THE 'NEW INSTITUTIONAL ECONOMICS' IN AGRICULTURAL DEVELOPMENT: INSIGHTS AND CHALLENGES

Michael Hubbard*

The insights of the 'new institutional economics' (NIE) and the challenges it faces are discussed, using examples from agricultural development. NIE has emerged from the theories of the firm, markets, history and politics. It is characterised by two propositions: (i) the nature of business contracts is determined by uncertainties and assurances arising from market conditions and from prevailing institutions (property rights, conventions, authority structures); (ii) prevailing institutions are altered by social action responding ultimately to trend changes in relative prices. Empirical progress in NIE has resulted from studies of contracting behaviour and has been greatest in measurement of intraindustry transaction costs and relating them to vertical integration among firms. But NIE is at an early stage in the more complex empirical task of analysing relations between markets and prevailing institutions.

The purpose of this paper is twofold. First, to provide a simple overview of 'new institutional economics' (NIE) in the context of agricultural development. This is justified on the one hand by the breadth and complexity of NIE and the increasing interest in it, and on the other by the substantial part which the study of agricultural institutions is playing in the development of NIE. Second, to emphasise the importance of understanding contracting behaviour to empirical progress in NIE.

Section 1 outlines the emergence of NIE from the theories of the firm, markets, history and politics. Section 2 discusses two key propositions in NIE and the centrality of contracting. Section 3 concludes.

1. The Institutional Economics Approach

Having set up as its market ideal an environment of perfect information and communication, microeconomics then long neglected the actual costs of getting business done - the delays, uncertainties, bargaining, obstructions and chicanery.

* Michael Hubbard is in the School of Public Policy, University of Birmingham, Edgbaston B15 2TT, UK. Thanks to Bruce Trall and two anonymous referees for comments. This paper is an edited version of a paper presented to the Agricultural Economics Society Annual Conference in Cambridge, April 1995.

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Many textbooks still show typical business decisions as determined by production and distribution costs, prices and market structure alone, ignoring the costs involved in making transactions. Agricultural economics has been no less guilty of this omission than other branches of microeconomics, despite having long incorporated risk and uncertainty of yield and price.

The costs of doing business and the social rights and obligations (institutions)* which people contrive to reduce them, are the focus of the 'new institutional economics' (NIE), which has attracted much attention recently, including that of the Nobel committee. It contrasts with the earlier institutional economics tradition† of Veblen and Commons in its attempt 'to extend and generalise the theory of price and apply it to economic and political institutions' (Eggertsson, 1990, p.3) or, in other words, to endogenise institutions within the theory of markets. To this extent NIE is a neoclassical project, whereas the earlier institutional tradition tended to be anti-neoclassical in its attacks upon the simplified 'rational' person assumed in market theory (Veblen, 1919, p.73).

At the heart of institutional economics is the making, monitoring and enforcing of contracts. The ease or difficulty of contracting, and the types of contract made, are determined by the level and nature of transaction costs, underlying which is the extent of imperfect information involved in making a transaction. The contracts, laws and conventions of a society (its institutions) either evolve to reduce transaction costs or fail to do so. Institutions may benefit one group more than at the expense of another, they may outlive their usefulness, and - through being hard to alter - lock a society onto an historical path which may or may not favour economic development. From this angle, economic development is determined by the extent to which a country's institutions favour broad-based, sustainable economic growth.

This brief description indicates the breadth of institutional economics. It emerges from the theories of the firm (transaction costs), markets (imperfect information), politics (institutions used to favour interest groups) and history (institutional change). Each of these aspects is introduced briefly.

* The former institutional economics tradition saw institutions 'as settled habits of thought common to the generality of man' (Veblen, 1919, p.239). Stein (1994) discusses further differences between the 'old' and 'new' institutional economics.
† Market relations refer to the ability to choose who to buy from or sell to in each transaction, whether repeated or unique. A contract necessarily suspends market relations for its duration, in return for carrying out the exchange on the terms agreed. Only in spot markets do market relations prevail continuously, since each agreed transaction is immediately complete. The firm is made up of employment contracts of individuals, which tend to be longer term and incompletely specify the output expected, in order to allow flexible deployment.
lower are transaction costs, the less reason for the non-market based integration among related activities which constitutes the firm; the greater are transaction costs, *ceteris paribus*, the more it pays the firm to employ factors of production on a longer-term basis to carry out a particular function.

Thus the firm is seen in NIE as a flexible coalition - a 'nexus of contracts' - designed to reduce transaction costs, rather than a fixed entity. Just as economic institutions, such as sharecropping, are a response to transactions costs, so too is the nature of the contracts which make up the firm. The modern theory of the firm, with its stress on explaining integration and coordination has been developed from this basis.

