On the Role of Markets in Economic Development: The New Institutional Economic Transactions Approach Defined

Jerome D. Davis

> One of the most important findings of the transition period to date is that well-functioning markets, while appearing in some areas, do not automatically grow like weeds. Indeed, in many areas the successful introduction of well-functioning markets may be better likened to the nurturing of a greenhouse plant, rather than being a natural outcome of liberalization of market activities (Svejnar, 1991, p. 131).

Introduction: Are Markets "Greenhouse Plants?"

Do markets grow "like weeds" or must they be carefully nurtured as "greenhouse plants?" The above citation dwells on the difficulties of introducing markets to Eastern European command economies; yet in principle, it applies the the growth of markets everywhere--including markets in third world countries.

As with most simple economic questions, answers as to how markets function, why they function the way they do, and what the implications of their functioning (or malfunctioning) are for society, are as relevant today as they were when Adam Smith posited the "invisible hand." Any introductory discussion of the new institutional theory of markets involves a certain degree of over simplification and subjective interpretation of the massive literature which exists in the field. The following discussion therefore is of a somewhat tentative nature--subject to amendation, interpretation, and rewriting. Our discussion too is geared to the themes of this conference: a set of themes that requires a slightly different emphasis as to what is interesting about new

institutionalism and markets[1]. Generally speaking, one can note the following characteristics as to what we will call the "new institutional transaction theory of markets"[2]:

There is not one single theory; rather the new theory is an interwoven fabric of at least three differing approaches to market transactions: an evolutionary/functional theory of markets; a industrial organizational theory concerned with why markets fail to clear; and a set of theories concerned with market failure as a function of imperfect information and consumer uncertainty.

Each of these approaches deals with a set of economic problems, recognized as such by the economics profession for at least thirty years if not longer. Thus the evolutionary/functional theory of the market is based on an abiding economic interest in how commodity markets function;[3] the industrial organization concern with non-clearing markets on a classic (and generally repudiated) article by C. Gardner Means as to price inflexibility in the American depression[4]; and market failure as a function of imperfect information and product quality on a series of pioneering articles written in the 1960's and '70's.[5]

While in many ways substantially different, these approaches are all indebted to Ronald Coases 1937 "The Nature of the Firm" (**Economica** IV(1937), pp. 386-405). Yet while Coase uses market transaction costs as an insight as to why firms exist, this literature utilizes market transaction costs as an insight as to why and how markets function as the institutions they are.

In common with Coase (and in contrast to other economic institutionalist schools), these approaches do not reject the

---

[1] This alteration in priorities is reflected in three manners: a downplaying of "parallel markets", a prime feature of the presentation originally planned for this workshop; a featuring of the evolutionary functional approach to markets at best a minor offshoot of new institutionalism, but included here as particularly applicable as an approach to development theory; and almost a total neglect of Oliver Williamson and R. Coase, this last a function of their treatment in other workshop presentations which renders detailed treatment unnecessary in this context.

[2] Specifically use of this term excludes what might be called "the neoclassical," the "Austrian" and the "radical subjectivist" institutional approaches to the market. See Littlechild (1986) for a description of these schools.

[3] See H. Working, 1953.

[4] See G.C. Means, 1935; for update see also Stigler and Kindahl 1972; D.Carlton, 1979, 1988.

[5] On quality and uncertainty, Akerloff, 1970; on imperfect information, G. Stigler (1961).

microeconomic foundations of welfare economics; rather they seek to modify, to improve, and to render applicable many of the insights of existing economic literature. New institutional economists are a part of the existing economic fraternity, and frequently have their articles published in journals known for their non-institutionalistic bias.

How are these approaches applicable to development studies? Rather than answer that question directly, we shall look at each approach in its own terms; each purports to be a different "slice of reality." It is our contention that each can yield insight into the functioning of markets in developing countries.

In concluding this paper, we relate these approaches to the discussion of market "solutions" to development problems, in particular the renewed emphasis on markets as instruments on which development planning should be based. Generally, we find that while this emphasis on market solutions is not necessarily misplaced, such solutions should be used with caution. We know much too little about markets as institutions to utilize them as a sort of universal panacea to be applied to any or all development economic maladies.

"Slice One;" An Evolutionary/Functional Approach to Markets

Although other similar approaches may exist, the evolutionary approach to the market has its roots in the analysis of the functioning of commodity exchanges. As single markets these have attracted an inordinant amount of attention largely in regards to their fulfillment of the Fama "efficient market hypothesis"--i.e. that they provide price "discovery", price transparency, and risk "transfer" for the parties involved, and therefore are informationally efficient.

Related to this literature is that on how commodity markets, in particular commodity futures exchanges actually function (see Working, 1953; Veljanovski, 1986; Williams, 1986). This is the point of our commencement.

Looking at commodity futures is useful from a new economic institutionalist/ development point of view for the following reasons:

The markets often trade in commodities on which developing countries rely for export earnings: oil, cacoa, tin, copper, and the like;

The markets highlight the role of juridical instruments: drafting and enforcing contracts, taxation, market settlement arrangements. These are the focus of investigation in new institutionalism elsewhere, and thereby "fit" commodity markets nicely to theorizing in general.

