

# New Institutional Economics and Agrocredit Markets in Agrarian Economies: A Theoretical Perspective

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**Abstract:** *In this paper we outline the relevance of the New Institutional Economics (NIE) approach in analysing the current behaviour of suppliers of agrocredit in remote areas of developing economies. The paper covers the definition of NIE and its relevancy in modern economics, basic features of NIE, transaction cost economics (TCE) and modelling of transaction costs, application of transaction cost economics in agriculture sector, and review of empirical research using TCE theory. The application of NIE theory in advancing understanding of the development path of agrocredit market and other related markets has proved very relevant particularly in less developed areas of the developing world.*

**Key words:** New Institutional Economics, Transaction Cost Economics, Agrocredit SuGood day managers,

## INTRODUCTION

NIE began to develop as a self-conscious movement in 1970s following Coase's article on analysis of the firm in 1937 (Coase, 1937). Coase questions why firms exist, a point of deviation from mainstream economics thinking which is perceived as the starting point of NIE. Its best known representatives are Coase, Williamson and North (Klein, 1999). According to Klein (1999), it is Williamson (1975) who originated the term "New Institutional Economics". North (1993) defines NIE as an attempt to incorporate theory of institutions<sup>1</sup> into economics by building on, modifying and extending Neoclassical Economics (NCE) theory. NIE retains and extends on the fundamental assumption of scarcity and hence competition, which is the basis for the choice theoretic approaches that, underlies microeconomics. In explaining how NIE fits in NCE North, (1993) explains:

It (NIE) begins with the scarcity hence competition postulate; it views economics as a theory of choice subject to constraints; it employs price theory as an essential part of the analysis of institutions; and it sees changes in relative prices as a major force inducing change in institutions.

What NIE abandons is the instrumental rationality in which NCE assumes existence of the real world which in practice does not exist. NIE tries to modify the rationality postulate and it adds institutions as a critical constraint and relating transaction costs

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<sup>1</sup> From NIE perspective, the term *institutions* refers to the rules of the game i.e. the humanly devised constraints that structure human interaction. They are made up of formal constraints (such as policy, rules, laws, constitutions), informal constraints (such as norms of behaviour, conventions, self-imposed codes of conduct), and their enforcement (<http://coase.org/nieglossary.htm>).

to be connection between institutions and costs of production. In addition, NIE incorporates ideas and ideologies into the analysis. NIE assumes that the real world does not exist due to the fact that decision-makers have incomplete information and limited capacity to process information leading to transaction costs which underlie the formation of institutions thus, persistence of imperfect markets. NIE therefore differs from mainstream NCE in insisting that policy analysis be guided by comparative institutional analysis other than comparing real world outcomes with the hypothetical benchmark of perfectly competitive general equilibrium (Klein, 1999). To summarise, NIE is a development of neo-classical economics to include the role of transaction costs in exchange and so to take account of institutions as critical constraints on economic performance.

#### BASIC FEATURES OF NIE

Conveniently the study of NIE has been revolving around four different but closely linked strands, namely the institutional environment, institutional arrangement or governance structures, moral hazard and agency theory, and transaction cost economics. This section briefly reviews these approaches as described by various NIE scholars.

#### **The Institutional Environment**

North (1993) defines institutional environment as set of background constraints, or “rules of the game”, that guide individuals’ behaviour. These can be both formal, explicit rules (constitutions, laws, property rights) and informal, often implicit rules (social conventions, norms, etc). While these background rules are the product of, and thus can be explained in terms of, goals, beliefs and choices of individual actors, the social result (the rule itself) is typically not known or designed by anyone (Klein, 1999). Institutional environment forms the framework in which human action takes place. According to North (1990:3) institutions reduce uncertainty by providing a structure to everyday life. These institutions often arise spontaneously as by-products of individual choices, rather than deliberately through collective actions. Klein (1999) summarises types of these institutions (rules) into five main categories: the legal environment and property rights, norms and social conventions, economic history and economic growth, positive political theory, and complexity and cognitive science. Formal institutions such as legal environment and property rights governing economic activities may change more rapidly to respond to market reforms than informal ones such as norms which at times may respond in a way that is contrary to expectations under ideal conditions (Dorward et al, 1998).

The North’s idea on institutional environments and its interpretation by Dorward et al, (1998) implies that in order for transaction to take place, partners in agrocredit markets for example, have to incur costs of exchange in three broad areas of credit contractual activity:

- (a) Measuring the valuable attributes of what is being exchanged. The exchange partners are assumed to possess incomplete information concerning the attributes of the good (credit contract) in question
- (b) Protecting (and capturing) rights to the product being exchanged
- (c) Policing and enforcing contractual agreements

North's perception that transaction costs are low within the community in a stylised village in a developing country due to closeness of relationship is challenged by Dorward et al, (1998). Dorward et al (opt cit) argue that for development to proceed, people have to trade with others outside their village community, at progressively longer distances away, thus transaction costs increases with complexity and impersonality of trading contracts.

