5. MARKET EXCHANGE STRUCTURES

This chapter follows the same format as that preceding in discussing the rules for exchange structures. However, the rules of the exchange structures that are presented in this chapter imply a different allocational outcome and fulfill, in various degrees, the conditions constituting a market process.

In directing production and distribution, market exchange structures do not rely on fixed-allocation rules arising from custom or command. Rather these exchange structures rely on rules that are more responsive to the desires of traders engaged in the transactions for goods and services. In addition, the rules of the market exchange structures allow a good deal of choice over transaction options. As a result, current demand and supply conditions have a much greater influence in market structures than non-market exchange structures.

The market exchange structures discussed in this chapter span a broad range of exchange activities. The peasant marketplace (from economic anthropology) and associational markets (derived from the informal-economy literature) are followed by the neo-classical economic model of the perfectly competitive market and the extreme example of the absence of competition, the monopoly market. The characteristics of perfect competition and monopoly can be considered as two extremes of the formal-market spectrum. Several other variations of imperfectly-competitive markets are also described insofar as their rules vary from those of monopoly markets.

5.1 THE PEASANT MARKETPLACE

The peasant marketplace consists of persons who produce for trade, usually in localized marketplaces (Dalton 1964). Despite this difference from the subsistence sphere, the contrast between peasant and subsistence production is largely institutional and economic rather than technical. For example, where both are based on agriculture, they are likely to use small family-managed land allocations. Where both are based on pastoralism, peasant producers and subsistence producers are likely to exploit open-access grazing rights.

The technology and applied science available to peasant farmers and pastoralists may be indistinguishable, in some cases, from that available to the subsistence producer (Nash 1964). The contrast is that unlike the subsistence sphere, with its emphasis on self-sufficiency and isolation, peasant producers are outward looking, seeking to produce for trade, often with urban populations who will provide the peasant producer with manufactured goods or money (Firth 1951).

Demand may be made by anyone entering the marketplace with goods to exchange or money to purchase. However, differential transportation costs may constrain entry unless rotating market mechanisms are used,

for example, shifting the location each day on a weekly cycle (Nash 1964). Demand is principally for survival or to benefit from differential skills or preferences. In some cases peasant-market producers specialize to the exclusion of maintaining their own subsistence and rely exclusively on the market trade for other goods (Lewis 1951). Consumption is shared at the discretion of the buyer, usually within a co-resident extended family.

The goods and services traded in the peasant marketplace may be divisible or indivisible, homogeneous or differentiated. Most agricultural goods are homogeneous, but limited manufactured goods may be traded. However, most trade is for agricultural products, fish, pastoral products, etc. which are produced on peasant smallholdings. The supply of such goods tends to be highly seasonal, depending to some extent on climate and location. Purchase of large, predominantly non-seasonal items may be lumpy, for example, livestock. Generally, storage is limited to salted, dried, or smoked products, or to live storage on the hoof. Incentives to store may depend on extent of seasonal variation.

Suppliers are admitted to the peasant marketplace on the same basis as demanders. However, suppliers may prefer to deal with regular customers with whom personal ties reduce risk (Mintz 1961). Offers to sell are made by displaying goods in the marketplace.

Technical constraints on supply include the simplicity of hand tools, a low level of technological sophistication, and reliance on human labor power which is inexpensive relative to other resources of production. Institutional constraints include the nature of land-tenure patterns and rules, inheritance rules, especially for land and cattle rights, a low-level of division of labor, and problems of mobilizing human labor for large projects such as irrigation, bridge construction, etc. Natural constraints include seasonal variation, weather conditions, and soil quality. Also, constraining are the availability or proximity to raw materials for specialist activities such as blacksmithing, potting, medical services. Major uncertainties to suppliers are seasonal/weather variations, and public health effects on labor power.

The supplier in the peasant marketplace holds the title to produce, but may or may not hold title to land. In such cases of usufruct, the landowner may have title over various portions of the produce. As in subsistence economies, land actually may be a common resource (Scott 1976), privately managed, with the landowner, or village chieftan responsible for the allocation of managers. Otherwise, the entitlement to use and manage property belongs to the peasant farmer (head of household), and the condition of exclusivity applies insofar as goods and services are treated as private property.

