AGRICULTURAL MARKET ANALYSIS

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AGRICULTURE MARKET ANALYSIS
Vernon L. Sorenson, editor

AGRICULTURAL MARKET ANALYSIS

DEVELOPMENT, PERFORMANCE, PROCESS

Written by
Members of the Faculty of the Department of Agricultural Economics
Michigan State University

Edited by
VERNON L. SORENSON

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Contributors

LAWRENCE L. BOGER

JAMES T. BONNEN

DAVID H. BOYNE

JOHN BRAKE

DAVID CALL

GEORGE DIKE

CARL K. EICHER

JOHN N. FERRIS

W. SMITH GREIG

ROBERT L. GUSTAFSON

HENRY LARZELERE

GLYNN MCBRIDE

JOHN R. MOORE

JAMES NIELSON

DENNIS OLDENSTADT

A. ALLAN SCHMID

JAMES D. SHAFFER

VERNON L. SORENSON

LAWRENCE W. WITT

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Preface

THIS book attempts to fill a longstanding gap in the available literature in agricultural marketing. It is designed for use by students and others who wish to pursue the study of agricultural marketing beyond the first course or introductory level. The book itself is the product of an educational process. It developed from a series of faculty symposia involving discussions of individual chapter outlines and preliminary drafts of the material prepared for each chapter. Using this framework and with the guidance provided by symposia discussions, individual authors formulated their material in terms of their own insights and concepts of what is relevant. Though editing of the entire manuscript was required to improve the general flow of material and to iron out discrepancies that arose from multiple authorship, no attempt has been made to reconcile differences in viewpoint, or to create a completely homogeneous method of presentation.

The book is intended, as were the symposia out of which it emerged, to stimulate discussion and inquiry into a series of questions related to agricultural marketing. Conclusive answers and final positions on what is, what will be, or what ought to be are rarely stated. Rather, an effort is made to develop analytical insights with emphasis on (1) the nature of the interaction between social and physical and economic variables in determining the form and outcome of market activity; (2) the relationship between micro-level (firm and group) behavior and macro-level market organization and performance; and (3) the implication of public policy on overall market results and performance. Within this overall focus we attempted to include those topics that appear to have greater continuing relevancy to solution of problems in agricultural marketing. For this reason considerable emphasis is given to the implications of marketing for economic growth and development. The discussion of firm behavior in turn includes topics related to short-term competitive practices as well as to firm growth and integration which influence overall market organization. The formation and activities of groups are continuing and pervasive forces in agricultural markets as are the various policies and

programs that evolve through time. Each of these areas has a perpetual currency in the analysis of agricultural marketing problems.

Unfortunately it is impossible to enumerate all of the persons in addition to the authors who contributed to preparation of the book. Overall direction of this effort has been under the guidance of a committee which included the editor and J. Shaffer, J. Bonnen and J. Moore. Certain chapters have been read and criticized by a number of individuals not directly involved in the symposia or otherwise recognized. Of the Michigan State University faculty L. V. Manderscheid and E. Brown deserve special mention. Anne C. Garrison, Editor of the Bureau of Business and Economic Research in the Graduate School of Business, reviewed the manuscript, improved the quality of presentation, and is responsible for the format of the finished book. Harold Breimyer, AMS, USDA, read and criticized a pre-publication draft of the entire manuscript. Carol Newton assisted with the initial editing of the entire manuscript and Janice Meyer typed the manuscript. Their assistance and that of several other unnamed persons in the Department of Agricultural Economics at Michigan State University are appreciated.

VERNON L. SORENSON

Michigan State University, East Lansing, Michigan
October, 1964

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AGRICULTURAL MARKET ANALYSIS

CHAPTER 1

Introduction

THE marketing system in primitive societies is often simple. Man produces to satisfy his basic needs; only nominal form, place, and time utilities are required. As societies mature, production becomes specialized, and methods of exchange or trade more complex. Interrelationships among people, as determined by public and private institutions, influence a society's welfare and destiny. No study of marketing in maturing and mature societies can be considered even moderately inclusive if it focuses only on commodities, or only on functions, or only on institutions. Some combination of all, plus a consideration of other significant factors, is required.

This book assumes that the reader has prior knowledge of the basic components of agricultural marketing as covered in introductory courses that emphasize commodity, functional, or institutional analysis. It assumes a basic knowledge of economic theory at an elementary level. Further, this book is not specialized in the sense of defining the bounds of agricultural marketing as an area of study aimed at explaining or analyzing only the segment of activity between the farm gate and the consumer. It is aimed at the development of marketing analysis that has empirical relevance to the exchange of goods and services, whether this occurs in product or in factor markets. Stated more specifically, the objective is to provide a basic body of knowledge that will prove useful in the analysis of economic problems in marketing under a variety of circumstances. It is hoped that the book is written in a sufficiently generic sense so that its usefulness is not limited to the United States or to any single set of specific conditions.

Focus

In pursuing the broad objectives outlined above, the volume focuses on three major areas of inquiry. The first relates to questions concerning

By LAWRENCE L. BOGER.

the nature of the linkage between social organization and the physical and economic relationships embodied in marketing processes. Consideration of this question was generated by the necessity of casting marketing analysis within the perspective of the overall political and social framework of which markets are a part.

In some societies economic and social organization is such that most exchange of goods and services occurs through a bargained system in which price, quantity, and other conditions of transfer are determined by the interaction of individual buyers and sellers. In other societies political authority and administrative decisions dominate as methods of directing economic activity. In still other societies, marketing may be guided largely through status: the transfer of goods and services is not guided by a price, but rather is more closely related to custom, tradition, and commonly accepted social behavior.

Though varying emphasis is placed on the use of these methods, most societies have important elements of each embedded in their economic system. Even in western countries where emphasis is placed on bargained exchange between buyers and sellers, large amounts of goods and services are provided outside the market.

In composite, the rules that guide bargained exchange, those that specify or permit administrative direction of exchange, and those that determine the status relationships of a society make up the social framework within which market activity occurs. Obtaining insight into the relationship between social variables and physical and economic variables can lead to greater understanding of the role of marketing in general, and of various forms of exchange in attaining economic ends. Their implication for economic development and growth seems particularly relevant at the present time.

The second area of inquiry relates to questions concerning actions taken by firms and organized groups in pursuit of their objectives, and to the influence of these actions upon the market. Development of this kind of analysis was stimulated by the belief that a great deal can be learned about the nature and outcome of market activity by focusing on questions of how firms and organized groups behave in the market. They undertake a wide range of activities that generate a composite influence on overall market organization and performance. This influence is reflected in such things as quantity and quality of product, how prices are determined, and how much economic progress is attained. The actions of these units are thus reflected in social welfare, and become of central concern in attempting to develop appropriate policy alternatives.

The third area of inquiry has to do with the kinds of public policies

that have been established in the market and their influence upon market outcomes. Even in those societies where primary reliance is placed on exchange through interaction by independent buyers and sellers, the outcome of market activity is strongly conditioned by rules that become codified into public policy. Public policies influence and guide the market exchange system by altering the environment within which private managers make decisions and in some cases by generating programs that place more emphasis on administrative direction of exchange activity. In sum, the method or mix of policies and programs in use strongly influences the linkage between physical and economic and social variables in determination of market results. Thus, policy and the programs that emerge become important variables in the market and warrant a central role in market analysis.

Plan of the Book

To deal with the topics outlined above, this book is divided into four parts. Part I, "The Overall Role of Marketing," contains two chapters. The first takes stock of the fact that marketing activities occur in a social context within the total structure of human relationships. Every society must have established practices for making essential decisions on what products shall be produced and consumed by whom, where, how, in what form, and under what conditions. These decisions are made in various ways through an exchange system melded from social and political processes. This chapter contains an analysis of how societies may be organized to make economic decisions and how human ideas and values influence the particular combination of procedures in use. Concepts of rule, role, position, and institution are applied to the analysis. Normative rules are elaborated and a final conclusion is drawn: what is a good marketing system is inseparable from the question of what is a good society.

The second chapter in Part I considers the market as an integrator of economic activity and a tool for development. To accomplish these tasks there is a discussion of some of the relationships between growth and the variables of the physical distribution system. This is followed by a conceptualization of the linkage between the physical distribution system and the social variables of the exchange system, with emphasis on the implication for growth and economic development. Finally, the United States serves as a case illustration of how this linkage has influenced economic progress.

The stage is thus set for Part II, "Firm Behavior and Adjustment Pro-

cesses in Agricultural Markets." The chapters deal with behavioral and organizational phenomena in agricultural markets. The analysis is largely at the micro level, with the marketing firm as the focus of attention. Economic theory has an important contribution to make; firm and group behavior in a dynamic setting, however, becomes the center of attention. Equally important as the analysis of firm behavior are its implications for overall market results.

Because of their variety and complexity, the areas requiring management's attention cannot all be considered in a single volume. Special ones have been singled out for more detailed attention. The nature of firm behavior related to pricing, advertising, firm growth and expansion, and product development comes under consideration. Group action as a general form of behavior has a chapter devoted to it, as do cooperatives because of their special significance to agricultural marketing.

Part III, "Aggregate Adjustment and Performance in Agricultural Markets," constitutes a logical follow-up. As implied in the title, the chapters are oriented to the macro level. Because of the structure of marketing industries with their elements of imperfect competition, individual firms both influence and are influenced by overall market results. Considerations of aggregate demand and supply, derived demand and marketing margins, and overall price fluctuations are especially important.

Causes of change in market organization are explored in a following chapter, along with a description of the organizational structure in agricultural markets in the United States. The latter portion of this chapter stresses the interdependence of market organization and performance and sets the stage for discussion of market policy.

The final part deals with policy. It includes an initial general chapter on the role played by public policy to support and amplify market operations, regulate and guide market decisions by firms, and limit and control commercial operations. This chapter also considers the process by which policy decisions are formulated and delineates the basis for emergence of public policy. The second chapter discusses policies for the regulation of competitive behavior of firms; the third considers broader policies related to comprehensive market adjustment, e.g., policies to equalize information between firms, to reduce costs and increase efficiency, to adjust supply and demand.

No attempt is made in this volume to provide readers with comprehensive empirical data on existing marketing systems. Rather, a framework of analysis is provided for handling real problem situations involving quantitative variables. The marketing mechanism of a mature econ-

omy is highly complex and highly refined. It functions with many built-in self-regulators. It involves a multitude of persons and institutional relationships. It functions through time and over wide geographic regions. It overcomes barriers imposed by different languages and currencies, ill-founded controls, and economic ill-health. But the important thing is that it functions. To understand it completely defies human capacities. To understand it better and, hopefully, to provide a basis for its improvement, are the real purposes of the chapters that follow.

PART I

THE OVERALL ROLE OF MARKETING

CHAPTER 2

Marketing in Social Perspective

MARKETING activities take place within a social context. Certain analytical concepts help relate marketing to the society in which it takes place. If marketing is understood within its social context, then we are in a better position to explain, predict, and evaluate marketing organization and results, and to create new marketing institutions for the better direction of economic activity.

The physical transformation function in economic theory is a concept relating changes in combinations of specified physical resources (inputs) to changes in physical products (output). This concept may be applied to transformations involving a continuum of physical changes ranging from those with limited spatial and temporal dimensions, typically called production, to changes in space and time, called distribution. All of these processes affect human life. These physical relationships between things may be described without any reference to the social system of relationships between humans. However, such descriptions cannot explain human behavior and why human energy was applied in one economic activity rather than another. Reference to the social system is needed to explain the choice of physical combinations of things actually undertaken by people and behavior patterns related to such matters as saving, investment, new product development, firm growth, advertising, and various other economic pursuits.

Concepts for Marketing System Analysis

As man goes about making a living, he interacts with his fellows in varying degrees. An economic interaction is here referred to as a *transaction* and the outcome as an *exchange*.[1] This interaction exists in men's

By A. Allan Schmid *and* James D. Shaffer. *The authors wish to thank the members of the Department of Agricultural Economics and also John F. A. Taylor and Richard Walsh for reviewing an early draft of this chapter.*

minds and is intangible. It involves changes in one person's perception and understanding of himself, of others, and of his natural environment. These perceptions, in turn, influence the individual's behavior in a particular situation. Several analytic concepts are here developed to help in structuring observations of human behavior, particularly as related to economic activity. These concepts are rule, role, position, and institution.[2] Knowledge of social system variables can be suggestive of possible points of policy leverage if it is desired to change economic behavior and results.

A *rule* is here defined as a specific prohibition, requirement or permit defining a limit of appropriate action for a position situation. For example, a rule may require a seller (position) to label his product in a specific way if it is to be offered for sale to the general public (situation). The rule in this case imposes an obligation or duty on the seller and confers a right on the potential buyer. A rule may be of the form: advertisers are permitted to "puff" the descriptions of their product. This grants a right to the seller and imposes an obligation (to put up with it) on the consumer.

A *role* is a patterned sequence of prescribed, expected or actual actions relating the behavior of individuals to a social position:

1. The prescribed role is the accepted set of rules defining the limits of proper action for a person in a position. The prescribed role is normative in that it defines how a person in a position situation ought to behave and what factors he should take into account in choosing lines of action.

2. The expected role (role expectation) is the anticipated pattern of behavior associated with a position. It is the image people hold of the limits of behavior which will be exhibited by persons in a position. The expected role is based upon an estimate of the rules actually circumscribing the behavior of a person in a particular position situation.

3. The described role is the actual observed pattern of behavior of persons in a particular position. This is the role as it is actually acted. In a dynamic world, these three images of role will seldom be identical and will vary from individual to individual in the community. This variation is a source of potential conflict.

Roles are seldom defined in such detail that they completely determine the behavior of an individual in any particular position. Rather, the role circumscribes behavior. The rules that circumscribe or define roles vary in nature. A rule may permit what is not prohibited, or it may prohibit what is not permitted.[3] A rule may require a particular act or simply permit it. A rule may be specific or general. For example, the role

of a grain elevator manager may include a general rule specifying that a manager shall not act in such a way as to bring discredit to his firm in the eyes of the public, and a specific rule that he shall not use the firm's money for his private purposes. A rule may be formal or informal. Formal rules are laws, regulations, and codes of conduct. Informal rules are not codified but are usually learned through observation, direct experience, and the literature of the group. The informal content of prescribed and expected roles is learned not so much in terms of specific rules as in terms of an image of appropriate behavior patterns. Finally, rules vary in terms of the kinds of sanctions the group will use to enforce them. Some are enforced through external sanctions and some entirely through internalized concepts of right and wrong in the individual (conscience). The variety of external sanctions will be discussed shortly.

Position is the name or social symbol identifying a particular set of role images identifying an individual in relation to others. Farmer, doctor, mother, and owner are examples of positions. Each position has a set of prescribed, expected, and described role images held by individuals in the position and by those who relate to it.

Position and role have meaning only in terms of reciprocal relationships. Each position carries both rights and obligations, which are prescribed role reciprocals. The rights of one position imply an obligation to another. In marketing, the positions of buyer and seller carry roles which include a number of reciprocal rights and duties. The specific nature of these rights and obligations will depend upon the role definitions in a particular community. The prescribed roles of all positions involved in a market contain what may be called the working rules of the market.

An *institution* is defined as an enduring organized set of related positions directing energies of individuals toward common ends. It is an instrument of social organization. Examples of institutions are the family, the state, the school, the business firm, the local market, and organized baseball.

The *social system* is the aggregate of institutions defining the relationships of any group of individuals. The *economic system* is that particular subset of institutions defining the limits of activity and dependence among individuals in the provision and use of goods and services within a society.

The analysis of a social system centers about three related questions:

1. How do the roles and rules become defined?
2. How does an individual come to be identified with a position?
3. How are the roles and rules enforced? What kinds of sanctions

are applied and what authorities apply them? These questions are involved in differentiating types of social systems.

The process by which individual members of a group learn prescribed roles and identify their positions in society is called socialization. As the individual is socialized he perceives the socially accepted behavior associated with particular positions as the correct, proper or perhaps the only conceivable behavior.

Insofar as the socialization process is complete, the individual will want to perform his prescribed roles as socially defined. Prescribed roles may also be accepted because the individual members of society recognize their mutual self-interest in maintaining a social order, even though the infraction of a single rule might work to their advantage. If the minimum social order is not maintained, all members are losers—rich and poor, esteemed and despised.

The political process results in a formal definition of some rules specifying limits to behavior of individuals in particular positions under threat of community-imposed sanctions. Here the roles become formally defined in written laws, regulations, and decrees. Usually associated with a political formulation is the creation of a position, such as an administrative agency, which is vested with the authority to apply the collective physical power and other sanctions under certain conditions. The process by which a position is invested with the authority cannot be discussed here but lies at the heart of the distinction between democracy and other governmental forms.

Failure of the individual to act in accordance with a prescribed role will normally result in the application of sanctions. Though these sanctions may take many forms, they can be broadly classified into four categories.

1. Social: fear of the loss of status and of others' good opinion. This is administered by one's family and fellows. Another aspect is fear of the loss of self-respect, where the socialization process is so complete that the individual does the accepted thing without regard to external sanctions.

2. Political: fear of loss of life and of physical freedom. This is usually administered by the sovereign state, which has a monopoly on the legal use of this sanction. It may be exercised by the religious leaders in some societies.

3. Economic: fear of the loss of income (materials or services). This may be administered by private wealth holders, government or religious leaders.

4. Religion: fear of the supernatural and of loss of salvation. This is administered by religious leaders.

An individual may at one time have a large number of positions in a society, each with its defined roles. For example, a man may, during a single week, act as father, son, husband, farmer, deacon, co-op member, customer, etc. An individual's roles may conflict in varying degrees. Society is integrated to the extent that individuals act according to the prescribed role associated with their positions, and thus allow others to act in accordance with the expectation of such behavior. This integration provides predictability and stability. The roles of an individual cannot be adequately described without taking into account this interdependency. If the role of one individual contains the expectation that another person will act in a certain way, then this corresponding obligation in the other person's role must be noted in defining the reciprocal relationships between individuals.

Social Process and Norms

At any moment of time, the social structure consists of the multitude of reciprocal human relationships involved in the hierarchy of rules, roles, positions and institutions. Social structure thus is a static concept which implies a snapshot view of an ongoing process of changing reciprocal human relationships and dynamic interaction between individuals.

The concept of social process is complex. However, it is essential to understand marketing within the context of social process if the relationship of marketing to economic development is to be understood. The essence of the concept of process is the notion of continuous change through time. It is not an equilibrium concept. A process involves interaction.

Personality[4] is formed largely through the interaction of members of a society within the framework of existing institutions. Personality structures, perceptions and concepts impose meaning upon the environment. Concepts are generalizations arrived at by individuals and based upon personal experience and information perceived to be authoritative. This is a sequential process in that all new experience is interpreted in terms of current conceptions of total physical and social relations. But concepts do change through experience, and as they do, new roles and role expectations are formed, which alter the structure of institutions, the social system, and therefore economic activity.[5]

Thus we can say that the personalities of individual members of a society determine the social structure (including the marketing system) and at the same time that the social structure (including the marketing system) determines the personalities. This is the nature of process.

We have used the concept of prescribed roles here to describe what is sometimes referred to as society's operative norms. The individual's con-

cepts of how persons in different positions ought to behave contain elements of the norms of the society. Value symbols such as freedom, security, equity, progress, efficiency, etc., influence the individual's prescribed role perceptions. But it is only as these broad symbols are translated into specific rules that they become operative in influencing behavior. The operative significance of the value symbols is defined in the social process. For example, as farmers experience different types of market organization, such as market orders or integrating contracts, their perceptions of prescribed role for the position "farmer" will change as a result. These changes, in turn, will alter the political behavior of individuals and influence the formal rules governing the market. The change in market organization may alter both the distribution of political power and the character of the people involved.

Economic Roles and Marketing

Some of man's roles have an economic dimension that provides a set of rules for transfer of goods and services between individuals and groups which occupy various positions. Positions such as customer, broker, retailer, wholesaler, checkout-girl, president of the largest food chain, member of retail food dealer association, city market master, farmer, secretary of agriculture, tenant, borrower, and citizen, each have roles that include behavior requirements or limits constituting the working rules and practices of a marketing system. As with all aspects of role, the working rules may be based on social or political processes and enforced by internal or external sanctions.

These rules define the activities which individuals may or must do; they also define what the individual may expect in the behavior of others with respect to certain objects. These relationships between people with reference to things define property rights and help make the economy function.

We can now define the marketing system as the complex pattern of institutions and physical facilities which relate human beings and things in the transfer of goods and services. That subset of the social system governing transactions between individuals and groups which result in the exchange of property rights of future control of assets will be referred to here as the *exchange system*. Associated with this is the actual physical transfer of goods executed primarily in terms of time and space, with limited implications for use and form. This will be referred to here as the *physical distribution system*. The marketing system thus includes both intangible social relationships and tangible physical relationships.

This distinction between exchange and physical distribution systems

is important for both analysis and evaluation of two kinds of questions. The first question assumes that the system of human relationships is settled, along with the rules on who is to occupy positions of control and how the control is to be used. For example, if the exchange system results in the decision to transport melons from Texas to New York, we can ask how efficiently the distribution system performs the specified physical task. However, we also may want to ask the other question: what is the desired institutional structure of human relationships to produce such decisions? The property rights contained in the exchange system set limits in which labor can produce, consumers can consume, and commodities can be physically delivered. Transfer of property rights is a public phenomenon because the value of the object transferred is only as good as the role expectations of what others will do with reference to the object.

Commodities thus are not the same as property in these commodities. Commodities include land, buildings, machinery, and stock. But when a person buys a farm or a bushel of wheat, he obtains a set of relationships with other people defining his and others' roles, which may be stated in terms of rights and obligations relative to the physical object. Once the property relationships are settled, then the person who controls the commodity may make the management decision involving its use in production, consumption, transportation, storage, and other physical executions. Actual performance in the market is thus influenced by the roles which govern the relationships between people, the exchange rules which indicate how the individual should react to certain pieces of information, and the physical relationships involved.

Rules, Conduct, and Performance

Exchange rules define the content of property rights. They help define the role of the economic decision maker. These rules take many forms; a few are listed below to indicate the variety of possible points of leverage which can affect market performance.

Does a son own his deceased father's property? What items can be inherited? Can a going business live beyond the life of its proprietor? Can one's liability be limited to certain items? Can a business protect its goodwill and can this asset value be sold to others? Can a firm buy out a competitor to escape the other firm's damage to its business? What items can a firm attempt to buy from others, e.g., pollution abatement and market shares (contracts for avoidance)? What damages need not be bought, but are prohibited as a matter of criminal law? What promises may be bought and sold (debt but not marriage promises)? What

items of knowledge can be kept for exclusive use and for how long (patent laws)? What promises will be publicly enforced? Under what conditions may promises be broken (unforeseen circumstance, bankruptcy laws)? What are the rules for taxation (discrimination, uses, sources, etc.)? Can an unhealthful food be sold even though people will buy it because of inability to detect its quality? All of these questions and rules plus many others produce a continuum of often conflicting marketing conduct and performance results.

Performance results are used here to mean attributes of general well-being. Some of these variables studied by economists include production and marketing efficiency, technological progressiveness, product suitability, distribution of income, level of output, costs of sales promotion, unethical practices, participant rationality, conservation, external effects, and labor relations.[6] For those interested in economic development or growth, additional variables may be added, such as level of employment, rate of capital accumulation, and per capita income. These variables are considered in some detail in Chapter 3 and the policy chapters. In addition, several social variables might be added, such as freedom, equality and general components of what might be considered a meaningful life.

The structure of exchange rules is one point of leverage where these conduct and performance issues are resolved. In empirical analysis of a marketing system we could ask what is the structure of rules which stimulates the application of human energy, creates the need for achievement, sharpens perception, and encourages the efficient use of imagination and energy. To gain insight into processes of economic change we could further ask how these rules can be structured to initiate desired changes and to support and maintain those desired activities already underway. To achieve this insight, the linkages between the exchange system described in terms of human relationships and the production, distribution and consumption system described in terms of physical relationships need further elaboration. To do this, two common classifications of exchange rules are briefly considered.

Access. The structure of the exchange system largely defines those who can participate in certain kinds of economic activity and engage in certain kinds of transactions through role definition and position identification. This structure is involved in what is often referred to as the conditions of entry. For example, in one economy the credentials of money purchasing power entitle a person to participate in certain activities while in another kinship is the criterion.

This question of access is really a problem of discrimination. In the United States economy, for example, there are rules of price discrimination which say that any person has the right of access to a specified good at the same price as that charged to others.[7]

Competitive methods. The general question of what is to be the content of a given role has been previously discussed. In the economy, the structure of the exchange system influences what rights the occupant of a certain economic position has and what powers can be applied to secure agreement to a transaction which transfers ownership rights to commodities and services. An important issue in any economic transaction is the use of power to affect the exchange ratio (price). Most peaceful societies have exchange rules which prohibit fraud and physical coercion because individuals involved in a transaction may vary in skill and strength. In the United States economy, there are rules of competition which prevent the use of economic assets in certain ways even though the individuals involved may differ in the amounts they control. For example, there are rules on whether a retailer may be forced to carry a manufacturer's full line.

Exchange rules relating to competitive methods place limits on the actual use of power which a person might already control. It should be emphasized that economic powers may accrue to a person because of various changes in the environment, e.g., discovery of oil on one's property as well as changes in exchange rules. A change in the environment causing a change in economic power may well necessitate a change in the competitive rules governing the use of that power. Hence these two sets of factors must be considered together.

The commonly accepted structure of the competitive rules is often referred to as promoting fair competition, the meaning of "fair" being determined by the prevailing rules. Rules of access and fair competition may have broad secondary effects. These rules influence the structure of the exchange system which, in turn, influences the social roles people have and thus affects marketing performance results by influencing the application of human energies. This becomes particularly important in considering the implication of exchange for economic development. The relationship between the structure of the exchange system and economic development will be explored in detail in Chapter 3.

Variations in Exchange Systems

Each society has a complex set or system of rules governing exchange. These exchange systems may vary greatly in the way in which the rules

of access (entry) and competitive methods are worked out. The rules governing exchange may be direct or indirect, specific or general, formal or informal, certain or uncertain, dynamic or fixed, social or political in origin; enforcement may be internalized in the personality or imposed externally by a wide variety of sanctions. Each of these dimensions could be used in developing a taxonomy of exchange systems and each is relevant in empirical analysis of marketing systems.