These markets are the focus of intense analysis. They are not only of interest to economists, but provide valuable information and functions to a wide variety of traders and commercial users. Thus they are analyzed in terms of constituting an alternative capital market, a source of finance, a means of storage, a conveyor of information, and a valuable strategic tool, to name but a few of the more prominent alternative uses.

Finally, and most importantly, these markets are highly sophisticated. They are probably the most complex, sensitive markets in existence, and are therefore perhaps the ideal exemplar for an evolutionary functional approach.

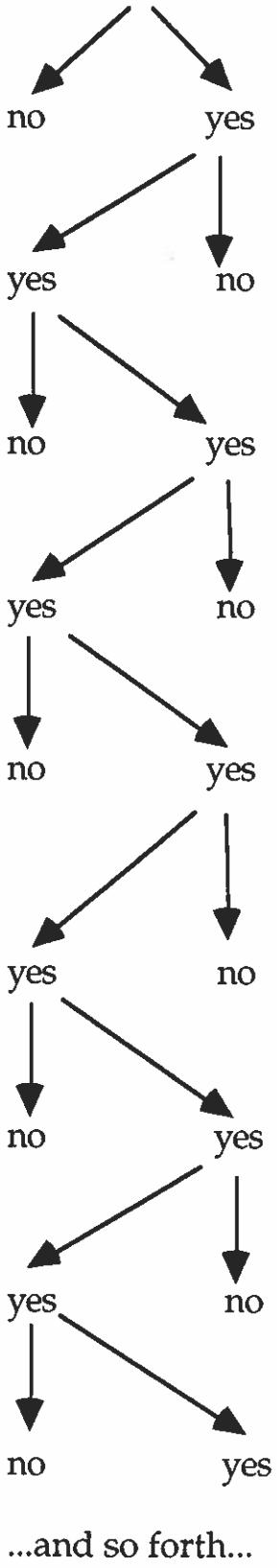
Let us assume, for point of illustration, that a peasant in a developing country is considering raising produce for the market. What kind of considerations must he have, beyond the provision of infrastructure to convey his produce to market, an investment which is relatively frequent in the countries concerned? Our argument here is that there is a set of institutional criteria which must be in place before our peasant can sell (even indirectly to a commodity exchange).

The steps illustrating our points are represented in Figure One (next page). We ask ourselves the following questions to commence the our illustrative logic:

Sell to market? We assume that the peasant has decided to sell to the market; in fact, depending on the answers to the additional questions, this may not be true.

Source of finance? Given that our peasant need to expand production to include market sales, he needs a source of financing to produce for the market. If he does not get such a source, he will not produce for the market.

Figure One: Enroute to a Commodity Exchange? A Diagram of MarketingPrerequisites/Choice



Are crops acceptable as security for loans? Finance must be available, and on terms which the peasant can accept. Placing his farm at the mercy of money lenders may imply an unacceptable risk. Promising to deliver a portion of his crop as repayment of his loan not only secures his farm against repossession, an impractical means of raising finance in areas where individual property rights may not be fully delineated, but it also allows for a certain degree of risk sharing. If crops are not acceptable as collateral, then all progress towards a commodity exchange ends at this stage.

Is the contract for future delivery a negotiable instrument? Is it transferable to a third party? Clearly such a contract has a monetary value. Sale to a third party could allow realization of its monetary value before performance by the peasant involved. It is the essential feature of all commodity markets: clearly it rests on a well functioning legal system, financing system. If these conditions do not obtain, then no commodity market and no futures exchange.

Do dealers exist? Clearly the existence of professional dealers purchasing and selling such contracts depends on a large number of factors. Once again, no dealers, no market.

Are the contracts standardized in that they specify precise quantities, qualities, terms of delivery over time and in a reliable manner? If this condition is not fulfilled, it is unlikely that sufficient buyers and sellers will be inclined to accept the risks involved, and the market will fail through lack of volume.

We will not follow this logic through all the steps in Figure One. Suffice it to say, that non-fulfillment of any one of the conditions in that figure sabotage development towards a commodity futures exchange.

Even where these conditions exist and the environment is favorable to trading in a commodity, it is uncertain whether such trading will be a commercial success. Even in areas where there is considerable commercial interest, "contracts" have been known to "fail" more often than succeed. Carlton (1987,p. 48) estimates a failure rate of all attempted futures market creations of roughly 40 percent in the first five years, 50 percent by the tenth year. This figure may be low; this authors investigation into the creation of contracts for the

trading of crude oil and products, found that 70 percent of the new introductions failed (Davis, 1990a, p. 54)

The example of the peasant and his crops is not misplaced. In fact, a similar historical evolution was behind the creation of the Chicago Board of Trade and other exchanges in the United States; here the primary actors were farmers in the American Middle West and Northwest rather than the somewhat mythical "peasant" which we have utilized. The prime source for this evolutionary approach is Williams (1986).[6]

Insights from this "slice" are predominantly three in number and are somewhat tentative:

Markets can be costly to run and establish. Yet calculation of market cost is difficult. Here failures in establishing a futures market can give an idea as to how costly markets can be an indication of these costs. As Carlton notes (1987, p. 47) "/I/t is costly to create a market in which price equates supply to demand."

