Inefficient Institutions and Institutional Change: Theory and Evidence from Tanzania

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The purpose of this thesis is to theoretically and empirically investigate the effects of institutional inefficiencies on markets and on non-elite groups, and to better understand the factors that prevent efficient institutions from evolving through the process of institutional change. It commences by reviewing the literature relating to institutions and institutional change and presenting a theoretical framework. It then presents three empirical chapters that aim to address the key questions and hypotheses relating to how inefficient institutions affect markets and why inefficient institutions persist.

The first two empirical case studies of are of institutionally driven market failures that currently exist in Tanzania’s coffee and maize markets (coffee grading and maize farm gate buying). These chapters demonstrate how these failures contribute to market inefficiency and how they lower the incomes of some of the poorest groups participating in these market chains.

The findings demonstrate that there is no automatic welfare maximising process in the functioning or the evolutionary path of institutions because even though these institutions are inefficient, they remain constant and largely unchallenged in the market. In other words, inefficient market institutions do not spontaneously disappear even though they disadvantage large groups. The findings also raise questions about how these inefficient institutions evolved and why they persist.

The third case study of Tanzania’s agricultural market liberalisation reforms addresses these questions. It describes shifting alliances and local level resistance and shows how competition between groups around the reform period has changed their respective abilities to influence institutional change over time. Initially, elite power was characterised by the capture of local and village governments by big agricultural cooperatives during the liberalisation reform period. Subsequent to the reforms, private sector traders and processors have become powerful and influential even though they were the market underdogs for many years. This is because they have invested in reducing their influence costs by establishing strong business associations and by building strong relationships with local and village government authorities. It is argued that groups with low influence costs are more powerful and can build the links that are necessary for influencing institutional change more easily.

The analysis of Tanzania’s agricultural market reforms also shows that these relative positions of power and influence evolved through a long process of distributional conflict at the micro level. The complexities, contradictions, delays and reversals of Tanzania’s agricultural market liberalisation reforms were largely determined at the most disaggregated level. Massive institutional change was taking place, but its path was steered by a drawn-out process of distributional conflict in rural villages that is still ongoing today. The findings of the coffee and maize chapters are directly linked to this above described process of distributional conflict, relative power and institutional change since the inefficient institutions analysed in the coffee and maize markets emerged as outcomes of the liberalisation reforms.

What this thesis shows is that institutional change depends, to a large extent, on the preferences and responses of the most influential interest groups. The historical perspective is also important in that it acts as a clarifying lens for what may otherwise seem to be an opaque set of groups, structures and incentives. This is what this thesis has sought to achieve. By combining quantitative institutional impact investigations with interest group-based political economy and historical analyses, this research has been able to reveal the thread that links current economic outcomes with long-standing group conflict dynamics.
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DECLARATION

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Introduction

Agricultural markets in Sub-Saharan Africa are puzzling in their tendency to stagnation and volatility. Their humble performance is apparent through the low levels of productivity and the low value of production over the last 40 years. Whilst generalisations such as these are certainly subject to exceptions, the general trend is not. Poverty has been almost uniformly concentrated amongst the rural population, which has had to manage exogenous and endogenous factors including the terms of trade and the persistent agro-climatic shocks.

Whilst the agricultural performance remained in the doldrums, agricultural institutions have undergone various transformations in a relatively short period of time. Within about 50 years, most African agricultural markets evolved from a colonial administrative structure to an African nationalist one, and more recently to a liberalised 'Washington consensus' type framework. Therefore, it appears that the politics and the institutions have changed, but the economic outcomes have not.

Today, most agricultural markets in Sub-Saharan Africa function under a semi liberalised form, with a tension between state control of the markets and the liberalisation reforms. One of the most characteristic aspects of the market structure is the low level of concentration. A high volume of low value transactions take place between a complex web of producers, cooperatives, traders, processors, exporters, retailers and state marketing bodies. Personal exchange is the dominant form of exchange (Fafchamps, 2003). The number of firms is low, the domestic manufacturing base is insignificant and the processing of agricultural products is also minimal.

A rudimentary glance at these facts raises several questions. Firstly, the market structure is quite different to that of developed market economies. The main difference is not that African states still play an active role in the market mechanism as the liberalisation agenda would have it. The difference is that in more developed markets, markets operate with higher levels of information
for all participants, allowing impersonal exchange to be the norm. Many high level transactions take place at a lower cost. And it is their set of elaborate market institutions that enables this. Agricultural markets in Africa have, so far, failed to develop institutions in the same way.

Increasingly, economists have identified an underlying path dependent institutional framework that undermines the livelihoods of the poor rural masses. Through a series of in depth studies of the political economy of African agricultural markets, Robert Bates has highlighted a series of economic and political factors have caused the prominence of elites that have the power to skew political and economic institutions in their favour. They establish rent-seeking networks that often operate to the detriment of weaker groups and the market overall:

“Owners and workers in industrial firms, economic and political elites, privileged farmers and the managers of public bureaucracies – these constitute the development coalition in contemporary Africa. It is they who reap the benefits of the policy choices made in formulating development programmes. The costs of these choices are distributed widely, but fall especially hard on the unorganised masses of the farming population”. (Bates, 1981, p.121).

Hence, it is difficult to ignore the fact that the institutional set-up of markets in Sub-Saharan Africa is not only under developed, but is also skewed in terms of the welfare of the various actors therein. The peasant producers or the smallholders are systematically poorer and more vulnerable than the large and medium size farmers, traders and other market agents.

For these reasons, the purpose of this thesis is to investigate the effects of institutional inefficiencies on non elite groups in agricultural markets and to better understand the factors that prevent efficient institutions from emerging. Our purpose is to demonstrate how inefficient institutions affect markets through specific empirical case studies and to explore why these inefficient institutions persist.

We will explore these questions through case studies of Tanzania’s agricultural markets and reform experiences, using a combination of quantitative and qualitative methods. We will conduct a quantitative analysis of the effects of institutional inefficiencies on small farmers in Tanzania’s agricultural markets, and qualitative analysis of the process of institutional change during recent economic and political reforms.

The rest of this thesis is organized as follows. The next chapter is a review of the literature on
institutions and institutional change. Chapter three presents our theoretical framework and our core hypotheses. Chapters four and five contain quantitative analyses of the effects of institutional inefficiencies on the incomes of small farmers in the coffee and maize markets. In chapter six, we conduct a qualitative analysis of the process of institutional change during Tanzania’s liberalisation reforms, and consider how these changes relate to our theoretical framework and the coffee and maize case studies. Finally, chapter 7 summarizes our findings.
Literature Review

This chapter provides an overview of the literature relating to institutions and institutional change. We will begin with a definition and discussion of institutions. We subsequently discuss some of the prominent theoretical approaches that deal with institutional change, particularly the dynamic social interactions view, the efficient institutions approach and the distributional conflict approach. We will additionally review the role allocated to the state by each of these approaches.

2.1 Definition of institutions

Despite some variations on the theme, most economists have settled on a definition of institutions that is appropriately broad, such as “the rules of the game”, or “a framework within which human interaction takes place” (North, 1990), or even a “settled habit of thought common to the generality of men” (Veblen, 1994). The use of the term essentially relates to the stable mechanisms that govern interactions and is distinct from the common understanding of the term that refers to organisations. Definitions that are more precise yet as encompassing than these are difficult to come by purely because of the breadth of the types of institutions.

The concept of the market as an institution is also a challenging one. The market is an institution composed of a mass of agents, organisations, policies, products, prices and institutions that function collectively to enable exchange. It is both chaotic and orderly, both formal and informal at the same time. Therefore, it is not surprising that the characteristics of the market have been an area of contention among economists for some time. Neo-classical economists, particularly those of the new institutional school, model markets as perfectly competitive and consider them to have arisen spontaneously. In this study, we will focus on the political and economic institutional arrangements of the agricultural market. We subscribe in our understanding of the market, and particularly agricultural markets in Sub-Saharan Africa, to an alternative view, namely, that the market is a social and political institution that is

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1 Veblen’s definition reflects his tendency to focus on cognitive and behavioural aspects.
2 In addition to this, the literature also refers to 'market institutions'. These are the set of institutions that enable exchange within the overarching framework of the market.
incompletely and imperfectly developed, both physically and economically (Ellis 1992, Harriss-White 1995, Chang 2003).

**Form & Function**

The form of an institution is the infrastructure or the framework that enforces a set of rules or constraints. In other words, it is the way that we organise interactions around a specific function. A contract, therefore, is a form of interaction, as is trust, yet both may be used to perform the same function. Institutions are often described in terms of their form, as market, public, private, formal or informal institutions. Whilst these distinctions between different types of institutions are useful, they are not completely independent of each other, nor are they able to express the complexity of institutional reforms. For instance, separating the economic aspects of an institution from its political characteristics is not a straightforward task, and categorising institutions in this way masks their inherent complexity. Nevertheless, these descriptions provide a general distinction that may help us to understand how various forms of institutions interact to achieve specific outcomes.

It is also useful to develop a hierarchy of institutions that distinguishes between the institutional environment and institutional arrangements. The institutional environment refers to the set of underlying constraints that are typically embedded in social norms and values. They are typically slow-moving informal institutions that cannot easily be transformed by fiat. Customary rights and culture form part of the institutional environment. Institutional arrangements, on the other hand, are a relatively faster moving set of constraints that encompass legal and political systems (Roland, 2004). Firms, contracts and public hierarchies are examples of institutional arrangements that are relatively transient and that may be transformed by fiat. Other more complex hierarchal orders have also been developed. Williamson (2000) distinguishes between four levels of institutions according to how quickly they change. At the top of the scheme are the slow changing “institutions of embeddedness”, followed by high-level formal rules such as constitutions and law. The third level is composed of “institutions of governance” that govern day-to-day interaction such as contracts, whilst the last level represents the continuously changing prices and quantities within those contracts. Under this scheme, Williamson sets up a hierarchy that allows him to take the institutions of embeddedness as effectively exogenous and beyond the analytical scope of new institutional economics (Kingston & Caballero, 2006)\(^3\).

\(^3\) Also Ostrom, 2005.
In many cases, economists overemphasise the form of institutions at the expense of their function, both in definition and in analysis. The function of an institution helps us to distinguish an efficient institution from an inefficient one. A prime example is the discussion about the primacy of markets over the state. In this case, it is difficult to escape the conclusion that a position at either end of the state-market spectrum is not feasible. To a large extent, markets are created and defined by the state. State interventions are also frequently determined by market conditions. Therefore, it is the capacity of the institution to perform a function that should be at question, not the form. However, for many economists, the primary outcome of market institutions is to enable efficient exchange mechanisms.

**Outcome/ equilibrium**

The new institutional and transaction cost schools of economics hold that efficiency is the primary function of institutions, to the point that their existence is explained by this function (Coase, 1937; Williamson, 1999; North, 1990). Within this framework, Pareto efficiency emerges as a valid criterion against which institutions are assessed. In this way, if an institution makes one group better off without disadvantaging the others, then it is a Pareto efficient institution. The problem with this approach is that in the real world, ensuring that no one is disadvantaged by the process of institutional change is highly unlikely. It is a condition that only exists in theory under very specific conditions (markets must exist for all possible goods, markets are perfectly competitive, transaction costs are negligible and there must be no externalities). So the second best situation is to allow for the possibility that winners will compensate the losers. For this to be possible, the winners must accrue an amount that exceeds the loss of the losers or that is at least equal to the minimum amount the losers would accept in order to accept the change. This is the Kaldor-Hicks concept of efficiency, which is a more relaxed condition that only requires that compensation is possible in theory. It therefore includes a wider range of efficient outcomes than the Pareto condition.

Once again, the problems with these neo-classical frameworks of welfare and efficiency are particularly problematic when assessing institutional change. Firstly, Pareto efficiency is a concept that necessarily preserves the status quo; it is efficient for the rich to get richer as long as the poor stay in at least the same condition. Therefore, Pareto efficiency does not automatically provide for conditions where the under-privileged may improve their lot. Secondly, in reality, instances of transfer of resources between winners and losers are uncommon and complicated. The ability of the winner to compensate the loser does not mean that she will be willing, persuadable or even able to do so. The winner may choose to keep all of
her gains, especially if the institutional change is a stable one and the deal is done. She may be persuaded to compensate the losers if she is subjected to coercive pressure (say by the state) or the threat that the change will be reversed by the losers. It becomes a question of who is more powerful, and what is the position and inclination of the arbitrator (the state in this scenario). If willing or if persuaded, she must then be able to measure the volume of the losers’ loss and have a mechanism to compensate them without becoming a loser herself. Therefore, it is not surprising that in reality, it is only in exceptional circumstances that winners compensate losers. Other questions also arise. If the possibility of compensation is accepted, meaning that the losers can effectively claim compensation, we must also accept the possibility that the losers could also block the institutional change from taking place. What becomes clear when we explore the theme of institutional change is that we cannot understand these dynamics through efficiency criteria alone and that equity and power are a large part of the story, as is the role of the state.

From the perspective of the agricultural markets of Sub-Saharan Africa, where it is most pertinent to discuss the question of poverty, it has been increasingly recognised that growth does not automatically lead to a proportionate decrease in poverty. It would therefore appear that equity and distribution are also critical outcomes of well-functioning institutions. For instance, networks and coalitions that exist as agents in the market often organise themselves in a manner that extracts rents and that skews the distribution of institutional gains. Inefficient outcomes in such circumstances are not uncommon, yet in other situations, disproportionate gains may effectively spur productive activity.

Equity, distribution and efficiency, therefore, are critical outcomes of institutions that cannot be ignored where poverty is concerned, even though they are not goals that are normally associated with market behaviour. They are social (and hence political) goals. Therefore, in the framework of this research, efficient institutions are considered to be those that promote broad-based growth by maximising the growth potential of the society as a whole\(^4\). We also recognise that this must necessarily be a dynamic distinction since a good institutional arrangement may later become obstructive to growth in a different time and context (Acemoglu, 2003). The emphasis on the society as a whole arises because of the recognition of the existence of various groups with economic and political powers and conflicting preferences. It recognises that it is likely that there will be winners and losers in the game\(^5\). Therefore, a necessary condition for an institution to be efficient is that it allocates resources in a manner that enables productive groups to exploit

\(^5\) We define a loss both in nominal and relative terms.
their potential and minimises inefficient rents for unproductive winners. In the long term, it is preferable to enable all the groups involved to gain from the institutional change.

2.2 Theories of institutional change

Economists, political and social scientists have attempted to incorporate the study of institutions, and their works have highlighted both the importance and complexity of institutional change. Nevertheless, we are far from developing a complete understanding of this process. The process of institutional change has been the subject of a relatively recent and influential body of literature. Although essentially concerned with the same process, the authors have tackled a variety of important and interlinked questions. The common point of departure is that institutions are fundamental to the structure of economic and political exchange.

In this section, we will map out some of the key aspects of the most prominent theories of institutional change by examining three distinct approaches. After a brief exposition of the dynamic social interaction view, we will look in greater detail at the efficient institutions view and the distributional conflict view of institutional change. This is not intended as a comprehensive review but rather a selective one that draws on some of the key elements within each theory.

The dynamic social interaction view

The dynamic social interaction view regards the development of institutions as a by-product of social interactions that evolve in a decentralised and spontaneous manner. According to this view, institutions arise as a consequence of a complex and dynamic set of choices by socio-economic actors. An important body of work that exemplifies this approach is found in the work of institutionalists such as Veblen, Commons, and Mitchell. It is often referred to as 'old' institutional economics (OIE) because it was developed in the early part of the twentieth century, prior the prominence of the 'new' institutional approach. The OIE tends to focus on cognitive and behavioural functions and, in doing so, often incorporates aspects from the disciplines of sociology and psychology. In general, OIE is concerned with developing an understanding of economic processes within the framework of the continuity and change in social life. Therefore, institutions are perceived as inextricably linked to the social interactions in daily life.

More on this in chapter three.
It follows then that the OIE considers that the institutional architecture is shaped by the value rationality of individuals, with habitual behaviour perpetuating some institutions (Hodgson, 1991). Networks, trust and reputation developed through repeat interaction are examples of such social institutions that compensate for market failures (Fafchamps, 2004).

Therein lies one of the fundamental incompatibilities of 'old' institutionalism with mainstream neo-classical theory. Old institutionalism does not take the individual as a given. Individuals are considered to be affected by their institutional and cultural situations and are not simply conceptualised as utility-maximising agents. The neo-classical concept of the economic agent, however, allows it to curb a line of inquiry that relates to the evolution of institutions and definitive mutual interactions between agents and institutions. It simply maintains one causal direction in all circumstances: institutions are shaped by the economic needs of the rational man. However, from this perspective, it is difficult to explain the existence of institutions beyond their ability to reduce transaction costs. Such explanations have caused the neo-classical approach to institutional dynamics (particularly the transaction cost branch) to be considered as tautological: “Institutions minimise transaction costs because it is ex-post rationalised that transaction cost minimisation is their function” (Harriss-White, 1999, p.11). Ronald Coase’s response to such statements is that a tautology “is the criticism people make of a proposition which is clearly right” (Coase in Williamson & Winter, 1993, p.48).

One of the strengths of the OIE is its ontological approach that relies on realism, historicism, process, and internal relationality (Lawson, 2005). However, the subsequent dominance of neo-classical economics and its set of formalistic tools eventually caused the OIE to be considered anti-theoretical and unpredictable. In addition, despite its analytical depth, OIE has been described as lacking in rationality in the sense of an intrinsic means-ends nexus (Zafirovski, 2003). In other words, a high degree of imprecision caused the work of old institutionalists to be unsuited to theoretical translation (Hodgson, 1993).

The efficient institutions view

The efficient institutions view is very much the domain of the new institutional school of economics (NIE), a body of work that extended the neo-classical economics framework via a breakthrough analysis of institutions. The NIE draws on the pioneering insights of Ronald Coase (1937, 1960) to challenge one of the pillars of neo-classical economics: the assumption of zero transaction costs. It rejects the notion of the ‘black box’ of the Walrasian auctioneer and
argues that the efficiency of markets is also a function of the costs of negotiation, specification and enforcement of transactions. The general argument is that “market failure is not absolute; it is better to consider a broader category, that of transaction costs, which in general impede and in particular cases completely block the formation of markets” (Arrow, 1969, p. 48). In this way, the transaction cost branch of the NIE has deepened the understanding of markets as manageable within institutions and exchange by departing from the concept of impersonal exchanges that involve no transaction costs to a more complex view of the functioning of markets.

The efficient institutions view is a strand of research that treats the question of institutional change as a minor issue (Kingston & Caballero, 2006). In particular, the transaction cost economics branch (TCE) assumes that efficient institutional forms will arise spontaneously in response to changes in transaction costs as a result of exogenous parameters that affect relative prices. Implicitly, efficient institutions will eventually weed out the inefficient ones (Alchian, 1950). Therefore, the process of institutional change is driven by an evolutionary competitive process where the most efficient institutions inevitably prevail. This is what Williamson (1996) describes as the 'discriminating alignment' hypothesis.

In this way, TCE uses relative prices and transaction costs to explain the existence of all institutions (including the social ones) at all times and in all places and derives a predictive power based on the changes in the price mechanism. Therefore, relative prices provide the incentives to which the rational agent will respond. In essence, this means that institutions are patterns of interaction that respond to prices.

According to North (1990), informal institutions change slowly, continuously, and hesitantly, with the pace of change being occasionally punctuated by bursts of discontinuous activity (say a revolution). Formal institutions, however, can evolve more rapidly as they can be changed by fiat. Institutions, therefore, are the source of stability and a cause for the slow evolution of rules in society. Path dependency adds to the stability of institutions because organisations and society in general develop a symbiotic relationship with the existing framework of rules and constraints. However, this institutional inclination towards stability is disturbed by a dominant force – relative prices:

“[i]nstitutions change, and fundamental changes in relative prices are the most important source of that change. To the non-economist (and perhaps for some economists as well), putting such weight on changing relative prices may be hard
to understand. But relative price changes alter the incentives of individuals in human interaction, and the only other source of such change is the change in tastes.” (North, 1990, p.84).

North identifies relative prices as the main trigger that changes the incentives and perceptions of agents, leading them to transform the boundaries within which they operate. This position, however, is inconsistent with the rest of his framework for institutional change and economic performance. The question is, if institutions determine economic change, then how can relative prices be an exogenous factor that shapes institutional change? Relative prices are not exogenous. They are to a large extent driven by the changes in the scarcity of factors, which is a movement that is itself mediated through the incumbent set of rules and structures (Vandenberg, 2002).

Firstly, the scarcity of factors, say land or labour, is not always exogenously determined. There are many instances in history, and indeed in modern times, where laws have restricted the access of some groups to land, causing a scarcity of land relative to labour and other assets. Pastoral communities that restructure their livelihood systems as a result of conflict over land provide a clear example. Domestic laws that are driven by political consideration eventually force many of them to abandon their nomadic patterns and to concentrate their labour for cultivation. China’s child laws also show how domestic policy choices can lead to a shift in relative prices as labour becomes scarce in relation to land.

Secondly, even if factor endowments are exogenously determined, their relationship with relative prices is channelled through an institutional framework. For instance, in many markets, the terms of trade are largely determined by a system of international trade that is politically determined rather than by the availability of factors of production or the efficiency of their deployment.

Whilst relative prices are an undeniably powerful force, crediting them with generating the institutional structure is an approach that limits our understanding of the dynamics of market institutions. The sources of institutional transformation are invariably more complicated than is suggested by North’s institutionalism.

There are other concerns that arise when considering the efficient institutions view. It fails to explain why inefficient institutions persist and why successful institutional innovations may work in one context but have an opposite effect in another. But most fundamentally, it does not
recognise the existence of different groups with diverse preferences within the market, which may lead to equilibrium with distributional asymmetries.

**Distributional Conflict View**

In the distributional conflict approach, understanding institutions requires that we look at how individual preferences are aggregated and whose preferences are of a sufficient weight to swing the balance. In other words, dynamic interactions between interest groups are the core element in the overall picture in that they determine where the balance of political power lies. Therefore, the bulk of the differences between institutions are an outcome of a process that involves a conflict of interest between individuals or groups.

An important contribution to the distributional conflict literature on institutional change was made by Jack Knight’s *Institutions and Social Conflict* (1995). Knight elaborates on the relationship between group interests and distributional concerns on rules, norms and structures. He describes the process of institutional change as an interaction between individual actors engaged in decentralised bargaining, resulting in the adoption of informal rules that may subsequently develop into formal rules. In general, Knight argues that some actors have greater bargaining power, largely determined by wealth, and that this affects the rules that are adopted by society and their distributional consequences. The core of his arguments is captured in the following passage:

“Development and change are functions of the distributional conflict over substantive social outcomes; maintenance and stability are functions of the continuing ability of institutional rules to provide distributional advantages. Such explanations, which apply to both formal and informal institutions, conceptualize social interactions as bargaining problems and invoke the asymmetries of power in a society as a primary source of explanation.” (Knight, 1995, p.210).

Knight applies the argument that there is often a fundamental conflict between individual self-interest and social efficiency as to the selection of institutional rules. Therefore, he develops a system that is better equipped than the transaction cost school for understanding why differing institutional paths are taken under similar circumstances because it sheds light on why some forces cause an institutional change whilst others fail to effect a ripple in the system.

The primacy of political distribution factors is a theme echoed in the work of several other
theorists. Kingston & Caballero (2006) describe some of the theoretical approaches that have been developed by theorists to model institutional dynamics within a hierarchal framework. This approach essentially emphasises that a hierarchy determines the interaction between institutions, with historically determined political institutions typically influencing economic ones. This approach views political institutions as more flexible than economic ones and predicts that they will determine the changes in economic institutions. In effect, this model regards political institutions as exogenous (Acemoglu, 2006; Ostrom, 2005).

Developing hierarchies of institutions necessarily leads to one of the most difficult areas in the study of institutions: the problem of endogeniety. There is a lack consensus amongst researchers on the sources of exogenous institutional change, and this area requires much theoretical and empirical work.

In contrast to the efficient institutions view, the distributional conflict approach explains the most prevalent equilibrium outcomes more realistically, seeing them as an outcome of conflict between groups that results in winners and losers. In this process, the interaction between economic and political institutions drives the process of institutional change. The distributional conflict approach does not shy away from tackling the conditions that allow for inefficient outcomes to be the favoured outcomes of individuals and groups by holding that efficiency is a not a sufficient factor in explaining the dynamics of the change process. Therefore, this position allows for the existence of inefficient institutions and attempts to explain why different institutional forms with a similar function arise. One such attempt to explain the existence of inefficient institutions is found in the work of Acemoglu & Robinson (2006). He describes situations where the elite’s attempts to extract rents create a mass of inefficient policies and institutions. Under his framework, the elite try to extract rents by three means:

- Increase output of the non-elite so as to be able to extract revenue
- Distort factor prices to make the activities of the elite more profitable
- Consolidate political power by impoverishing the poor

Of these, the first is the least damaging in that it stimulates the output of the non-elite as opposed to impoverishing them. It is a strategy that in the long term may reverse itself. As the non-elite also establish a base of economic power, they may achieve some independence from the political powers, as occurred in Korea when the Chaebols became increasingly independent.

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of the state in the later stages of economic development.

The core strength of the distributional conflict approach is that it restores people at the centre of the dynamics of institutions. Institutions are essentially human constructs and respond to the perceptions and the incentives of the agents involved. The way in which they set rules and provide incentives is a reflection of a continuous and gradual feedback loop between human perceptions, incentives and desires, and the incumbent set of rules that they have created to institutionalise them. The rules are also influenced by the distribution of power in society. The need to institutionalise them is there because humans function in a social context that can be defined by the exchanges we have with others, be they economic, political or social.

The distributional conflict approach also recognises that agents are heterogeneous. It differentiates between them according to their capacity to bargain and to influence others. The institutional architecture is more likely to reflect the utility of those who enjoy a higher capacity or more power in general. The others simply conduct their activities in an institutional environment that is less than ideal from their perspective. The tension between these groups determines the level of traction that other pressures on the institutional framework can attain. Thus, this emphasis on the heterogeneity of agents is critical to our ability to unpack the process of institutional change itself and to explain the existence (and persistence) of inefficient institutions and the heterogeneity of outcomes. Therefore, the distributional conflict approach affords a basic analytical framework that integrates group powers and incentives with institutional dynamics.

2.3 Institutional change and the state

To a large extent, the rules of the game in any market are filtered or even designed by the state. This is particularly relevant to institutional arrangements, political and governance institutions. Although this is true of almost all existing markets, the theoretical treatment of the state across the various approaches to the study of institutions varies widely.

The efficient institutions view on the state boils down to an approach where its role is diminished, and it is regarded as distinct from the market. The role of the state is conceptualised as a facilitator of a narrow set of institutions centring on property rights, laws, macro stability and regulation. Consequently, the governance agenda has almost calcified around a ‘one size fits all’ model that drives the agenda for governance reforms in developing countries (Chang, 2006).
Implicit in this approach is that state failure is generally considered by neo-classical economists to be more serious than market failure (Khan, 1995). However, if we momentarily step out of the conceptual realm and into the historical one, we are immediately reminded that the state has had a definitive role in the process of institutional change and in determining equilibrium outcomes. Economic and political institutional changes are largely overseen by the state. It is almost impossible to develop a meaningful understanding of institutions, particularly agricultural market institutions in Sub-Saharan Africa, if they are removed from their historical context and their relationship with the state (Bates, 1981; Harriss-White, 1995). Nevertheless, ahistoricism may be an ontological tool that allows much of neo-classical theory to obscure the considerable historical evidence linking the state to the process of economic transformation and development.

Developing a framework for institutional change that disregards the state as an actor is problematic, and from the NIE perspective, it is also inconsistent. The rationale of transaction cost economics may apply equally to the state as it does to the market. Therefore, it is a question of who can allocate resources most effectively given the underlying institutional endowment (Chang, 2003). In addition, the pervasiveness of the state in the institutional architecture of markets requires agents to engage in institutional arrangements that interface with state agents to reduce transaction costs. For instance, many Sub-Saharan African countries’ agricultural markets have been undergoing liberalisation reforms over the past two to three decades. Widespread market failures emerged as the previously interlinked input and output markets were de-linked by the reforms. In the later stages of this process, the resulting pressures of the market failures have led states to develop policies and institutional arrangements that aim to reverse some of the reforms. The outcome is the perception by agents that the state did not credibly exit the market as intended by the reforms. So, whilst trade relationships and networks between producers, traders and firms are important in the African context (Fafchamps, 2004), studying the relationship between these agents with little reference to the state as an agent will result in an incomplete picture at best. In the African context, where the state has not credibly exited the market, agents will have a significant incentive to invest much of their effort in developing a network and a reputation with the state, as well as amongst each other.

By contrast, the distributional conflict approach generally regards the state as central to the study of political power. Its view can be roughly subdivided into three chapters, depending on the role attributed to the state.
The first is the state as an agent of the elite\textsuperscript{8}. This approach conceptualises the state as a playground for managing distributional conflicts between private agents. The state may use its monopoly of violence to maximise the utility of a social elite defined by their political power. Marxist theories could be associated with this approach in as much as they associate states with the capitalist ruling class. In Africa, this type of ‘state capture’ is often associated with ethnic groups. In such theoretical frameworks, the state essentially acts on behalf of others and is not an agent that seeks its own ends.

The second is the state as a self-serving agent\textsuperscript{9}. Here, the agents within the state (bureaucrats, politicians) are engaged in the process of maximising their gains through their privileged positions. Such states are often referred to as predatory states by political scientists and economists. Therefore, this state is not primarily concerned with secularly coordinating economic action nor promoting the interests of one group over another, but in extracting from the other agents.

The third is the state as an autonomous benefactor or arbitrator\textsuperscript{10}. In these theories, the state is viewed as a ‘developmental’ state in that it optimises the well-being of the society as a whole. Such a state would have to be sufficiently powerful to dominate society in order to achieve a beneficial change. What distinguishes this concept of the state from the others is that whilst it is integrated as an agent, it does not engage in processes of rent-seeking and extraction.

All of the above views of the state are typified for the purposes of theoretical reasoning, but more often than not, state dynamics are complex and the various roles we have described are not necessarily discrete from each other. The state may favour one group over another but may later use its powers to extract rents from the favoured groups in furthering its own goals. It is also useful to note that whilst the state is mostly modelled as a group that functions in a centralised and purposive manner, its actual operations are often dispersed and fragmented, as reflected by the state's continuous efforts to control dispersion of power and to consolidate control.

\textsuperscript{8} Platteau, 2004; Hyden, 2005; Bardhan and Mookherjee, 2000.
\textsuperscript{9} Olson, 1993.
\textsuperscript{10} Leftwich, 1994; Evans, 1995; Woo–Cummings, 1999.
Table 2.1: Summary of key approaches to institutional change

<table>
<thead>
<tr>
<th></th>
<th>Drivers of institutional change</th>
<th>Process of institutional change</th>
<th>Equilibrium outcome</th>
<th>View of the State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic social interaction view</td>
<td>Veblen Commons</td>
<td>Social interactions</td>
<td>Non-deliberate &amp; decentralised</td>
<td>Both efficient and inefficient outcomes</td>
</tr>
<tr>
<td>Efficient institutions view</td>
<td>Williamson North</td>
<td>Relative Prices</td>
<td>Deliberate &amp; decentralised</td>
<td>Efficient institutions</td>
</tr>
<tr>
<td>Distributional conflict view</td>
<td>Acemoglu Knight</td>
<td>Group dynamics and political power</td>
<td>Deliberate &amp; centralised</td>
<td>Both efficient and inefficient outcomes</td>
</tr>
</tbody>
</table>

Source: Author.

2.4 Concluding Remarks

Our review of the main approaches to institutions and institutional change leads us to conclude that although each approach has its strengths and limitations, the distributional conflict approach is best suited for answering the key questions we seek to address in this thesis. A more complete picture of the dynamics of institutional change can be developed by applying theories of political economy, power and collective action to the study of market institutions. Hence, in the following chapter, we will outline our theoretical framework based on the distributional conflict approach. We will elaborate institutional change as a process and describe the factors that influence group power and capacity to influence institutional change.
Theoretical Framework

This chapter lays out the theoretical foundations for addressing our main research questions. Our first question explores whether inefficient market institutions discriminate against the poor. It is a question that seeks to explore how institutions might operate in a manner that increases inequality and exacerbates poverty. The second question addresses a more dynamic issue, namely, which factors determine the structure and the change of inefficient market institutions?

Even though both questions have been of much interest to economists in recent years, the role that institutions play in growth and development has been better explored than the process of institutional change. Therefore, in this theoretical framework, we will treat the first question lightly whilst placing a larger emphasis on the second. Mainly, our theoretical discussion in relation to the first question emphasises the gaps in new growth theory and new institutional economics in addressing the way in which institutions interact with power, and how they might skew outcomes against the poor. We then present a more detailed theoretical framework for our second question. We seek to add value to the understanding of how power and influence interact with and even determine the process of institutional change. More specifically, we present a framework in which influence costs play an important role in distributional conflict over institutional change at the local level.

