on the choice of farmers. The MNL revealed that all the attributes (price, trust, dependability, reliability, strictness, proximity and social relationships) we hypothesize to determine the preference of farmers in their choice of traders significant. All, except price and social relationships, can lead to farmers to embed their transactions in long-term relations. While price doesn't lead to personalized transactions, the social relationship attribute does. But since the MNL model doesn't capture preference heterogeneity, we use LCM to control for it. This enabled us to identify the different classes of farmers that share similar preferences. The result

revealed that only a small proportion of farmers value social relationships. This suggests that the existing personalized relationship is a strategic response of farmers to market constraints and information problems. The detailed examination of the effects of personalized relationships on coffee quality suggests that personalized transactions are not an efficient institutional arrangement to incentivize quality maintenance.

To be sure, the issue was also examined from trader's side. Descriptive analysis of survey data collected from trades suggests a similar result. The results indicate not only that personalized transactions are pervasive and increasing in recent times, the transaction risks faced by traders suggest the inefficiency of the personalized institutional arrangements. Given the historical context that forecloses the development of impersonalized transactions, we conclude that personalized transactions continue to govern coffee and other transactions in the local markets, despite their inefficiency.

While in the past such impersonalized transaction was pervasive even in the central markets, an institutional intervention was made to create a competitive and impersonalized transaction through ECX. To evaluate the efficiency of this institutional intervention we analyzed its speed and degree of symmetry of price transmissions between pairs of markets along the world-export-auction-local/retail coffee supply chain.

In most of the cases, the impacts were found to be limited to the upstream end of the supply chain. The implication is that institutional reforms at higher levels cannot succeed unless comparable reforms are made at each stage of the value chain down to the local markets. The result revealed that the speed and symmetry of price transmissions have not changed considerably after ECX and the effect also varies between export and domestic markets. Specifically, price improvements associated with grading and standardization will continue to be captured by traders and exporters as long as the transactions in the local markets remain traditional and the level of competitions at export markets little. We conclude that as long as the local markets remain traditional and personalized and the export market little competitive, farmers will continue to receive a small share of the final price for their produce. All the evidence imply that

improving the market to benefit farmers requires more than just improving institutions governing the central market.

Descriptive results obtained from survey data of producers and exporters showed that the intervention is effective in impersonalizing the transaction at the central markets. Most of the traders and exporters recognized the impacts of the intervention in reducing transaction problems such as payment failures, delivery, grading and the like. Yet, its impacts in improving the overall efficiency of the market were not as ECX claims. Some transaction risks are still there and transaction costs have not improved much. Moreover, the social landscape seems to have allowed some collusion among traders and exporters.

Given the transaction situations where exporters and trader/suppliers cannot use alternative arrangements except ECX auction floor, it is difficult to judge whether the observed transaction is efficient or not. Moreover a given institutional arrangement tends to be efficient and dynamic when it competes with alternative arrangements. In addition, one arrangement could be more suitable than another depending on the attribute of the transaction. For instance, the existing transaction through ECX is designed to handle commodity-coffee but not brand coffee. It cannot incentivize brand (geographic origin) reputation. This is because, while transactions in commodity market are necessarily non-traceable, transactions of GI-protected products at least require fully traceable transactions.

The government through the Ethiopian Fine Coffee Trademarking Initiative was able to get GI-protection in a number of European countries, USA and Japan. The initiative was to improve the bargaining power of exporters in the world markets. But a couple of years after this, the government also introduced a new rule that prohibits coffee transaction outside ECX: a rule in full contradiction with the institutional arrangement GI-protection requires. The two interventions: commoditization through ECX and trademarking are to our opinion fully incompatible – in terms of objective and structure of the transaction. This may not enable Ethiopia exporters of Ethiopian coffee to take advantage of trademark protections of Ethiopian coffee. Given this incompatible

institutional interventions, we wanted to analyze the impacts of the trademarking initiative on prices of GI-protected Ethiopian coffee.

We found the impacts of the trademarking on prices was positive and increasing over time. But when we analyze the impacts of ECX intervention, controlling other parameters, the impacts on prices of GI-protected coffee turns out to be negative.

Samenvatting

De hoofddoelstelling van de thesis was om na te gaan welke rol gepersonaliseerde transacties spelen tijdens de ontwikkeling van een samenleving. Deze studie had tot doel om de rol van informele instituties (die de gepersonaliseerde transacties bepalen) en institutionele interventies op de werking van markten te onderzoeken. De koffieketen in Ethiopië werd gekozen als case studie.

We kwamen tot de conclusie dat gezien de perceptie van agenten over de gedragskenmerken van elkaar en transactie attributen, de lokale institutionele omgeving de agenten dwingt te kiezen tussen persoonlijke en onpersoonlijke transacties. Maar het voorkomen van persoonlijke of onpersoonlijke transacties in de lokale markten is sterk bepalend voor de structuur en dynamiek van de bredere socio-economische, politieke en fysische omgeving.

In het licht van dit kader, begint dit proefschrift met een overzicht van theorieën over gepersonaliseerde transacties als een institutionele regeling en hoe het zich ontwikkeld heeft over de tijd heen. Vervolgens wordt gekeken naar de historische oorsprong van gepersonaliseerde transacties en worden de implicaties daarvan op het ontwikkelingstraject van het land beoordeeld. Bovendien worden de belangrijkste institutionele elementen geïdentificeerd die de evolutie van gepersonaliseerde transactie mede hebben bepaald. Door dit te doen, worden de hoofdelementen die de evolutie van persoonlijke transacties bepaald hebben geïdentificeerd en wordt haar impact beoordeelt op de bredere socio-economische en politieke omgeving.

