

## 2. THE NATURE OF MARKETS AND ECONOMIC RECOVERY

In contemporary American society, the existence and functioning of markets for a large range of goods and services is taken for granted. However, the questions raised by research probing socioeconomic life following societal cataclysm suggest that much of what is taken for granted is susceptible to challenge. The primary purpose of the following literature review is to offer some insights on the functions that may be considered necessary and sufficient conditions for the restoration of market activity following a major societal disaster of the order of nuclear war.

Two considerations guide our effort in this review. First, we diverge from the traditional focus of most neo-classical economics and concentrate on the processes of market activity rather than the equilibrium state. (More precisely, the area of economics that focuses on equilibrium states is called Neo-walrasian analysis.) Processes of market activity refer to the dynamic considerations of exchange while the equilibrium state is solely concerned with static results of exchange behavior. This approach is necessitated by our interest in the dynamics underlying market creation, participation, and the consequences for economic recovery.

Second, we do not seek to judge whether or not the free-market process is the optimal form of economic organization, even if, as we discuss below, we could define this process adequately. The principal interest of this study is in the conditions for recovery of stable, market activities. However, other forms of economic organization, e.g., traditional or command systems, may be more likely given the assumptions of any particular scenario. Our analysis yields recommendations that could enhance the conditions necessary for the establishment of a market process as well as precautions where actions would be counterproductive or destructive. Yet, to judge how economic life should be reconstructed after societal cataclysm is ultimately a political and ethical question, beyond the scope of our analysis.

Finally, our consideration in this review goes beyond the conditions established by mathematical economic models of market exchange. Although these models are very relevant to the recovery problem, it would be inappropriate for the recovery problem to derive a set of conditions from a mathematical model that generates market transactions under the model's assumptions if these conditions and assumptions are unrealistic (Shoemaker 1982, Daly 1982). From a policy perspective, our conditions have meaning only to the extent that they correspond to actual market activities.

## 2.1 THE MARKET IN ECONOMIC THEORY

Investigation of the modern economics literature reveals that a great deal of attention is paid to the components and outcomes of market activity, but relatively little analysis has been devoted to understanding how markets emerge from social interaction (Gould 1980). This presents a particular problem for our study since economic recovery under the various scenario assumptions involves some aspects of market creation in the wake of destroyed resources and institutions. The dearth of analysis on the emergence of markets is somewhat surprising given the amount and scope of literature that addresses market phenomena. A first step in understanding the necessary and sufficient conditions to generate and sustain markets is to examine some of the more prominent issues that have emerged from the study of the market process in economic theory.

As noted, there has been some analysis of the market making process. However, this literature has concentrated on the function of advertising or search in an environment where market activities are already well established (Gould 1980). The problems this literature addresses can be placed under a more general category concerning the costs of conducting transactions, which are discussed below.

Related to market making is the theme of market behavior, where the incentives and responses of various market agents, e.g., consumers, producers, laborers, etc., are explored in order to understand economic choice and how diverse activities and wants are coordinated. While it would be incorrect to suggest a consensus exists in this literature, two of the more coherent areas of study focus on the theory of consumer choice and the theory of the firm. Consequently, two paradigms of choice behavior that are important for our study are utility maximization and profit maximization. Blaug (1968) provides an account of the historical development of these theories, their roots going back to the nineteenth century with the work of Jevons, Marshall, and Walras.

The market behavior literature is closely connected to many of the original ideas set forth by Adam Smith in what may be considered the bible of market study, The Wealth of Nations. In this seminal work, written in the latter half of the eighteenth century, Smith identified the powerful force of self-interest and the equally powerful force of the competitive market process that lead selfish economic agents, as if guided by an invisible hand, to provide a diverse group of goods and services to satisfy the wants of consumers.

This view of the market process has been extensively modeled and expanded in the modern economic literature, the most notable being the formal modeling of Smith's invisible hand theory and its welfare implications for the economy (Debreu 1959, Arrow and Hahn 1971). Modern economic theory states that under a specific set of assumptions, competitive market outcomes not only equate demand and supply plans, but result in an outcome where no one person can be made better off without simultaneously making another person worse off (Pareto optimality).

Further, once this state has been reached, there will be no internal pressures to move to another set of exchange plans thus reflecting an equilibrium state. Two of the more important characteristics of the competitive equilibrium are the self-regulating nature of competition and the efficient coordination of supply and demand information.