3.1 Theoretical framework: institutions, growth and poverty reduction

Several important and well known studies have shed light on the way in which macro and micro institutions determine the incentives behind what people do, including why they transact,

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11 This question is empirically addressed in chapters four and five.
12 This question is empirically addressed in chapter six.
13 In the previous chapter, we highlighted the importance of equity in the definition of an inefficient institution. Poverty reduction is the primary variable of interest when it comes to institutional impact. Whilst economic growth can be considered as a pre requisite to significant and sustained poverty reduction, it is how institutions affect the distribution of this growth that of primary interest to us. These include institutions for direct wealth accumulation as well as institutions for redistribution.
14 We refer to Williamson’s (2000) definition of macro and micro institutions.
innovate and invest. The findings of these studies are particularly important in explaining economic stagnation in low-income countries given that modern growth theory fails to establish a clear role for institutions. In its earlier phases, growth theory focused on capital accumulation in explaining why some economies lagged behind others. The application of growth theory to the study of poor countries led to the conclusion that developing countries are poor because their abundant workforce has insufficient access to capital assets. Using the Harrod-Domar model, it was easy to calculate the average ratio of capital-to-output and hence, how much new investment in capital is required to achieve a specific level of growth. Armed with this information, analysts then calculated the volume of savings and foreign investment to assess the size of the financing gap for developing economies. International financial institutions such as the World Bank typically relied on the financing gap model to link foreign aid with growth targets for developing economies. The underlying assumption behind this approach is that investment in capital (financed by savings, foreign investment or aid) will lead to economic growth in poor countries. It was a crude capital accumulation approach to development that paid no specific attention to incentives or institutions.

The endogenous growth variant of neoclassical growth theory subsequently emphasised the role of endogenous technological change in driving growth. Endogenous growth theory brought much needed diversity and complexity to neo-classical growth theory. Despite this, the core neo-classical methodology still presented a handicap to studying sources of growth that relate to incentives and behaviour. Therefore, in the basic model, capital and labour failed to account for a large proportion of measured growth and the third variable, technology, acted as a residual that accounted for this unexplained growth. This is referred to as total factor productivity. However, this large residual is problematic in that it camouflages important determinants of growth such as institutions. In not addressing these factors, new growth theory was criticized for being concerned only with the immediate sources of growth (Nelson, 1998) and for having little that is “novel and important to say about governance structures and institutional environments” (Eggertsson, 2005).

The emergence of new institutional economics has brought the neo-classical framework a long way towards developing a better understanding of the role of institutions. But even this framework has several serious limitations of its own. As discussed in the literature review, new institutional economics generally fails to explain why inefficient institutions persist. Moreover, it does not recognise the presence of competing groups with diverse institutional preferences.

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This presents a situation where both mainstream growth and institutional theory do not recognise the potential for institutions to be an instrument of power and rent-seeking, or for an institution to be relevant for growth, but not for poverty reduction. Therefore, in addressing our first research question, we seek to demonstrate this generally less well-understood aspect of institutions. We will do this in the two subsequent chapters by presenting quantitative analyses of some of Tanzania’s agricultural market institutions, and by analysing outcomes and incentives for the market groups surrounding them. We will show the winners and losers and demonstrate how institutions that seem to have pragmatically adapted around imperfect markets are captured by market elites, causing lower incomes for poor and less influential groups.

3.2 Theoretical framework: the process of institutional change

As discussed in our literature review, new institutional economics conceptualises the process of institutional change functionally by theorising that transaction costs are the determinants of institutions, how they are arranged and why they change. In effect, transaction cost economics holds that institutions are organised efficiently around the existing transaction costs. The role of other costs or political factors that may affect these structures are not typically factored in.

In an important paper, Milgrom and Roberts (1990) present influence costs as fundamental costs associated with using markets to carry out transactions. They argue that where an authority such as company management has the power to intervene in organisational structures, there is an incentive for individuals to engage in bargaining over these arrangements. These are influence activities that involve costs, including the opportunity cost time devoted to influence activities, the costs of the resulting arrangement if it is inefficient in addition to the costs of resources dedicated to preventing influence activities. Milgrom and Roberts describe the implications of influence costs as follows:

“We believe that these ideas about influence costs are important in analysing organisations. For example, they might be used to examine issues of corporate control, financial structure, bankruptcy, proxy fights, and takeovers. Moreover, because influence activities are essentially political and because the theory applies equally to public and private organisations, we believe that it may also prove valuable in the more general study of political economy.” (Milgrom and
Milgrom and Roberts’ theory of influence costs primarily addressed organisational management within firms. But as they observe in the quote above, the idea is not limited to this arena. By placing influence costs in a critical position in the process of institutional change, our theoretical framework draws out the understanding of the role of influence costs and applies it to a broader landscape.

We present influence costs as the transaction costs of political exchange. Influence costs are a type of transaction cost although they differ in some respects from the conventional transaction costs. In the new institutional economics, transaction costs are typically incurred in making an economic exchange in the market for goods and services, such as commission paid to broker when buying a house or commercial contract enforcement costs. Influence costs on the other hand are incurred in the process of making a political exchange in the market for power. Hence, lowering influence costs does not automatically lead to efficiency gains, and may be associated with inefficient structures and the extraction of rents. Their true impact depends on their relationship with varying groups. Optimally, influence costs would be best minimized for productive groups and kept restrictively high for unproductive groups. This is not to say that the economic and political realms are unrelated. Although economic institutions are essential for shaping economic incentives and outcomes, they are to a large extent determined by the political distribution of power in a society. But what determines the relative levels of power that shape economic outcomes? The distinction between the costs related to economic and political processes serves to shed some light on this question by separating the drivers of relative economic and political power.

We establish two main hypotheses to address this question. The first is that the capacity of groups or individuals to influence institutional change, meaning their level of relative power, is determined by influence costs. The second is that group conflict relating to institutional preferences is, to a large extent, characterised by conflict between elite and non-elite market groups at the local level. The power play takes place in villages and rural towns, and the capture of state authorities at these levels can determine the path of institutional change at a macro level.
We begin with a short definition of political power and influence for the purpose of our framework. The following section describes institutional change as a process and the role of influence costs therein. We then present a basic framework for understanding distributional conflict at the local level. The final section briefly discusses the potential for institutions to selectively support productive but powerless groups.

### 3.2.1 Political power and influence

Political power is related to the amount of societal influence that a group can wield, formally or informally, to direct or influence the behaviour of others with or without resistance. The literature on the sources of group power is fairly well established. For J.K. Galbraith (1983), the sources of power are wealth, personality and organisational. More broadly, groups may draw power and influence from a variety of sources including delegated authority (such as that given through the democratic process), wealth, class, charisma, moral persuasion, group dynamics and brute force.

The political elite are a minority group composed of those who enjoy political privileges typically from a level of control over the state and social apparatus (through wealth, education, affiliation with powerful individuals, groups, etc.). Societies are generally endowed with a specific distribution of political power, whereby some groups are more influential than others. These are often referred to as the elite groups in society. Their position tends to be the outcome of a long and socially embedded process.

The distribution of political power is not static and the balance of power may shift between groups. Yet much of the literature on distributional conflict and institutional change takes the distribution of power as given. The literature largely explores the way in which groups use their political assets to influence institutions and change. The various models generally incorporate groups of differing levels of power, elites and non-elites, and investigate how the interactions between these groups result in institutional change or how they affect efficiency. The determinants of relative power however are not well integrated within the framework. Whilst the elite may use their position of influence for economic gains, they are also engaged in preserving or even supplementing their power. The non-elite are also in a continuous struggle to assert a position for themselves. For both groups, being more influential is likely to be translated into being better off (at least relatively).
3.2.2 Influence Costs

In our framework, influencing change is recognized as a process that incurs several costs. Establishing one's position in society and influencing institutional change must be seen as a slow, costly and complex process. Hence, in exploring the structure of elitism and group dynamics of the market, we will describe relative power in relation to influence costs.

Influence costs are the costs incurred in the process of acquiring sufficient power to influence institutional change\(^{16}\). The less powerful a group, the higher the resources that it needs to expend on influencing institutional change. Similarly, a powerful group is nearer to this goal in that it has already invested in being influential. The sources of these resources (hence the source of group power) vary as discussed in the previous section. Hence, influence costs help us to understand the relative powers of competing groups. They describe the relative capacity of agents to systematically influence, capture and successfully bargain with others to further their own objectives.

When groups engage in the process of influencing institutional change, the level of group power and the influence costs they face are relevant. For instance, a group that draws power from being large and well organised (meaning it has overcome the collective action problem) might not have access to sufficient and timely information and may lack the financial clout or contacts to gain this access. Another group that draws power from wealth and has large amounts of cash might prosper in a context whereby access to the suppliers of institutional change requires considerable handouts to corrupt politicians. In a different context, where socialist ideology is more dominant, wealthy groups might not be as influential with politicians as large grassroots groups such as labour or cooperative unions. Hence, influence costs vary depending on the existing political institutions and the power characteristics of the group engaged.

In this framework, influence costs are divided into three main components. The first two, the costs of demanding and supplying institutional change, refer to Alston’s approach to structuring analyses of institutional change (Alston, 1996). Alston considers bargaining as a necessary process that must take place between the demanders and the suppliers of institutional change:

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\(^{16}\) Influence costs encompass both private and social costs. The private costs are those borne by the individuals or groups that are attempting to influence change. The social costs are those that are borne by others, typically as a negative spillover of the process of influencing change.
“Institutional change can be thought of as the result of supply and demand forces in a society. We can think of demanders as constituents and suppliers as the government. The rational for using the terms demand and supply is that formal institutions emerge through a political process.” (Alston, 1996, p. 26-27).

We identify information as an important third factor. Information about the existing institutions, their effects, how to change them and who to influence is critical for influencing institutional change. So overall, bargaining between demanders and suppliers requires that individuals and groups are well informed and that they can gain access to each other. This involves costs, influence costs\textsuperscript{17}.

\textit{Figure 3.1: Influence costs}

\begin{center}
\begin{tikzpicture}
    \node (influence) {Influence Costs};
    \node (info) [below of=influence, xshift=-2.5cm] {Cost of Access to Information};
    \node (demand) [below of=influence, xshift=2.5cm] {Cost of Access to Suppliers};
    \node (suppliers) [below of=influence, xshift=2.5cm] {Cost of Access to Suppliers};
    \draw (influence) -- (info);
    \draw (influence) -- (demand);
    \draw (influence) -- (suppliers);
\end{tikzpicture}
\end{center}

\textit{Cost of access to information}

Influencing any kind of change requires a clear understanding of the institutional framework as it stands and an idea of a better alternative to strive towards. This kind of knowledge is neither readily available nor perceivable. Information gaps exist that might prevent an individual from associating market failures to the prevailing institutional arrangements. This is particularly relevant when the existing rules and regulations are elaborate and complicated. Anne Krueger (in Alston, Eggersston & North, 1996) gives a good example of this situation in her analysis of the American Sugar Programme. As the programme grew, it acquired a level of technical complexity that prevented even those that would have benefited from its reform from identifying the changes that would have been beneficial to them. Another case where access to information is a crucial ingredient for influencing change is in developing economies, where the

\textsuperscript{17}These are not the exogenous sources of influence costs but a breakdown of the main components.
vast majority of the economic actors, such as small farmers, are illiterate and unaware of many of the formal rules that regulate their economic life.

Cost of access to the other demanders of change

Associational life, networks and collective action in general are some of the main ways in which individuals acquire political influence. Uniting around joint interests can boost their positions of influence and power. Trade unions, lobby groups, industry associations, farmer groups and cooperatives are common examples of the collective action approach to gaining influence. This is not to say that the matter of acting collectively with others is simple one. The formation of interest groups, coalitions, unions and cooperatives is a costly and risky business. The likelihood of such an endeavour to succeed is subject to the vagaries of the freerider problem. It also depends on the size of the group and the share of the total benefit to be accrued by the individual. And so, success in building up bargaining power through collective action may favour most resourceful and wealthy groups:

“The larger the number of members in the group, the greater the organization costs, and the thus the higher the burden that must be jumped before any of the collective good at all can be obtained.” (Olson, 1965, p.48).

Cost of access to the suppliers of change

Groups and individuals need to communicate with and convince the suppliers of change to meet their objectives. This type of communication typically involves formal (or informal) meetings with the regulators. Visiting your local MP, holding briefing sessions for parliamentary committees and regulatory bodies attending village meetings with officials are common examples. Providing information to the suppliers of change is also critical. In the end, collaborating with other demanders of change is unlikely to yield the desired results unless the group can also gain access to the suppliers of change and deliver a specific set of information. This may be one of the reasons why lobbying groups tend to be concentrated around the centres of administrative power rather than those of production.

3.2.3 Distributional conflict at the local level
Distributional conflict literature and models tend to address interest group dynamics and the tensions between elites and non-elites mostly at an aggregate level. The details of elite interests however and their relative importance are not frequently disaggregated between the local and central levels, and rarely within the local level itself. Therefore, the 'micro foundations' of the social conflict theories are poorly understood. This area is of particular importance for African agricultural commodity markets that are to a large extent controlled at village and district levels, but that have frequently been used as a national political tool for the consolidation of power and economic objectives.

Addressing social conflict at the aggregate level generally obscures an underlying complex picture, composed of a rich mix of players and contexts. The nature of elitism itself is as inconsistent as the local political dynamics within which it operates. The characteristics and the tenure of elite groups can vary across geographical areas and periods of time. For instance, in areas where there is a considerable inequality of wealth determined by access to scarce fertile land, the elite may be identified by their land holdings and income. In other contexts, where inequality concerns are immaterial, elite groups might be more readily associated with their affiliation with central or external sources of power. Membership of the village committee or the local branch of the dominant political party, or kinship to an influential politician or state bureaucrat would be important characteristics in this case. The level of aggregation in social conflict theories also obscures the heterogeneity of outcomes that are apparent even within one overarching context. The level of elite or interest group cohesiveness and coordination may vary between localities, suggesting a diversity of outcomes, particularly in the diversely structured traditional commodity markets of developing economies.

Besides the diversity of elite groups, there is also the matter of the relative importance of their power and state capture at the central and local levels, and more specifically, “the relative susceptibility of national and local governments to interest group capture”\(^\text{18}\). A key question is whether elite capture by interest groups is stronger at the local or at the central level. Bardhan (2005) addresses this question by developing a model for identifying relative capture at the central and local levels of government by interest groups during two party electoral competition. Several determinants of relative capture are identified, including voter awareness, heterogeneity of districts and interest group cohesiveness. He finds that the relative susceptibility to capture of local governments depends on a variety of factors. But in relation to the importance of capture at the local or the central levels, the net effect is theoretically

\(^{18}\) Bardhan, 2005.
ambiguous, suggesting that the extent of relative capture is context specific.

We present here a simple framework that outlines a basic structure of elitism and distributational conflict, incorporating the supplier and demander functions of the groups (figure 3.2). Whilst recognising that any categorisation of group power and influence may not capture the inherent nuances, we use it as a tool to begin unpacking the tiered structure of elitism and distributational conflict. Since elites are defined by a position of privilege that affords them an elevated level of power in their locality and beyond, it follows, that varying levels of power and influence produce a hierarchy of elitism that is structured by types and concentrations of power. The suppliers and the demanders of change are situated within this hierarchy. The combination of the type of power, and the institutional preference determine the structure within which distributational conflict will take place at the local and central levels.

*Figure 3.2: Distributational conflict framework*

State institutions rest in the vertical axis of the figure above. They are the suppliers of institutional change because of their capacity to revise the institutional arrangements and to constrain the resources available to all the other groups. The state is also characterised by a relatively high level of internal cohesiveness and coordination, although different levels of the
state could also be in conflict or competition.

In contrast, the market groups on the horizontal axis are a heterogeneous collection of groups that demand institutional change. In agricultural markets, these would be cooperatives, local political elites and private trader groups or associations. They are differentiated by their levels of influence and conflicting institutional preferences. Their fragmentation and conflicting preferences drive the distributional conflict amongst them. The non-elite group can be described as an 'institutional taker' in that they largely operate within the institutional environment determined as an outcome of distributional conflict on higher tiers. Influence costs are too high for them to be effective demanders of change. That is not to say that as a group they are entirely powerless. In the medium to long term, the non elite may accumulate a sufficient level of political capital to move up the hierarchy.

Distributional conflict between government institutions, particularly in relation to issues of power at the central and local levels is vertical conflict. The overall distribution of power is hierarchal with power being mostly directed downwards from the government institutions to the market groups, and from the market elites to the market non elites. In this process, the market groups attempt to capture the suppliers of institutional change and to compete with each other. In some cases, market groups find ways to collaborate rather than compete.

What this framework emphasises is that contrary to the Bardhan type models, where interest groups are posed as distinct from the governance structure itself, the groups are organised on the basis of varying interests that open up a space for organisation and collective action around shared goals. Therefore, it is not simply a question of whether the state is captured by interest groups at the local or at the central level. Rather, the question can be framed as to how the structure of distributional conflict between elite interest groups at the local level determines institutional change.

3.3 Institutions for growth

When analysing the process of institutional change, it is important to consider the relationship between institutions, groups and productivity. It is a matter that is relevant for the question of inclusive or pro poor growth: how can institutions evolve to support powerless yet potentially productive groups? To a large extent, these include the masses of poor small farmers in Africa.

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19 This also applies to conflict between secondary elites and non elites.
that hold the key to future economic transformation, but that remain politically and economically marginalised. Although we do not address these questions directly in this thesis, this theme is indirectly present throughout.

Realizing the potential of productive but powerless groups is difficult when distributional conflict is taking place. Much rests on the nature of the political environment and the nature of state. A developmental state might favour the most productive group, or activities that accrue gains for the society as a whole. A self-serving state, on the other hand, may be most concerned with consolidating its political base, and therefore focus primarily on groups that offer political influence, at the expense of economic gain. One factor that may influence the inclination of states is the exogenous risk. In a situation where political powers require a strong a productive economic constituency for maintaining their position against exogenous risks, they will develop institutions that strengthen the incentives and conditions for productivity. Herbst (2000) discusses the process of state building in Africa as an incidental outcome of exogenous conditions such as the threat of war. In these situations, economically productive groups would find themselves sought out by political elites that require their services for achieving a political objective. A pertinent example of such a situation applies to the colonial era of several African states. During the Second World War for instance, the demands of the British Empire to develop agricultural institutions that facilitate the production and export of food and raw materials to their war economies form a large part of the colonial heritage of agricultural institutions to this day (Bates, 1981).

Put another way, simply possessing the potential to be productive is not sufficient, productive groups need to also be politically successful in order to prosper. They would additionally require a level of bargaining power that exceeds that of the competing groups. Alternatively, they may have cause to avoid posing a threat to the power of the incumbent political elite. Evidently, the winning strategy for any one group is to establish a bargaining position based on both economic and political power.

For these reasons, institutions that promote the activities of productive groups and that restrict the power of the political elite are fundamental. It is also of great importance that productive groups perceive that a mechanism for the various players to effectively commit to and enforce any agreements is in place. In environments where the elite have unrestricted power, the risk of ex-post expropriation of gains will be large for productive groups. Acemoglu (2006) describes this as the ‘hold-up condition’. It holds a strong parallel with the asset specificity condition. Therefore, an agreement with a politically powerful group requires that it is able to give a
credible ex-ante commitment that it will not abuse its power at a later stage. Contracts, reputations, trust and networks are institutions that are used in this context. A big risk in many markets, particularly the agricultural markets of sub Saharan Africa however, is to be ‘held up’ by the state, typically through taxes, withdrawal of subsidies or property rights, and through marketing board operations. In this context, the institutions that restrict the power of the state or the political elite are of great relevance.

3.4 Concluding remarks

The balance of power in Tanzania’s agricultural marketing chains has been dramatically shifting over the last forty years. The most recent transformation took place during the liberalisation reform period in the 1990s. The reform process involved a series of negotiations and distributional conflict between various groups. The outcome was a diverse set of institutional arrangements for the main market players: small farmers, cooperatives, private businesses and state institutions at the central and local levels. Some groups emerged as winners from the new institutional arrangements whilst others lost market and rent seeking opportunities as a result.

In the two following chapters (four and five), we will quantitatively test the effects of agricultural market institutions on the various groups, particularly on farmer incomes. We will show that in contrast to new-institutional theoretical frameworks, institutions can be captured by rent-seeking market groups and can systematically depress the incomes of the weakest groups. Having done this, in chapter six we will analyse our theoretical framework for institutional change using a historical case study of market reforms and group conflict in Tanzania. We will examine the relationship between influence costs and the balance of power between the main market groups during and after the reform period for Tanzania’s agricultural markets. We will also apply our horizontal and vertical distributional conflict framework to the context to differentiate the interaction between the various groups at the local level. In this way we will explore the hypothesis that micro level distributional conflict has had a role in shaping market institutions. We will examine the potential for the markets to be more strongly captured at the local level, and the ways in which disaggregated distributional conflict is aggregated to national outcomes.
Grading or Cooperatives? A comparative analysis of institutional efficiency in Tanzania’s coffee market

As is the case with most agricultural markets in developing economies, Tanzania’s coffee market is complex and riddled with institutional pitfalls. In this chapter, the institutions that we will consider are the grading and contracting arrangements and the regulatory framework. The aim of this chapter is to demonstrate the inefficiencies of these institutions. In the process of analysing the institutional inefficiencies, we will identify the main groups in the market and identify whether they are winners or losers from the existing inefficient market institutions. Having done this, a more in-depth and comparative analysis that addresses the reasons why these inefficient institutions persist will be presented in chapter six.

In the first section of this chapter, we give an overview of the coffee market’s performance since undergoing the bulk of its liberalisation reforms and provide a description of the key players. The subsequent section analyses the institutional inefficiencies in grading and contracting. A quantitative analysis is presented based on primary survey data.

4.1 Overview of the coffee market

Tanzania is a small producer of coffee with a market share of less than one per cent of global production, making it a price taker in the international market. The majority of coffee grown is of the Arabica variety with some Robusta coffee grown in the western areas. Arabica coffee is predominantly produced in two areas, the northern Kilimanjaro and Arusha regions and the southern Mbeya and Iringa regions. With the exception of some speciality markets, Tanzanian Arabica coffee is generally used as a filler in blends or as a substitute for higher quality coffees from other regions. It therefore competes largely on a price basis rather than attaining a quality premium (Government of Tanzania & European Commission, 1998).

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20 Our focus in this study is on the market for Arabica coffee.
Market Performance

Overall, the coffee market reforms of the 1990s have had a mixed outcome at best (Baffes, 2003; Krivonos, 2004; Nelson & Temu, 2002; Ponte, 2004). On an aggregate level, the market has become more diversified with the entry of the private sector. However, despite extensive reforms, Tanzania’s coffee sector performance has been underwhelming at best. The Tanzania Coffee Board’s records show that coffee production in Tanzania has declined steadily over the last twenty years. Price transmission patterns do not reflect those of a robustly competitive market. The producer shares of coffee growers\(^{21}\) (an important indicator for grower incomes) do not seem to have maintained their growth as a proportion of the export price. The producer price share initially went up after the reforms but subsequently continued to decline (figure 1), unlike in Kenya and Uganda, where their shares rose sharply subsequent to their reform periods. This is a sign that price transmission is poor and that farm-gate prices might not bear an integrated relationship with international coffee prices (Krivonos, 2004). In an efficiently operating market, or a market that has undergone effective liberalisation reforms, we would expect the two price series (producer and export prices) to move together. In fact, the major aim of the coffee market reforms in Tanzania was to introduce competition into the market. This should in turn improve price transmission along the coffee supply chain, and move the market nearer to the conditions of the Law of One Price. So if there was no long-term co-integration between domestic coffee prices and international coffee prices prior to the reform period, a higher level of co-integration should be present in the post-reform period. Yet in Tanzania and other post-reform developing economies where the level of competition in the market is found to have improved farm-gate prices, an asymmetric wedge remains between farm-gate and international coffee price series that has not been affected by the liberalisation reforms (Krivonos, 2004).

We would also expect that an incentive for improving the quality of coffee would be created as higher quality coffee could be more readily compensated in a competitive market. However, the reforms do not seem to have created mechanisms or sufficient incentives in the market for improving the quality output of the Tanzanian coffee sector, and the decline in coffee production has been accompanied by a marked decline in coffee quality, particularly for Arabica coffee (Baffes, 2003). The declining quality of coffee is a phenomenon that has persisted throughout the fundamental changes to the structure and the institutions of the market. It has

\(^{21}\) Arabica coffee
resulted in a situation where the supply of high quality coffee is predominantly sourced from the large estate sector rather than smallholder producers. Overall, the result is a market that underwent macro-level reforms that have not had the desired micro-level impact. The reforms have not led to the expected improvement in the productivity, incomes and overall livelihoods of the Tanzanian coffee growers.

**Figure 4.1: Producer prices as a share of the ICO indicator price 1995 to 2005**

![Producer Price as a Share of ICO Indicator Price 1995 to 2005](source: International Coffee Organisation data)

**Figure 4.2: Producer price as a share of ICO indicator price for Arabica coffee**

![Producer Price as a Share of ICO Price Arabica Coffee - 2006](source: International Coffee Organisation data)

**Figure 4.3: Arabica coffee production (tonnes)**

42
Market Structure

The largest group in the coffee market in terms of production is that of the smallholder growers\textsuperscript{22}, composed of approximately 450,000 households. This group accounts for 95 per cent of total coffee production\textsuperscript{23}. The remainder of Tanzania’s coffee is produced by a handful of large privately owned coffee estates that are fully vertically integrated and that enjoy strong international market linkages\textsuperscript{24}. Coffee marketing on the other hand is dominated by a handful of vertically integrated firms that collect, process and export coffee, referred to in this thesis as the coffee buyers. This segment of the coffee industry is highly capitalised, and in common with large estates, it is well connected to the international market. Small independent traders that buy coffee in villages do not play a role in Tanzania’s coffee marketing chain.

\begin{itemize}
  \item[\textsuperscript{22}] With an average farm size of 1 - 2 acres.
  \item[\textsuperscript{23}] Tanzania Coffee Board
  \item[\textsuperscript{24}] We do not include estates in the analytical framework, since they do not generally transact with other players in the market.
\end{itemize}
The other key player in the coffee market, straddling both production and marketing, is the network of coffee cooperatives that acts as the marketing arm for its member coffee growers, albeit to a decreasing level. The coffee cooperative unions are large organisations with apex bodies that coordinate the operations of smaller sub-units known as cooperative societies. They have had a historically important role in coffee production and marketing. In the early seventies, cooperative unions marketed virtually all the coffee produced in Tanzania. The continued political interference by government in the running of the unions and in price setting between 1975 and 1994 caused their eventual decline and bankruptcy. Even though the cooperative is in principle a union of individual farmers, the history of Tanzania’s cooperatives movement has shown that these large bodies inevitably develop their own set of incentives that are independent of those of the growers and that may lead to the extraction of rents by the administrative cadres. Nevertheless, the cooperative unions still have an established network of primary societies that act as the buying agents at the village level. They collect the coffee and form large consignments that are marketed by the cooperative union at the auction. They typically offer a two-stage payment process. The first payment is given to the farmer for parchment coffee during the first transaction at the village. The second payment is made after the coffee is sold at auction. It is a mechanism designed to remit premiums collected through auction sales back to the producer. This segment of the market is only partially integrated as the operations of the cooperatives are mostly concentrated on collecting and processing coffee for sale at the local Moshi auction.

Another important element for the coffee market is group representation. Group representation is strong for the large coffee businesses that are members of the Tanzania Coffee Association.

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25 This is the most recent market share data we have been able to obtain. Dialogue with the coffee regulator and industry members indicate that the trend presented in table 4.1 was generally applicable in 2008.

26 More recently, small independent producer organisations have been increasingly active in coffee marketing. These are groups that operate in a manner that is similar to the cooperative system in many ways, but they operate on a smaller scale and place a greater emphasis on accountability and the sharing of technology.

27 Parchment coffee is a term that describes the state of coffee as it leaves the farm gate. It has undergone the primary processing stage of removing the outer shell but retains a thin film of parchment over the bean.
This association is composed of approximately 20 - 30 members and primarily represents coffee estates, buyers, processors and exporters. The cooperative movement is another group that has a strong level of influence, albeit in the context of declining membership (particularly in the southern coffee producing regions). Their influence is historically rooted in a national ideology of socialism that found its expression through the cooperative movement. The group in the market that has the weakest level of representation is that of the thousands of small coffee producing households that are not members of the cooperative movement and that sell directly to private buyers. This group has no effective direct channel for representation that is independent of the village authorities and the cooperative unions.

Table 4.2: Summary description of the main groups in the coffee market

<table>
<thead>
<tr>
<th></th>
<th>Level of Vertical Integration</th>
<th>Capital Base</th>
<th>International Market Linkages</th>
<th>Regulatory Access at the Central Level</th>
<th>Regulatory Access at the Village Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee Industry – buyers, processors &amp; exporters</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Cooperatives</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Other Small Producers</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Source: Tanzania Coffee Board.

4.2 Coffee grading: nature and inefficiency

Since Tanzania is essentially a price taker in the international market, the foremost institution for price determination is grading. Coffee grading is designed to be a two-stage process. At the first stage, coffee growers deliver their consignments of parchment coffee to regulated buying posts in the village market place after completing primary processing at the farm. The coffee should be partially graded at the village buying post by the buyer. This village level grading process is based on a simple visual inspection of physical characteristics such as colour and cleanliness. Moisture is also checked by cutting or biting a coffee bean. Four classes of parchment coffee have been established by the Tanzania Coffee Board (see annex 4.1). Village grading of parchment coffee can be described as partial grading. It is a quick activity based on basic procedures that are suitable for the large numbers of very small transactions that take place at buying posts. Although it does not provide full information about quality characteristics, it gives an adequate indicator of likely quality attributes. More importantly, the

28 The participation of one or two farmer representatives is accommodated by the association.
cost of this village grading process is negligible.

The parchment coffee then undergoes further processing by the buyer. The outer grey parchment film is milled off the bean, producing green coffee. This is the final stage of processing before the coffee is exported. The green coffee is graded once more to determine its finer quality characteristics. This is the full grading process. Coffee is graded by size, shape, aroma and flavour (see appendix one). Cup tasting is the method that has been and still is used as the ultimate procedure for the assessment of green coffee flavour quality. The cup tasting process does not take place at the village or in the presence of the producer. In Tanzania, coffee is first cup tasted when it makes its way into the hands of the big buyers and processors, which have their own grading facilities, and again by the Tanzania Coffee Board when it gets to auction. Samples of each consignment are sent to the Tanzania Coffee Board, where they are graded, cup tasted and then documented in the auction’s catalogue. This full grading process is relatively costly and time consuming. It is only carried out on bulked consignments of processed coffee and would not be suitable for grading the numerous small village level transactions.

In villages, where the first transaction takes place, the producers sell parchment coffee directly to traders that operate either independently or as agents of processing and exporting companies. The coffee is milled into green coffee before being taken to auction, where it exchanges hands between traders/processors and exporters. However, since the auction is compulsory, much of the coffee sold there does not actually exchange hands but is bought by a sister company of the firm selling the coffee (Winter-Nelson & Temu, 2002).

For a small coffee producer in the village, the main marketing channels that are available are selling to a private trader, selling to the cooperative society or selling to both. The transaction between the producer and the private buyer is based on a spot contract, whereas the transaction between the producer and the cooperative is a contingent contract. The full value of the contract is contingent on the final price achieved pending the final sale at the auction.

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29 The term green coffee describes the final state of the coffee prior to being exported. Green coffee is roasted to produce the brown coffee beans used for brewing. Roasting typically takes place in the locality of consumption.
30 We were unable to obtain reliable estimates of the cost of fully grading each consignment. The cost of the equipment used to grade coffee in this way (roasting machine, sorting equipment, etc.) is above $2000. The buying and milling companies and the Tanzania Coffee Board confirmed that it would not be economical to grade small village consignments in this way, but that the partial grading process at the village level is a virtually costless and sufficiently reliable method for estimating quality.
31 Although small farmer business groups also play a role in coffee marketing, we will not consider them independently of cooperatives in this thesis because of the similarities in their marketing structures and the small market share of these business groups.
The box below summarises the grading and marketing process for both the private trader and cooperative channels.

**Box 4.1: The two stage grading and marketing process for Arabica coffee in Tanzania**

<table>
<thead>
<tr>
<th>Stage One - Parchment Coffee – Producer sells to private trader/ cooperative at the village</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Producers carry out primary processing on the farm and deliver coffee to the village buying post;</td>
</tr>
<tr>
<td>• Coffee is sold; it is rarely graded in the village;</td>
</tr>
<tr>
<td>• If graded, it is a simple low cost visual inspection that is verifiable by both the buyer and each seller on the spot;</td>
</tr>
<tr>
<td>• Private buyers make one full cash payment at the village – spot contract;</td>
</tr>
<tr>
<td>• Cooperatives make only a partial payment at the village – contingent contract.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage Two – Green Coffee – private traders/ cooperatives sell to exporters at the auction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Private and cooperatives buyer pool the consignments delivered by the producers;</td>
</tr>
<tr>
<td>• Buyers “cure” the coffee by processing it into green coffee by removing the outer husk;</td>
</tr>
<tr>
<td>• All the green coffee is graded by the coffee board using the auction grading system. The coffee is roasted and cupped to establish the taste characteristics of the produce. The grading information is available to traders and exporters;</td>
</tr>
<tr>
<td>• The secondary grading system is more complex, costly and is observable by the buyer only</td>
</tr>
<tr>
<td>• Quality is tested for pooled consignments;</td>
</tr>
<tr>
<td>• Cooperatives make a second payment to producers after sale at the auction, completing the contingent contract.</td>
</tr>
</tbody>
</table>

Source: Author.