We vonden dat het gemeenschappelijk bezit van belangrijke hulpbronnen zoals land in het verleden en beperkte handel met de buitenwereld, de twee belangrijkste determinanten waren voor het voorkomen van persoonlijke transacties. We vonden ook dat het overmatig ingrijpen van de overheid in de economische sector heeft geleid tot de huidige inefficiënte instituties. De analyse suggereert de sterkte van privé-eigendom en een vrijere markt op institutionele evolutie. We concluderen dat de huidige gemeenschappelijke en staatseigendomsrechten de ontwikkeling van onpersoonlijke

transacties zal blijven verhinderen. Deze ontwikkeling is cruciaal is voor de ontwikkeling van efficiënte instellingen die overweg kan met complexe uitwisselingen.

Om in staat te zijn de oorzaken van gepersonaliseerde transacties te identificeren, hebben we de marginale effecten van elke eigenschap gemeten op de keuze van boeren. De MNL toonde aan dat alle attributen (prijs, vertrouwen, afhankelijkheid, betrouwbaarheid, striktheid, nabijheid en sociale relaties) waarvan wij veronderstelden dat ze de voorkeur van boeren bepalen voor handelaren, significant zijn. Alle attributen, met uitzondering van prijs en sociale relaties, stellen de boeren in staat langdurige transacties te creëren. Hoewel prijs niet leidt tot een persoonlijke transactie, doet sociale relatie dit wel. Maar omdat het MNL model geen voorkeurheterogeniteit kan vastleggen, maken we gebruik van LCM om hiervoor te controleren. Zo konden we verschillende klassen van boeren die soortgelijke voorkeuren delen identificeren. Slechts een klein deel van de boeren waardeert sociale relaties. Dit suggereert dat de bestaande persoonlijke transacties een strategisch antwoord zijn van boeren op beperkingen van de markt en informatie problemen. Het gedetailleerde onderzoek naar de effecten van persoonlijke relaties op de koffiekwaliteit suggereert dat gepersonaliseerde transacties geen efficiënte institutionele regeling is om koffie kwaliteit onderhoud te stimuleren.

Om zeker te zijn werd de kwestie onderzocht vanuit het perspectief van de handelaar. Beschrijvende analyse van velddata die verzameld werden van transacties duidt op een vergelijkbaar resultaat. Niet alleen zijn persoonlijke transacties alomtegenwoordig en nemen ze recent toe in aantal, de transactierisico's voor de handelaren suggereert de inefficiëntie van de gepersonaliseerde institutionele regelingen. Gezien de historische context die de ontwikkeling van onpersoonlijke transacties afschermt, kunnen we concluderen dat gepersonaliseerde transacties de norm blijven voor koffie en andere producten op de lokale markten, ondanks hun inefficiëntie.

Daar waar in het verleden onpersoonlijke transacties alomtegenwoordig waren zelfs in centrale markten, werd een institutionele ingreep gedaan om een competitieve en onpersoonlijke transactie te creëren via ECX. Om de efficiëntie van deze institutionele interventie te evalueren analyseerden we de snelheid en de mate van symmetrie van

prijs transmissies tussen paren van markten over de wereld-export-veiling-lokale/kleinhandel koffie waardeketen.

In de meeste gevallen bleken de effecten beperkt tot het stroomopwaartse einde van de keten. De implicatie van deze bevinding is dat institutionele hervormingen op hogere niveaus niet kunnen slagen behalve wanneer vergelijkbare hervormingen worden doorgevoerd op elke trap van de waardeketen met als laatste trap de lokale markten. Snelheid en symmetrie van prijs transmissies zijn niet aanzienlijk veranderd na ECX en het effect varieert ook tussen export en binnenlandse markten. Concreet zullen prijs verbeteringen die geassocieerd zijn met indeling en standaardisatie, blijven plakken bij handelaren en exporteurs zolang de transacties in de lokale markt traditioneel blijven en de competitie op exportmarkten klein. We concludeerden dat zolang de lokale markten traditioneel en gepersonaliseerd blijven en de exportmarkt weinig concurrerend is, boeren een klein deel van de uiteindelijke prijs zullen blijven ontvangen voor hun producten. Al het bewijs impliceert dat om een verbetering van de markt dat de boeren ten goede komt te bewerkstelligen, meer nodig is dan alleen het verbeteren van instellingen met betrekking tot de centrale markt.

Uit de beschrijvende resultaten van velddate verzameld bij producenten en exporteurs bleek dat de interventie effectief is om transacties op centrale markten onpersoonlijk te maken. Het merendeel van de handelaren en exporteurs erkende de impact van de interventie op het verminderen van transactie problemen, zoals uitblijvende betalingen, levering, sortering en dergelijke. Maar de impact op het verbeteren van de algehele efficiëntie van de markt was niet zoals ECX het stelt. Sommige transactie risico's zijn er nog steeds en transactiekosten zijn niet veel verminderd. Bovendien lijkt het dat het sociale landschap toegestaan heeft dat collusie is ontstaan onder sommige handelaren en exporteurs.