### **Institutional Arrangements and Theory of the Firm**

Davis and North (1971) distinguish institutional arrangements from institutional environment in that the former comprises of specific guidelines which are designed by trading partners to mediate particular economic relationships. Business firms, long term contracts, public bureaucracies, non-profit organisations and other contractual arrangements are examples of institutional arrangements. Such institutional arrangements are termed by Williamson (1996) as "institutions of governance" or as "governance structures" (Williamson, 2000). These institutions include contracts and organisations and in particular, the business firms. It is arguably stated that the study of governance, in particular, the theory of the firm, is more developed than the study of the institutional environment. Klein (1999) argues that what economists usually mean by the "theory of the firm" is the theory of production, not of the firm as a legal entity. NCE models the firm as a single actor facing a series of straightforward decisions i.e. what level of output to produce, how much of each factor of production to hire etc. Similarly Spulber, (1989) expresses that the firm's size and product range are usually explained by economists in terms of production costs where, economies of scale implies larger firms, while economies of scope justify the multiproduct firm. Klein (1999) argues that although the conventional theory has proved highly useful for understanding pricing and output decisions and how these vary with competitive conditions, the production function approach provides little insights into the boundaries of the firm.

Unlike NCE's failure to distinguish between the firm and the plant (production process), NIE sees the firm as a set of arrangements (as an organisation) itself worthy of economic analysis. In the Coasian (1937) framework from which other NIE scholars have expanded, the decision to organise transactions within the firm as opposed to the open market, "the make or buy decision," depends on the relative costs of internal and external exchange. The market mechanism entails certain costs such as discovering the relevant prices, negotiating and enforcing contracts etc. Within the firm, the entrepreneur can reduce these transaction costs by coordinating these activities himself. More generally, Williamson (2000) argues that since all feasible modes of economic organisation incur costs, then the nature of the firm is determinedly the relative costs of organising transactions under alternative institutional arrangements.

Williamson (1995) adds the costs of adaptation onto the North's (1990) costs of contracting. The costs of adaptation are all costs incurred by contracting partners to adjust to unforeseen changes in the original contracts between the partners. Dorward et al., (1998) summarise these costs into three categories:

- Costs incurred when the terms of the contract turn out to be sub-optimal under the circumstances actually experienced,

- Costs of negotiation for better terms with the other party to the contract, and
- Costs of seeking arbitration or of going to court in case of disputes.

Based on Williamson's view, Dorward et al., (1998), further identify three key characteristics of transactions and discuss them in the context of their applicability in agricultural markets in developing countries:

- *The degree of uncertainty surrounding the transaction.* Agricultural production is inherently risky and uncertain due to factors such as climatic variability, and crop marketing faces uncertainty due to price fluctuations. These factors define the nature of contractual transaction that takes place.
- *The frequency of the transaction.* Agricultural transactions tend to be highly seasonal. They argue that transaction cost increases with large infrequent transactions but decrease with many small transactions between parties since the latter allow them to build up information about each other.
- *The extent to which one or both parties are involved in investing in specific assets.* Asset specificity involves assets that are human or physical for which the investment cannot be recovered in a use other than that originally planned for. Dorward et al., (opt. cit) give an example of the farmers' co-operative demands for a high price for its products from the processor, knowing that the processor's equipment would be idle without the products (opportunism). NCE perception is that asset specificity does not exist since resources (e.g. labour and capital) can costless be switched to alternative activity if the former activity is idle or not profitable.

### **Moral Hazard and Agency Theory**

Moral hazard and the agency theory constitute one of the approaches of the modern theory of the firm, whereby ownership and control of the large firms are separated. The interests of the salaried managers of the modern corporation may differ from those of the owners (shareholders). In this case managers may use their discretion to "shirk" or otherwise pursue their own objectives (e.g. firm growth, personal power, entrenchment) at the expense of shareholders. Klein (1999) argues that the basic model of conflict between shareholders and managers i.e. the principal-agent problem, remains a powerful lens for viewing the internal organisation of the firm. The agency theory studies the degree of *ex ante* incentive-compatible mechanisms to reduce agency costs in the face of potential moral hazard by agents. Klein summarises the agency costs as the sum of:

- Monitoring expenditures of the principal
- The bonding expenditures by the agent and
- The residual loss i.e. the potential gains from trade not realised because principals cannot provide perfect incentives for agents when the agents' actions are unobservable.

In a typical agency model, a principal assigns an agent to do some task (e.g. producing output) but has only an imperfect signal of the agent's performance (e.g. personal effort). Thus, a firm is defined by Alchian and Demsetz (1972) as simply a convenient label for the collection of contracts between owners and managers,

managers and employees and the firm and its customers and suppliers. The agency theory has remained popular in imperfect market information related studies and it is widely applied in business and marketing management studies.

### **TRANSACTION COST ECONOMICS (TCE)**

TCE represents an alternative approach to studying institutional arrangements. It holds that all but the simplest transactions require some kind of mechanism to protect the transacting parties from various hazards associated with exchange. This mechanism is what Williamson (1995, 2000) refers to as the *governance structure*. The appropriate governance structure depends on the characteristics of the transaction, thus TCE implies an applied research programme of comparative contractual analysis i.e. how different forms of governance work in various circumstances. For this reason, TCE (associated with Williamson) is sometimes described as the “governance” branch of NIE, as opposed to the “measurement” branch (associated with Alchian and Demsetz, 1972). TCE is the most widely used approach in NIE related researches and in fact, as also pointed out strongly by Hubbard (1997), TCE stands at the heart of NIE.