The description of the coffee marketing process in Tanzania shows that the grading system is designed to provide information about coffee quality in two stages: partial village grading and full auction grading. Village grading (when it takes place) is a simple inspection of cleanliness and moisture content. No special equipment is used. At the auction, coffee is firstly graded by size and density to give a reasonably uniform consignment and is additionally graded by taste characteristics using cup tasting techniques. This is because the demand for coffee is determined by a coffee’s unique characteristics, which are based on its taste and origin. For instance, the premiums that Tanzanian coffee attracts in Japanese markets are to a large extent

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32 Uniformity in bean size is important because it is difficult to roast large and small beans together. Smaller beans tend to require less roasting than larger beans, and very small particles may burn altogether when roasted with larger ones. It is therefore an industrial requirement that coffee is size and density graded. The degree to which the separation by size and density is effected depends on whether the coffee beans will be sold whole or ground. Roasters handling ground coffee are more concerned about the cup quality rather than its physical dimensions. Since the majority of coffee is sold ground, many exporters in Tanzania initially separate the coffee into a large number of physical grades to conform to the requirements of the coffee board, but later combine them to provide the large consignments preferred by large roasters.
based on the marketability of the northern Arabica Kilimanjaro brand. On the other hand, the southern Arabicas have a distinctive sour and fruity taste that is appreciated by the German market, where these coffees are blended with Colombian coffees.

Since the dual grading system is split along the supply chain, the quality of coffee is defined differently by the different people involved in each stage of its production. The coffee grower would consider that he has obtained a good quality crop when the normal production levels are reached and when the crop has not been affected by the climate and/or traditional coffee diseases. Buyers rely on auction grading criteria that are typically not disclosed to the producers: they will not give a verdict on the quality of the crop until it has been processed and cup tasted. It is a system that maintains an underlying asymmetry of information between coffee producers selling at the village level and coffee buyers that process and export the coffee beans. This may diminish the buyers’ incentive to carry out the simple village grading process if it does not provide them with useful information.

It also creates an asymmetry of information and power between buyers and producers. If both the buyer and the seller observe the qualities of the goods the efficient equilibrium will prevail. However, an asymmetry of information, and information rents, will exist if only one party (the buyer or the seller) observes the quality of the goods. If the attributes of the product are not observed by the buyer but are observed by the seller, the seller will have an incentive to report a higher quality and therefore ask a higher price. Since this claim cannot be verified, the buyer will have the incentive to offer only the lowest price. If there is asymmetry of information, in that the attributes of the product are observable by the buyer but not observable by the seller, the buyer will have an incentive to offer only the lowest price. Therefore, when an asymmetry of information exists, so that the full characteristics of a good are not revealed at the point of sale by village grading to the seller, but are determined later through auction grading to the buyer, buyers will pay the price of the lowest quality grade for all goods, causing a disruption of the quality incentive and the under-provision of quality in the market\(^{33}\) (Fafchamps, Hill & Minten, 2006). This is an information rent.

The presence of information asymmetries prevents the general equilibrium market outcome of zero rents\(^{34}\). In an efficient equilibrium, the price premium paid for high quality goods in

\(^{33}\) Moreover, in a competitive market with asymmetric information, buyers (coffee traders) will not have the incentive to independently invest in long term mechanisms for improving the quality of the goods by offering a price premium because they would still have to compete with other buyers for the same goods. This reinforces the under-provision of quality in the market.

\(^{34}\) Since information costs are ubiquitous in real markets, those who have access to information, or that invest in acquiring information will also earn rents. Information asymmetries are particularly pervasive in the markets of
comparison to lower quality goods will be equal to the marginal utility derived by the buyer from the quality characteristics, which is also equal to the marginal cost of providing the quality characteristics. This efficient equilibrium requires that complete information about the product's attributes is conveyed when transactions take place or that there are no transaction costs incurred in obtaining information.

Typically, the size of a rent might be reduced to zero in a sufficiently competitive environment. In this case however, this adjustment is not likely. Firstly, Tanzania’s coffee market shows strong signs of being imperfectly competitive with monopsonistic tendencies (this will be discussed in more detail in chapter six). Secondly, for competition to whittle away the quality information rent, the buyer would have to be aware of the true value of the rent, being the difference between the actual value of the goods and the price paid for them. Since the quality of the goods is not observable at the point of sale without grading, their actual value will also be unknown. Paying anything more than a price for the lowest quality grade, as described above, would be risking the profitability of the transaction rather than just a reduction of the excess surplus. In effect, the exact size rents collected by the buyer are not observable until the final quality of the goods is determined.

The likely overall outcome, therefore, is that when a village grading and premium system is not enforced by a third party, it will not take place. Under the spot contract, private buyers will not grade and differentiate prices. Similarly, under the group contingent contract, cooperatives will not differentiate the quality premium between producers. This will lead to a less than optimal supply of quality in the coffee market, an outcome that is not beneficial for the producers, the buyers or the consumers. In the following section, we will use survey data to determine whether coffee grading is beneficial for coffee growers and the coffee market in general and to assess the prevalence of village grading in the Kilimanjaro coffee growing region. The main questions we are attempting to answer are the following:

1. Is grading (through contingent contracting) beneficial for producers’ incomes and the market as a whole?

2. Is village grading taking place? If not, why not?
4.3 The Data: the Kilimanjaro coffee grower survey 2008

The primary data used in this chapter was generated through an original survey of coffee growers designed specifically for the purpose of this thesis. The survey was carried out in Kilimanjaro, Tanzania’s main northern Arabica coffee growing region between August and November 2008. The survey targeted small Arabica coffee producers and was conducted in the Moshi Rural district of the Kilimanjaro, which is in the heart of one of Tanzania’s prime Arabica coffee producing regions during the peak coffee buying season.

Survey Design

The objectives of the survey were to collect the necessary information for assessing the efficiency of a range of grading and contracting mechanisms for small coffee growers. Hence, our primary aim was to capture sufficient variation in the sample by contract type in order to establish the efficiency of various contractual arrangements.

The contract types that were targeted by the survey are the spot contract, the contingent contract without village grading and the contingent contract with village grading. The spot contract was widely offered by private coffee buyers and the contingent contract without village grading was also widely offered by cooperatives. The contingent contract offering village grading was not generally present in the market. The exception was in one of the villages in the district where village grading through the local cooperative was introduced as an exogenous intervention.

Grading was introduced to the cooperative society of Kinyamvuo village by a donor funded project that targeted five village cooperative societies in the region. The project, supported by the Swedish International Development Agency, became operative in the 2004/05 season. It introduced two main interventions, the grading of coffee and the promotion of organic production practices. New procedures for implementing grading and organic marketing protocols were introduced to the primary cooperative office where coffee transactions with farmers took place. Farmer membership records were created at the start of each season. When coffee consignments were brought to the cooperative collection centre, they were immediately weighed and graded (using basic visual inspection and moisture detection methods). Data about the quantity of coffee collected, the grade assigned and the associated price were recorded in the

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35 We also collected information about the extent to which coffee growers are able to influence rules and regulations.
farmer’s record sheet, and the preliminary payment under the contingent contract was made. At this stage, the cooperative collecting agent would also identify the farmer according to their organic certification status. Later in the season, when the second payment of the contingent contract was made, the amount paid to each farmer would be based on the grade they had been allocated and whether their coffee was organic.

This intervention created the opportunity for us to design our sample around what is essentially a natural experiment. Using the village where grading is taking place as the treatment group, we selected two other villages where the other two contract types (spot and contingent without grading) were being used for comparison purposes. Our sample only included farmers that were not certified as organic coffee producers for the purpose of comparability with the other villages. The Kilimanjaro region was selected because unlike some of the southern Arabica coffee producing regions it still has a strong and active cooperative presence. Conducting the survey there allowed us to compare growers who market their produce through private buyers with those that sell to cooperatives.

Purposive targeting was the method used to achieve the objectives above. Three villages were purposively selected. The villages were identified using a list of all the registered buyers and cooperatives in the Moshi rural district. A sample of 450 households was selected for the survey. Even though the number of coffee growers is relatively stable due to the perennial nature of the crop, they are not registered or listed in any official record. The most recent agricultural sample census of 2003/04 estimates that there are 425,162 coffee growing (Arabica and Robusta) households, representing 3.7 per cent of all the crop growing households in Tanzania, and making it the third most important permanent crop grown by smallholders. Small Arabica coffee producers are our target population. This type of coffee is grown in the northern and the southern growing regions, which according to the census together contain 60 per cent of Tanzania’s coffee producing households. We therefore estimate the number of our target population to be 255,000.

We targeted coffee growers that came to sell at a buying post (as opposed to visiting the households), and interviewed them directly after they had completed their coffee transaction. In this way, we targeted coffee growers who were selling in the current season as we considered them to be the most likely ones to have also sold in the previous season\(^{36}\). Data from 450\(^{37}\)

\(^{36}\) Since the survey was based on respondent recall, the previous year was selected as the shortest recollection period for a full season of transactions.

\(^{37}\) The original number of observations is 450. The final sample was reduced to 420 after data processing.
coffee growers was collected at the three locations. The sample was constructed as shown
below in table 4.3:

Table 4.3: Village sample selection

<table>
<thead>
<tr>
<th>Village One</th>
<th>Village Two</th>
<th>Village Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Masia Mshiri</td>
<td>Kinyamvuo</td>
</tr>
<tr>
<td>Marketing channel</td>
<td>Private buyer</td>
<td>Cooperative</td>
</tr>
<tr>
<td>Contract type</td>
<td>Spot contract</td>
<td>Contingent contract with village grading</td>
</tr>
<tr>
<td>Village grading</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>No. of observations</td>
<td>130</td>
<td>159</td>
</tr>
</tbody>
</table>

Source: Author's own calculations from primary data collected

The survey data was collected using a structured questionnaire that was composed of nine
modules: general profile, wealth profile, marketing practices, marketing dynamics, access to
information, access to other demanders of institutional change, access to suppliers of
institutional change and grower transaction costs.

The questionnaire was initially piloted in the Kilimanjaro region and was subsequently revised
accordingly. The survey interviews were conducted by three enumerators. Each enumerator was
trained on the questionnaire, interview technique and given an overview of the coffee market
before being posted at a coffee buying post in three different villages in Moshi Rural district.
One enumerator was placed at one buying post in each village, so that data was collected at the
three locations simultaneously. They verbally conducted the interviews with coffee growers that
came to sell their coffee and filled in the questionnaires.

Several qualitative interviews with key informants were also conducted before and during the
survey period. Those interviewed included the Tanzania Coffee Board, local government
officials, private coffee buying companies, village buyers, cooperative buyers, coffee producers,
private coffee estates and the Tanzania Coffee Association.

Our purposive survey design allowed us to capture small groups in the population that would
not have otherwise been significantly represented in a random or proportionally stratified
sample. This is particularly applied to the small group of coffee growers who sell coffee through
the village grading channel. However, using a non random sampling approach means that the
sample might not necessarily represent the characteristics of the population as whole. There is a
chance that this approach would tend to overweight sub-groups that are more readily accessible in the local population. Since the coffee growers interviewed were those that brought their coffee for sale at a buying station, it is likely that those that sell coffee more frequently in the season are disproportionately represented in the sample.

The average number of coffee transactions (in the previous season) recorded in the survey is 3.8, meaning that on average the coffee sellers took approximately four lots of coffee to market during the season. The coffee grower’s selling frequency is determined largely by their processing capacity, the volume of their production and their skill in processing coffee. Ideally, the coffee grower will pick the berries as they ripen, leaving unripened produce to mature while they process the picked berries. This ensures that only fully developed coffee beans are brought to market and prevents overly ripe and fermented beans from contaminating the consignment. Therefore, it can be argued that better growers process and sell more frequently as long as they have sufficient access to labour. Household cash flow and price maximisation are unlikely to be major determining factors of selling frequency because the window between when coffee becomes ripe and ready for picking and before it spoils is relatively narrow. Having completed primary processing, taking coffee to market becomes a priority in order to avoid potentially significant post-harvest losses.

Table 4.4 compares the general descriptive statistics of coffee growers and categorises them into three groups: high, medium and low frequency of sales. It shows that these two groups of coffee growers are fairly similar in terms of age, education, and asset ownership. So, since coffee growers’ basic characteristics does not differ much by selling frequency, we do not foresee a significant bias, nor the need to use a statistical method that corrects for selection bias when an approximating population (sample) is suspected to be unrepresentative of the total population.

It also shows that coffee growers who sell to the grading cooperative in Kinyamvuo village are more frequent sellers, suggesting the existence of a relationship between quality and frequency of sales. Since the growers in Kinyamvuo village tend to have larger farms, higher frequency sellers share this characteristic.

---

38 These methods include the Heckman correction (Heckman, 1979), which essentially uses probability measures to adjust estimates for the omission of certain population groups, or bootstrapping methods that create a new approximating population by resampling from the original sample.
Table 4.4: Characteristics of coffee growers by selling frequency

<table>
<thead>
<tr>
<th>Selling frequency</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>47</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td>Asset index</td>
<td>2.8</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Male</td>
<td>72%</td>
<td>84%</td>
<td>70%</td>
</tr>
<tr>
<td>Literate</td>
<td>98%</td>
<td>98%</td>
<td>92%</td>
</tr>
<tr>
<td>Influences</td>
<td>82%</td>
<td>85%</td>
<td>91%</td>
</tr>
<tr>
<td>institutional</td>
<td>20%</td>
<td>34%</td>
<td>75%</td>
</tr>
<tr>
<td>change through</td>
<td>1.2</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>associations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinyamvuo (grading</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm size (acres)</td>
<td>1.2</td>
<td>1.3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Source: author’s own calculations from primary data collected

Descriptive Statistics

Some of the main characteristics of coffee grower are presented below in table 4.5. The survey shows that coffee growers tend to be older in age (around 50 years old on average) and literate and with education up to the primary level. As is the case for most commodity crops in Tanzania, the marketing of coffee is dominated by males, as is shown by the high proportion of male sellers.\(^{39}\) In addition, the majority of coffee selling households in our sample rely on coffee as the main source of cash income for the household.

Farm sizes in the Kilimanjaro region are generally small due to the high number of crop growing households relative to other regions. Our sample average of 1.28 acres per household is lower than the 2.47 acre average for the region\(^{40}\) due to the exclusive inclusion of smallholders. Overall productivity in our sample is also relatively low but increases for households that use more inputs. The survey shows that producers who are also cooperative members have a higher level of input use (table 4.6). For the large majority of respondents, this is typically a combination of organic fertiliser and pesticide. Cooperative members also more often use drying tables\(^{41}\) to process their coffee (as opposed to drying coffee beans on the ground, which results in lower quality output due to inconsistent drying, dirt contamination and a generally poorer flavour). This pattern is likely to be an outcome of agronomic training and

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\(^{39}\) A survey anecdote: at Masia Mshiri village, a woman who had come to sell the household’s coffee crop in the morning was marched back to the buying point by her husband, who, at the cost of transporting the coffee back to their premises, demanded (and received) a full refund for what was otherwise a perfectly legitimate sale. His main point of contention was that as a woman, she had no right to complete the transaction in the first place.

\(^{40}\) Tanzania Sample Census of Agriculture 2003/04

\(^{41}\) The drying tables are not generally major investments. They are simple flat surfaces that allow farmers to air and dry coffee off the ground.
input supply by cooperatives for their members, leading to a higher level of productivity.

Table 4.5: Overview of survey data (mean values)42

<table>
<thead>
<tr>
<th>General</th>
<th>%</th>
<th>Education</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>49</td>
<td>Level of Education</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>primary-incomplete</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>73</td>
<td>primary-complete</td>
<td>75</td>
</tr>
<tr>
<td>Female</td>
<td>27</td>
<td>secondary-incomplete</td>
<td>2</td>
</tr>
<tr>
<td>Primary Source of Income</td>
<td></td>
<td>secondary-complete</td>
<td>13</td>
</tr>
<tr>
<td>Coffee</td>
<td>87</td>
<td>vocational-college</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>none</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literate</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>illiterate</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production Practices</th>
<th>%</th>
<th>Marketing Practices</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity Harvested (kg)</td>
<td>90</td>
<td>Quantity Sold (kg)</td>
<td>89</td>
</tr>
<tr>
<td>Farm Size (acres)</td>
<td>1.2</td>
<td>Selling Frequency</td>
<td>3.8</td>
</tr>
<tr>
<td>Productivity (kg/acre)</td>
<td>76</td>
<td>Grades Before Selling</td>
<td></td>
</tr>
<tr>
<td>No. of Inputs Used</td>
<td></td>
<td>yes</td>
<td>42</td>
</tr>
<tr>
<td>one-input</td>
<td>53</td>
<td>no</td>
<td>58</td>
</tr>
<tr>
<td>two-or-more-inputs</td>
<td>47</td>
<td>Marketing Channel</td>
<td></td>
</tr>
<tr>
<td>Use of drying Table</td>
<td></td>
<td>private-buyer</td>
<td>13</td>
</tr>
<tr>
<td>Yes</td>
<td>67</td>
<td>mixed-buyers</td>
<td>24</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>cooperative-grading</td>
<td>37</td>
</tr>
<tr>
<td>Processing Duration (days)</td>
<td>9</td>
<td>cooperative-no-grading</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change of marketing channel</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Source: author’s own calculations from primary data collected

Table 4.6: Cooperative membership and production practices

<table>
<thead>
<tr>
<th>Member of a cooperative</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Inputs Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>one-input</td>
<td>44%</td>
<td>88%</td>
</tr>
<tr>
<td>two-or-more-inputs</td>
<td>56%</td>
<td>12%</td>
</tr>
<tr>
<td>Use of drying table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>74%</td>
<td>42%</td>
</tr>
<tr>
<td>no</td>
<td>26%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Source: Author’s own calculations from primary data collected

The survey collected several variables relating to the poverty profile of the households, including monetary variables such as cash income and non monetary variables measuring food security, asset and livestock ownership and quality of housing (table 4.7). The asset ownership

---

42 See annex 4.2 for a table showing mean values, standard errors, min and max values and coefficients of correlation.

43 In almost all cases, one input refers to the use of fertiliser and two inputs refer to the use of fertiliser and pesticide.
variable was further transformed into a weighted asset index. Households were asked during the
survey to state which assets they owned from a list of context-specific household goods (stove,
refrigerator, telephone, fan, television, iron, radio, bicycle, motor vehicle). The total number of
assets per household were calculated (asset index) and weights applied to more valuable assets
(weighted asset index\textsuperscript{44}). Housing also shows the same pattern with mud-walled dwellings being
concentrated in households in the lowest cash income quartile and brick-walled dwellings being
concentrated in the households of the highest cash income quartile. The range of variables
presents us with a choice of variable for analysing the survey findings in relation to wealth
profile.

Table 4.7: Survey wealth data (means)

<table>
<thead>
<tr>
<th>Wealth Profile</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Meals Per Day</td>
<td>2.4</td>
<td>0.52</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Asset Index</td>
<td>2.8</td>
<td>1.18</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Weighted Asset Index</td>
<td>3.9</td>
<td>2.18</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>No. of Livestock Owned</td>
<td>5.7</td>
<td>2.97</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Cash Income per person (Tsh)</td>
<td>483,593</td>
<td>623,446</td>
<td>0</td>
<td>4,800,000</td>
</tr>
<tr>
<td>Wall Material (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron sheet</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brick</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mud</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s own calculations from primary data collected

Cash income is a particularly relevant measure for our analysis since coffee is the main source of
cash income for coffee growing households in the Kilimanjaro region (87 per cent of the
households in our sample). It directly indicates the impact of the coffee business on the
households’ ability to purchase basic goods and services, and to invest in future income.
Households with higher cash incomes also tend to own more assets, eat better and live in better
homes. We find a significant level of variability in cash income between households according
to marketing channel (table 4.8). Households in our sample that sell to the grading cooperative
have significantly higher cash incomes. Conversely, comparing the welfare of coffee growers
using the weighted asset index measure surprisingly shows little variation. Households have
similar levels of reported asset ownership irrespective of marketing channel\textsuperscript{45}.

\textsuperscript{44} The weighted asset index measure corresponds well with the other measures of non-cash based wealth such as
the number of meals consumed per day and livestock ownership.

\textsuperscript{45} The same outcome is observed with the un-weighted asset index.
Table 4.8: Cash income and weighted asset index by marketing channel (where primary source of income is coffee)

<table>
<thead>
<tr>
<th>Marketing Channel</th>
<th>Cash Income (Tsh)</th>
<th>Weighted Asset Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private buyer</td>
<td>Mean 134,670</td>
<td>Mean 4.1</td>
</tr>
<tr>
<td>Mixed buyers</td>
<td>Std. Dev. 104,266</td>
<td>Std. Dev. 2.17</td>
</tr>
<tr>
<td></td>
<td>Min 10,000</td>
<td>Min 0</td>
</tr>
<tr>
<td></td>
<td>Max 700,000</td>
<td>Max 11</td>
</tr>
<tr>
<td>Cooperative grading</td>
<td>Mean 773,039</td>
<td>Mean 3.9</td>
</tr>
<tr>
<td>Cooperative no grading</td>
<td>Std. Dev. 794,235</td>
<td>Std. Dev. 2.28</td>
</tr>
<tr>
<td></td>
<td>Min -</td>
<td>Min 0</td>
</tr>
<tr>
<td></td>
<td>Max 4,800,000</td>
<td>Max 14</td>
</tr>
</tbody>
</table>

Source: Author’s own calculations from primary data collected

This is a somewhat surprising finding since it would be reasonable to expect that households that earn distinctly more cash would also be significantly better endowed with various assets around their home. A likely explanation for this finding is that households do not tend to spend their additional cash income on household assets in the short term. Since grading had been introduced to the grading cooperative in our sample only in the 2004/05 season, households’ expenditure since this period may have gone towards school fees, a better diet, investment in productive assets or other income generating activities. Alternatively, household assets such as radios or bicycles may have been acquired through remittances from family members not resident in the household. For these reasons, and because it is more directly and immediately related to coffee operations, we will henceforth use the cash income measure in attempting to establish how household welfare is affected by coffee market institutions.

4.4 Data Analysis & Results: Is grading beneficial?

The Kilimanjaro coffee growers survey enables us to explore the impact of grading and other marketing institutions on producer cash incomes. Table 4.8 showed that households that sell through the grading cooperative channel have significantly higher levels of cash income, whilst the lowest levels of cash income are recorded for households that sell to private buyers. In contractual terms, this suggests that the contingent contract significantly outperforms the spot contract. Moreover, household cash income increases steadily with engagement with the contingent contract since:

\[
\text{Cash income private buyer < cash income mixed buyers < cash income non-grading cooperative < cash income grading cooperative}
\]
This raises the question of whether this effect is to be attributed to the cooperative or to the grading contract. If it is related to the cooperative, then there should be little variation between the grading and non-grading cooperatives. However, the cash income reported by households that sell through a contingent contract with grading is almost four times as high as the cash income of those that sell through a contingent contract without grading. This indicates that whilst membership of a cooperative seems to have a positive effect, contingent contracts markedly augment producer incomes when combined with grading.

Since the survey sample includes two types of cooperatives, one with grading and the other without, we can examine the effect of grading on cash incomes in more detail by disaggregating the effects of cooperative membership and grading in order to examine the relative impact of each on household welfare. We do this with a simple ordinary least squares (OLS) model that holds cash income as the dependent variable and grading and cooperative membership as the explanatory variables:

\[
\text{log } y_i = \alpha G_i + \beta C_i + \mu_i
\]  

(1)

Where \( y_i \) is the household cash income, \( G_i \) is a dummy variable indicating whether the producer grades their coffee, and \( C_i \) is a dummy variable indicating whether the producer is a member of a cooperative. The results (in column one of table 4.9) show that the increase in income from grading is larger than the increase in income from being a cooperative member. In other words, it shows that coffee growers that sell through a grading channel are better off even when cooperative membership is taken into account.

This however is a very tentative result since model (1) does not take other variables that may influence our dependent variable into account. Attaining more robust results requires that we take a range of other variables that may affect the dependent variable into account. To do this, we use a log linear OLS regression model that is designed to estimate the effects of grading and cooperative membership whilst controlling for other factors that may influence cash income:

\[
\text{log } y_i = \alpha G_i + \beta C_i + \sum \delta \log X_i + \mu_i
\]  

(2)

Where \( X_i \) is a vector of controls. The control variables include household characteristics (age, dummies for gender and literacy) and production and marketing variables (farm size, use of...
drying table and quantity sold). We include the quantity of coffee sold as an explanatory variable even though cash income and quantity sold are arguably almost synonymous when coffee is the grower’s main source of income. The reason is that within the coffee selling season, the causality between the two variables is likely to run in only one direction: from sales to cash income. The cash income of a coffee grower could affect productivity and the quantity sold, but only in the subsequent season, if some of that income is invested in production enhancing inputs or activities. Therefore, we do not consider endogeneity to automatically be an issue with this variable. Moreover, the significant relationship that is found between cash income and many of the other explanatory variables, even when sales are accounted for, indicates that cash sales are not synonymous with cash income. In fact, excluding quantity sold from the list of control variables may result in omitted variable bias, whereby the coefficients of the other explanatory variables may be distorted by the omission.

Ethnicity is not included as a variable since the area covered is generally ethnically homogenous. However, a village dummy is used to control for village specific variables. These include factors such as prices, village leadership and institutions, infrastructure and capital endowments. Controlling for village effects is particularly important because of the way in which the survey sample was designed. The villages in the sample correspond with marketing channels. For instance, grading for instance took place only in Kinyamvuo village. Therefore, controlling for specific village-related factors is necessary for accurately measuring the effects of grading and cooperative membership.

The results of model (2) confirm our previous findings. They show a significantly higher income for households whose coffee is graded. On the other hand, whilst cooperative membership shows the expected sign (being a member increases cash income), this finding is not significant even at the 10 per cent significance level. In our survey sample, grading was conducted by a cooperative society. What this result shows is that the marketing channel itself is incidental. Incomes would have been higher for producers who sell through the private buyer or mixed buyer channel if coffee were graded and the prices received by producers differentiated by the buyer according to grades.

46 Standard specification test results for model (2) are largely unproblematic.
Table 4.9: OLS regression results

<table>
<thead>
<tr>
<th>Model</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS: Without Controls</td>
<td>OLS: With Controls</td>
<td>OLS: Interaction Variable</td>
</tr>
<tr>
<td>Dummy if member of a cooperative</td>
<td>0.883***</td>
<td>0.11</td>
<td>0.089</td>
</tr>
<tr>
<td>Dummy if grades coffee</td>
<td>1.053***</td>
<td>0.089</td>
<td>0.250**</td>
</tr>
<tr>
<td>Age (log)</td>
<td>-0.247**</td>
<td>0.111</td>
<td>-0.205</td>
</tr>
<tr>
<td>Dummy if coffee farmer is female</td>
<td>0.017</td>
<td>0.079</td>
<td>0.222***</td>
</tr>
<tr>
<td>Quantity of coffee sold (log)</td>
<td>0.301***</td>
<td>0.068</td>
<td>0.288***</td>
</tr>
<tr>
<td>Farm size (log)</td>
<td>0.176**</td>
<td>0.081</td>
<td>0.219***</td>
</tr>
<tr>
<td>Dummy if uses drying table</td>
<td>-0.529***</td>
<td>0.119</td>
<td>-1.367***</td>
</tr>
<tr>
<td>Dummy for village Masia Mshiri (no village grading)</td>
<td>-0.503***</td>
<td>0.185</td>
<td>-0.539***</td>
</tr>
<tr>
<td>Dummy for village Lole Marera (no village grading)</td>
<td>13.267***</td>
<td>0.061</td>
<td>13.346***</td>
</tr>
<tr>
<td>Interaction variable: grading * use of drying table</td>
<td>13.267***</td>
<td>0.061</td>
<td>13.346***</td>
</tr>
<tr>
<td>Constant</td>
<td>13.267***</td>
<td>0.061</td>
<td>13.346***</td>
</tr>
<tr>
<td>No. of observations</td>
<td>356</td>
<td>343</td>
<td>343</td>
</tr>
<tr>
<td>R – squared</td>
<td>0.4575</td>
<td>0.6816</td>
<td>0.6854</td>
</tr>
</tbody>
</table>
Other factors that are positively and significantly related to cash income are quantity sold, farm size and use of drying table. Old age and being female are related to lower incomes. In addition, the village dummies are significant and show that cash incomes in the two villages where coffee is not graded is lower overall than the village where grading takes place.

Grading is likely to have translated into higher cash incomes for coffee by providing an incentive for producers to invest in production practices that enhance quality. Table 4.9 shows that the incomes of coffee producers that use a drying table are higher than those that do not. The use of a drying table is the main quality enhancing production practice measured in our survey: 68 per cent of producers in our sample use a drying table. Most of them are based in Kinyamvuo47.

An issue that needs to be addressed when considering these results is the potential for endogeneity. More specifically, there is a possibility that the cooperative membership variable is endogenous. Whilst cooperative membership may be a factor that influences the cash income of a coffee grower, it is possible that the grower’s income is related to their ability to afford cooperative membership. Cooperative members are expected to pay a subscription fee and are also expected to attend village cooperative meetings and to sell exclusively to the local cooperative society through a contingent contract that involves a deferred payment. This is a combination of actual and opportunity costs that may cause a relationship between wealth and cooperative membership.

In order to test for the presence of endogeneity, we will use the Hausman specification test (Hausman, 1978). This test compares the coefficients of the potentially endogenous variable using the OLS and instrumental variable (IV) estimators. If one appreciably differs from the other, it is likely that the variable in question is endogenous.

Where valid instruments exist, the instrumental variable approach is one of the main ways of estimating models with endogenous regressions as they provide consistent estimators. Weak instruments are a particular concern since one of the side effects of IV estimators is the loss of efficiency resulting from the use of fitted values. In order to minimise this loss of efficiency, the instrumental variable needs to be not only exogenous, but also relevant. The relevance condition requires that a strong fit exists between the instrument and the endogenous regressor. When the fit is good, the instrument is said to be strong, and when

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47 Kinyamvuo is the grading village, but rates of drying table use are reasonable in the other two villages also.
it is less robust, the instrument is said to be weak.

We have identified an instrumental variable from our coffee growers survey that is related to cooperative membership (the explanatory variable) but that is not directly related to cash income (the dependent variable) that needs to be tested for validity. The variable measures whether coffee growers attempt to influence changes in local bylaws and regulations, and policies or practices that affect their coffee business through associations (as opposed to directly lobbying officials for instance, or not attempting to influence any institutional change). In the survey, the list of associations was not limited to cooperatives, and included savings, religious and other farmer associations. However, cooperative membership is the most common type of associational affiliation for coffee growers. Coffee growers that are cooperative members have more access to group resources and services compared with growers that are not members of any cooperative or association, and that may consequently lack access to such an avenue. Therefore, cooperative members are more likely to attempt to influence institutional change through an association since their membership gives them access to a platform for dialogue with influential bodies (table 4.10).

For this reason, we will use influencing through associations as the instrumental variable for estimating cooperative membership, and will apply suitable estimation approaches to manage the possibility of this being a weak instrumental variable.

Over 80 per cent of those attempting to influence institutional change through associations are cooperative members. Despite this, the correlation coefficient between cooperative membership and influencing through associations variable is relatively low (table 4.10). This opens us to the possibility that it may be a weak instrument. For this reason, we have used a standard two stage least squares estimator (2SLS) IV estimation method as well two other methods that deliver more robust results when instruments are likely to be weak. These are Fuller’s modified limited information maximum likelihood (FULL) and Moreira’s conditional likelihood ratio (Moreira’s CLR), (Bascle, 2008).

48 It is likely that the village location of the interviewed growers would have been a potential instrumental variable since the absence of cooperative society in a village, or even its location within the village, will influence cooperative membership greatly. The problem with this option, however, is that the village variable is one of the key exogenous control variables in model (2). Excluding it from the list of exogenous variables would make it difficult to control for village-specific effects on cash income, including institutional, leadership, price, infrastructural and geographic effects.

49 The 2SLS estimator is the most efficient estimator when the errors are homoskedastic and independent.
Table 4.10: Correlation between cooperative membership and the potential instrumental variables

| Coffee growers that attempt to influence institutional change through associations |
|-----------------------------------|------------------|
| Correlation with cooperative membership | 0.128 |
| % of which are cooperative members | 81% |
| % of which are not cooperative members | 19% |

Source: Author's own calculations from primary data collected

The results of these IV estimations are presented in table 4.11. The results show that the coefficients of the standard 2SLS instrumental variable estimation and those generated through Moreira’s CLR are identical. The latter however have slightly larger standard errors. Since Moreira’s CLR estimates are not robust in the presence of heteroskedasticity, we present the heteroskedasticity test results in table 4.11. These results show the absence of heteroskedasticity, suggesting that the results of Moreira’s CLR are fairly robust. This implies that our instrument is sufficiently relevant. Hence, we will use the estimates generated through Moreira’s CLR approach in the Hausman test for endogeneity.