In de transactie situaties waarbij exporteurs en handelaars/ leveranciers geen alternatieve regelingen dan de ECX veiling kunnen gebruiken, is het moeilijk om te beoordelen of de waargenomen transactie efficiënt is of niet. Bovendien heeft een bepaalde institutionele regeling de neiging efficiënt en dynamisch te zijn wanneer het

concurreert met alternatieve regelingen. Eén regeling kan geschikter zijn dan een andere, afhankelijk van de eigenschap van de transactie. Zo is de bestaande transactie door ECX ontworpen voor “grondstoffen-koffie”, maar niet voor “merk-koffie”. Het kan niet merk (geografische oorsprong) reputatie stimuleren. Dit is omdat transacties van GI-beschermde producten ten minste volledig traceerbare transacties vereisen daar waar transacties in de grondstoffen markt noodzakelijkerwijs niet-traceerbaar zijn.

De regering was in staat om via de “Ethiopian Fine Coffee Trademarking Initiative” in staat een GI-bescherming te krijgen in de VS, Japan en een aantal Europese landen. Het initiatief had de bedoeling om de onderhandelingspositie van exporteurs in de wereldmarkt te verbeteren. Maar een paar jaar na dit initiatief, introduceerde de overheid een nieuwe regel dat koffietransacties buiten ECX verbiedt: een regulering die in volledig in strijd is met het institutionele regeling dat GI-bescherming vereist. De twee interventies: “commoditization” door middel van ECX en “trademarking” zijn, naar onze mening, onverenigbaar - in termen van doel en de structuur van de transactie. Dit kan de exporteurs van Ethiopische koffie niet in staat stellen om mee te profiteren van de handelsmerk beschermingen die deze landen aanboden voor Ethiopische koffie. Gezien deze onverenigbare institutionele interventies, wilden we de impact van het handelsmerk initiatief analyseren op de prijzen van GI beschermde Ethiopische koffie. We vonden dat het effect van het handelsmerk op de prijzen positief was en toenam over de tijd heen. Maar wanneer we de gevolgen van de ECX interventie analyseerden, controlerend voor andere parameters, bleek de impact op de prijzen van GI-beschermde koffie negatief.

Appendices

A. Supplementary information for results

A. Sample choice set

No.	Attributes	Trader A	Trader B
1	Additional price the buyer offered (Birr/kg)	1	3.0
2	Strictness of the buyer in quality assessment	Strict	Not strict
3	Trustworthiness of the buyer	Trustworthy	Not Trustworthy
5	Buying location	Outside village	Within village
7	Dependability during crisis	Dependable	Not dependable
6	Reliability	Not reliable	Reliable
4	Social relationship	Known	Not known

Table A Results of ADF unit root test

		Test statistics (using 3 lags and trend parameter)			
		Overall (N=221)	Before ECX (n=157)		After ECX (n=64)
Producer price	Level	-3.42**	-2.27		-2.26
	First difference	-7.85***	-6.15***		-4.62***
Auction price	Level	-2.32	-1.86		-1.76
	First difference	-6.59***	-5.59***		-3.77**
FOB price	Level	- -2.80	-2.18		-1.89
	First difference	-7.49***	-7.42***		-3.62**
World price	Level	-2.95	-6.60		-1.66
	First difference	-7.85***	-8.43***		-3.81**

Significance levels *** p<0.01, ** p<0.05, * p<0.10

Table 6B Results of Granger's causality test using the actual ECX intervention period of December 2008

Direction of causality (lag=2[a])	χ2-stat		
	Overall (N=213)	Before ECX (n=141)	After ECX (n=72)
World → FOB prices	15.58***	6.78*	13.97***
FOB → World prices	31.39***	17.35***	13.54***
FOB → Auction prices	37.25***	6.56*	33.19***
Auction → FOB prices	8.07**	9.87**	1.51
Auction → Producer prices	35.05***	19.76***	11.00**
Producer → Auction prices	4.03	9.46**	4.66

Significance levels *** p<0.01, ** p<0.05, * p<0.10

[a] lag order was selected using various information criterion (AIC, SBIC and HQIC selection)

Table 8.1a Coffee brand specific seasonal effects of the fixed and random effect regressions of FOB prices (*continued from Table 5.1)*

	Fixed Effect (N=41259)		Random Effect (N=41259)	
	b	t	b	t
Harar*Jan.	0.00	0.07	0.04**	2.24
Sidama*Jan.	0.07***	5.16	-0.10***	-4.91
Yirgachefe*Jan.	0.14***	6.38	0.14***	6.33
Wellega*Jan.	0.06***	4.03	0.06***	3.99
Harar*Feb.	-0.01	-0.56	0.03	1.53
Sidama*Feb.	0.09***	7.31	-0.08***	-4.19
Yirgachefe*Feb.	0.15***	7.32	0.15***	7.31
Wellega*Feb.	-	-	-	-
Harar*Mar.	-0.05*	-1.87	-0.01	-0.58
Sidama*Mar.	0.08***	6.87	-0.09***	-4.84
Yirgachefe*Mar.	0.15***	7.61	0.15***	7.62
Wellega*Mar.	0.02*	1.81	0.02*	1.83
Harar*Apr.	-0.04	-1.56	0.00	-0.15
Sidama*Apr.	0.07***	5.87	-0.10***	-5.14
Yirgachefe*Apr.	0.16***	7.6	0.16***	7.6