The governance approach is distinguished by its emphasis on incomplete contracts. With orthodox economic model of competitive general equilibrium, all contracts are assumed to be complete. TCE relaxes this assumption and holds that in the transaction cost framework, economic organisation imposes costs because complex contracts are unavoidably incomplete. The contractual incompleteness exposes the contracting parties to certain risks. The need to adapt to unforeseen contingencies is an additional cost of contracting, failure to adapt leads to the so-called *maladaptation costs* especially for specific assets investments. TCE holds that parties tend to choose the governance structure that best controls the underinvestment problem (unwillingness to invest in specific assets without protection for contingencies), given the particulars of the relationship. More generally, contractual difficulties can arise from several sources (Klein, 1999) i.e. bilateral dependency, weak property rights, measurement difficulties and/or over searching, inter-temporal issues that can take form of disequilibrium contracting, real-time responsiveness, long latency and strategic abuse, and weaknesses in institutional environment. Each of these has the potential to impose maladaptation costs. Foreseeing this possibility, agents seek to reduce the potential costs of maladaptation by matching the appropriate governance structure with the particular characteristics of the transaction. Thus, the main hypothesis of the TCE is that economic organisation is mainly an effort to align transactions, which differ in their attributes, with the governance structures, which differ in their costs and competencies, in a discriminating (mainly transaction cost economising) way (Williamson 1975; Menard 1997; Williamson 2001). The role of TCE is therefore to give explanation of how trading partners choose, from the set of feasible institutional alternatives, the arrangement that protects their relationship-specific investments at the possible least cost (Klein, 1999, p.468). The rest of this paper concentrates on how TCE has been useful in analysing economic organisations in terms of their structure, conduct and performance with emphasis on third world countries.

## **MODELLING TRANSACTION COSTS**

Transaction costs, as put forward by Coase (1937, 1960, 1984, 1992) refers to the costs of using the price mechanism or the cost of carrying out a transaction by means of an exchange on the open market. In empirical studies, a direct measurement of transaction costs is simply the economic value of resources used in locating trading partners and executing transactions (Wallis and North, 1986; de Soto, 1989; Wang, 2003). Wang (2003) summarises a survey of research programmes that have contributed to our understanding of transaction costs which could be subdivided into two major categories: the marketed and non marketed transaction costs.

### **Marketed Transaction Costs**

Measurement of the marketed transaction costs is based on the Williamsonian view of transaction costs (Williamson 1975, 1995, 1998, 2000, 2001). The distinctive feature of the marketed transaction costs is the cost of conducting transactions in one organisational or contractual form relative to the others. Therefore what matters is not the absolute amount of transaction costs, but the relative ranking of transaction costs associated with different organisational and contractual choices. Furthermore, Wang (2003) observes that in empirical studies, transaction costs are not directly measured. Thus instead certain proxy variables which are believed to critically affect the costs of transactions are used. Such proxies include uncertainty, transaction frequency, asset specificity, opportunism etc. A statistically significant relationship between the chosen proxy and organisational governance suffices to make a justification that various contractual arrangements within a given market are set to economise on transaction costs.

Klein (1999) observes that much of the empirical research in TCE is based on the same basic model: the efficient form of economic organisation and therefore the likelihood of observing a particular organisation form or governance structure is a function of certain properties of the underlying transactions such as asset specificity, uncertainty, complexity and frequency. Organisational form is the dependent variable, while asset specificity, uncertainty, complexity and frequency of transactions are independent variables. Specifically, the probability of observing a more integrated organisational structure depends positively on the amount or value of the relationship-specific assets involved. The significant levels of asset specificity depend on the degree of uncertainty about the future of the relationship, on the complexity of the transaction and on the frequency of transactions. Based on Williamsonian view, Klein (1999) argues that most empirical literature inspired by TCE takes as given an economising framework, assuming that we can draw inferences about the efficiency of organisational forms by observing what organisations are actually doing. Unlike earlier traditions in industrial organisation which presumed that complex contracts and similar deviations from perfect competition are usually attempts to gain monopoly power, Williamson (1985) argues that TCE follows the common law presumption that such contracts serve affirmative economic gains. Furthermore Coase (1964) reported in Klein (1999) contends that such contracts are objectively relevant unless some feasible alternative exists.

Following Williamsonian approach, organisational form is modelled as a binary variable – e.g. “make or buy” although it can sometimes be represented by a continuous variable. Of the independent variables mentioned earlier in this section, asset specificity is the most difficult to measure. Williamson (1991) distinguishes six different types of asset specificity

- Site specificity – this is where parties are in what is referred to as a “cheek-by-jowl” relationship to reduce transportation and inventory costs, and assets are immobile
- Physical asset specificity – this refers to relationship-specific equipment and machinery
- Human asset specificity – this describes transaction-specific knowledge or human capital, achieved through specialised training or learning-by-doing
- Brand name-capital specificity – This is reflected in intangible assets reflected in consumer perceptions
- Dedicated asset specificity – This refers to substantial, general purpose investments that would not have been made outside a particular transaction, the commitment of which is necessary to serve a large customer
- Temporal assets specificity – this describes assets which must be used in a particular sequence in a given transaction.