Likewise, the transferability of property is maintained, except for land. Severance rituals (Mauss 1925) to break the social bond between beast and master may be invoked in transference of livestock from one owner to another. Bids to buy in the peasant marketplace are made by inquiry about the asking price to a producer/vendor as a basis for haggling. The location of such bids that are made depends on the goods

or services, but principally will be made at a customary marketplace. The timing of bids to buy is determined at regular intervals established by custom, for example, at daily or weekly markets, seasonal fairs, etc (Bohannan and Dalton 1962)

The medium of exchange in peasant marketplaces may be cash or barter, The object of exchange is usually for a direct monetary equivalent. Transactions are characterized by haggling both before and after repeat exchanges. Haggling is pervasive in these market structures, possibly because time is a relatively less expensive resource than other resources. Moreover, the face-to-face (non-anonymity) nature of the exchange forces traders to negotiate given their conflicting objectives. The conflict stems from the condition that the single seller is a monopolist (at least for a single contemplated transaction) and the single buyer is a monopsonist (again, for this single transaction) and neither of them is a price-taker. The balance in their market power implies that this is a situation of bilateral monopoly. In such a situation, the negotiated price will be lower than the price preferred by the monopolist and higher than the price preferred by the monopsonist.

Transactions are legitimated by handshake, exchange of goods, or, sometimes for livestock, a severance ritual, intended to symbolize consent. Transactions are enforced through repeat exchange, the maintenance of the market peace by a political patron, or the extra-market legal system.

Identifiable externalities may be negotiated between the producer of the externality and the affected party. However, it is likely that externalities go unrecognized.

5.2 THE ASSOCIATIONAL MARKET

The associational market consists of a looser-knit network than the intimate exchange structure discussed in chapter four. The goods and services that are offered through this structure may vary over time depending upon availability. Exchange here is less likely to be essential for survival than in the intimate exchange structure. Participation is usually motivated by a desire to obtain goods cheaper than in the formal market, or for status, or for goods that are unavailable in formal markets.

In describing the irregular or illicit sources of goods in associational markets, we are not referring to those that have been expropriated unwillingly from holders of legitimate property rights. Goods obtained in this way are considered to be circulating in what we call the criminal variant of associational exchange. The associational market consists of items sold by wholesalers direct to individual consumers, goods that are taken from the workplace as "perks" with the complicity of the employer, or are produced without respect to legal requirements for weights and measures, quality, or licensing requirements. Examples of these last items would include homemade preserves and wine, homebrewed beer, and certain quasi-professional

services such as legal or financial advice and veterinary or medical treatment.

Demand for goods and services in the associational exchange structure is made by members of extended networks which include friends, co-workers, neighbors, acquaintances, and friends of friends. In contrast with the intimate exchange structure, associational networks are extended and, thus, are characterized by low transitivity. However, to protect the network, new consumers will be tested by extensive verbal probing and a relationship of temporary intimacy will be established prior to admittance in the network. However, demanders generally act on their own behalf in associational markets so consumption is unlikely to be shared.

The goods and services traded in the associational exchange structure are predominantly differentiated. Demand for them may be prompted by a variety of motivations including status, to obtain goods unavailable in formal markets, or to reduce the costs of goods by avoiding formal market business stages. For most legitimate goods there will be sampling, thus, trust in trading partners is not a constraint on demand. For other goods which are illicit or irregular, non-divisible, or obtained through greater distance in the network, trust will be important in the relationship.

Suppliers, on the other hand, enter the associational market because there is unemployment of their resources in the formal market, because they are already members of the extended network that supports it, or because there are institutional constraints in the formal market that they seek to avoid. However, activity in the associational exchange structure is seen as either temporary or supplemental to legitimate income sources (Henry 1978).

Bids to buy are made, at any time, on the basis of comparisons with the formal market for legitimate goods. Buyers are free to accept or reject any offer from the network. For irregular goods, there will be far less discretion afforded to consumers with the exception of removing themselves from the market entirely. Offers to sell are made through the network but, unlike the intimate exchange structure, suppliers are free to accept or reject any offer to buy. Also in contrast with intimate exchange, offers to sell are made with the expectation of equivalent and immediate material return. Goods and services are generally valued in monetary terms but this need not always be the medium of exchange. Prices are negotiable prior to consumption but not after consumption has taken place. The legitimation of exchange contracts is implied by the consent of the trading parties.

The timing of offers to sell is constrained by the supplier's ability to obtain goods and services from formal markets. Unlike the intimate markets, services in the associational markets also are constrained since suppliers are faced with large opportunity costs of diverting supply from the formal economy to the informal sector.

Buyers and sellers have equal control over where transactions take place for most cases. The place where offers to sell are made is

constrained generally by loose network boundaries. Similarly, the physical or geographical location of the network will affect where supply occurs, but not to any great extent. The location of supply may be more severely constrained by the need to conceal goods and services from existing legitimate traders, regulators, or enforcers in the formal markets.