Even though no two empirical exchange systems are likely to be identical, it is instructive to differentiate three broad classes: *status, administrative,* and *bargained* exchange systems.[8] The distinguishing characteristics of this classification represent a continuum, and in many societies, all three types of exchange systems operate at the same time in different areas of the economy.

Status. In a status exchange system, transactions are governed primarily through the prescribed roles associated with social position. Exchange rates (prices) tend to be prescribed or fixed by custom. Trade within the community tends to consist of gifts and grants to discharge social obligations. The roles are in terms of obligatory gift- and counter-gift giving between persons who occupy socially related positions. In the succinct statement of Raymond Firth, it is a system of "From each according to his status obligations in the social system, to each according to his rights in that system."[9]

In a status system, roles are not defined exclusively in terms of economic functions. Transactions are expressions of social obligation, social affiliation, and social right. For example, access to land may be acquired as a kinship right and is a matter of status prerogative. It is a system of accepted dependence based upon custom. The sanctions involved tend toward those involving loss of community and self-respect for breaking the code or custom. Control and direction of individuals within the group tend to be based on the socialization of members rather than on external sanctions or personal material gain.

There is no necessary relationship between the immediate transfer of goods or services from A to B and the receipt of goods by A. The system may operate without direct *quid pro quo,* with B not obligated to return something of equal value to A in exchange.

The transfer of rights in commodities may not produce a price. Rather, the price ratio is determined prior to the status transaction. The rules determine the transfer amounts that are regarded as adequate in relation to the symmetrically placed party. Bargaining is not part of the system. Exchange ratios are a matter of custom, and cannot be changed by an individual. The transfer of ownership rights may be non-

specific. One may gain ownership not of a specific good but rather of a claim on goodwill and a position in society measurable only when the characteristics of the future transfer situation are known. Prices in this case are not known at the time of the initial transaction. A system of "To each according to his need and from each according to his ability," if voluntarily accepted by the members of society rather than being enforced by authority, would be a system of status.

Status is a rather widely used system for transfer of goods and services. The internal transfer of goods and services of most families is carried out by this method, as it is also among some broader kinship groups such as tribes and voluntary associations. Gift-giving is an example. The practice of community barn-raising in early rural America was also a status institution.

The outcome of a status system in terms of economic growth, equity, mental health, level of satisfaction, etc., will depend upon the specific customs and character of the members of society. A variety of status systems could be classified.

Administrative. In an administrative exchange system, transactions are governed primarily through the control of members of the society by those in positions of political authority. Exchange rates are variable at the discretion of the political authorities, within limits set by their values and ability to maintain political power. Such a system tends to have working rules which prohibit what is not allowed. Discretion in exchange rests with the position of authority, not with each individual. The essence of political authority is the power to impose sanctions which are backed ultimately by physical force. The sanctions may be negative or positive, that is, punishment or reward.

Roles in an administrative system may be exclusively in terms of economic functions or may combine these with civil functions. For example, a feudal landlord is not only a farm manager but also a judge and a military chief.

Positions of authority may be held by a single individual or a group. The authority may be vested by democratic voting, custom, or force. The roles of authorities may be prescribed with various ranges of discretion. However, once the power is vested and the range of discretion prescribed, there is no negotiation or bargaining between the occupants of authoritative positions and the affected individuals. This is not to say that the rules cannot be changed through some political process. For example, in the case of a democracy the ultimate authority is the franchised citizenry. A group vote to determine the allocation of goods and services would be an example of an administrative transaction if, once

the vote was taken, the decisions were enforced by occupants of authoritative positions without further negotiation and with application of sanctions, if necessary. Wartime food rationing is an example.

A subclass of the administrative system is one which regulates either price or quantity, but not both. For example, rather than determine the allocation of goods and services directly, the authority may manipulate prices of commodities and wages. In such a system, price is used to ration the goods and services produced and as an information device in directing production and keeping accounts. The integrating or organizing force is based on power, whether utilized by private firms or government:[10] it is not the bargained price institution but authority which governs exchange. The prices are manipulated by persons in positions of authority in such a way as to indirectly affect distribution (both quality and quantity). An example is the setting of prices in public utilities and in the postal system. The quantity to be purchased is left to the buyer. Marketing boards are another example. In a number of African countries, they are used as an instrument of forced saving by paying producers of export products less than the world prices and using the surplus to finance public investments.

A parallel situation may exist if the position of authority sets quantity rather than price. This is the case in government marketing quotas for farm crops. The amount which can be grown is specified and the price is determined by the relationship of the specified supply and existing demand.

A considerable portion of our life is affected by an administrative exchange system. Outstanding examples are education and national defense services. The internal organization of most business firms, some families, kinship groups, tribes, and nation-states are administrative systems. The firm is an institution relating individuals through a hierarchy of positions with roles carrying various degrees of authority over the allocation of goods and services within the control of the firm. However, once that initial control may have been obtained, there is no further individual negotiation. The roles relate manager and worker, employer and employee. The management process involves the definition and manipulation of roles without individual bargaining for each activity.

Administrative direction of economic activity is a general phenomenon observable in many areas. In agricultural marketing, a firm may buy out a supplier (integrate vertically) and then the goods will change hands by command of the management instead of through market bargaining as before.

Bargained. In a bargained exchange system, transactions are governed primarily by a set of impersonal rules (i.e., the same rules of exchange apply regardless of social or political position) within which exchange rates are established by bargaining processes. The motivation assumed is material success, and this is identified as an appropriate personal goal through the socialization process. In a society that implements exchange through a bargained price system, the social and political processes are involved ultimately through custom and law just as in the case of the other systems discussed. The socialization process produces people who perceive their roles in marketing in terms of the bargained price system.

Bargaining transactions involve the transfer of rights of ownership between individuals considered legal equals in the market. At least four individuals are directly involved—the two participants in the transfer as well as an alternate buyer and an alternate seller. Prices are established through the process of interaction between buyers and sellers. This does not imply that they need meet face to face. The process of interaction simply implies a knowledge of alternatives. It includes both the sale of a cow to a neighbor farmer, with overt higgling, and the sale of wheat at the elevator where the farmer is essentially a price taker. Modern bargained systems are more commonly composed of decisions on whether to buy, sell, store, and produce than of direct negotiation.

In a society where the bargained price system dominates, there is a tendency for political and economic positions to be distinct and separate. A position such as farm manager is likely to have associated roles which are largely economic in nature and to exclude certain civil functions such as settling the personal social problems of employees. This is not the tendency in administrative systems such as those often associated with feudalism, where the farm manager may also have roles which include the functions of lawmaking, enforcement, and adjudication.

The bargaining transaction is always made within a set of social and political restrictions which set the limits, or the rules, for trading and the rights of property being exchanged. For example, the position of property owner has associated with it certain obligations in the use of this property. It also contains certain rights, and others are exposed to the owner's freedom to use his property in certain ways. Prescribed roles define what it means to be a property owner and how the position is acquired. These rules are important elements for the orderly operation of the bargained price system. As these market rules change, the outcome of bargaining transactions will change.

The bargained system is often referred to in Western countries as the

"market." The market even in these countries does not comprise the whole of exchange transactions. Many goods are exchanged outside the market.

The exchange system, whatever its conceptual type, is an instituted process. Its operation is effected through institutions within the limits set by the total social system. The outcome always reflects custom, political power, and the personality of the members of the society.

An important distinction is made between the rules of an administrative exchange system and the rules of a bargained system. It is important whether the rules provide the limits for direct political allocation decisions or set the rules by which the bargained system operates. However, it is equally clear that the rules, political and social in origin, just as surely influence the general results in the bargained system.

Some Normative Performance Rules of Marketing Exchange

A general framework for studying the interconnections between physical performance results and variation in intangible social relationships has now been laid. This leaves the question, what set of exchange rules and market systems will produce a particular performance result? Parts of the answer to this question are analyzed in later chapters. For example, in Chapter 3 the relations between exchange rules and economic growth are considered, and in the policy chapters the influence of public decisions on market adjustments is appraised. It would be helpful if in all circumstances there were certain available rules which always led to predictable behavior and which, in turn, produced specified performance results. If these linkages were known, then actual performance would not need to be tested; we would merely note if the rule were being met in order to ascertain whether markets were performing satisfactorily. Unfortunately, much of this linkage is not known.[11] The following discussion further develops concepts which might be used to fill in our knowledge of the linkages between marketing exchange rules and performance results which directly affect people's well-being in the broadest sense.

In the course of this discussion, the exchange rules implied in the model of pure competition will be examined. This model calls attention to three main variables—atomistic numbers, product homogeneity and freedom of entry and exit.

Access—barriers to entry. An essential problem dealt with by the social system is the creation and translation of consumer wishes into productive activity. To do this, there must be some system of weighing the

wishes of people and specifying whose wishes count. To understand how the system operates, it is useful to ask how individuals gain access to positions of authority, such as buyer and seller. Obviously, some people are not buyers at all or at least don't count for as much in the market as others. Some communications of taste are ignored by sellers. There are exchange rules which define what is a legitimate communication signal and who are the legitimate senders and receivers of these signals. The part of the idea of pure competition relevant here may be stated in terms of a rule that there must be no artificial barriers to mobility and entry.

It is sometimes suggested that no formal rules are needed and that the exchange system may be organized solely upon the fact that self-seeking is an important part of people's roles. Perhaps a simple example will illustrate that this is not enough. A hungry man may walk into a grocery store and communicate his hunger. He will not legitimately walk out of the store with food unless he uses the group-approved symbol (money) which entitles him to the position of authority called a buyer. Mere self-seeking is not enough, for certain kinds of self-seeking are defined by the public as theft and fraud, and sanctions are applied accordingly.

The analysis developed in this chapter would suggest that there is always some kind of informal or formal rule defining barriers to entry and restrictions on mobility. Two people with equal hunger may not have an equal opportunity to communicate this want to those who control food. There are some kinds of rules which indicate what credentials the hungry must have to enter the market and communicate.

The key word in the pure competition rule regarding barriers to entry is artificial. It says that once it is decided what is to be the legitimate basis for admission to or exclusion from the market, then for a buyer or seller to discriminate on some other basis will draw forth the sanctions of the group. There may be differences in production costs between established and would-be manufacturers. Some of the reasons for these differences will be regarded as legitimate, while others will not.

The Western bargained exchange societies discriminate between people on the basis of the number of monetary units controlled. Discrimination on the basis of dollars owned cannot be fully understood, however, until we ask what lies behind the distribution of the ownership of resources which is translated into dollars. Attention should be given to ownership rules and why ownership and control are acquired in one way rather than another. In the Western system, people get dollars by selling their property and services on the market. There are rules which define what an individual may own and exchange for money. To il-

lustrate, in some systems there are rules which mean that individuals own their labor services, while in others marked by servitude they do not. The vast array of ownership rules cannot be further described here.

In a system of status the rules of entry may be quite different from those in a bargained market system. Access to positions may be based on age, sex, or family relationship. The rules in status and bargained systems could, however, be quite similar though worked out quite differently. For example, in a status system a person may have access to certain positions if he demonstrates a certain skill. In a bargained price system, the rules may still be such that skill determines who is the highest bidder for ownership of certain goods, hence some of the results may be identical in the two systems. Both systems may have the criterion of skill at their core, but the total array of results may be similar or quite different depending upon the combination of rules that exist. This is not to say that some results may not be precluded by the use of a particular system.

To summarize, any exchange system, whether status, administrative or bargained, has some set of rules which defines the legitimate basis for access to or exclusion from specified economic position, roles, and associated activity.

Competitive methods—atomistic numbers. In addition to the rules controlling market entry and access, we can ask what is the content of economic positions and roles which influence how consumers can communicate their wants to producers. It is common to find rules of competitive methods which restrict the ability of individuals to affect price and other results. These and other rules found in status or administrative exchange systems, as well as in bargained systems, influence the way exchange ratios are determined. The rule implied in the model of pure competition is that there must be large numbers of buyers and sellers. The intended effect of this rule, combined with others in a bargained system, is to create a social relationship in which each individual has a large number of alternative buyers and sellers to choose from. In terms of behavior, this means that no individual has the power to affect price (exchange ratios) by himself.

It should be noted that the content of roles can be directly affected (1) by changes in rules or (2) with given rules, by changes in the environment such as new invention, new demand, exhaustion of a resource, population growth, and numerous other factors. Given a set of formal rules, the content of roles such as that of property owner is different if there are many or few producers. However, the number of producers is not the only determinant of results. The result flows from the condi-

tions created by concentration within the context of the various rules. Concentration may have different effects depending on the nature of the rules that exist.

Product homogeneity. Rules which define entry and competitive methods are relative to the nature of the product under consideration. In the United States, there are rules which take the general form of prohibiting the charging of different prices to different people for the same product or service. To be operative, such a rule must indicate what variations in a good or service are sufficient to distinguish a homogeneous product from a heterogeneous one. The point at which items are regarded as heterogeneous is man-made and it creates a social relationship governing conduct with reference to specified items. Grade #1 wheat is an example. All wheat which has certain specified characteristics is graded #1 and then regarded as homogeneous. Though obviously there are also unspecified characteristics which should distinguish between units of #1 wheat, we choose to ignore these at any given moment.

Let us consider another case. Assume we have two containers of flour ground from this #1 wheat. The containers are of different shapes and colors and bear different trade names. Assuming that we have a rule which prohibits charging different prices for the same product, are we to regard these two brands of flour as the same (and the differences as merely artificial)? What should be our attitude toward the advertising expenditure by one brand owner to convince consumers that they should in fact distinguish between them?

In any product there is a wide continuum of differences. A major policy issue is, at what point on this continuum is a product to be considered as different? Product heterogeneity is a fact of life, and the rules of market organization cannot be simply stated in terms of appropriate human interaction with reference to similar goods, but must also include terms specifying which goods are in fact similar and which are heterogeneous.

Profit and Loss Accounts

These exchange rules influence what things are taken into account by individuals in economic positions of authority as they direct their own and others' activity. The positions may be buyer, seller, landlord, tenant, entrepreneur, laborer, etc. These rules help define the kinds of information that will be received by certain individuals and the kind of economic activity that will result. In terms used earlier, this involves the process of role definition for individuals and the integration of these roles in larger aggregates.

Different exchange rules and systems mean that the contents of what

individuals in positions of authority take into account in their behavior will also differ. Put in terms of the economic system of the United States this means that the contents of the profit and loss accounts of buyers and sellers will differ under different rules. If economic activity is viewed as a process of converting inputs into outputs, these rules define the qualitative contents of the input and output categories. That is, they specify whether a particular output or cost is considered or excluded. These marketing rules also influence the relative values placed upon the items that are included in the input-output categories.

We can observe the results that are produced in the United States by the existing inclusion or exclusion of certain items in the profit accounts of business firms. While the United States system has a great deal of flexibility, there are limits to what can be communicated through the market system by refusal to buy, increased buying or indication of willingness to pay more for the same amount.[12] The profit account of a firm contributing to the pollution of a river usually does not include the costs of this pollution which are borne by people outside the firm. Similarly, the value of the benefit that the general public receives from having a group of people with skills acquired in a certain firm may not be a part of the returns to that firm. There are many examples of external economies and diseconomies which do not show in the profit and loss accounts under existing rules.

Depending on the rules, the occupant of the position of authority may or may not be motivated to distinguish between profits made by redistribution of existing assets through increased bargaining power over others and profits obtained by an increased power over nature, which results in an increase in national wealth. In addition, there are usually some costs of operation which are borne by individuals and firms but which cannot be directly traced to individual items of output. The allocation of these overhead costs affects pricing and output decisions and thus overall marketing performance. The exchange rules and the construction of the profit and loss accounts have a great deal to do with the allocation of overhead costs, and are an important leverage point affecting marketing results.[13]

Personal Utility Accounts

The personal utility accounts of an individual may similarly fail to include certain costs and benefits accruing to others as the result of his activity. The marketing rules may or may not be such that individuals may consider the cases where utility functions are interdependent. It is, for example, of benefit to other members of a community for an indi-

vidual to keep healthy, both mentally and physically, and to maintain his property in such a way that it is safe and pleasing. A failure to spend money to keep up a respectable appearance causes displeasure for other members of the community. Also a man's pleasures and sorrows are felt by others, and his likes and dislikes influence their preferences. A further market issue is raised by the fact that human wants are not always independent of producer action. Thus, there must be some rules which direct the generation and origination of wants by producer action. This issue will be discussed in the chapter on product promotion.

The indivisibility and nonpersonal nature of many essential community services create special problems if these services are to be met by inclusion in individual utility accounts. The marginal costs and benefits of such services as national defense and the judiciary cannot be easily handled in private utility accounts because the benefits and costs are not divisible and purchasable by individuals.

Efficiency as a Performance Result

We have been examining some ways to conceptualize the exchange rules which help define the legitimate qualitative content of the input-output categories and define the procedure for attaching value weights to the various items included in the categories. These rules are of a broad structural nature and there are many other questions left to be solved. There usually will be a great variety of productive processes, kinds of resources, varieties of products, and services, which must be decided upon. Economic theory provides a method of calculating positions of maximum efficiency or optimum advantage within the broad structural rules of the system. Later chapters are devoted to the discussion of economic tools of analysis that may provide guides for decision makers and may be used for making predictions of the outcome of various changes in the relationship between prices and commodities. These calculations are valid, however, only within any given set of exchange system rules which defines the qualitative makeup of the inputs and outputs to be included.

Perhaps the limitations thus imposed on economic tools of efficiency calculation for policy purposes can best be demonstrated by the following example.[14] People in the United States today generally accept the formal rules which penalize employers of child labor. Such was not always the case. It was once accepted as the natural thing, perhaps not good, but it was accepted. What concepts can be used to evaluate this change in the exchange rules?

First, we might ask what are the rules which influence job access.

The pure competition model might be used as a norm. The first assumption of the model is that there should be no restriction to entry. The child labor law fails the first test because it restricts entry to the labor market. The model tends to ignore the fact that there are always some accepted restrictions to entry, such as skill. No person can be hired as a baker who is not skilled in baking. This is not a written law, but this is the effect produced in the existing social system based on other formal and informal rules. Mere seeking of a baking job is not enough.

We might now ask why the test of barriers to entry should be decisive. The model suggests that failure to meet this test means the labor law will lead to inefficiency and this means we will wind up with less rather than more. What does the statement mean?

The facts are these. Children may possess the necessary skill to perform certain tasks. They will work for less than older workers because of fewer alternatives and other means of supplementary support. The work may result in damage to the children's health, and subtracts from their long-term skill through the lack of education. However, the children are willing to work, and they are not physically coerced by the employers.

If children are denied access to the labor market, then the output will not be produced most efficiently because other labor must be employed at a higher price. The marginality conditions for an equilibrium would not be met. Therefore with the law the input-output ratio would be less. This efficiency analysis would lead to the conclusion that since everyone prefers more to less, the proposed law should not be passed. Or it may suggest that the decision is up to the public and that they will have to weigh their values of efficiency (which is a good) against the "bads" of poor health and poor education.

It is submitted here that the above presentation of the choice is incomplete. The use of the concept of efficiency masks the content of the choice to be made. What is involved is the question of the qualitative content of the input and output categories. Under the existing rules, the categories include the opportunity cost of the older workers as priced in the market. However, there is no market price for the opportunity cost of the children's poor health or educational possibilities. (The opportunity cost of keeping them in good health and in school may be computed, since a price for alternative use of their time is available.)[15] Thus, the policy issue is really one of defining what are to be the relevant contents of the input-output categories. It is a choice between two sets of exchange rules which recognize different input-output categories and per-

formance results. One set contains the items of children's health and education, and the other excludes these items.

The efficiency calculation may be used to evaluate any change which does not involve the qualitative content of the input-output categories, such as changes in the proportion of a specified group of inputs. When it is said that people prefer more to less, it is only relevant to a particular qualitative content of the input-output categories. The marginal calculus of efficiency is not relevant to two sets of categories that cannot be reduced to a common denominator.

The difficulty comes when people disagree about what the exchange rules specifying the input-output categories should be. Here each student must develop his own point of view. He may restrict his analysis to discovering the performance consequences of alternative exchange rules, or he may take conflicts of interest as his data and try to discover, create and suggest new elements for social systems with a view to resolving conflicts and bringing about agreement. In any case, the efficiency variables identified by the pure competition model must be placed in the total context of exchange rules if performance results such as social and economic progress are to be understood. For example, Frank Knight has pointed out that ". . . the control of progress is to an especially limited extent within the domain of individual free enterprise and the price forces."[16] If we return to the example of child labor laws, perhaps we can indicate why this is so and also make a peripheral comment on freedom as a value.

Freedom as a Performance Result

In the absence of child labor laws, a poll of values might show that children and their parents as individuals are willing to accept the results of bad health and education in return for present income. The wage contracts were "freely" made without physical coercion by the employer. Due to the environmental pressure of low family incomes, the preference patterns (values) of certain children and their parents lead them to work for low wages under poor conditions. This individual self-seeking in the long run results in a vicious circle of poorly educated, unhealthy people and continued low incomes.[17] How are these people to communicate to their employers their aspirations for something better? Their signals will be barred from entry into business decisions unless there is a change in the rules. Surely they are free to stop work and continue in school, but the pressures are overwhelming. It is difficult for the employers as individuals to see that they and the rest of society might benefit in the long

run if this vicious circle could be broken. It is not likely to be broken through price signals in the market. The individual employer cannot refuse to hire children: his gesture will only result in his eventual bankruptcy, because his competitors will undersell him. Thus, the vicious circle can be broken only by group action when the public decides it does not want to live in a society which produces these results.

Some have argued that to look for procedures for change from outside the market system is to invite a lessening of freedom. Child labor laws restrict the freedom of children and employers to make contracts. The laws do, however, create new opportunities for realistic choice by the children which can lessen their exposure to the pressures of low income, poor health and poor education. It involves a choice between alternatives with quite different qualitative content. Any freedom to act on the part of one party represents an exposure of another party to that act in some degree. In this case, employers will probably have to hire more expensive labor. Freedom is always a reciprocal relation. The choice is between different kinds of opportunities. Freedom is like the concept of efficiency in that if it is not carefully used, it may mask the content of the real choice.

Human Relations as a Performance Result

The point has been made implicitly throughout this chapter that exchange systems must be evaluated in terms of the human personalities involved. The above example is much to the point in indicating the effect of the rules on health. Another example more directly relating to agricultural marketing further illustrates the above point and further clarifies the use of efficiency calculations.

One of the significant trends in food retailing is toward large supermarkets with prepackaged meats and little personal contact between store employees and the consumer. The reason often given for this trend is that the prepackaged system is more efficient than the individual service of the butcher behind the counter. Put in value terms, we might say, people value efficiency more than personal contact. In what sense is this true?

It is submitted here that to say that people value efficiency more than personal contact in meat retailing is to confuse the issue. What one is really saying is that people prefer to spend their income for meat and other nonmeat items and personal services rather than for meat and the personal contact with the butcher. To say that they simply prefer more to less is misleading, and assumes that the qualitative content of input and output remains the same in both cases. This is not true. In the first

case, they prefer more meat and other goods and less personal contact; in the second, they prefer less meat and other goods and more personal contact. One confuses the content of the choice by putting it in terms of efficiency vs. personal contact. It is really a comparison of two different contents of input-output.

Space does not permit a detailed discussion of all of the performance variables stated earlier. The variables involved in economic growth, however, will be discussed in detail in the next chapter.

The Good Society: Marketing in Perspective

The institutions developed in the social process in a particular society may not result in the good society. Laws may be enacted and customs followed which result in waste of resources. Roles may be inadequately defined, resulting in frustration and ineffective human relationships. The system may result in economic progress or stagnation, equality or inequality, happy people or sad. A society, however, is not stuck with the results of its marketing system but may consciously evaluate it with a view toward change.

A major event in the social development of a people is the realization that it is within their power to alter their social system—that traditional institutions are neither sacred nor necessarily the most desirable. This change in basic belief ranks in importance with the change to the belief that man can modify his physical environment in his favor, which is essential to the development of science and technology. Once a people believe they can modify their social institutions, they provide the basis for a meaningful social science. Only then do people self-consciously look at the institutions which make up the market with a view to purposeful change.

The question of what is a good marketing system cannot be separated from the more fundamental question of what is a good society, for the evaluation of a market organization has meaning only within the context of a broader view of the good society or the good life. In this sense we can ask, economic growth for what? It is quite clear that a society cannot properly be judged solely in terms of the material goods it produces. Many years ago Marshall said,

> . . . not only does a person's happiness often depend more on his own physical, mental and moral health than on his external conditions; but even among these conditions many that are of chief importance for his real happiness are apt to be omitted from an inventory of his wealth.[18]

Much more important is the quality of the people produced within

the society and the opportunity provided for individuals to develop meaningful lives in terms of both material and human relationships. The same is true in evaluating systems of marketing. The system cannot be evaluated simply in terms of material measures, but also in terms of human relationships and their effect on the character of the people. Thus the question is, what kind of people do we want to be?

CHAPTER 3

Marketing in Economic Development

SINCE marketing can play an active role in initiating development and accelerating growth, we single out for special study in this chapter the relationship between marketing and economic development in advanced and underdeveloped countries. Marketing is here conceived in a broad context to include the physical aspects of storage, transportation, and other functions, as well as social variables in exchange.

The emphasis in this chapter is to present a framework of analysis for viewing marketing in development rather than an exhaustive coverage of the theories of development. The reader is directed to the standard economic development texts for detailed elaboration of the latter.

The chapter is organized into three related parts. Section 1 begins by examining the experiences of advanced nations and some of the development theories and variables suggested in development literature in order to provide a background for a discussion of the role of marketing in the development process. Section 2 conceptualizes the linkage between the physical transformation variables with special emphasis on distribution and the social variables of the exchange system in the development process. Section 3 is an application of the ideas of the first two sections to some of the marketing experience in the United States. In addition, it provides some historical perspective on contemporary marketing problems.

1. APPROACHES TO THE STUDY

One of the important postwar developments in the social sciences is the expansion of economic history as a field of study. Scholars have

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JAMES T. BONNEN, CARL K. EICHER, *and* A. ALLAN SCHMID *jointly authored Sections 1 and 2 of this chapter. Section 3 is the work of Schmid.* *The authors wish to acknowledge consultation with Richard Holton and Bert Hoselitz during the formulation of this chapter.*

searched for regularities in the development process of the eighteen to twenty-four nations which have experienced modern economic growth in order to explain the development process and to generate hypotheses for use in theory construction. Among the regularities under examination are the rates of modern economic growth and the structural shifts which occur in the development process.