Transaction costs enter into other, related aspects of microeconomic theory relevant to behaviour within organisations, namely the principal-agent (Jensen and Meckling, 1976) and X-efficiency (Liebenstein, 1966) literature. The former explores differences and similarities in the interests of the principal (the owner of the resources) and agent (employed to carry out a specific function) under varying conditions of uncertainty, where monitoring costs are too great for the principal to observe every detail of implementation. The X-efficiency debate focuses on problems of motivation and morale within the organisation, which can be partly principal-agent problems.

*Markets (Imperfect Information and Missing Markets)*

Markets rather than firms are the starting point for the other main strand in the development of the NIE. This has concerned itself with the behavioural implications of inadequate and unequal (asymmetric) availability of information to potential buyers and sellers. The resulting risks might be reduced to mutual advantage by non-market arrangements as perhaps by sharecropping agreements, or by the emergence of insurance markets (provided that the underlying institutions allow them to operate). This approach, associated with Stiglitz (1974, 1986) among others, has been applied extensively in models explaining rural institutions (notably sharecropping), that emerge in response to needs to share risk and obtain resources (Bardhan, 1989). Markets may be missing either because of the low level of development of the economy, or because their emergence has been blocked. Thin or absent markets mean less information and higher costs of obtaining it. Specifically, they increase the costs of searching for information about buyers and sellers, and about the quantities and qualities of goods or services available; they increase the costs of bargaining to determine prices, the uncertainties in making, monitoring and enforcing contracts, and the costs of enforcing property rights (Eggertsson, 1990, p.15).

The popularity of the imperfect information approach is indicated by the pervasiveness in current economic analysis of imperfect information concepts, such as asymmetric information, moral hazard, adverse selection, bounded rationality, first mover advantage and opportunism. Further, the imperfect information approach has a prominent role in wider theoretical developments, such as collective action theory and trade theory.

The theory of common property management has generated an extensive literature since Olson's work on collective action (1965) and Hardin's (1968) 'tragedy of the commons' assertion that natural resources held in common would necessarily be degraded. Information plays a key role in the current consensus in
that literature, which has focused on common pool resources*: renewable resources can be well managed under common ownership provided that the common users are a group sufficiently small, motivated and well-informed to monitor use, detect and deter 'free riders', and provided they know the impact of use levels on the resource (Wade, 1987).

In the case of trade theory, textbook analyses of trade policy have emphasised the benefits of free trade, and often assumed perfect competition in traded goods markets, with domestic economic efficiency the implicit objective of government. Yet international agricultural markets tend to be imperfect, with differentiated products, substantial protectionism, and little evidence in commercial policy of economic efficiency as a policy priority. In attempting to reconcile theory and reality, recent contributions (Maclaren, 1991, p.289) demonstrate that in the presence of imperfect information, with risk averse producers and/or consumers, and incomplete markets for risk sharing, free trade is not necessarily the optimal policy. Free trade is demoted from optimum to 'rule of thumb' and trade policy (particularly use of protection instruments) becomes an institutional substitute for missing insurance markets, a form of social insurance to importers, import substituters or exporters against trade risks, for which they lobby politically.

History (Institutional Change)
The formal and informal rules which societies evolve or fail to evolve in order to reduce transactions cost, are argued in NIE to be a key factor determining differences in economic performance among societies. As societies become more economically integrated, unit production and distribution costs are reduced by division of labour. But at the same time unit transaction costs increase, since the face-to-face contact, knowledge and mutual interdependence of village life is lost, creating greater uncertainty, opportunities for deception and reducing enforceability of contracts by reciprocal obligations. 'In Western societies over time complex institutional structures have been devised (elaborately defined and effectively enforced property rights, formal contracts and guarantees, corporate hierarchy, vertical integration, limited liability, bankruptcy laws . . .) . . . to prevent . . . transactions from being too costly and thus to allow the productivity gains of larger-scale and improved technology to be realized' (Bardhan, 1989 p.5-6). But economic institutions do not necessarily evolve in this way. To explain the different performance of economies historically, North (1990) argues that institutional arrangements (e.g. property rights, labour contracts) tend to be self-perpetuating ('path dependent'), until trends of change in relative prices so increase costs of maintaining existing institutions, that pressure for reallocation of resources becomes irresistible.