Markets can be unexpectedly fragile creations. This is particularly true of sophisticated markets, but is no less true of markets which may be less advanced.

Finally, our exercise in Figure One gives a good indication of the institutional prerequisites which must exist for a market to function. At any one of the nine sequential requirements, nonfulfillment would negate the formation of a commodity exchange. And the nine sequential requirements are suggestive only; further study and specification of preconditions could multiply these manyfold.

It is submitted that the three above conditions are of value to development planning-- in particular the all-too-easy view of markets as a panacea to all development problems in which markets are compared to the legendary Topsy ("She just grew"). This is not an argument against the greater use of "market-as-

---

[6] This book is also notable for other institutional insights, most notably the introduction of the notion of "indicative prices" i.e. a set of transparent prices which can be utilized by society in general in calculating proper commodity prices irrespective of quality and location.

planning- instrument." It is rather a cautionary note; really quite little is known of markets as institutions. We should know more.

"Slice Two:" Market "Clearing" as an Institutional Problem

Coincident with but methodologically very different is the literature on market "clearing." Observations of many (if not most markets) have shown that these do not necessarily "clear" in a costless Walrasian fashion, i.e. that market prices are often surprisingly inflexible.

This has led to two theoretical insights (with a corresponding literature to match):

The macroeconomic consequences of inflexible prices, here most notably the debate over the C.Gardner Means administered prices hypothesis, has led to an extensive literature (for a good review see Carlton (1978,1987)).

The creation and existence of what might be termed "multiple price" markets, generally understood to be markets with a concurrent set of relatively fixed contractual (or administered) prices and a set of highly volatile "auction" prices-- not atypically those of a commodity exchange or "spot transactions" at the margin.

Common to both views are the existence of transaction costs involved with market clearing (what might be termed the "mirror image of Coase's "The Nature of the Firm"). Carlton summarizes observations to date:

The evidence on price reveals that some markets are well described by the simple models of market clearing. But others are clearly not. Markets differ greatly in how flexible prices are, the the degree of competition being an important determinant of flexibility. In some markets, price changes to one buyer may be uncorrelated with those to another buyer, suggesting that other factors.... may be involved (1987, p. 26)"

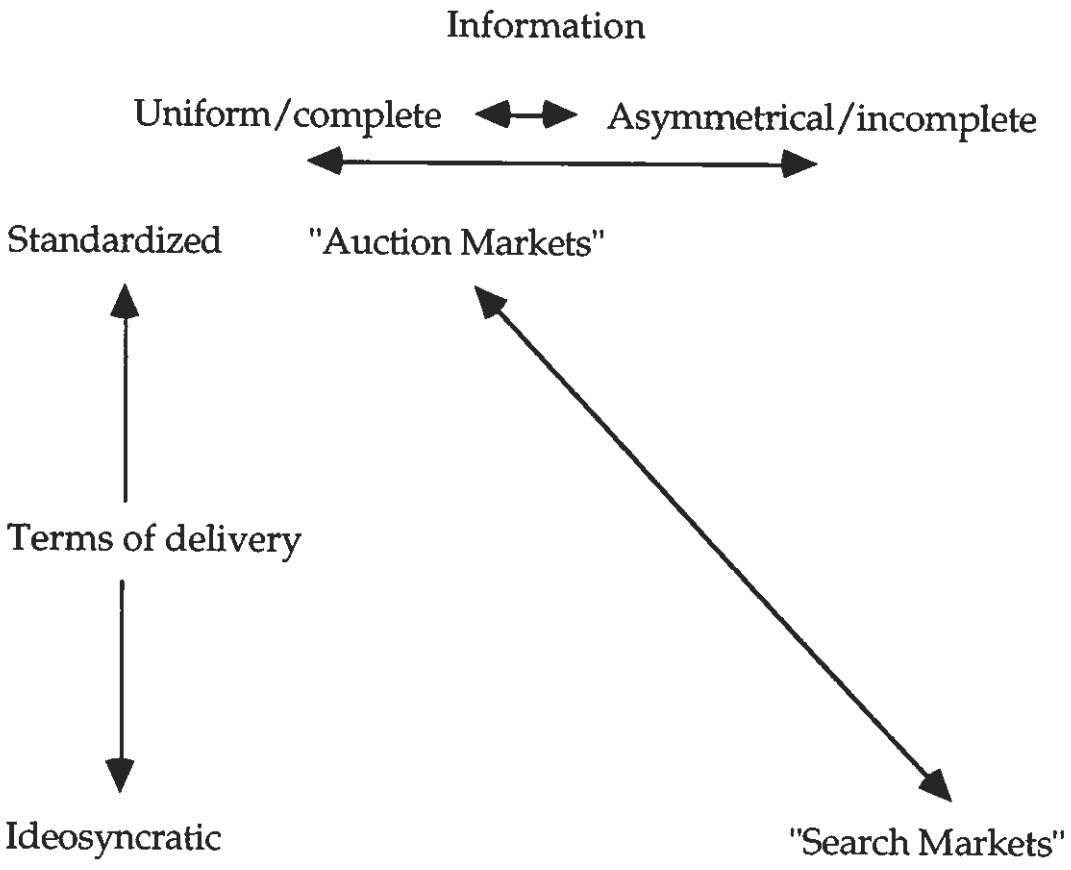
For a market to clear efficiently and uniformly at a given price to a given commodity, two vital preconditions must be met:

(1) Buyers must have a uniformly high level of information as to quantities available, degree of commodity differentiation, and future price movements on the market concerned; and

(2) The commodity traded shuould be relatively non-heterogeneous, of uniform quality, available on predictable terms in standardized lots at standard points of delivery, what might be termed "standardized terms of delivery." (Davis, 1990, pp 47-48).

Schematically this is expressed in Figure Two (next page), a simplified illustration of what is meant by the above

Figure Two: Differing Types of Market Organization



Source: Davis, 1989.

characterizations. Horizontally markets run from those in which buyers uniformly have a relatively high degree of information to

markets where information is asymmetrical and incomplete. On the vertical axis markets run from those which are characterized by highly standardized terms of delivery to those where terms of access, product heterogeneity, and physical delivery vary sop much so as to make price comparison difficult.

As can be seen, there are two ideal types of markets, emerging from this dichotomy:

What might be termed "search markets" were first modeled by Stigler (1961). In Stiglers approach there is no organized market on which prices equate supply and demand. Instead buyers seek across different sellers in order to discover the prices at which to transact. Here the buyer's search costs are the resource cost of operating the market.

"Auction markets" are formally or informally organized markets where participants enjoy what we have termed "uniform terms of delivery" (uniform information, uniform access to standardized lots, at uniform qualities, at a uniform point of delivery). Here, in contrast to "search markets" prices work efficiently to equate supply and demand (Davis, 1990, p.48).

What is the significance of the "market clearing" literature to development studies? There are perhaps three insights relevant for further investigation in development studies:

The consequences of observations such as those in Figure Two for markets in developing countries; these might be characterized as being predominantly "search markets", with small and uneven qualities and qualities delivered in dispersed areas removed from the major commercial flows of goods and services world wide.

Studies of what might be termed "dual markets:" These are markets characterized by sets of prices which can include two or more of the following: term contractual prices, spot prices, forward prices, and futures prices (Davis and Andersen, 1991, p.4).

These characteristics are widespread among trade in raw materials: coffee, tin, copper, oil... where "spot deals" are performed, producers and purchasers often enter into long term contracts, and

the commodities concerned are traded in commodity exchanges. Literature treating this phenomenon and its consequences is still largely theoretical (Carlton, 1979; B. Roberts, 1980; A. M. Polinsky, 1985); but general empirical studies do exist (R.G. Hubbard and R.J. Weiner, 1985; 1986); more specific studies are also available: on copper (McNichol, 1975) and crude oil (Weiner, 1988; Davis, 1990a; 1990b).

Investigations of what are often categorized as "parallel markets":

Markets resulting form planned economies where official planned market prices are supplemented by more or less unofficial "black market" prices which as often as not have an implicit unsanctioned "market clearing function (Davis and Andersen, 1991, p. 4).[7]

Investigation as to the nature of parallel markets is already well underway in development literature. C. Jones and M. Roemer, 1989, is a good introduction to this literature in a development context, as are the diverse articles in that issue of **World Development** for which they are responsible.(See also T. Nguyen (1989), Nguyen and Whalley (1989), and Roth et al (1990)). There is additionally a quite extensive literature on parallel markets in a Eastern European and Soviet context. Here Alexeev (1987), Charemza (1990), Charemza and Quandt (1990), Ericson (1984), Katz and Oven (1988), Panagariya (1990), and Tarr (1990) could well be of interest.

"Slice Three": Market Failure, Product Quality, Uncertainty, and Imperfect Information

Of the three slices, this last is perhaps the most recognized new institutional economic approach to markets in the Third World, as well it should be. Akerloffs (1970) pioneering work on product quality and consumer information utilized his personal experiences in Third World countries to draw on for examples illustrating his

[7] This dichotomy is developed at length in Davis and Andersen, 1991, and is there further defined in terms of additional institutional characteristics. This dichotomy can also be seen as irrelevant-- both being particular cases of multiple pricing and clearing arrangements in the presence of a spot and contractual markets. For such a point of view see Goldberg, 1976; Goldberg treats administrative regulation -- here primarily price/rate of return regulation-- as a particular form of "administrative contract" similar to contracts entered into by firms mutually dependent on long term market relationships.

famed "lemon principle." Development studies thus contributed to the first of the quality/consumer uncertainty literature, a literature to which we shall return below.