Various common empirical proxies have been used to quantify certain forms of asset specificity. For example Masten (1984) uses component complexity, qualitatively coded from survey data as a proxy for physical asset specificity. Another proxy for physical asset specificity has been research and development expenditure. Monteverde and Teece (1982) use worker specific knowledge, coded from survey data to quantify human asset specificity. Physical proximity of contracting firms has also been used as a proxy for site specificity (Spiller, 1985; Joskow, 1988, 1991). Other proxies, such as fixed costs or capital intensity, have more obvious limitations and are therefore rarely used (Klein, 1999).

### **Non-Marketed Transaction Costs**

Unlike marketed transaction costs, non-market transaction costs are those costs that do not flow through the market. For instance resources spent in waiting, getting licences to do business, cutting through the red tapes, bribing officials etc. Non-marketed transaction cost is critically important in understanding the economies particularly in developing countries such as Tanzania where such costs are rampant. Non-marketed transaction costs affect not only the contractual arrangement of production, but also the amount and type of goods and services to be produced and available on the market (North, 1990; de Soto, 1989). Literature in non-marketed transaction costs emphasises the cost of setting up a business i.e. the cost of entry. This differs from barriers of entry as traditionally emphasised in the mainstream economics literature such as monopoly, large initial capital investment etc (Wang, 2003). Instead, the emphasis is on government imposed cumbersome rules and regulations, such as import regulations, rules on sale or lease of real estate, export

and import regulations, taxes, licensing procedures etc. These costs force entrepreneurs to conduct some or all of their business outside the official economy or even worse, discourage them from entry all together (see for example Johnson *et al.*, 1997; Djankov et al., 2002; and Hoshi et al., 2002).

Various research work has been done to measure the non-marketed transaction costs (e.g. de Soto, 1989); Benham and Benham, 1997, 1998, 2001; Gabre-Madhin, 2001; Djankov et al, 2002). In his study, de Soto documents the costs of doing business formally i.e. the costs of meeting legal requirements for starting and running a business, and the costs of doing business informally (where such costs are not incurred) in Peru. Benham and Benham (1998) carry out the comparative studies across countries to measure the cost of exchange. They argue that the cost of doing business varies across individuals and countries since the principle of NCE's single price usually does not apply due to taxes, tariffs and knowledge base. Quoting figures from The Services Corporation (1998), Benham and Benham (2001) found that it took 7-14 days with waiting time of up to 91 days in Tanzania to clear items already in port whereas in Singapore it took only 15 minutes. The fourteen days wait in Tanzania is more than 1300 times the average waiting time in Singapore. In her study of Ethiopian grain market, Gabre-Madhin (2001) measures the cost of transactions that grain traders do face. For each transaction she measures the labour time in searching trading partners and the opportunity cost of working capital during search. The latter is the measure of how costly it is for a trader to tie up working capital in grain stocks while waiting for a transaction to take place.

#### **APPROACHES TO TRANSACTION COST MEASUREMENT**

Methodological debates in ways of applying transaction cost approach are summarised in Chang and Ive (2000). The authors discuss the theoretical and empirical differences between two dominant approaches to measuring transaction costs for a given transaction type (e.g. farm credit supply) i.e. the Direct Measurement Approach (DMA) and Indirect Measurement Approach (IMA). DMA is an approach that considers direct measurement of the magnitude of transaction costs of running a governance structure whereas IMA is concerned with the determination of the factors that are predicted to be responsible for comparative difference in transaction costs across governance structures. For a rational, sound model based on transaction costs entails showing clear link between costs of organisation and of selecting governance structure. Intuitively, a good reason for explaining why governance structure 1 (GS1) is chosen instead of governance structure 2 (GS2) is justified by the lower costs of using GS1.

The major difference between DMA and IMA is the depth and type of data required. For DMA data is required on measurable transaction attributes, the relative sums of all transaction costs for transactions with similar attributes under different governance structures, and the absolute values of the comparatively significant elements of total transaction costs. For IMA data is required on measurable transaction attributes and on relative frequencies with which governance structures are used, for transactions with different attributes. According to DMA, all  $n$  categories of transaction costs  $TC_i$  ( $i=1...n$ ) associated with use of a given governance structure must first be identified before being quantified. Summing up

all the quantified items of transaction costs gives the total cost of running a given governance structure. For comparison purposes, the governance structure with the

minimum  $\sum_{i=j}^n \Delta TC_i$  is regarded as most efficient. This implies that in using DMA,

the absolute level of elements of transaction costs, and the relative or ordinal level of total transaction costs must be known in order to determine the relative efficiency of governance structures. Since there are several elements of transaction cost whose relative magnitude or weight are not known in advance, this poses a limitation to the application of DMA. In order to overcome the difficulties in measuring the absolute level of transaction costs inherent in DMA, the IMA stresses comparative differences between transaction costs of comparable governance structures. Provided there are say two governance structures under review, their running costs

can be expressed as  $TC^1 = \sum_{j=1}^n TC_j^1$  and  $TC^2 = \sum_{j=1}^n TC_j^2$ . The transaction cost

between them is given as illustrated in equations 1 and 2.