The Hausman test results are presented in table 4.12. They show that the null hypothesis – that there is no systematic difference in the OLS and IV coefficient estimates - cannot be rejected here. In other words, there are no significant differences between the estimated coefficients of the two models, indicating that the cooperative membership variable is most likely to be exogenous. In this situation, the Hausman specification test suggests that the OLS estimates generated with model (2) are valid and that our findings previously described under that model are valid.

We note that the variable we are testing for endogeneity - cooperative membership - is not statistically significant in the results of OLS model (2). In this case, the instrumented variable results presented in column one are likely to be non-significant, which might explain why the Hausman test shows little difference between the OLS and IV estimates. For this reason, we repeated the Hausman procedure (including the IV estimates) using model (1) as the OLS estimator. However, the results of the second Hausman test (in table 4.12) also show that there is no systematic difference in the OLS and IV coefficient estimates.

---

50 We use the ivhettest command in STATA 10.
Table 4.11: Instrumental variable regression results

| Variable | IV: 2 SLS | | | IV: FULL | | | IV: Moreira’s CLR | |
| --- | --- | --- | --- | --- | --- | --- | --- | |
| | First Stage | Second Stage | | First Stage | Second Stage | | |
| Dummy if member of a cooperative | 0.705 | 1.047 | 0.705 | 1.064 | 0.387 | 0.707 | 0.705 | 1.064 |
| Dummy if grades coffee | 0.300*** | 0.145 | 0.299** | 0.147 | 0.273*** | 0.126 | 0.300*** | 0.147 |
| Age (log) | -0.215 | 0.142 | -0.215 | 0.144 | -0.233* | 0.131 | -0.215 | 0.144 |
| Dummy if coffee farmer is female | -0.008 | 0.083 | -0.008 | 0.085 | -0.013 | 0.080 | -0.008 | 0.085 |
| Quantity of coffee sold (log) | 0.195*** | 0.068 | 0.195*** | 0.069 | 0.209*** | 0.057 | 0.195*** | 0.068 |
| Farm size (log) | 0.291*** | 0.073 | 0.291*** | 0.074 | 0.297*** | 0.069 | 0.291*** | 0.074 |
| Dummy if uses drying table | 0.128 | 0.116 | 0.128 | 0.118 | 0.153 | 0.097 | 0.128 | 0.118 |
| Dummy for village Masia Mshiri (no village grading) | -0.467*** | 0.198 | -0.467** | 0.201 | -0.472*** | 0.191 | -0.467*** | 0.201 |
| Dummy for village Lole Mbarera (no village grading) | -0.454*** | 0.175 | -0.454*** | 0.178 | -0.492*** | 0.145 | -0.454*** | 0.178 |
| Dummy if illiterate | -1.038** | 0.572 | -1.038* | 0.581 | -1.207*** | 0.396 | -1.038** | 0.581 |
| Constant | 13.335*** | 0.561 | 13.335*** | 0.570 | 13.342*** | 0.541 | 13.335*** | 0.570 |
| No. of observations | 342 | 342 | 342 | 342 | |
| R – squared | 0.6509 | 0.6509 | 0.6746 | 0.6509 | |
| First-stage F-statistics | 15.26 | 3.84 | 64.63 | |
| First-stage P-value | 0 | 0.051 | 0 | |
| Moreira’s CLR (confidence regions) | | | | | | | (-inf, 2.81) | (444.64, +inf) |
| P-value in parentheses | | | | | | | | 0.4882 |
| Pagan – Hall test for Heteroskedasticity | | | | | | | 15.282 | |
| Chi-sq (10) test statistic | | | | | | | | 0.1221 |
Table 4.12: Hausman specification tests for endogeneity

<table>
<thead>
<tr>
<th></th>
<th>OLS Model (2) - Coefficients</th>
<th>OLS Model (1) - Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IV</td>
<td>OLS</td>
</tr>
<tr>
<td>Dummy if member of a cooperative</td>
<td>0.7054</td>
<td>0.0893</td>
</tr>
<tr>
<td>Dummy if grades coffee</td>
<td>0.2148</td>
<td>0.2483</td>
</tr>
<tr>
<td>Age (log)</td>
<td>-0.0080</td>
<td>-0.0171</td>
</tr>
<tr>
<td>Dummy if coffee farmer is female</td>
<td>-0.2996</td>
<td>-0.2468</td>
</tr>
<tr>
<td>Quantity of coffee sold (log)</td>
<td>0.1952</td>
<td>0.2224</td>
</tr>
<tr>
<td>Farm size (log)</td>
<td>0.2908</td>
<td>0.3007</td>
</tr>
<tr>
<td>Dummy if uses drying table</td>
<td>0.1284</td>
<td>0.1759</td>
</tr>
<tr>
<td>Dummy if illiterate</td>
<td>-0.4675</td>
<td>-0.5032</td>
</tr>
<tr>
<td>Dummy for village Masia Mshiri (no village grading)</td>
<td>-0.4543</td>
<td>-0.5286</td>
</tr>
<tr>
<td>Dummy for village Lole Marera (no village grading)</td>
<td>-1.0377</td>
<td>-1.3673</td>
</tr>
<tr>
<td>Chi-sq test statistic</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>P – value</td>
<td>0.7140</td>
<td></td>
</tr>
</tbody>
</table>
Having established that endogeneity is not a cause for concern, we now consider whether other factors that we have not accounted for in our analysis may be causing the observed outcomes. The main potential factor we have identified is the gender of the coffee survey enumerators. Our three enumerators comprised one female and two males. The female enumerator was positioned in Kinyamvuo village, the grading village where the highest levels of income were recorded. Since the majority of respondents were male, they might have been motivated by the gender of the female interviewer to inflate their cash income. In fact, all three enumerators indicated that many respondents showed some discomfort in answering questions about their household’s economic status. To test for the possibility of this bias, we will examine whether the response of the male respondents in Kinyamvuo village differed considerably from the responses of the female respondents. Male respondents reported an average income of Tsh 861,345 whilst the female respondents reported an average income of Tsh 836,081. Since the difference between the cash incomes reported by male and female respondents in minimal, we conclude that the gender of the enumerator did not bias the responses of coffee growers in the grading village.

After addressing the robustness of our results, we now investigate some of the dynamics between grading, production practices and marketing channel. Table 4.6 showed previously that coffee producers in our sample who sell through the cooperative marketing channel tend to have higher levels of input use (mostly fertiliser and pesticide) and productivity, leading to higher cash incomes. Of this group, producers who sell through the grading cooperative channel invest the most in quality enhancing practices such as the use of drying tables. And even though they have the same level of input use as the non-grading cooperative sellers, they have a significantly higher level of productivity. In order to explore the link between better production practices (use of a drying table) and the attainment of higher grades of coffee, the table 4.13 below isolates the coffee growers that sell to the grading cooperative. Of those attaining the higher grade (P1), 82 per cent used drying tables indicating their importance for achieving quality (table 4.14). It is likely that these coffee growers’ investments in increased productivity and higher quality outputs are the driving factors behind their higher grades of coffee and levels of cash income. Being able to realise the gains from higher quality output through grading may be the key incentive that stimulated the coffee producers of the Kinyamvuo village to achieve these significant results.

51 To alleviate this problem, the relevant section of the survey (which initially was at the start of the questionnaire) was transferred to the end of the questionnaire after piloting, in order to allow the enumerator to establish trust and be comfortable with the respondents before asking them to disclose information about their wealth and income.
Table 4.13: Production practices by buying channel

<table>
<thead>
<tr>
<th></th>
<th>Private buyer</th>
<th>Mixed buyers</th>
<th>Cooperative no grading</th>
<th>Cooperative grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Size</td>
<td>0.88</td>
<td>1.12</td>
<td>1.27</td>
<td>1.53</td>
</tr>
<tr>
<td>Quantity Harvested (kg)</td>
<td>50</td>
<td>74</td>
<td>71</td>
<td>127</td>
</tr>
<tr>
<td>Productivity (kg per acre)</td>
<td>63</td>
<td>67</td>
<td>62</td>
<td>97</td>
</tr>
<tr>
<td>No. of Inputs Used (per cent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>one-input</td>
<td>96</td>
<td>70</td>
<td>38</td>
<td>37</td>
</tr>
<tr>
<td>two-or-more-inputs</td>
<td>4</td>
<td>30</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>Use of drying Table (per cent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>43</td>
<td>63</td>
<td>66</td>
<td>80</td>
</tr>
<tr>
<td>No</td>
<td>57</td>
<td>37</td>
<td>34</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Author's own calculations from primary data collected

Table 4.14: Effect of use of drying tables on grade achieved

<table>
<thead>
<tr>
<th>Use of Drying Table</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade - P1</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>Grade - P2/3</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: Author's own calculations from primary data collected

We further explore this effect by including an interaction variable to model (2) in order to get an indication of whether the difference in income between those who do and those who do not grade varies with the use of drying tables:

\[
\log y_i = \alpha G_i + \beta C_i + \sum \delta \log X_i + \sigma l_i + \mu_i
\]  (4)

Where \( I_i \) is an interaction variable between grading and the use of a drying table. In this way, we can determine whether good production practices (proxied by the use of a drying table) are identified and rewarded through the grading process. The results presented in the third column in table 4.9 show that the interaction variable is positive and highly significant, indicating that the grading mechanism is effective in establishing a link between higher quality coffee and cash income\(^\text{52}\).

\(^\text{52}\) The coefficients and significance levels of the other variables have remained mostly similar to previous results.
4.5 If grading is good, why doesn’t it happen?

During the fieldwork phase of the Kilimanjaro coffee growers’ survey, it became abundantly clear that coffee grading at village buying stations is the exception, not the rule (table 4.15). This is why our survey took advantage of a natural experiment that was underway. Whilst all coffee was graded at the auction, parchment coffee transactions in the village were not graded. Transactions were based on the spot contract (private buyers) and the group contingent contract (cooperatives), and in both cases the basic visual grading tests failed to be applied. Discussions with market players confirmed the field observations. The Tanzania Coffee Board described and demonstrated the village grading criteria instituted in the coffee regulations (described in section 4.1). But they confirmed that grading is not generally applied on the ground and that their capacity to enforce the mechanism is prohibitively low. Coffee producers also confirmed that they do not grade their own coffee because buyers do not distinguish the grades and prices.

Table 4.15: Coffee grading by village

<table>
<thead>
<tr>
<th>Village</th>
<th>Kinyamvuo (grading village)</th>
<th>Lole-Marera</th>
<th>Masia-Mshiri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee graded</td>
<td>Yes</td>
<td>91%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>9%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Source: Author's own calculations from primary data collected

It is likely that the real deterrent to village grading is not the visual inspection itself, which is a fairly simple low-cost exercise, but the application of price differentiation and the payment of quality premiums.

Absent quality incentives is a phenomenon that affects both of the prevalent contract types in Tanzania’s coffee market: the spot and the group contingent contracts. Under the spot contract grading and premium transfers simply don’t take place. The group contingent contract differs in that the delivery of premiums (based on auction grading) is inbuilt, but is not differentiated by producer, bringing forth the free rider problem. When the quality premium is shared between a mixed group of high and low quality producers, the incentive to be a high quality producer is eroded. Producers in this group would gain just as much by saving themselves a substantial amount of effort and simply producing low quality coffee.
Over a period of time, the group is likely to under invest in producing high quality coffee altogether. Moreover, asymmetry of information within the cooperative structure, between the producers and the marketers, creates the same incentive effect as that faced by private buyers under the spot contract: the quality premium that is supposed to be transferred to a group of producers can be siphoned off by the upper cooperative cadres. Without sufficient controls and incentives, the contingent contract is likely to deliver the same underperforming results to the producers as the spot contract.

The individual contingent contract differs in that it distinguishes between types of producer (high quality and low quality) and awards the premium accordingly. It distinguishes between producers by grading their produce at the village, registering them according to their quality profile then using the register to allocate premiums after the coffee has been fully graded and sold at the auction. Allowing individuals to capture the quality premiums from their own individual output however gives them the right incentive to optimise their production practices. More importantly, it is more likely to induce low quality producers to adopt better practices in order to gain the tangible benefits of the quality premium. Table 4.16 below summarises the characteristics and incentives delivered by the above contract types discussed here.

<table>
<thead>
<tr>
<th></th>
<th>Spot Contract</th>
<th>Contingent Group Contract</th>
<th>Contingent Individual Contract</th>
<th>Spot Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without Village Grading</td>
<td>Without Village Grading</td>
<td>With Village Grading</td>
<td>With Village Grading</td>
</tr>
<tr>
<td>Grading village</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Grading auction</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Premium</td>
<td>None</td>
<td>Individual</td>
<td>Shared</td>
<td>Individual</td>
</tr>
<tr>
<td>Incentive</td>
<td>No</td>
<td>Yes</td>
<td>Limited</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Author.

4.6 Concluding Remarks

Despite some early gains in the post-liberalisation period, the performance of Tanzania’s coffee sector has failed to meet expectations. Both quality and production show a declining trend. But most concerning from a poverty perspective is that the producer price share for Tanzanian coffee growers is lower than in most other coffee producing countries.

Our analysis of grading in section 4.4 showed that when the proper institutional arrangements and incentives are in place, grading can play a very important role in making
the market work better for both coffee producers and coffee buyers. It can increase the incomes of otherwise poor producers that rely on their annual coffee crop to sustain the household and can create a virtuous cycle that leads to a market that reinforces investments in better production and processing practices. Yet this is not the case for Tanzania’s coffee market, where grading resides as an inefficient institutional arrangement. Under the spot contract, coffee is graded at auction. This process for quality and price determination takes place after the transaction with the coffee producer has been concluded. No specific premium or incentive is delivered to the producer. Under the prevalent contingent contract, grading again takes place at auction as part of a group contingent contract, which is a mechanism that also fails to provide an adequate incentive to coffee producers to invest in improving their production practices. Individual grading contracts that are based on village grading would deliver better incentives to producers but are very rare. Although *de jure* regulations require buyers to apply the village grading arrangement, the *de facto* reality is that they stand to extract rents by avoiding them.

From the perspective of the coffee buyer, the coffee market accommodates demand for both high and low quality coffee. High quality coffees are sold as premium products, whilst lower quality Arabica coffee may be used as filler in coffee blends for less refined segments of the market. This may in turn cause coffee buyers to develop a segmented buying strategy. They would need to procure low quality coffee at the lowest cost possible through marketing channels such as the one described in this case study. In this segment of their market, the coffee buyer might not have an interest in fostering the supply of high quality coffee as long as they can source it from other channels. These other channels include large private coffee estates or other coffee producing regions and countries.

The winners and losers from these institutional arrangements, and the associated market failure, are evident. Whilst coffee growers lose out on income and incentives, coffee buyers earn premium rents in the short term. The third party in this scenario are the regulatory bodies, which have failed to mitigate negative outcomes for producers.

In this chapter, we briefly explored the factors that reinforce the market failure brought about by the absence of grading; however, a more detailed discussion is presented in subsequent chapters.
Annexes

4.1 Grading Standards for Washed Arabica (Coffee Regulations 2002)

Village Grading: Parchment Coffee

- **Premium grade**: which shall mean a very good quality parchment coffee silver skinned with no damaged, broken, black and loose beans
- **Parchment I**: which shall mean a good quality parchment coffee which is silver skinned beans with brownish parchment. The coffee has some parchment coffee with centre cut slightly opened with few parchment broken by machine.
- **Parchment II**: which shall mean a fair quality Parchment Coffee with brownish to black skinned parchment, presence of noticeable parchment broken by machine, presence of much more parchment with center
- **Parchment III**: which shall mean parchment coffee brownish to black skinned beans with much more beans broken by machine, presence of floats and dis-coloured parchment and presence of black beans
- **Estate Clean**: which shall mean domestically hulled coffee of good quality, greenish in colour and requiring cleaning, grading and polishing only.

Auction Grading: Green Coffee

<table>
<thead>
<tr>
<th>Grade</th>
<th>Screen Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Retained minimum 90% of screen 18.</td>
</tr>
<tr>
<td></td>
<td>Maximum 8 – 10% of screen 17</td>
</tr>
<tr>
<td></td>
<td>Maximum 2% of screen 15</td>
</tr>
<tr>
<td>A</td>
<td>Retained minimum 90% of screen 15/16</td>
</tr>
<tr>
<td></td>
<td>Maximum 2% of screen 14</td>
</tr>
<tr>
<td>B</td>
<td>Retained minimum 90% of screen 15/6</td>
</tr>
<tr>
<td>C</td>
<td>Maximum 10% of screen 14</td>
</tr>
<tr>
<td>PB</td>
<td>Retained minimum 95% pea-berry beans 14</td>
</tr>
<tr>
<td></td>
<td>Maximum 5% float beans</td>
</tr>
<tr>
<td>AF</td>
<td>Minimum 90% screen 17</td>
</tr>
<tr>
<td></td>
<td>Maximum 8-10% screen 15/6</td>
</tr>
<tr>
<td></td>
<td>Maximum 2% screen 14</td>
</tr>
<tr>
<td>TT</td>
<td>Maximum 90% screen 15/6</td>
</tr>
<tr>
<td></td>
<td>Maximum 10% screen 14</td>
</tr>
<tr>
<td>E</td>
<td>Minimum 90% 18.</td>
</tr>
<tr>
<td></td>
<td>Maximum 10% below</td>
</tr>
<tr>
<td></td>
<td>Nothing below screen 15</td>
</tr>
<tr>
<td>F</td>
<td>Light broken beans resulting from all above grades.</td>
</tr>
</tbody>
</table>

Source: Tanzania Coffee Regulations
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Min-Max</th>
<th>Female</th>
<th>Literate</th>
<th>Uses a drying table</th>
<th>Weighted asset index</th>
<th>Farm size (acres)</th>
<th>Quantity sold (kg)</th>
<th>Cash income (Tsh)</th>
<th>Age</th>
<th>Has held an official position</th>
<th>Coop member</th>
<th>Grades coffee</th>
<th>Village (Kinya -mvuo)</th>
<th>Influences through association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>27%</td>
<td>0.022</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literate</td>
<td>97%</td>
<td>0.009</td>
<td>0</td>
<td>1</td>
<td>0.0268</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses a drying table</td>
<td>68%</td>
<td>0.023</td>
<td>0</td>
<td>1</td>
<td>0.1256</td>
<td>-0.0509</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted asset index</td>
<td>4.16</td>
<td>0.12</td>
<td>0</td>
<td>14</td>
<td>-0.0586</td>
<td>-0.0619</td>
<td>-0.1725</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm size (acres)</td>
<td>1.28</td>
<td>0.05</td>
<td>0.25</td>
<td>6</td>
<td>-0.0962</td>
<td>0.0544</td>
<td>-0.2073</td>
<td>0.1011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity sold (kg)</td>
<td>96</td>
<td>5.40</td>
<td>2</td>
<td>700</td>
<td>-0.0703</td>
<td>-0.0069</td>
<td>-0.3681</td>
<td>0.2930</td>
<td>0.5017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash income (Tsh)</td>
<td>505,085</td>
<td>3454.5</td>
<td>0</td>
<td>4800000</td>
<td>-0.1575</td>
<td>0.0200</td>
<td>-0.3610</td>
<td>0.2131</td>
<td>0.4734</td>
<td>0.5333</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>48</td>
<td>0.75</td>
<td>19</td>
<td>85</td>
<td>-0.2228</td>
<td>0.2375*</td>
<td>-0.1020</td>
<td>-0.0902</td>
<td>0.2645</td>
<td>0.1247</td>
<td>0.2495</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has held an official position</td>
<td>20%</td>
<td>0.020</td>
<td>0</td>
<td>1</td>
<td>-0.0568</td>
<td>0.0638</td>
<td>-0.0971</td>
<td>-0.0978</td>
<td>0.1258</td>
<td>0.0476</td>
<td>0.2078</td>
<td>0.1578</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative member</td>
<td>80%</td>
<td>0.020</td>
<td>0</td>
<td>1</td>
<td>0.1379</td>
<td>-0.0692</td>
<td>0.2834</td>
<td>-0.0560</td>
<td>-0.2581</td>
<td>-0.3108</td>
<td>-0.4956</td>
<td>-0.1779</td>
<td>-0.1659</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades coffee</td>
<td>43%</td>
<td>0.025</td>
<td>0</td>
<td>1</td>
<td>0.0629</td>
<td>-0.1238*</td>
<td>0.1905</td>
<td>-0.1650</td>
<td>-0.2574</td>
<td>-0.3568</td>
<td>-0.5988</td>
<td>-0.2466</td>
<td>-0.2552</td>
<td>0.2827</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village (Kinya -mvuo)</td>
<td>39%</td>
<td>0.024</td>
<td>0</td>
<td>2</td>
<td>0.1417</td>
<td>-0.1547*</td>
<td>0.2917</td>
<td>-0.0094</td>
<td>-0.2892</td>
<td>-0.3383</td>
<td>-0.7443</td>
<td>-0.3179</td>
<td>-0.3453</td>
<td>0.5490</td>
<td>0.6866</td>
<td></td>
</tr>
<tr>
<td>Influences through association</td>
<td>85%</td>
<td>0.017</td>
<td>0</td>
<td>1</td>
<td>0.1012</td>
<td>0.0434</td>
<td>0.0848</td>
<td>-0.0531</td>
<td>-0.0068</td>
<td>-0.1002</td>
<td>-0.1396</td>
<td>-0.0485</td>
<td>-0.0384</td>
<td>0.0946</td>
<td>0.1495</td>
<td>0.1560</td>
</tr>
</tbody>
</table>

Source: Author's own calculations from primary data collected
Inefficient Institutions of the Maize Sector: Farm-gate buying, search costs and producer prices

The purpose of this chapter is to show how inefficient institutions in Tanzania’s maize market lead to high transaction costs and add to the poverty of maize growing households. The main marketing institution we will address is farm-gate buying.

Maize is the staple food of choice for the majority of Tanzanians. For many households, it forms the basis of the main family meal. Around 65 per cent of Tanzania’s households grow maize\(^{53}\); these include a large proportion of Tanzania’s poorest households. These households market the surplus output that is not consumed during the harvest season. They also tend to buy maize later in the year when prices are high when their limited food stocks are depleted. It is therefore a crop that has a double impact on the poor, through production and consumption. Because of its importance for poverty and food security, the maize market has received much attention from politicians and policy makers, and has undergone a range of reforms, policy interventions and controls over the past twenty years. The market underwent liberalisation and privatisation. Government interventions have been scaled back, and then later reintroduced. New players, notably from the private sector, have established a strong foothold in the market and regional trade harmonisation initiatives have been initiated. However, the maize market’s performance has been disappointing, particularly for the poor.

The maize market has also received much analytical attention over the past years. There is a relatively large literature on Tanzania’s maize market in the form of academic papers, operational reports and market analyses\(^{54}\). This literature contains many useful insights relating to the constraints that face players along the maize value chain (transport, finance, inputs, storage, prices, infrastructure, market access, taxes and so on). However, despite being informative from a diagnostic perspective, it offers little in the way of explaining how institutions and market structures affect incentives, producer outcomes and poverty. More

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53 National sample census of agriculture 2002/03
54 Referred to throughout this chapter
critically, the studies and assessments do not adequately capture how maize is actually bought and sold by maize growers and consumers at the village level. This relegates the incentives facing the maize grower and the structural constraints, particularly at the village level, to the analytical periphery. It also leaves large information and analytical gaps that need to be addressed before a poverty-focused perspective of the maize market can be pursued.

In the first section of this chapter, we provide an overview of the maize market’s performance with an emphasis on the post liberalisation reform period. We also describe the market structure and the key players. The second section sets out the institutional inefficiencies in farm-gate buying that we propose to analyse, and is followed by a section presenting a quantitative analysis of these inefficiencies using household budget survey data. The last section prior to the conclusion briefly describes other dimensions of the Tanzania’s market that can be classed as inefficient institutional arrangements.

As a part of the research for this chapter, fieldwork was conducted in two major maize producing regions in Tanzania, namely Iringa (Southern) and Arusha (Northern) and in Dar es Salaam, the major urban trading centre for maize in Tanzania in March 2009. Maize producing villages, wholesale grain markets, retail markets and small maize mills were visited, and maize producers, traders, mill owners, market retailers, senior and technical local government officials were interviewed. These first hand observations were used to construct a picture of the structure, groups and conditions of Tanzania’s maize market, and to develop the hypotheses addressed in this chapter.

### 5.1 Overview of the maize market

A considerable level of variation exists between maize producing regions in terms of productivity. Much of Tanzania’s maize is produced in the southern highlands, with significant levels of production through the central belt and the northern regions. While the central Shinyanga and Dodoma regions have almost double the area planted as the southern Iringa and Mbeya regions, they only produce a little over half of the output. This is because although households in the central region dedicate a larger proportion of their land to their maize crop, they have a lower level of input use and productivity compared to southern and northern maize producing regions. Regional variations in price behaviour exist. Prices tend to be lower in surplus regions and in regions with less developed
infrastructure. Deficit regions, regions that are more developed, and those that border a neighbouring country exhibit higher prices and lower volatility (Kilima et al, 2008). As is the case for most agricultural markets that rely on rain fed cultivation, the supply of maize is seasonal in all regions of Tanzania. It peaks during the harvest seasons of July, August and September. Maize prices are strongly subject to seasonality, so that farm-gate prices are significantly lower during the harvest season (figure 5.1). This pattern, which is largely driven by national supply and demand dynamics, has a negative effect on poor households that sell their maize when prices are low in order to satisfy their urgent household cash needs.

Figure 5.1: Maize price variations in harvest and lean seasons

![Maize price variations in harvest and lean seasons](image)

Source: Famine Early Warning Systems

Tanzania has most recently been a net exporter of maize. This status however fluctuates regularly subject to production levels domestically, those in neighbouring countries and to trade policies such as export bans\(^5\).

Market performance

The maize market’s liberalisation reforms took place mostly between 1982 and 1991. The

\(^5\) Unobserved maize movements resulting from smuggling can also affect the net exporter/ importer status.
reforms introduced market-based pricing and competition through the withdrawal of the state marketing function. The reform had mixed results. Market prices increased but so did price volatility (Kilima et al, 2008). An expansion in the area harvested has led to a significant increase in the quantity of maize produced since 1986. Much of this expansion in area cultivated occurred between 1995 and 1998 (figure 5.2). Over the same period, the level of productivity declined sharply, with a large drop in maize yields (figures 5.3 & 5.4). The levels of input use also declined sharply (figure 5.5). The area cultivated and the yields achieved have remained broadly constant from 1998 onwards. When the performance of the market since the reform period is reviewed (1986 to 2008) a sharp overall decline in maize yields is observed. When we limit ourselves to investigating the last ten years, a stagnated trend is revealed, whereby yields and areas cultivated have remained largely constant, indicating a declining level of production per capita.

Figure 5.2: Production and area harvested

![Production and Area Harvested](image)

Source: FAOSTAT

Figure 5.3: Per capita production

![Per Capita Production](image)

Source: FAOSTAT
Whilst it is recognised that market integration and price transmission in Tanzania have improved in the post-reform period (van Campenhout, 2007), price behaviour in the post-reform period continues to suffer from serious inefficiencies. Maize price in Tanzania are weakly related to international prices. Domestic prices react weakly to international market signals. The maize market in Tanzania is less integrated than in Kenya and Uganda (World Bank, 2009). In fact, data shows that Tanzania slows down the speed of price transmission in the maize trade between it and Kenya and Uganda (World Bank, 2009).

Maize price transmission between the regions of Tanzania is also weak domestically,

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56 Gross per capita production index for cereals (base 1999-2001)
57 Yield in hectogram/hectare
between the regions of Tanzania. Prices are slow to adjust, with strongest relationships seeming to be bunched into two zones: [Dar es Salaam – Arusha] and [Iringa – Mbeya-Songea]. While the combined adjustment parameters for market pairs\(^\text{58}\) that include Dar es Salaam are moderate, the integration between the production centres in Tanzania is generally weak (Table 5.1). It means it takes many months for price signals in one market to be incorporated into prices in other markets. Overall, it should be noted that the strongest combined rate of adjustment in Tanzania (35 per cent between Dar es Salaam and Arusha), is smaller than the weakest combined rate in Kenya (38 per cent between Eldoret and Nakuru (World Bank, 2009).

**Table 5.1: Long-run price transmission elasticities and total price changes in Tanzania**

<table>
<thead>
<tr>
<th>Market A</th>
<th>Dar es Salaam</th>
<th>Dar es Salaam</th>
<th>Dar es Salaam</th>
<th>Dar es Salaam</th>
<th>Arusha</th>
<th>Arusha</th>
<th>Iringa</th>
<th>Iringa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market B</td>
<td>Arusha</td>
<td>Iringa</td>
<td>Mbeya</td>
<td>Songea</td>
<td>Iringa</td>
<td>Songea</td>
<td>Mbeya</td>
<td>Songea</td>
</tr>
<tr>
<td>Price transmission elasticity</td>
<td>0.908</td>
<td>0.734</td>
<td>0.196</td>
<td>1.224</td>
<td>-0.73</td>
<td>4.991</td>
<td>1.05</td>
<td>1.37</td>
</tr>
<tr>
<td>Combined adjustment</td>
<td>35%</td>
<td>30%</td>
<td>17%</td>
<td>27%</td>
<td>5%</td>
<td>5%</td>
<td>27%</td>
<td>29%</td>
</tr>
</tbody>
</table>


**Figure 5.6: Maize Market Prices (December) 1995-2007**

![Figure showing maize market prices from 1995/12 to 2008/12](source: Famine Early Warning Systems Network)

The availability of market price data has stimulated research based on spatial price transmission analysis. Yet, besides these analyses of relationships between main markets within Tanzania, little is known about the relationship between market and producer prices. Whilst maize market prices are well documented, producer prices are very hard to come by.

\(^{58}\) This parameter shows the percentage of price disequilibrium to be restored within one month.
This makes it very difficult to monitor market outcomes for maize growers directly.

At the national level, the Tanzania Bureau of Standards and the National Food Control Commission have determined two standards for grading maize (RATIN, 2005). The grades are mainly differentiated by moisture content, inclusions of foreign matter and pest damage. However, maize transactions across Tanzania do not make reference to grades in either marketing or consumption. Maize is sold as an undifferentiated crop throughout the supply chain. In addition, data on maize production and marketing trends by grade is unavailable.

**Market structure**

The largest group in the maize market is the maize producers. Some three million households grow maize, representing 65 per cent of the crop growing households in Tanzania. Large to medium size growers contribute only a small share of the total production. Some of the most important characteristics of the most vulnerable small maize growers are as follows:

- Low productivity and input use
- Distress sales when prices are low during the harvest season
- Purchase of maize when prices are high during the lean season
- Home or farm distant from centre of village or nearest market
- Attends village meeting and participates in local decision making less frequently

The second group to which we dedicate considerable attention in this chapter is the maize traders. They can be broadly categorised under two main groups: small itinerant and medium to large traders. The small itinerant traders collect maize directly from the producers. They originate from and operate mostly at the village and ward levels. They are well known to the maize growers in the locality and have in some cases established a relationship of trust with producers through repeat transactions because they purchase and sell maize in the village all year round. The first transaction in the maize marketing chain takes place between the maize grower and these itinerant village-based traders. They perform the function of collecting maize and aggregating maize into larger consignments. Their business typically involves buying maize directly from the growers, aggregating their consignments and selling them either at the nearest urban market or at neighbouring villages that have a maize deficit. They also act as buying agents for external buyers. They typically operate with low capital, no storage facilities and seek a quick return on their
investments (less than one week). These traders tend to be based around the village centre or near the local marketplaces. They are also well informed about market prices, and manage their transactions to minimise price fluctuation risk.

The medium to large maize traders originate from outside of the village or ward. They buy maize from the markets and village-based traders in the lean season and directly from the producers at the farm-gate during the harvest season. They operate as wholesalers and handle relatively large quantities of maize and transact across regions and borders. These buyers collect maize from villages, rural towns and urban buying centres such as the markets in Iringa, Mebya and Arusha. They operate with more capital than village-based traders do. They benefit from some economies of scale in transport but like itinerant traders do not store maize for long durations either, usually for no longer than approximately one month (Santorum & Tibaijuka, 1992).

Another important group in the maize market is the public sector buyers such as the Government of Tanzania’s strategic grain reserve and the World Food Programme, which engage in the market for purposes other than commercial gain. These maize buyers do not interact directly with small maize growers; they procure maize from large farms and traders. Cooperatives have not been a feature of the maize market since the liberalisation reforms period, as maize is mostly marketed by individual households through the marketing agents described above.

*Farm-gate buying*

Farm-gate buying is one of the most prevalent marketing arrangements for African producers. Prior to the liberalisation periods in the 80s and 90s, many African markets were run on a public monopsony basis, whereby procurement relied heavily on marketing through producer cooperatives and public buying networks. Direct producer to buyer relationships or hubs for private marketplace transactions had not been fully developed. Post liberalisation, the cooperative and procurement networks were dismantled and many producers have found themselves geographically isolated and distant from marketplaces. Upon their entry to the market, private buyers embarked on setting up buying networks, many of them based on buying at the farm-gate.