The characteristic of self-regulation, refers to two properties of the perfectly competitive system. First, given some exogenous shock to the system, e.g., a new, large oil field is found, the forces of demand and supply underlying the competitive model will move the economy to a new price/quantity outcome that reflects this new supply. The concept of self-regulation denotes the economy's ability to adjust, without extra-market intervention to a new equilibrium outcome (Arrow and Debreu 1954). The same term also has been used in another way when referring to the competitive model. The second meaning, which emerges in the models of fully contestable markets (Baumol, Panzar, and Willig 1982), principal-agent problems (Stigler 1983), and the notion of consumer sovereignty (Lerner 1944), is related to the way competition regulates self-interested or opportunistic participants to (a) do what they have promised and (b) produce what people want at the lowest price.

Efficiency in the use of information and communication resources to bring about the demand-equals-supply condition, rests entirely on what Hurwicz (1973) calls the "mechanism for resource allocation." In the perfectly competitive model, such a mechanism may take the form of an auctioneer, who calls out prices for different commodities, observes desired purchases and sales at those levels, and then adjusts prices until all desired purchases equal all desired sales. The only information that need be transmitted from the auctioneer to traders is the set of prices that can be incorporated into their decentralized, decision-making processes. While it may take many iterations for such a mechanism to work, i.e., all markets to clear, individual traders do not need to know the preferences, technological options or level of resources of other traders to make their own market plans. In modern markets with a well-functioning price system, the auctioneer is effectively replaced by many accessible retail outlets and low search costs.

On the surface, the self-regulation and efficiency in the use of information characteristics seem to suggest a framework to find our fundamental conditions for a market process. Unfortunately, the perfectly competitive model of exchange underlying the result, is based on very restrictive and somewhat unrealistic assumptions (Bell 1981, Schotter 1985). For example, it ignores the factors that Kirzner (1973) identifies as the prime movers for the market process; asymmetries in market information and uncertainty that give rise to entrepreneurial decisions and active competitive behavior (rivalry). In the perfectly competitive model, competition does not imply active competitive behavior. Rather, it denotes the absence of competition where economic agents act as passive price takers subject to the same information. In a later criticism Kirzner (1981:116) remarks:

Economists have always emphasized the beneficial role of competition in market processes. Sad to say, neoclassical

economics long ago developed a technical notion of static competition which is not only antithetical to that used in everyday layman's speech, but which, more seriously, fails entirely to appreciate the nature and enormous importance of dynamic competition. Not only did neoclassical economics introduce a meaning to the term "competition" which is almost the opposite of its ordinary meaning, but, in so doing, it diverted attention from market processes (original emphasis).

The competitive force in the model is not that firms or consumers aggressively attempt to out perform other rivals, but that there are so many traders that no single trader has any measurable affect on the outcome of prices and quantities. This large-number-of-traders condition, while crucial to the perfectly competitive model, does not fit most actual market activities, where information is asymmetric and/or rivalry is evident. Thus, in real markets, a large number of traders hardly seems necessary although, when coupled with symmetric information and other conditions, it may in fact be sufficient.

Relaxing the condition of large numbers and/or perfect (i.e., symmetric and complete) information has been the focus of the literature concerning market power (Shepard 1979). This literature addresses the conditions that would prevent a market process from obtaining the efficient outcome of the perfectly competitive model, instead, achieving an outcome that implies some waste in the allocation of resources. The models which characterize this literature address imperfect competition (or monopolistic competition), oligopoly, and monopoly. In addition, the comparable cases of oligopsony and monopsony, as well as bilateral monopoly are relevant. (See chapter five for a more complete description of these forms of market organization.) In short, the modeling emphasis is on the conditions that limit the supply of and demand for a good or service and the implications for resource allocation. While important for understanding the range of choices for market traders, this literature generally relies on the perfectly competitive model as a baseline description of the market process. Three major exceptions to this convention are Chamberlin (1933), who focuses on the tendency for firms to distinguish themselves from competitors, Schumpeter (1942), who focuses on the relationship between innovation activities and market organization, and the literature of the Austrian School which focuses on the dynamic adjustments made by economic agents (Kirzner 1981).

Finally, rather than searching for a general definition or set of conditions of the market process in the literature concerning operating market structures, one may look at two areas where formal-market operation is precluded. The literatures on market failure and non-market allocations are relevant to the market process because they emphasize the conditions under which formal markets will fail to exist or are unable to achieve optimal social outcomes (Toumanoff 1984). Three key concepts emerge from these literatures that bear on market processes and resource allocation; transaction costs, externalities, and property rights.