$$\Delta TC = TC^1 - TC^2 = \sum_{j=1}^n TC_j^1 - \sum_{j=1}^n TC_j^2$$

$$1 \quad TC = \sum_{i=j}^n \Delta TC_i (\Delta TC_i = TC^1 - TC^2) \quad 2$$

The IMA is not concerned either with the magnitude of each component of  $TC_i^1$

and  $TC_i^2$  or  $\sum_{i=j}^n \Delta TC_i$ , but with what factors will contribute to their difference. Put

in a formal functional form this relationship can be presented as indicated in equation 3.

$$\sum_{i=j}^n \Delta TC_i = f(X_k)k = 1..l$$

3where  $X_k$  is the matrix of  $k$  transaction cost attributes and  $l$  is the total number of transaction cost attributes. Figure 1 summarises the procedures for implementing DMA and IMA. The common point of departure between the two approaches is the step of identifying attributes (categories) of transaction costs that may occur in the course of transactions. After identifying the sources of transaction costs and interpreting why they will change with different governance structures, leading to predicted frequency dominance of one governance structure (GS) over another, the two approaches branch out at this point. If DMA is adopted, transaction costs have to be broken down into a comprehensive significance list of elements for which no adequate *a priori* reasons to reject in advance the proposition that they may vary significantly between one GS and another (i.e. reasons to rule out their comparative significance). If the IMA is adopted, it requires theoretical prediction of transaction cost attributes that are perceived to influence differences in performance of governance structures. From the direction of attributes acting on the selection of GSs, given the assumption that behaviour is transaction cost minimising, the



current study), the potential costs incurred will go beyond resource-incurring transaction costs and include commitment, rent seeking and opportunism costs. Chang and Ive (2000) conclude that the relative desirability of the DMA and IMA is naturally dependent on what are the principle elements of transaction costs with comparative significance, which in turn is affected by what are the alternative GSS under comparison. The conceptual framework discussed in sections 4.4 and 4.5, provides an understanding of the main sources of transaction costs that may occur in the agrocredit supply chain and hence justification for the application of IMA in the current study.

### **APPLICATION OF TCE IN AGRICULTURE**

Irrespective of its importance in analysing agriculture sector development, very few agricultural economists especially in developing countries have used TCE approach to address agricultural development paths. Hubbard (1997) agrees with this point when he notes that: "...Agricultural economics has been less guilty of this omission than other branches of microeconomics, despite having long incorporated risk and uncertainty of yield and income."

The comprehensive reviews of the empirical TCE research by Boerner and Macher (2001) and Wang (2003) reveal that there has been little systematic statistical analysis of agriculture or the organisation of agriculture transaction from a transaction cost perspective. However Masten (2000) notes that agricultural transactions provide a rich and largely unexplored area for application and refinement of transaction cost theory. Masten further argues that agricultural transactions display a broad range of governance structures, including the location-specific nature of the investments required and the temporal specifications associated with the perishability of the agricultural products. Boerner and Macher (2001) point out that the nature of agricultural products and production means physical and human asset specificities likely play a less important role in agricultural transactions in comparison to the temporal and vocational specificities associated with production, processing and distribution of farm produce. Perishability (which affects quality) of farm produce tends to exacerbate contracting hazards between contracting parties, while geographic and process disparities between contracting parties tend to impede the administration and coordination of activities. Based on this premise, Knoeber (1983) examined the governance of fruits and vegetable processing and dairy processing and found that there was a significant connection between hold-up problems, and temporal and location specificities.

Another body of literature on the empirical studies of TCE in agriculture is connected to the examination of the extent and use of long term contracting in agriculture. Purceli (1990) examines the growth of long term contracting and prevalence of integration between feedlots and beef processors brought on by the site specificity that exists. Allen and Lueck (1992, 1996) study the use of relatively simple short term contracts in farming, and argue that the simplicity of these agreements reflects the comparative advantage of enforcing farmland contracts through the market and common law. The authors suggest that the character of the farming economy, namely good information about reputations, the immobility of

farmers and land owners, relatively low transaction costs and the desire to maintain long term relationships, lends itself to the pervasive use of informal, simple contracting.

In their study on the institutional adjustments to coffee trade liberalisation in Tanzania, Anna Temu and Nelson (2001) apply TCE theory to empirically examine the impact of liberalised market on transaction costs. The authors argue that although liberalisation has reduced costs in output market, it has however removed opportunities for linked input-output transactions that served to lower the costs of providing finance in state controlled parastatals. They found that irrespective of the fact that output marketing costs<sup>2</sup> have fallen with general positive impacts on smallholder coffee farmers, there has been a massive rise of transaction costs for rural finance. They further argue that evaluation of trade liberalisation that focuses on output market alone ignores the rising transaction costs in financing necessary productive inputs particularly to small-scale farmers. Anna Temu and Nelson (*op.cit*) reveal that since 1994 economic agents (private traders, co-operative unions, and the government) have responded to liberalised coffee market in Tanzania by forming new contracts (governance structures) to reduce costs in the new institutional environment. These contracts ranged from vertical integration of exporters into assembly and processing, to collaborative support for National Input Voucher Scheme (NIVS) involving all stakeholders (the state, private traders and cooperative unions). The impact of these arrangements has been detrimental to financing production. Fewer farmers have been able to access input finance. The study by Anna Temu and Nelson reveals further that while all coffee farmers received input finance before liberalisation, 80% of interviewed smallholder coffee farmers did not receive input finance after liberalisation of coffee market, and that of the remaining 20% claimed to have had access to finance through shopkeepers (8%), cooperative societies (8%) and through official projects (4%). This problem is exacerbated by the fact that no large scale input financing system has been in place, as a result the multiple outlets for coffee have resulted to increased transaction costs of screening, monitoring and enforcing input financing transactions. Similar observations could be probable for other tradable farm products in the country.