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59 The buyers and agents that work for the large vertically integrated maize processing and trading companies are included in this group.
The liberalisation of Tanzania’s maize market took small farmers through a scenario very similar to the one described above. The cooperatives, which had been their main marketing channel dissolved and itinerant buyers took their place. Since maize farmers’ choice of marketing channel depends largely on the way that the market in which they operate is structured\(^{60}\), farm-gate buying became the main marketing institution for a large proportion of maize growers, and today, only a small proportion of Tanzania’s maize growers sell their output at a marketplace\(^{61}\). Maize growers retain a proportion of their annual output for household consumption\(^{62}\). The rest of their maize, the surplus, is sold mostly at the farm-gate to itinerant small maize buyers who typically travel around the village on a bicycle, announcing prices and searching for households that have maize to sell. Typically, once the buyers have procured a sufficient quantity of maize, they return with a large vehicle such as a truck to collect the purchased maize\(^{63}\).

Subsequent to the food market reforms of the late eighties, entry into and exit from domestic maize buying has been largely unregulated. Itinerant maize buyers in producing villages are not required to obtain a licence or permit from any authority. They operate informally, with few barriers to entry, allowing them to enter and exit the market flexibly throughout the year. What is more, the operational entry costs are fairly low and many traders operate with little capital (from own savings), with no storage capacity or significant transport assets. This further facilitates entry to and exit from the market.

Nevertheless, the level of buyer activity in the maize market varies throughout the year. Buyer entry peaks during the harvest season when maize is abundantly available and when many maize growers are ready to sell due to depletion of their savings from the previous season. Non local traders from neighbouring villages, regions and even from Dar es Salaam travel out to maize growing villages to collect maize grain. By contrast, the lean season sees a sharp reduction in buyer entry in the villages by non-resident buyers. Non-resident buyers tend to use regional markets and local buyers as agents during seasons of scarcity\(^{64}\). This means that the market share of local buyers in primary marketing is higher in the lean

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\(^{60}\) Proximity of markets, formal and informal rules governing buying and marketplaces and transaction costs such as search and transport all affect this choice.

\(^{61}\) Field work interview findings in Southern and Northern region.

\(^{62}\) Field interviews with farmers and mills owners revealed that this maize is stored throughout the year, and milled into flour at the local “posho” mill at a high cost: approximately 15 to 30 per cent of the value of the maize.

\(^{63}\) Maize is sold on the spot, ungraded and on a cash basis. In some instances the payment is deferred and the buyer pays the maize grower after he or she has sold the maize they collected. This mostly occurs when the buyer is well known to the seller.

\(^{64}\) Fieldwork interviews.
season, whereas non local buyers capture a significant market share in the harvest season. Despite the seasonal decline in the number of traders, overall demand for maize is high throughout the year. Buyers remain active in the procurement and trading of maize by rotating their working capital fairly quickly and by taking advantage of seasonal variations in prices so that trading activity tends to peak just before planting and during the harvest (World Bank, 2007).

5.2 Farm-gate buying: nature and inefficiency

In this chapter, we question the efficiency of the farm-gate buying system described above. Although the role of itinerant traders is undoubtedly critical given the absence of other marketing outlets, empirical evidence, such as Fafchamps & Hill’s (2004) analysis of farm-gate buying in Uganda’s coffee market, shows that farm-gate buying is generally less remunerative for producers than selling at the marketplace. We anticipate a similar outcome for maize producers in Tanzania. We argue that buyer search costs and information asymmetries widen the gap between producer and market prices for growers who sell at the farm-gate. In other words, the costs associated with farm-gate buying reduce producer prices.

We expect these costs to be absorbed by the small maize producers because they are price takers in both harvest and lean seasons. Village maize buyers (both local and non local) are also price takers that mostly operate locally. They do not transact directly with consumers as they sell the maize they have collected to other traders or processors. They depend on the daily prices reported in regional markets and the central Dar es Salaam market to establish their buying prices. Price determination in these reference markets is based mostly on national supply and demand conditions since maize tends to behave as a non-tradable good with the exception of some road or rail-linked transit markets (World Bank, 2000). Hence, the main avenue for a buyer to recover the costs they have incurred is to pass them on to the maize producers. Similarly, the most obvious way for a buyer to increase their trading profit margin is by pushing producer prices down as far as possible.

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65 As outlined in the previous chapters, our definition of an efficient institution requires that it should not be biased towards any group in the market so that it should promote an efficient outcome for all groups rather than generate inefficient rents for one group in the market. The institutions should establish a framework for the allocation of resources that rewards productivity and efficiency rather than power.
66 When interviewed, they reported that they have little room for negotiation with buyers and that they tended to readily accept the prices offered to them.
67 89 per cent of rural traders operate within the confines of their ward or district, World Bank (2007)
68 Traders in regional markets reported that they refer to the wholesale markets in Dar es Salaam to establish trading prices when interviewed.
given the competitive environment and the rent opportunities.

We also consider whether search costs are likely to vary in response to seasonal market conditions. We argue that search and information costs vary with the agricultural season because buyer entry levels vary. More specifically we expect that non local maize buyers incur higher search costs in the harvest season as they enter the market directly to engage in farm-gate buying, pushing producer prices down during the harvest season when they are already at their lowest.

In our earlier account of the maize marketing system, we described how non local maize buyers are more active in the harvest season as they enter the market directly to procure maize in villages, whereas in the lean season they would procure using marketplaces and through buyer networks. In this way, these traders varied their buying strategy by season: in the harvest season, they went out to the villages and incurred search costs and the in the lean season, they reduced their search costs by relying on marketplaces. The search costs of non local buyers are higher than those of the village-based buyers irrespective of season. We anticipate that these harvest season search costs to cause a downward push on maize prices that is likely to most acutely affect the most vulnerable maize growers. These are the households that are geographically remote and that sell maize as early as possible in the harvest season.

But what explains this pattern? Ideally, we would expect buyers to minimise all of their costs for any transaction, so that if procuring maize indirectly through village-based buyers provides economies, it would be the strategy of choice irrespective of season. Under this set up, the village-based buyers would be the main procurers of maize throughout the year, and would have strong business networks with buyers across the country and with local markets. They would handle orders and prepare consignments to be sent to non-local buyers or to the local marketplaces. However this does not seem to be the prevalent arrangement, particularly in the harvest season. This is likely to be due to limitations in trust and networking between traders when large quantities of working capital are involved. Local village buyers have a small supply of working capital and so would normally need to be forwarded with the cash required to purchase maize on behalf of another buyer. The generally weak contract enforcement and legal context makes such largely trust based

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69 Non local buyers travel longer distances to procure maize, have less information about areas in abundance and have less established networks at the village level.
transactions more difficult in the harvest season when hefty sums are exchanged and large quantities of maize are bought and distributed within and outside of Tanzania. Loss of capital for a trader at this stage, which marks the start of the trading season, would be likely to put him out of action for most of the remaining season. Moreover, since the number of marketplaces remains largely constant all year round, marketplaces become very competitive when the number of buyers shoots up in the harvest season. In this situation, it is not surprising that most buyers opt to engage in direct farm-gate procurement despite the added search costs, especially since the unit costs of search are lower in the harvest season than in the lean season due to the sheer abundance of maize.

In sum, the two hypotheses we make in this section and that we will test in the following sections are that search and information costs associated with farm-gate buying reduce producer prices and that search costs push producer prices lower in the harvest season due to increased buyer activity.

Definition of search costs

Before proceeding further with this chapter, we must first define buyer search costs. We define them as the costs incurred by a buyer in locating a seller with whom he or she may complete a transaction. This includes costs related to transport, costs of collecting information and maintaining market networks, in addition to the opportunity cost of the time spent searching for sellers. Several studies have noted that many components of search costs tend to be fixed (Renkow, Hallstrom & Karanja, 2004; Alene et al, 2008). Payments for transportation services constitute a large share of the marketing costs between the farm-gate and wholesale markets. Overall, these costs disproportionately add to total marketing costs at the first two segments of the supply chain, particularly the village to primary markets segment (table 5.2). Because of this, the itinerant buyer must minimise these and other search costs by collecting as much maize as transport capacity allows. The risk of collecting too little maize after having incurred the costs of travelling to and around the village is significantly minimised in the harvest season when maize is more abundant than it would be in the lean season.

\[70\] This refers to transaction costs that are normally measured in surveys, which exclude, amongst others, costs related information, search and bargaining.
Table 5.2: Marketing costs at various stage of the supply chain

<table>
<thead>
<tr>
<th>Market segment</th>
<th>Cost element</th>
<th>US$ per ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm-gate-primary market</td>
<td>Storage/rental fee</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>Transportation charges</td>
<td>6.40</td>
</tr>
<tr>
<td></td>
<td>Hired labor loading/unloading</td>
<td>1.92</td>
</tr>
<tr>
<td></td>
<td>Council cess</td>
<td>1.60</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td><strong>10.72</strong></td>
</tr>
<tr>
<td>Primary-secondary market</td>
<td>Storage/rental fee</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>Transportation charges</td>
<td>27.00</td>
</tr>
<tr>
<td></td>
<td>Hired labor loading/unloading</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Council cess</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>Drying tent/empty bags</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td><strong>34.30</strong></td>
</tr>
<tr>
<td>Secondary-wholesale market/miller</td>
<td>Storage/rental fee</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>Transportation charges</td>
<td>41.40</td>
</tr>
<tr>
<td></td>
<td>Hired labor loading/unloading</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Council cess</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td><strong>45.51</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>90.53</strong></td>
</tr>
</tbody>
</table>


In common with other transaction costs, search costs are not addressed by the neo-classical framework, which does not allow for the homogenous goods to have varying prices for different buyers. Search costs are extremely common in many markets. As consumers, most of us have experienced this phenomenon, for instance, when searching for the best price for a new computer online or on the high street. Anderson & Renault (1999) provide another informative example of how search costs function is given by: the tourist trap. Touristic areas are often dominated by low quality, high cost restaurants that offer relatively undifferentiated menus, but that nevertheless have full tables. Their good fortune is caused by the high search costs faced by the average tourist, who is unaware of the local alternatives and that values leisure time highly.

Search costs are closely related to information asymmetries and the bargaining process. The lack of information drives potential buyers or sellers to search for each other. Having found one another, the outcome of their subsequent bargaining is affected by the search costs. A buyer who has incurred high search costs in attempting to find an appropriate seller is likely to pay a higher price simply to avoid recommencing the costly search as long as the premium paid to the first seller does not exceed the cost of the search process itself. This is the intuitive result that underlies the outcomes of some of the important
contributions to search theory that establish a link between search costs, competition and price dispersion, namely, that for homogenous goods, even modest buyer search costs can lead to monopoly pricing by sellers (Salop & Stiglitz, 1977; Stiglitz, 1989 and Diamond, 1971). Once monopoly prices are established throughout the market, buyers will no longer expect any value in searching, leading to a situation referred to as the Diamond Paradox: monopoly pricing without search. Most price dispersion models conclude that search costs reduce both consumer and social welfare and that lowering search costs for one buyer will have the positive externality of reducing prices for all buyers by stimulating competition.

Much of the literature relating to search costs is theoretical but some applied empirical studies exist, such as Vukina & Zheng’s (2007) analysis of search costs and price dispersion in the US hog market. What most of this literature (theoretical or applied) has in common is that it refers to buyers who are price takers. Therefore, the buyer absorbs the search costs allowing for the possibility for sellers to engage in monopoly pricing. Some literature, such as Vakis, Sadoulet and de Janvry’s (2003) study of Peruvian producers, considers search costs incurred by the sellers. This study demonstrates that households that sell in distant markets to attain better prices incur “not trivial” costs in searching for buyers. Almost two-thirds of the households in their survey that sold at distance markets found the buyer in advance by incurring some search costs. They also importantly note that:

“...transaction costs have a large unobservable component, and hence their measure can only be indirectly revealed from the behaviour of potential agents in these markets. In addition, with the exception of transaction costs attributes like distance to markets and transportation costs, aspects like market information or search and bargaining procedures are rarely included in most surveys and are unlikely to be comprehensive when included.” (Vakis et al, 2003, page 2).

In the remaining sections of this chapter, we will empirically test our hypotheses. This requires a measure of search costs from the perspective of the buyer for each transaction. As adeptly summarised in the quote above, this information is often missing, as is the case for our case study. To get around this constraint, the approach we adopt is to use a proxy, namely the distance of maize sellers to the marketplace. The further away a seller is from a market point where buyers and sellers congregate, the more difficult he or she is to find, causing buyers to incur higher search costs in transacting with them. Hence, the more remote a maize growing household is, the higher the search costs associated with their
transactions and the lower the prices they receive for their maize. This approach allows us to use Household Budget Survey data in measuring the effects of search costs on producer prices. Given that generally standard modules of such surveys, this approach may facilitate comparative analyses of search costs in cross sectional and longitudinal analyses.

5.3 The data

Our empirical analysis in the forthcoming sections is based on the most recent Tanzania Household Budget Survey by the National Bureau of Statistics, undertaken in 2007. It followed similar surveys in 2000/01 and 1991/92. Data collection took place in 2007 over a period of twelve months in all 21 regions of mainland Tanzania. The sample for the survey was based on Tanzania’s 2002 population census. In total, 10,466 households were surveyed. The proportion of the population surveyed in the three areas of estimation – Dar es Salaam, other urban areas and rural areas is shown in table 5.3.

Table 5.3: HBS 2007 population sample

<table>
<thead>
<tr>
<th></th>
<th>Weighted population</th>
<th>%</th>
<th>No. households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dar es Salaam</td>
<td>3.09</td>
<td>8.1</td>
<td>3,456</td>
</tr>
<tr>
<td>Other urban</td>
<td>6.78</td>
<td>17.7</td>
<td>3,737</td>
</tr>
<tr>
<td>Rural areas</td>
<td>28.42</td>
<td>74.2</td>
<td>3,273</td>
</tr>
<tr>
<td>Total</td>
<td>38.29</td>
<td>100.0</td>
<td>10,466</td>
</tr>
</tbody>
</table>


The 2007 HBS collected information on a wide range of household and individual characteristics. They include consumption (income) poverty and trends in productive and social sector indicators. Information was collected on the following areas:

- Household members’ education, economic activities, and health status
- Household expenditure, consumption and income
- Ownership of consumer goods and assets
- Housing structure and materials
- Distance to services and facilities
- Food security

The particular content that is of interest to us relates to maize growing households and variables such as maize prices, distance to markets and household characteristics.\(^{71}\)

\(^{71}\) Annexes 5.1 and 5.2 provide descriptive statistics and correlations of the variables used.
One of the main findings of the 2007 HBS is that the rate of poverty reduction in Tanzania has been modest. Figures 5.7 and 5.8 show the development in the food and basic needs poverty incidence from the 1991/92 HBS, 2000/01 HBS and 2007 HBS.

Figure 5.7: Percentage of people below basic needs poverty line

![Figure 5.7: Percentage of people below basic needs poverty line](image)

Source: Poverty monitoring group, 2008.

Figure 5.8: Percentage of people below food poverty line

![Figure 5.8: Percentage of people below food poverty line](image)

Source: Poverty monitoring group, 2008.

Progress was made in reducing food and basic needs poverty in Dar es Salaam between 1991 and 2000, but progress slowed between 2001 and 2007. The fact that the population of Dar es Salaam grew significantly between 2001 and 2007 largely due to rural-urban migration may have contributed to dampening the progress that had been made in poverty reduction in the city. But reduction of the rural poverty ratio between 2001 and 2007 has also been slow: 37.4 per cent of the rural population were living below the basic needs poverty line in 2007, compared with 38.7 per cent in 2001 and 40.8 per cent in 1991. However, this modest reduction in the poverty ratio recorded by the HBS has not been able to compensate for population growth (about 2.6 per cent per year). As a result, despite the reduction in the overall percentage of the population below the poverty line, the number of people living in
poverty in Tanzania increased by one million between 2001 and 2007.

With almost 58 per cent of adults working primarily in agriculture, this is the main source of employment for adult Tanzanians, particularly in rural areas. Therefore, the impoverishment of the rural population is likely to be linked to their dependence on agriculture. Table 5.4 presents the distribution of income across wealth quintiles. It shows that agricultural income is fairly equally distributed across the five wealth quintiles. The poorest earn 15.9 per cent of all agricultural income, whereas the other four quintiles earn proportions in the region of 20 per cent. The data suggests that the differentiating factor is that the better off households earn a large share of their income away from agriculture. Households in the wealthiest quintile earn almost half of all wage income and half of non-farm self-employment income. Conversely, households from the poorest quintile only earn 5 per cent of all wage income and 4 per cent of all income from non-farm self-employment. This suggests that earnings from agriculture are limited and that households lift themselves out of poverty when they get the opportunity to engage in income generating activities away from their farms.

An added disadvantage for the poor households that rely mostly on agriculture, particularly those growing maize, is the deterioration in relative prices. The price of maize has declined relative to the prices of other basic foods such as sugar and cooking oil. In 2000/01, 5.8 kg of maize had to be sold to obtain 1 kg of sugar, and this had increased to 6.0 kg in 2007. Expressed in maize, the price of a litre of cooking oil increased from 8.7 kg in 2000/01 to
8.8 in 2007. The deterioration was more notable for rice, as shown in table 5.5.

<table>
<thead>
<tr>
<th></th>
<th>Maize grain</th>
<th>Rice (paddy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar</td>
<td>5.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Cooking oil</td>
<td>8.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Maize flour</td>
<td>2.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Source: Poverty monitoring group, 2008.

Using the HBS data presents some challenges, the main one being the absence of data or responses that exactly match the hypotheses we have made in this chapter. For instance, the HBS does not collect information related to transaction and search costs. Moreover, the data set that is available to us is a household data set and does not include any information about local assets and conditions. This will require us to use proxies in some instances without sacrificing the robustness of the analysis and the precision of the results.

5.4 The analysis

The 2007 HBS indicates that distances to the markets have been increasingly affecting rural prices. Figures 5.9 and 5.10 below show that in 2000/01 maize prices remained constant as household distance to markets increased. But by 2007, the price of maize had become more responsive to distances decreasing the further the households were from the market. This implies that maize growing households that live further away from markets have become more vulnerable. It may also partly explain why the HBS recorded a decline in rural consumption by the bottom ten per cent of the rural population.

**Figures 5.9 and 5.10: Price of maize and distance to market**

Source: Poverty monitoring group, 2008.
Additionally, figure 5.11 below shows that being further away from the marketplace is associated with lower maize prices. It charts maize prices by distance to markets and shows that the further the household is from the market, the lower the farm-gate price. This suggests that a significant share of the difference between farm-gate prices in a given period and area for a homogenous good such as maize (henceforth referred to as price dispersion) can be accounted for by the distance of the household to the local marketplace. Additionally, figure 5.12 presents the coefficient of variation (a measure of price dispersion being the ratio of the standard deviation to the mean) by distance to market quartiles and by season. It shows that price dispersion increases with distance from the marketplace. So households that are further away from the market experience larger price fluctuations than those near to the market in both the harvest and lean seasons. It also shows that price dispersion is lower during the harvest season irrespective of distance to market.

To further explore the role of search costs and distances to markets and test our first hypothesis, we test a model of the determinants of maize prices using OLS regression. We commence with a simple univariate model:

\[ p_t = \alpha DM_t + \mu_t \] (1)

Where \( p_t \) is the maize price and \( DM_t \) is a variable indicating the distance of the household from the nearest market in kilometres. In this model, we are using distance to market as proxy for search costs incurred by maize buyers (including any associated transport costs).
If we detect a significant and negative relationship between maize prices and distance to market, it would confirm our first hypothesis, that search costs (proxied by distance to market) have a negative effect on producer prices.

The use of proxies to estimate search costs is common in the literature on this topic. In their study of small-scale farming households in South Africa, Randela, Alemu & Groenewald (2008) use distance to markets as a proxy for search costs (amongst other variables) to identify factors that determine the extent of commercialisation or market participation. Kuksov (2002) considers online marketplaces and the share of online sales as proxies for buyer and seller search costs and Benjamin & Lusht (1993) proxy the search costs associated with finding a rental apartment using the characteristics of the managing agent (e.g. whether they have a well-located rental office). Most studies (including this one) use proxies because of the dearth of data measuring specific transaction costs. Household budget surveys and agricultural censuses in particular do not tend to include a module directly measuring transaction costs, possibly because the large amount of detail that this would entail could make the survey unwieldy. Given such data constraints, we have selected distance to market as a proxy for search cost because of its relevance to the marketing structure of Tanzania’s maize market. The procurement of maize is a largely physical exercise that requires buyers to travel around villages visiting households, literally knocking on doors. The buyers travel mostly by bicycle (or sometimes on foot accompanied by a donkey), and some announce their arrival using a mega phone. The costs of their search process will be directly associated with the distance of the household from the market.

Our results are presented in the first column of table 5.6. They show that maize prices fall as the households’ distance to market increases, indicating that search costs may be an underlying factor. However, we cannot take these preliminary results at face value since we need to take a range of other variables into account in order to be able to control for variables that may affect our dependent variable, and to attain more robust results in general. To do this, we use model (2), a log linear OLS regression model that estimates the effects of distance to market on maize prices while controlling for other factors that may influence cash income:

$$logp_i = a logDM_i + \sum \delta X_i + \sum \delta Y_i + \mu_i$$  \hspace{1cm} (2)
Where $X_i$ is a vector of household assets that are likely to influence maize prices. These are dummy variables that indicate whether the household owns a radio, telephone, bicycle, motorcycle or car. We include radios and telephones in the list of assets because they represent the maize farmers’ access to information about prices, information that is likely to be used to decide when and where to sell all or some of their maize, particularly for producers who engage in speculation. The remaining assets are related to the households’ transport capacity. They reflect the capacity of maize farmers to move with their produce in search of better prices by, for instance, transporting their maize to the market. $Y_i$ is a vector of control variables composed of a set of household characteristics (age, gender and literacy of the household head and household size). It also includes controls for region and a dummy for seasonality that distinguishes between harvest and lean seasons. In addition, we include the average monthly maize price in Dar es Salaam with the control variables to account for the effects of national supply, demand and price conditions.

Here again, the results (presented in the second column of table 6) show a significant and inverse relationship between distance to market and maize prices, indicating the presence of search costs. Maize prices received by farmers fall as the distance between their household and the nearest marketplace increases.

Although significant, the measured effect of search costs as proxied by distance to markets is relatively small. The largest measured effect on maize prices comes from our season dummies, indicating the important role of seasonality on maize prices. There is also a statistically significant relationship between average monthly price of maize in Dar es Salaam and maize prices realised by households at the village level. In addition, household size is significant and positive, indicating that larger households receive higher prices. This may be because households with more family members have more individuals that can market produce in markets where prices are higher.

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72 VIF test results do not show a multicolinearity problem

73 Using the household’s distance to all-season passable roads in model (2) in lieu of distance to markets as a proxy does not yield a significant result. This is likely to be because this variable is only a partial measure of the households’ geographical position in relation to traders.
Table 5.6: Determinants of producer maize prices

<table>
<thead>
<tr>
<th>Model #</th>
<th>Without Controls</th>
<th>With Controls</th>
<th>Interaction Variable</th>
<th>Southern Region</th>
<th>Northern Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distance to market</td>
<td>-0.802***</td>
<td>0.221577</td>
<td>-0.01***</td>
<td>0.0019228</td>
</tr>
<tr>
<td></td>
<td>Age of household head</td>
<td>-0.0000164</td>
<td>0.0000964</td>
<td>-0.000015</td>
<td>0.0000095</td>
</tr>
<tr>
<td></td>
<td>Household size</td>
<td>-0.0013**</td>
<td>0.0005427</td>
<td>-0.0013**</td>
<td>0.000538</td>
</tr>
<tr>
<td></td>
<td>Season</td>
<td>0.0911***</td>
<td>0.003766</td>
<td>0.083***</td>
<td>0.003919</td>
</tr>
<tr>
<td></td>
<td>Gender of household head dummy</td>
<td>Female</td>
<td>0.001814</td>
<td>0.0036517</td>
<td>0.002374</td>
</tr>
<tr>
<td></td>
<td>Literacy Dummy</td>
<td>-0.0024653</td>
<td>0.0034142</td>
<td>-0.002183</td>
<td>0.003384</td>
</tr>
<tr>
<td></td>
<td>Owns radio</td>
<td>0.0028993</td>
<td>0.0033103</td>
<td>0.003185</td>
<td>0.003281</td>
</tr>
<tr>
<td></td>
<td>Owns phone</td>
<td>-0.0668***</td>
<td>0.0215497</td>
<td>-0.063***</td>
<td>0.021369</td>
</tr>
<tr>
<td></td>
<td>Owns bicycle</td>
<td>0.0019621</td>
<td>0.0032789</td>
<td>0.001766</td>
<td>0.003250</td>
</tr>
<tr>
<td></td>
<td>Owns motorcycle</td>
<td>-0.0019652</td>
<td>0.0125435</td>
<td>-0.002208</td>
<td>0.012434</td>
</tr>
<tr>
<td></td>
<td>Owns car</td>
<td>0.0190001</td>
<td>0.0236407</td>
<td>0.017455</td>
<td>0.023436</td>
</tr>
<tr>
<td></td>
<td>Price of maize in Dar es Salaam</td>
<td>0.7349***</td>
<td>0.006605</td>
<td>0.734***</td>
<td>0.006548</td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td></td>
<td>(Included but results not presented: significant at 1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interaction variable: distance to market * season</td>
<td>-0.007***</td>
<td>0.001053</td>
<td>-0.0029***</td>
<td>0.001953</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>223.87***</td>
<td>1.098909</td>
<td>1.513***</td>
<td>0.0360621</td>
</tr>
<tr>
<td></td>
<td>No. of observations</td>
<td>2750</td>
<td>2750</td>
<td>2750</td>
<td>1134</td>
</tr>
<tr>
<td></td>
<td>R - squared</td>
<td>0.0047</td>
<td>0.8348</td>
<td>0.8377</td>
<td>0.8194</td>
</tr>
</tbody>
</table>
It is interesting to note that none of the household asset variables is significant. The exception is the ownership of phones, which has a negative coefficient. This result suggests that ownership of a telephone is associated with a 6.7 per cent drop in prices maize prices received by farmers, which is a surprising result. Phones are typically associated with increased welfare and lower price dispersion through an information effect (Andrianarison, 2010; Rheingold, 2005). In our case, looking at asset ownership statistics, we find that less than one per cent of the households in our sample actually own a phone (table 5.7). So, it is likely that this effect is a random phenomenon in that data that is based in a spurious relationship as opposed to being a robust result. Alternatively, the few households in our sample that have a phone might not be using it to collect relevant market information for their maize sales. Overall, it is notable that the ownership of what we theoretically consider to be relevant assets such as bicycles, motorcycles and radios shows no real impact on prices.

Table 5.7: Asset ownership

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>1876</td>
<td>62.6%</td>
</tr>
<tr>
<td>Phone</td>
<td>13</td>
<td>0.4%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>1394</td>
<td>46.5%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>37</td>
<td>1.2%</td>
</tr>
<tr>
<td>Car</td>
<td>10</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Source: Author’s calculations from HBS 2007.

Returning to search costs, we now consider whether distance to market affects maize prices differently by season in order to test our second hypothesis: whether search costs are higher in the harvest season. As described previously, market conditions change significantly between the harvest and the lean seasons. The number of players (both buyers and sellers) declines during the lean season as the number of transactions falls. It is plausible that because of this, search costs will vary by season, giving a temporal dimension to market distances. To do this, we use an interaction variable to test the following model:

\[
\log p_i = a \log D M_i + \sum \beta X_i + \sum \delta Y_i + \gamma D M M + \mu_i
\]

(3)

Where DMM is an interaction variable between season and distance to market. We also interacted phones by season to explore whether the effect of phone ownership on maize prices varies by season and did not find a significant result. We have mean centred the distance to markets variable in the interaction to facilitate interpretation.
addition, we find that search costs are higher in the harvest season than in the lean season. This confirms our second hypothesis: that after controlling for the effects of seasonality, prices will dip lower for a given distance to market in the harvest season than in the lean season.

The robustness of this result could be affected if our season variable does not fully control for the effect of seasonality. In this case, the seasonal effect shown above might have been captured in the coefficient of the interaction variable, and may be influencing the results described above. The difficulty in adequately controlling for seasonality lies in the fact that regional variations exist in the timings of the maize harvest season. For instance, the harvest season in southern regions is concentrated around the months of July and August whilst northern regions such as Arusha and Kilimanjaro have an additional harvest season between November and December each year (RATES, 2003).

To tackle this, we apply model (3) individually to southern and northern regions using the relevant periods in defining the season variable. The results of this exercise presented in the last two columns of table 6 below confirm our previous results. Search costs are higher in the harvest season in both Southern and Northern regions.

**Other explanations and the strength of the proxy variable**

One of the challenges of using proxy indicators is the identification problem. Using distance to market as a proxy for search costs opens the possibility that our identifying variable measures factors other than search costs. If this is the case, then it would be difficult to attribute the results we describe in this chapter to the effects of search and information costs associated with farm-gate buying. The question is whether there are other reasons besides buyer search costs and seller information costs that would cause the prices received by households that are distant from the market to be lower than those nearer the market. We identify three such factors.

The first is competition. On average, rural trading businesses face competition from only five other businesses, providing each one with a relatively high market share (World Bank, 2007). In this context, maize growing households that are distant from the market may be reached by fewer buyers, creating an opportunity for monopsony rents that push producer

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76 Including transport.
prices down as the distance from market increases. In addition, since remote households tend to be more vulnerable, their bargaining power will be further diminished. This will be the case if buyers tend to concentrate around the village and market centres and avoid covering long distances in search of maize.

Nonetheless, this effect is unlikely to be present. In this scenario, we would expect monopsonistic market power at the village level to be most concentrated during the lean season when buyers are already relatively scarce. So we would expect remote households to experience a significant downward pressure on maize prices at that time. However, our results show the opposite effect, namely that maize prices decrease more with distance during the harvest, not the lean season. This leads us to conclude that weak competition and monopsony rents do not comprise an underlying and undetected factor influencing our results. It also corroborates the findings from our interviews with maize growing households, who reported that they do not generally have a difficulty in finding a buyer for their maize when they are ready to market it.

The second factor is volume. Remote households also tend to be more vulnerable and resource poor, particularly since they have limited access to infrastructure and social and economic facilities. If these households are also less productive, they may be making smaller volume transactions when it comes to selling their maize. In addition, small transactions are less attractive to buyers and may attract lower prices.

To explore this potential effect, we examine the farm size of households in relation to their distance from market in table 5.8 below. We use farm sizes as an indicator of the volumes of maize produced by farmers. Table 5.8 shows that relatively remote households do not tend to have smaller farm sizes than households located nearer to the marketplace. For instance, in the southern Iringa and central Dodoma regions, households in the middle tercile tend to have the largest farms whilst in the northern Arusha region, farm sizes tend to be similar irrespective of distance to market. This leads us to discount the possibility that small volume sales are another casual factor that has not been accounted for.

Besides competition and volume, other factors such as the quality of maize are unlikely to play a relevant role here. Production related quality issues can be significant but are likely to affect households irrespective of their distance to market. Storage related quality issues are

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77 Data of the quantity of maize produced by household was not available.
also important, particularly since only four per cent of maize growing households make use of effective storage facilities. On the whole, households do not tend to have adequate storage amenities and post-harvest losses can be large. Of the maize growing households that do store maize, only two per cent do so to sell it later in the season\textsuperscript{78}. Their main reason for storing maize is for household consumption.

The third factor is seasonal fluctuations in transport service prices. If higher demand for transport services during the harvest season causes truck and lorry rental prices to increase relative to the lean season, then the pattern we detect might simply be determined by price trends in the transport and logistics sector, not buyer search costs. However, when interviewed, maize buyers indicated that transport prices tended to vary with fuel costs rather than maize harvest seasonality. Rural transport vehicles tend to be engages year round in the transport of crops and goods other than maize so prices are not exclusively related to maize harvest seasonality. Moreover, they highlighted that transport costs also tended to rise during the wet season when many of the rural roads become difficult to navigate. Since the rainy season precedes the harvest season by over three months, this price increase would be felt in the lean season not the harvest season. Since the pattern we detect in our results moves in the opposite direction (higher costs during harvest season), we conclude that this is not an underlying factor that is behind our findings.

Hence, despite our use of distance to markets as a proxy variable for search costs, the absence of other influencing factors means that we can consider it to be an adequate proxy and we can consider our findings sufficiently robust.

\textit{Table 5.8: Household farm size by distance to market (terciles)}

<table>
<thead>
<tr>
<th></th>
<th>Iringa</th>
<th>Arusha</th>
<th>Dodoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>3.1</td>
<td>2.8</td>
<td>4.9</td>
</tr>
<tr>
<td>Middle</td>
<td>6.9</td>
<td>2.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Highest</td>
<td>4.0</td>
<td>2.7</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Source: Author’s calculations from HBS 2007.

\textit{Distance to markets, search costs and food security}

The most recent food security assessment of Tanzania conducted by the World Food

\textsuperscript{78} Tanzania Sample Census of Agriculture 2002/03.
Programme in 2005/06 indicates that the areas with the highest food insecurity are in the centre of the country (figure 5.13). The assessment shows that both of the most food insecure regions, Tabora and Singida, (in which over 50 per cent of households are labelled as food insecure) are slightly more reliant on purchasing food than on their own production (50-75 per cent purchased food, less than 50 per cent consumed from own production). High prices could potentially be responsible for this, but maize prices in Tabora and Singida were not in the highest two price quintiles in the period under review. Therefore, while maize prices may not be as high as in other regions, people in these central areas are unable to provide adequately for themselves (WFP, 2007).