In fact, a wide range of constraints is placed on the associational exchange structure by its dependency upon the regular market economy. For instance, although the parasitic nature of associational exchange combines with its wider social network to make the timing of supply less erratic than in the intimate market, its dependency and irregularity make members vulnerable to sudden breaks in supply (Mars and Nicod 1984). Associational exchange is highly correlated with the business cycle in the formal markets and is often the first area to be cut back or scrutinized by institutions of the formal economy under poor market conditions.

Indeed, major institutional and technical constraints on supply depend on the degree of policing and security, and on prices relative to the legitimate market. The type of supply also depends on the formal occupation of the supplier who is the source of the supply to the associational market (Mars 1982). Hence, major uncertainties face suppliers concerning the state of the formal economy and changes in the level of policing. Information asymmetries exist in both demand and supply. Buyers may lack information on sellers especially where the transaction is illicit. Sellers may lack information on the value of the goods or services to buyers because such information is costly to collect. The cost of collection will depend of the observability and frequency of associational transactions.

Furthermore, the informal nature of the supply implies that there are high opportunity costs for producers to store, thus, storage is unlikely. In addition, to the extent that the supply is illicit, storage will be a risky activity implying that the tendency is for immediate distribution (Henry 1978).

Property rights in the associational exchange structure do not necessarily recognize those of the wider society. Inside the network, the titles to resources are held by trading agents, who also are entitled to use, manage, and transfer the property. Because certain property rights are not completely shared, there may be some external effects for traders related to the associational exchange. For example, wholesale trade with a final consumer is regarded as illicit by retailers. The retailers may undertake monitoring activities or impose sanctions on the wholesaler as a result. These costs are an externality of the wholesale-final customer transfer of property.

Property rights are only enforceable through exclusion from the network or threats of retribution from members with greater market power. The exception to this is where the owner is endowed with the right of enforceability by the extra-market legal system. Similarly, the enforcement of contracts also is performed loosely by the

recognition of opportunities for repeated exchange or competition from legitimate sources.

Within the network, externalities, to the extent that they exist, will not explicitly be adjusted. Outside the network, attempts will be made to recover losses that are due to informal trading.

5.3 THE CRIMINAL VARIANT OF ASSOCIATIONAL EXCHANGE

The criminal variant of the associational exchange structure is that in which the goods and services that are traded have been stolen, obtained by fraud, or are defined by the extra-market legal system as illegal goods. This category includes contraband, illegal drugs, hardcore pornography, stolen property, and the services of pimps, prostitutes, and assassins. To belong to the criminal exchange structure, as opposed to simple associational exchange, most suppliers are those that obtain the majority of their income from the criminal market. This exchange structure possesses certain restrictive rules specifically deriving from the need to avoid apprehension by society's regulators, such as the police or securities commissions, as well as from the organizational structure of criminal enterprises. For example, consumption of the fruits of criminal activity may be individual or shared according to the distinct hierarchy of a criminal gang.

Demand, in some cases of criminal exchange, may be for survival, status, or merely the desire to obtain something for less than its formal-market cost. In all these cases, sampling of the goods will be very restricted, although there may be some opportunities for repeat exchange. Criminal suppliers are severely restricted by a system which is comparable to formal-market licensing. The location of supply depends largely upon the legitimate activities that are the source of goods, and can occur anywhere where detection by external regulators can be avoided. The timing of supply depends on the changing opportunities afforded by legitimate institutions, e.g., changing law enforcement or changing restrictions imposed by regulation of the formal markets. Storage is possible but the illegal nature of supply implies a requirement for transient supply outlets. Two major uncertainties are the possibility of getting caught and untrustworthy sources of information.

Goods and services are always slightly differentiated, especially by differences in suppliers or the terms of negotiation. For particular goods or services, such as prostitution or stolen property, they may be highly differentiated.

Bids to buy must be made under a veil of secrecy, as efforts are made to restrict information about the intention to bid. This factor, plus the nature and quantity of goods determine where bids to buy are made. If demand is for survival, then the timing of such bids is constrained by immediate need. Otherwise, bids to buy are likely to be made very close in time to the actual exchange. Similarly, offers to sell will be linked in time to offers to bid since this reduces the risk

of leaking information to others. Hence, information about the intention to supply is very restricted.

Most offers to sell will be made from transient supply outlets and are likely to be based on a fixed pricing rule. Money is the medium of exchange. Negotiation may occur prior to consumption but not after the transaction is completed, while enforcement of contracts is performed by the threat of exposure, or the sanctions of the criminal corporation.