Applying NIE approach, Fafchamps (2004) gives a bird's eye view of the practical functioning of market institutions in Sub Saharan Africa. Fafchamps used survey questionnaires to collect cross sectional data from traders who locally marketed consumed staples in Benin, Madagascar and Malawi. The type of data collected included search behaviour and costs, quality inspection, contract enforcement, information, and property rights enforcement. Fafchamps used a cross section of variables to assess factors responsible for trading partners to abide by or breach the

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<sup>2</sup> In their paper Anna Temu and Nelson (2001) define marketing costs as the combined transaction and transformation costs of marketing. Transformation costs refer to costs of physically transforming products through space, form and time (e.g. transportation, processing and storage) whereas transaction costs refer to the costs of arranging an exchange that do not relate to physical treatment of the commodity. However, as with other studies on TCE, the paper by Anna Temu and Nelson did not explicitly quantify the transaction costs and show their proportion in the marketing costs used to compute marketing margins.

contractual arrangements. He categorised these variables into subgroups such as incidence of theft and breach of contract, exposure to theft and prevention, variation of quality and inspection by trader, assessment of type and quality, risk exposure and incidence etc. Using descriptive statistics and logistic regression analysis Fafchamps shows that theft and breach of contract is low among agricultural traders and that losses resulting from such are small, suggesting that such market institutions in SSA work well. Further econometric analyses showed that exposure to risk such as overnight storage is a significant risk factor. Other significant theft risks were found to be risk of ambush and employee-related theft. Therefore traders avoid exposure to risk and breach of contract by sleeping in their stores, payment of protection money and travel in convoys, refraining from hiring additional workers, and adopting commercial practices that leave little room for abuse of contract. Among the common commercial practices include cash and carry transactions, infrequent supplier credit, uncommon placement of orders, and virtual absence of payment by check or invoicing. Using case study surveys in Kenya and Ghana, Fafchamps (2004) documents how trust and business relationships arise and their role in the conduct of business with a focus among others, on screening procedures for supplier credit and the role of social (network) capital in business performance. Traders value relationships (social networks) because they open access to trade credit in the form of payment facilities with suppliers or advances paid by customers. Fafchamps (*op.cit*, p. 194) found that transacting parties never grant or receive trade credit on the first transaction, indicating the role of relationships (social network) in access to trade credit. Although Fafchamps (2004) did not quantify the transaction costs associated with comparable forms of trade arrangements, much of his theoretical and analytical insights are useful in assessing and quantifying transaction costs that are associated with contractual arrangements in other markets such as agrocredit markets. Fafchamps provides methodological approach on data collection (questionnaire designing) and data analysis (descriptive statistics, and econometric modelling and testing of primary data) that are particularly relevant to the economic analysis of development.

#### **EMPIRICAL RESEARCH IN TCE**

Empirical research in TCE employs a variety of econometric and historical methods. The term “empirical” is defined by Shelanski and Klein (1995) and Boerner and Macher (2001) as to include qualitative case studies, quantitative single industry studies, and cross sectional econometric analyses. Many scholars (for example Masten and Saussier, 2000; Boerner and Macher, *op.cit*; and Kydd, *pers. Comm.* 2006) argue that although case studies are often criticised because of their lack of generality and possible *ex post* rationalisation, they are an important and necessary complement to econometric analyses. In addition, case studies often provide a richer description and perspective than many statistical analyses offer. Boerner and Macher (2001) refer single industry studies as to mean quantitative case studies or research that quantitatively examines contracting in a single industry (See for example analysis of farming by Allen and Lueck, 1998). Other studies such as the Maher’s (1997) examination of contractual relations between customers and suppliers examine contracts across industries more than one. The bulk of the empirical research in TCE falls into the first three categories i.e. qualitative case studies, quantitative single industry studies, and cross sectional econometric

analyses. TCE researchers are increasingly implementing more novel methodological approaches than discrete choice analysis to evaluate the influence of transactional properties, hold-up or small numbers bargaining on the mode of governance and over time<sup>3</sup>. The review paper by Boerner and Macher (2001) on the assessment of empirical TCE research reveals that the most common means of primary data collection in empirical TCE research are mail surveys, interviews and firm visits. Researchers often use Likert scale, whereby survey participants do rate transactional considerations, such as the degree to which an investment is specific to the relationship or to the level of demand or supply uncertainty present in the industry. Authors caution that although these data are most popular, they are subject to the general limitations of survey data that they are based on respondents' stated beliefs rather than non-subjective valuations.