Rates of Modern Economic Growth

Since the industrial revolution began in England well over one and one-half centuries ago, only about one-fourth of the world's population has registered high and sustained rates of growth of per capita income. Our quantitative data on economic growth rates cover only about 100 years and a small part of the world's population. The striking aspect of modern economic growth over the past 100 years is the high and sustained rate of growth in per capita income, often accompanied by a sustained and significant increase in population. In fact, for the eighteen to twenty-four nations that have experienced modern economic growth, total product increased from 15 to 40 percent, while population has grown from 8 to 20 percent and per capita income from 10 to 30 percent per decade.[1] A rise of per capita income of 20 percent per decade, for example, means that per capita income would double in less than 40 years. This rate was attained in the United States, for example, when per capita income grew 20.3 percent per decade over the 1869-1954 period, while the increase in Russia was 15.4 percent per decade over the 1870-1954 period.[2]

During the 1950's, the rate of growth of industrial output in the U.S.S.R. was in the range of 8 to 10 percent per year, or more than twice as high as the United States.[3] Although there are some non-comparabilities in estimates, the industrial output in the centrally planned economies—U.S.S.R., mainland China and Eastern European nations—will probably be about equal to the industrial output in free enterprise economies in 15 to 25 years.[4]

Structural Shifts in Economic Growth

In order to understand the development process we must go beyond rates of growth in income and analyze the structural shifts which contribute to it. These are usually defined as including movements of labor, capital, ideas, and location of production within and between geographic areas, occupations, industries, and sectors.

One of the structural shifts of interest to those studying marketing is the occupational shift which occurs through development with special emphasis on the percent of workers engaged in the primary (agricul-

tural), secondary (manufacturing), and tertiary (trade, transportation, communication, government, and personal and domestic services) sectors. The Fisher[5]-Clark[6] growth stage thesis postulates that in low-income countries tertiary activities (which include trading) are relatively unimportant as compared with the agricultural and manufacturing sectors, where most of the labor force is employed. Moreover, those authors suggest that economic development can be viewed as a process of moving people out of agriculture into secondary and tertiary occupations. It has been well documented that the percentage of workers engaged in the tertiary sector generally increases through economic development. Three common explanations account for this phenomenon. First, economic development generally brings about a reduction in the degree of self-sufficiency of the average family and a greater reliance on the use of retail markets.[7] Second, retailing in less-developed nations is so easy to enter that it provides employment for many who would otherwise be unemployed. Third, "available historical and cross-sectional data support the hypothesis that productivity increases in retailing lag behind those in the rest of the country."[8] In the United States, for example, the rate of increase in output per man-hour in retailing and wholesaling was 1.0 percent per annum over the 1869-1949 period, compared with similar increases of 1.9 percent in agriculture, 2.3 percent in manufacturing, and 2.6 percent in mining.[9] Kuznets presents data on structural shifts for 38 countries in the post World War II years, which show that 23.7 percent of workers were engaged in the tertiary industries in countries with a $100 per capita product as compared with 45.3 percent in countries with a $1,700 per capita product.[10] Within the tertiary sector we find that trade, banking, and finance occupations account for 5.8 percent of the workers in the nations with $100 per capita incomes, compared with 15.1 percent in nations with $1,700 per capita incomes.[11] Moreover, similar changes have occurred in the United States. Barger's study over the 1869-1949 period reveals that the percentage of the total work force engaged in retail and wholesale trade rose from 6 percent in 1869 to 16 percent in 1949.[12] Holton recently reported that, over the 1870-1951 period in Italy, the percentage of the labor force in trade increased and, in fact, the percentage of the labor force in trade increased from 6 to 9 percent over the 1951-1961 decade.[13]

Turning to the underdeveloped countries, numerous studies indicate the relatively large percentage of the labor force currently engaged in trading and retailing.[14] Bauer and Yamey reject the proposition that the percentage of labor force engaged in trade and marketing increases through economic development, on the basis of data collected in West

Africa.[15] While occupational statistics in 1950 had shown trade to be a relatively insignificant activity in West African nations, they observed the ubiquity of traders and market women, and the trading activities of farmers who were classified as full-time farmers according to the censuses. They decided that the census under-reported the trading activities of people living in small towns; they contend that marketing is a more important activity in underdeveloped nations than occupational census data sometimes show, and that economic development should not be automatically viewed as a process in which marketing becomes more important (as measured by the percentage of the labor force employed) as per capita incomes rise. Bauer and Yamey's criticisms do not disprove the Fisher-Clark thesis, which is stated in terms of proportions of total resource commitment to trade. Their criticisms do, however, point out the danger of overgeneralization about the development process in underdeveloped nations.

Just as we can view structural shifts between sectors in occupational terms, we can use the changing value of output generated within sectors to observe the same process. The data presented in Table 1 illustrate the changing share of agricultural production as a proportion of total national output from 1870-1960 in a variety of nations. Within the context of these data Kuznets observes "At the danger of stressing the obvious, one may claim that an agricultural revolution . . . is a precondition of the industrial revolution for any sizeable region of the world."[16] North's study of the early growth of the American economy shows that under certain conditions food exports can play a vital role in the regional growth of a nation and in financing capital imports needed for the industrial sector.[17] A recent United Nations publication summarizes the current status of the literature by noting that "issues, such as agricultural development *versus* industrialization . . . have . . . largely been disposed of."[18] Today it is recognized that there is no basis for doctrinaire statements that development should be launched with either an agricultural or industrial expansion but that "Every economy has an agricultural and a nonagricultural sector, and one of the most important aspects of development is the changing, complex but always intimate relation between the two."[19]

There are several other interrelated ways to view structural shifts. One approach focuses on shifts in the production of various commodities between geographical areas within or between countries. A century ago, for example, Europe was relatively self-contained with respect to food, with the possible exception of Britain. Robert Stern states: "In the ensuing decades, however, the United States, Canada, Argentina, Australia

Table 1. Share of agricultural production as a proportion of total national output

Country	Circa 1870		Circa 1900		Circa 1930		Circa 1960	
	Year	Percent	Year	Percent	Year	Percent	Year	Percent
United States	1869–79	20.5	1899–1908	16.7	1924–33	8.7	1955–59	4.5
Canada	1870	44.6	1900	33.1	1930	13.1	1955–59	8.2
Australia			1901	27.4	1933	21.5		
New Zealand			1901	47.4	1926	35.7	1952	23.7
Denmark	1870–79	45.1	1900–09	29.1	1930–39	17.3	1955–59	21.8
France	1872	43.0	1898	37.0	1929–33	20.0	1952	16.2
Germany	1865–74	30.2	1895–1904	15.8	1925–34	13.4	1955–59	7.2
Netherlands					1929–31	9.4	1955–59	10.9
Norway			1910	23.5	1930	16.6	1955–59	13.1
Sweden	1869–71	43.4	1899–1901	29.1	1929–31	15.4	1952–53	9.6
United Kingdom			1895	9.7	1930	3.8	1955–59	4.4
Hungary			1899–1901	49.0	1928–32	35.8		
Ireland					1938–39	28.0	1955–59	29.2
Italy	1866–70	56.6	1896–1900	45.8	1926–30	32.5	1955–59	23.3
Japan	1878–82	64.6	1898–1902	48.5	1928–32	21.8	1955–59	19.0
South Africa					1919–23	19.4	1955–59	13.0
Argentina					1938–39	26.8	1955–59	16.7
Brazil							1955–58	27.7
Colombia							1955–57	37.1
Costa Rica							1955–58	39.5
Ecuador							1955–58	36.8
Honduras							1955–57	49.3
Mexico					1935–39	17.1		
Paraguay							1956–58	41.8
Peru							1955–58	26.0
Ceylon					1938	65.0	1955–59	49.5
India					1931	53.5	1955–59	47.3
Philippines							1955–59	36.3
Kenya							1955–59	41.9
Nigeria							1950–52	67.3

Sources: Bert F. Hoselitz, "Agriculture in Industrial Development" in *Food—One Tool in International Economic Development* (Ames: Iowa State University Press, 1962), p. 127.

For all years preceding 1940: Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations, II. Industrial Distribution of National Product and Labor Force," *Economic Development and Cultural Change*, V, 4, Supplement (July 1957), passim.

For the years after 1940: United Nations, *National Income Statistics, 1938–1948* (New York, 1948). United Nations, Statistical Office, *Yearbook of National Accounts Statistics* (New York, 1957 and 1960).

Pan American Union, Department of Statistics, *America en Cifras, 1960*, v (Washington, D.C., 1961), 15–19.

and New Zealand, the 'new' countries of the world's temperate zones, were opened, and together with Russia and Eastern Europe, exported vast quantities of foodstuffs to Western Europe."[20] This process need not be detailed here to indicate that vast shifts in the location of production have occurred. In addition to commodity flows, we could also consider shifts in various inputs, labor and capital, and even ideas and technology within and between countries.

Another view of structural shifts in the process of economic development focuses on changes in the size of markets and nations. These phenomena have been studied by economists since Adam Smith, whose ideas were elaborated by Allan Young as follows: "Taking a country's economic endowment as given . . . the most important single factor in determining the effectiveness of its industry appears to be the size of the market."[21] This concern is reflected in the contemporary volume, *Consequences of the Size of Nations.*[22] The area is fraught with empirical difficulties, and generalizations are limited in applicability. Let it suffice here to note that current researchers studying the European Common Market are examining the structural shifts related to size of nations and trading areas as they affect economic growth.[23]

Other structural changes important in marketing are found in analyzing what has happened to the size of firms in various sectors of the economy. For example, consider the recent trends in retailing in the United States. Holton advances data to reject the popular image of retailing in recent years which supports an exaggerated power position of the large retail stores and firms. He points out that the small retail store in the United States is not in danger of extinction.[24] In fact, about 36 percent of all retail trade was accounted for by retail stores with five or fewer employees in 1954, compared with 38 percent in 1939. Postwar adjustments in retailing in the United States have not greatly reduced the market share of the smaller retailer. In fact, Holton observes that the smaller retailers lost market share exclusively because of the increase in the average size of food retailing. The supermarket gained ground, and the small food retailer with five or fewer employees saw his market share slip from 63 percent of all food store sales in 1939 to 41 percent in 1954. But in nonfood fields, which account for three-fourths of all retail trade, the smaller retailers (with five or fewer employees) actually increased their market share from 30 percent sales in 1939 to 34 percent in 1954. Among the kinds of small retail businesses which expanded rapidly during this period were those dealing in goods oriented towards children and recreation.

Now that we have outlined some of the structural shifts involved in

development, the next problem is to understand how the development process can be initiated and accelerated.

Initiating and Accelerating Development in Underdeveloped Countries

In the immediate post World War II period scholars formulated a series of models and essays on aspects of initiating and accelerating development in underdeveloped nations. These were usually cast in a partial equilibrium framework and assumed that there were particular obstacles to development.[25] Among these obstacles were (1) low rates of savings, (2) high rates of population growth, (3) poor quality of human resources, (4) feudal agricultural organization, (5) inadequate market demand,[26] (6) inadequate market organization, e.g., excessive middlemen.[27] Policy prescriptions were formulated to overcome these obstacles by advocating certain preconditions to development, including social overhead investment, investment in human resources, land reform, population control, and government intervention in marketing.

These policy prescriptions have not gone unchallenged. For example, Gerschenkron's intensive analysis of the growth process in France, Germany, and Russia suggests that we should not assume that the less-advanced nations will follow the same path as advanced ones.[28] This is because of differences in economic conditions, in institutions, and in the intellectual climate, as well as other socio-political factors which are often not included in contemporary economic development theories. In fact, he suggests that the only generalization that can be made is that the latecomers will probably not follow the path of the advanced nations and that economists should be looking for less-developed nations to skip certain stages of development; he suggests researchers should ask in what way and through what devices can less-developed nations substitute for the missing prerequisites. Hirschman also analyzes the postwar theories of development which have stressed overcoming obstacles to development, and notes:

> If only as much attention had been devoted to the successes as to failures, we should have noticed that whenever development occurs, it does so invariably in the absence of one or several of these required components or preconditions. . . . Brazil experienced development in the absence of monetary stability, and Colombia even in the absence of public order, not to speak of land reform.[29]

The points made by Gerschenkron and Hirschman also apply to accelerating the growth of the advanced countries. For example, a study by Moses Abramovitz leads to a questioning of heavy reliance on in-

creases in capital stocks as a big development factor.[30] Abramovitz has estimated that increases in capital stock in the absence of technological improvements account for only 14 percent of the increase in per capita income of the United States between 1879 and 1950. When changes in labor input, measured in hours, are added to changes in capital we still cannot adequately explain the increases in United States output. The unexplained residual is usually attributed to technology. This has led economists to explore what is involved in the reduction in input coefficients which have resulted in higher output per unit of input.

The above discussion indicates that economists should move beyond listing obstacles to development and erecting a list of preconditions which must be fulfilled before development can be initiated and accelerated. Specifically, this suggests that simplistic recommendations for land reform or marketing reform as preconditions to development ignore the substitution possibilities at the heart of the development process. In looking at the role of marketing in economic development, this background discussion of postwar economic development theories and policies should be kept in mind.

Approaches to the Study of Marketing in Development

We find it useful to classify the approaches to the study of marketing in development into the following: (1) static distribution costs and efficiency, (2) distribution, production, and consumption interrelationships, (3) market structure. Although these approaches are not mutually exclusive, it is observed that economists frequently study marketing by using elements from one or more of these approaches.

Static costs and efficiency analyses. A common approach to marketing in economic development is to emphasize reduction of costs in performing transportation, storage, processing, and other marketing functions. For example, considerable research has been done on marketing margins in the United States.[31] A related approach is the study of the role of cooperatives in reducing marketing costs.[32] This concern for reducing marketing costs has also been pursued in underdeveloped nations. The Food and Agriculture Organization reflects this view in its publication, *Marketing Problems and Improvement Programs.*[33] Livestock, grain, and other marketing specialists concerned with better transportation, storage, processing, and other physical facilities usually omit or make assumptions about the social relationships through which these physical improvements flow. In marketing research and improvement programs, these social relationships are largely omitted because of difficulties in

identifying and modifying them. Increasingly, however, agricultural economists such as L. R. Martin[34] and J. C. Abbott[35] have moved beyond stressing improved physical facilities to reduce marketing costs and have broadened their scope of inquiry to include the social relationships involved in price uncertainty, producer incentives, credit, and other marketing conditions.

Study of production, distribution, and consumption interrelationships. Another approach to the study of marketing in development is to analyze the relationships between activities in the production, distribution, and consumption sectors of the economy. The outputs from any one sector may become inputs into another sector of activities. Involved in this relationship is the theoretical concept of external economies. To understand the development process, it is important to understand the dynamic interconnections between the various firms and individuals who comprise the sectors of production, distribution, and consumption. Changes in any one sector may be impossible without changes in one of the others and also changes that do occur in any one may have far-reaching implications for activity in another.

There are numerous research studies of the interconnections between the production, distribution, and consumption sectors. These suggest that under certain conditions the distribution sector may act as a catalyst of development, while in other cases the impetus arises from changes in production and consumption sectors. Changes in the distributive sector may be necessary to sustain the development process.

Turning to a specific example of how changes in distribution may affect the activities in other sectors let us consider the implications of the rapid growth of Sears, Roebuck retail stores in Latin America.[36] Sears opened its first Latin American store in 1942; today it has 65 stores in ten countries. Sears originally intended to sell almost all United States goods in its retail stores, but foreign exchange fluctuations resulted in currency losses; therefore it shifted to acquiring goods from Latin American producers. In Brazil today, for example, Sears buys 98 percent of its goods from Brazilian manufacturers; in Mexico the figure is 95 percent and in Colombia, 86 percent. Although Sears has earned slightly higher net earnings—13 percent—in Latin America than in the United States and has helped revolutionize retailing in Latin America, the greatest impact it has had is in the encouragement of indigenous production. One observer recently summarized this by noting:

> The greatest impact Sears has had, however, is in the multiplication of new industrial business for which Sears creates a marketing channel. . . .

> Sears has been instrumental in getting established literally hundreds of new manufacturers making goods which, a few years ago, could not be made in the country, let alone be sold in adequate quantity. Simply to satisfy its own marketing needs, Sears has had to insist on standards of workmanship, quality, and delivery—that is, on standards of production management, of technical management of people—which, in a few short years, have advanced the art and science of management in these countries by at least a generation.[37]

Among other inter-sectoral relationships which have been explored are the effects of consumer behavior on the success of various distributional techniques,[38] the effects of experience gained in distribution activities on the supply of entrepreneural skills for industry,[39] and the effects of changes in production specialization and of the characteristics of export crops on distribution activities of industrial development.[40]

The above cases are illustrations of the interchange of effects between sectors of an economy. Several questions now need to be raised about the dynamics of these interconnections. Just how are the changes in one sector transmitted to another? We could find examples in which the same change in one of the sectors produced no change, or quite different changes, in the other sectors. This would suggest the need to examine additional variables such as the components of the social system and the exchange rules that influence economic transactions. For example, certain technological changes in the distribution sector may produce one effect on the other sectors in economies with certain aspects of a status exchange system. Another effect may occur in an economy with an administrative or a bargaining exchange system.

Market structure analysis. Another approach to the study of marketing in development is that of market structure analysis.[41] The analysis assumes a causal relationship running from market structure to firm behavior and market performance. One definition of market structure is:

> Organizational characteristics which determine the relations of sellers in the market to each other, of buyers in the market to each other, of the sellers to the buyers and of sellers established in the market to other actual or potential suppliers of goods, including potential new firms which might enter the market.[42]

The main variables in market structure analysis are: (1) the degree of seller and buyer concentration described by their number and size distribution, (2) the degree of product differentiation, (3) the conditions of entry.

This approach hypothesizes certain relationships between these struc-

tural variables and behavioral variables including: (1) access—who can participate in certain kinds of economic activity and engage in certain kinds of transactions, (2) competitive methods—the content of a given role which influences what rights the occupant of a certain economic position has and what powers can be applied to secure agreement to transactions which transfer ownership. These behavioral variables may be viewed in terms of decisions, policies and tactics which affect the performance results of economic activity.

One hypothesis of the relationship between market structure variables and development is that a competitive structure is favorable to development. A competitive structure is marked by low concentration ratios, product homogeneity and free entry. Studies of this relationship present varied and conflicting results. Sol Tax in studying Guatemala and Alice Dewey in studying Java have noted marketing conditions of large numbers, free entry, homogeneous products, and no excess profits being earned, while the economy was stagnant, with little or no development.[43] On the other hand some high levels of performance and growth have been obtained where these structural criteria are absent, such as in some concentrated U.S. industries, government marketing boards in Africa, and in some Russian industries. Other descriptions of market structures in underdeveloped countries are available.[44] While it is hard to generalize, many examples may be found of low concentration with differentiated products in food distribution. In industry or import-export firms, concentration is often higher. There is some evidence that competitiveness as measured by concentration ratios increases with market size.[45] The critical question in economic development, however, is the relationship between such variables as concentration and productivity. The empirical evidence is scarce. Stigler found that United States economic development over the period 1899-1937, as measured by the decline in the labor requirement per unit of output, was most rapid in industries with declining concentration.[46] However, as has been noted, the "evidence also supports the hypothesis that concentration tends to decline in industries experiencing rapid increases in technology and demand."[47] It can be seen that many of the causal relationships between structural variables and performance are still untested. It was indicated in the preceding chapter that, while variables such as concentration ratios may affect behavior and performance, other variables such as the exchange rules may affect them directly without necessarily changing the structural variables. Some examples are cited in section 3 of this chapter.

An important part of the market structure approach is what items are to be included in performance. For certain purposes we may be

interested in the relationships between cost and returns functions, e.g., selling price equal to both marginal and average cost. This is considered in Chapters 5 and 6. For other purposes the performance variables may be some of the common targets of economic development plans such as specified levels of gross national product, per capita income and employment rates. Also, performance may include variables such as rates of saving and capital formation, technological change and economies of scale.

The choice of performance variables influence the scope and application of the results. Many authorities would agree with Bain's comment:

> In general, it is not appropriate to measure the market performance of an enterprise or industry in such terms as its contribution . . . to total employment in the economy, the total output of goods, or the stability over time of either. This is because . . . the essential limits of the performance of enterprises within a capitalist economy are those of adjusting to whatever effective demands are present for their outputs, with the restriction that in so adjusting, they must, as a group, at least "break even."[48]

This approach postulates that firms will and should respond to their given individual opportunities. In some contexts this approach is useful. However, in analyzing development these effective demands, opportunities, restraints and break-even points faced by firms must themselves be treated as variables rather than taken as givens. The changes in these variables are possible points of leverage in initiating and accelerating growth. These can be changed by altering not only such items as concentration ratios, which are emphasized by the market structure approach, but also the exchange rules outlined in Chapter 2. These exchange rules, including property and contract laws, influence what individual demands will be effective, create new opportunities, restrain certain practices, and affect the incidence of costs and benefits of economic activity.

To conclude this section, we have noted that each of the three approaches to the study of marketing in development could be improved by the incorporation of social relationship variables. In the next section we outline how this incorporation of social relationships in the study of marketing might be done.

2. THE LINKAGES BETWEEN PHYSICAL AND SOCIAL SYSTEMS

Social relationships are frequently omitted from market research and improvement programs because of difficulty in identifying and modify-

ing these relationships in practice. The objective of this section is to make a step toward providing a conceptual framework for relating the physical variables involved in production, consumption, and distribution to the social system within which these variables are embedded. This conceptualization (see the graphic representation in Figure 1) is necessary because even sound economic plans and marketing programs for initiating development in underdeveloped countries or accelerating growth in advanced nations will be of little value unless we have an adequate conception of how people will carry them out. Specifically, we

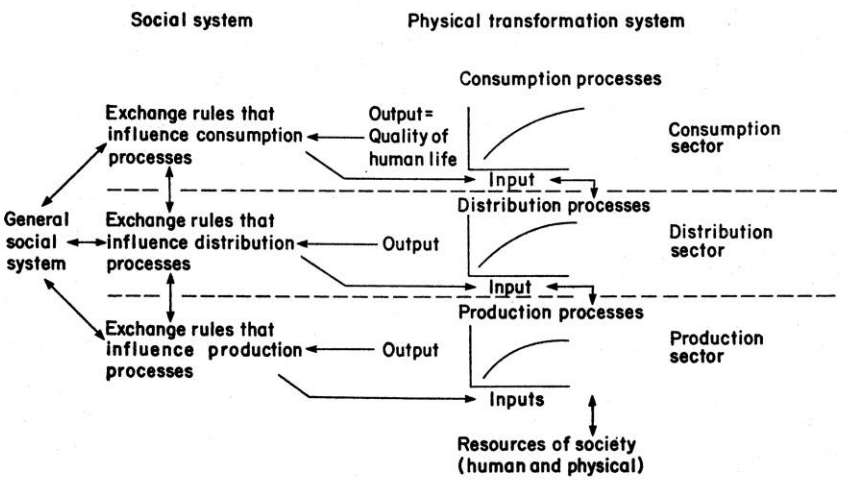


FIGURE 1. A conceptualization of the linkages between physical and social systems for the study of marketing in development.

shall attempt to link social system variables discussed in Chapter 2, with emphasis on the marketing exchange system, to the distribution, production, and consumption variables outlined in the previous section of this chapter.

The emphasis is on developing a framework, which might be used to gain insight into the relationship between social variables and economic activities, thus leading to a greater understanding of the development process in general and the role of marketing in particular. While we shall use specific cases to illustrate our conceptualization, we shall not attempt to specify universal causal relationships in growth and development. It is hoped that this approach may be useful in discovering appropriate leverage points at which to enter the development process in devising a strategy for any concrete situation.

Elements of the Linkage Framework

In our generalized framework of linkage in the growth process the economy is conceptualized to distinguish between a system of *physical transformation processes* and the related *social systems.* The physical transformation processes are the central concern of the economist's traditional focus in economic analytics. In our conceptual framework these processes are further differentiated into production processes, distribution processes, and consumption processes. The physical production processes can be conceptualized as a production function for the producer units; the physical distribution processes can be handled as a production function for all distribution units;[49] the physical consumption processes can be cast in the form of a consumption transformation function.[50]

The inputs into the physical transformation process include all of the resources of the society: its land, its labor, its capital, in their specific quantitative aspects. These conventional economic inputs[51] are a part of the physical input-output system that we have termed the physical transformation process. Most of the variables which have been identified by economists as important to growth are associated in our conceptual framework with the physical transformation process.

The distinction between production and distribution processes involves only a matter of degree along a continuum in the transformation of utilities. At one end of the continuum are the production processes involving primarily the creation of form utilities and only limited spatial and temporal dimensions—such as those within a set of factory buildings or a farm. At the other end of the continuum are the distribution processes with relatively larger space and time changes and more limited form utility creation. We identify the distribution processes (and units) with the functions (and firms) to which we have traditionally applied the term marketing.[52] Normally included in the physical distribution transformation processes are such concerns as transportation, storage, wholesaling, retailing, grading, and assembling, as well as various processing transformations.

The physical transformation processes of production, distribution, and consumption do not exist independently of human social relationships. Each economic activity has a social dimension. For example, consumption may involve the destruction of certain forms of goods while contributing to the physical growth of the consumer. In addition, the act of consumption has an effect on the social organization and associated values of society, and vice versa. In our conceptualization the social system

is linked to the physical transformation system by describing the social system in terms of human relationships and rules that control the physical resources. The linkage is central to our conceptual framework and needs further elaboration within a development context.

The production function in economic theory is a concept relating changes in certain combinations of specified resources (inputs) to changes in products (output). This relationship is usually described without explicit reference to the social system. However, without reference to the social system we cannot explain human behavior and thus why a society chooses the physical combinations that are actually selected and controlled.

In empirical analysis we have the problem of adequately specifying the inputs and outputs of the development process. On the input side there is first the problem of an adequate measure of quantities and qualities. For example, hours of labor worked may not be a sufficient measure of the labor input in some problem contexts. We may wish to know labor's skill, punctuality, and response to impersonal centralized orders. When this specification is adequate, then we must ask what social relationships affect these input qualities and quantities. Hence, we must investigate what institutional factors affect creativity, skill, willingness, punctuality, and other qualitative factors that influence productivity.

On the output side there is also the empirical problem of measuring product quantities and qualities. The problems in formulating measures of gross national products are relevant here. When this specification is adequate, then we must also note that these outputs have effects on people and social relationships—distribution of power and status, freedom, stability, and the quality of human relationships. The concept of development as a process is completed when we note that the physical and social aspects of inputs and outputs are all interconnected.