Within the criminal market, private property rights prevail over exchanges. Outsiders, from whom goods were unwillingly or unwittingly obtained for introduction into the criminal market, do not recognize the internal property rights as legitimate and will attempt to regain property through the extra-market legal system when possible. This exposes owners to the risk of confiscation. Hence, for some illicit goods and services exclusivity may not hold.

To the extent that the sources can be identified, there will be attempts to adjust for negative externalities both within the criminal market and between the criminal market and the formal economy.

While the peasant and associational structures can be considered as having a combination of traditional and market allocation rules, the formal markets respond very directly to demand and supply conditions. Among the formal markets, the perfectly-competitive market produces the best economic result, where all factors of production are employed up to the level that exhausts their net social benefit and all goods are traded up to a level that exhausts the net gain in consumers' utility. However, the result relies on the complete absence of market power and uncertainty, which are prevalent in real-world markets. Markets that are less than perfectly competitive also respond to demand and supply conditions, but the allocational results involve waste and payments to resources above and beyond their true value in production. To appreciate the influence of the competitive forces in the market, we present first the rules of the perfectly-competitive market and then those of the monopoly market where the absence of competition among suppliers is complete.

5.4 PERFECT COMPETITION

The major characteristic of the perfectly competitive market structure is the complete absence of market power on the part of any buyer or seller. This characteristic emerges from the rules and conditions that apply to the demanders and suppliers, as well as the requirement that transactions are conducted under effectively certain conditions. As a result, the transactions conducted in a perfectly competitive market structure are distinct and divisible, and occur between anonymous traders. Although no true real-world example exists of this structure, markets like those for shoes, textiles, and clothing come close to exhibiting the rules of the perfectly competitive market.

There is a large number of buyers in the perfectly competitive market, such that no individual or group faces differential access to

the market. For example, anyone willing to pay the price of a pair of shoes may demand them. Coalition formation among buyers is ruled out either because bargaining is costless and an allocational outcome is achieved that could have been achieved through competitive behavior (Aumann 1964), or because bargaining is very costly, thus, competitive bidding in the market is cheap (Arrow 1969). Where it is practical to form coalitions, demanders may do so to increase their market power, a consideration that is discussed in a later section.

Consumption in the perfectly competitive market usually is limited to the individual trader. If sharing exists, it is so minor that it does not alter the allocational and distributional characteristics of the market. Similarly, consumption must be effectively divisible so that no barrier to consumption exists. For example, if goods are lumpy as with housing, then demand is unlikely to be very repetitive and sampling becomes a major source of informational disparity among demanders.

No distinction is made between survival and status since it is assumed that all demand arises from wants and utility maximization. Furthermore, the large number of buyers implies that demand in the competitive market cannot be of the sort that arises out of an immediate need, unless a large number of consumers are subject to the same crisis event.

As with the demand side of the market, there is no differential access to the market imposed on sellers and no positive return to coalition formation. There is easy entry and exit in the market so that firms can emerge and leave according to the price signals they receive from the market. Economists refer to this condition as the perfect mobility of resources. Restaurants in large cities are a good example of the easy entry and exist of firms in the market.

High resource mobility guarantees that supply will occur anywhere and anytime that suppliers receive an adequate price for their goods or services. There is no incentive to store goods in this structure, since there are no major uncertainties and no constraints on market entry or exit.

While there are no differential physical or technical constraints on supply, there are constraints arising from competitive behavior and profit maximization. In particular, in the short run, suppliers will produce only if price covers variable costs, in the long run only if price covers average cost. Further, the competitive pressures on firm survival will drive all firms to the same long-run production conditions where all extra-normal profits are eliminated. This results from the rule that goods and services are homogeneous. Since all Idaho potatoes are fairly similar, no one Idaho farmer can expect to receive a price that is substantially different from the price received by his/her neighbors.

All of the property rights in the formal markets discussed in this chapter largely follow the rules of private property. The title to property is held by individual owners or corporate entities. In

general, property is allocated to the use that results in the most production or consumption value (Umbeck 1976). This allocational rule is actually an outcome of the private-property rules where: owners hold the rights to use and manage the property, owners receive all costs and benefits derived from the use of the property, and rights are both fully transferable and fully enforced.

When conducting transactions, buyers are price takers. This means that no single demander can influence price by the decision to buy. Price is accepted by the demander if it is less than or equal to the consumer's marginal valuation of the good or service. This is an outcome of utility maximization across goods. Sellers are price takers but have control over the amount they supply to the market. The suppliers accept prices if they are greater than or equal to the incremental cost of supply and set production at the profit maximizing level of output.