The second type of data collection by other researchers (e.g. Balakrishnan and Wernerfelt, 1986) involves continuous measures of transactional considerations, although limitations do exist. It is unlikely that continuous measures, such as research and development intensity or advertising intensity, can distinguish specific investments from durable or generic investments, or can differentiate contractual hazards from firm specific capabilities, especially across industries (Henisz, 2000). The third method of data collection is secondary data collection. Although surveys are the principle and preferred data collection approach, a number of empirical studies utilise secondary data collection techniques. These techniques include published data from diverse sources such as industry trade publications, government data, newspapers or archival data. In comparison to survey or questionnaire data, secondary data may offer shorter collection times and larger sample sizes. Other secondary data outside of published data are contracts between exchange partners. Usually employed by economists, the examination of actual contracts represents an excellent data source for historic and empirical TCE related research. Boerner and Macher (2001) report that TCE research using contract data is diverse and examines the decision to contract (Lyons 1995), to contract duration and to contract design (Joskow 1988). The fourth approach of data collection, which is most recent but not as popular as the previous ones is the approach that employs experimental methods. Individuals are separated into control groups and manipulated groups and the impact of the manipulated factors (in this case transactional measures typically under a role-playing scenario), on perceived transaction costs are examined.

## **CONCLUSION**

In economically isolated areas, the provision of agrocredit is likely to be a government's task in the short term but with a gradual withdraw in the long term, only so when more private suppliers are motivated to engage in the business on a sustainable manner. Thus the government needs not only to formulate pro-agrocredit market policies, but also to fully participate in the delivery of agrocredit when needed. This is due to the fact that such areas have very low potential to attract private investors because of prevailing transaction costs resulting from such factors like the areas' remoteness and covariant risk which raise up the transaction risks for potential agrocredit suppliers. The Transaction Cost Economics (TCE)

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<sup>3</sup> For more literature on the novel methodological approaches refer to Boerner and Macher (2001)

theory was the core theoretical basis for this study. However, some of the assumptions of TCE theory need some adjustments to suit the third world, particularly in most isolated areas of the developing world. For instance, Ngaruko (2008) found out that the specificity of assets was not as stipulated in the theory especially in rural areas. For example he found out that being a rural dweller was sufficient to be location specific to farming business; that irrespective of declining marginal productivity of agricultural sector rural dwellers kept on engaging themselves in farming business. This implies that if rural dwellers did not practice farming then their labour could not be used elsewhere due to limited non-farm investments in rural areas. The application of NIE theory in advancing understanding of the development path of agrocredit market and other related markets has proved very relevant particularly in less developed areas of the developing world.

## References

- Alchian, A. and H. Demsetz (1972). "Production, Information costs, and economic organisation." *American Economic Review* **62**: 777-795.
- Allen, D. W. and D. Lueck (1992). "Contract Choice in Modern Agriculture: Cash Rent Versus Cropshare." *Journal of Law and Economics* **35**(2): 397-426.
- Allen, D. W. and D. Lueck (1996). *The Transaction Cost Approach to Agricultural Contracts. Agricultural Markets: Mechanisms, Failures, and Regulations.* Amsterdam. Elsevier Science
- Allen, D. W. and D. Lueck (1998). " The nature of the farm " *Journal of Law, Economica and Organisation* **41**: 343-386.
- Balakrishnan, S. and B. Wernerfelt (1986). "Technical Change, Competirtion, and Vertical Integration." *Strategic Management Journal* **7**: 347-359.
- Benham, A. and L. Benham (2001). The costs of Exchange. *Working paper series no.1.* Ronald Coase Institute.
- Benham, A., L. Benham, et al. (2004). Questionnaire on Costs of Exchange: Registering a new business officially. *Ronald Coase Institute Working paper series no 3 revised version*
- Boerner, C. and J. Macher (2001). Transaction cost economics: an assessment of empirical research in the social sciences.
- Chang, C.-Y. and I. Graham (2000). A comparison of two ways of applying transaction costs approach (I): Methodological debates. Bartlett Research Paper First draft. Bartlett School of Graduate Studies, University College London
- Coase, R. (1964). "The regulated Industries: Discussion." *American Economic Review* **57**(May): 1994-7.
- Coase, R. (1984). "The New Institutional economics." *Journal of Institutional and Theoretical Economics* **140**(March): 229-31.
- Coase, R. (1992). "The Institutional Structure of Production." *American Economic Review* **82**(September): 713-19.
- Coase, R. (1937). " The Nature of the Firm." *Economica* **4**(6): 386-405.