Importance of Linkage for Analysis of Marketing in Development

In summary, we have suggested a conceptualization of the linkages between physical and social systems which would be useful in discovering appropriate leverage points at which to enter the development process in devising a marketing strategy for any concrete situation. In the next section of this chapter, we shall use this framework to explore marketing in economic development in United States history. The materials are not intended to provide an exhaustive treatment of marketing and economic development, but rather to suggest an approach which might be used in other countries and problem contexts.

3. SOME SELECTIONS FROM THE UNITED STATES EXPERIENCE

The selections from United States economic history discussed here illustrate how social system variables and especially marketing rules interact with the physical transformation system variables to affect economic development. This section has two purposes: to present an experiment with our conceptual ideas, demonstrating their utility in organizing and analyzing data on marketing in development, and to impart some historical perspective on contemporary marketing systems and problems.

In the series of selections to follow we shall analyze (1) some of the historical structural shifts in the United States economy, (2) some of the marketing variables suggested in our earlier discussion of approaches to marketing and (3) the interaction between changes in social relationships and changes in the physical transformation relationships in the course of development. The cases are organized into various groups according to several selected characteristics of the participants involved in the marketing transaction.

Transactions with Foreign Nations

The rules influencing transactions among nations have been an important factor in the historical development of the United States. One illustration is the marketing rules implemented by various nations at the outbreak of the European War in 1793. The result was the development of profitable re-export and carrying trades. Neutral U.S. ships were the only ones allowed into European ports. Considerable capital was accumulated in the shipping industry as a result. However, the British and French changed their market rules in 1807 and the United States passed the Embargo Act closing down foreign trade.

The European market rules which benefited U.S. shipping extended the market for U. S. products and skills and then narrowed it again. However, the embargo did help to initiate certain kinds of domestic transactions protected by the absence of foreign competition. Capital accumulated in the shipping sector was applied to the development of domestic manufactures, especially textiles, after 1807 as prices rose.[53] Market rules gave manufacturers new bargaining powers by restricting the access of domestic consumers to foreign goods. This signalled the later decline of higher cost home manufacture on many farms, as the mills extended their markets and benefited from economies of scale. In 1800

the typical farmer was clothed in homespun, but by 1840 the household textile industry had been largely transferred to the mills.[54] In 1791 there was only one cotton mill in the United States, but in 1809 there were 102.[55] The value of home manufacture on farms declined throughout the nineteenth century.

Transactions Between Distant and Unrelated Parties

While the United States, from colonial times, had an export market sector, some important inputs, such as land, were not exchanged by market processes. In some American colonies, the feudal market rules of primogeniture and entail meant that the particularistic kinship relationship between the parties determined land transfer rather than the universal criteria of the best manager and the highest bidder. New entrepreneurs and capital were often in New England, and the new lands were on the southern and western frontiers. If access to land were to be a matter of birth, production would be limited by the accidental skill and other resources of the eldest son, and land could not be used as collateral for mortgage credit, since the line of exchange was fixed. To initiate and facilitate factor mobility and market expansion, these feudal exchange rules were replaced. By 1786, entail was made illegal in every state but two, and primogeniture disappeared by 1791.[56]

Even after access to land was generalized, the ability and willingness of the New England owner of capital to transfer his resources to the frontier was influenced by the kind of title which could be obtained and the method of its attainment. To illustrate, let us take the situation which developed in the South after much of the upland areas became more valuable upon the invention of the cotton gin in 1793 and with the growing cotton export demand. In 1795 the Georgia legislature, under fraudulent conditions, granted the Yazoo Land Company the greater part of Alabama and Mississippi at 1½ cents per acre. An indignant new legislature rescinded the grant in 1796, but some of the land had already been sold to innocent third parties.The Supreme Court in 1810 ruled that the rescinding act was unconstitutional and an impairment of the obligation of a contract.[57]

What was the effect of this court definition of the market contract rules on economic results? At issue was whether any unrelated New England buyer of Georgia land would have to go to the trouble of inquiring as to how the present owner obtained title to the land, the fairness of the price, and the motives of the former owner. To do so would certainly slow exchange and restrict the extent of the market. The rule formulated by the Court limited the exchange relationship to readily observable fac-

tors. The validity of the title was ascertainable by easily observed conformity to certain procedural rules, and the buyer could make further investment plans with confidence that his right of access would not be voided by future legislation. The effect of the Court's decision facilitated exchange and the flow of resources between the various areas and sectors of the economy.

Credit Transactions

The rules influencing transactions between lenders and debtors were another point of leverage in United States development, as is shown in the following illustrations. Whether planned or not, the imposition of taxes payable in money was a factor in attracting people to the market economy. However, as the proportion of market transactions increased, farmers were exposed to unfamiliar forces. Price changes beyond their individual control affected the exchange value of their property and threatened the solvency of debtors. Inflation was a corollary of the Revolutionary War, but afterwards prices fell. The wholesale price index was 225 in 1780 and only 90 in 1786. Debts contracted during the period of high prices and taxes, imposed to retire the Revolutionary War debt, could not be paid in the face of declining prices. The market rules specified that debtors be imprisoned for nonpayment. The magnitude of this price change was not predictable, and many honest farmers, who were doing just as good a job of farming as before, now found themselves in jail for reasons they could not wholly perceive.

The farmers attempted to change the market rules in several ways. One was to foster policies that encouraged inflation of the currency, another was to stay mortgage foreclosures, and a third was to return to premarket conditions of barter, where debt could be paid in kind at some fixed price level.[58] Mass rebellions occurred before changes were made. It was in this atmosphere that the federal Constitutional Convention met in 1787.

Various attempts were made to give strong protection to property. As the Constitution emerged, it contained only one such clause—Art. 1, Sec. 10: "No State shall . . . pass any . . . ex post facto law, or laws impairing the obligation of contracts."

The Convention delegates may have thought they had dealt with the problem of debtors created by the growth of the market economy when they prohibited the coining of money by the states.[59] However, widespread financial disaster followed the embargo of 1807 and the War of 1812. In 1809, the New York jails were not large enough to hold the 1300 men imprisoned for debt.[60] State legislatures tried to change the

market rules but the Supreme Court, in 1819, rejected a statute which applied retroactively to contracts made prior to its passage.[61] Rule changes finally accepted in 1827 provided for bankruptcy procedures if such bankruptcy laws were in effect at the time a debt transaction was made; they did not impair contract obligations.[62] These rules governing "competitive methods" made all credit transactions subject to bankruptcy procedures, regardless of the bargaining power of the parties involved.

The market rules of bankruptcy were important for economic development because they provided a means whereby farmers and other debtors could be saved from irrevocable ruin due to unpredictable circumstances, and salvaged as entrepreneurs who might again contribute to society.

An inventory of society's productive assets would include numbers of skilled people. Yet, depending on the rules of exchange, some of these skilled people might be in jail labeled "debt failures," and thus denied future access to resources only because of unpredictable violent market price swings. The availability and realization of productive assets is a matter of social organization and is reflected in physical production relationships.

Corporate Transactions

In order to extend the market and achieve economies of scale, it is necessary to have human relationships which make it possible to aggregate and organize capital, human energy and other resources. This often requires units larger than individual proprietorships or partnerships. Corporate activity was often used in the colonies to build bridges, roads, canals, colleges, and other items of social overhead capital. The organizational forms devised for these purposes later became the models out of which our modern industrial corporations grew. Social organization and its subpart, exchange organization, played two major roles in the development of this corporate activity.

First, the procedural rules gave the holders of positions of corporate management access to power not available to the individual acting alone. On the positive side they gave the power of indefinite life, the power of limited liability, and the power to speak for and make binding contracts in the name of the unit under specified conditions. The access to these powers was increasingly through meeting universal standards rather than through personal grants of the legislature. On the negative side the procedural rules gave those in management positions freedom within certain limits from the acts of others including both individuals and government.

These rules have significant implications for the economies of scale and specialization that can be realized. They make possible the coordination of various production and distribution activities in a single large-scale decision-making unit through administrative commands rather than bargaining at each point between individuals in the market. This affects cost structures and the characteristics of the inputs used. While one trend was toward including more kinds of resources and products in market bargaining processes, there was also a trend toward administrative non-bargaining processes.

Administrative Transactions

A number of instances can be cited of exchange rules which allowed occupants of governmental positions through administrative processes to directly transfer rights to resources and make them accessible to individuals and corporations. Among the rules used were those granting exemption from taxation and from the government's power of eminent domain for certain enterprises. Another was grants of land to homesteaders and to the railroads, and direct subsidies based on the government's taxing power. Still another was grants of monopoly power (in a sense, a form of private taxing power) which enabled selected enterprises to raise capital by high and secure prices. These rules affecting resource mobilization were especially important in attracting attention to and initiating investment in high-risk areas with extended early periods of relatively low payoff.

Many of the investments that the legislatures wanted to encourage were related to extension of the market, and the factor of external effects was important. A case involving transportation will illustrate the use of monopoly grants. In 1798, Robert R. Livingston secured from the New York legislature an exclusive 20-year grant to navigate the waters of the state by steam if he could build within one year a boat which would make four miles per hour upstream on the Hudson. In 1802, Livingston entered into an agreement with Robert Fulton, advancing him money to build an experimental boat.

The monopoly grant was extended for Livingston and Fulton at various times. It is difficult to appraise the role that the monopoly grant and the promise of great profits played in the motivation of Fulton and the channeling of funds for his use.[63] Under monopoly protection Fulton devoted his energies to apply several basic scientific discoveries to the development of the steamboat.[64] He offered a share of his exclusive rights in return for money needed at a critical moment in its construction. On the other hand, being a man of many interests, he delayed his work to accept a lucrative contract to develop torpedoes for the British

Navy. Furthermore, it is true that other people who did not have monopoly protection were applying their energies to steamboat development; John Stevens successfully built a steamboat that made a trial run one month after Fulton's successful New York-to-Albany test in 1807. Perhaps the lesson of this case is that there is no one way to channel human energy and other resources. These early monopoly grants no doubt played some role, but other kinds of human relationships could and did contribute to the same results.

The security and flexibility of marketing rules can play a role in development. Consider the following cases of the formation of rules which govern how other rules may be changed. Earlier we referred to the security of contract rules as applied to land transactions. This principle was further expanded in 1819 to formulate rules which determined when the government could withdraw any of the powers it had formerly given to corporate management. The Supreme Court in the famed Dartmouth case created the rule that a corporate charter was a contract which could not be impaired by the legislature.[65] This meant that the relationship between the corporate management and the government was to be limited to the terms of the original charter even if unforeseen changes transpired. The rule clearly defined the area of discretionary action and administrative power in which management could exercise its creative abilities with security. The alternative was a more diffuse relationship, in which the powers under corporate control would have been subject to unpredictable change.

This rule played a part in the motivation of corporate managers and in the release of their creative skills. It was also an encouragement to investment in corporate enterprise. Carl Swisher summed up the importance of this rule:

> It gave stability to the rights of corporations which could not have been achieved in any other way. The decision preceded the time when the laws and traditions of corporate enterprise made it possible for corporations to engage safely in large-scale enterprise and when participation of the federal government in the management of internal improvements was still being discussed.[66]

However, the rule raised the danger that corrupt legislatures could irrevocably grant privileges contrary to the public interest. It also meant that, as unforeseen changes occurred, the legislature could not adapt the terms of a charter. This strict interpretation of contracts was to prevail in the early part of the 19th century.

While the market rule of the Dartmouth case seems unequivocally secure, there were contrasting elements in other rules of the time. The

role of grants of monopoly power in the development of the steamboat has already been discussed. The grant was made by the New York legislature. Because past extensions of the market had created interdependencies, a New York rule could affect the exchange value of property in other states. Thus the New York steamboat monopoly brought retaliatory legislation which threatened interstate commerce. In 1824 a new market rule was established which invalidated the power of any state to create monopolies in river transportation.[67] This had the effect of maintaining market extensions already attained and was related to the changing regional patterns of production.

The rule of security of contract contained in the Dartmouth case was also modified by the concept of Jacksonian democracy, popular sovereignty through the ballot box, and other political organization changes.[68] A changed balance in market rules was struck by Supreme Court Justice Taney in 1837 in the face of economic and social changes, including new technologies in transportation. Massachusetts had granted the Charles River Bridge Company the right to build a toll bridge between Boston and Charlestown. Some two generations later, in 1828, one bridge could not serve the needs of the growing cities, and the state authorized a competing bridge. The holders of the original charter claimed that the granting of an additional charter was a violation of implied contract obligations. Though the new bridge would certainly reduce the exchange value of the old bridge company's assets, the Court in 1837 refused to sustain the monopoly.[69] This rule was of tremendous importance to market expansion and the liberation of new creative energies. It meant that new means of transportation such as the infant railroads could not be strangled by old bridge, canal, and turnpike monopolies. Eastern railroad expansion was rapid in the 1840's and marked the period of economic "take off," as denoted by Rostow.[70]

This rule did not mean that thereafter all legislative grants of monopoly power ceased; it only meant that the balance of power was changed. Monopoly power was granted in such a way as to preserve some element of flexibility. For example, the states learned that one way to protect against uncertainty was to insert reservation clauses in corporate charters by which they retained repeal and modification powers within certain reasonable limits.

If any generalization is possible, it is that neither outright monopolies and fixed areas of discretion nor complete flexibility are preconditions of market extension. Neither can it be generalized that market extension means a one-way trend toward bargained market transactions and away from administrative transactions. Rather we must search out the ef-

fects of various combinations of exchange organization variables as they act in particular circumstances.

Transactions between Unequals in an Exchange Economy

The previous examples illustrate how exchange rules may influence the extent of the market and certain market performance results such as new inventions and capital accumulation. The very success in extending the market and hastening the decline of self-sufficient production creates new problems in turn if certain types of economic activity are to be maintained.

As a society develops from a self-sufficient economy (producing use values) to an exchange economy (producing exchange values), the marketing rules which protect the freedom to use physical objects are no longer sufficient to maintain motivation based on assurance of the fruits of economic activity. The fact that one's material production cannot be physically taken away is little consolation if this production cannot be used directly and if one is not allowed access to the market so that exchange value can be realized.

After the Civil War, personal incomes were increasingly obtained by production for exchange. A man's welfare was increasingly subject to the effects of others' actions and less subject to his personal, independent control.[71] For one specific illustration of the decline of self-sufficiency, consider the structural shifts in regional wheat production. The main sections of the nation were agriculturally self-sufficient in 1800.[72] By 1859, there were marketable surpluses produced in the North Central and Western states at the same time that the North Atlantic and Southern states imported wheat. In 1890, the North Atlantic region produced only 36 percent of its estimated wheat consumption.[73] These trends, together with the growing industrialization, raised new questions concerning the use of market power. The distribution of power to affect the livelihood of others was influenced not only by the action of government in creating monopolies and direct access to resources but also by the growth and organization of private firms at strategic points. Examples of both cases are cited below.

In an exchange economy a monopoly has far-reaching effects on the exchange values of others. In 1872, a rule was formulated ignoring these interdependent effects. The rule was created in a Supreme Court case involving a legislative grant of a slaughterhouse monopoly.[74] Butchers could not slaughter on their own premises but only at specified slaughterhouses with regulated charges. The butchers charged that the monopoly granted to slaughterhouse owners deprived them of their property and

liberty. This challenged a general rule that had been created in 1868 with the 14th Amendment to the Constitution, which prohibited a state from depriving any person of life, liberty and property without due process of law. This raised the question of what was going to be the meaning of property in a marketing context. In this case the Court interpreted property to mean only the value of physical things held for one's own use. The monopoly law did not deprive the butchers of the use value of their shops (that is, title and physical possession). But since they were producing for exchange, the act did lessen the exchange value of their property and labor by preventing their access to a certain line or location of work.

The minority of the Court argued, in effect, that property meant the exchange value of one's possessions and labor and the right to realize that value in the market. In their view property was thus denied without due process under the 14th Amendment; the state legislation was consequently subject to judicial review.

The majority interpretation, however, left unsolved the question of how far regulation of economic affairs could go in the hands of the legislatures. In the past the Court had placed judicial limits on the legislative power of eminent domain by insisting on just compensation. In this case, however, police power affected not use value, but rather exchange value, and the Court was not yet ready to afford it judicial protection.

In the Slaughterhouse case, the Court was concerned with how far a state could go in creating an artificial monopoly. A later case, *Munn* v. *Illinois,* was to involve the extent of a state's ability to regulate a privately created monopoly.

After the Civil War farmers were beginning to feel the economic effect of large-scale business on both their input costs and product prices. One source of economic power was the growth of terminal elevator and storage facilities in such cities as Chicago, which collected the grain from the farms for the interregional markets. In 1874, there were 14 warehouses in Chicago, through which much of the production of seven Western states passed on its way to the seaboard population centers. The Granger movement succeeded in getting legislative relief in some areas of the distributive sector. For example, the Illinois legislature passed a marketing rule regulating grain elevator rates and prohibiting price discrimination. In *Munn* v. *Illinois,* in 1876, the Court upheld this rule regulating competitive methods in keeping with the economics of the Slaughterhouse case, and said it was not a deprivation of property.[75] The Court noted that business affected with a public interest may be regulated

for the protection of the public. Though exchange value might be affected, it was not regarded as property, and the Court allowed no constitutional impediment to legislative regulation, except the need to find if the business was affected with the public interest.

Commons pointed out that "The decision on Munn v. Illinois recognized for the first time the economic power of property, or power to withhold, growing out of economic conditions, as distinguished from the physical power of sovereignty, or power to compel. . . ."[76] The history of the evolution of property in Western Europe indicates a series of battles against the direct use of power and political privilege deriving from feudalism. However, while the direct use of power over individuals had been curtailed, the indirect power of property had been growing with the expansion of the market.

Prior to the Munn case, the Court had recognized the use of police power to restrain an owner in the use of his property if it affected the health and life of others. The Court also recognized the common law of nuisance which protects the use value of property against smell, noise, etc., of others' use. But the common law was not well developed to protect the exchange value of property against the unequal market bargaining power of another. Thus, the need arose for expansion of the police power to redress the balance of power.

The growth of the exchange economy made it possible to affect others not only through the use of property, but also through the withholding of property. This withholding did not affect such items as the health of others but rather the value in exchange of the property they owned. For example, if someone puts a pigsty next to another's property and it prevents that property's use as a dwelling, the harmed party is protected by the common law of nuisance or, if statutory law exists, by the police power. If someone destroys the value of property by charging very high grain elevator and storage rates because of a natural monopoly of shipping points, the property is not protected by nuisance law, which protects only physical use. A Chicago elevator doesn't prevent a farmer from using his land to grow wheat, but it can destroy the value of his land and wheat in an exchange economy. This market power could inhere in certain property as a result of economic changes as well as through a grant of the state. Such a grant had previously been recognized as carrying with it the power to regulate. This economic power inhered in certain property because of such things as natural occurrences and economies of scale. It was not a new phenomenon, but the growth of the exchange economy had increased its occurrence.

The movement from a self-sufficient economy to an exchange econ-

omy made it possible for an individual to expand his control over others from *"holding* things for one's own use to *withholding* things from other's use, protected, in either case by the physical power of the sovereign."[77] Before, one had only physical power while now one has economic power to withhold from others. In the former case one expanded his power by expanding his capacity to use his personal faculties or by sharing in special grants of sovereignty; property had no value separate from the owner's manual, mental, and managerial faculties. In the latter case the mere withholding of property produces value through the power to extract things in exchange from others (i.e., a power of property, *per se*). The pattern of human relationships creates a structure of opportunities, and in a market economy the regulation of access to market becomes an important determinant of value. An important factor in market access is the private bargaining power of others. Expanded police power could control the unreasonable use of economic power to increase the value of one person's assets at the expense of another and perhaps also at the expense of economic growth and national wealth.

Just how was the expansion of state control of economic activity in the Munn case related to economic growth? This discussion can only indicate a hypothesis for testing. Further research would be needed to show the effects of various storage and transportation rates on the development of Midwestern agriculture during this period.[78]

As pointed out earlier, all market rules may be stated as reciprocals. Limitations placed on the use of market power, however attained, while expanding the powers of those benefited may, if carried too far, actually result in confiscation of the regulated property. This may affect initiative and inhibit further market transactions. The balance of power between parties influenced by the exchange rules is thus a point of leverage in economic change.

In 1890 a new rule was formulated which recognized property as exchange value and brought it under the 14th Amendment. The definition of property thus changed from physical things to exchange value of things. Prior to this, the legislature had the power of eminent domain, which takes title and possession. Obviously, this kind of taking involved the concept of property as specified in the Constitution, and the Court was the final arbiter of just compensation. If exchange value was regarded as property, then the courts could decide whether rate regulation was reasonable or confiscatory.

The Court, in a railroad rate case, noted that mere ownership and possession were empty if the owner were not free to establish its price.[79] The picture was further elaborated in 1897, when the Court noted that

exchange value did not exist without free access to markets. The Court stated that "the privilege of pursuing an ordinary calling or trade, and of acquiring, holding and selling property is an essential part of liberty and property as guaranteed by the Fourteenth Amendment."[80]

In the Munn case, the Court recognized the effect of the private market power of the warehouse owners on farmers' exchange values and consequently on the farmers' motivation and investment initiative, but largely ignored the fact that warehouse rate regulation in turn affected the exchange value of the warehouse owners and their motivation and investment initiatives.

To find the combination of exchange rules which will relate the bargaining power of all parties in such a way as to stimulate growth and maintain or expand the extent of the market is a major issue in development.

In this discussion, we have seen how some of the marketing rules of today evolved and how they responded to, as well as stimulated, development. We have also noted the interaction between marketing exchange rules which affect human relationships and the physical transformation processes. These were examined in the context of intersectoral shifts, specialization, the aggregation of resources, coordination of sectoral activities, and other variables involved in development and growth. There is evidence that no one exchange organization variable, such as security of contract, monopoly power or flexibility of market rules, can by itself be said to be a precondition for development. All play a role depending upon the environment, and combinations of other variables can often offset the lack of any one. Still, a conceptualization of the linkages between physical system variables and social system variables can be a useful starting place for the marketing analyst working in a particular development problem context.

SUMMARY

We opened the chapter by reviewing the present state of knowledge about economic growth and development in order to introduce the study of marketing in development. We concluded that there is no single or unique path to successful economic development even within a given environment or country, but rather that there are important substitution possibilities between many, if not most, of the causally associated factors of growth. Economic development cannot be adequately explained or predicted within the context of economic factors alone: rather it is necessary to include some range of social organizational characteristics for adequate definition of the relationship. With these conclusions as a

background, we reviewed research and marketing improvement programs and indicated that economists examining marketing in development have focused on cost and efficiency (changes in marketing facilities) and interrelationships between production, distribution, and consumption in development. In addition, market structure analysis also has devoted attention to structure, behavior, and performance of markets.

In Section 2 we advanced a conceptualization of some of the linkage between physical and social systems for the study of marketing in development. In particular, it was designed to gain better understanding of the interrelationsip among cost and efficiency variables; production, distribution and consumption; market structure variables; and other social variables influencing human relationships involved in marketing. While there are obvious operational problems in empirical analysis, it is our judgment that increased attention needs to be given to socio-physical interrelationships if we are to understand the development process better and know how to plan and implement effective marketing improvement programs in advanced and underdeveloped countries.

In Section 3 we used this conceptualization to make a step in this direction by analyzing selections from the United States experience of marketing in development.

The analysis presented in this chapter is designed to provide the basis for looking at the interaction between the various systems and subsystems involved in development. As we have previously indicated, economists in the past have been largely concerned with the interaction between elements of the physical system, and have verbalized this in terms of preconditions for development and in terms of lead and lag sectors. Our emphasis has been on the interactions between social variables (exchange rules) and physical variables that lead to economic growth and development. Though we limited ourselves here to a discussion of a few broad examples of this interaction, in the remainder of the book there are other illustrations which might be analyzed within the conceptualization presented here.

SELECTED BIBLIOGRAPHY
Marketing in Economic Development

Books and Monographs

Atherton, L. E., *The Pioneer Merchant in Mid-America,* Columbia: University of Missouri, 1939.

Baldwin, K. D. S., *The Marketing of Cocoa in Western Nigeria,* London: Oxford University Press, 1954.

Barger, Harold, *Distribution's Place in the American Economy Since 1869,* Princeton: Princeton University Press, 1955.

Bauer, P. T., *West African Trade.* A study of competition, oligopoly and monopoly in a changing economy. Cambridge: Cambridge University Press, 1954.

Bohannan, Paul and Dalton, George, eds., *Markets in Africa,* Evanston: Northwestern University Press, 1963.

Chaturvedi, J. N., *Theory of Marketing in Underdeveloped Countries,* Allahabad, India: Kitab Mahal Publishers, 1959.

Dewey, Alice G., *Peasant Marketing in Java,* New York: The Free Press of Glencoe, 1962.

Dunbaugh, Frank Montgomery, *Marketing in Latin America,* New York. Printers' Ink Book Company, 1960.

Galbraith, John K. and Richard H. Holton, *Marketing Efficiency in Puerto Rico,* Cambridge: Harvard University Press, 1955.

Goldman, Marshall I., *Soviet Marketing: Distribution in a Controlled Economy,* New York: The Free Press of Glencoe, 1963.

Heilbronner, Robert L., *The Making of Economic Society,* Englewood Cliffs, N.J.: Prentice-Hall, 1962.

Hirsch, Leon, *Marketing in an Underdeveloped Economy: The North Indian Sugar Industry,* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.

Hurst, James Willard, *Law and Economic Growth,* Cambridge: Harvard University Press, 1964.

Jones, Fred M., *Middlemen in the Domestic Trade of the United States,* Urbana: University of Illinois, 1937.

Polanyi, Karl, Conrad M. Arsenberg, Harry W. Pearson, eds., *Trade and Market in the Early Empires,* Glencoe: The Free Press, 1957.

Tax, Sol, *Penny Capitalism: A Guatemalan Indian Economy,* Washington: Smithsonian Institution, Institute of Social Anthropology Publication No. 16, U.S. Government Printing Office, 1953. Reprinted by University of Chicago Press, 1963.

Prepared by WILLIAM L. MILLER.

Articles, Papers, and Chapters in Books

Abbott, J. C., "The Role of Marketing in the Development of Backward Agricultural Economies." *Journal of Farm Economics,* Vol. XLIV, May 1962, pp. 349-362.