Wellega*Apr.	0.03**	2.00	0.03**	1.99
Harar*May	-0.06**	-2.00	-0.02	-1.01
Sidama*May	0.11***	9.19	-0.06***	-3.19
Yirgachefe*May	0.15***	7.41	0.15***	7.4
Wellega*May	0.02*	1.76	0.02*	1.73
Harar*Jun.	-0.06**	-2.00	-0.02	-1.03
Sidama*Jun.	0.12***	9.55	-0.06***	-3.01
Yirgachefe*Jun.	0.18***	9.27	0.18***	9.25
Wellega*Jun.	0.01	1.21	0.01	1.18
Harar*Jul.	-0.03	-1.09	0.01	0.59
Sidama*Jul.	0.11***	8.80	-0.06***	-3.05
Yirgachefe*Jul.	0.21***	10.18	0.21***	10.18
Wellega*Jul.	0.02	1.23	0.02	1.24
Harar*Aug.	-0.01	-0.42	0.03	1.63
Sidama*Aug.	0.11***	9.00	-0.06***	-3.04
Yirgachefe*Aug.	0.22***	10.46	0.22***	10.46
Wellega*Aug.	0.03**	2.13	0.03**	2.13
Harar*Sep.	-0.04	-1.42	0.00	0.01
Sidama*Sep.	0.08***	5.89	-0.09***	-4.38
Yirgachefe*Sep.	0.14***	6.26	0.14***	6.26
Wellega*Sep.	0.05***	3.22	0.05***	3.21
Harar*Oct.	0.00	-0.18	0.04*	1.93
Sidama*Oct.	0.08***	5.96	-0.09***	-4.53
Yirgachefe*Oct.	0.13***	6.13	0.13***	6.14
Wellega*Oct.	0.05***	3.81	0.05***	3.82
Harar*Nov.	-0.04	-1.46	-	-
Sidama*Nov.	0.04***	2.98	-0.13***	-6.21
Yirgachefe*Nov.	-	-	-	-
Wellega*Nov.	0.06***	4.17	0.06***	4.14
Harar*Dec.	-0.04	-1.51	0	0.1
Sidama*Dec.	-	-	-0.17***	-7.84
Yirgachefe*Dec.	-0.01	-0.31	-0.01	-0.33
Wellega*Dec.	0.07***	4.92	0.07***	4.92

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

Table 8.2a Coffee origin – Month interaction of producer prices of coffee beans and coffee cherries (*continued from Table 5.2)*

	Producer price of coffee cherries (N=14503)		Producer price of coffee beans (N=4983)	
	FE	RE	FE	RE

	b	t	b	t	b	t	b	t
Harar*Jan.	-0.12	-1.1	-0.13	-1.15	0.09	1.54	0.08	1.37
Sidama*Jan.	0.05	1.22	0.45***	10.9	0.03	0.35	0.02	0.29
Wellega*Jan.	-0.20***	-5.04	-0.19***	-4.98	-0.01	-0.16	-0.02	-0.33
Yirgachefe*Jan.	-0.41***	-2.94	-0.24*	-1.7	0.22	1.21	-0.04	-0.21
Harar*Feb.	-0.15	-1.33	-0.15	-1.37	0.07	1.12	0.06	0.96
Sidama*Feb.	0.07*	1.66	0.47***	11.3	0.05	0.73	0.05	0.69
Wellega*Feb.	-0.19***	-5.03	-0.19***	-4.95	-0.02	-0.33	-0.03	-0.5
Yirgachefe*Feb.	-0.41***	-2.99	-0.23*	-1.7	0.21	1.17	-0.05	-0.27
Harar*Mar.	-0.22*	-1.93	-0.23*	-1.95	0.02	0.39	0.01	0.14
Sidama*Mar.	0.09**	2.06	0.49***	11.68	0.11	1.56	0.1	1.44
Wellega*Mar.	-0.22***	-5.94	-0.22***	-5.82	0.06	1.03	0.05	0.79
Yirgachefe*Mar.	-0.40***	-2.91	-0.22	-1.59	0.30*	1.68	0.05	0.25
Harar*Apr.	-0.19	-1.64	-0.20*	-1.67	0.18***	2.97	0.16***	2.65
Sidama*Apr.	0.07	1.51	0.47***	10.74	0.15**	2.06	0.14*	1.87
Wellega*Apr.	-0.19***	-5.03	-0.19***	-4.92	0.1	1.56	0.08	1.25
Yirgachefe*Apr.	-0.42***	-3.04	-0.24*	-1.73	0.27	1.51	0.01	0.04
Harar*May.	-0.15	-1.25	-0.15	-1.27	0.08	1.32	0.07	1.12
Sidama*May.	0.11**	2.34	0.52***	11.32	0.07	0.8	0.06	0.74
Wellega*May.	-0.22***	-5.45	-0.21***	-5.3	-0.03	-0.51	-0.05	-0.7
Yirgachefe*May.	-0.49***	-3.52	-0.31**	-2.2	0.16	0.83	-0.1	-0.51
Harar*Jun.	-0.19	-1.53	-0.19	-1.52	0.01	0.22	0	0.07
Sidama*Jun.	-0.04	-0.76	0.37***	7.96	0	.	-0.06	-0.92
Wellega*Jun.	-0.23***	-5.69	-0.22***	-5.5	-0.05	-0.78		
Yirgachefe*Jun.	-0.48***	-3.46	-0.29**	-2.11	0.1	0.47	-0.15	-0.67
Harar*Jul.	-0.19	-1.59	-0.19	-1.58	-0.11	-1.59	-0.11*	-1.67
Sidama*Jul.	-0.14***	-2.87	0.26***	5.4	0.08	0.93	0.08	0.97
Wellega*Jul.	-0.31***	-7.36	-0.30***	-7.17	-0.02	-0.26	-0.02	-0.31
Yirgachefe*Jul.	-0.70***	-5.1	-0.52***	-3.74	0.19	0.85	-0.05	-0.22
Harar*Aug.	0.05	0.35	0.05	0.35	0	.		
Sidama*Aug.	0	.	0.41***	7.69	-0.1	-0.92	-0.1	-0.86
Wellega*Aug.	-0.25***	-5.45	-0.24***	-5.23	0	.		
Yirgachefe*Aug.	-0.57***	-3.9	-0.38***	-2.6	0	.	-0.24	-1.05
Harar*Sep.	0	.			-0.01	-0.17	-0.02	-0.31
Sidama*Sep.	-0.41***	-7.69			-0.11	-1.25	-0.11	-1.28
Wellega*Sep.	-0.20***	-4.36	-0.19***	-4.13	-0.05	-0.68	-0.06	-0.76
Yirgachefe*Sep.	-0.54***	-3.27	-0.35**	-2.12	0	.		
Harar*Oct.	-0.32**	-2.49	-0.33**	-2.54	0.11*	1.7	0.1	1.62
Sidama*Oct.	-0.42***	-8.41	-0.02	-0.43	0.01	0.19	0.02	0.22