Politics (Institutions Used to Favour Interest Groups)
There is an additional dimension of NIE, the political, referred to by Bates as its 'dark side'. Underlying allocation decisions is an initial distribution of wealth and power. 'Lying behind the economic theory of institutions...is a political story . . . While many kinds of institutions may provide enhanced efficiency in markets . . . [t]hose will be created that favour 'special interests' (Bates, 1989, p.90). Established

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* Examples of common pool resources are communal fishing lakes and rivers and grazing areas, usually classified as non-excludable, subtractable goods. The management difficulty is in preventing community members (and, more problematically, non-members of the community) from over-using the resources, and motivating them to contribute to investment and maintenance.
public organisations (e.g. marketing boards) become the focus for distributional struggles between interest groups.

Four sources of power by sectional interests over markets can be identified (White, 1993). Power derived from the state through its defence of particular interests; associational power, deriving from collective action by market actors (e.g. regulation by traders associations or farmers associations); power from market structures (e.g. monopoly), and socially embedded power (i.e. power deriving from birth or status).

The capture of markets by sectional interests (using varying combinations of these sources of power) is stressed in the 'real markets' literature (e.g. Hewitt de Alcantera, 1992). This is a strand of institutional thinking with its roots in social anthropology, which attacks simplified neoclassical theory for abstracting the notion of markets from the realities of unfair exchange under which rural people in low income countries live. It is argued that a local elite typically controls product and factor markets and transport in an interlinked manner, for their own benefit. Under these circumstances liberalisation of markets and withdrawal of state services, it is argued, may decrease competition and increase hardship. The recommendation is for case by case reform according to local circumstances, rather than sweeping changes.

2. Propositions of the New Institutional Economics

From the discussion above, it is clear that NIE has causation flowing both ways between markets and institutions. It is therefore important to distinguish types of institution. Matthews (1986) identifies four: contracts, property rights, conventions and authority. Of these, contracts are the most flexible institution, being the means whereby parties design transactions to their mutual advantage under varying degrees of both market failure and institution failure. Transactions necessarily involve implicit or explicit contracts specifying - to a greater or lesser extent - price, quality, quantity, timing of payment and delivery, penalties and rewards to encourage contract fulfilment and distribute costs of failure. Property rights, conventions (the unwritten moral rules) and social authority (governmental, associational and socially embedded power, to use White's 1993 terms referred to earlier) make up prevailing institutions. They are 'prevailing' because they change only slowly. In sum, contracts respond to market conditions, either assisted by prevailing institutions where these are supportive (give assurance), or hindered where they are incomplete (creating uncertainty) and/or hostile to the transaction concerned.

Figure 1 illustrates the relation already described between contracts, markets and prevailing institutions. Contracts (which include firms as nexi of contracts) are the intermediary institution through which markets and prevailing institutions influence each other. Market uncertainties and market assurances (from repeated transactions) partially determine the nature of contracts, which feed back to the market as assurance for further transactions. Prevailing institutions also partially determine contracts through the uncertainties and assurances they provide regarding clarity and enforcement of property rights, the conventions which must be conform with, and the social authority (who decides what) which must be recognised in contracting. Contracts feed back into prevailing institutions. They leave prevailing institutions unchanged if they are in conformity with them. Or they gradually change prevailing institutions, if the contracts do not conform to those institutions but enable transactions which are economically advantageous to society.
There is of course no mechanical relation between transactions, contracts and prevailing institutions. The notion of contract suggests a discrete transaction between independent parties, enforced ultimately by recourse to the law. But the reality of more complex and risky contracts (e.g. management contracts for large farms) is that the transaction is not discrete, not all contingencies can be predicted and performance cannot be continuously measured. Success in such contracts necessarily involves building a problem solving relationship between principal and agent to spread risk and build trust. Similarly, the reality of many contracts, large or small, is that the parties are not independent, either because market power is unequal (e.g. a small farmer dealing with a monopolistic crop buyer) or social authority is unequal (e.g. a tenant bound by tradition and debt to a land owner). Ultimate enforcement of contracts by the law depends on whether the contract is legal or not, on the delays and financial costs involved and sometimes on the legal status of the parties.

The two central propositions of NIE, implicit in Figure 1, are discussed here in relation to some current issues in agricultural development.

Proposition I. The nature of business contracts is determined by uncertainties and assurances arising from the transactions involved and from prevailing institutions (property rights, conventions, authority structures).

In agricultural development, there is extensive research documenting differences in contracts in varying market conditions and institutional contexts. Examples from the literature on farm tenancy and labour contracts include Bliss and Stern (1982), Eswaran and Kotwal (1985), Newbery (1989), Zusman (1989), Platteau (1995) and Sharma and Dreze (1996).