*Figure 5.13: Household food insecurity map*

Search and information costs might provide part of the explanation for this. Distances to markets are highest for households in central areas, particularly Tabora, Singida and Manyara (table 5.9), suggesting a link between search costs and food insecurity. Food markets in maize producing villages are scarce, particularly in the central producing areas. Many villages do not have a marketplace or retail point where maize is sold in small quantities for household consumption. Since almost all the households produce maize, demand for purchased maize is low around the harvest season. When household maize stocks are depleted in the lean season, maize is purchased from neighbours that have
remaining stocks or from village-based buyers. As the year progresses, sourcing maize becomes more difficult and risky. Maize prices also hit their peak during this time of the year. Door-to-door buying of small quantities of maize from neighbours who are also concerned about their own household’s food security is not an efficient way of procuring maize. It increases the buyers’ search costs, limits their information about market conditions and prices, and reduces their bargaining power.

Table 5.9: Distance to market by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Description</th>
<th>Mean</th>
<th>Std. Err.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mtwara</td>
<td>Southern</td>
<td>0.21</td>
<td>0.037</td>
</tr>
<tr>
<td>Ruvuma</td>
<td>Southern</td>
<td>0.49</td>
<td>0.075</td>
</tr>
<tr>
<td>Lindi</td>
<td>Southern</td>
<td>0.67</td>
<td>0.115</td>
</tr>
<tr>
<td>Iringa</td>
<td>Southern</td>
<td>1.54</td>
<td>0.247</td>
</tr>
<tr>
<td>Mara</td>
<td>Northern</td>
<td>1.69</td>
<td>0.153</td>
</tr>
<tr>
<td>Morogoro</td>
<td>Southern</td>
<td>1.96</td>
<td>0.233</td>
</tr>
<tr>
<td>Mbeya</td>
<td>Southern</td>
<td>1.99</td>
<td>0.186</td>
</tr>
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<td>Kilimanjaro</td>
<td>Northern</td>
<td>2.10</td>
<td>0.183</td>
</tr>
<tr>
<td>Mwanza</td>
<td>Northern</td>
<td>2.82</td>
<td>0.326</td>
</tr>
<tr>
<td>Pwani</td>
<td>Coastal</td>
<td>3.14</td>
<td>0.378</td>
</tr>
<tr>
<td>Rukwa</td>
<td>Southern</td>
<td>3.19</td>
<td>0.379</td>
</tr>
<tr>
<td>Dodoma</td>
<td>Central</td>
<td>3.69</td>
<td>0.323</td>
</tr>
<tr>
<td>Arusha</td>
<td>Northern</td>
<td>4.66</td>
<td>0.638</td>
</tr>
<tr>
<td>Tanga</td>
<td>Coastal</td>
<td>5.05</td>
<td>0.385</td>
</tr>
<tr>
<td>Shinyanga</td>
<td>Central</td>
<td>5.70</td>
<td>0.364</td>
</tr>
<tr>
<td>Singida</td>
<td>Central</td>
<td>6.27</td>
<td>0.432</td>
</tr>
<tr>
<td>Manyara</td>
<td>Central</td>
<td>6.87</td>
<td>0.531</td>
</tr>
<tr>
<td>Tabora</td>
<td>Central</td>
<td>8.37</td>
<td>0.754</td>
</tr>
</tbody>
</table>

Source: Author’s calculations using HBS 2007 data.

An important route out of poverty for maize growers is the option of applying the available factors of production to an activity other than producing maize. With her land, labour, capital and knowledge, a maize grower may choose to grow an alternative high value crop such as sunflowers or other horticultural produce. The decision to do so would entail a shift for the household from producing their staple food to purchasing it. However, in the absence of a secure mechanism for purchasing food within the village, the risk of facing food insecurity may exceed the premium that could be attained from switching to higher value crops. The farmer is effectively locked in a cycle of food production for subsistence that prevents their entry into more profitable markets.

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79 Maize is an annual crop. Unlike perennial crops such as cashew, coffee or banana, the decision to plant maize must be newly made each year.
5.5 Other inefficient market institutions: weights and measures

Maize transactions at the village level are made using the traditional *gunia na debe*, or bag and bucket measurement system. As opposed to selling by the kilogram, maize is sold by the bag or by 20 litre bucket units. Cups or smaller paint buckets are also widely used for smaller transactions. The approximate relative measures are as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>English</th>
<th>Name Kiswahili</th>
<th>Description</th>
<th>Traditional conversion</th>
<th>Metric Conversion</th>
<th>Margin for error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup</td>
<td>Kilo Mbili</td>
<td>Long plastic cup</td>
<td>-</td>
<td>2 kg</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Small Bucket</td>
<td>Sado</td>
<td>Paint bucket</td>
<td>2 cups</td>
<td>3.75 - 4 kg</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Large Bucket</td>
<td>Debe</td>
<td>20 litre plastic bucket</td>
<td>4 – 5 tins</td>
<td>18 - 20 kg</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Bag</td>
<td>Gunia</td>
<td>Large litre polythene sack</td>
<td>6 - 7 buckets</td>
<td>100 - 140 kg</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author.

In principle, using bags and buckets to measure value is not so different from using pounds or kilograms if the measure captures quantity in a constant and comparable manner across the market chain. This, however, is not the case in Tanzania’s maize market\(^80\). The bag and bucket system prevails in villages, whilst metric measures are used in towns and cities. The bag and bucket system itself is not uniformly applied. For instance, a bag consists of six buckets in some areas but consists of seven in others. The phenomenon of the overspilling maize bag is well recognised in the market and is commonly known as *Rumbesa*. It is interesting to note that *Rumbesa* is more prevalent in southern producing areas, where farm-gate buying is dominant, than in the northern maize producing regions, where maize producers have more access to marketplaces.

This weights and measures system establishes an asymmetry of information between the buyer and seller. Village buyers establish market prices in kilograms before setting their village buying price for the day in bags and buckets. Their incentive, therefore, is to maximise the number of kilograms they collect at the village. The techniques used include heaping and shaking the buckets and bags and lengthening the polythene bags with additional materials to hold excess maize. By contrast, maize producers are under-informed price takers. Most of them do not own scales, or if they do, they do not use them when

\(^{80}\) This also applies to most other food crops.
selling maize. Their lack of capacity to monitor the market values of their transactions leaves them open to losses from underselling their maize.

The bag and bucket measures system weakens market outcomes in two ways. First, it creates an opportunity for traders to extract rents. An enticing opportunity exists to extract rents through a weights and measures system that reduces producer prices. The market player that can do this is the trader that buys in bags or buckets in the village and sells in kilograms in the town markets.

The table above shows the potential surplus (being the loss to the producer) that could be earned by such a trader, particularly when transacting with poorly educated rural producers. The second is the information effect. The system reduces the level of information and the monitoring capacity of the maize producer. Information is critical both for making the correct marketing decisions and for bargaining power. A producer that transacts in bags and buckets without using scales will find it very difficult to calculate the value of their sales and to compare it with kilogram-based prices in the nearest town’s market.

The bag and bucket measures system is deeply embedded in the market. Supplanting it will be a lengthy and difficult process. Most maize producers have no access to scales. They have never sold maize in kilograms and would feel highly uncertain when transferring to a new measurement system. The largest resistance, however, is likely to come from traders, who stand to lose from a reform of market measures. The large proportion of maize transactions that take place at the farm gate are difficult to monitor, and in the absence of other marketing channels, the buyer’s power is relatively concentrated.

5.6 Concluding remarks

A significant quantity of Tanzania’s maize is produced by smallholder farmers. This group includes a large proportion of Tanzania’s poorest households, making maize one of the key markets for poverty reduction. The maize market reforms have had some important positive outcomes for maize growers. Market prices have risen and the area of maize under cultivation has increased. Yet despite the gains accrued through the reform effort, the maize market still suffers from some serious institutional weaknesses.

We argue that farm-gate buying is one of those weaknesses. In the post-reform period, farm-gate buying has emerged as the most prevalent mechanism for marketing maize in
many regions of Tanzania even though the search and information costs linked with farm-gate buying are high. We showed that the dispersion of maize growers and the farm-gate buying system make transaction costs such as search and village to town transport particularly high and unresponsive to economies of scale, so much so that they may widen the price gap, causing a downwards pressure on producer prices. We also showed that since non-local buyers enter the market and search for maize more actively when maize is abundant, buyer search costs incurred are likely to be higher in the harvest season than in the lean season.

To explore the efficiency (or otherwise) of farm-gate buying, we tested the effects of search costs associated with farm-gate buying on producer prices using household budget survey data. We also tested for the presence of seasonal variations that may cause search and information costs to vary by season. To do this, we used households’ reported distance to markets as a proxy for search costs in an OLS regression model. We additionally included an interaction variable in the model to examine whether these costs affect producer price differently by agricultural season. After controlling for a range of factors that are likely to influence producer prices, we found that producer prices do indeed fall as the households’ distance to market increases and that this effect is intensified during the harvest season.

We also briefly explored whether households that are distant from the market face a higher risk of food insecurity. We found that central regions (such as Tabora, Singida, Dodoma and Shinyanga) that have the highest mean household distance from markets have also been reported by the World Food Programme to be the most food insecure regions. Lower producer prices in those regions and the inaccessibility of retail food markets for purchasing food within the village may increase the risk of food insecurity and reduce the livelihood options of poor maize producers.

Lastly, we briefly discussed how maize producer information and bargaining power are limited by the bag and bucket weight and measures system. This system creates an opportunity for traders who buy in bags or buckets in the village and then sell in kilograms in the town markets to extract information rents that reduce producer prices.

Reducing search costs is clearly important for increasing market efficiency and prices for remote maize producers. However, the following questions remain: if farm-gate buying is an inefficient institution, why haven’t more proximate village marketplaces emerged by
themselves? And what explains the regional variations in distance to markets\textsuperscript{81}? 

The group that benefits the most from the absence of marketplaces is the village-based buyers. They are well known in the village. Their local market knowledge is high, and their search costs are relatively low. They tend to be approached by maize growers who need to sell during the lean season, further reducing their search costs at that time of year, and their need for the marketplace. The value of their business model when they act as buying agents for buyers from outside the village is based on personal local contacts and knowledge, which would be lost if the external buyers had more direct access to producers. The marketplace would also lessen the dependence on the collection function as more maize producers gain direct access to the market. It is natural then that the village buyers would discourage the emergence of the local marketplace in order to protect their market shares.

Maize producers and non-village-based buyers that have high search costs would benefit from better coordination through markets. However, these are relatively large groups. Maize producers tend to sell on an \textit{ad hoc} basis depending on when household need arises. Coordinating themselves, given their size and their sales pattern is extremely difficult. Non-village-based buyers face a similar predicament. They come from widely dispersed areas and do not have an effective platform to meet and coordinate solutions that reduce their transaction costs.

Given the above, the key players in establishing village marketplaces must be the local village and district authorities through their mandate to deliver public goods and services. Establishing marketplaces in rural villages (in parallel with farm-gate buying) is an intervention that would go a long way towards overcoming many of these constraints. It would reduce search costs for a large proportion of buyers, increase price information for producers and create a reliable retail market for food in the village. It could also create a platform for introducing interventions that aim to increase the volume of properly measured maize transactions. This is particularly important for rural districts with a high proportion of food producers and villages that are distant from the road network and the ward centre. The central maize producing regions fit this profile.

Having said this, it is important to note that rural marketplaces are not a panacea. Opportunities for rent seeking abound therein, including local government taxes and

\textsuperscript{81} These questions will be addressed more fully in the chapter six.
market operations by traders to gain control and market share. Therefore, a purely market-based selling system for maize might not necessarily lead to a better outcome for small farmers. It may be that a combination of well-governed marketplaces in parallel with farm-gate buying would increase the access of maize farmers to competitive markets with low transaction costs.
### 5.1 Summary statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household size</td>
<td>5.0</td>
<td>2.94</td>
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<td>32</td>
</tr>
<tr>
<td>Age of head of household</td>
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<td>97</td>
</tr>
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<td>Distance to market (km)</td>
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<td>35</td>
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<tr>
<td>Dar es salaam maize price (Tsh)</td>
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<td>52.02</td>
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<tr>
<td>Male head of household</td>
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<tr>
<td>Literate head of household</td>
<td>66%</td>
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<td></td>
</tr>
<tr>
<td>Owns radio</td>
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<td></td>
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<tr>
<td>Owns phone</td>
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</tr>
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<td>Owns car</td>
<td>0.3%</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owns motorcycle</td>
<td>1.2%</td>
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<td></td>
<td></td>
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<td>Owns bicycle</td>
<td>47%</td>
<td>0.01</td>
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</table>

Source: Author’s calculations using HBS 2007 data.
## 5.2 Coefficient of correlation table

<table>
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<th></th>
<th>Season</th>
<th>Region</th>
<th>Gender</th>
<th>Age of household head</th>
<th>Literacy of household head</th>
<th>Household size</th>
<th>Distance to market</th>
<th>Radio</th>
<th>Phone</th>
<th>Car</th>
<th>Motorcycle</th>
<th>Bicycle</th>
<th>Dar es Salaam maize price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Season</td>
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<td></td>
<td></td>
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</tr>
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<td></td>
</tr>
<tr>
<td>Literacy of household head</td>
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</tr>
<tr>
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</tr>
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</tr>
<tr>
<td>Phone</td>
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<td>0.0115</td>
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<td>0.0377</td>
<td>-0.0006</td>
<td>-0.0085</td>
<td>0.0513</td>
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</tr>
<tr>
<td>Car</td>
<td>0.005</td>
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<td>0.0089</td>
<td>0.024</td>
<td>0.018</td>
<td>0.055</td>
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<tr>
<td>Motorcycle</td>
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<td>0.0033</td>
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<td>0.0319</td>
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<td>0.0102</td>
<td>-0.0024</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Author’s calculations using HBS 2007 data.
Groups, Influence and Institutional Change in Tanzania’s Coffee and Maize Markets

The aim of this chapter is to bring our theoretical framework and case studies together. Here, we apply the hypotheses and propositions made in the theoretical framework (chapter three) firstly to the events surrounding Tanzania’s agricultural market liberalisation reforms and then to the analyses of case studies of institutional inefficiency in the two preceding chapters (chapters four and five).

The theoretical framework addressed how diverse groups with conflicting institutional preferences and different levels of influence attempt to capture market institutions. We hypothesised in the theoretical framework that the relative power of each group to influence the regulatory structure is described by the levels of access of the various market groups to information, to other demanders of institutional change (e.g. capacity for collective action) and to the suppliers of institutional change (such as local and village government authorities). We expect that agents who are well informed about the institutional framework within which they operate, and who have a high level of access to other demanders and the regulatory providers of institutional change will be more effective influencers. The theoretical framework also set out a hierarchal framework for mapping key market players by their elite or non-elite status.

In this chapter, we apply our hypotheses to our case studies to examine the extent to which influence costs can determine the balance of power between the demanders and the suppliers of institutional change and how they have changed.

We commence section one by providing an overview of the pre-liberalisation reforms that were experienced by Tanzania’s agricultural markets. This varied set of institutional changes took place between the 1960s and the 1980s. This section provides a useful context for the following section, which describes the main stages of the agricultural market liberalisation reforms between the late 1980s and the 1990s. Having done this, we then move on to
analyse our above described hypotheses and the distributional conflict dynamics surrounding the liberalisation reforms, with an emphasis on the role of the cooperatives and the elite capture of state institutions, particularly at the local government and village-levels. In section two, we apply the same analytical questions and tools to the two case studies addressed in chapters four and five: grading and contracting in the coffee market and farm-gate buying in the maize market.

Overall, this chapter demonstrates that the path of institutional change is far from straightforward. Ponte (2002) summarises it well when he states that institutional reforms:

“ cannot be characterised simply by a hegemonic position of the national government over local governments and private interests, but rather by a mixture of sudden changes, creative interpretation, partial reversals, shifting alliances and local level resistance.” (Ponte, 2002, p.110).

The “shifting alliances and local level resistance” described in this chapter are essentially characterised by the cooperatives’ capture of local and village governments during the liberalisation reform period and subsequently by the growing power of private traders to influence markets and institutions and to enjoy outcomes favourable as they gained a strong foothold in the market and began displacing cooperatives. We present this shift in the position of the private sector players from being non-elites to becoming an elite group by showing how it is related to the reduction of their influence costs in the post-liberalisation period.

6.1 The Liberalisation Reforms

6.1.1 Pre-liberalisation reforms in coffee and maize markets (1962 – 1982)

Coffee was introduced to Tanzania as a commercial estate crop early in the 20th century. German settlers established the crop on large estates and an out-grower system eventually grew around it, which is how it evolved into a smallholder crop. Cooperatives were an early phenomenon in the coffee market and facilitated the spread of coffee cultivation amongst Tanzania’s rural population. The earliest cooperatives (both expatriate and native) emerged in the 1920s and 1930s and were active in promoting coffee as a smallholder crop. A network of primary societies emerged representing a village or a group of villages that joined to form an apex cooperative, the most well known being the Kilimanjaro Native
Cooperative Union. Having been born organically, the cooperatives were later taken on by the new post-independence government, which expanded them into wider areas. New cooperatives were created and spread around the same period as the villagisation movement was underway.

At first, coffee marketing was exclusively handled by cooperatives and the Tanganyika Coffee Board. Regional cooperative unions purchased coffee from farmers through primary societies, which managed the process of collecting coffee from producers and bulking it into large consignments. After milling, the coffee was then auctioned by the Board to private exporters. This was the first stage at which coffee would first enter into the hands of the private sector.

In May 1976, the government abolished all cooperative unions. The Tanzania Coffee Board was renamed the Coffee Authority of Tanzania and was given all the post harvest functions that had been previously handled by the cooperatives. However, this new market structure lasted for only a short period. In 1982, cooperative unions were re-established and, along with the primary cooperative societies, they conducted all primary coffee marketing once again. The cooperative union collected coffee, processed it in its curing factories and delivered it to the Tanzania Coffee Marketing Board (formerly the Coffee Authority of Tanzania), which continued to conduct the auction for private sector exporters. Under this set-up, the cooperative unions based their transactions with coffee farmers on a contingent contract, whereby a first payment is made to the farmer upon collection based on an announced price, and a final payment is made after coffee was finally auctioned to exporters. Growers’ first payment was fixed on a pan-territorial basis. The final price received by the coffee farmers was contingent on the price realised at the auction, being a residual of the net auction price after the cooperative’s handling and marketing costs, which were often very large (Ellis, 1983).

On the whole, primary coffee marketing (being the coffee farmers’ first transaction) was a monopsonistic system from independence in the 1960s to liberalisation in the 1990s. It was also a costly system that was burdened by bureaucracy and rent seeking, the overheads and cost of which were borne by coffee farmers. The system also placed considerable risk with

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82 The Union consists of 93 primary societies (Baffes, 2003).
83 Besides their legal monopoly in selling coffee to exporters through the auction, the marketing board carried out regulatory functions and supplied inputs to farmers for coffee production.
the cooperative unions. Price fluctuations meant that the cooperatives were liable to accumulate significant losses if market prices fell below the announced pan-territorial prices paid to farmers in any season. Besides this, the cooperatives had a poor financial and general management capacity. They eventually amassed huge losses and tended to be bailed out by state intervention. Price risk was not the cooperatives’ only predicament. They operated using poor and rapidly degrading facilities and the complexity of their business operation exceeded their management capacity levels. What is more, weak supervision and poor incentives led to widespread misappropriation of funds.

Throughout this period, coffee estates were being nationalised. The estates had been developed during the colonial period in the early 1920s, when German settlers obtained titles for land to grow new crops. Some of the coffee grown on these estates was of very high quality (Ponte, 2004). Within a period of six months, all Kilimanjaro estate owners with farms larger than 50 acres left their estates in late 1973 as the government of the time announced that their estates would be bought by the primary societies of the Kilimanjaro Native Cooperative Union. Estate production accounted for 10 per cent of coffee produced in the late 1960s and declined to only about 5 per cent of total production by the late 1990s.

The maize market’s pre-liberalisation reforms took a path that is in many ways similar to the coffee market’s experience. At independence, Tanzania had a maize marketing system based on a mixture of cooperatives, private (mostly Asian) traders and marketing boards. Tanzania’s new post-independence government encouraged rural populations to form agricultural cooperatives. The objective was to strengthen existing cooperatives and to develop new ones as a means of bolstering economic independence. Historic animosities between the Asian minority and the African Tanzanians, stemming from the former’s control of agricultural marketing and distribution, were also a major motivating factor behind this in that cooperatives would assist the native population to push out the Asian middlemen.

As was the case in the coffee market, the Nyerere government abolished the maize marketing cooperatives in the mid 1970s. The political leadership had established a set of new parastatal authorities with powers to engage in agricultural marketing and that were ready to take on the function previously carried out by the cooperatives. The National Milling Corporation (NMC) took the lead role in maize marketing. It became responsible for maize marketing across the supply chain from village to national level. The NMC did
not only market maize but also processed, stored and sold other grains such as rice, sorghum, millet and cassava. Coordinating its marketing functions (in addition to some other functions such as research and extension) across all of Tanzania was a challenging task. Because of this, a mechanism was developed whereby maize and other grain marketing was coordinated with the activities of the other agricultural marketing parastatals (such as the marketing agencies for tea, coffee and tobacco). Each parastatal coordinated the marketing of all the relevant produce in a specific set of districts. The parastatals then exchanged commodities and netted the financial transactions that had taken place between themselves. This system was designed to rationalise the transport and logistics burden, but it simply proved to be too challenging to the NMC and the other parastatals in terms of record keeping and accounting requirements. For these reasons, the area-based procurement system was abandoned in 1979 for a crop-based arrangement.

The NMC procured maize either directly or through registered villages. Registered villages were officially considered to have adequate financial capacities to handle and account for the task at hand. A village council that acted as a buying agent for the NMC was typically appointed. They would be advanced the funds needed to procure maize and would also receive a 9 cents per kilo commission, or village levy, that was to be used for village development purposes (Nindi, 1990). The NMC would then collect the maize from the villages or other appointed collection points. This entire system was deeply flawed and was subject to a significant level of corruption, as described by Nindi (1990):

“Village secretaries who did the purchasing were encouraged to do so on a self-help basis, with the aim to reduce costs of marketing at the village-level to a minimum. Since the vast majority of villages did not have bank accounts, payments had to be made in cash, making theft and the more casual leakage of funds very common. Financial loss, through mismanagement and theft, occurred at various points and with various agents. First, robberies occurred en route from NMC regional headquarters to village buying posts, which necessitated police escorts in many areas, thereby boosting marketing costs. Second, there were cases of NMC personnel absconding with funds. Third, village officials were often found to be siphoning off funds.” (Nindi, 1990, p. 206).

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84 At the time, the several grain marketing boards were working with around 20 regional unions composed of some 2,300 cooperative societies (Ellis, 1983).
Eventually, the scope of the NMC’s planned operations exceeded its financial management and planning capacity. High marketing costs and widespread corruption took their toll on the Corporation. This effect was exacerbated by the grain pricing policies that were in place at the time, which placed control of buying and selling prices outside the hands of the NMC. This eventually necessitated the reinstatement in 1984 of the regional cooperatives that marketed maize. The cooperatives took over primary marketing, with the NMC managing the national marketing of maize.

At the same time as the public procurement system was creaking under the pressures of its own inadequate design, a parallel market (black market) for the trading of maize and other grains emerged and prospered. Large amounts of maize were traded through this channel, which at times was the only avenue for the sale of maize in some areas. Coulter and Golob (1992) estimate that during the 1980s, when the state was officially in control of maize marketing, its control of domestic maize marketing never exceeded 14 per cent of estimated production. They also show how unofficial maize prices significantly exceeded official prices in both surplus and deficit years (table 6.1).

| Table 6.1: Estimates of farm-gate prices in Mbozi district in surplus and deficit years (1991 costs) |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| **Price of maize at DSM (US$)** | **Official rate** | **Surplus year** | **Parallel rate** | **Deficit year** | **Parallel rate** |
| 110² | 110² | 140² | 140² |
| **Price in Tsh** | 25 300 | 39 609 | 32 200 | 50 400 |
| **Movement charge (2.5%)** | 632 | 909 | 805 | 1 206 |
| **National charge for storage and interest on capital (5%)** | 1 266 | 1 989 | 1 810 | 2 520 |
| **Parity price for shipments of 10 tonnes or more** | 23 400² | 38 639² | 34 715² | 54 180² |
| **Less margin for interregional shipment** | 20 000 | 20 000 | 20 000 | 20 000 |
| **Wholesale buyer’s selling price (Mtozzi)** | 3 402 | 18 629 | 14 715 | 34 180 |
| **Less primary marketing margin** | 2 500 to 14 500 | 2 500 to 14 500 | 2 500 to 14 500 | 2 500 to 14 500 |
| **Farm-gate price** | –11 097 to 933 | 2 139 to 14 139 | 715 to 12 215 | 19 680 to 31 680 |

*All values in Tsh unless otherwise stated. \² Official rate: US$1 = 230 Tsh. \³ Parallel rate: US$1 = 360 Tsh. \⁴ Feb. \⁵ Cf. \⁶ Export parity. \⁷ Import parity. Source: Coulter & Golob (1992).*

The experiences of the coffee and maize markets are fairly similar because many of Tanzania’s agricultural markets simultaneously underwent these varied pre-liberalisation reforms. However, one of the main differences between the maize and coffee markets is the presence of the coffee auction and the important role of private sector exporters. Being an export commodity, control over coffee marketing was not fully assumed by the post-independence government. Foreign exporters continued to procure coffee at the Moshi auction, which has proven to be a resilient institution. Maize on the other hand was a
national priority crop in terms of food security, and full control over its marketing was considered to be a matter of national autonomy.

One of the main reasons why the Nyerere government decided to abolish the cooperatives in both the coffee and maize sectors between 1973 and 1984 was the political threat they had begun to pose to the new post-colonial administration. As they expanded, the cooperatives’ outreach grew to encompass a large part of Tanzania’s rural population. Cooperative leaders, although not direct political actors, were becoming powerful figures as a result of their grassroots power. Their power was at its peak as the Nyerere’s villagisation movement was getting under way. The tendency of the cooperative leaders to voice opinions that differed from those of the political leaders, and to draw massive crowds when they did so proved to be unacceptable, particularly when they criticised the villagisation movement. For these reasons, the cooperatives were effectively brought under the control of the government and its ruling CCM party when they were reintroduced in the mid-eighties. Three main measures facilitated this move. These were the establishment of regional cooperatives to break up national unions and to broaden government control, government control of the recruitment of union staff and intervention in the election of cooperative committee members. This move reduced the political threat that the agricultural cooperatives brought to the political leadership, which was arguably a prerequisite for their return to primary marketing. It was a move that disrupted the internal governance structure of the cooperative movement, and that transferred cooperative ownership from the farmers to the political elite. However, at the same time, it also brought cooperatives and governments closer together. Hence, immediately prior to liberalisation, coffee cooperatives found themselves more closely associated with the Coffee Board and central government and the maize cooperatives to the central government as well as the National Milling Corporation than ever before. The locally elected district councils were also subjected to a similar treatment (being abolished at the same time as the cooperatives and later being reinstated and infiltrated by central government agents) because they were also perceived to have posed a political threat.

6.1.2 The liberalisation reforms in coffee and maize markets (1983 – 1995)

The maize market liberalisation reforms commenced in the early 1980s at a time when the agricultural marketing system and the macroeconomic fundamentals were in a state of collapse. They began with a wave of privatisations, after which the restrictions on the
official participation of private traders began to be eased in 1983. Initially, the quantities of maize that they were permitted to handle increased from 30 to 500kgs, and in 1987, the restrictions were removed altogether (Coulter & Golob, 1992). Eventually, pan-territorial prices were abolished and private buyers were permitted to enter the market without restriction.\(^85\)

The liberalisation process of the coffee market commenced later, in 1990. The reforms began with the transformation of the Tanzania Coffee Marketing Board from a marketer to a marketing agent that administered the auction in which cooperatives sold to private exporters in return for a 1.6 per cent fee. This was followed in the 1992/93 season by an end to the announcement of prices to be paid to coffee growers upon collection by the unions. Unions were allowed to determine their own prices. This move was followed by the opening of input markets to private suppliers and traders.

The most profound change brought about in this period was the opening of domestic marketing of coffee to private businesses, which took effect in the 1994/95 season after the adoption of the Crop Boards Act of 1993. The Act allowed private buyers to enter into domestic marketing for the first time in three decades and to compete for market share with the cooperatives. The Tanzania Coffee Marketing Board was once again renamed under its original and current title of Tanzania Coffee Board.\(^86\)

The effects of the reforms on market shares were immediate. For instance, Baffes (2003) reports these effects in the coffee market as follows:

“Before 1994, 75 per cent of coffee was marketed by cooperative unions, 19 per cent by other government organisations, and 6 per cent by private estates. Four seasons later the market shares were 67 per cent by private buyers, 26 per cent by cooperative unions, 7 per cent by estates, and 1 per cent by other governmental organisations.” (Baffes, 2003, p.9).

The extensive literature reviewing Tanzania’s experience with the market liberalisation reforms after the initial period generally presents a more varied picture of how the reforms had positive impacts in some ways whilst they were negative in others.

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\(^85\) See annex 6.2 for a map of maize marketing structures pre and post-liberalisation reforms.

\(^86\) See annex 6.3 for a map of coffee marketing structures pre and post-liberalisation reforms.
Mwakalobo and Kashuliza (1999) show that the liberalisation reforms resulted in costlier and generally lower access to inputs in some rural areas. They attribute this to the removal of input subsidies and currency devaluation. As a result of this, farmers’ yields have declined and in some instances, they have reduced the size of areas under cultivation. They conclude that increased government intervention in markets is needed to amend market failures and to realise the gains that were expected from liberalisation.

In his analysis of agricultural market liberalisation reforms, Cooksey (2003) presents a more nuanced picture. He describes the reforms as having been successful in the sense that a sufficient and increasingly varied selection of foods (including poultry and livestock) are available to feed rural and urban populations. They have however been less successful in export crop markets and in giving farmers access to agricultural inputs such as fertilisers and seeds.

Sen (2005) also examines the impact of economic reforms on smallholder agriculture. Similarly to Cooksey, Sen describes a mixed performance. He finds that export crops such as cashew nuts have shown a significant positive supply response in the post-liberalisation period whilst the production of food crops has shown stagnancy. This is partly explained by the terms of trade, which declined for food crop and improved for export crops. At the same time, the producer price shares of producers growing food crop such as maize went up significantly whilst those of export crop growers such as coffee, tea, cotton and tobacco growers declined. Sen (2005) additionally notes that despite a large surge in private sector activity, structural weaknesses in agricultural markets have dampened the potentially positive impact of the economic liberalisation reforms. These include weaknesses in agricultural marketing, government failures and market failures, especially in the credit and agricultural inputs sectors.

Cooksey considers the reforms to essentially have been a “flirtation” with liberalisation in that they had not taken place to the extent initially prescribed. Since then, Cooksey notes that regulators have been gradually reversing the changes that introduced the free market even though public discourse may not acknowledge this shift. For instance, officials have been running market unfriendly policies and passing laws that are increasingly statist in the nature, such as the crop boards acts. This view that the reforms have been undergoing several reversals, particularly in export crop markets is backed up by the World Bank (Government of Tanzania & World Bank, 2004) in a review they conducted of the four major commodity crops.
These analyses support the hypothesis that the roll out of the liberalisation reforms was problematic in that it mobilised an internal resistance that underlies the tensions and reversals described by these studies. There is however less consensus as to whether the liberalisation reforms were adequate to start with in terms of being suitable and sufficient for creating outcomes that lead to higher productivity, market efficiency and poverty reduction.

Even though the success of the liberalisation reforms is questioned, it is certain that they caused the marginalisation and eventual dismantling of many state institutions. The numerous parastatals that had been created to govern the markets and to replace private business functions in the economy were hit hard. By 1979, 380 parastatal agencies had been established (up from just 20 in 1968). Their rapid growth effectively created a bureaucratic class that had to be displaced as reforms were rolled out (Ellis, 1983). These agencies lost many of their powers when markets were liberalised and even many of their bureaucrats lost their positions as the privatisation process kicked-off.

This influential group represented what could have been a strong opposing force to the reforms. In the periods surrounding Tanzania’s independence, the few state functionaries that existed were in the central role of African elite leaders for the purposes of state building. This group grew exponentially in the 1970s and early 1980s (Ellis, 1983). It was critical for Tanzania’s state building that it grew as a cohesive group. The organisation of other potentially powerful groups such as trade unions or the capitalist class was disrupted by political leaders (Khan, 2010). When cooperative leaders emerged as a competing power, their threat was effectively neutralised as described in previous sections. Hence, in this context, alienating a significant share of the political and bureaucratic elite would have been problematic for what Khan (2010) characterises as the political settlement. Their incentive to disrupt the political settlement and the economic reforms would have been high because being displaced would have drastically raised their influence costs and reduced their power. So what happened to this group in the immediate post-reform period?