Wellega*Oct.	-0.06	-1.27	-0.05	-1.2	0.08	1.05	0.08	1.01
Yirgachefe*Oct.	-0.18	-0.99			0.25	1.09		
Harar*Nov.	-0.34***	-2.74	-0.34***	-2.8	0	-0.08	-0.01	-0.23
Sidama*Nov.	-0.25***	-5.18	0.15***	3.26	-0.02	-0.22	-0.02	-0.24
Wellega*Nov.	0	.			0.08	1.21	0.07	1.08
Yirgachefe*Nov.	0	.	0.16	0.89	0.24	1.15	-0.02	-0.08
Harar*Dec.	-0.33***	-2.82	-0.33***	-2.87	0	-0.06	-0.01	-0.15
Sidama*Dec.	-0.09*	-1.92	0.31***	7.06	-0.01	-0.13	-0.01	-0.11
Wellega*Dec.	-0.11**	-2.57	-0.11***	-2.6	0	0.05	0	-0.04
Yirgachefe*Dec.	-0.25	-1.36	-0.08	-0.44	0.36*	1.79	0.11	0.54

Significance levels *** p<0.01, ** p<0.05, * p<0.10 and t-value in parenthesis

B. Curriculum Vitae

1. PERSONAL INFORMATION

1.1. Full name	Fekadu Gelaw Mersha
1.2. Sex	Male
1.3. Date of birth	October 19, 1972
1.4. Place of birth	West Gojjam, Burie town
1.5. Marital status	Married
1.6. Nationality	Ethiopian
1.7. Language	Amharic and English
1.8. Current position	PhD student at Gent University and Assi. Prof., School of Agricultural Economics and Agricultural Economics, Haramaya University, Ethiopia
1.9. Current address	Coupre Links 653, Gent 9000, Belgium Tel. - Mobile: (+32) 483302972 E-mail: fekadugelaw1@yahoo.com; fekadugelaw.mersha@ugent.be

2. EDUCATIONAL AND TRAINING BACKGROUN

2.1. *Formal Training* (Post-Secondary only)

Institution (most recent first)	*Mo./yr.*	*Mo./yr.*	*Major field of study*	*Diploma or degree obtained*	*CGPA/4.00*
Haramaya University	*09/2002*	*07/2004*	*Agricultural Economics*	*M.Sc*[+]*.*	*3.87***
Haramaya University	*09/1986*	*07/1990*	*Agricultural Economics*	*B.Sc.*	*2.88**

** The best grade from 23 students of the batch

* The 6th best grade from 110 students of the batch

+ Title of MSc Thesis: ***Analysis of Technical Efficiency of Wheat Production in Machakel District, Ethiopia. Scored*** "A".

2.2. Other relevant short courses and training

Title of the short course/training	*Month/ year*	*Dur.*	*Organizer*	*Place*
OER production training	*Jun. 2013*	*1 week*	*AgSgare/MSU*	*Addis Ababa, Ethiopia*
Emergency Market Mapping Analysis	*May. 2013*	*1 week*	*USAID*	*Addis Ababa, Ethiopia*
IAAE 28th Conference	*Aug. 2012*	*1 week*	*IAAE*	*Foz do Iguasu/Brazil*
LSMS: Panel data analysis + STATA	*Feb. 2012*	*3 days*	*World Bank/AERC*	*Dar es Salaam/Tanzania*
LSMS: Econometrics using+ STATA	*Jun. 2012*	*3 days*	*World Bank/AERC*	*Manzini/Swaziland*
LSMS: Impact Assessment Methods	*Feb. 2011*	*3 days*	*World Bank/AERC*	*Nairobi/Kenya*