Market failure as a result of institutional lacks__8/[8], another variant of new institutionalist economic literature has been preliminarily explored in terms of development economics by Joseph Stiglitz, (Stiglitz, 1987a, 1987b, 1988, 1989; Dasgupta and Stiglitz, 1988) in a number of very insightful articles. The reader is especially referred to Stiglitz's (1989) paper where he focuses on the market failure with respect to two commodities "knowledge" and "information" to get a sense of how his approach is applicable.

In the following, however, we will maintain our focus on market transactions and how uncertainty can cause markets to fail, the original Akerloff puzzle--and one of significance to development studies. Akerloff proves that, given consumer asymmetric information and uncertain quality of the commodity being bought or sold, "it is quite possible that no goods will be traded at any price level (Ackerloff, 1970, p. 490)." Given the uneven quality of commodities bought and sold in developing countries, it could be contended that Ackerloff's observations should be of interest.

Akerloff's article (1970) led to a flowering of academic interest in markets with imperfect information. This has led to a very considerable theoretical literature dealing with various

forms of imperfect information[9]. Of particular interest is a variant of this literature, that concerned with the necessary preconditions for

---

[8] The line drawn between the classic welfare economic causes for market failure (provision of collective or public goods, the existence of externalities, natural monopolies, the provision of "merit" goods and institutional causes of market failure is at times somewhat tenuous. Thus a return in a firm investment in knowledge is difficult to realize if the knowledge results in a public good that other firms can appropriate. Therefore in the lack of means to appropriate or finance that knowledge the firm will not invest in the acquisition of knowledge. This is a classic case of market failure in welfare economic terms, but is generally regarded as belonging to new institutional economic theory.

[9] Early studies assuming non-availability of information at any cost have been replaced by studies based on changed (and more realistic assumptions): search (Hey and McKenna, 1981; Chan and Leland, 1982), investment in firm reputation (Klein and Leffler, 1981; Shapiro,1983; Allen, 1984) and utilization of consumer reserve prices (see Hey,1979; Hey and McKenna, 1981). While early models assumed exogenous seller price setting, later models incorporate seller price and quality determination and multiple price-quality equilibria (for example Chan and Leland, 1982; Cooper and Ross, 1984).

markets to function successfully; here the following debates have been engendered (although not necessarily resolved):

Reiterative Transactions: Heal (1976), responding to Akerloff, argued that markets could be expected to clear given reiterative transactions between buyer and seller, a feature which would lead to a seller disincentive to cheat. This solution had two problems: firstly reiterative transactions are not characteristic of all markets (and are thus not part of any general solution). The other problem is that one can argue that reiterative transactions requires that consumers not know of individual instances of "cheating"; should they become aware of individual instances, none would transact on the market and the market would fail.

Firm investment in reputation: Reputation effects serve not only as an incentive to the firms not to supply low quality goods but also as a form of consumer warranty as to the quality purchased (Dybvig and Spatt, 1980; Shapiro, 1983). This has led to considerable theorizing on reputation effects on market clearing (See, among others: Braverman, 1980; Salop and Stiglitz, 1977; F. Allen, 1984)

Sunk costs: Reputation has been demonstrated by Klein and Leffler (1981) to be no more than the existence of "sunk costs", in the presence of imperfect information, predominantly (although not only) costs of advertising:

> A sufficient investment in advertising implies that the firm will not engage in short-run quality deception since the advertising indicates a nonsalvageable cost gap between price and production costs, that is, the existence of a price premium (p. 630).

It is this gap which conveys a quality signal to the prospective purchaser. The implications of this argument are significant for competition; the absence of such "sunk cost" signals --directly in terms of product design and packaging and indirectly in terms of advertising and product guarantees -- can be a signal for the buyer to beware.

"Hit and Run Entry", and Quality: Perhaps the most promising approach to the problem of market clearing and quality, seen from a development perspective, is that relating contestable market

theory to product quality (Rashid, 1988; Davis, 1992).[10] Critical to the definition of a contestable market is that incumbents are vulnerable to "hit and run entry" should they attempt to exert market power and raise prices. As stated by Baumol, "Even a very transient profit opportunity need not be neglected by a potential entrant, for he can go in before prices change, collect his gains, and then depart without cost should the climate grow unattractive to him (Baumol, 1985, p. 317)." Fundamental to such entry is lack of sunk costs.[11]

If our sunk costs variation of Klein and Leffler (1981) is valid, we would expect Third World markets without extensive sunk costs and allowing for "hit and run" entry to have problems with quality goods. To the author's knowledge this is a relatively unexplored hypothesis. To date it has been confirmed with regard to the historical development of cotton, silk, worsted and milk markets in England and the United States (Rashid, 1988).

Conclusion: Markets: Weeds or "Hothouse Plants"?