The price-taking rule implies that bids to buy and offers to sell are not limited by any temporal or spatial restrictions. Traders observe a certain price in the market and can purchase or sell as much as they want at that price. Prices may change over time, but the changes occur because of the aggregate actions of the market traders. Individual actions have an insignificant impact on the market price.

In most formal markets, the price system is used to value goods and services. In perfect competition, the price mechanism requires a costless medium of exchange, e.g., currency to prevent the medium of exchange from imposing a restriction on market entry. In the aggregate, prices are bid up by consumers in situations of excess demand and bid down by suppliers in cases of excess supply. Consumers and producers can respond immediately to the price signal and adjust their quantity decisions.

An alternative mechanism, that could be implemented through a computer network, is a costless bidding system where the plans of buyers and sellers are reconciled by their responses to announced prices (Smith 1986). After collecting the information on excess demand and supply from the two groups, the auctioneer continues announcing prices until the market clears exactly. Trading may not be allowed outside of this process. In this case, money is not a necessary condition (the price of a good relative to some other good may be used), but if money is not used, the transaction costs of completing the exchange must be negligible.

Transactions in the perfectly competitive market are legitimated through consent of trading partners subject to the rules of the extra-market legal and regulatory system. Transactions are enforced by repetitive transactions and competition from alternative buyers and sellers. Since information is freely available and symmetrical, externalities do not exist which have not been eliminated already by costless negotiation.

The rules of the perfectly competitive market restrict market power on the demand and supply side of the market. Because the salient rules

and features in the imperfectly competitive, oligopoly, and monopoly markets emerge from the existence of market power on the supply side, rules which refer to demand are essentially the same as in the perfectly competitive model. In other words, to present the supply-side rules, it is assumed that perfect competition holds on the demand side of the market. Following the oligopoly discussion, this assumption will be relaxed and countervailing market power will be explored for the consumers.

Also, it should be pointed out that the rules are based on the unregulated characteristics of the formal market structures. Regulation, generally undertaken to correct for market failure to achieve desired results or the retention of market power, will alter the rules that would emerge if market agents were left to operate on their own. Thus, government creation of a regulated monopolist or industry licensing by regulatory institutions are extra-market constraints that have obvious implications for the selected rules, but do not emerge directly from the underlying conditions and assumptions regarding market activity

5.5 THE MONOPOLY MARKET

In the pure monopoly market, there is one and only one supplier of the good and service with no close substitutes available. As is the case with the perfectly competitive market, it is difficult to find many real-world examples of a pure monopoly. However, monopoly markets effectively may exist within localized economies, where close substitutes for some goods are expensive to obtain due to high transportation costs. Certain entertainers, artists, scientists, or athletes also may be considered as monopolists in the sale of their skills.

Internationally, examples of monopolies are found where state-owned firms are protected from domestic competition such as Atomic Energy of Canada Limited, which is the only exporter of CANDU power reactors. In addition, some countries do not impose anti-trust regulations on domestic private firms, thus, natural-resource monopolies may be quite persistent over time, e.g., the DeBeers diamond monopoly in South Africa. In the US, formal anti-trust legislation has existed since 1890 with the passage of the Sherman Act, making it illegal for a firm to monopolize trade or commerce in several states or countries. The landmark application of the Act occurred in 1911 when the Supreme Court found Standard Oil of New Jersey guilty of monopolizing the petroleum refining industry and ordered that the company be dissolved (Scherer 1970)

A possible reason a monopoly may arise is the unique location of some input to production. Further, when supply occurs may be affected by the supply of inputs or resource uncertainty. Generally, a unique product is being considered. If the monopolist supplies more than one type of good, and is a monopolist in each, then more than one monopoly market exists.

The key to the monopoly position of the seller is the ability to prevent the emergence of rivals. Given the possibility of profitable trade, other potential suppliers must perceive some barrier to entry in the market. This barrier may be technical, e.g., economies of scale, erected by other institutions, e.g., a supply critical to national security, or created by property rights, e.g., owning the only source of an input. Control over the critical resources for the production process or complete and exclusive knowledge of that process are likely ways for a monopolist to eliminate the possibility of rivalry.

Where storage of the good or service is possible, it may be highly profitable depending on the monopolist's expectations of the future. This would be especially true where current production is cheap and the monopolist expects a significant increase in the demand for the good in future periods.

Major uncertainties are likely to be present in the monopoly market. In particular, the duration of the monopoly is highly uncertain in the face of regulation, technical change, and changing demand conditions. Monopoly behavior can be regulated by the threat of competition, even where it does not exist presently (Baumol, Panzar, and Willig 1982)

Private-property rules apply in the monopoly market as in the perfectly competitive market. The only distinguishing consideration in the monopoly market involves the exclusivity rule. Monopoly pricing behavior will cause a reduction in allocational efficiency in comparison to the competitive conditions. This implies that some resources will not be employed in their highest-valued uses across all markets. Thus, there are costs involved in the monopoly management of resources that will not be incurred by the monopoly owner (Shepard 1979).