- Coase, R. (1960). "The problem of social cost." *J. Law Econ.* **3**: 1-44.
- de Soto, H. (1989). *The other path*. New York, Harper and Row.
- Djankov, S., L. P. Rafael, et al. (2002). "The regulation of entry." *Quarterly Journal of economics* **117**: 1-37.
- Dorward, A., J. Kydd, et al. (1998). *Smallholder Cash crop production under market liberalisation: A New Institutional Economics Perspective*. Wallingford, CAB International.
- Fafchamps, M. (2004). *Market Institutions in Sub Saharan Africa: Theory and evidence*. Cambridge, England, The MIT Press.
- Gabre-Madhin, E. Z. (2001). "Market institutions, transaction costs, and social capital in the Ethiopian grain market." *International food policy research Institute. Washington D.C.*
- Gabre-Madhin, E. Z. (2003 ). "Of markets and middlemen: Transaction costs and institutions in the Ethiopian grain market." *The World Bank, July*
- Henisz, W. (2000). "The Institutional Environment for Multinational Investment." *Journal of Law, Economics, and Organisation* **16**(2): 334-364.
- Hubbard, M. (1997). "The 'New Institutional Economics' in Agricultural Development: Insights and Challenges." *Journal of Agricultural Economics* **48**(2): 239-249.
- Johnson, S., K. Daniel, et al. (1997). "The unofficial econoy in transaction." *Brookings papers on Economic Activities* **2**: 159-329.
- Joskow, P. (1988). "Asset specificity and the structure of vertical relationship: empirical evidence." *Journal of Law, Economics and Organisation* **4**(1): 95-117.
- Joskow, P. (1991). "The role of Transaction Cost Economics in antitrust and public utility regulatory policies." *Journal of Law, Economics and Organisation* **7**(Special issue): 121-155.
- Klein, P. G. (1999). "New Institutional Economics." *Journal of Economic Literature* **0530**: 456-480.
- Knoeber, C. (1983). "An Alternative Mechanism to Sure Contractual Reliability." *Journal of Legal Studies* **12**: 333-343.
- Kydd, J. G. (2006). Personal Communication. Imperial College London.
- Lyons, B. R. (1995). "Specific investment, economies of scale, and the make-or-buy decision: A test of transaction cost theory." *Journal of economic behaviour and organisation* **26**: 431-433.
- Maher, M. E. (1997). "Transaction Cost Economics and Contractual Relations." *Cambridge Journal of Economics* **21**: 147-170.
- Masten, S. (1984). "The Organisation of Production: Evidence from the Aerospace Industry." *Journal of Law and Economics* **27**.
- Masten, S. (2000). "Transaction cost economics and the organisation of agricultural transaction." *Industrial organisation* **9**: 173-195.
- Masten, S. and S. Saussier (2000). "Econometrics of Contracts: An Assessment of Developments in the Empirical Literature on Contracting." *Revue d'economie Industrielle* **0**(92): 213-36.
- Menard, C., Ed. (1997). *Transaction Cost Economics: Recent Developments* Brookfield Edward Edgar.

- Monteverde, K. and D. Teece (1982). "Supplier Switching Costs and Vertical Integration in the Automobile Industry." *Bell Journal of Economics* **13**: 206-13.
- Ngaruko, D. D. (2008). "Agrocredit Supply Chain Response to Market Coordination Failures in Tanzania: A New Institutional Economics Approach", Unpublished PhD Thesis. Imperial College London
- North, D. (1990). "A transaction cost The Theory of Politics." *Journal of Economic History* **49**(4): 803-832.
- North, D. (1993). *Institutions, Transaction Costs and Productivity in the Lon Run*. Eighth World Productivity Congress, Stockholm, Sweden.
- Purcell, W. D. (1990). "Economics of Consolidation in the Beef Sector: Research Challenges." *American Journal of Agricultural Economics* **72**: 120-1218.
- Shelanski, H. A. and P. G. Klein (1995). "Empirical Research in Transaction Cost Economics: A Review and Assessment." *Journal of Law, Economics, and Organisation* **11**(2): 335-61.
- Spiller, P. (1985). "On Vertical Mergers." *Journal of Law, Economics, and Organisation* **1**: 285-312.
- Spulber, D. (1989). *Regulation and Markets*. Cambridge, MIT Press.
- Temu, A. and A. Winter-Nelson (2001). "Institutional Adjustment and Agricultural Markets: Following the transaction costs in the Tanzanian coffee system. Draft March 21."
- Wallis, J. J. and D. C. North (1986). Measuring the transaction sector in the American economy, 1870-1970. *Long term factors in American Economic growth*. S. Engerman and R. Gallman, University of Chicago Press: 95-161.
- Wang, N. (2003). "Measuring Transaction Costs: An Incomplete Survey." *Working Paper Series Ronald Course Institute February*(2).
- Williamson, O. (1975). *Markets and Hierarchies: Analysis and antitrust implications*. NY, Free Press.
- Williamson, O. (1985). *The Economic institutions of capitalism: Firms, markets, relational contracting*. New York., The Free Press, Collier Macmillan Publishers.
- Williamson, O. (1991). "Comparative economic organisation: The analysis of discrete structural alternatives." *Admin. Scie. Quart* **36**(2): 269-296.
- Williamson, O. (1996). *The mechanisms of governance*. NY, Free press.
- Williamson, O. (1998). "Transaction Cost Economics: How it works; Where it it headed." *De economist* **146**(1): 23-58.
- Williamson, O. (2000). "The New Institutional Economics: Taking Stock, Looking Ahead." *Journal of Economic Literature* **38**(3).
- Williamson, O. (2001). "The theory of the firm as governance structure." *University of California at Berkeley Working Paper*. .
- Williamson, O. and S. E. Masten, Eds. (1995). *Introduction to Vol.II: in Transaction Cost Economics*. Brookfield, VT, Edward Elgar.