First is the concept of transaction costs, or what Arrow (1969) calls the costs of running the economic system and Williamson (1985) calls the economic counterpart of friction. Transaction costs arise because announcing you have something to sell may not be costless, finding a buyer may not be that easy, and even when you do, buyers' checks can bounce. Toumanoff (1985:531) provides a concise summary of these costs: "Transactions costs occur as resources are used when trading partners attempt to identify and contact one another (identification costs), when contracts are negotiated (negotiation costs), and when the terms of the contracts are verified and enforced (enforcement costs)."

Second is the concept of externalities in consumption or production. Actually, as Arrow (1969) argues, market failure due to externalities is a special case of the general problem of transaction costs. Externalities exist where an individual's gain or loss from a transaction depends on the actions of others. Thus, pollution from a nearby city may affect the farmer's costs of growing crops and hence, the return on the farming activity. Efficiency could be restored if a costless bargain (i.e., one where the costs of making the bargain are insignificant) could be struck between the two parties, i.e., bribe the city not to pollute as much or compensate the farmer for his/her losses (Coase 1960).

However, in many cases it is difficult to correct externality problems because (a) it is too costly to exclude winners or compensate losers in the presence of external effects generated by use of the resources (i.e., bargains are very costly to make) or (b) the bargain depends on the existence of other markets (including markets for information and insurance) that do not exist. For example, Schelling (1978:42) describes a set of transactions where, in the absence of appropriate information and through the processes of sorting, segregation, or integration, market processes fail to bring about the desired social results: "If everyone wants to stay at home and watch the crowds in Times Square on television, there will be no crowds in Times Square, while if everyone wants to join the crowd to be seen on television there will be nobody watching." In such cases, some coordination of individual plans or better information on the plans of others can produce a better aggregate outcome.

A third concept from the literature on market failure (as well as in economic anthropology) is property rights. Property rights refer to the entitlements which define how resources may be used by traders. Because decisions regarding resources are interdependent, societies define and enforce rules to govern the use and consumption of scarce resources as an alternative to the possible violent competition of their members for these resources.

Two alternative systems for defining property rights are private property and common property. The major difference between the two systems is the first assigns property rights primarily to the individual while the second assigns the rights primarily to the collectivity. Contrary to what many economists and non-economists may think, common property does not imply the absence of an entitlement system. The

absence of entitlements would indicate an open-access system (Stevenson 1984). Of course, hybrid systems are also possible, e.g., where ownership entitlements are defined but use entitlements are not.

While many conditions characterize either the private property or common property case, in their simplest forms they embody: (a) a principle for exclusion, i.e., who may use and manage the resource and who may not; (b) a principle for distribution of income and/or costs arising from the use of the property; and (c) a principle for transferring the rights implied by (a) and (b) (Cheung 1983). In addition, Umbeck (1981) reminds us that all property rights are based ultimately on the abilities of the owners (individuals or groups) to persuade others to respect these rights or at least, exclude those who will not.

## 2.2 A GENERAL DEFINITION OF THE MARKET PROCESS

The market process is central to economic theory and the foregoing review represents only a brief sketch of the research related to it. However, given the position the market process occupies in the economics literature, one might be inclined to believe that this concept has been defined clearly. In fact, the most surprising outcome of a comprehensive literature review is that the market process has been defined in many ways and little or no consensus exists about any single definition. At best, it can be said that most of the definitions fall into one of two categories: general exchange spheres and institutions free of collective action.

The category of general exchange spheres encompasses just about any form of voluntary exchange. For example, Alchian and Allen (1969:63) define the market as: "a non-administered device allowing uncoerced parties to negotiate exchanges." Presumably, any exchange that was not administered by some central authority would be consistent with this definition. As another example, Schelling (1978:23) describes a market as: "the entire complex of institutions within which people buy and sell and hire and are hired and borrow and lend and trade and contract and shop around to find bargains."

The second category of institutions free of collective actions has been used by a number of authors to make a distinction between a market process and a contract process. Thus, these definitions focus on the differences between anonymous exchange and exchange relationships, defined either by contract or membership in an institution, like a firm. However, it would be incorrect to claim that the degree of this distinction is consistent in the market literature. In fact, three views can be identified.