The rules under which bids to buy are made may be dictated by the monopolist since consumers will be price takers and the monopolist may discriminate among different consumers. With price discrimination, consumers are separated into groups according to how much they value the good. The group that values it the most will be charged the largest price. Price declines as the groups' valuations decline. However, price discrimination requires that resale is not possible among the discriminated groups (Henderson and Quandt 1971). Otherwise, the group that obtained the good for the lowest price could try to compete with the monopolist and sell to groups with higher valuation levels.

Offers to sell may be according to customer classes if the monopolist discriminates. In general to maximize profits, the monopolist will restrict the quantity available in the market at the level where the change in total revenue (marginal revenue) just equals the change in total costs (marginal costs) for producing one more unit of the good. Unlike the perfectly competitive supplier, who cannot set price, the monopolist may maximize profits by setting either the price or the output, however, setting one will determine the other.

Cre er (1984) argues that the monopolist may offer non-price incentives initially to attract customers and establish the market.

Once established, the monopolist can remove the incentives and exploit the monopoly position. Establishing market power by the monopolist allows the seller more control over when and where offers to sell are made, since buyers lack any significant bargaining power.

While goods are priced by the monopolist, demand must be noted in order to maximize profits. However, negotiation of prices is ruled out because buyers have essentially no market power. The monopolist recognizes that each increase in supply can be absorbed by industry demand only at a lower price, i.e., demand varies inversely with price. A uniform pricing rule (no price discrimination) will cause the price to fall for each increase in supply if the supply is to be fully absorbed by the industry demand. Under these conditions, the monopolist is aware of an additional cost of increasing output; a cost that is over and above the production cost of the good. Consequently, the monopolist restricts the level supplied to the market to reflect this additional cost. The cost is additional in the sense that a perfectly competitive supplier would not recognize it, and therefore, total industry output would have been greater and price would have been lower under pure competition. At the restricted, monopoly level of supply, the total revenues exceed total cost of production by an amount economists call monopoly rent.

Transactions in the monopoly market are legitimated by consent of the traders subject to the rules of the extra-market legal and regulatory system. Transactions are enforced by the threat of the monopolist to withdraw supply.

Being the sole source of supply, the monopolist can observe very precise information on consumers' valuations of the good or service. On the other hand, information regarding the production process of the inputs to production is likely to be very restricted to protect the monopoly position. As a result, there are significant asymmetries in information in the market. Coupled with the severe inequality in market power, externalities are likely to be absorbed by consumers.

The imperfectly competitive and oligopoly markets also involve market power on the part of suppliers, however, to a much less degree than pure monopoly. Although the imperfectly competitive and oligopoly structures are considered to be the most representative of actual US markets (Shepard 1979), analysis of these structures is difficult because the combination of competition and market power renders some of the rules ambiguous.

Further, it has been long recognized that firms engage in activities that reduce the level of competition in their industries (Tollison 1982). However, the reasons they do this is a matter of debate. One side has argued that firms integrate either horizontally or vertically to increase their market power and thus, their profitability. However, the source of this profit is not from better ideas or better products, but rather, through the restriction of output and the increase in prices (Bain 1968).

The other side of the argument claims that market concentration and control of inputs and outputs of production is undertaken to respond to transactions costs. These costs may arise from trying to discover prices in the direct and separate pricing of activities (Coase 1952, Cheung 1983); insufficient market for risk reduction especially with respect to assuring an input or output market (Williamson 1975); indivisibilities in activities such as R&D (Stiglitz 1986); and as responses to the risks implied by asymmetries in information, especially with respect to quality (Barzel 1982) or effort (Stiglitz 1974). Many of the same explanations are effective in understanding coalition formation (attempts to increase market power) on the demand side of the market.

5.6 IMPERFECT COMPETITION

Imperfect competition resembles perfect competition in that the number of sellers is sufficiently large so that no one firm has substantial market power at the industry level. In addition, products are differentiated slightly. Each supplier offers some special feature that makes its product different, but the overall function of the products is the same. Suppliers may compete on the basis of quality (or at least the perception of it), research and development activities, and non-price incentives offered to consumers.

When and where the generic supply occurs are not constrained because there is easy entry and exit of suppliers, i.e., free mobility of resources. However, for any particular supplier, this may not be true. Each supplier enjoys some attribute that makes it different from its rivals. The time and place of trade may be this attribute. For example, shampoo is readily available in most drug stores, but certain shampoos are sold only through hair salons.