Title of the short course/training	Month/ year	Dur.	Organizer	Place
OER production training	*Jun. 2013*	*1 week*	*AgSgare/MSU*	*Addis Ababa, Ethiopia*
Emergency Market Mapping Analysis	*May. 2013*	*1 week*	*USAID*	*Addis Ababa, Ethiopia*
LSMS: Poverty analysis + ADePT	*Jun. 2010*	*3 days*	*World Bank/AERC*	*Pretoria/South Africa*
CGE/SAM Model using GAMS	*Mar. 2010*	*3 days*	*IFPRI/AAU*	*Addis Ababa/Ethiopia*
LSMS workshop: Survey design	*Feb. 2010*	*1 week*	*World Bank/AERC*	*Nairobi/Kenya*
Biofuel Workshop in Nairobi	*Sep. 2009*	*1 week*	*CETRAD*	*Nairobi/Kenya*
Living Standard Measurement	*June 2009*	*3 days*	*CMAAE*	*Pretoria/South Africa*
IAAE 27th Conference	*Aug. 2009*	*1 week*	*IAAE*	*Beijing/China*
Panel Data Econometric Analysis	*Jul. 2008*	*1 Week*	*EDRI/AAU*	*Addis Ababa/Ethiopia*
Participatory Rural Appraisal	*Apr. 2001*	*3 weeks*	*Finida*	*Addis Ababa/Ethiopia*
Saving and Credit Promotion	*Jun. 2001*	*2 weeks*	*Winrock*	*Bahir Dar/Ethiopia*
Transfer of Technology (TOT)	*Jun. 2000*	*3 weeks*	*MOA*	*Addis Ababa/Ethiopia*
Vulnerability Study	*Oct.2000*	*3 weeks*	*DPPC*	*Bahir Dar/Ethiopia*
Integrated Rural Dev. & Proj. Plan.	*Apr. 1998*	*3 months*	*ANRS*	*Bahir Dar/Ethiopia*
Participatory Planning Approach	*Oct.1992*	*3 weeks*	*CIDA*	*Bahir Dar/Ethiopia*

3. *WORK EXPERIENCES*

3.1. At Haramaya University

A. *Teaching*

- **Postgraduate course** - Agricultural Project Planning and Analysis; Macroeconomics
- **Undergraduate courses** - Macroeconomics I and Macroeconomics II Agricultural Project Planning and Analysis, Project Analysis, Development Planning, Microeconomics II, Intermediate Microeconomics and Intermediate Microeconomics (to Pre-masters Students), Agricultural Marketing, Labor Economics, International Trade and Marketing,

B. *Thesis supervision and examination*

- Advised and co-advised 4 MSc students of Agricultural Economics
- Examined about 10 MSc thesis defenses
- Reviewed 4 research papers
- Advised more than 40 undergraduate students in Proposal Writing (1 CrHr) & Senior Essay (3 CrHr) in the Dep. of Agri. Econ., Econ., & ABM.

C. Research

D. .**Consultancy services**

E. Extra-curricular activities

- **Head of Department of Agricultural Economics** from Jan. 2006 to Nov. 2009,
- **Planning and Evaluation Expert** of Haramaya University from Sept. 2005 – Nov. 2006
- Many committees/taskforces commissioned by HU.

3.2. Apr. 2001 to Sep. 2002, Regional Coordinator for International Fund for Agricultural Development (IFAD) and Senior Expert, Cooperative Promotion Bureau, Bahir Dar, ANRS.

3.3. Sep. 1990 to Mar. 2001, Extension Communication Expert and Team Leader, Agricultural Development Department, East Gojjam Administrative Zone, ANRS.

4. PUBLICATIONS, REPORTS AND TEACHING MATERIALS

4.1. Publications

1. Fekadu Gelaw, Stijn Speelman, Guido Van Huylenbroeck, 2016. Farmers' marketing preferences in local coffee markets: Evidence from a choice experiment in Ethiopia. *Food Policy* 61: 92-102.
2. Kumilachew Alamerie, Mengistu Ketema and Fekadu Gelaw, 2013. Risk Management Strategies and Pesticides Use in Vegetable Production: The Case of Smallholder Farmers in Kombolcha Woreda, East Hararge Zone, Oromia National Regional State, Ethiopia, *Journal of Economics and Sustainable Development*, 4(7): 108-116.
3. Fekadu Gelaw, 2013. Inefficiency and Incapability Gaps as Causes of Poverty: A Poverty Line-Augmented Efficiency Analysis Using Stochastic Distance Function, *African Journal of Agricultural and Resource Economics*, 8(2): 24-68. Special Issue.
4. Fekadu Gelaw and Million Sileshi, 2013. Impacts of grain price hike on poverty in rural Ethiopia. *African Journal of Agricultural and Resource Economics*, (8)2: 69-89. Special Issue.
5. Fekadu Gelaw and Million Sileshi, 2012. Impacts of grain price hike on poverty in rural Ethiopia. Contributed paper presented at the 28th International Conference of Agricultural Economists (ICAE) which was held in Foz do Iguaçu, Paraná, Brazil, Aug., 18-24, 2012.
6. Jema Haji and Fekadu Gelaw, 2012. Determinants of the recent soaring food inflation in Ethiopia, *Transnational Research Journals*, 1(8): 225-233.
7. Fekadu Gelaw, 2010. The dynamic relationship among poverty, inequality, and growth in rural Ethiopia: A micro evidence. *Journal of Development and Agricultural Economics*, 2(5):197-208.
8. Jema Haji and Fekadu Gelaw, 2010. Do 'favorable' terms of trade bear the effect of soaring food inflation for pastoralists in Ethiopia? A paper presented at the International DCG (Dryland Coodrdination Group/Norway) Workshop held Oct. 11-16, 2010, Addis Ababa.
9. Fekadu Gelaw and Bezabih Emana, 2009. Analysis of Technical Efficiency of Wheat Producers in Machakel Woreda, East Gojjam. *Ethiopian Journal of Agricultural Economics,* 7(2): 1-33.
10. Fekadu Gelaw, 2008. Poverty, Inequality, and Growth in the Rural Ethiopia: Micro Evidence from Ethiopian Rural Household Survey. Contributed paper presented at the 27th International Association of Agricultural Economists (IAAE) Conference, Beijing, China, Aug., 16-22, 2009.