First is the view that markets involve decentralized decision makers attempting to coordinate their desires (Toumanoff 1984:535-6):

Market institutions create a horizontal mechanism for coordinating economic activity between consumers and producers. Private property rights are generally

decentralized, distributed among the individual actors, and market prices act as presumably low-cost transmitters of information, enabling potential trading partners to locate and contact one another. In addition, specialized traders, or middlemen, emerge to bring partners together, lowering transactions costs further. For many transactions, negotiating costs are negligible and enforcement costs are low, because self-interest is the enforcer. For other transactions, in which behavior is difficult to monitor or property rights difficult to define, negotiating of enforcement costs may be significant enough to inhibit trade.

Thus, decision makers are decentralized, but middlemen (coordinators), are within the bounds of the market process. Consistent with this view are those analysts who see the perfectly competitive model as representative of the market process. For example, Hurwicz (1973) discusses "market phenomena" in connection with the Walrasian auctioneer process (i.e., a system of bidding where trade is allowed only at the prices that equate supply and demand in all markets) and a "command system" when referring to those supply and demand decisions made by a centralized authority. Arrow (1969:69) refers to the perfectly competitive equilibrium as "a free market equilibrium." Such views would see the competitive conditions as necessary for the market process, where relative prices guide exchange behavior.

A second (and popular) view is not so concerned with the absence of collective action as long as it has no effect on the price system. This view is characterized by the attention placed on the price system in the market process. In fact, one is left with the impression that all that is necessary for a market process is a price system with some flexibility to respond to demand and supply conditions. Bell (1981:50) argues that this emphasis began in the writings of Alfred Marshall: "For Marshall, price theory was what economics was all about." Friedman (1976:5) proposes that: "The fundamental principle of the market sector is the use of purchase and sale to organize the use of resources." Further, he notes that: "The introduction of enterprises and money does not change the fundamental principle of a market system" (p. 6). In their book, The Market System, Haveman and Knopf (1966:11) state that: "A market system is one in which the basic economic questions are decided, not by some central authority, but by producers and consumers acting in response to prices. The essence of the system is that the goods are produced for exchange and exchanges are money transactions." While this definition reflects the operation of many modern U.S. markets, it excludes transactions that are accomplished in the absence of either money or explicit price systems.

Finally, the third view is the most restrictive in the sense that it presumes a price system and requires that the identities of trading parties do not affect the terms of the trade (Williamson 1979). Here, we have a distinction among three types of institutions for exchange: firms, markets, and relational contracting (Williamson 1985). Firms are characterized by formal, hierarchical organization governing resource owners and employers. Markets are characterized by discrete, anonymous transactions. Relational contracting is characterized by flexible,

time-dependent relationships between trading partners, as contained in implicit or explicit trading contracts.

One only has to contrast the last description with the category of a general exchange sphere to appreciate the lack of agreement on a single definition of the market. Further, the lack of agreement is not resolved when authors restrict themselves to discussing a single problem such as contracts. For example, Cheung (1983) argues that the market and the firm are merely different types of contracts. However, conflicting views emerge even in the course of coordinated dialogue. For example, in comments on a symposium paper, Holmstrom (1985) refers to non-market organization as transactions "conducted outside the price system, most notably within firms." According to this view, negotiation of employment contracts is not a market transaction. A few pages later, Riley (1985) describes how "a single individual on one side of the market negotiates with one or more individuals on the other side of the market." Certainly, this is the essence of employment negotiations in firms.

Having considered the salient features of the market process as used in economic theory and what attempts have been made to define it, we propose a general definition based upon the transaction level of exchange. Five overall requirements are important to this definition:

- (1) property rights defining control over goods and services; although private property may be important, its absence does not preclude a market process, whereas absence of control over goods and services does;
- (2) the desire to exchange;
- (3) transaction costs that do not exceed the perceived gains from completing the exchange;
- (4) choice over trading partners and/or choice over trading periods; and
- (5) trust in the security of the transaction being completed in an atmosphere of non-coercion.

A market process exists where these conditions are present for at least two or more traders.

The first requirement specifies that either private property or common property rights, or some hybrid, must be recognized, at least implicitly, between trading partners. Thus, stealing is not legitimate in a market process because this implies the absence of a shared definition of the rights that establish control over goods and services. The second condition reflects what Alchian and Allen (1969) call the exchange proposition; that some difference in personal tastes and/or endowments suggests the opportunity for traders to gain from an exchange. The third condition simply means that the exchange results in a net benefit to the parties after all costs are considered. The fourth requirement introduces the process of choice, thus, pure command or



traditional allocations involving no choice are not market processes. And finally, the fifth requirement rules out the use of violence in the market process.