The parastatal agencies were largely a part of central government apparatus. But this group was too large and dispersed to be absorbed by the Dar es Salaam based central government agencies when they had to be scaled down or privatised. A solution had to be found that prevented the total displacement of this group. It is likely that this was one of the main
motivating factors for reinstituting and extending the administrative apparatus of sub-national government, particularly the district councils. Locally elected district councils had been effectively dismantled between 1972 and 1984\textsuperscript{87} in an attempt to eliminate open politics at the local level (Seppälä, 1998)\textsuperscript{88}. Central government (including the parastatals and regional secretariats) carried out all administrative and agricultural marketing functions at the local level.

The district councils (and cooperatives) were reintroduced with the Local Government Act of 1982 (effective in 1984). Subsequently, as the reforms picked up momentum, their role became better defined with the Local Government Act of 1999, the Regional Administration Act of 1997 and a constitutional revision that institutionalised the role of these sub national tiers of government\textsuperscript{89}. Since then, district governments have grown in numbers and a decentralisation reform process was set in motion. And although there has been a renewed rhetoric relating to empowerment at the local level and some transfer of competences from central to local governments, the transfer of power has been limited. For instance, although village governments reacquired policy space to enact regulations relating to marketing, taxes etc, central government controls the appointment of senior and technical staff, the amount and allocations of sub-national public expenditure and the strategy for public service delivery.

The political and economic reforms in Tanzania demonstrate the oscillation of power between rural and urban elites that took place between 1970s and 1990s. The urban political leadership initially neutralised the nascent rural political powers of the cooperatives and locally elected district councils by abolishing them entirely. Later, these organisations were reinstated but with a fundamentally changed governance structure that was no longer independent. Therefore, it can be said that a shift of power from rural to urban political elites was successfully orchestrated. But what is notable throughout this period is the relatively stable position of village power. The planning process in Tanzania had involved village institutions since the Arusha Declaration. Village affairs had been discussed and decided upon in the village council that had subcommittees covering key local issues such as nutrition and agriculture. They continued to influence small decision in their local arena such as some local levies and a level of market regulation, but also local governance

\textsuperscript{87} This was the same period that the agricultural cooperatives were also dismantled.
\textsuperscript{88} In 1961, 17 district councils were in place. By 1972, this number grew to 66 rural and 15 urban councils that were run mostly by locally elected officials (URT, 2010).
\textsuperscript{89} In this context, local government in Tanzania is a tier rather than a separate sphere of government.
issues. Moreover, prior to Tanzania’s adoption of a multi party democracy system of governance, there was little distinction between the state and the political party (the Chama Cha Mapinduzi) and the village governments were no different. So although Tanzania’s villages had a well established political role throughout the liberalisation reforms, they do not seem to have been perceived as a large threat that needed to be managed, as had been the case for the district councils and cooperatives. Although both were rural based power elites, the critical distinction is likely to be that cooperatives and district councils engaged in open politics of a type that could spill and spread whilst village power was isolated and confined to a small locality.

Hence, to a large extent, the initial drive behind Tanzania’s decentralisation processes could be viewed as mechanism by which a political settlement was reached that prevented the total marginalisation of the large portion of the political elite. This is in opposition to the common view that the decentralisation reforms are a genuine attempt at devolving power away from Tanzania’s central political leadership to the local level in pursuance of better governance and service delivery. However, it is highly questionable whether this strategy for compensating the potential losers of the reforms and consolidating political power was fully successful. Although it has undoubtedly contributed to Tanzania’s enviable level of political stability, it did not prevent distributional conflict and local resistance to economic reforms.

The agricultural market liberalisation reforms did not take place overnight in either the coffee or maize markets. In fact, it was a fraught and drawn-out process that involved many reversals and interpretations. Old laws, regulations and procedures remained in place or were, at best, slowly abolished. At the same time, new rules were introduced that were designed to reverse the effects of liberalisation reforms. These were often used as tools to hamper the operations of the new private sector entrants. For instance, new licensing requirements, taxes and levies were instituted. Coulter and Golob (1992) describe the crooked path taken by the liberalisation reforms well. They describe how strong vested interests in the cooperative-based single channel marketing system sought to maintain the status quo by making it difficult for new players to enter the market:

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90 Although they are relatively micro decisions, their macro impact could significant as will be discussed in later sections.
“...traders were not allowed to buy from farmers but were obliged to deal with the primary societies, at the official price of 30 Tsh/kg, and only if the cooperative union did not wish to buy from them. Permits issued by the District Commissioner restricted the areas in which a trader could operate and the quantity he was allowed to purchase. Moreover, the trader had to pay no less than five separate levies and taxes. Even in areas where trade was permitted, restrictions could be imposed whenever regional or district authorities deemed there to be a shortage of grain.” (Coulter & Golob, 1992, p422).

6.1.3 Distributional conflict during the liberalisation reform era

The quote above is very revealing in that it demonstrates the role of key players such as district commissioners and local government in general. Notably, much of this freedom to intervene in the progress of the agricultural market liberalisation reforms was in the hands of the local and village government authorities, whereas the common perception was that the reforms were singularly determined by central government. In general, local and village governments were not under the intense scrutiny of either central government or the international financial institutions when the reforms were taking place.

Central government did indeed drive and externally show support for the reforms owing to being under pressure from a collapsing macroeconomic framework and their need for donor support. Even though Tanzanian leaders may have recognised the need for change in agricultural markets, they were never fully convinced of the liberalisation project. Rather, the reforms were forced by economic circumstances and pressures from international financial institutions such as the World Bank and the IMF. Privatisation in particular naturally clashed with the socialist ideology of the political leadership. It also raised lingering fears from the colonial era that the means of production would fall into non-indigenous Tanzanian hands, especially the Asians.

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91 Annex 6.1 describes the various levels of local and village governments.
92 At the time, not all of the groups were opposed to the reforms. The most educated indigenous Tanzanians tended to be bureaucrats working in the public sector, with no business experience. Nevertheless, there was a group of retiring state bureaucrats associated with agriculture that wished to venture into commercial agriculture and to engage in private businesses without the hindrances associated with public sector’s control of markets (Nindi, 1990).
The agricultural market liberalisation reforms were poorly understood by local governments and poorly communicated to them. They had not been an important part of the decision-making process and design of the reforms. In effect, the reforms were a top-down directive that came with limited or patchy guidance. Jaffee (1994) for instance, reports how local governments learned of agricultural market liberalisation reforms through radios and newspapers and received no official documentation in the initial periods.

Besides local governments, village governments in particular have historically had a strong mandate to govern the affairs of the local residents and have also played an important role in determining the path and success of the reforms. In fact, many residents of rural Tanzanian villages have little knowledge of the activities of government at the central, district and ward levels, whilst they are aware of the daily impact that village and sub-village-level authorities have on their lives (James, Mdoe and Mishili, 2002). In Tanzania, the village is more than just a geographic space. It is also a social and administrative unit where decisions are taken, taxes are levied and investments are made. Villages have an internal governance mechanism that permits them to select their own leadership by electing a village chairman and committee. Village-level consultations between the leadership and the population are expected to take place through pre-planned public village meetings in order for collective decisions to be made. On paper, this governance mechanism might be considered a model of good governance at the local level. The reality, however, is frequently different since the rural village population is heterogeneous. Capacities and the levels of information, wealth and influence differ and asymmetries of power can be pronounced.

At the time of the liberalisation reforms, and still today, village leaderships tended to be composed of an elite group of the wealthiest local residents, and despite a five-year election cycle, the village committee tends to have relatively constant membership. Committee members are normally drawn from the residents of the central sub-village, which is typically the most developed in terms of commercial activity, public services and housing. In addition, the village leadership is drawn almost entirely from the wealthier households in

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93 Villagers only discern the presence of local government officials when it comes to taxation and revenue collection, which they also believe are misappropriated once collected.

94 Putterman (1990) and Collier et al (1986) find that intra village inequalities are significantly larger than inter village inequalities. Using village-level surveys in several regions in Tanzania, they applied the Theil index of inequality of household income and found that differences between the incomes of households within the village accounted for over 84 per cent (Collier et al, 1986) and 75 per cent (Putterman, 1990) of all inequality measured by their surveys.
the locality. Putterman (1990) found that when using an index that distinguishes type of leadership roles, wealth was positively and significantly related to village leadership roles. So in sum, the village leadership is composed of some of the most prosperous individuals from the local community, and once they secure power, they tend to retain it for some time.

The lack of information and the conservative attitude of the local and village governments resulted in their lack of buy into the reforms. The likelihood that many of the newly reinstated district government officials were linked to the recently displaced parastatal agencies did not help. A distributional conflict kicked-off in which local authorities were free to participate in the distributional conflict between private traders and cooperatives, siding most often with the strongest local vested interest group, the cooperatives. Together, they worked to delay the entry of private traders. Numerous restrictions were placed on private buyers, including restrictions on locations where they are able to operate and the prices they pay (Coulter & Golob, 1992; Jaffee, 1994; Ponte, 1992 and Nindi, 1990). The local governments also viewed the reforms as an opportunity to levy registration fees and other taxes on private traders.

Besides the lack of local and village government buy-in, one of the frequently overlooked motivations for distributional conflict around Tanzania’s agricultural market liberalisation is what Ponte (2004) terms the politics of ownership. From the immediate post-independence period up to the liberalisation reforms, domestic trade was largely in the hands of Tanzanians, through cooperative and government bodies. Liberalisation introduced foreign interests to the domestic marketing segment. Foreign owned companies engaged in village-level buying and competed with local entities for the first time. Ponte (2004) frames the post-liberalisation distributional conflict as politics of ownership in which Tanzanians are in competition with foreign companies represented by expatriate workers (and often local workers), but the story is essentially the same. Private businesses, particularly foreign-owned interests, are viewed as predatory and as entities that are acquiring wealth that, even if it is legally obtained, is in some sense illegitimate.

The support given by local and village governments to the cooperative movement is unsurprising given the cooperatives’ historical role and the strong links between the two groups. For most of the period since Tanzania’s independence, cooperative societies and unions were the most powerful agents in agricultural markets. As earlier mentioned, at the height of their power, they operated as a monopsonistic buyer for Tanzania’s major
agricultural crops. Their power base was socially and politically embedded within the socialist ideology of the Tanzanian politics of the time. They were perceived as representatives of the interests of the masses of small producers, who traditionally voiced their concerns and interests through the cooperative movement. The cooperatives also enjoyed strong support from the political leadership that was committed to the principles of cooperative organisation, particularly at the local level. Their privileged position with Tanzanian governments is particularly evident when we note the extensive access they have had to state-guaranteed credit, despite their tendency to perform poorly and the fact that farmers and private business severely lacked access to any kind of financing (Coulter & Golob, 1992).

When the agricultural markets were liberalised, the new private sector entrants began competing with the failing, but still, politically supported cooperatives and had to establish their market position under those conditions. Cooperatives were the incumbent group in primary marketing in a socialist political environment that highly valued their role, whilst private traders tended to be engaged mostly in illegal trade through parallel markets and were often from an ethnic group that was generally mistrusted. For instance, prior to liberalisation, maize wholesale and retail was to a large extent in the hands of South Asian traders, who used their extensive family and community connections to build a national supply network of *dukawallahs* (meaning shopkeepers)\(^{95}\). Although they had strong social networks, they were not organised under an officially recognised association. These private traders paid punctually, and in cash. Despite this, and in spite of their ability to capture a significant market share, they were unable to entrench themselves as powerful vested interests because they were illegal operators. The clandestine nature of their business required them to stay off the official radar, and to concentrate their influence activities on their internal networks and being able to continue engaging in the parallel market. When the markets were liberalised, many of the private traders that immediately entered the market were the same traders who had operated in the parallel markets that had flourished prior to the reforms and that had been pursued as illegal traders in the parallel markets. Figure 6.1 below presents the above described scenario of competition between cooperatives and private buyers using our distributional conflict framework\(^{96}\).

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\(^{95}\) These traders were initially displaced by regional cooperatives backed up by a Dar es Salaam based National Agricultural Products Board (NAPB), and then later by the National Milling Corporation (NMC) (Fahy-Bryceson, 1994).

\(^{96}\) See annexes 6.4 and 6.5 for a summary of the principal organisations involved in the Tanzania coffee and maize markets.
The vertical axis shows the hierarchical relationship within the state, with central government being in a position to send directives to the lower local and village levels of government. Central government also guides the policies and regulations of parastatal bodies such as the crop marketing boards. The role of the local and village government is notable. Whilst they are engaged in local distributional conflict, their type of power differs in that it is state power. Local and village governments, as part of the state machinery, are obliged to conform to the mandates from central government. At the same time, they are subject to pressure and capture at the local level, particularly from cooperative unions seeking to halt the liberalisation process and to prevent the entry of private traders and processors. In this way, the position of local government determined whether power relations were conflictual at the vertical or at the horizontal level. Local and village government in effect, functioned as a conflict brokers in this context.

The horizontal axis portrays the position of the non-state market players also in a hierarchical framework. We distinguish between the elite and the non-elite groups in the market. These groups are competing for market share or value added from the processing and sale of goods. Since the role of market institutions is critical in determining these
shares, the various groups will compete to capture these institutions, and the elite groups are in the most favourable position to do so. Our framework shows how cooperatives were the market elite at the time of the liberalisation reforms. They were in a position to dominate the market and to steer outcomes for both farmers and private traders. The cooperatives’ ability to do this was determined to a large extent by local and village governments. Their official role is to objectively maximise the welfare of the local farmers by seeking the best market conditions for them. However, in this case, these sub-national state authorities were highly influenced by the cooperatives, placing them in the elite position. But how did the cooperatives succeed in blocking reforms despite significant pressure from central and government and the international financial institutions?

As the incumbents, the cooperatives maintained an advantage over private buyers and influenced the path of institutional reforms during the liberalisation period because their influence costs were lower than those of any other competing group. The cooperative (particularly the primary societies) had plenty of access to the suppliers of institutional change as they enjoyed very close links with village governments and were well informed of planned changes in local regulations and taxation. They were also increasingly closely linked with higher levels of governments since their reintroduction in the early 1980s. In particular, the association between the cooperatives and the local district councils that had caused them to be jointly perceived as political threats and to be abolished in the early 1970s was reinforced when they were both re-established in 1982. By contrast, private buyers had high influence costs, particularly in terms of access to central, regional and local governments (the suppliers of institutional change). Their ability to organise themselves as an interest group when they entered the market was also limited as many had to establish legitimate business operations. New market opportunities necessitated new networks and many new players entered the market. Of the groups, farmers had the most limited influence. Although national and local rhetoric prioritised their welfare, in reality, they were uninformed, rarely consulted, and the cooperatives, which were meant to represent their interests and give access to the demanders and suppliers of change, evolved into an organisation with a governance mechanism and a set of incentives that were separate from farmer concerns. Table 6.2 below summarises our assessment of the relative influence costs of farmers, private buyers and cooperatives.
Table 6.2: Influence costs of market groups during liberalisation reforms

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<th></th>
<th>Farmers</th>
<th>Private buyers</th>
<th>Cooperatives</th>
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<tbody>
<tr>
<td>Cost of access to information</td>
<td>High</td>
<td>High</td>
<td>Low</td>
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<tr>
<td>Cost of access to other</td>
<td>Medium</td>
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<td>demanders of institutional change</td>
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<td>Cost of access to suppliers of</td>
<td>High</td>
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<td>institutional change</td>
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Source: Author.

It is prudent at this point to recognise that an alternative set of factors may explain the way that Tanzania’s most agricultural market liberalisation reforms were played out. Although several other possible explanations are possible, in our view, they are unlikely.

One of these possibilities is that the local authorities did not believe that the reforms would work as intended and that they would not improve the livelihoods of local farmers. Hence, the local authorities may have been attempting to protect farmer interests. However, it was clear to all parties at the time of the reforms that the existing marketing system was collapsing, that cooperatives were struggling to pay farmers and that private traders had been able to pay higher producer prices in parallel markets for some time. Another unlikely possibility is that local authorities were not able to implement the reforms due to capacity constraints. It is unlikely because it is more taxing for local governments and village authorities to engage in a campaign of resistance against private buyers than it is to allow them to simply enter the market.

It is feasible however that local and village governments independently had a stake in sabotaging reforms. Most local government and village officials own farms (sometimes large farms). Given their positions of authority, it is likely that they were benefiting disproportionately under cooperative marketing. So as opposed to being neutral players who were likely to be captured by one group or another, they were maximising their own utility functions. It is likely these factors incentivised local authorities to collaborate with cooperatives to a certain extent. In fact, the extent of their collaboration suggests some level of urgency that may have been driven by a threat from the reforms to their own livelihoods. But besides having farming interests, it must not be forgotten that these were state officials. It was through this role, and not as farmers, that they gained leverage and power in local affairs. They also earned a regular salary that formed a significant part of

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97 We mark the access of farmers to other demanders as medium because although they were largely cooperative members, internal governance failure of the cooperatives prevented its effectiveness as a mechanism for collective action.
their livelihoods. In addition, because of the villagisation movement, many local officials were not originally of the local area and had been placed there relatively recently, such those transferred from ex parastatal agencies. For these reasons, it is unlikely that local and village officials would have been strong and coordinated enough to engage in conflict with central government solely to pursue their own gains. It is more likely that their personal circumstances facilitated their capture by cooperatives, which had had a history of conflict with central government.

What this review of the role of local government and village elite dynamics shows is that the dynamics of local elite power and capture were very much at play during the liberalisation reform period. Tanzanian local and village governments have always been involved in agricultural market regulation and taxation. Furthermore, since the relationship between cooperatives and these authorities was strong, elite capture and the joint initiatives to prevent the entry of private sector players in the market were determined at the local level. The complexities, contradictions, delays and reversals of Tanzania’s agricultural market liberalisation reforms were largely determined at the most disaggregated level. Massive institutional change was taking place, but its path was steered by a drawn-out process of distributional conflict in rural villages that is still ongoing today.

In the following sections, we describe a number of events that occurred during the liberalisation of the maize and coffee markets that demonstrate the types and complexities of distributional conflict that took place during the liberalisation reform era, the important role played by local and village governments and how they were effectively captured by cooperative interests. For the coffee sector, we look at a case study of reforms in the Kagera region and the regulatory and licensing arrangements that arose from the liberalisation reform period. In relation to the maize sector, we describe comparative case studies of maize market reforms in the Morogoro and Songea regions.

The Kagera coffee saga

The north-western Kagera region has a long history of coffee production and was one of the first coffee producing regions in Tanzania. The Kagera Cooperative Union (KCU) and

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98 They have also had an increasingly important role in local planning as decentralisation reforms continue to be implemented.

99 Primary cooperative societies are mostly village-level institutions that have very close links to the local village and ward committees.

100 The case studies of the Kagera, Morogoro and Songea regions are based on Ponte (2004).
the Kagera District Cooperative union (KDCU) had been operative in the region since 1982 (prior to this period, they operated jointly as the Bukoba Cooperative Union). By 1991, the Kagera unions were struggling to meet with farmer payments and to balance their books. Their financial turmoil was at the time associated with the government policy of setting agricultural prices, which proved to be higher than international market prices at times. The government eventually took on the cooperatives’ debt and gave them a fresh start when the Cooperative Societies Act of 1991 came into force. With this Act, cooperative membership was made voluntary, they were free to set their own prices and government guarantees were withdrawn. As an outcome of this reform, banks took a more restrained and cautious approach to cooperative financing. Despite the lifeline extended to them via these developments, the KDCU and KCU’s buying capacity dwindled over the next few years, and large quantities of coffee were smuggled through neighbouring Uganda. This situation continued until the 1994/95 season when the coffee market reforms opened the door for private businesses to engage in coffee trading and processing. The KDCU and KCU were now competing with foreign interests for the first time, which proved to be a difficult task. By 2000, both unions had been put into receivership by their bankers. This event was the straw that broke the camel’s back, as it were, and triggered a series of extreme government interventions that were unparalleled in other coffee regions at the time.

The Kagera cooperatives’ financial woes coincided with a set of regional and national political factors that resulted in the Tanzanian government bailing them out yet again and banning the newly established private interests from purchasing coffee in the region until the cooperatives repaid their debt. Another important matter was that 2000 was an election year. Cooperatives have traditionally featured in Tanzanian political parties’ election manifestos, particularly in those of the ruling Chama Cha Mapinduzi (CCM) party. The rescue of cooperatives was one of CCM’s promises in the 1995 election campaign. At the same time, the Kagera region would have been marked as an electoral priority for the CCM because it was one of the regions where it had received a low number of votes in the previous election. With coffee being Kagera’s main commercial crop, it is unsurprising that it also became a political playing field. The decision to bail out the cooperatives came about following the delivery of the report by a special committee appointed by President Benjamin Mkapa to recommend measures that would halt the collapse of Tanzania’s agricultural cooperatives. The committee concluded that in Kagera, the solution was to grant the cooperatives monopsony power, a recommendation that was duly adopted.
This arrangement was designed to relieve the Kagera cooperatives from the pressures of competition, giving them a chance to recover financially and repay government loans. However, it is likely that this was not the only factor driving the government’s policy. Politicians from opposition parties had major coffee business interests in the region at the time. Pushing them out of the coffee market, where their trading businesses had regular dealings with local farming communities, would cut them off from politically valuable opportunities to contact farmers and to influence the vote of the Kagera population. The monopsony finally ended when the 2002/03 Coffee Act came into effect and subsequent to intense lobbying by the Tanzania Coffee Association to the Tanzania Coffee Board and to Tanzania’s donors.

The Kagera coffee case study presents us with a clear illustration of the distributional conflict that surrounded the coffee market even after the liberalisation reforms. It is characterised by the direct intervention of central government and the political elite at the highest level of the vertical distributional conflict framework. In particular, it demonstrates the elite position of the cooperatives and the state and the precarious status of the private sector at the time. It is not, however, an isolated case. Close observation of other coffee market institutions reveals a set of arrangements, such as licensing and contracting (described below), that are generally skewed in favour of cooperatives and that seem to stem from continued distributional conflict between cooperatives and private traders from the liberalisation era to current times. In these cases, it is local and village governments that once again determine many of these outcomes.

Coffee licensing and the village veto

Prior to commencing their operations, private coffee buyers are required to obtain annually a multiple set of licences and permits to buy coffee. The licences extend to the separate operations of the coffee business, with distinct authorisation being required for coffee buying, curing, warehousing and exporting. Village coffee buying in particular has attracted heavy licensing requirements as coffee buyers are required to obtain a buying licence from the Tanzania Coffee Board, a buying licence from the district council and permission to buy coffee from each village authority where the buyer proposes to operate. In addition to these requirements, private buyers are forbidden from engaging in farm-gate buying. They are instead obliged to set up a village buying post, where they may procure coffee from farmers who deliver their goods. Village governments have a strong say in determining the
location of the buying posts.

Until recently, a fee of $2000 was charged by the Tanzania Coffee Board for a coffee buying licence and $2000 for a coffee exporting licence. This requirement for multiple licences and permits arguably contributes more to the transaction costs of private businesses than it does to the quality of the regulatory environment. Moreover, a one licence rule exists that is designed to prevent businesses from running vertically integrated operations. It prohibits the issuance of licences for both buying coffee from growers and exporting it to the same enterprise, making it another regulatory restriction that increases the costs of firms that would otherwise be able to reduce their transaction costs by integrating their operations, particularly in a difficult contracting environment.

We mention in previous sections that village authorities are also generally empowered to manage the coffee business in their areas. The local regulatory arrangements for coffee buying require private buyers to obtain permission from village authorities to purchase coffee in their areas. The approval to buy is granted by the village committee, under the overall leadership of the village chairperson, giving the village the power to veto private buyer entry. This single licensing requirement generates a fundamental conflict of interest in many villages, where the village committee is also active in the local cooperative society. In some cases, the village chairperson is also the chairperson of the local cooperative society. It also creates a set of rent-seeking opportunities for village authorities. The most worrying practice in this regard is the banning of private buyer operations in several villages, establishing a monopsony for the local cooperative. During interviews with village authorities and private buyers in the Kilimanjaro region when conducting the coffee survey, it became clear that several villages had made the choice to forbid private buyers from entering into the market, or to impose restrictive conditions for private buyers. Often, the reasons cited for this included the need to support the local cooperative primary society or complaints about private buyer actions in the area. Kinyamvuo village (one of the villages selected for the coffee survey) was one such village. It had only one buyer, the local cooperative, the members of which were also members of the village committee. Other rent-seeking opportunities also exist for the villages, including allocating village-owned properties for buyers to rent as buying posts and levying village taxes on private buyer coffee purchases.

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101 This requirement was removed in 2007.
102 These actions were also observed during field work interviews with village officials in Mwanga district.
To demonstrate the effect of this situation, we take the example of coffee marketing in the Moshi Rural district of the Kilimanjaro region\textsuperscript{103}. This is one of the Tanzania’s prime coffee producing areas. Of the 127 coffee producing villages in the district, the private buyers were active in only 45 of the villages in the 2008/09 season\textsuperscript{104}. In effect, 35 per cent of the villages had access to only one private buyer, and only 9 per cent had access to two or more.

Most of the regulatory requirements described above apply solely to private buyers. Examining this from the perspective of two major actors that are competing in the marketing of coffee, a sense of regulatory capture begins to emerge. The regulatory environment seems to be heavily skewed against private buyers and in favour of the cooperative societies and unions. This is an outcome of their level of influence, which has traditionally been high, both at the national level and the local level.

Taken together, these requirements for buying coffee, including the licensing process, the need for multiple registrations and the costs of setting up village buying posts, may prohibit the entry of small operators to the market, thus reducing employment opportunities for small entrepreneurs and driving down the prices offered to growers. Business licences are an important feature of many markets. They facilitate several important functions such as the coordination of market operations and the enforcement of standards and contracts. The licensing of private buyers by the Tanzania Coffee Board is also an important factor for the management of the Moshi coffee auction. Although business licences may be useful in some instances, they need to strike a balance so that they do not also pose a significant constraint to the efficient functioning of the market. For instance, heavy requirements for village buying are likely to dampen the competitive environment and encourage monopsonistic market conditions. Large businesses however operate with a considerably higher capital base that reduces those costs in relation to the volume of business transactions they make.

However, despite the obstacles described above, large vertically integrated coffee businesses have continued to compete and invest in Tanzania, and to dominate the private operations of the market (Baffes, 2003). They have entered the market with a large capital base and a high volume of operations that allows them to mitigate the high transaction cost

\textsuperscript{103} Data referenced was collected from the Moshi Rural District authorities during fieldwork in 2008.

\textsuperscript{104} The village and the ward levels are the most appropriate level of analysis in this context as the operations of rural producers, including coffee growers, are mostly limited to the village or the ward.
environment and have demonstrated the capacity to absorb some of the transaction costs that smaller businesses might not be able to support. For instance, the way that most of the large coffee businesses overcome the one licence rule is by establishing new companies that operate independently on paper but are owned and transact solely within their business group. This may be a feasible solution for big businesses; smaller businesses however may find the costs of such manoeuvres too costly to be justified within the scope of their operations. It follows that the above factors have contributed to a market structure that has not supported the emergence of small or medium sized businesses, and in which small coffee buyers or processors are virtually absent. It may have also led to the depression of the coffee producers’ price share (see figure 6.2 below).

Tanzania’s high transaction cost set-up for coffee buyers contrasts with some of the other coffee producing countries. The Ugandan coffee industry for instance has evolved in a manner that is dissimilar to Tanzania’s concentrated industry structure due to the differences in the respective reform processes and the resulting regulatory environment. Uganda’s coffee market had many similarities with Tanzania’s coffee market prior to the liberalisation reforms of the mid-nineties. In both cases, marketing was dominated by coffee cooperatives and the state marketing bodies. Eventually, both markets underwent liberalisation reforms linked to structural adjustment programmes. Uganda’s reforms in particular were more comprehensive than Tanzania’s. The Ugandan state marketing board’s monopoly was disbanded, export taxes where removed, price setting mechanisms were abandoned and public assets were privatised (Akiyama, 2001). These reforms have created a market driven sector where transactions between buyers and sellers are subject to few restrictions. The marketing segment of the Ugandan coffee market evolved into a fairly competitive and efficient chain with a high level of participation by private buyers and exporters throughout the supply chain as reflected by the low level of market concentration for coffee exports (Baffes, 2006). Village coffee buying is mostly handled by a large number of small coffee buyers known as debe boys, who aggregate coffee from small farmers and deliver it to larger traders and exporters (Fafchamps & Vargas-Hill, 2008). These individuals purchase coffee at the farm-gate and sell it on to larger buyers or coffee processors. The key characteristic of this regulatory and marketing structure however is that it maintains increased competition in buying and exporting coffee whilst keeping producer price share for Arabica coffee high and stimulating a considerable supply response.\(^{105}\) Figure 6.2 below shows how Uganda’s producer price share increased

\(^{105}\) Uganda also produces Robusta coffee, which is a variety of coffee that is not as refined as Arabica in terms
significantly in the post-liberalisation period. Tanzania in contrast, was the only economy of those presented below where the producer price share actually declined.

Figure 6.2: Ratio of producer prices to world price pre and post-liberalisation.

The liberalisation of maize marketing also took a thorny path in the Morogoro and Songea regions. In Songea, the unions had a well-established network of cooperative societies and had been the main marketing channel for local farmers. The level of collaboration between them and the local government was high in that they worked together in suppressing parallel food marketing channels and thus in maintaining the cooperatives’ market shares.

The alliance between the cooperatives and local government came into play once again when private traders attempted to penetrate the newly liberalised maize market in Songea. Although the local union was struggling to buy and market even meagre amounts of maize, of quality differentiation.

Morogoro & Songea maize case studies

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The alliance between the cooperatives and local government came into play once again when private traders attempted to penetrate the newly liberalised maize market in Songea. Although the local union was struggling to buy and market even meagre amounts of maize,


they persuaded the local government to engage in a campaign of political rhetoric against private buyers and to impose regulatory obstacles and taxes to impede their operations. Despite this, the cooperatives failed to market maize efficiently, and private traders eventually entered the market but faced relatively high operational costs that made Songea’s maize less competitive in Dar es Salaam markets.

In contrast, Morogoro’s experience with maize market liberalisation was less fraught. The cooperative unions were already very weak when private traders were entering the market and, hence, had no significant market interests to protect. In this context, the local government was not forced to take sides in the competition for market share and by not hindering private activity in any significant way, it became complicit with the reforms.

Export crop marketing in Morogoro, however, took a very different path. The main export crop at the time of the liberalisation reforms was cotton. Although the cooperative unions failed to maintain control of the maize market, they enjoyed considerable control over the procurement and processing of cotton grown in the area. The 1993/94 season coincided with declarations of interest from three private traders to purchase cotton from producers. Their business operations would place them in direct competition with the local cooperatives. Fearing this, the cooperatives convinced the local government to forbid private traders from purchasing cotton directly and thus, to disregard (or at best delay) central government directives. The unions preferred to retain their village buying monopsony. They did however enter into deals whereby they sold the cotton they collected from farmers to private traders. Since they had serious liquidity problems, they needed the private traders to forward them the needed cash, making them in effect a type of buying agent. In the following seasons, the cooperatives in some instances defaulted on their agreement with private traders. In the meantime, continued pressure to advance market liberalisation meant that some private trades were able to buy cotton directly from the farmers, thereby avoiding unprofitable arrangements with the unions. Unfortunately for them, the cooperative unions had another card to play in that they controlled the local cotton ginning factories. The unions obstructed access to ginneries for private companies that engaged in village buying, raising their trading costs and stock losses. The local government also entered and played an important role in this conflict, siding with the cooperatives and imposing regulations that required private traders to supply inputs to farmers without adequate buyer zoning and contracting arrangements. Eventually, the cooperatives and local government succeeded in establishing a hostile business environment that cause private traders to engage in other areas where it was easier and more profitable to do business. From this brief account, it becomes apparent how
distributional conflict between cooperatives, private businesses, and local and central
government led to the decline of cotton production in Morogoro. It is also apparent how
the absence of such conflict in the context of food production during the liberalisation
reform period has enabled Morogoro to be one of Tanzania’s most prolific food producing
areas today.

6.2 The coffee and maize case studies

All of the events described above are highly illustrative of the nature of the distributional
conflict that took place in Tanzania when the liberalisation reforms were set in motion. At
that time, the cooperative movement had an advantaged position since it had the lowest
influence costs amongst the various market players. As liberalisation became more
entrenched in agricultural markets, private businesses gained a better foothold. More
importantly from our perspective, the private buyers and traders were also able to reduce
their influence costs over time.

This shift becomes apparent in this section, where we describe the distributional conflict
surrounding the institutions analysed in chapters four and five. The institutions in question
are grading in the coffee market, and farm-gate buying in the maize market. Having
demonstrated the inefficiencies of these institutional arrangements in chapters four and
five, we will consider why those institutions are still in place and the role that market elites
play within them. Notably, we will show how in the post-liberalisation period, private
traders have emerged as an elite group that effectively competes with cooperatives (where
they are still active) and that effectively captures market rents at the expense of small
farmers, a group that has firmly remained in the non-elite category.