Abbott, J. C., *Marketing Problems and Improvement Programs,* Marketing Guide #1, Rome: Food and Agricultural Organization of the United Nations, 1958. 260 pp.

Bauer, P. T. and B. S. Yamey, "Economic Progress and Occupational Distribution," *Economic Journal,* December 1951, pp. 741-755.

Bauer, P. T. and B. S. Yamey, "Competition and Prices: A Study of Groundnut Buying in Nigeria," *Economica,* February 1952, pp. 31-43.

Bauer, P. T., "Concentration in Tropical Trade: Some Aspects and Implications of Oligopoly," *Economica,* November 1953, pp. 302-321.

Bauer, P. T. and B. S. Yamey, "The Economics of Marketing Reform," *Journal of Political Economy,* Vol. 62, June 1954, pp. 210-235.

Boyd, Harper W., Jr., Richard M. Clewett and Ralph L. Westfall, "The Marketing Structure of Venezuela," *The Journal of Marketing,* Vol. 22, April 1958, pp. 391-397.

Boyd, Harper W., Jr., Abel Aziz El Sherbini, and Ahmed Fouad Sherif, "Channels of Distribution for Consumer Goods in Egypt," *Journal of Marketing,* Vol. 25, October 1961, pp. 26-33.

Clodius, Robert L. and Willard F. Mueller, "Market Structure Analysis as an Orientation for Research in Agricultural Economics," *Journal of Farm Economics,* Vol. XLIII, August 1961, pp. 515-553.

Collins, Norman R. and Richard H. Holton, "Programming Changes in Marketing in Planned Economic Development," *KYKLOS,* Vol. XVI, January 1963, pp. 123-136.

Cook, Hugh L., "Market Structure and Economic Development in the Philippines," *Journal of Farm Economics,* Vol. XLI, December 1959, pp. 1316-1322.

Drucker, Peter F., "Marketing and Economic Development," *Journal of Marketing,* Vol. 22, January 1958, pp. 252-259.

Edwards, C. D., "Size of Markets, Scale of Firms, and the Character of Competition," *Economic Consequences of the Size of Nations,* E. A. G. Robinson, ed., New York: St. Martin's Press, 1960, pp. 117-132.

Holton, R. H., "Marketing Structure and Economic Development," *Quarterly Journal of Economics,* Vol. LXVII, August 1953, pp. 344-361.

Holton, Richard, "Changing Demand and Consumption," in *Labor Commitment and Social Change in Developing Areas,* Wilbert Moore and Arnold Feldman, eds., New York: Social Science Research Council, 1960, pp. 201-216.

Holton, Richard H., "Economic Development and the Growth of the Trade Sector in Italy," *Banca Nazionale del Lavoro: Quarterly Review,* No. 62, September 1962, pp. 240-257.

Hoselitz, Bert F., "The Market Matrix," in *Labor Commitment and Social Change in Developing Areas,* Wilbert Moore and Arnold Feldman, eds., New York: Social Science Research Council, 1960, pp. 217-237.

Katzin, Margaret F., "The Business of Higgling in Jamaica," *Social and Economic Studies,* Vol. 9, September 1960, pp. 297-332.

Kindleberger, Charles P., *Economic Development,* New York: McGraw-Hill Book Company, Inc., 1958, Chapter 6, "Scale."

Martin, Lee R., "Some Marketing Problems in Pakistan and India," *Journal of Farm Economics,* Vol. XLI, December 1959, pp. 1323-1326.

Mehren, George L., "Market Organization and Economic Development," *Journal of Farm Economics,* Vol. XLI, December 1959, pp. 1307-1315.

Mintz, Sidney W., "The Jamaican Internal Marketing Pattern: Some Notes and Hypotheses," *Social and Economic Studies,* Vol. 4, March 1955, pp. 95-102.

Mintz, Sidney W., "Internal Market Systems as Mechanisms of Social Articulation," *Intermediate Societies, Social Mobility and Communication.* Proceedings of the 1959 Annual Spring Meeting of the American Ethonological Society, pp. 20-30.

Mueller, Willard F., "Some Market Structure Considerations in Economic Development," *Journal of Farm Economics,* Vol. XLI, May 1959, pp. 414-425.

Nicholls, W. H., "Domestic Trade in Underdeveloped Country—Turkey," *Journal of Political Economy,* December 1951, pp. 463-480.

Solomon, M., "The Structure of the Market in Underdeveloped Economies," *Quarterly Journal of Economics,* August 1948, pp. 519-541.

Stigler, George J., "The Division of Labor is Limited by the Extent of the Market," *The Journal of Political Economy,* Vol. LIX, June 1951, pp. 185-198.

Ward, Barbara E., "Cash or Credit Crops? An Examination of the Implications of Peasant Commercial Production with Special Reference to the Multiplicity of Traders and Middlemen," *Economic Development and Cultural Change,* Vol. 8, January 1960, pp. 148-163.

Wharton, C. R. Jr., "Marketing, Merchandising and Moneylending: A Note on Middleman Monopsony in Malaya," *Malayan Economic Review,* Vol. VII, October 1962, pp. 24-44.

Westfall, Ralph and Harper W. Boyd, Jr., "Marketing in India," *Journal of Marketing,* Vol. 25, October 1960, pp. 11-17.

Bibliography

UN, FAO, Bibliography of Food and Agricultural Marketing, 1950-1962. This is a loose-leaf notebook of marketing publications on a world-wide scale. Annual supplements are issued to keep the bibliography up to date.

PART II

Firm Behavior and Adjustment Processes in Agricultural Markets

CHAPTER 4

The Firm as a Focal Point in Market Analysis

THE previous chapters have dealt with questions related to the role of markets within the total structure of human relations and the role of exchange systems in initiating or accelerating economic development and growth. When viewed in this broad framework, it is apparent that exchange systems involve a diverse set of linkages between social and economic variables. Further, the nature of the variables and interrelationships among them differ between societies, and change within a society through time. Some systems are guided primarily by direct governmental planning, while others are coordinated more via a bargained market exchange system where market processes are initiated and implemented by individual producers, distributors, and consumers. These processes are carried on within the framework of a set of rules of the game maintained by a democratic government. This latter form of market, and particularly those markets that function in agriculture, are the primary concern of the remainder of this volume.

The study of marketing in this framework has been approached in various ways by different authors. Some have used an institutional approach, others a functional one, while still others emphasize price analysis. Our choice is to emphasize the firm as a dynamic behavioral unit whose actions will influence and in large part determine the outcomes or kind of market performance attained. Study of firm behavior also provides insight into the nature of dynamic processes and interactions (linkages) that bring about both short-run and long-run market adjustment. Firms undertake courses of action related to pricing, production, and other factors that determine what product is produced, how income is distributed, and how prices are established. They also take action to grow, integrate, diversify, and adopt new technology that will lead to

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change in market organization, improved production techniques, and higher performance levels.

Rarely are the actions taken by firms confined solely to any one of these effects. Pricing and output behavior, for example, may reflect monopolistic power that has the short-run effect of increasing marketing margins and food costs, and of increasing the flow of income to those who have the monopolistic power. The accumulation of monopoly profits may, however, represent the basis for accumulating investment funds needed to expand output and improve production techniques in future periods. In another situation, it is apparent that the economic behavior of American farmers has led to low incomes, a market result that in the short run may be judged as undesirable. The longer-term consequences of relatively inexpensive food, however, may be substantial in its impact on general economic growth and development.

Though the composite of firm action cannot be summed up as a complete description of overall market results, it is possible to look at specific actions and relate the consequence of these actions to market performance. Pricing decisions by processors, wholesalers, and retailers, for example, will have some impact on the level of market margins that exist between farmers and retailers. Product development and innovation by farm supply firms have a direct influence on the technology available to farmers, and as such will influence the overall supply of farm products and the organization of farm businesses. Production decisions by farmers have an immediate impact on farm prices and in turn on income allocation within the market. Product development, promotion, and merchandising practices by processors and retailers affect the composition and level of food expenditures by consumers. Other actions taken by producer units in the market will influence such things as economic growth, stability, income distribution, the kind of product and services produced, and other relevant performance characteristics.

The study of the firm can be approached in many different ways. Depending on the purpose, the main body of concepts that guide the analysis may be sociological, organizational, economic, or engineering. Each of these approaches provides the basis for insight into certain kinds of problems, but one must attempt to simplify and abstract from other elements of the composite that makes up the total of the firm. Price theory, for example, plays an important role in analyzing the price-production behavior of firms. Its usefulness, however, is limited by the framework of assumptions involved, including those related to the nature of interdependence among firms in the market. In studying agricultural markets we are interested in several kinds of actions that firms en-

gage in—not just pricing and short-run competitive behavior by profit maximizing firms. To do this we need an analytical framework broad enough to recognize the relevance of available theory that can be applied in each case and also to provide a way of taking account of real-life phenomena that will affect firm behavior. Since management is that part of the firm that determines its courses of action, the nature and role of management must be considered to effectively evaluate various kinds of behavioral situations.

The problem of looking at firm behavior and the managerial processes is complex. This complexity reflects the many dimensions in the firm's internal structure and its environment that must be taken into account in attempting to explain behavior. Many variables have to be considered jointly. Also, it reflects the fact that decisions are made in a dynamic world, and this must be taken into account in developing principles of managerial behavior.

Variables Relevant to Appraising Firm Behavior

The variables relevant to looking at firm behavior can be put into three general categories: outcomes, behavioral variables, and a set of variables that specify the internal and external conditions facing the firm.

The outcomes that the firm attains include its rate of earnings or profits, cost levels, market penetration, market power, organizational adjustment, or other results that follow from the actions taken.

The behavioral variables are those factors that can be manipulated by the firm to attain ends sought. These include such things as price, amount and type of production, amount and kind of promotion, firm size and organization, and numerous other things.

The choice of actions taken and procedures established by the firm, as well as the results attained, will in turn be influenced by internal and external conditions. The internal and external conditions or situations that influence behavior and outcomes will vary widely in content and in importance among societies as well as among firms and industries within a society. Though this diversity presents a problem in developing an adequate classification with sufficient detail to fit all circumstances, several general classes of variables are relevant in most circumstances. Internal variables include: the kind and quantity of resources available, organizational structure of the firm and the goals or objectives sought by management. The environmental phenomena that firms must deal with in charting courses of action can be classified into four general categories: physical environment, government and institutional environment, cultural environment, and economic and market environment.

In a static system, the management of the firm would consider the relevant internal and external variables, make a decision, and carry out a course of action based on the decision. The action taken (possibly conditioned by external factors) would determine the outcome. These statements follow from our understanding of static economic theory, the usual assumptions of which are as follows:

1. *Constant production functions.* The state of the arts is constant—input-output relationships are such that a given set of inputs always produces the same output. This implies that there are no changes in technology and no random elements influencing input-output relationships.
2. *Fixed utility functions.* Tastes, preferences, and habits remain unchanged.
3. *Fixed institutional framework.* The framework itself varies in different parts of the world, but whatever the framework, it remains constant over time.
4. *Motivational assumptions.* Goals or objectives are taken as given. The usual assumptions are that firms follow rational behavior directed toward maximization of monetary profits, and that households follow rational behavior directed toward maximization of utility.
5. *Perfect knowledge and foresight.*

The importance of change. The existence of change is the most noteworthy feature of the dynamic world in which agricultural marketing firms operate. Changes may occur slowly or rapidly. They may come in spurts or in a steady flow. But in any case, changes are inevitable.

Any of the variables in the firm's environment may change at any time. Invention and innovation result in new production and marketing technology. Introduction of new products, advertising, and other factors result in shifts in consumer tastes and preferences. As a result, utility functions shift. Actions of government in the form of changes in tax laws and changes in laws to regulate competition and in other ways to alter the rules of the market result in changes in the institutional framework.

The nature and extent of changes in environment will depend upon the degree of stability or consistency in the physical, governmental, cultural and economic environment in which the firm is operating. For example, there will be more change in supply of farm products available from year to year in a semi-arid than in a humid region. More change will take place in a young, vigorous, growing nation than in an older one.

While we have focused attention on changes in the environment, we

should note also that changes take place within the firm. There may be changes in inventories, in personnel, in production or merchandising techniques, and in the goals and objectives sought. These changes take place partly as a result of the direct impact of events in the environment. They come about partly because of the firm's reacting and adjusting to the environment.

Limits of man's perceptive abilities. Man is limited in his ability to perceive, process, and interpret information. He cannot comprehend all the facts that are directed toward him. Values, attitudes, and beliefs serve as a screen and make it more difficult for him to see the nature of reality.[1] Since he cannot perceive all that there is to be known in his environment, man necessarily makes decisions with knowledge of only a limited number of the objective alternatives open to him, and with limited information regarding the alternatives he does consider.

Previously, we pointed out that change occurs in the firm's environment. Thus the future will be different from the past or present. If man is unable to obtain accurate knowledge of the past and present, he cannot accurately project into the future.

The importance of uncertainty. Change (plus values, beliefs and limitations on man's perceptual abilities) leads to imperfect knowledge and imperfect foresight. Lack of perfect knowledge and foresight leads to uncertainty.[2] Uncertainty leads to problems of goal formulation: of estimating consequences of action and developing appropriate strategies. Imperfect knowledge and uncertainty may exist about any of the variables that enter into the decision process. Some important examples are these:

1. Uncertainty can exist about what goals or objectives should be sought.
2. There may be uncertainty regarding existing circumstances, especially in the environment, but also to some extent within the firm.
3. There may be uncertainty regarding the consequences because of unpredictable external factors.
4. Uncertainty is frequently associated with factors which directly affect the outcome of a decision or action. This particular type of uncertainty may be the result of the compounding of two subtypes of uncertainty. One is the uncertainty regarding the causative factor itself. The other is uncertainty about the relationship between the causative factor and the outcome of action. For example, a businessman attempting to merchandise goods where purchases are in some way related to consumers' income levels may be

uncertain about both prospective income levels and the nature of the relationship between income and expenditures on the item in question.

The amount and nature of uncertainty are closely related to the amount and nature of change faced by the firm. The amount of change is in turn dependent upon the circumstances such as the market, economy, or society in which the firm is operating.

Need for the management function. If man's perceptive abilities were keener, if certainty of knowledge existed and if static conditions prevailed, the analytical insights and predictability possible with static analysis would be adequate. Through the use of static analysis of cause and effect relationships, firms could organize so as to maximize a fully specified and known profit or utility function. Optimum pricing, firm organization, input combinations, plant location, product development, promotion, and firm behavior could be determined and followed after a modest initial input of planning.

The fact that change is constantly occurring means that decisions must be made and actions taken by the firm even though the future cannot be seen clearly and uncertainty exists. Businessmen recognize that random elements will occur and that outcomes will not always be as projected. Changes of various kinds create problems or present opportunities to the firm. They provide occasion for, or (in some cases) demand, reaction from the firm. The firm must perceive, react to, and in some cases attempt to control its environment. The problem is to develop actions that most nearly fulfill goals in a dynamic setting, and frequently to make adjustments in the goals themselves. These demands on the firm bring forth the need for the function of management.

The decisions made and the courses of action carried out by the firm result in the production and marketing behavior emphasized in the following chapters of Part II. It is managerial behavior that determines what form production and marketing behavior will take.

The Functions of Management

By drawing on theories of management, informal observation of managerial behavior, and formal studies of management, we can construct a statement of its functions.

Formulating the goals of the firm. In a world of change and uncertainty businessmen must formulate both normative and factual concepts; these then must be transmuted into realistic goals which form part of the basis for action. Goal formulation consists of deciding on both the overall goals

of the firm and the guiding motives for specific actions within the overall framework of firm goals.

Profit maximization is assumed to be an important goal of the firm. But firms may have other goals. From his study of business behavior, McDonald reports that businessmen are torn between the desire for profits and the desire for control, power, or prestige.[3] He observes that the objectives of firms themselves may involve a complex of desires: the firm's goals may be made up of a combination of objectives, some complementary, some competitive. For example, there may be question of profits in the long run versus profits in the short run, larger riskier profits versus smaller safer ones. Not only may firms have a multiplicity of complementary and competing goals, but the goals themselves are subject to change from time to time.

Also, under many circumstances, there may be a number of means through which the goals can be attained satisfactorily. This implies that, even in objective terms, unique "correct solutions" for goal attainment may be difficult or impossible to determine. Business decisions are made at specific times for specific purposes and will be influenced directly by those goals that are particularly relevant to decisions being made. In evaluating firm behavior, then, it is necessary to know something about what goals are most relevant to certain kinds of actions, how they vary through time within the firm, and how they vary among firms.

Recognizing problems and opportunities. To recognize problems and opportunities created by changes in the environment or arising because of unexpected outcomes is one of the very important responsibilities of management. The opportunities are of many sorts: they may consist of production adjustment in the short run, but also may include plans for acquiring additional resources to permit the firm to expand and adjust to changing conditions. If problems are not seen or opportunities are not discovered by management, then desirable action will not be taken. Recognition of problems or opportunities may be an important factor motivating management to further managerial activity. When problems are perceived, an additional responsibility of management is to specify the problems in terms that are clear and specific enough so that the problem can be solved.

Obtaining information and analyzing alternative lines of action. It is management's responsibility to decide what alternative lines of action are feasible, and to analyze these alternatives in search of the alternative or alternatives that will most nearly fulfill the firm's goals. This will usually require obtaining and analyzing data and formulating expectations about

future events. Expectations may need to be formulated about any of the internal or external variables outlined above—for example, expectations regarding new technology, prospective prices of both inputs and outputs, and prospective actions and reactions of competitors. Since expectations are normally subjective judgments, the nature of the individual making the judgment may be an important factor influencing behavior.[4]

Making decisions. One of the key functions of management is making decisions—deciding on appropriate actions on the part of the firm. In the process of decision making, goals and policies of the firm come into play as well as personal preferences and attitudes toward risk and uncertainty.

The actions taken by a firm may have various kinds of consequences. Actions which have an impact only upon a single variable, such as profits, costs, labor, or any other, are probably largely atypical. Thus, an alternative line of action may have both advantages and disadvantages. One alternative may lead to attainment of one goal and, at the same time, make the attainment of another goal more difficult. Or it may contribute modestly to the attainment of each of several goals.

Management must decide on strategies for dealing with uncertainty and unexpected outcomes. In general, strategies relate to efforts either to deal with unexpected or unpredicted events or outcomes, or with efforts to reduce the range of possible outcomes. Buying insurance is an example of a strategy to deal with an unexpected event. Building in flexibility, diversifying, and integrating are examples of strategies often used to reduce the range of possible outcomes. Other strategies may consist of acquiring market power, exerting monopoly behavior, increasing scale, and exerting social or political influence to obtain action that will be to the benefit of the firm and reduce uncertainty.

The strategies actually employed will depend on such things as ability to withstand risk, the objectives being sought, and the kind of managerial resources available. Rules of thumb and procedures and methods of operation which seem to work are often adopted. These procedures are adopted both because they eliminate uncertainties that may go along with diffferent types of action, and because they avoid the need to commit large amounts of managerial resources to the process of obtaining, evaluating, and analyzing data in order to make decisions.

Taking action and accepting responsibility. Implementing decisions may, among other things, involve communication, coordination, and supervision of business activity. Management must also accept responsibility for the consequences of the actions taken, evaluate outcomes, and provide feedback information for future decisions and action.

The Managerial Process

It should be emphasized that these functions are all closely interrelated parts of an overall process. There is need for more emphasis on certain of the managerial functions in some situations, and for more emphasis on other functions under other conditions.

Given the objectives of the unit, managers react to both internal and external stimuli in determining courses of action. The way in which they react depends a good deal upon the competence, interests, drives, and attitudes of the manager or the managerial unit. Some managers can perform some managerial functions better than other functions. Some obviously can perform all of the functions better than other managers. The success of the firm and returns to management depend on how management reacts to and handles problem situations. Inefficiencies may result from inadequate reaction to uncertainty as well as failure to recognize that a problem or opportunity exists.

When the functions of management are considered, it becomes apparent that the problem of resource adjustment in the firm is broader than that of obtaining optimal use of the physical production inputs. The acquisition and utilization of physical and managerial resources must be planned jointly; they are interrelated within the firm and in turn must be related to the environment within which the firm operates. Because firms employ various kinds of human as well as physical resources, they are able not only to produce commodities but also to engage in such activities as creative research, salesmanship, lobbying and otherwise influencing the range of available productive opportunities.

Organization of Management

The overall organization of the firm includes the organization of the managerial unit. The type of organization will be dictated largely by the size and kind of firm and the environment in which it operates. Within the managerial unit itself there may be varying kinds of hierarchies and degrees of specialization. Management can be viewed as an organizational phenomenon in which communication and interaction among people become important. This is especially true in large firms.

Agricultural markets include business enterprises ranging from the small entrepreneurial firm to the larger integrated firm with highly developed managerial structures that often embody a variety of legal, technical and information gathering skills. The dominant characteristic of managerial resources in smaller firms may be its general inadequacy. Level of competence and personality factors of the personnel in the managerial unit are important in any size of firm, but the problem may be

more acute in smaller firms. Moreover, in small firms specialized interests and knowledge are often associated with a commodity focus; this frame of reference limits the basis for recognizing problems and making adjustments.

Large firms, on the other hand, that tend to dominate performance in some agricultural markets, are probably characterized by quite a different situation. In very large firms, the accumulation of both specialized knowledge and general competence at higher levels is necessary. Special competence in commodity problems may be available and also the ability to raise funds, handle legal problems, and carry out research and accounting activities. Within a large specialized management group, the potential for growth in ability to perform managerial services is very substantial. Specialization is usually associated with the development of economies of scale in the use of physical resources. At the managerial level, there is some indication that economies of scale are fully as relevant as with physical resources. These economies of scale in fact may motivate firms to expand well beyond the limits where technical economies in plant are available. Knowledge comes to people in two different ways: through the formal learning process, and through the informal process of experience. If one hypothesizes that the process of solving problems in business cannot be undertaken without some learning that will forever remain as intellectual capital in the managerial group, then it would seem to follow that the managerial resources tend to grow. Only in the case where the level of managerial resource is held constant (for example, one person in an entrepreneurial firm) would increasing costs arise because of managerial limitation. But this is due to shifting the proportions between managerial resources and other resources employed in the production process, and hence, in economic terms, is a short-run and not a scale phenomenon.

Further, since managerial resources tend to be nonspecialized and can be used in many different ways, firms have a tendency to expand either vertically or horizontally beyond the confines of a single market or market group, due to the economies of management that result.

Legal organization and control also make up an important variable that may influence the decisions made by management. Where individual proprietorship exists, the owner is the entrepreneur and manager, and by virtue of exclusive ownership and responsibility of management determines the objectives and actions of the firm. Except in farming itself, however, this is not the predominant basis for firm organization in agricultural markets. Both the corporation and the cooperative are normally organized on a joint stock basis with ownership participation con-

firmed in a certificate share arrangement. Though primarily a device for associated ownership, the corporation and cooperative both establish the basis for the delegation of powers and obligations of control to professional management. The separation of ownership and control suggests a number of hypotheses. One is that management policy may be tempered somewhat by the pursuit of individual interests by the management group. A second and more extreme possibility is that management may view itself as an impersonal professional administration group with obligations to numerous other groups, of which shareholders, or members in the case of a cooperative, are only one. These other groups may include labor unions, bankers, consumers, government, and in some cases the social community in its entirety.

Questions of ownership and management interrelationships and how they affect the motivations of management are intriguing. A distinction can and probably should be made between private entrepreneurship, the corporation that is controlled either by professional management, or by a capital stock interest group motivated by return on investment, and the cooperative, where the return is directly related to the extent of participation in the operation of the business.

The Need for a Dynamic Model

As previously mentioned, static economic theory is useful in explaining certain aspects of business behavior. Even so, it is true that in order to understand the behavior of marketing firms in a complex dynamic world, most of the assumptions of static economics must be relaxed. The concept of equilibrium—even moving equilibrium—is not adequate to deal with problems of adjustment to continuous change.

Several writers have made contributions to the development of dynamic theories relating to firm behavior.[5] As yet there have been few empirical applications of the theories, and even the most complete models cannot handle the large number of change variables faced by firms operating in a dynamic setting.

Two approaches to dynamic analysis are to study how managers handle unexplained residuals (such as through insurance schemes) and to study the efforts of management to reduce unexplained residuals (such as spending time and money to obtain more information). The latter concept of dynamics focuses attention on the learning aspect of management.[6]

In a dynamic situation, behavioral variables are seldom manipulated independently. Frequently two or more of them are necessarily adjusted at the same time. Also, in a dynamic setting, cause and effect relationships do not move in one direction only. Pricing, for example, influences

profit levels, which in turn change the resource base with which the firm has to work. In addition, interrelationships exist among the causative factors.

The nature of the dynamic relationships depends upon the particular internal and environmental framework faced by the firm. For example, the competitive situation has important influence on what actions or reactions may be appropriate. For a firm operating under conditions of perfect competition, price of output must be taken as a factor given by the environment. A firm with monopolistic power may choose to manipulate either price or output as decision variables. In an imperfectly competitive situation, firms may also have important interactions with competitors that do not exist in a purely competitive market.

Summary

Firms in pursuit of their objectives undertake a number of activities ranging from those with implications for internal adjustment only to those aimed at influencing market position and general environment. This book, however, is not concerned directly with the entire range of actions that compose the firm's plan of operation. We are concerned only with those that have the most direct application in assessing how agricultural markets perform and adjust. The present chapter has outlined the conceptual framework built upon in the following chapters. The specific areas of firm behavior dealt with include price-output behavior, promotion, new product development and product competition, firm growth and integration, and the nature of group activity in agricultural markets.

CHAPTER 5

Market Structure Variables And the Analysis of Firm Behavior

IT was pointed out in the previous chapter that economic and market environment are important variables conditioning the behavior of firms. Market factors, including supply-demand conditions and competitive interrelationships, often represent the most volatile aspect of the firm's environment, and force continual adjustment and readjustment of production and merchandising plans. Recently several writers have pointed out the major differences in the competitive organization of agricultural industries throughout the world. In the United States, particular attention has been given to the on-going changes centered around the development of mass retailing, and the related changes in the industrial structure.