To return to the provocative question posed at the commencement of this paper, could it be that "markets" as institutions are essentially weak, needing careful nurturing prior to flourishing?

If this is so, what are the consequences for development studies--and the use of markets as a panacea to developmental problems? This is the first question.

Secondly, if markets are sensitive and difficult of creation, they themselves should be the focus of more attention than they are otherwise given in Third World countries.

Markets as panacea: Our analysis sounds a cautionary note to enthusiasm for the markets-as-solutions approach.

---

[10] Much of the information in this subsection is based on the research and writing of Davis (1992).

[11] Sunk costs "are those costs that (in some short or intermediate run) cannot be eliminated, even by total cessation of production. As such once committed, sunk costs are no longer a portion of the opportunity cost of production" (Baumol and Willig, 1981, p. 406).

Firstly, there must be a distinction drawn between the use of economic incentives to enable an institution to function more effectively and economic institutions (such as voucher schemes) which in effect establishment of markets. There is a difference between for example increasing economic incentives to improve public services designed to provide incentives for civil servants to follow--and the establishment of a "voucher" system which depends on a market clearing system and well established property rights in order to be effective. In the first case, economic incentives are addressed to a limited well educated group which can expect to grasp the meaning of the incentives and change their behavior accordingly. In the second case, the issues are much more complex, difficult to understand, and easier to manipulate.

Furthermore, it is a useful reminder that consumers and producers seldom have the relatively positive view of markets in Third World countries as they do in more developed economies. Here, the very impersonal nature of efficient market solutions -- removed from extended family or village relationships -- is suspect. This suspicion is further confirmed by the problem of product quality, a topic to which we shall later turn.

In short, our analysis stresses some of the preconditions for "true market type" solutions to work. If these preconditions are not fulfilled, the resulting policy could well be both costly and needlessly complex. We stress simplicity in such cases.

Efficient markets as a policy end in itself: We have stressed the considerable costs of using the market in our discussion of "market clearing." it is quite likely that the problems of search and price discovery in most developing countries are more considerable, the cost of market transactions higher than in OECD Europe, Japan and the United States.

Under certain circumstances these increased transaction costs can work as a positive disincentive for villagers to resort to the impersonal workings of a market. But here too, it is easy to overgeneralize. Experience in the Eastern European economic transformation process indicates that it is easier to create markets for simple standardized products--agricultural produce, for example-- is easier than for products which are more sophisticated

which are produced by more highly oligopolised industries. This could well be the case in Third World countries, but any conclusion in this regard can be at best purely suggestive in nature.

Thirdly, we suggest that the "product quality-market failure" literature is applicable to developing economies. Such a suggestion is highly qualified, however.

As virtually every development specialist knows, cheating in terms of quality and prices is quite prevalent in developing country village markets. Still, people continue to buy and sell, and markets do clear. Something, some would contend, must be wrong here.

Subjecting the highly formal models of quality-reputation and market clearing to such a "true-false" test is misleading. These models assume a wide variety of assumptions which do not obtain in the real world of village markets. Yet, we still make the argument that this literature can give the village market problem some perspective.

Firstly these models assume that the seller is dependent on a reiterative transaction relationship with the buyer who has few other opportunities in time and space. There is a major difference between the firm which sells dicey products on a market in which information is freely available to millions of customers and the "hit and run" merchant who can cheat on a given village market and move on to other village markets without news of his dubious reputation preceeding him.

Given the opportunity of "hit and run" entry, it might be interesting to study price formation and cheating in a variety of village markets. For example, local merchants given a dependence on their local market might sell higher quality merchandise than merchants from other villages. If this is true, the local merchants can capitalize on this difference by charging marginally higher prices. They could also differentiate between selling locally and selling in far away villages, keeping premium products for local use and using "hit and run" techniques to unload inferior merchandise further away.

Quality also becomes a relative phenomenon. To the degree that cheating in market exchanges is relatively frequent among

merchants and firms with little or no reputation, it pays firms with reputation to cheat-- but relatively... So long as the cheating regarding quality is less frequent than it is for other firms or merchants, they can sell their products at a quality premium.

The problem of quality, if well reputed firms begin to speculate in it, could well become serious with regard to international trade. If large well reputed trading firms can get away with selling shoddy merchandise domestically, could they not be tempted to do likewise in international markets? This too is a matter for speculation only. To the degree to which goods are traded on the basis of non-price factors, exporter cheating in this regard could backfire with welfare consequences for the nation state involved.

Seen from the buyers' perspective, there are several strategies to be adopted: firstly, one can limit ones exchange of goods and services to the extended family unit in so far as it is possible. This is merely replacing the market with another form of exchange. Secondly, the buyers can confine their purchases to merchants or firms which engage in reiterative dealings with them. Thirdly buyers can "discount" for the possibility of poor quality in their transactions- a process which almost guarantees that the goods purchased will be of poor quality.