Transaction cost analysis has become the main means for analysing the impact of market conditions on contracting behaviour. It is criticised as weak on testability.* But at the firm and industry level the empirical analysis of transaction costs is now

* 'To the extent that the theory relies on unobservable transaction costs, it often seems to fail the test of falsifiability; just as the present set of economic relations is justified by current (unobservable) transaction costs, changes in the nature of economic relations are 'explained' by reference to similarly unobservable changes in transaction costs' (Stiglitz, 1986 p.263).
well-established in marketing theory and practice (Moschandreas, 1994; Heskett et al., 1994; Jaffee and Morton, 1995), particularly with regard to firms’ decisions on vertical integration or vertical co-ordination, and decisions on mode of entry into new markets (Krishna Erramilli and Rao, 1993). It is founded on the theoretical basis that firms prefer to integrate and coordinate vertically the higher the transaction costs they face. Studies (e.g. Frank and Henderson, 1992; Jaffee, 1991) examine production and trade arrangements and attempt to explain degrees of integration among market actors, and the types of contracts they make, from the size and nature of transaction costs. Transaction costs for a producer are argued to be higher the less flexible and powerful is the producer and the less predictable the market environment. Thus transaction costs are higher the greater is asset specificity,* the greater the uncertainty surrounding the exchange, and the less the market power in relation to the buyers of the product and suppliers of the inputs. The less competition in markets upstream and downstream, the less is the producer’s market power, meaning greater discretion for the producer’s buyers and suppliers to alter trading terms in their favour.

Jaffee’s analysis of Kenya’s horticultural exports is a recent example of a transaction cost study in the agricultural sector of a lower income country (Jaffee, 1991). Asset specificity was estimated by the need for specialised equipment in grading, storage and transport, and by processing economies of scale. Indicators used for uncertainty and market structure were perishability, seasonal constraints on the market, market concentration, segmentation, and brand name differentiation. The study’s results indicated the importance of vertical integration between exporting and importing firms, mediated through long-term contracts and family connections in the most successful horticultural export firms, given the high degree of uncertainty characterising the industry.

A limitation of transaction costs analysis is that it currently only provides tools for examining the impact of the market on contracts, not the impact of prevailing institutions. This is perhaps no disadvantage where the concern of the analysis is to help firms make strategic decisions within a stable and developed institutional environment. It is a substantial limitation where the institutional environment is unstable or undeveloped as is often the case in agricultural development. Inadequate or hostile prevailing institutions increase transaction costs, especially in insurance and finance which rely heavily on clear property rights. Higher contract negotiation and enforcement costs (the other side of the rent seeker’s bargain) are the consequence, requiring political and financial influence to be effective.

One important consequence of inadequate or hostile prevailing institutions, combined with inadequate market infrastructure and financial markets, may be low barriers to entry and high barriers to growth, resulting in a bimodal industrial structure. For example, in the institutionally adverse business environment of much of Africa agricultural processing and trade often appears bimodal in structure. Large operators tend to be vertically integrated, most conspicuously in export production, where a multinational may internalise every stage from input provision and extension advice to farmers, to processing and export. B.A.T. tobacco operations in Uganda are an example.† At the other extreme of size, small informal agricultural processors are collectively gaining market share but individually appear unable to overcome barriers to growth. Current changes in the milling and meat processing industries in Namibia (Hubbard 1989), Kenya (Lewa and Hubbard, 1993), Zimbabwe and South Africa provide examples. Deregulation of urban slaughtering

* The specificity of an asset is high when it cannot easily be used for alternative production, so that investing in it allows less flexibility to the owner, whose operations are then locked into that type of production and the corresponding input and sales channels. For example, the asset specificity of fruit trees is higher than that of annual crops, since they take several years to mature.

† From own interviews with B.A.T. Uganda in 1994.
and milling there have resulted in strong growth of small scale abattoirs and hammer milling of flour. But they face substantial financial and market barriers to individual expansion. Together these developments at the large and small ends of the industry create a ‘missing middle’. Much of the growing informal sector resembles North’s depiction (1990) of the ‘bazaar economy’ which emerges when a society fails to develop adequate institutions for assurance and finance: characterised by reliance on face-to-face contracts requiring lengthy negotiation, instability, lack of access to capital, and little means of spreading risk.

Proposition 2. Prevailing institutions are altered by social action responding to trend changes in relative prices

As illustrated by Figure 1, prevailing institutions (property rights, conventions and social authority) are relatively stable parameters which, together with market conditions, determine the nature of contracts. Their inertia is the ‘path dependence’ which is argued to account for major differences between countries’ economic development experience. The inertia may be partly caused by increasing returns (positive or negative) to particular institutions (Arthur, 1988). In the case of economic growth ‘an adaptively efficient path . . . allows for a maximum of choices under uncertainty, for the pursuit of various trial methods of undertaking activities, and for an efficient feedback mechanism to identify choices that are relatively inefficient and to eliminate them . . . [U]nproductive paths . . . create organizations and interest groups with a stake in the existing constraints . . . [and] . . . provide few rewards from increases in the stock of economically useful knowledge’ (North, 1990 p.99).