When viewed in worldwide perspective, it is apparent that food production, processing, and distribution are carried on in a variety of economic and market settings. These vary from the primitive economy of isolated family or tribal groups, where output consists of goods and services consumed within the system, to the highly specialized complex of agricultural industries, where the tasks of organizing economic activity are strongly influenced by exchange in an impersonal market. One aspect of market analysis in this kind of a setting tends to focus on the question of how various kinds of market structures influence the competitive behavior of firms with respect to output, pricing and other decisions. As a result, we become concerned with supply-demand relationships, the nature of firm and industry organization, the basis and distribution of market power, and the relation of each to market results.

Economic theory, a body of knowledge developed over time, is useful in understanding and making predictions about economic phenomena. Given certain assumptions about the goals of individuals and firms, it is possible to deduce expected results about individual or firm behavior. Theory provides a framework in that it directs our attention to variables,

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including those related to the composition or structure of the market, which are important in understanding economic relationships. In order to better appreciate the role of theory, and because we rely heavily on it in fulfilling the objectives of this chapter, we begin with a brief discussion of the method of positive economics.

The Method of Positive Economics

Friedman states, "The ultimate goal of a positive science is the development of a 'theory' or 'hypothesis' that yields valid and meaningful (i.e., not truistic) predictions about phenomena not yet observed."[1] The method used in the development of such theory usually follows the steps of observation, abstraction, deduction, testing, and confirmation or rejection.

An illustration at this point may be a useful aid to understanding the method of positive economics. Suppose we are interested in explaining and predicting changes in the quantity of a specific product that will be supplied by individual firms. We might begin by drawing on observation and experience to suggest that the quantity of a product that a firm will be willing to supply depends on the price of the product, the cost of factors used in production, the price of products which are substitutes in production, and the technical relations specifying the quantity of output obtainable from given combinations of inputs. In suggesting certain variables that may be important in explaining the phenomena of firm supply, we are in effect abstracting from a very large number of variables that may in some way influence firm supply. We also abstract from particular circumstances surrounding each individual firm. We do not explicitly mention such things as customs and traditions, the tax structure, or the legal framework. The assumption is not that these factors are unimportant, but that in the particular setting of the problem being considered it is reasonable to assume that they will not change or will change very little.

In addition to selecting a few variables believed (assumed) to be important in predicting firm supply, it is necessary to know something about the goals of firm managers. Here again we may draw on observation and experience to suggest that there is a general tendency to maximize profits. In practice we make a further simplification or abstraction and state as a postulate of the problem that the goal of firm managers is to maximize profits.

The first step then in the method of positive economics is to simplify, to abstract from the multitude of potential influences, to make the problem manageable. Furthermore, this is a requisite of useful theory. A

theory is useful "if it 'explains' much by little, that is, if it abstracts the common and crucial elements from the mass of complex and detailed circumstances surrounding the phenomena to be explained and permits valid prediction on the basis of them alone."[2]

Deduction is the second step in the method of positive economics. Based on the assumptions or underlying hypotheses set forth in the first step, we deduce expected results. In the example being considered we can deduce that at any point in time profits will be maximized if:

$$(1) \qquad \frac{MVP_{x_1}(y_1)}{P_{x_1}} = \frac{MVP_{x_2}(y_1)}{P_{x_2}} = \cdots = \frac{MVP_{x_n}(y_1)}{P_x} = 1$$

and

$$(2) \qquad \frac{MVP_{x_i}(y_1)}{P_{x_i}} = \frac{MVP_{x_i}(y_2)}{P_{x_i}} = \cdots = \frac{MVP_{x_i}(y_m)}{P_{x_i}} = 1$$

where for example MVP_{X1} (y_1) stands for the marginal value product of input x_1 in the production of product y_1; P_{X1} stands for the price of factor x_1 and there are n factors and m products.[3] We can also deduce that: (1) An increase in the price of input X_1, other things remaining unchanged, would lead to a decrease in the quantity of X_1 used in production. (2) An increase in the price of all inputs, other things remaining unchanged, would lead to a decrease in the quantity of a product that a firm would be willing to supply. (3) An increase in the price of a product, other things remaining unchanged, would lead to an increase in the quantity of the product that a firm would be willing to supply. (4) New knowledge of the kind that enables firms to obtain an increase in useful output per unit of input, other things remaining unchanged, would lead to an increase in the quantity of a product which a firm would be willing to supply.

Such deduced results form the basis for substantive hypotheses which may then be tested empirically. If upon testing a hypothesis, using evidence not previously observed, we find the evidence to be consistent with the prediction of the hypothesis, we say it is confirmed; if inconsistent we say it is rejected. A hypothesis or theory can never be proved; we can never be certain it is true. However, repeated confirmations of a hypothesis or theory, over time and covering a wide range of the phenomena to be explained, lead to greater confidence in the theory.

The subject matter of the remainder of this chapter lies in the area of positive economics. The primary objective is to identify and discuss those factors which influence firm price and output behavior, and hence market results. In this endeavor we shall draw heavily on the central body

of economic theory. We will present those parts of the framework, developed over time, which have proved useful in explaining and making predictions about a broad range of economic phenomena.

The Framework for Demand-Supply Analysis

Each firm may be viewed as operating in at least two markets, more likely in two sets of markets: one in which it is a seller and one in which it is a buyer. We are interested in identifying those factors related to the structure or composition of the market, within a particular social setting, which tend to explain firm output behavior and the price at which a given quantity of a product is exchanged.

First, let us focus on the firm as a seller. In other words, from the viewpoint of the firm we will be looking at the firm's product market. This could be a market in which a farm firm sells wheat to a local elevator, a market in which a miller sells wheat flour to a baker, or a place called a supermarket where a food retailer sells bread to a housewife. The first two product markets are often referred to as *intermediate product markets,* whereas the market involving the housewife or ultimate consumer is called a *final product market.*

Each of these firms can be viewed as approaching its product market with a supply schedule. The quantity of product which each firm will be willing to supply depends on or is a function of a large number of variables. For a broad range of supply phenomena, repeated testing has consistently confirmed that the quantity of a product a firm will supply depends primarily upon the price of product, the prices of other products which the firm can produce, the prices of factors of production, and the state of the arts. Using functional notation this can be expressed as:

$$Y = f(P_y, X_1, X_2, X_3) \tag{1}$$

where:

- Y stands for the quantity of product Y
- f stands for the specific functional relationship, which depends on existing technology
- P_y stands for the price of product Y
- X_1 represents the prices of other products which the firm can produce
- X_2 represents the prices of factors of production, and
- X_3 represents other variables (e.g. weather, social variables) which may affect the quantity of Y produced.

Equation (1) is the supply function for an individual firm. The industry supply function is an aggregation of all firm supply functions for product Y.

But what are the price and the corresponding quantity which will prevail in the market? Thus far we have mentioned only factors affecting supply. This is one side of the picture; the other side concerns demand. The demand schedule facing a firm in its product market is also a function of a large number of variables. In final product markets, repeated testing has consistently confirmed that for a broad class of demand phenomena the quantity of a product which a consumer will purchase depends primarily on the price of the product, the prices of products which are substitutes in consumption, income, wealth, and tastes and preferences. In functional notation this can be expressed as:

$$Y = g(P_y, Z_1, Z_2, Z_3, Z_4) \tag{2}$$

where:

- Y stands for the quantity of product Y
- g stands for the specific functional relationship, which depends on tastes and preferences
- P_y stands for price of product Y
- Z_1 represents the prices of products which are substitutes in consumption
- Z_2 stands for income
- Z_3 stands for wealth, and
- Z_4 represents other variables (e.g. customs, traditions, social variables) which may affect the quantity of Y demanded.

Equation (2) is the demand function of an individual or household. To get the total demand for product Y, we add together the quantities demanded by individuals.

Frequently in deducing expected results we conceive of holding constant all except one of the variables affecting the quantity that would be supplied or demanded. In actual estimating procedures we may adjust for all except one of the variables. In each case the desire is to remove the influence of other variables in order to examine the specific effect of one variable, say the price of the product, P_y, on the quantity supplied or demanded. A shorthand notation is the following:

$$Y = F(P_y \mid X_1, X_2, X_3) \tag{3}$$

$$Y = G(P_y \mid Z_1, Z_2, Z_3, Z_4) \tag{4}$$

Equation (3) reads: the quantity of Y that the industry would be willing to supply is a function of P_y *given* or *holding constant* X_1, X_2 and X_3. Equation (4) refers to industry demand and should be interpreted in a similar manner.

Figure 2 shows the familiar supply and demand diagram with the equilibrium price and quantity, P_{y_0} and Y_0, respectively. We can think

of obtaining the industry supply curve SS from Equation (3) by observing particular values of the price variable, P_y, and the corresponding quantities of Y which are supplied. Similarly, if we permit the price variable P_y to vary in Equation (4) and observe the quantities that are demanded at various prices, we can obtain the industry demand curve DD. Presenting the simple demand and supply curves in this way makes

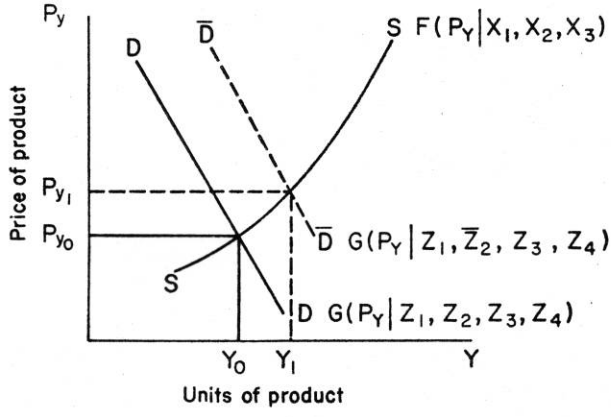


FIGURE 2. Hypothetical market supply-demand.

clear an important assumption which must be made either implicitly or explicitly whenever we draw such curves or consider such relationships: *all* variables affecting the quantity supplied or demanded, except product price, are being held constant.

In an entirely analogous manner we can conceive of varying one of the X_i while holding the other variables, including P_y, constant and investigate the relationship between X_i and Y. Similarly, we can study the demand relationship between Z_i and Y and present it in a two-dimensional diagram. An example is the income demand curve, which is the relationship between Z_2 and Y.

Returning now to Figure 2 and remembering that in terms of market results we are particularly interested in price and quantity, let us consider the effect on DD of a change in one of the Z_i. Suppose, for example, that per capita income, Z_2, increases to $\overline{Z}_2$. This means that the relevant function is $Y=G(P_y|Z_1, \overline{Z}_2, Z_3, Z_4)$. If Y is a superior good, that is if the income elasticity of demand is greater than zero, then we would expect the new demand curve to lie to the right of DD. In other words, for any level of P_y consumers will demand a larger quantity of Y when per capita income is $\overline{Z}_2$ than when it is Z_2. The new equilibrium price and quantity are P_{y_1} and Y_1, respectively.

The Variables of Market Structure

The foregoing has been presented as a generic framework for economic analysis. The variables mentioned explicitly are among those which are most important in explaining price-output behavior and market results in a broad range of market situations.

The relationship between cause and effect variables and the kind of market results obtained, however, may differ widely, depending on the composition or structure of individual markets to which analysis is being applied.

To obtain insight into the reason for these differences and into the influence of certain market characteristics on price-output behavior, we turn now to a consideration of what are sometimes referred to as market structure variables. These are variables related to the composition of markets that tend to affect firm price-output behavior and market results. Some of the more important market structure variables are the number of sellers, the number of buyers, substitute products or inputs, complementary products or inputs, and conditions influencing entry.

The Number of Sellers

The number of sellers or firms in a given market directly affects the price elasticity of demand facing each firm, and hence the extent to which a firm can influence the price it receives by changing its output. At one extreme is the market in which there is only one seller, a monopolist. In this case, the industry demand is also the demand facing the firm. The decrease in price resulting from an increment to the firm's output will depend on the industry elasticity of demand. At the other extreme is the market in which there are a large number of sellers or competitive firms. In such markets the demand curve facing each firm, individually, is considered to be almost perfectly elastic. This means that a change in output of one firm has no effect on the price received by that firm. In general the larger the number of sellers in a given market, the more elastic will be the demand facing each seller and, therefore, the smaller will be the change in price resulting from a change in an individual firm's output.

The monopoly model (one seller). In Figure 3 let *DD* represent the demand curve for an industry in which there is a large number of buyers. Assume that there is only one firm producing product Y and that *ss* is that firm's marginal cost curve. *MR* is the firm's marginal revenue curve. In this situation we would expect that a profit-maximizing firm would produce at the point where marginal revenue equals marginal cost. Therefore, this firm would produce and sell quantity Y_1 at price P_{Y_1}.

If the firm produced more than Y_1, say Y_2, the addition to total revenue would be the area under the marginal revenue curve between Y_1 and Y_2. The addition to total revenue would be less than the addition to total cost, the area under the marginal cost curve between Y_1 and Y_2, and hence total revenue would be less at Y_2 than at Y_1. Similarly, one can reason that the profit-maximizing monopolist would not produce less than Y_1.

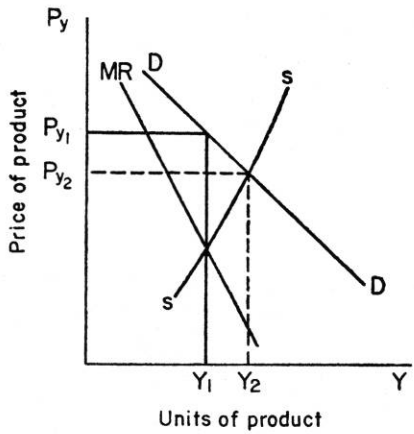


FIGURE 3. Price-quantity adjustment with monopoly.

The competitive model (many sellers). For purposes of comparing the market results of the monopoly model with the results of the competitive model, let the industry demand curve *DD* be the same in Figure 4 as in Figure 3. In addition, let the industry supply curve *SS* in Figure 4 show the same quantity supplied at any price as did the monopolist's marginal cost curve, *ss*, in Figure 3. The curve *SS* represents an aggregation of firm supply curves where there are a large number of firms producing product *Y*. Therefore, we are now looking at a model of a market in which there are a large number of both buyers and sellers.

Figure 5 shows the supply and demand curves of a typical firm producing *Y*.[4] The demand facing the firm, *dd*, is shown to be perfectly elastic at the level of the equilibrium price in the industry. This is the result that would be approached in a market where the number of firms is sufficiently large for no individual firm to be able to affect its price by changing the quantity of the product it produces. Hence the individual firm is a price taker and maximizes profits by producing at the point where price equals marginal costs.

While a single competitive firm cannot affect the price it receives, a decrease in factor prices, a decrease in the price of products which are substitutes in production, or an improvement in technology are among the changes which would shift to the right supply curves of all firms in the industry and consequently the industry supply curve *SS*. If demand remains unchanged, the industry equilibrium price would fall, and as a result the demand curve facing each firm will shift downward to the level of the new industry equilibrium price.

What are some of the implications for firm behavior and market results of the number of sellers in a market? A comparison of the two extremes, the monopoly model and the competitive model, suggests that in terms of market behavior a firm which is the only seller in a market can affect the price it receives and will maximize profits in the short run

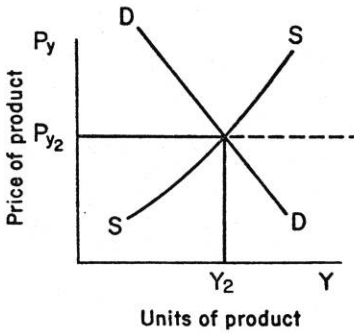


FIGURE 4. Industry demand and supply, competitive product market.

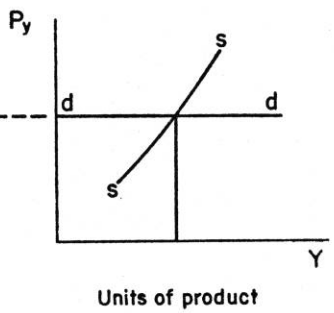


FIGURE 5. Firm demand and supply, competitive product market.

by producing where marginal revenue is equal to marginal cost. A firm which is only one of a large number of sellers has no affect on the price it receives; more practically, the effect of a change in its output upon price received is so small as to be considered negligible, and thus the firm will maximize profits by producing where the price of the product equals marginal cost.

In terms of market results a comparison of Figures 3 and 4 reveals that in a monopolistic market, in contrast to a competitive market, we would expect the equilibrium price to be higher, and the equilibrium quantity to be lower.

This result is the basis for an important objection to the existence of monopolies. The objection is that monopolies lead to an inefficient allocation of resources. One way to view this is the following. The area under the *MR* curve (Figure 3) is equal to total revenue or total private benefits

(these are the benefits which accrue to the monopolist), the area under the demand curve is equal to total social benefits, and the area under the marginal cost curve (assuming the monopolist is one of many buyers in its factor markets) represents both total private costs and total social costs. The monopolist maximizes profit at output Y_1, where marginal private benefits equal marginal cost. However, at this level of output social benefits are greater than social costs, so that if output is increased beyond Y_1 the increase in total social benefits exceeds the increase in total social costs. Hence from the standpoint of society it would be "profitable" to employ additional resources in the production of Y, up to the point where added social cost and added social benefits, resulting from the last increment of output, are just equal. In Figure 3, this is output Y_2, corresponding exactly to the quantity of product which would be forthcoming if there were many sellers in the market (Figure 4).

The effect of the number of sellers in a market upon firm behavior and market results is not limited to those differences derived from the ability of the single seller to affect the price it receives by varying its output.[5]

First, the monopolistic firm may find it possible to treat various buyers differently. This practice, commonly referred to as price discrimination, is discussed in Chapter 6.

Second, the monopolist will probably find it necessary to consider the possibility of other firms' entering the monopolized market and may take action to prevent entry. Competition could take the form of other firms producing the same product or of firms producing products which are good substitutes. The effect on firm demand curves of the number of substitute products and the degree of substitutability are discussed later in this chapter. The importance of substitutes as it relates to the behavior of a monopolist is simply that the existence of a large number of poor substitutes or a few good substitutes may mean that market results will approach those which would obtain if, in fact, the market were competitive. The possibility that other firms may enter the market or develop substitute products, the threat of antitrust action, and other factors may prevent a monopolist from attempting to maximize profits in the short run. Hence even when we find a market in which there is a single seller we cannot be sure that the results differ greatly from those which would prevail if the market were competitive (that is, had many sellers).

Third, the monopolist may attempt to change the demand curve for his product. Frequently this involves the use of advertising and some means of further differentiating his product.

This discussion of the number of sellers in a market and the effect on firm behavior and market results has focused on differences between the

monopolistic firm and the competitive firm. In part, this discussion is applicable to a comparison of differences between oligopolistic firms and competitive firms. Models involving two sellers (duopoly) and several sellers (oligopoly), together with other models involving imperfect competition, are discussed in Chapter 6.

The Number of Buyers

The product market of the wheat farmer is a factor market of the elevator operator. The product market of the miller is a factor market of the baker. Each market is characterized by transactions in which there are both a buyer and a seller. We wish now to turn our attention from the firm as a seller to the firm as a buyer.

For this purpose it seems useful for at least two reasons to concentrate on intermediate product markets. In final product markets there is usually a large number of buyers so it seems less meaningful to vary the number of buyers and to examine the effect on market results. Secondly, it is important to recognize that the variables affecting the demand for a factor of production, an intermediate product, are not the same as the variables affecting the demand for a final product.

The demand curve of a firm for a particular factor of production is a derived demand curve. In effect, a firm's demand curve for a factor is its marginal value product curve for that factor. The quantity of the factor which a firm will be willing to purchase depends primarily upon (1) the price of the factor, (2) the price of the product in the production of which the factor is used, (3) the quantity used of other factors which are substitutes or complements in production, and (4) the production function of the firm. Individual firm demand curves may be summed to get the industry demand curve.

The effects on firm behavior and market results of the number of buyers in the market are analogous to those discussed in connection with the number of sellers. The number of buyers or firms in a given market directly affects the price elasticity of supply facing each firm, and hence the extent to which a firm can influence the price it pays for a factor by changing the quantity it uses. In general, the larger the number of buyers, the greater the elasticity of supply facing each one. Again there are two extremes: one where there is a single buyer in the market, a monopsonist, and one where there are many buyers or competitive firms.

The monopsony model (one buyer). In Figure 6, dd is the relevant section of the marginal value product curve of the monopsonistic firm for factor X. The curve SS represents the industry supply curve of X where there are a large number of firms or individuals supplying the factor. Since

there is only one buyer in the market, the industry supply curve is the supply curve facing that buyer, and *MFC* is that buyer's marginal factor cost curve.

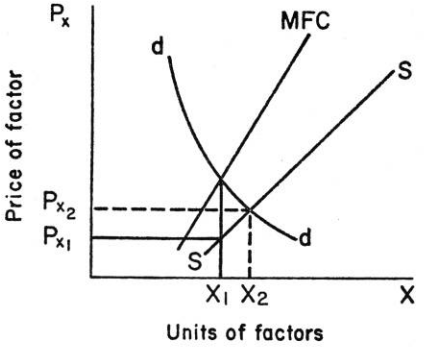


FIGURE 6. Price-quantity adjustment with monopsony.

The profit-maximizing monopsonist will produce at that point where marginal value product equals marginal factor cost. In Figure 6 we see that the monopsonist would purchase quantity X_1 of factor X at price P_{X_1}.

The competitive model (many buyers). Figure 7 is the same as Figure 6 except that *DD* now represents an industry demand curve composed of the sum of the marginal value product curves of many buyers. Figure 8 shows the demand and supply curves for a competitive firm. Profits are maximized at the point where marginal value product is equal to the price of the factor.

In terms of market behavior it is clear that the price the monopsonist pays for factor X depends on the quantity of X he purchases, whereas the competitive firm requires such a small portion of industry supply

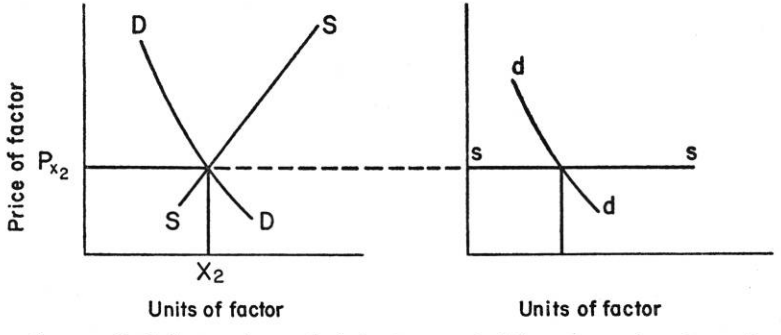


FIGURE 7. Industry demand and supply.

FIGURE 8. Firm demand and supply, competitive factor market.

that a change in the quantity it purchases has a negligible effect on the price it must pay. With respect to market results, Figures 6 and 7 indicate that the monopsonist, as compared with the competitive firm, would be expected to pay a lower unit price for the factor and purchase a smaller quantity.

Substitute Products

The quantity of a final product consumers are willing to purchase depends on the price of other products which are substitutes in consumption. The quantity of an intermediate product (factor of production) which producers are willing to purchase depends on the price of other factors which are substitutes in production.

To illustrate how substitute products may affect market results, consider a market for each of two substitute products: for example cotton and Nylon. Figure 9 shows the market for cotton (C) in equilibrium, with C_1 being produced and used at P_{C_1}. Simultaneously, Figure 10 shows the market for Nylon (N) in equilibrium, with N_1 being produced and consumed at P_{N_1}. Now suppose that there is a technological breakthrough in the production of Nylon such that at any given price individual firms are willing to supply a larger quantity. In other words, the supply curve for N shifts to the right from S_N to $\bar{S}_N$.

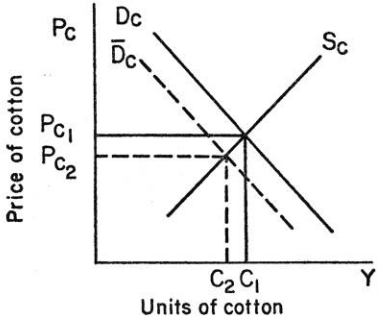


FIGURE 9. Hypothetical demand and supply curves for cotton.

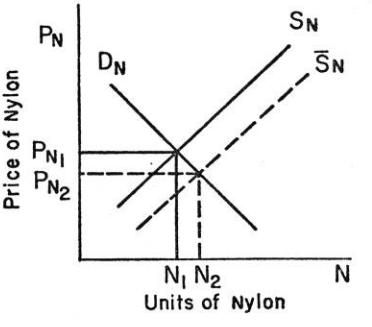


FIGURE 10. Hypothetical demand and supply curves for Nylon

Figure 10 suggests that if nothing else were to happen the market for Nylon would reach a new equilibrium point at N_2 and P_{N_2}. However, recall that in deriving the demand for cotton, it was necessary to hold all other things constant and, in particular, the price of the substitute product, Nylon, in this case at P_{N_1}. Similarly, D_N was derived holding constant the price of cotton at P_{C_1}. Hence, as the price of N moves from P_{N_1} to P_{N_2} the demand curve for C is shifted. Since cotton and Nylon

are substitutes, the decrease in the price of Nylon would encourage consumers to substitute Nylon for cotton so that at a given price of cotton consumers would be willing to purchase less cotton when the price of Nylon is P_{N_2} than when it was P_{N_1}. Therefore, the demand curve for cotton shifts to the left, say to $\overline{D}_C$. These may be described as first order effects of the shift in the supply curve of Nylon.

Now as the price of cotton moves from P_{C_1} to P_{C_2} the demand curve for Nylon will shift to the left. This is the beginning of the second order effects. As the second and higher order effects run their course we expect each market to approach a new equilibrium position. In the market for cotton we would expect that the new equilibrium point, as compared with the initial equilibrium point, would be at a lower price and smaller quantity. In the market for Nylon the expected final result would be an increase in the quantity produced and consumed but at a lower price.