In all cases, although we cannot prove as such here, the problem of quality and market exchange if calculated as costs of transactions and summed for all the markets of a developing country (currency, agricultural commodities, semi-industrial products, and more sophisticated traded items) can cost billions in terms of local and international currencies, money which such countries can ill afford to waste.

If this analysis is accepted as valid, it goes almost without saying that development of efficient markets should be a greater focus of Third World policy-makers than they are at present.

Bibliography

Akerloff, G., 1970, The Market for Lemons: Qualitative Uncertainty and the Market Mechanism, *Quarterly Journal of Economics*, supple. 83(3), pp. 488-500.

Allen, F., 1984, Reputation and Product Quality, *The Rand Journal of Economics* autumn 15(3), pp. 311-327.

Alexeev, M., 1987, Microeconomic Modelling of Parallel Markets: The Case of Agricultural Goodfs in the USSR, *Journal of Comparative Economics* (December)

Barzel, Y., 1982, Measurement Cost and the Organization of Markets, *Journal of Law and Economics* April XXV, pp. 27-48.

Baumol, W.J., 1985, Industry Structure Analysis and Public Policy in G.R. Feiwel ed., *Issues in Contemporary Microeconomics and Welfare* (London: Macmillan).

Baumol, W.J., and R. D. Willig 1981. Fixed costs, sunk costs, entry barriers, and sustainability of monopoly, *Quarterly Journal of Economics* XCVI (3), August, pp. 405-431.

Becker, G.S., 1991, A Note on Restaurant Pricing and Other Examples of Social Influence on Price, *Journal of Political Economy* 99(5), pp. 1109-1116.

Braverman, A., 1980, Consumer Search and Alternative Market Equillibria, *Review of Economic Studies* LIV.

Carlton, D.W., 1978, Market Behavior with Demand Uncertainty and Price Inflexibility, *American Economic Review* 68, September, pp. 571-587.

Carlton, D.W., 1979, Contracts, Price Rigidity, and Market Equilibrium, *Journal of Political Economy* 87 November, pp.1034-1062.

Carlton, D.W., 1987, *The Theory and the Facts of How Markets Clear: Is Industrial Organization Valuable to Understanding*

Macroeconomics? (Cambridge, Mass: National Bureau of Economic Research Working Paper No 2178).

Chan, Yuk-Shee, and H. Leland, 1982, Prices and Qualities in Markets with Costly Information *The Review of Economic Studies* October, XLIX(4) no. 158, pp. 499-516.

Charemza, W.W., 1990, Parallel Markets, Excess Demand and Virtual Prices: An Empirical Approach, *European Economic Review* 34(2-3), pp. 331-339.

Charemza, W.W., and R.E. Quandt, 1990, Dual Housing Markets in a Centrally Planned Economy - An Empirical Analysis, *Kyklos* 43(3), pp. 411-436.

Coase, R., 1937, The Nature of the Firm, *Economica* IV,pp. 386-405).

Cooper, R. and T.W. Ross, 1984, Prices, Product Qualities and Asymmetric Information: The Competitive Case, *The Review of Economic Studies* April, LI(2) no. 165, pp. 197-208.

Dasgupta, P. and J.E. Stiglitz, 1988, Learning-by-doing. Market Structure and Industrial and Trade Policies, *Oxford Economic Papers*, 40, June, pp.246-268.

Davis, J.D., 1990a, *The Restructuring of the International Oil Industry: Consequences for Danish Industrial Policy* November, Report to Danish Social Science Research Foundation, Grant no. 14-4861, 164 pp.

Davis, J.D., 1990b, How Secure International Oil? Organizational Instability and Change within the Oil Industry, *International Interactions* X(1) Spring, pp. 19-32.

Davis, J.D., 1992). The 'Quality Factor': Firm Incumbency, Entry and The Economic Transformation of Eastern European and SNG Markets Paper presented to Eastern European Group, Økonomisk Institut, Københavns Universitet, February 4, 12pp.

Davis, J.D., and Ole Winckler Andersen, 1991, 'Market Clearing' in Multiple Markets and Reform of 'Parallel Market Economies'" (Paper presented at the 8th Annual Conference, European Association of Law and Economics, Copenhagen, August 29-31,1991) 28pp.

Ericson, R., 1984, The Second Economy and Resource Allocation under Central Planning, *Journal of Comparative Economics* (March), pp. 1-24.

Grossman, S. and J. Stiglitz., 1980, On the Impossibility of Informationally Efficient Markets, *American Economic Review* (June),70(3), pp. 393-408.

Heal, G., 1976, Do Bad Products Drive Out Good? *Quarterly Journal of Economics* 90 (3), pp. 499-503.

Heal, G., and C.J. McKenna, 1981, "Consumer Search with Uncertain Product Quality, *Journal of Political Economy* 89(1), pp 54-66.

Hubbard, R.G. and R.J. Weiner, 1985, *Nominal Contracting and Price Flexibility in Product Markets* (Cambridge, Mass: National Bureau of Economic Research Working Paper No 1738).

Hubbard, R.G. and R.J. Weiner, 1986, Contracting and Price Flexibility in Product Markets. June (unpublished).