The hypothesis of path dependence begs questions about institutional change: how the economy gets locked onto one path and is eventually moved onto another. One line of enquiry (Schotter, 1981; Sugden, 1986; Runge, 1986; Axelrod, 1988) - often focusing on associational contract issues (collective action) in managing common property forests, grazing lands and water - has used game theory to evolve rules of behaviour from self-reinforcing, repeated games of strategy. These lead to confidence (assurance) among the players in a well-tried strategy. Another (Hayami and Ruttan, 1985) has attempted to endogenise ‘secondary institutions’ (mainly property rights) in the theory of markets via induced institutional innovation. Changing relative prices of products and factors create a demand (from consumers and producers) for change in institutions which is supplied by political innovators.* Boserup’s classic thesis (1965) of population pressure increasing agricultural productivity is of this type.

Insights from both these lines of enquiry lack completeness. Circumscribed, microlevel assurance games do not explain the larger social picture characterised by diversity and uncertainty, to which ‘prisoners dilemma’ games with their Pareto-inferior outcomes often seem more appropriate, particularly in the socially turbulent conditions of many developing countries (Grabowski, 1988). Clearing the ‘market’ for efficiency-enhancing innovations in property rights must contend with ‘the enormity of the collective action and free-rider problems that limit the ability of potential gainers to get their act together, (Bardhan, 1989 p.7-8), with the diversity of country experiences of institutional change, and with the fact that institutional innovations are often for redistributive, political reasons which reduce rather than increase efficiency.

* The induced innovation theory builds on Hayami and Ruttan’s earlier theory of induced technical innovation in agriculture, in which differences in relative factor prices bias technical change towards land saving or labour saving innovations (Hayami and Ruttan, 1985).
Experience with attempts to bring about institutional change in agricultural marketing in developing countries under structural adjustment programmes demonstrate the complexity of the process.* For example, reform programmes for grain marketing parastatals (e.g. in Kenya and Zimbabwe) typically involve phased removal of restrictions on private marketing, greater corporate independence for the parastatals, introduction of price bands in place of fixed prices as the target for price stabilisation by the marketing parastatal, performance contracts for staff to increase their efficiency, and separation of the parastatal’s commercial from its social functions.

The social functions are defined as those which are undertaken on behalf of government to assist farmers or consumers, usually involving buying at above the market price, buying in remote areas, and selling at below market price. However, uncertainties in the wider institutional environment have created difficulties:

(i) Marketing boards are not confident that governments will actually respect their independence. There is a property rights problem here between boards and governments.

(ii) Marketing boards are not confident that government will meet the social costs they incur on government’s behalf. The advice to separate social from commercial costs is standard, deriving from welfare economics. But this breaks down on practical grounds if there is government failure, i.e. if the budget is unable to meet its obligation to fund the social costs.

(iii) as long as marketing boards have a large market share and hold large reserve stocks, investment by private traders may be discouraged through fear that marketing boards, under political direction, will drive marketing margins down by buying above market price and selling below market price.

Proposition 2 is the more contentious of the two NIE propositions. The mechanism invoked by NIE theorists (e.g. North, 1990) finally to deliver institutional change (i.e. that the trend change in relative prices imposes such great costs that change becomes irresistible) requires collective action to bring it about. But collective action has multiple social as well as economic determinants and is difficult to predict. By contrast the impact of prevailing institutions and market conditions on transactions (Proposition 1), though complex, is accessible to study through contracting behaviour.

3. Conclusion

A decade ago RCO Matthews noted:

‘[I]n the economics of institutions, theory is now outstripping empirical research to an excessive extent... Theoretical modelling may or may not be more difficult in this field than in others, but empirical work in it is confronted by a special difficulty. Because economic institutions are complex, they do not lend themselves easily to quantitative measurement... There is a challenge here to economists...’ (Matthews, 1986:917).

The challenge is being met most effectively in the measurement and analysis of intraindustry transaction costs, which have become a valuable tool in decision making. But this most developed part of NIE is also its most limited. In the wider

and more complex task of measuring the effect of prevailing institutions on markets, NIE is at an earlier stage. Studies of contract enforcement (e.g. Fafchamps, 1996) are providing one way forward.

References