The cross-demand schedule. Focusing on just the product market for cotton we see that a decrease in the price of a substitute product, Nylon, will result in a decrease in the equilibrium quantity of cotton. A useful concept to introduce at this point is the cross-demand curve. It shows the relation between the quantity of cotton that would be demanded

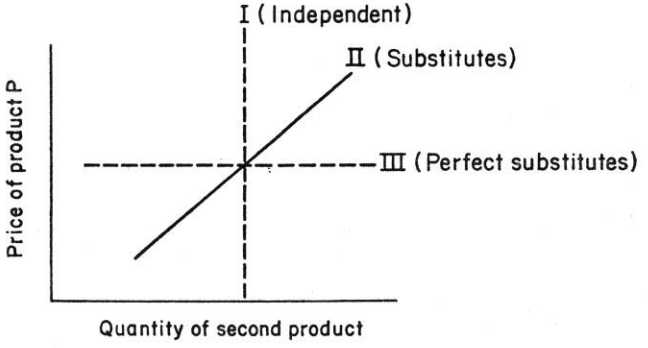


FIGURE 11. Hypothetical cross-demand schedules.

and the price of Nylon, assuming that income, tastes and preference, and other prices, including the price of cotton, are held constant. Figure 11 shows three cross-demand curves. Curve II depicts the kind of positive sloping relation characteristic of substitute products. Curve I shows an extreme relation in which the price of one product has no effect on the quantity demanded of a second product. In this case the products are not substitutes and are said to be independent. Curve III suggests the other extreme; a situation in which a small change in the price of one product causes a very large increase in the quantity demanded of a

second product. In this case the products are said to be perfect substitutes, or in effect are the same product. Curves I and III show the extreme or boundary relations. In between are substitute relations ranging from poor to good as one moves from curve I toward curve III.

Effects of substitute products. It is now possible to summarize some of the effects of substitute products on firm behavior and market results. These effects are applicable to demand curves in general, whether for an intermediate or for a final product.

1) A firm producing a product for which there is a good substitute will have its demand curve shifted by changes in the price of the substitute product. An increase in the price of a substitute product will shift the demand curve to the right, with the new equilibrium position at a higher price and larger quantity and conversely, if the substitute product's price decreases.

2) The shift in demand due to a change in price of a substitute product will be greater, the greater the substitutability of the competing product.

3) The shift in a firm's demand curve due to a change in the price of substitute products will be greater, the larger the number of substitute products. A large number of poor substitutes may have the same effect on a firm's demand curve as a small number of good substitutes.

4) The elasticity of a firm's demand curve depends on the existence of substitute products. The elasticity of demand for a product will be greater, the greater the substitutability of a competing product.

5) The elasticity of a firm's demand curve depends on the number of substitute products available. The larger the number of substitute products, the more elastic the demand for a product.

Complementary Products

A complementary product is the opposite of a substitute product. In the preceding section the analysis of substitutes indicated that if A and B are substitutes then a decrease in the price of B will shift the demand curve for A to the *left.* Hence a decrease in the price of oleo would be expected to shift to the left the demand curve for butter. On the other hand, if C and D are complementary products, then a decrease in the price of D will shift the demand curve for C to the *right.* The development and widespread use of inexpensive outdoor grills has probably shifted to the right the demand for chicken and beef (particularly certain cuts of beef).

A two-market comparative statics kind of analysis could be carried out for steak and outdoor grills. It would follow the procedure outlined

for substitute products. First we might hypothesize a shift to the right of the supply curve for grills and then trace through the first, second, and higher order effects. The decrease in price of grills would be expected to lead to a new equilibrium point in the market for steak, showing an increase in quantity produced and consumed and at a higher price.

The quantity of a product which will be purchased at a given price is definitely affected by prices of complementary products and the number of complementary products.

1) The shift in a firm's demand curve due to a change in price of a complementary product will be greater, the greater the degree of complementarity between the products.

2) The shift in demand due to a change in the price of complementary products will be greater, the larger the number of complementary products.

3) The elasticity of demand for a product will be smaller, the greater the complementarity of other products.

4) The larger the number of complementary products, the less elastic the demand for a given product.

A comparison of these results with those for substitute products explains why promoters of products of competitive industries, as well as monopolists, would want to encourage the development and sales of complementary products and discourage such activities for substitute products.

Conditions of Entry

The number of buyers and sellers and the existence of substitute products and complementary products are components of the structure of a market which bear on the way a firm behaves and consequently on the market results that obtain. But the number of firms producing a product or the number of firms producing close substitutes can be limited by conditions influencing entry. Stigler discusses conditions of entry under five headings: economies of scale, superior entrepreneurs, indispensable resources, exclusive franchises and capital requirements.[6]

If economies of scale exist over a considerable range of output and long-run industry demand is small, relative to that range of output, then the number of firms that can cover costs will be limited. In Figure 12, C is the average total cost curve of the typical firm producing Y. Curve D_1 represents the industry demand or the demand facing a monopolist in this industry. The monopolist could produce at Y_1 and make profits of OP per unit. However, if a second firm entered the industry, and the industry demand were divided equally between them, then each would be faced with demand D_2 and cost curve C. Neither firm would be able

to cover costs and hence one firm would be forced out of business. If the second firm properly evaluated the market potential, it probably would not try to enter the market in the first place.

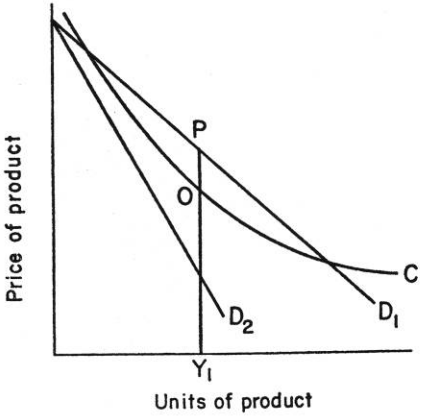


FIGURE 12. Hypothetical firm demand and cost curves.

The utility field offers good examples of industries with economies of scale. Supply curves for electricity, natural gas, water, bus services, bridge services, and highway services probably exhibit economies of scale over a significant range when compared with industry demand. Economies of scale and related problems partially explain why many utility services are provided by publicly owned and operated firms or are closely regulated by government agencies.

Superior entrepreneurs are able to produce at lower per unit cost regardless of the scale of output. If the superiority is great enough, it may force other firms out of the industry or limit the number that can enter and survive. If a particular resource or factor of production is indispensable and the supply of this resource is controlled by one or more firms, then entry by others can be controlled. Exclusive franchises include such things as patents; copyrights on books, movie film and records; and exclusive grants from units of government to provide such things as transportation services, natural gas, and electricity. Entry and survival in some industries may require large quantities of capital. This may be due to economies of scale or to tactics employed by oligopolists who attempt to impede entry and survival of new firms. Hence to the extent that it is difficult to accumulate large quantities of capital, entry into certain industries may be more difficult.

Summary

This chapter has considered some of the variables that influence firm behavior and market results. These variables, in some cases supplemented by others, are used as the basis for classification of industries into competitive groups.[7] Analyses of the cases of perfect competition and pure monopoly (monopsony) as presented are suggestive of tendencies and direction and illustrate broad differences that might be expected in markets in which many buyers or sellers participate as opposed to those where a single or few buyers or sellers participate. The next chapter adds certain refinements to the analyses, first by looking at variations in the results that occur in markets where specific assumptions in the traditional model are relaxed, and second by considering the question of interdependence between firms. This latter question leads to consideration of oligopolistic interdependence, a condition typical of most agricultural markets and farm supply industries.

CHAPTER 6

Firm Price Output Behavior in Imperfectly Competitive Markets

THE simplest and most generally useful models of firm behavior which economists have yet succeeded in devising for the purpose of market analysis were introduced in the preceding chapter: the "pure competition" model and the "pure monopoly" model. In both of these, the firm maximizes net revenue; in pure competition the firm takes the prices of its products as unaffected by the amounts it sells; in pure monopoly the firm takes the demand functions for its products as unaffected by the prices it sets. These models, oversimplified as they may seem on first acquaintance, are in fact the bases for what can become, in the hands of a skilled analyst, highly complex and subtle analyses of a wide variety of observable economic phenomena.[1]

Two kinds of efforts aimed at improving the basis for market analysis have been pursued in recent decades. These are efforts to develop better theoretical models of firm behavior and efforts to specify and empirically measure "market structure" variables that influence firm behavior. Attempts to devise "better" basic models of firm behavior have been a continuing part of the development of economic thought, starting at least as far back as Cournot;[2] they still constitute a substantial part of recent literature.[3] The criterion of "betterness" is not always made clear, but presumably it should be the usefulness of the model in helping the economic or market analyst to understand, and in particular make predictions about observable market phenomena under specifiable alternative conditions. By this criterion none of the attempts to improve upon the pure competition and pure monopoly models have been very successful.[4]

When the individual firms' demand curves are not taken as given (i.e., whenever one is attempting to analyze a market without using either

By ROBERT L. GUSTAFSON.

the pure competition or the pure monopoly model), it is not possible to determine equilibrium prices and outputs under given conditions, and hence it is not possible to make predictions about what will happen to prices and outputs when conditions change, *unless one introduces some alternative assumptions* to take the place of the one which has been discarded. And the principal difficulty is that there is no one assumption, or one set of assumptions, which economists have as yet found generally acceptable to serve as such a replacement. Essentially what we have is not a theory, but a collection of alternative hypotheses, each of which may have some degree of applicability in a given situation, and virtually none of which has (to this writer's knowledge) been very generally or rigorously tested, empirically, against possible alternative hypotheses.

The attempt to develop market structure analysis is a product largely of the last three decades. It consists of efforts to introduce into conceptual and empirical analysis "those characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing within the market."[5] Though numerous empirical studies have been developed, the market structure approach suffers from the fact that some of the important hypothesized variables of causation cannot be adequately quantified.

This chapter is an attempt to introduce the reader to the nature of the problems involved in developing better models and quantifying market structure variables. The problem of model development is handled by briefly discussing some of the features of a few of the simpler hypotheses or models that have been proposed and that may have relevance to agricultural market situations. We consider only the simplest problem, the determination of price and output; for further simplicity we consider only firms producing a single product.[6]

Because of the multidimensional nature of market structure analysis the discussion developed here is limited to illustration of how the addition of new variables can change the indeterminacy of solution associated with certain oligopoly theories and to a brief description of some of Bain's empirical results. It is convenient to start with some further discussion of the pure monopoly model.

Some Extensions of the Pure Monopoly Model

The basic nature of this model is stated in the previous chapter. The most crucial condition of the monopoly model centers on the proposition that the firm's actions in setting its price (and hence quantity sold) or quantity sold (and hence price) do not change the demand curve for its product. This implies that either: (1) the effects of the given firm's actions in changing its price and quantity on other firms' decisions about their prices or quantities are zero or negligible or (2) the cross-elasticities of

demand for the firm's product with respect to the prices of other firms' products are zero or negligible.[7] When such a firm sets its price (or quantity) so that net revenue is maximized,[8] the quantity is such that the firm's marginal revenue equals its marginal cost, and the price is always greater than the equilibrium marginal cost.[9]

The extent to which the pure monopoly model has practical relevance in the analysis of agricultural markets is an empirical question still open to investigation. Cases in which the individual firm or selling unit, as for example a farmers' bargaining cooperative, has complete or near complete control of a commodity are, of course, rare. But there are situations in which the firm or selling unit acts with a sufficient degree of independence with respect to other firms or units in the market, such that the model becomes relevant. Baumol argues, for example, on the basis of a considerable amount of empirical observation of day-to-day decision-making by the managers of large "oligopolistic" firms, that ". . . often, even in fairly crucial decisions, and almost always in routine policy-making, only the most cursory attention is paid to competitive reactions."[10] Furthermore, certain special aspects or extensions of the monopoly model, such as price discrimination, joint profit maximization by groups of firms, and the dominant firm model appear to have particular applicability in some markets for agricultural products or inputs.

Price discrimination. If the monopolist faces or can create two markets for his product which (a) are separate in the sense that buyers in one market are somehow prohibited from buying in the other, (b) are independent in the sense that buyers in one market are not affected by the price charged in the other,[11] and (c) have different demand curves, then profit is maximized by setting different prices in the two markets.

Figures 13a and 13b represent the two markets. Profit maximization

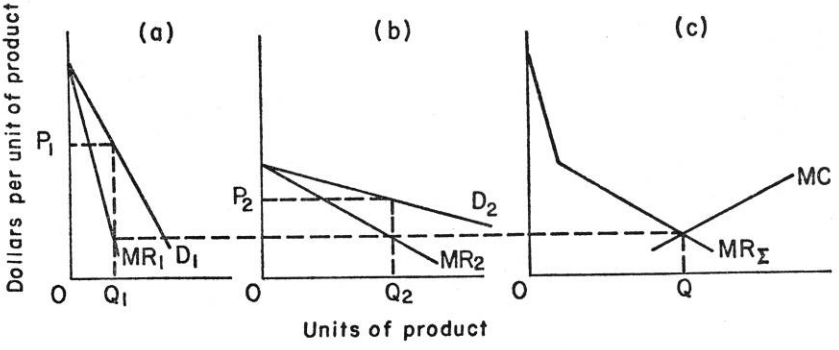


FIGURE 13. Hypothetical illustration of price-quantity adjustment under price discrimination.

implies that marginal revenue in each market equals marginal cost (which is assumed here, for simplicity, to be a function only of total quantity sold, $Q_1 + Q_2 = Q$). In Figure 13c, MR_Σ is the horizontal summation of MR_1 and MR_2 (since we want $MR_1 = MR_2 = MC$). To maximize profit the firm sets price P_1 in the first market and the lower price P_2 in the second market. The analysis can clearly be extended to the case of three or more separate markets for the product.[12]

Joint profit maximization. The pure monopoly model can be applied to an industry as well as to an individual firm. The firms in the industry somehow cooperate to maximize total or joint industry profit. It is clear that by such cooperation the individual profit of each firm can be increased from what it would be if total industry profit were not maximized. The model stipulates nothing about how the cooperation is achieved, whether it be by open explicit collusion (where legal), secret explicit collusion, or tacit collusion. "If the industry has only a few firms, . . . they must realize that their policies affect one another and they may develop a common price policy without express collaboration, just as an experienced string quartet learns to play as a unit."[13] Also, the model says nothing about how the maximized industry profit is shared by the participating firms. More complicated models may, of course, stipulate something about these things.[14]

The necessary conditions for maximum industry profit are simple: each firm operates at the same marginal cost, and marginal cost equals industry marginal revenue. Second-order conditions for a maximum are a little complicated but will be satisfied if, for example, each firm is operating on the rising part of its marginal cost curve and marginal revenue is downward sloping.[15]

There are several kinds of reasons why collusion does not always occur, even though it is always potentially profitable. Antitrust laws, where they exist, make explicit collusion difficult. The usual absence of an objective criterion for determining how the profits should be shared means that every firm has some temptation to try to do better by acting independently, and the larger the number of firms the stronger the temptation. (The larger the number of firms, the more likely is it that deviations from collusive behavior by any one firm will be unnoticed.) Especially when the industry is undergoing rapid technological or market change, there may be considerable difficulty in agreeing on what demand and cost conditions really are, and therefore on what the correct profit-maximizing action is. Finally, if the collusion is successful and large profits are made, there is an incentive for new firms to enter the industry, driving profits back down to a more normal level.

These considerations suggest that the monopoly or joint-profit-maximization model is likely to be most applicable to industries which have the following characteristics: relatively few firms, relatively stable technology and demand, and relatively high barriers to the entry of new firms.

A special case. The joint-profit-maximization model of price determination may be applicable even in situations where there is essentially no collusion of any kind, explicit or tacit. The following simple example is perhaps somewhat special, but may be not too unrepresentative (as an approximation) of some industries at some times. In this model, (a) marginal and average variable cost curves are horizontal over the relevant range for each firm, and the same for each firm, and (b) the firms' relative shares of the market are predetermined, by buyers' preferences or habits which have been entirely conditioned by the past history of such things as advertising, customer service, locational advantage, etc. (the costs of which are assumed to be independent of the quantity of product sold). Such a model might be applicable to feed and fertilizer handlers and other farm supply industries that operate primarily at the local level; individual firms are at least partially isolated spatially, and buyers may be influenced largely by locational advantage and customer service. Another possible application might be to the cigarette manufacturing industry, in which advertising is the main means of competition.

Let n be the number of firms in the industry and a_i be the ith firm's relative share of the market,

$$0 < a_i < 1, \quad i = 1, 2, \cdots, n, \quad \sum_{i=1}^{n} a_i = 1.$$

Let q be the total quantity sold by the industry (determined, via the demand function, by the price set), and let the total revenue of the industry, as a function of quantity sold, be $R(q)$. Then the ith firm's total revenue is $a_iR(q)$ and its total variable cost is $TVC_i = cq_i = ca_iq$, where $q_i = a_iq$ is the quantity sold by the firm, and c is the constant marginal and average variable cost, assumed the same for all firms. Net variable revenue for the ith firm is thus $NVR_i = a_iR(q) - ca_iq$, and if q is chosen (i.e., price is set) to maximize this, we have $dNVR_i/dq = a_iR'(q) - ca_i = 0$, or $R'(q) = c$. For the industry as a whole total variable cost is cq and net variable revenue is $NVR = R(q) - cq$. Choosing q to maximize this, we obtain again $R'(q) = c$.

Thus in this case any single firm can set the price to maximize its own individual profit; the same price maximizes the individual profit of every other firm and is equal to the monopoly price that would be set to maximize total industry profit. Any competition which may occur is not via

price in the current market, but is aimed for the long run: trying to change buyers' future "habits" by the current level of advertising, customer service and other non-price competition.

The dominant firm or group of firms. In this model the industry consists of one large firm (or one group of joint-profit-maximizing firms), which can influence price by its own action, and a large number of small firms, each of which cannot influence price by its own action.[16] The large firm (or group) sets the price which will maximize its own profit (or joint profit), taking the supply curve of the small firms as given. In Figure 14a, S is the supply curve of the small firms in aggregate, and D is the total market demand. Taking the horizontal difference between D and S gives

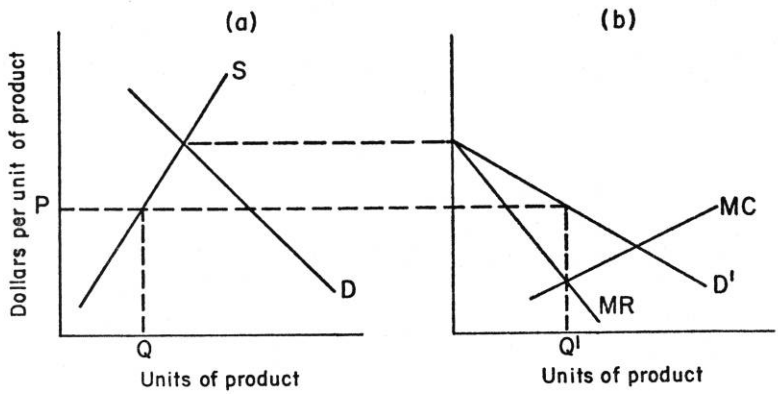


FIGURE 14. Hypothetical illustration of market price quantity adjustment with a dominant firm or group.

the demand curve facing the large firm (or group), shown as D^1 in Figure 14b. The large firm (or group) sets its output and price to equate marginal revenue derived from this demand to its marginal cost. The small firms take this price as given, and supply in aggregate the quantity indicated in Figure 14a.

MARKETS WITH TWO TO SEVERAL SELLERS

In many agricultural markets there are relatively few competing firms, or a relatively few *dominant* competing firms. In meat packing, dairy product processing, and feed manufacturing, for example, the total number of firms in the United States is large, but it might be alleged that the competition is pretty well dominated in each case by a half dozen or so large firms which operate nationally. Similarly, at the local level the typical city milk market, for example, has perhaps five to seven dis-

tributing firms. Some economists and market analysts have felt that, for studying the operations of such markets, the pure competition and pure monopoly models of firm or group behavior are by themselves inadequate. The result has been the development of a large number of alternative "oligopoly" models, i.e., models in which joint-profit-maximizing collusion is excluded by definition, and in which each firm, in deciding on its own actions, is assumed to attempt to take into account the actions of competing firms, and possibly also their reactions to its own actions.

Duopoly as the Simplest Case

The simplest market situation, other than those of pure competition, pure monopoly, and the dominant firm or group (which is just a simple mixture of pure competition and pure monopoly), would appear to be the case of duopoly: a market with two sellers and many (purely competitive) buyers. Several alternative hypotheses or approaches have been proposed to deal with such markets, but we shall briefly discuss just a few of these. The purpose is to introduce the reader to the nature of the problems involved in attempting to analyze duopolistic (or, more generally, oligopolistic) markets, rather than to attempt anything like a complete discussion.[17] For simplicity, we will for the most part suppose that the two sellers are selling the same product, so there is just one price, and the single variable which each firm has direct control of is the quantity it sells.

The Cournot solution. The basic assumption is that each of the two firms acts, at any instant, as though the quantity (per unit of time) being sold by the other firm is given, i.e., not affected by what the first firm does. Let the market demand be D in Figure 15a, and suppose the quantity being sold by Firm 2 is Q_2. If Q_2 is subtracted from total demand

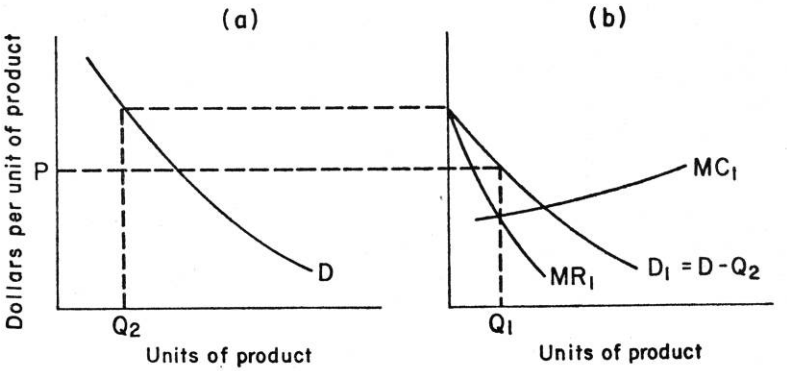


Figure 15. Hypothetical illustration of Cournot solution to duopoly adjustment.

D at each possible price, we get the demand curve facing Firm 1, say $D_1 = D - Q_2$ in Figure 15b, and its corresponding marginal revenue curve MR_1. Firm 1 now chooses Q_1 to maximize its profit, at which point $MR_1 = MC_1$, and the price is determined as shown at the left.

This gives us one point on a so-called "reaction" function, namely the function which tells us that *if* the output of Firm 2 is Q_2 *then* the output of Firm 1 will be $Q_1 = R_1(Q_2)$. We can imagine doing the same thing for all other possible values of Q_2, and thus obtain the whole reaction function, which will generally be downward sloping (i.e., the more Firm 2 is producing, the less the amount it appears profitable for Firm 1 to produce); see the curve labeled $Q_1 = R_1(Q_2)$ in Figure 16.

At the same time, however, Firm 2 is assumed to be doing the same thing, that is, looking at Q_1 and, taking that as given, choosing Q_2 to maximize *its* profit. We can therefore go through, for Firm 2, the procedure just outlined for Firm 1, and obtain a second reaction function, $Q_2 = R_2(Q_1)$. Plotting both reaction functions on the same diagram, we obtain Figure 16. We conclude that only if the two firms are operating

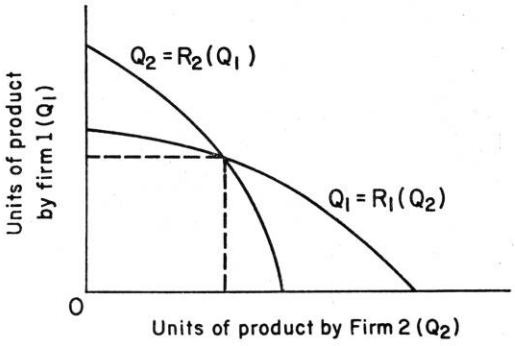


FIGURE 16. Hypothetical illustration of reaction functions of two firms.

at the outputs indicated by the intersection of the two reaction functions is the industry in equilibrium; i.e., at this point and only at this point, neither firm has an incentive to change its level of output.[18] This result has an appealing simplicity, but unfortunately it is considerably less than completely satisfactory, as is illustrated in the following section.

An algebraic-numerical illustration. Let us examine the duopoly situation and the Cournot solution in a little more detail, by means of a simple algebraic-numerical example, which can later be conveniently extended to the general oligopoly case. For further simplification, we will assume the two firms have identical cost functions.

Let the relevant part of the market demand function be represented by

$$P = p_0 + p_1 Q = p_0 + p_1(Q_1 + Q_2),$$

where Q_i is the quantity sold by firm i ($i=1, 2$) and, of course, $p_0>0$, $p_1<0$. Let the relevant part of each firm's total cost function be

$$TC_i = k + c_0 Q_i + c_1 Q_i^2, \qquad i = 1, 2,$$

where k is total fixed cost (including a "normal" return on the capital investment in the firm). The marginal cost functions are

$$MC_i = c_0 + 2c_1 Q_i, \qquad i = 1, 2.$$

Total revenue of Firm 1, written as a function of Q_1 for a given quantity Q_2, is

$$\begin{aligned} TR_1(Q_1 \mid Q_2) &= PQ_1 = [p_0 + p_1(Q_1 + Q_2)]Q_1 \\ &= (p_1 Q_2 + p_0)Q_1 + p_1 Q_1^2, \end{aligned}$$

and the marginal revenue function is

$$MR_1(Q_1 \mid Q_2) = p_1 Q_2 + p_0 + 2p_1 Q_1.$$

Setting this (conditional) marginal revenue function equal to Firm 1's marginal cost function and solving for Q_1, we have

$$Q_1 = \frac{p_1 Q_2 + p_0 - c_0}{2(c_1 - p_1)} = R_1(Q_2).$$

This is Firm 1's reaction function: how it behaves in response to changes in Q_2. The second-order condition for (conditional) maximum net revenue in Firm 1 requires $c_1>p_1$. Similarly we obtain Firm 2's reaction function:

$$Q_2 = \frac{p_1 Q_1 + p_0 - c_0}{2(c_1 - p_1)} = R_2(Q_1).$$

Solving the two reaction function equations for the quantities Q_1, Q_2, which satisfy them both simultaneously, we obtain

$$\hat{Q}_1 = \hat{Q}_2 = \frac{p_0 - c_0}{2c_1 - 3p_1}.$$

A necessary and sufficient condition for stability of this equilibrium (under the basic Cournot assumption that each firm acts as though the other firm's behavior is not affected by its own) is $c_1>(1/2)p_1$. (Note that this is a somewhat stronger condition than the second-order condition for the conditional maximum net revenues, namely $c_1>p_1$.)

Substituting the $\hat{Q}_i$ in the demand function to get the equilibrium price, we obtain

$$\hat{P}_C = \frac{2c_1 p_0 - p_0 p_1 - 2c_0 p_1}{2c_1 - 3p_1},$$

where the subscript C is used to indicate that this is the Cournot-solution equilibrium price.