4.2. Other Research and Evaluation Reports

4.2.1. Writing course modules for undergraduate students

1. **Fekadu G.** & K., Dawit, 2007*. Microeconomics II: Module I & II.* Dep. of Agri. Econ., Faculty of Continuing & Distance Education, Haramaya University*, pp: 1-340.*
2. **Fekadu Gelaw,** 2006**.** *Principles of Agricultural Marketing: Module I*. Dep. of Agri. Econ., Faculty of Continuing & Distance Education, Haramaya University*, Pp: 1-162.*
3. Gemoraw Adinew & **Fekadu Gelaw**, 2008. *Mathematics for Economists II*: *Module II*. Dep. of Agri. Econ., Faculty of Continuing & Distance Education, Haramaya University*, pp: 1-160.*
4. **Fekadu Gelaw** & Yetmwork Hailemariam, 2009a. *Development Planning: Module I & II*. Dep. of Econ., Faculty of Continuing & Distance Education, Haramaya University*, pp: 1-308.*
5. **Fekadu Gelaw** & Bekele Kerebih, 2009b. *Agricultural Project Planning and Analysis: Module I & II*. Dep. of Agri. Econ., Faculty of Continuing & Distance Education, Haramaya University*, pp: 1-335.*
6. **Fekadu Gelaw**, 2010. *Project Analysis: Module I & II.* Dep. of Econ., Faculty of Continuing & Distance Education, Haramaya University*, pp: 1-320.*

4.2.2. Writing course modules for postgraduate students

1. **Fekadu Gelaw**, 2014. *Institutional and Behavioral Economics pp: 1-140.*
2. **Jema Haji and Fekadu Gelaw**, 2011. Module 1 *Agricultural Marketing and Price Analysis, pp: 1-55.*

4.2.3. Other research reports

1. **Fekadu Gelaw** and Ketemma Bekele, 2013. Indigenous and modern Early Warning Systems in the face of climate change. Submitted to Ethiopian Relief Service/ Ethiiopian Catholic Church - Social Development Coordnation office of Hararghe (ERS/ECC-SDCOH).
2. **Fekadu Gelaw,** Dereje Taddesse, and Ketemma Bekele, 2013. Global Climate Change, Ethiopian's Climate Resilient Green Economy and GCC induced Conflict in Eastern Ethiopia. A training module to Pastoralist and Agropastoralist Areas of Eastern Hararghe. Submitted to USAID – CIAFS.
3. **Fekadu Gelaw,** 2012. Inefficiency and incapability gaps as causes of poverty: a poverty line-augmented efficiency analysis using stochastic distance function. A research report submitted to African Economic Research Consortium (AERC), Kenya, April 2012.
4. **Fekadu Gelaw.** & A., Molla, 2009. *Economic Integration between Eastern Regional States: Yesterday, Today and Tomorrow.* Belay Kassa (Ed). A paper presented at Panel Discussion held to commemorate Ethiopian Nations and Nationalities Holiday, Harar, Dec. 6-8, 2009.
5. **Fekadu Gelaw.**, 2009. *Handbook of Project Cycle Management*. A Training Manual for Regional & District Experts, funded by CISP/Ethiopia.
6. **Fekadu Gelaw.** & A., Gemoraw, 2008. *Impact of Agricultural Livelihood Recovery Project in East and West Hararghe.* A research report submitted to ERS/ECC-SDCOH.
7. Paulos Asrat and **Fekadu Gelaw**, 2007. *Market and Credit Based Livelihood Study in Eastern Hararghe.* A research report submitted to Oxfam GB, East Hararhe Coordination Office.

8. Tadele Tefera., **Fekadu Gelaw** & Paulos Asrat, 2007. *Impact Assessment on Safety Net Program Interventions of the ECC-SDCOH: The Case of East Hararghe & Dire Dawa Agro-pastoral Areas.* Belay K., & L., Belaineh (Eds), A research report submitted to ERS/ECC-SDCOH.