6.2.1 Coffee grading analysis

Chapter four addressed the inefficiencies of the grading mechanism in Tanzania’s coffee
market. It described how grading rarely takes place at the primary marketing stage where
farmers sell their coffee to buyers at the village. Since the process for quality and price
determination takes place after the transaction with the coffee producer has been
concluded (at the coffee auction), no specific premium or incentive is delivered to the
producer. Using original survey data, chapter four also demonstrated how the incomes of
small farmers increase significantly in the rare cases when grading does take place. The winners and losers from the prevalent grading arrangements are clear. Although the de jure regulations require buyers to grade coffee at the village, the de facto reality is that coffee buyers openly flout these regulations and stand to extract rents by not complying with the rules at the expense of farmers. Small coffee farmers lose out on quality premiums, which are consumed by the rent seeking buyers.

In chapter four, we also described how coffee transactions between growers and private buyers are based on a spot contract whereby the payment made at the point of sale is the final one. The transaction that takes place between the grower and the cooperative is based on a contingent contract whereby a first payment is made at the point of sale, and a second payment is made several weeks or months later that is contingent on quality achieved and prices received after the goods are sold at the coffee auction. The main difference between these two types of contracting arrangements from the coffee grower’s perspective is that in theory, unlike the spot contract, the contingent contract allows for quality premiums received at the auction, where coffee is fully graded, to be passed back to the grower. This is why the contingent contract is potentially an important tool for transferring quality premiums back to producers once coffee has been graded and sold.\textsuperscript{107} In practice however, the contingent contract, as it is currently applied in rural villages, does not provide a significant quality premium to coffee producers (as demonstrated in chapter four).

Grading of parchment coffee at the point of procurement from farmers is mandatory by law but is not enforced in practice. The Tanzania Coffee Board, although aware of the non-compliance with grading regulations and the resultant decline in the quality of coffee, has not enforced them. Although they face general resource constraints, it is not implausible for them to conduct random checks at buying posts, or to collaborate with village governments to enforce grading. Their reluctance to engage with this problem then, despite its quality depressing effects points to pressures within the industry circles linked to the influence activities of coffee buyers.

The enforcement of an effective coffee grading mechanism would necessarily cause coffee buyers to transfer some or the entire quality premium to buyers and would lower their

\textsuperscript{107} An additional advantage of the contingent contract is cost saving since the transaction costs of fully grading each coffee consignment at the village are high. Instead, coffee buyers fully grade samples from pooled consignment of the coffee they have bought in villages just before the coffee is auctioned.
overall payoff from the transaction. This is an undesirable outcome for buyers. It is natural then for them to attempt to avoid this situation through non compliance, but more importantly, by convincing the coffee sector regulators that the absence of grading is an acceptable market situation.

At the time of the coffee market liberalisation reforms, the influence costs of private coffee buyers were high. They were only permitted to enter the market because of pressures placed on central government by the international financial institutions, and the imminent collapse of the agricultural marketing system that was in place. Since then, private coffee businesses have invested in establishing a strong industry association, the Tanzania Coffee Association, which now has a high level of access to regulators. Their association provides them with a direct channel for advocacy and influence to facilitate their business operations. The association was established in 1997, and is composed mostly of large coffee traders, processors and exporters. Through their associations, local coffee businesses have facilitated access to each other. They have also established regular contact with the officials of the Tanzania Coffee Board and the local government authorities. For instance, in interviews conducted with the Tanzania Coffee Association and the Tanzania Coffee Board during fieldwork, we observed that the offices of the Tanzania Coffee Association are located in the premises of the Coffee Board. We were informed that the association meets with the main regulatory body (the Tanzania Coffee Board) on a monthly basis to lobby and to discuss industry issues, including issues such as taxation and auction management. In this way, private buyers have succeeded in lowering their influence costs. Their costs of access to demanders and suppliers of institutional change have become relatively low, since they are a small and well organised group. They have also become extremely well informed of local market conditions and prices for unprocessed and processed coffee by grade, both domestically and internationally.

The outcome of all of this is that in effect, although de jure institutions require private buyers to grade coffee at the village, the de facto situation is that the regulator allows them to buy coffee without grading. The disadvantage that private buyers face in terms of de jure laws reflect the relatively low level of influence they had over the regulatory environment during the reform period compared with the cooperatives, and the difficulty they faced in accumulating socially embedded political capital.

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108 See chapter four for an analysis of the buyer payoffs under various grading scenarios.
We present the dynamics of this distributional conflict in figure 6.3 below. It demonstrates the distributional conflict framework for the coffee market and presents the winners and losers from grading institutions. The elite in this context are the cooperatives and the private coffee businesses (traders and processors). The non-elite are the small coffee farmers, who are generally poorly endowed financially and institutionally and are marginalised in the local political scene. The difference between this framework and that presented previously in figure 6.1 is that in the post-liberalisation reform period, private buyers have moved from the non-elite to the elite group.

Cooperatives continue to be influential market players in the northern coffee growing regions because they still have fairly low influence costs. Since they buy at the village and sell at the auction, they are well informed of coffee prices and quality premiums. They also have historically strong relationships with government at all levels. Their relationship with village governments is still strong at the village level because village based primary societies tend to have close links with village leaders. For instance, during our coffee fieldwork, we noted that it was not uncommon for the officials of the local cooperative society to also be members of the village leadership committee. They frequently share offices in the village centre and merge village and cooperative affairs when village meetings take place.

*Figure 6.3: Distributional conflict framework for the coffee market in the post-liberalisation period*
Small farmers remain in the non-elite group. Their knowledge of market prices for varying coffee qualities is negligible. They are rarely aware of the local buying conditions from season to season, so overall, their cost of access to information is high. Their costs of access to other demanders vary, but are generally lower for coffee growers that are cooperative members. However, their costs of access to the suppliers of institutional change such as the local government authorities and the Tanzania coffee board are high.

6.2.2 Maize farm-gate buying analysis

In chapter five, we described the village marketing process in the maize market and the main groups involved with it. In the post-liberalisation reform period, farm-gate buying has emerged as the dominant channel for marketing maize in most regions of Tanzania. We illustrated how the search and information costs linked with this marketing channel are high. Using data from the most recent household budget survey of Tanzania, we found that the producer prices of small farmers fall as a consequence of high search costs and that this effect is intensified during the harvest season. In sum, we described how the dispersion of maize growers and the farm-gate buying system make transaction costs such as search and village to town transport particularly high and unresponsive to the economies of scale, so much so that they may widen the price gap, causing a downwards pressure on producer prices. The alternative marketing arrangement to farm-gate buying is selling at the marketplace. Nevertheless, the emergence of village marketplaces is not free of distributional conflict. Throughout chapter five, we identified two types of private buyers, and in this section, we describe in more detail how the distributional conflict between them and the small farmers prevents the emergence of a potentially more efficient marketplace based marketing system.

Maize farmers and non-local traders are at a disadvantage when it comes to establishing new marketplaces. Since a marketplace is a location where buyers and sellers congregate and transact, it must be convenient for all parties involved. The convenience to farmers comes from selling in a competitive environment, to gather market information and to potentially receive higher prices. Non-local traders on the other hand could significantly

109 Proxied by the households’ distance to market.
reduce their search and information costs given their weak local knowledge and high transport costs. Local traders however are in a different position. As buyers, their search costs are relatively low as they are familiar with the local farming households and can easily contact them. They often take advantage of the absence of markets and their additional information by selling maize to external traders or by acting as their agents. So marketplaces would largely pose a threat to the role played by local traders in the maize markets.

Since primary marketing in Tanzania’s maize market is fully liberalised the use of the marketplace to buy or sell goods is voluntary in that neither buyer nor seller is obliged to participate, to sell a specific good, and since buyers are freely able to engage in farm-gate buying. In this context, the risk is tangible that insufficient numbers of buyers or sellers will participate in less established markets. This is likely to be the case since the coordination and information costs of establishing marketplaces may be significant. Nevertheless, if marketplaces have the potential to improve the business prospects of non-local traders and farmers who reside at a distance from markets, we might expect them to attempt to establish unofficial marketplaces or to pressure village and local government authorities to establish markets in underserved areas. Similarly, we might expect local traders to oppose such initiatives. Indeed, these were the dynamics in play that were reported by district council officials in Iringa, one of the main maize producing regions. In fieldwork interviews, the Iringa local government council, and several village authorities in the region, described the difficulties they had faced in attempting to establish new marketplaces. Although some well established markets exist in the area, local buyers tended to not engage with new marketplaces. Maize growers would bring their goods but fail to meet the relevant traders. Instead, the markets were frequented by other traders dealing in goods such as used clothing.

The abilities of these groups to influence the potential market arrangements depend, according to our framework, on the costs they face in gaining access to information, access to the other demanders of institutional change and access to the suppliers of change. Small maize farmers have generally high information costs. This is especially the case for remote households that are located at a forbidding distance from the nearest marketplace or main road. They have little chance of knowing how many buyers will be present at the marketplace and whether the prices on offer will exceed those offered by itinerant traders, particularly since telephone and radio ownership is rare. Their costs of visiting the marketplace and not making a sale would be high, particularly since most markets do not
have areas where maize can be stored. Their costs of access to other demanders are also very high since maize growers did not organise themselves into cooperative groups after the collapse of the cooperative marketing system. The rarity of collective action amongst small maize growers is likely to be related to the constrained nature of household maize marketing. Most small-scale farming households grow maize primarily for their own consumption and only market what they calculate as the surplus. They rarely apply agricultural inputs to their farms. Years of self-sufficiency type agricultural policies have reinforced this pattern. Since the main aim of most small agricultural cooperative groups is to reduce marketing and production costs, their relevance to maize growers seems to be limited. Lastly, their access to the suppliers of change, namely village and local government authorities is limited. As local residents, they have fairly good access to village government leaders (albeit without being organised as interest groups) but not to local government authorities.

Non-local buyers also face high costs. Being resident outside the local village or ward, their knowledge of conditions in new marketplaces (e.g. amount of maize available for procurement, access to support services such as bagging and transport) is limited. It would also be very difficult for them to coordinate themselves for lobbying purposes or to independently organise village marketplaces. Furthermore, from outside the local village or ward, their capacity to influence local government authorities may be weak. Moreover, since these traders aim to turn over their capital in the shortest amount of time possible, the opportunity cost of any time that they spend on forming interest coalitions with other traders or lobbying local governments for marketplaces is high.

The circumstances of the local maize buyers are different. They are permanently based in the village or ward centres. Their knowledge of local market conditions is high as they have business dealings with both local farmers and non-local buyers throughout the year. They effectively have what can be termed as a bird’s eye view of the local market. Local buyers are also familiar with other local buyers in the area and, hence, have access to and the capacity to organise interest groups with other demanders of change at relatively little cost. In addition, being some of the main business people in the local village and ward areas, they are local elites that can regard local government officials as peers and are frequently active in local market affairs. Overall, the group that is best placed to lobby for and support the establishment of local marketplaces is the local buyers, which is exactly the same group

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110 Author’s field work observations in northern and southern Tanzanian maize growing areas.
that would stand to lose the most from their establishment.

In figure 6.4 below, we present the distributional conflict framework for primary maize marketing. The horizontal axis shows the distributional conflict between maize buyers and maize farmers as they compete for market share and institutions. The vertical axis shows the role of the state in the distributional conflict, and how local and village governments tend to be more closely engaged than central government.

The elite in the horizontal section of this framework are the local maize buyers. The elite groups are characterised by their influence over the non-elite, being non-local maize buyers and the small maize farmers. The farmers tend to be price takers, participate little in local decision making and are mostly on the wrong side of market information asymmetries.

One difference between the coffee and maize scenarios is that private buyers’ increasing access to power in the coffee scenario was achieved mostly by large, vertically integrated entities while in the maize scenario, smaller locally based agents gained influence. This pattern is partially explained by market structure and costs. As previously described, entry costs for small itinerant buyers are prohibitively high in the coffee market, so we only find
a role for large, vertically integrated entities. Hence, influence relationships are primarily between relatively big companies and the local and village authorities. In contrast, the low entry costs to buying in the maize market mean that small maize buyers are ubiquitous and that they need to independently establish influence relationships with local authorities to survive in business. This is not to say that large vertically integrated businesses do not exist in the maize market. Several such enterprises exist that control large portions of maize distribution and processing and that are influential, but they do not tend to directly engage in primary marketing.

6.3 Kilimo Kwanza and the growing influence of the private sector

Lastly, it would not be appropriate to conclude this chapter without referring to the recent phenomenon that is Kilimo Kwanza and how it clearly demonstrates the commencing transition of power and influence that has been made by private businesses in Tanzania’s political and economic landscape. Kilimo Kwanza (meaning Agriculture First) started as a policy document made by the Tanzania National Business Council (TNBC) in early 2009. It sets out a vision for transition to a commercial agricultural sector based on investments in infrastructure and technology that target large scale farming operations. It also highlights the need for land resource transfers from cooperatives to business investors.

In a very short period of time, Kilimo Kwanza has become the slogan for national development, notably in the period directly preceding the campaigns for the 2010 election. Small pamphlets containing the Kilimo Kwanza message are being distributed across Tanzania and discussion about its contents are taking place in academic and media circles. In fact, Kilimo Kwanza was the theme for the 2010 Dar es Salaam international trade fair. But more than this, the pillars of this policy document have found their way into the national pre-election budget (announced in June 2010).

The budget announced several measures including a 30 per cent increase in the agriculture allocation. The additional funds are planned to go towards providing inputs and strengthening the Strategic Grain Reserve, as well as improving the rural road network, irrigation and storage facilities. These are fairly standard interventions in the Tanzanian policy portfolio. What is notable in the budget are the explicit interventions and measures designed to support large commercial agriculture businesses. For instance, there were

explicit statements related to the need to identify and survey land for large-scale farming. In addition, tax waivers were announced that apply to milk collection and processing machinery, airfreight for the export of horticultural products and large scale agricultural production equipment (such as combine harvesters, pick-up balers and hay making machines) after much campaigning from milk processors and associations such as the Tanzania Horticulture Association. Lastly, the government also announced that it will guarantee loans to agricultural investors, and that procedures and regulations for getting access to soft loans to finance agricultural projects will be fast tracked\(^\text{112}\).

*Kilimo Kwanza* is an initiative that was presented by an association of large private business interests. The TNBC is one of Tanzania’s largest business associations. What is notable about the TNBC is its visible constituency of African capitalists and its access to political power at the highest level as its annual meetings are chaired by the President of Tanzania. The quote below, taken from a speech made by Benjamin Mkapa, the former president of Tanzania, at a TNBC meeting is highly indicative of the importance of this factor:

> “Looking at the list of participants at this meeting, I am gratified to note that it comprises of Africans from the continent, and from the Diaspora. And we are all united in our purpose to empower our people, and enhance our profitable participation in the global economy. Africans must not continue to be marginalized in the global economy. As you perhaps know, for two years I was Co-Chairperson of the World Commission on the Social Dimension of Globalisation. Our report clearly states that efforts to address the adverse effects of globalisation have to begin at home. For our purposes today, this involves questions of good governance, peace, security and stability. It also involves addressing the “hard” and “soft” infrastructure issues I have talked about. And it involves empowerment of our people. For unless we have local investors, and other nationals with a real stake in the national economy, we will be planting the seeds of instability in the future.” *(Mkapa, 12\(^{th}\) October 2004.)*

With *Kilimo Kwanza*, private sector businesses seem to be collectively succeeding in influencing national policy in agriculture in an unprecedented manner. Instead of proclaiming the benefits of subsistence and cooperative-based agriculture as has been the case before, the Tanzanian government has changed direction and has bet on large

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\(^{112}\) The East African - Kilimo Kwanza prepares ground for future prosperity – 15th June 2009.
commercial enterprises as the future of Tanzania’s agriculture economy. Not only this, they have backed their support with tax exemptions, a means of support that is much more desirable for businesses than budgetary measures that may or may not be realised due to public financial management constraints.

The question why now is an interesting one in this context. The decades of socialist rhetoric and the commitment of political leaders to collective peasant agriculture are giving way to a more capitalist point of view. To a large extent, this may be related to the underlying changes that are taking place in Tanzania’s capitalist class itself. This class had been dominated by non-African in the past. The perceived threat that this class posed to Tanzania’s political leadership prevented growth enhancing collaboration between business and the state. But now, more than ever before, an African capitalist class is beginning to emerge, and this may be a new basis for shifting state business relations in Tanzania.

6.4 Concluding remarks

Reforms and institutional changes have been abundant in Tanzania’s agricultural markets since the 1960s. Nyerere’s new independence government experimented with agricultural marketing in a grand scale, transferring control of domestic marketing from cooperative unions to government agencies then back to cooperatives again, whilst also engaging in macroeconomic reforms and pricing interventions. These reforms were not only economic, but also political in nature.

Although these constant manoeuvres may have had a role in Tanzania’s political stability, they failed to make a success of its agricultural markets. By the early 1980s, the domestic marketing system was close to collapse as the state controlled agricultural cooperatives had been failing to pay farmers on time. At the same time, a parallel market for agricultural produce flourished. Further reforms became inevitable at this point. They were realised by liberalising agricultural marketing, amongst other changes. For domestic marketing, the biggest shake up was the legalisation of private buyer activity in rural markets.

The liberalisation reforms were a top down initiative. They were negotiated between Tanzania’s central government and the international donors, led by the IMF and the World Bank. They did however need to be implemented (at least partly) at the local and village
Having been external to the decision making process that introduced the reforms, local and village governments found themselves on the frontline of reforms that they did not fully support. One of the main reasons for their lack of support to the reforms is that the relationship between them and the local cooperatives was very strong. Where the cooperatives had a strong hold on the market, the reform experience of private buyers was particularly thorny. The cooperatives had effectively captured local and village government authorities, and as the incumbents, they used their influence to limit the competitive threat of new private sector entrants by preventing their access to market shares. In many cases, they managed to do so effectively. In Morogoro for instance, preventive tactics coordinated by the cooperatives and the local authorities, successfully pushed private buyers out of the market for cotton, making Morogoro one the regions that has lost a significant share of its cotton industry.

At the time of the liberalisation reforms, private buyers were an underdog, being firmly in the non-elite group of the market. Since that time, their fortunes have changed. Private businesses have invested in establishing national procurement networks and have vertically integrated their affairs. But more importantly, they have become more powerful in the markets, with large market shares and diverse business portfolios. This is because they invested in reducing their influence costs by establishing strong business associations and by building strong relationships with both central and local government authorities. In this way, they have reduced their costs of access to information, to the other demanders of institutional change and the suppliers of institutional change.

Table 6.3 below summarises the shifts described in this chapter in access to information, to the demanders and suppliers of institutional change and in influence costs for cooperatives and private buyers in the pre and post-reform periods.
Table 6.3: Shifts in access pre and post-liberalisation by group

<table>
<thead>
<tr>
<th>Access to information (market structure &amp; conditions)</th>
<th>Cooperatives</th>
<th>Private buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-reforms</td>
<td>Post-reforms</td>
<td>Pre-reforms</td>
</tr>
<tr>
<td>Well informed cooperatives were part of local decision making and benefited from government membership</td>
<td>Patchy access to information and decision making as there are fewer and weaker cooperatives</td>
<td>Limited access to information about market conditions and new rules &amp; regulations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access to other demanders of institutional change</th>
<th>Cooperatives</th>
<th>Private buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-reforms</td>
<td>Post-reforms</td>
<td>Pre-reforms</td>
</tr>
<tr>
<td>Wide spread reach of cooperatives and several apex bodies</td>
<td>Fewer unconnected cooperatives and collapse of apex bodies</td>
<td>None existent private buyer associations, illicit trading activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access to suppliers of institutional change</th>
<th>Cooperatives</th>
<th>Private buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-reforms</td>
<td>Post-reforms</td>
<td>Pre-reforms</td>
</tr>
<tr>
<td>Strong relationships at the central and village-levels, government role in cooperative governance</td>
<td>Weaker relationships as market shares decline, withdrawal of government backing</td>
<td>Conflicting relationship with local and village authorities</td>
</tr>
</tbody>
</table>

Source: Author.

What this chapter demonstrates is that groups with low influence costs are more powerful and can build the links that are necessary for influencing institutional change more easily. Market players know this, and for this reason, they build networks that give them access to information, they join associations that enable them to collaborate with other groups of similar interest and that allow them to gain access to politicians and regulators at all levels of government in order to keep their influence costs low.

Lastly, in concluding, we take the opportunity to briefly compare the interaction between Tanzania’s economic and political reforms with those of China and the USSR. Eggertsson (2005) describes how China took a long view with regards to reforms with the so called dual track approach. The Chinese authorities recognised that institutional change yields both winners and losers, and that the losers posed a risk to the entire enterprise. They acted
to mitigate this risk under the dual track approach, which consisted of compensating the losers of institutional change. Town village enterprises (TVEs) were established to absorb displaced local officials. Other measures were also designed to temporarily protect agents in the planning sector and to prevent their oppositions to the parallel market reforms. At the same time, local government’s take in local taxes was boosted as the TVEs grew. In this way, China ensured that their intended economic reforms moved forward, albeit at a slow rate. This is not to say that China’s reforms were conflict free. And although a big bang approach may have expedited reforms, it is not certain that it would have expedited growth if it would have stirred up distributional conflict that impedes its progress.

Economic reforms in the Soviet Union and Eastern Europe were also centrally led and began as early as the 1950s (Winiecki, 1990). Eggertsson (2005) also describes how these reforms were consistently frustrated by the mid-level agents and managers. The centrally managed USSR relied on two main lower levels to administer its economic system, a set of middle-level administrators and managers and a set of communist party officials to monitor them. These formed a group that had been placed in their positions by virtue of their party loyalty, not their skills or qualifications. When reforms were introduced that would displace them, they knew that their options were limited and their only card to play was to frustrate the reforms.

It is interesting to note that unlike China, the establishment of Tanzania’s political stability may have taken place at the expense economic progress, rather than being used as a tool for achieving economic transition and growth. In their quest for consolidating political power, Tanzania’s political leaders suppressed the emergence of a capitalist class and capitalist institutions. For instance, Khan (2010) describes this process as follows:

“The management of social order has been organized in Tanzania through the distribution of formal and informal political benefits through state bodies like village government structures rather than to distinct factional groups competing for benefits. The legal ban on setting up trade unions, political parties and other organizations meant that individuals and groups organized very loosely around state institutions to negotiate and capture benefits appropriate to their usefulness for the state-party. It is very difficult for an alternative party to delink some of these coalitions under an entirely new banner to contest for a different distribution of benefits.” (Khan, 2010, p.121).
In many ways, the Tanzanian experience shows important similarities with what Eggertsson (2005) terms as the USSR’s case of a “willing centre and resisting agents” and contrasts with the case of China’s reforms that were characterised by a “reluctant centre and willing districts”.
### Annexes

#### 6.1 Description of levels of local and village governments

<table>
<thead>
<tr>
<th>Level</th>
<th>Political head</th>
<th>Leadership</th>
<th>Procedure for selection of leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>District council chairman</td>
<td>District council chairman</td>
<td>Made up of councillors representing each ward</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chairman elected by fellow councillors</td>
</tr>
<tr>
<td>Ward</td>
<td>District councillor</td>
<td>Ward development committee</td>
<td>Chairman is district councillor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Village chairman</td>
</tr>
<tr>
<td>Village</td>
<td>Village chairman</td>
<td>Village council (15 – 25 members)</td>
<td>Chairman and other councillors elected by all adult villagers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub-village chairman</td>
</tr>
<tr>
<td>Sub-village</td>
<td>Local council chairman</td>
<td></td>
<td>District election by universal suffrage</td>
</tr>
</tbody>
</table>

Source: Adapted from James, Mdoe & Mishili (2002)
6.2  Maize marketing structures pre and post-liberalisation reforms

Pre-liberalisation

![Diagram showing pre-liberalisation maize marketing structures]

Post-liberalisation

![Diagram showing post-liberalisation maize marketing structures]

Source: Author.
6.3 Coffee marketing structures pre and post-liberalisation reforms

Pre-liberalisation

Source: Author.

Pre-liberalisation

Source: Author.
6.4 Principal organisations involved in the Tanzanian coffee sector

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>ENTITY</th>
<th>MAIN FUNCTIONS AND RESPONSIBILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Agriculture and Food Security</td>
<td>Government</td>
<td>Supervises the sector. Acts as liaison between the sector and the legislature and provides legal and policy guidelines.</td>
</tr>
<tr>
<td>Ministry of Cooperatives</td>
<td>Government</td>
<td>Oversees and regulates the cooperative unions. It provides policy guidance and operational framework that is geared towards restructuring cooperatives to operate on an independent, voluntary and economically viable basis and to develop into centres for providing and disseminating agricultural inputs, technology and information.</td>
</tr>
<tr>
<td>Tanzania Coffee Board</td>
<td>Statutory body</td>
<td>Established with the Policy Industry Bill of 1993, it replaced the Tanzanian Coffee Marketing Board. Advises the government on policies and strategies for the development of the coffee industry, regulates the industry, issues various licenses and permits, collects and disseminates statistics, and runs the coffee auction.</td>
</tr>
<tr>
<td>Primary Societies</td>
<td>Private sector</td>
<td>Village-level associations whose membership consists of farmers, often act as agents of coffee buyers (either private or union.) Engage in a number of other commercial and non-commercial activities.</td>
</tr>
<tr>
<td>Cooperative Unions</td>
<td>Private sector</td>
<td>Associations of primary societies, often buy, store, and process coffee in their own facilities (also engage in other activities.) Compete with private traders. As of 1991 they are supposed to be private entities. The Kilimanjaro Native Cooperative Union was the first union to be registered under the Co-Operative Societies Ordinance of 1932.</td>
</tr>
<tr>
<td>Coffee Apex Organization</td>
<td>Private sector</td>
<td>Created in 1996, membership consists of all cooperative unions that are still involved in marketing and processing of coffee. Promotes the interests of its members.</td>
</tr>
<tr>
<td>Tanzania Coffee Research Institute</td>
<td>Non-profit organization</td>
<td>Established in 2001 and modelled after the Tea Research Institute. Financed by a levy collected by the Coffee Board.</td>
</tr>
<tr>
<td>Tanzania Coffee Growers Association</td>
<td>Private sector</td>
<td>Established in 1945, promotes the interests of large coffee farmers and estate producers.</td>
</tr>
<tr>
<td>Tanzania Coffee Association</td>
<td>Private sector</td>
<td>Established in 1996, mainly a forum for dispute resolution. Membership consists of licensed coffee traders, processors, cooperative unions, and exporters.</td>
</tr>
</tbody>
</table>

### 6.5 Principal organisations involved in the Tanzanian maize sector

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>ENTITY</th>
<th>MAIN FUNCTIONS AND RESPONSIBILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Agriculture and</td>
<td>Government</td>
<td>Supervises the sector. Acts as liaison between the sector and the legislature and provides legal and policy guidelines.</td>
</tr>
<tr>
<td>Food Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry of Cooperatives</td>
<td>Government</td>
<td>Oversees and regulates the cooperative unions. It provides policy guidance and operational framework that is geared towards restructuring cooperatives to operate on an independent, voluntary and economically viable basis and to develop into centres for providing and disseminating agricultural inputs, technology and information.</td>
</tr>
<tr>
<td>National Grain Reserve</td>
<td>Government</td>
<td>Procures maize and other grains and stores it regional silos for use in case of food security emergencies.</td>
</tr>
</tbody>
</table>

Source: Adapted from Bafes, 2003.
Conclusion

The purpose of this thesis has been to theoretically and empirically investigate the effects of institutional inefficiencies on markets and non-elite groups, and to better understand the factors that prevent efficient institutions from evolving through the process of institutional change. We commenced by reviewing the literature relating to institutional change and presenting our theoretical framework. We then presented three empirical chapters that aim to address our key questions and hypotheses relating to how inefficient institutions affect markets and why inefficient institutions persist. We summarise the findings of these three chapters below, describe the linkages between them and how they relate to the key areas of investigation of this thesis.

Our empirical case studies of Tanzania’s coffee and maize markets (chapters four and five) present institutionally driven market failures that currently exist in two of Tanzania’s major export crop and food crop markets. We demonstrated how these failures contribute to market inefficiency and lower the incomes of some of the poorest groups participating in each chain.

Our first case study analyses inefficiencies in the grading arrangements of the coffee market. The empirical analysis for this case study is based on an original survey of coffee producers that we carried out in 2008. The analysis shows that when the proper institutional arrangements and incentives are in place, grading plays a very important role in making the market work better for both coffee producers and coffee buyers. It increases the incomes of otherwise poor producers who rely on their annual coffee crop to sustain the household. It also creates a virtuous cycle that leads to a market that reinforces investments in better production and processing practices, thus allowing buyers to engage in higher premium quality markets. However, this is not the case for Tanzania’s coffee market where grading is largely absent at the village level, and where transactions are not providing a premium or an incentive for the production of high quality coffee. Although the *de jure* regulations require buyers to apply the village grading arrangement, the *de facto*
reality is that they stand to extract rents by avoiding them. We show that this is an outcome of payoff maximization by coffee buyers. The winners and losers from these institutional arrangements, and the associated market failure, are evident. Whilst coffee growers lose out on income and incentives, coffee buyers earn premium rents in the short term.

Our second case study analyses some of the inefficiencies of the marketing institutions of Tanzania’s maize market. The empirical analysis for this case study is based on the most recent Household Budget Survey of Tanzania (conducted in 2007). We examine the search costs incurred by buyers in the process of sourcing maize from producers and getting it to the market. We show that farm-gate buying, the most prevalent marketing channel, is associated with high search costs. We found that these costs result in lower prices for maize producers and that this effect is more intense during the harvest season. The scarcity of marketplaces contributes to this effect, making it difficult for many farmers to gain access to markets. Maize producers and non village-based buyers that have high search costs would benefit from better coordination through markets. However, the group that benefits the most from the absence of marketplaces are the village-based buyers.

These findings demonstrate that there is no automatic welfare maximising process in the functioning or the evolutionary path of institutions because even though these institutions are inefficient, they remain constant and largely unchallenged in the market. In other words, inefficient market institutions do not spontaneously disappear even though they disadvantage large groups. The findings raise questions about how these inefficient institutions evolved and why they persist.

Our third case study chapter addresses these questions. Tanzania’s agricultural markets underwent numerous reforms and institutional since the 1960s. Tanzania’s leaders experimented with agricultural marketing on a grand scale, restructuring incentives and transferring control of markets between groups in the process. These reforms were not only economic, but also political in nature.

We carried out a qualitative analysis of Tanzania’s agricultural market liberalisation reforms with reference to our theoretical framework. We discussed how agricultural cooperatives had effectively captured local and village government authorities in the pre-liberalisation reform period. The cooperatives had a strong hold on the market and the reform experience of private buyers was difficult. In many cases they managed to prevent the entry of the new private entrants. At that time, the cooperative movement had an advantaged
position since it had the lowest influence costs amongst the various market players. As liberalisation became more entrenched in agricultural markets, private businesses gained a better foothold. Private traders have emerged as an elite group that effectively competes with cooperatives (where they are still active) and that effectively captures market rents at the expense of small farmers, a group that has firmly remained in the non-elite category. More importantly from our perspective, the private buyers and traders were also able to reduce their influence costs over time.

We argued that groups with low influence costs are more powerful and can build the links that are necessary for influencing institutional change more easily. For this reason, market groups build networks that give them access to information, they join associations that enable them to collaborate with other groups of similar interest and that allow them to gain access to politicians and regulators at all levels of government in order to keep their influence costs low.

Our analysis of Tanzania’s agricultural market reforms also showed that these relative positions of power and influence evolved through a long process of distributional conflict at the micro level. The complexities, contradictions, delays and reversals of Tanzania’s agricultural market liberalisation reforms were largely determined at the most disaggregated level. Massive institutional change was taking place, but its path was steered by a drawn-out process of distributional conflict in rural villages that is still ongoing today.

The findings of our analyses of the coffee and maize chapters are directly linked to this above described process of distributional conflict, relative power and institutional change. The inefficient institutions analysed in chapters four and five (grading in the coffee market, and farm-gate buying in the maize market) emerged as outcomes of the liberalisation reforms.

Although the political economy of institutional change literature has established the importance of distributional group conflict for institutional change, gaps exist in the literature in understanding how this group conflict is played out, why some groups are less influential than others and the relative importance of group conflict at the village level (micro foundations of group conflict). The respective levels of relative power and influence are taken as given. The thesis builds on this literature by addressing the mechanisms that relate to group success or failure in influencing institutional change. Our core contribution to the literature lies in using influence costs to describe relative power. We bring influence
costs out of the boundaries of firm level analysis (the typical context in which they are applied) and frame them as players in the broad process of distributional conflict and institutional change. We also elaborate the types of influence costs and apply them to a case study rooted in historical analysis.

What this thesis shows is that institutional change depends, to a large extent, on the preferences and responses of the relevant interest groups. Group dynamics and the underlying political economy of the market are key variables for success. Inferences and reform programmes that ignore these factors are unlikely to result in the predicted outcomes and may lead to wrong conclusions. Hence, institutional solutions that take vested interests within the market into account must be sought when directing the path of institutional change. The historical perspective is also important in that it acts as a clarifying lens for what may otherwise seem to be an opaque set of groups, structures and incentives. This is what we have sought to achieve in this thesis. By combining quantitative institutional impact investigations with interest group-based political economy and historical analyses, we have been able to reveal the thread that links current economic outcomes with long-standing group conflict dynamics.
References

Chapter One

Chapter Two


**Chapter Three**

Chapter Four


Chapter Five


   *http://documents.wfp.org/stellent/groups/public/documents/ena/wfp103646.pdf*

**Chapter Six**