Jones, C. and M. Roemer, 1989, Editors Introduction: Modeling and Measuring Parallel Markets in Developing Countries, *World Development* 17(12), pp.1861-1870.

Katz B. and I. Oven, 1988, An Equilibrium Model of a Second Economy Market in a Centrally Planned Economy, *Journal of Comparative Economics* 12(4), pp. 546-569.

Klein, B. and K.B. Leffler 1981, The Role of Market Forces in Assuring Contractual Performance, *Journal of Political Economy* 89(4), pp. 615-641

Langlois, R.N. ed., 1986, *Economics as a process: Essays in the New Institutional Economics* (Cambridge: Cambridge University Press)

Littlechild, S.C., 1986, "Three types of market process" in R.N. Langlois, *Economics as a process: Essays in the New Institutional Economics* (Cambridge: Cambridge University Press), pp. 27-40.

McNichol, D. L., 1975, The Two price Systems in the Copper Industry, *Bell Journal of Economics and Management* 5(2), Spring, pp. 50-73.

Means, G.C., 1935, Industrial Prices and Their Relative Inflexibility," *Senate Document 13*, 74th Congress, 1st Session, Washington,D.C.: U.S. Government Printing Office.

Nguyen, T., 1989, The Parallel Market of Illegal Aliens: A Computational Approach, *World Development* 17(12), pp. 1965-1978.

Nguyen, T.,and J. Whalley, 1989, General Equilibrium Analysis of Black and White Markets- A Computational Approach, *Journal of Public Economics* 40(3), pp. 331-347.

Panagariya, A., 1990, The Parallel Markets in Centrally Planned Economies: A Dynamic Analysis, *Journal of Comparative Economics* 14 pp. 353-371.

Polinsky, A.M., 1985, Fixed price versus spot price contracts: A study in risk allocation, *Stanford Law School Working Paper No. 20*

Rashid, S., 1988, Quality in Contestable Markets: A Historical Problem, *Quarterly Journal of Economics* CII (1) February, pp. 245-249.

Roberts, B., 1980, The Effects of Supply Contracts on the Output and Price of an Exhaustible Resource, *Quarterly Journal of Economics* 95 September, pp. 245-260

Roland, Gerard, 1988, Product Quality in a Soviet-Type Economy, *European Economic Review* 32, pp. 129-139.

Roth, M. J. et al., 1990, Evaluating Agricultural Price Policy under Dual Market Megimes and Institutional contraints, *Journal of Development Economics* 33(1-2), pp. 179-197.

Shapiro, C., 1983, Premiums of High Quality Products as Returns for Reputations, *Quarterly Journal of Economics* XCVIII (3), pp. 659-679.

Stigler, G., 1961, The Economics of Information, *Journal of Political Economy* 69(2), June, pp. 213-25.

Stigler, G.and J.R. Kindahl, 1972, Industrial Prices as Administered by Dr. Means, *American Economic Review* 63(4) September, pp. 717-721.

Stiglitz, J., 1989, Markets, Market Failures, and Development, *Papers and Proceedings: American Economic Review* 79(2) May, pp. 197-203.

Stiglitz, J., 1988, Economic Organization, Information and Development, in H. Chenery and T. Srinavasan, eds., *Handbook of Developmental Economics* Vol. I (Amsterdam: Elsevier).

Stiglitz, J., 1987a, Learning to Learn: Localized Learning and Technology Progress, in P. Dasgupta and P. Stoneman, eds. *Economic Policy and Technological Performance:* (Centre for Economic Policy: Cambridge University Press).

Stiglitz, J., 1987b, On the microeconomics of technical progress," in Jorge Katz, ed., *Technology Generation in Latin American Manufacturing Industries* (London: Macmillan)

Stiglitz, J., 1976, Prices and Queues as Screening Devices in Competitive Markets, *IMSS Technical Report no. 212* Stanford University.

Svejnar, J., 1991, Microeconomic Issues in the Transition to a Market Economy, *Journal of Economic Perspectives* 5(4), Fall, pp. 121-138.

Tarr, D., 1990, Quantifying 2nd Best Effects in Grossly Distorted Markets-the Case of the Butter Market in Poland, *Journal of Comparative Economics* 14(1), pp. 105-119.

Telser, L.G., 1980, A Theory of Self-enforcing Agreements, *Journal of Business* 53(1), pp. 27-44.

Veljanovski, C., 1986, An Institutional Analysis of Futures Contracting," in B. Goss, ed. *Futures Markets: Their Establishment and Performance* (London: Croom Helm)

Weiner, R. J., March 1989, A Comparative Analysis of the WTI Futures Market and the Brent Forward Market," Energy and Environmental Policy Center, JFK School of Government, Harvard University

Williams, J.C., 1986, *The Economic Function of Futures Markets* (London: Cambridge University Press).

Working, H., 1953, Futures Trading and Hedging, *American Economic Review* 44(2), June, pp. 314-343.