5. AWARDS AND RESEARCH PROJECTS

1. March 2013, I and Bamlaku Taddess won a competitive grant from Africa Peace-building Network (APN) for a research entitled: *'Sources of Resource-Based Conflicts and Tensions among Farmers and Pastoralists of Eastern Regions of Ethiopia*'
   Amount USD $16,866.00

2. March 2011, won Living Standard Measurement Survey (LSMS) grant of African Economic Research Consortium (AERC)/Collaborative Masters in Agricultural and Applied Economics (CMAAE) for a research entitled: '*Impact of price hike on rural poverty in Ethiopia'.*
   Amount: US$ 6,000.00

3. March 2011, won Faculty Research Grant of African Economic Research Consortium (AERC) to carry out a research entitled '*Inefficiency and Incapability Gaps as Causes of Poverty: a Poverty Line Augmented Efficiency Analysis Using Distance Function'.*
   May Amount: US$15,000.00

4. May 2010, won HU, AgShare, Michigan State University, OER-Africa and HU joint pilot project which was funded by Bill and Melinda Gates Foundations for improving MSc educations by producing Open Education Resources. As a result, Fekadu Gelaw, Jema Haji and Belay Kassa, produced a module for Agricultural Economics MSc students on the course '*Agricultural Marketing and Price Analysis*'.
   Amount: US$ 74,250.00

5. February 2009, Jema Haji, Belaineh Legesse & **Fekadu Gelaw** won a competitive grant from Dryland Coordination Group (DCG), TØRRLANDS-KOORDINERINGS GRUPPEN for a research entitled, '*Discovering and Explaining the 'Black-Box' of Ethiopian Agricultural Produce Price Formation and its Determinants within the Current Liberalized Market Policy*'.
   Amount: NOK 408,569 (US$ 68,000.00)

6. July 2008, won a competitive grant for Research Capacity Building grant of Ethiopian Development Research Institute (EDRI) for a research entitled "*The Dynamic Relationship between Poverty, Inequality and Growth in Ethiopia: A Micro Evidence from ERHS Panel Data*.
   Amount: US$6000.00

6. MEMBERSHIP IN PROFESSIONAL SOCIETIES

1. Full Member of the Ethiopian Society of Agricultural Economists (ESAE), Addis Ababa, Ethiopia.
2. Full member of the Ethiopian Economic Association (EEA), Addis Ababa, Ethiopia.

7. REVIEWER AND THESIS DEFENSE EXAMINATOR

1. **Reviewer**

Reviewed contributed papers submitted for the 8th Africa Farm Management Association (AFMA) held at Sarova Panafric Hotel Nairobi 25-29 November 2012:

i. Impact of gender socioeconomic characteristics on the rate of adoption of agricultural technologies among women in Marakwet East District of Kenya

ii. What drives commercialization of edible wild fruits in Kenyan Drylands

iii. Determinants of beef meat supply in Burundi: a vector error correction model approach applied to structural Nerlov paradigm.

Reviewed contributed papers submitted for the 29th International Conference of Agricultural Economists (ICAE) held August 8-14, Milan Italy.

iv. Supplier dynamics in horticultural export chains - evidence from Ecuador

v. Is Collective Action an Inclusive Strategy in Smallholder Contract Farming? Evidence from Sorghum Aggregation in Kenya

vi. Developing an online market mechanism for trading perishable agricultural commodities

2. **MSc thesis defense examination**

Examined the following MSc thesis of the Department of Agricultural Economics, Haramaya University:

i. Impact of Trade Liberalization on the Performance of Ethioipa's Agriculture Versus Industry Sector: The Case of Economic Partnership Agreement between European Union and Africa- Pacific- Caribbean Countries, Marta Yilma, **Internal examiner**, Oct 21-22, 2011.

ii. The Impact of Savings and Internal Lending Communities Program by Women on Households Economy: the case of Dire Dawa Administration, Yewibdar Tasew, **Chairman**, Oct 21, 2011.

iii. The Impact of Savings and Internal Lending Communities Program by Women on Households Economy: the case of Dire Dawa Administration, Deriba Seboka, **Internal examiner**, Oct 21-22, 2011.

iv. Determinants of Farm Household Poverty: The Case of Lay Gayint District, South Gondar Zone, Amhara National Regional State, Ethiopia, Eshetu Seid, **Internal examiner**, Oct 21-22, 2011.

v. Consumer preference and willingness to pay for sheep meat quality and safety in Addis Ababa, Aga Neme, **Chairman,** May 20-21, 2011 Haramaya University.

vi. Energy, Greenhouse gas and economic assessment of biodiesel production from *Jatropha*: the case of Eastern and Northern Ethiopia, Adem Feto, **Internal Examiner,** May 20-21, 2011 Haramaya University.

vii. Climate change adaptive measures and household food security under the Semi-arid conditions of Centeral Rift Valley of Ethiopia, By Birutawit Ejigu, **Internal Examiner,** May 20-21, 2011 Haramaya University.

viii. Technical Efficiency of Eastern and Rift Valley Route Rose (Rosa hybrid) cut flower farms in Awash Melkassa, Bishoftu and Zeway District, by Mohammed Aman, **Internal Examiner,** May 20-21, 2011 Haramaya University.

ix. Economic impact of HIV/AIDS on households of Dire Dawa Administration: the case of three urban and nine rural kebeles, by Yohannes Mengesha, **Internal Examiner,** May 20-21, 2011 Haramaya University.

8. REFEREES

- Prof. Willis Kosura, Director of Collaborative Masters in Applied and Agricultural Economics, Nairobi, Kenya, e-mail: Willis.Kosura@aercafrica.org
- Prof. Belay Kassa, President of Haramaya University, Haramaya, e-mail: belayk@hotmail.com Mobile: +251915330337; and
- Dr. Ayalneh Bogale, Associate Professor in the Department of Agricultural Economics, Haramaya University; e-mail: ayalnehb@yahoo.com , Mobile: +251915740258