In the imperfectly competitive market, there are no significant constraints on the industry as a whole, but there may be technical or institutional constraints on individual suppliers, such that no two are identical. Each breakfast cereal contains some special ingredient to distinguish it from competitors. Where it is difficult to prevent other firms from duplicating a production process, firms seek institutional restrictions on market entry such as patents and trademarks.

The extreme competition among firms has a number of implications for supply rules. Supply may be storable but returns will be limited to a level that just covers cost. The objective is to keep an inventory that allows the supplier to respond quickly to changes in demand, but the likelihood of capturing a large portion of any increase in demand is small. The major uncertainty facing suppliers is their ability to retain their small market shares. Thus, they may actively seek established trading relationships with consumers. In addition, advertising will be used to distinguish a firm's product as well as signal its presence to potential customers.

Individual suppliers face their own unique set of demanders, like the monopolist, but the existence of many close substitutes implies that

demand will be very responsive to changes in the imperfect competitor's prices (Chamberlin 1956). Furthermore, in the long run, extra-normal profits will be competed away by new suppliers entering the market (although, their products also are differentiated slightly).

Suppliers offer to sell when marginal revenue exceeds or equals marginal costs. However, this rule may be violated when they are trying to establish greater market shares. The pricing strategy of the imperfectly competitive firm differs substantially from that of the monopolist because in the long run, the imperfect competitor will be forced to supply at a level where total costs are just being covered by total revenue. However, this level will always imply that there is excess capacity for each supplier, i.e., they are not operating their production process at the level of lowest costs. This is one of the major inefficiencies associated with imperfect competition. Each imperfectly competitive firm uses the pricing rule of a mini-monopolist where the output level is less than a perfectly competitive firm, but as soon as extra-normal profits are observed, new rivals enter the market and compete the excess profits away. As a result, there are too many firms in the market and price for the generic good is higher than it would have been under perfect competition (Margolis 1985).

Prices are not negotiated directly between buyers and sellers because of the limited market power. Although sellers attempt to set prices, realistically they can control only a narrow range of price due to the high level of competition in the industry. The need to distinguish themselves from competitors may imply that a good deal of resources flow to advertising. Kirzner (1973) argues that this is actually a beneficial aspect of the imperfectly competitive market, but others see it as a wasteful use of resources (Bain 1968).

Transactions are enforced by the existence of repetitive demand and the presence of competition from other suppliers. On the demand side, since all products have some distinguishing feature, there is limited enforcement implied by the threat of withdrawing the supply. Because there are no major uncertainties to act as a barrier to entry, there is limited asymmetry in information about the uniqueness of the product. However, firms actively may pursue exclusive research and development projects to increase their relative market share.

Imperfectly competitive market structures imply some inefficiency in the economy. The costs of this inefficiency will be absorbed by the economy in the absence of regulation. On the other hand, imperfectly competitive markets adjust quickly to changes in market conditions and, therefore, produce some stabilization externalities.

5.7 OLIGOPOLY

The distinguishing feature in the oligopoly market is that either there are only a few suppliers in the industry or a large segment of the market is dominated by a few large suppliers. The product supplied may be differentiated, as in the case of pharmaceuticals, or homogeneous, as in the case of rail-freight service.

There exists some constraint on market entry or exit that generates an environment susceptible to control by a small number of firms. Generally, this will arise from economies of scale or mergers in the industry. These mergers can be among firms producing the same generic product (horizontal integration) or among firms which produce related input and output products (vertical integration).

The major uncertainty facing the oligopolist is the reactions of its rivals to price and output changes. As found in the imperfectly competitive market, maintaining market share is an important concern for the oligopolistic supplier. There may be particular uncertainties such as technological risk or uncertain rewards for innovations that cause oligopoly to be a necessary type of market structure. In these cases, a more competitive structure is inconsistent with the undertaking of large risks (Schumpeter 1942).

Because there are no generally accepted behavioral assumptions for oligopolistic behavior, there are numerous solutions for the pricing rules under this market structure (Henderson and Quandt 1971). The rules presented here vary largely on the basis of assumptions regarding the oligopolist's perception of the actions of its rivals. Under one rule, the oligopolist sets its price according to a reaction function which depends on its own cost conditions, the market demand, and the output of its rivals. To construct this relationship, the oligopolist assumes that its own action will not alter the output of its rivals, i.e., there is no interdependence in the industry. Thus, the oligopolist considers the profit-maximizing level of its own output for each possible level of output of its rivals. It selects a particular level by observing the level forthcoming from its rivals. Of course, this action is likely to lead to a change in its rivals output level, given they have their own reaction functions, which will cause the oligopolist to select another level. Market stability can be established when there is no longer an incentive for any supplier to change output.