Hence, we arrive at the definition of a free market. Such a market exists when uncoerced parties, desiring to exchange goods or services, may do so where the options are wider than to exchange or not to exchange.

### 2.3 MARKET STRUCTURES

While we have defined a market process which relies on the notion of choice over the transaction decision, the basic definition indicates nothing about the existence or extent of competition, government intervention, or allocation outcomes. Thus, our definition does not represent any particular organization of actual transactions. We have purposely made our definition general because we wish to explore to what extent alternative forms of organization lead to different trading outcomes.

What is lacking in our definition is information on the form of the market organization (Plott 1986). Market organization refers to the exchange institutions that govern or constrain the market process. Unless these institutions are specified, any number of allocation outcomes are possible from the market process. Conceptually at least, these outcomes become well-defined within the descriptive models of particular markets. Thus, our definition of a market process lacks realism without further specification of how it is constrained by social institutions. Brennan and Buchanan (1985:13) argue strongly that to understand the market, one must pay attention to the rules:

With respect to the far more important economic interaction among persons, however, the rules governing individual behavior within such interaction are often ignored. Economists, themselves, have been notoriously negligent in this respect. Complex analytic exercises on the workings of markets are often carried out without so much as passing reference to the rules within which individual behavior in those markets takes place. Adam Smith was not party to such neglect; he emphasized the importance of the "laws and institutions" of economic order.

Moreover, this attention to rules is valid even if we limit our interest to the workings of the popular notion of the free market, perceived by many to be the best example of an unconstrained market structure. Schotter (1985) argues that the popular notion of the free-market prescription for organizing economic activities, while very different from the perfectly competitive model of economic theory, is highly constrained by rules including: (a) preferences of the individual are the best guides to define value and welfare (Consumer Sovereignty); (b) people act in their own best interest (Utility Maximization and Profit Maximization); and (c) an unbridled price system provides the best incentives for economic growth (Laissez-faire).

As we argued above, the notion of the free market in the formal economics literature is related to the model of perfectly competitive exchange. The popular notion seems interested in rules promoting individual freedom to conduct commercial activities, thus, is more closely related to the idea of free enterprise. The perfectly competitive model deals solely with rules enabling price competition. As Stiglitz (1986:339) remarks:

It is now widely recognized that the nature of competition in market economies is far more complex (and more interesting) than the simple representation of price competition embodied in, say, the Arrow-Debreu model. Not only are there alternative objects of competition: firms compete not only about price but also about products and R&D. But, also, the structure of competition, the 'rules' which relate the pay-offs to each of the participants to the actions they undertake, may differ markedly from that envisioned in the standard model (original emphasis).

Whatever notion of the free market is used, the analysis of an actual market requires understanding the structure of rules that govern demand, supply, and transaction options for a particular set of transactions. We define this set of rules as an exchange structure, rather than a market structure, because not all possible exchanges of goods and services correspond to those described in our definition of the market. Where the exchange structure does fulfill the conditions of a market process it is also a market structure. Thus a market structure is an exchange structure, but the converse may not be true. The full set of exchange structures used to examine economic recovery from nuclear war are introduced in the chapter to follow.

## 2.4 CONCLUSION

From our review of the markets literature, we conclude that any application of the concept of the market process to an analysis of market behavior and allocation outcomes (whether to study the recovery question or other policy questions) must explicitly address the rules by which the market activities are organized. We define an exchange structure as the rules governing demand, supply, and transaction options for a particular set of transactions, and a market structure as an exchange structure that fulfills the conditions of the free market process.

The second important point is that the market, or more precisely, the market process, is a fundamental concept to many areas of economic research. Yet, we argue that it has not been rigorously defined. Although a rigorous definition exists in the perfectly competitive model, few economists would regard the model as representative of many of the market activities observed in the U.S. or other economies. We have developed a general definition of the market process which embodies a number of the more basic concepts suggested by the economics literature. These concepts include gains from trade, property rights, transactions costs, and some freedom of choice over the transaction in a

non-coercive environment. When combined with institutional rules, this general definition can be modified to reflect the conditions of ideal market structures or further refined to describe actual market activities.