Using a collusive rule, oligopolists may recognize their mutual interdependence and act in unison to maximize the total profit in the industry. However, if one of the oligopolists believes that each of its rivals will hold production constant, there will always be an incentive to cheat. This implies that collusion solutions are unstable in the absence of monitoring and policing agreements by the colluders (Varian 1978).

As another alternative, oligopolists may allow one supplier to be the price leader, i.e., rivals will mimic whatever the leader does with respect to price. This will result in a pricing outcome similar to pure monopoly.

Finally, the oligopolist may face two effective demand environments because of the reactions of its rivals. The first applies for price increases, where rivals keep their prices constant and, thus, increase their market shares relative to the supplier that raises price. The second applies for price decreases where rivals follow suit to retain their relative market shares. Such a situation generally implies that

the most profitable pricing policy for the oligopolist is not to change prices unless there is some significant change in its cost conditions.

Whatever pricing rule is used, the oligopolist can continue to earn extra-normal profits in the long run like the monopolist. Although there can be significant competition from rival firms, it does not approach the level of competition found in perfectly competitive or imperfectly competitive markets.

Legitimation of transactions is performed largely by consent between consumers and suppliers. Among suppliers, there may be conditions as part of a collusion agreement or cartel. Transaction agreements with demanders are enforced by the threat of withdrawing the supply. On the supply side, transactions are enforced by the presence of rivals. Again, among suppliers there may be sanctions imposed by a cartel.

Because of the significant market power enjoyed by the oligopolists, information is likely to be asymmetric between suppliers and consumers. Among suppliers that act as rivals this will also be the case. If suppliers collude, then information may be shared symmetrically.

5.8 LESS THAN PERFECT COMPETITION AMONG MARKET CONSUMERS

The behavior of product demanders endowed with varying degrees of market power is analogous to that of the supply models presented above. In fact, economists use the term oligopsonist and monopsonist to refer to few and single buyers, respectively. Because of the similarities, it is not necessary to repeat all of the rules outlined above. Instead, we present the salient implications of market power on the demand side.

In the case of a single buyer facing a competitive supply, the entire industry supply curve becomes the relevant information for the purchase decision. Like the monopolist, who recognizes that increases in supply led to a fall in price received because industry demand varies inversely with price, the monopsonist recognizes that, generally, industry supply curves vary directly with price. From the monopsonist's point of view, each additional unit that is purchased implies a slightly higher price than the last unit. Furthermore, if the monopsonist cannot discriminate among suppliers, i.e., it must pay a uniform price for all purchased quantities of the good or service, then the average cost of its purchases will be increasing with increases in the quantity purchased. Thus, for the non-discriminating monopsonist, price is determined by its level of demand. The higher the level, the higher the price it will pay for all units of the good or service. This leads the profit-maximizing monopsonist to purchase a lower quantity of the good or service than would be purchased if perfect competition existed on the demand side. When a monopsonist faces a monopolist on the supply side, then their market powers are balanced and to some extent this may force them to collude and achieve the competitive market conditions (Henderson and Quandt 1971).

Market power which is concentrated in a few buyers facing a competitive supply will lead to oligopsonistic behavior. However, as in the oligopolistic market structure, there is no single solution to this problem. Oligopsonists may either recognize or not recognize their interdependence, collude or fight each other. In any case, there will be some market effects in that quantities purchased and prices paid will be lower than under the competitive conditions, unless supply is also characterized by market power.

5.9 LINKAGE TO SCENARIOS

The exchange structures presented in this and the last chapter cover a wide spectrum of exchange activities. The applicability of each exchange structure in a particular economic environment depends on the whether or not the rules of the structure are consistent with the conditions of the environment. In some environments, the rules of an exchange structure may be highly improbable or unstable. In addition, exchange structures exist rarely in isolation, so the interdependent effects between structures are also important in assessing the applicability of the structure.

The next four chapters examine each of the post-disaster survival scenarios delineated in chapter one. Each scenario establishes the survival conditions for resources and institutions. Under the assumed survival conditions, we explore the major problems faced by traders and ask what structures are applicable to constitute exchange activities. Within each scenario, we pay particular attention to how the primary and secondary functions of social exchange are performed. We use information about the functions to suggest the likely ways survivors will address such issues as the resolution of property rights, currency and credit, shifts in the demand and supply conditions, and re-establishing authority and trust.