Now let us put in some numbers for the parameters. Suppose $c_0=2$, $c_1=1/2$, $p_0=62$, $p_1=-1$, and $k=200$. We obtain $\hat{P}_C=32$, and for each firm i ($i=1, 2$): $\hat{Q}_i=15$, $TR_i=480$, $TC_i=342.5$, and $NR_i=137.5$.

Now suppose that Firm 1, instead of acting as though its behavior does not affect Q_2, decides to try to take account of such an effect, and it does this by incorporating Firm 2's reaction function, $Q_2=R_2(Q_1)$, into its own net revenue function, so we have

$$\begin{aligned} NR_1 &= PQ_1 - TC_1 \\ &= [p_0 + p_1(Q_1 + Q_2)]Q_1 - TC_1 \\ &= p_0Q_1 + p_1Q_1^2 + p_1Q_1R_2(Q_1) - k - c_0Q_1 - c_1Q_1^2. \end{aligned}$$

(We assume for the moment that Firm 2 continues to act in accordance with $Q_2=R_2(Q_1)$.)

Since the algebra gets a little messy here, we will go directly to the numerical example, using the same values for the parameters as before. We have

$$R_2(Q_1) = -(1/3)Q_1 + 20$$

and then obtain

$$NR_1 = -200 + 40Q_1 - (7/6)Q_1^2.$$

Setting $dNR_1/dQ_1=0$ gives $\hat{Q}_1=17.14$, $\hat{Q}_2=14.29$, $\hat{P}_{S_1}=30.57$, $NR_1=142.86$, and $NR_2=106.12$. The subscript S_1 designates the equilibrium price when one firm is "smart" and the other firm continues to follow its original Cournot reaction function. Note that Firm 1 here has increased its net revenue by about 5, whereas Firm 2 has suffered a decrease of about 31.

If both firms get smart simultaneously and each incorporates the other's reaction function into its own net revenue function, they will each go to an output of $\hat{Q}_i=17.14$, price will drop to $\hat{P}_{S_2}=27.71$, and the net revenue of each firm to $NR_i=93.88$. This "solution" is, of course, pretty unstable since when both firms are selling 17.14, each can make more profit by decreasing its quantity sold; and there might very likely be a trend back toward the original Cournot solution, or perhaps even beyond that toward complete collusion as the firms learn what is happening.

On the other hand, if dynamic (lead and lag) and psychological considerations are admitted, the action might develop in the opposite direction. If we start again from the Cournot solution, with $Q_1=Q_2=15$, and Firm 1 increases Q_1 to about 17, thereby reducing Firm 2's net revenue by about 31, Firm 2 might decide its best strategy is to retaliate or take

the offensive, and increase Q_2 say to 18. If Firm 1 then retaliates similarly, the firms might drive each other toward the "price equals marginal cost" solution (also discussed below), or perhaps beyond if each firm decides the only way it can survive is to try to drive the other into bankruptcy.

If either open or tacit collusion is possible, the two firms taken together can generally be expected to act as a monopolist and to maximize their joint profit, since this automatically maximizes the profit of each. If the two firms have different cost structures, the problem arises as to how they decide on the division between them of the maximized joint profit, and various solutions have been proposed to this problem. We have assumed it away by supposing, for simplicity, that the two firms have identical cost structures.

In maximizing joint profit, the two firms with identical marginal cost functions will, of course, produce the same quantities, $Q_1=Q_2=Q_i$ (say). We have for the two firms considered jointly:

$$\begin{aligned} TR &= 2p_0Q_i + 4p_1Q_i^2, \\ MR &= 2p_0 + 8p_1Q_i, \\ TC &= 2k + 2c_0Q_i + 2c_1Q_i^2, \\ MC &= 2c_0 + 4c_1Q_i. \end{aligned}$$

Equating MR and MC, we get

$$\hat{Q}_i = \frac{p_0 - c_0}{2c_1 - 4p_1}$$

and

$$\hat{P}_J = \frac{c_1p_0 - p_0p_1 - c_0p_1}{c_1 - 2p_1}$$

where the subscript J designates the equilibrium price under the assumption of joint profit maximization.

Putting in the same numerical values of the parameters as before, we obtain $\hat{P}_J=38$, and for each firm $i=1, 2$; $\hat{Q}_i=12$, $NR_i=160$.

Finally, let us determine the quantity $Q_1=Q_2=Q_i$ which would result in price being equal to marginal cost. The price-equals-marginal-cost solution, i.e., the pure competition model, could be applicable in an industry with even as few as two firms if, for example, there is a sufficiently high degree of lack of knowledge or relevant information available to the firms' managers. If each firm has (a) no information about the other firm's output or planned output and (b) no information about how changes in its own output might affect price, then about the only thing it can do is accept the prevailing market price as given, and maximize profit by choosing the output such that marginal cost equals price. We

thus obtain an industry supply curve, and the actual price is determined by equilibrium of demand and supply.[19]

Setting price equal to marginal cost we have

$$p_0 + 2p_1Q_i = c_0 + 2c_1Q_i$$

giving

$$\hat{Q}_i = \frac{p_0 - c_0}{2(c_1 - p_1)}, \qquad i = 1, 2;$$

and the resulting price is

$$\hat{P}_M = \frac{c_1p_0 - c_0p_1}{c_1 - p_1}.$$

Putting in the numbers for the parameters, we have $\hat{P}_M=22$, $\hat{Q}_i=20$, and $NR_i=0$ $(i=1, 2)$. The value of $k=200$ was chosen so that the two firms each operating at price-equals-marginal-cost would exactly meet demand at $NR_i=0$. Some of our results are summarized in Table 2.

Table 2. Some duopoly solutions (Algebraic-numerical illustration)

Condition:	Joint max	Cournot	$P = MC$
Algebraically:			
$\hat{Q}_i =$	$\frac{p_0 - c_0}{2c_1 - 4p_1}$	$\frac{p_0 - c_0}{2c_1 - 3p_1}$	$\frac{p_0 - c_0}{2c_1 - 2p_1}$
$\hat{P} =$	$\frac{2c_1p_0 - 2p_0p_1 - 2c_0p_1}{2c_1 - 4p_1}$	$\frac{2c_1p_0 - p_0p_1 - 2c_0p_1}{2c_1 - 3p_1}$	$\frac{2c_1p_0 - 2c_0p_1}{2c_1 - 2p_1}$
Numerically:			
$\hat{Q}_i =$	12	15	20
$\hat{P} =$	38	32	22
$NR_i =$	160	137.5	0

The game-theoretic approach. Another way of looking at the duopoly situation is in terms of payoff matrices such as are used in the theory of games.[20] All we shall attempt here is the very barest of introductions to some of the ideas involved, making use again of our numerical illustration above.

Suppose, for simplicity, each firm considers using just three possible "strategies," namely setting its Q_i equal to 12, 15, or 20. Each firm knows the other's possible strategies, and each can calculate the outcome (in terms of its own resulting net revenue) of each possible pair of strategies chosen by the two firms. Using the same numerical parameters as before, we compute the payoff matrix for each firm; see Table 3.

Table 3. Illustrative payoff matrices

Firm 1. Net revenue					Firm 2. Net revenue				
		Q_2					Q_2		
		12	15	20			12	15	20
	12	160	124	64		12	160	182.5	160
Q_1	15	182.5	137.5	62.5	Q_1	15	124	137.5	100
	20	160	100	0		20	64	62.5	0

If, for example, Firm 1 chooses $Q_1=12$ and Firm 2 chooses $Q_2=15$, the resulting net revenues are 124 for Firm 1 and 182.5 for Firm 2. The two matrices here are transposes, because of the assumption of identical cost functions.

Now suppose Firm 1 decides on a kind of safety-first policy: it makes no attempt to predict what Firm 2 will do, but instead simply looks at what would be the worst possible outcome (the minimum possible net revenue) that could occur if it adopts each of its three possible strategies. The three minimal net revenues are of course 64, 62.5, and 0 for strategies 1, 2, and 3, respectively. Firm 1 then chooses the strategy for which this worst possible outcome is least bad, namely the strategy for which the minimum payoff is the largest, or in this case strategy 1, or $Q_1=12$.[21]

If Firm 2 also maxmins, it also of course chooses its strategy 1, or $Q_2=12$, and we have the somewhat interesting result that by each firm independently adopting a "conservative," or "safety-first," or "maxmin" policy, they arrive at the same outcome as if they had colluded to maximize joint profit. This result is, of course, partly an accident of the particular numerical example used, and does not hold in general, but it does illustrate another way by which a collusive outcome may occur even if open collusion is prohibited.

The solution $Q_1=Q_2=12$ may not seem completely stable since when both are selling 12, each can visualize an increase in its own net revenue by increasing its own quantity sold to 15. If one does so, however, the other will be forced to follow suit and both will lose, and the knowledge that this will happen may be enough to keep them both at 12.[22]

In looking at its payoff table (and at that of Firm 2), Firm 1 might decide not to play safety-first or maxmin, but rather to predict what Firm 2 will do in response to each possible strategy choice by Firm 1. Given that set of responses, Firm 1 chooses the strategy which maximizes his net revenue, which is in this case strategy 3, or $Q_1=20$. That is Firm 1 predicts (on the assumption that Firm 2 is a profit maximizer):

$$\text{if } Q_1 = 12, \text{ then } Q_2 = 15 \text{ and } NR_1 = 124;$$
$$\text{if } Q_1 = 15, \text{ then } Q_2 = 15 \text{ and } NR_1 = 137.5;$$
$$\text{if } Q_1 = 20, \text{ then } Q_2 = 12 \text{ and } NR_1 = 160.$$

Hence $Q_1=20$ is the best choice. If Firm 2 follows the same policy, they both end up with zero net revenue, and both have clear incentive to change their initial choice. We are now doing exactly what we did when we modified the initial Cournot solution by assuming that each firm incorporated the other's reaction function into its own profit function, except that there we considered all possible quantities Q_i instead of just three, and arrived at the unstable solution $Q_1=Q_2=17.14$.

It appears clear that, as stated at the outset, we are unavoidably left with a considerable degree of indeterminacy in any attempt to construct a simple general model to explain or predict the behavior of duopolists. One can obtain determinacy by adopting specific assumptions, but typically different assumptions lead to different results, and there seems to be no one set of assumptions which has very general applicability.[23]

The market structure approach. Partly because of the indeterminacy or multiplicity of solutions resulting from the consideration of simple oligopoly theories based primarily on alternative behavioristic assumptions, attempts have been made to construct more complex theories which introduce additional aspects of what is sometimes referred to as the structure of the market.[24] The concept of market structure is not completely well defined, but it is typically "multidimensional," and emphasis is placed on the idea that which dimension(s) or variable(s) is (are) important varies from one situation to another. Bain, for example, emphasizes the importance of three "dimensions:" conditions of entry into the industry, the degree of product differentiation and the degree of concentration in the industry.[25] Shubik emphasizes, in addition, the possible importance of financial considerations: the relative degrees of liquidity, or availability of capital, to the firms in an industry. We will briefly discuss some of Bain's empirical results in a later section and at this point simply try to suggest the nature of one form of the approach by illustrating how the introduction of two additional variables (or aspects of market structure) can reduce or eliminate the indeterminacy of noncollusive duopoly.

Starting with the same numerical example already used, we have the firms' respective net revenues as functions of the two quantities of output:

$$NR_1 = 60\,Q_1 - 1.5\,Q_1^2 - Q_1Q_2 - 200$$

and

$$NR_2 = 60\,Q_2 - 1.5\,Q_2^2 - Q_1Q_2 - 200.$$

We now suppose that (a) Firm 1 has sufficiently large financial resources (liquidity or availability of capital) and Firm 2 has sufficiently small

such resources, that Firm 1 could at any time, if it so chose, force Firm 2 to receive negative net revenue (and eventually go out of business), without the (possible) resulting temporary net loss to Firm 1 endangering its own existence;[26] but (b) Firm 1 does not choose to actually force Firm 2 out of business, perhaps because of the existence of antitrust laws, or perhaps simply because of public relations considerations. Under these conditions, Firm 1's profit-maximizing policy is clear: (a) choose Q_1 *and* Q_2 such that NR_1 is maximized, subject to the restriction that $NR_2 \geq 0$; (b) force Firm 2 to operate at the chosen level of Q_2, by imposing net losses whenever Firm 2 attempts to deviate from that level.[27]

The "restricted maximum" problem thus posed is fairly readily solved in the present case by numerical methods, the details of which are of no importance.[28] The solution (to an accuracy of two decimal places) turns out to be $Q_1 = 16.82$, $Q_2 = 5.80$, giving $P = 39.38$, $NR_1 = 287.27$, with, of course, $NR_2 = 0$. It is of some interest to note that the equilibrium price here (39.38) is even higher than the joint-profit-maximization price would be (38.00).

Oligopoly

Let n be the number of firms selling a given product in a given market, with pure competition on the buyers' side. $n = 2$ is the duopoly case just discussed. For $n > 2$ but still relatively "small," the difficulties of market analysis are essentially of the same nature as those in duopoly, but more complicated: each firm has two or more competitors, instead of just one, who might react in various ways to changes in its own actions. On the other hand, if n is "large enough," the assumptions on which some of the simpler duopoly solutions are based become somewhat more plausible. For example, the basic Cournot assumption, that each firm acts as though its actions do not affect those of other firms, becomes more plausible as the number of firms increases, and correspondingly the relative share of each firm in the market decreases. Also, it can be shown that some of the alternative or multiple solutions obtained for duopoly by using alternative assumptions tend to converge to the same solution as the number of firms increases. Mathematically, in the limit as n goes to infinity, they converge to the pure competition or price-equals-marginal-cost solution.[29]

Algebraic-numerical illustration (continued). It is instructive to see how this works out in terms of our algebraic-numerical illustration. We will assume as before for simplicity that all firms have identical cost functions. As the number of firms, n, is increased, one must suppose, to maintain comparability of results, either that demand increases (the

market expands) proportionally, or that the cost structure of each firm "shrinks" proportionally. We will use the latter supposition. For given n, let the cost functions of Firm i ($i=1, 2, \cdots, n$) be

$$MC_i = c_0 + nc_1Q_i;$$
$$TC_i = 2k/n + c_0Q_i + (n/2)c_1Q_i^2;$$

where Q_i is quantity sold by Firm i, and the coefficients have been chosen to be consistent with the case already considered ($n=2$). Let Q_0 be the total quantity being sold by all *other* firms (Firm i takes this to be unaffected by its own choice of Q_i), so the total quantity sold is $Q=Q_0+Q_i$. As before, price is determined by market demand,

$$P = p_0 + p_1Q = p_0 + p_1(Q_0 + Q_i), \qquad p_1 < 0.$$

Net revenue of Firm i, as a function of Q_i, for given Q_0, is

$$\begin{aligned} NR_i &= (p_0 + p_1Q_0 + p_1Q_i)Q_i - TC_i(Q_i) \\ &= -2k/n + (P_1Q_0 + p_0 - c_0)Q_i + [p_1 - (n/2)c_1]Q_i^2. \end{aligned}$$

Setting $dNR_i/dQ_i=0$, we have

$$Q_i = \frac{p_1Q_0 + p_0 - c_0}{nc_1 - 2p_1},$$

Firm i's "reaction" to changes in Q_0. Since every Firm i ($i=1, 2, \cdots, n$) has the same reaction function (because of the assumed identical cost functions), we must have in equilibrium $Q_i=Q_j$ for all $i, j=1, 2, \cdots, n$. So in the above reaction function we can substitute $(n-1)Q_i$ for Q_0, and solve for the equilibrium Q_i, giving

$$\hat{Q}_i = \frac{p_0 - c_0}{nc_1 - (n+1)p_1}$$

or

$$\hat{Q} = n\hat{Q}_i = \frac{n(p_0 - c_0)}{nc_1 - (n+1)p_1}.$$

In the limit, as

$$n \to \infty, \quad \hat{Q} \to \frac{p_0 - c_0}{c_1 - p_1},$$

which is the same as the price-equals-marginal-cost solution to the duopoly problem discussed earlier.

Putting $\hat{Q}$ into the price function gives

$$\hat{P} = \frac{nc_1p_0 - p_0p_1 - nc_0p_1}{nc_1 - (n+1)p_1}$$

and

$$\lim_{n\to\infty} \hat{P} = \frac{c_1 p_0 - c_0 p_1}{c_1 - p_1} .$$

To see that these limiting results are equivalent to the pure competition model, note that in the latter the quantity supplied by each firm as a function of price is obtained by setting marginal cost equal to price, giving

$$Q_i = \frac{P - c_0}{nc_1},$$

so the market supply function is n times that, or

$$Q = \frac{P - c_0}{c_1} .$$

Now equating supply and demand, we get

$$\hat{Q} = \frac{p_0 - c_0}{c_1 - p_1}$$

and

$$\hat{P} = \frac{c_1 p_0 - c_0 p_1}{c_1 - p_1} .$$

In Table 4 we have computed the Cournot equilibrium industry output (Q), price (P), industry net revenue (NR), net revenue as percent of total revenue ($(NR/TR)100$), and the percentage deviation of price from marginal cost ($[(P-MC)/MC]100$), for varying number of firms, n, using the same numerical values of the parameters p_0, p_1, c_0, c_1 and k as before.

Table 4. Cournot oligopoly equilibria (Numerical example)

n	Q	P	NR	$\frac{NR}{TR}100$	$\frac{P-MC}{MC}100$
1	24.00	38.00	320.00	35.1	171.4
2	30.00	32.00	275.00	28.6	88.2
3	32.73	29.27	224.80	23.5	59.4
4	34.29	27.71	187.74	19.8	44.7
5	35.29	26.71	160.56	17.0	36.0
10	37.50	24.50	92.18	10.0	18.1
20	38.71	23.29	49.52	5.5	9.1
100	39.74	22.26	10.52	1.2	1.8
1000	39.97	22.03	1.08	0.1	0.2
∞	40.00	22.00	0.00	0.0	0.0

It should be noted that for any n, the joint-profit-maximization Q, P and NR are the same as those given in the table for $n=1$; and similarly for any n, the price-equals-marginal-cost Q, P and NR are the same as those given for $n\to\infty$.

Free entry: monopolistic competition. If one starts with a set of n firms in Cournot equilibrium, and then changes the model so that new firms may enter the industry until net revenues are driven to zero, the result is similar to (the simplest form of) Chamberlin's "monopolistic competition" equilibrium.[30] We can illustrate the situation by using the numerical Cournot-oligopoly example of the preceding section. We suppose that, starting with any initial number of firms n, new firms enter the industry until net revenues become zero, each "full size" (see footnote

Table 5. Cournot "free entry" equilibria (Numerical example)

n	m	Q	P	$\frac{P-MC}{MC}100$
1	0.854	33.17	28.83	163.5
2	1.196	36.91	25.09	85.2
3	1.374	38.18	23.82	57.8
4	1.485	38.79	23.21	43.8
5	1.562	39.13	22.87	35.3
10	1.748	39.72	22.28	17.9
20	1.863	39.92	22.08	9.0
100	1.970	40.00	22.00	1.8
1000	1.997	40.00	22.00	0.2

31) new firm having the *same* cost functions as the original n firms. It turns out that, given the numerical values of the parameters in the example, the number of entering new firms, say m, which will make net revenues of all firms equal to zero, is $m=(3/2)[n(n+4)]^{1/2}-(3/2)n-1$.[31] m is an increasing function of n, and approaches an upper bound of 2 as n becomes indefinitely large. In Table 5 we have computed, for the finite values of n listed in Table 4, the corresponding values of m, and the resulting equilibrium industry output (Q), price (P), and the percent deviation of price from marginal cost ($[(P-MC)/MC]100$).

Comparing Tables 4 and 5, it may be noted that in this example free entry results in price and industry output approaching their pure competition levels for n of rather moderate size, say 5 or more. On the other hand, the relative discrepancy between price and marginal cost is only insignificantly reduced, for any finite n. This difference between equilibrium price and marginal cost is one indicator of the "waste" or misallocation of resources in monopolistic competition. Another indication

of waste is that in equilibrium each firm is operating on the downward-sloping part of its average cost curve. The same industry output could in principle be produced by fewer firms, at lower aggregate cost (i.e., using fewer total resources).

The situation of each (full size) firm may be illustrated diagrammatically as in Figure 17, which is based on our numerical example above, taking $n=5$. For joint profit maximization, each firm sells 4.8 units at price 38, point J in the figure. The price-equals-marginal-cost solution is point M: 8 units sold by each firm at price 22. The Cournot equilibrium solution is point C: each firm sells 7.06 units at price 26.71. At this point

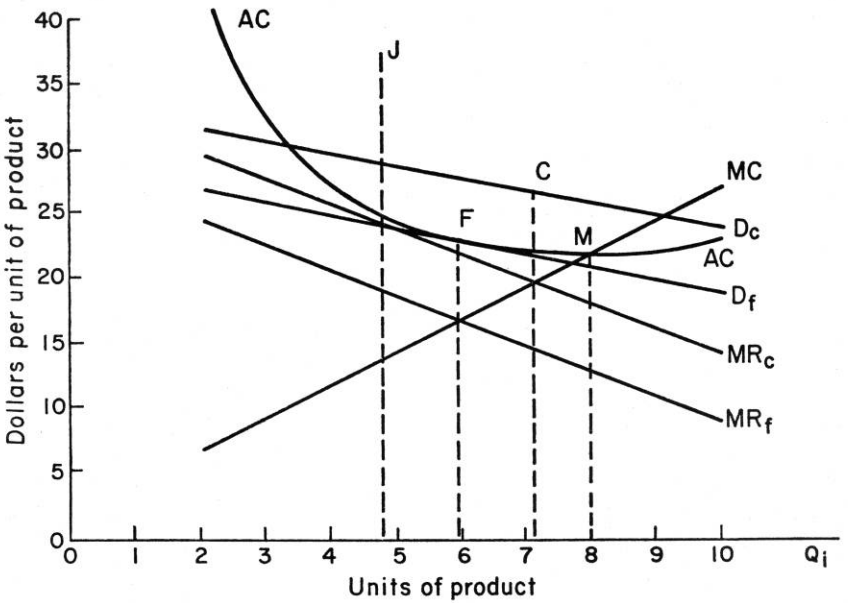


FIGURE 17. Hypothetical firm equilibrium under different conditions of entry.

the demand curve the firm "sees" for its product (taking other firm's outputs as given) is D_c and the corresponding marginal revenue is MR_c, with, of course, marginal revenue equal to marginal cost (MC) at the equilibrium output. Profit per unit of output is the vertical distance from C to the average cost curve (AC). With free entry, the new Cournot equilibrium is point F: each firm sells 5.96 units at price 22.87. Because of the entry of the new firms, each firm "sees" its demand curve as having shifted from D_c to D_f (after equilibrium is reestablished), with the corresponding marginal revenue shifting from MR_c to MR_f, and again, marginal revenue equals marginal cost at the equilibrium output. Each firm is maximizing its profit, given the outputs of the other firms, but the re-

sulting profit is zero: the demand curve is tangent to the average cost curve, and the firm must be operating on the downward sloping part of its average cost curve, assuming, of course, that the demand curve has some downward slope. [32]

The Need for Quantitative Tests of Oligopoly Models

The main purpose of putting much of the preceding discussion in terms of a specific algebraic-numerical example, oversimplified as it no doubt is, is to emphasize the importance of quantification, if there is to be much improvement in the present somewhat unsatisfactory state of oligopoly theory. *A priori* theorizing can lead to a multiplicity of models, hypotheses or solutions, a few of which have been suggested here, and it seems clear that the only way the problems can be resolved is by appeal to empirically observable facts. Such observable facts are typically quantitative in nature. We can probably never hope to observe, with any real confidence, whether, for example, firm managers do try to maximize profit, or what their beliefs are about competitors' possible reactions to their own actions, or what they treat as given in any particular context. What we can observe directly are quantities: prices and outputs, for example. And what we can hope to observe indirectly (i.e., through statistical estimating procedures) are also quantitative in nature: coefficients of demand functions, coefficients of cost functions, profit levels, etc.

In principle, the required procedure is simple, as our examples suggest: given enough quantitative information about cost and demand functions, one can make quantitative predictions about what price and output will be (or how they will change under changing circumstances), under each of the alternative models or hypotheses about firm behavior which are being considered. These predictions are then checked against the observed facts, and the hypothesis which led to the prediction best conforming with the observations is tentatively chosen as most acceptable, the others tentatively rejected as less acceptable. After a large enough accumulation of such predictions and tests (generally accompanied by various modifications in the original set of alternative hypotheses, as these may be suggested by the data), the science (hopefully) arrives at a "theory," namely a model which is generally accepted as being in conformity with more observed facts than any feasible alternative model.

In practice, unfortunately, the difficulties are quite formidable. The development of quantitative methods for the estimation of economic relationships has been rapid in recent decades, but we still have a long way to go. As Stigler wrote in 1949, "The economist as a scientist is where the physicist was when he was discovering the properties of the lever, not at the stage when he was discovering the laws of motion." And, "The

chief reasons for economics' undeveloped state are that the objective study of economic phenomena began relatively recently, and the phenomena to be explained are in their totality very complicated."[33]

Much of the empirical work which has been done in the analysis of oligopoly behavior has taken the form of "case studies" or "industry histories," in which the courses of prices and other aspects of firm or industry activity are examined in detail, and an attempt is made to relate what happened to one or another aspect of existing oligopoly theory. Nicholls, in his excellent study of the cigarette industry, for example, shows how during one period of time the firms' actions were consistent with the "kinked demand curve" hypothesis,[34] while during other periods they seemed clearly in tacit collusion, with one firm apparently mutually agreed on as the price leader.[35]

An Example Using the Market Structure Approach

We conclude these brief remarks on the importance and difficulties of relating hypotheses to observable facts, with a brief summary of some of Bain's empirical work on market structure. In one study,[36] Bain examined average profit rates and degrees of concentration in a number of different industries, and concluded that a "critical level" of concentration occurs roughly when 70 percent or more of the market is controlled by the eight largest firms. Industries with more concentration than this average substantially higher profits than those with less concentration, and for those with less concentration there appears to be no particular relation between average profit rate and degree of concentration.[37] In another study,[38] Bain constructed measures of the barriers to entry in each of 20 industries, and classified the industries as having "very high entry barriers," "substantial entry barriers" or "moderate to low entry barriers." Comparing average profit rates of the dominant firms in the industries in each class, he concluded that profits average substantially higher in the first class than in the other two, but that there was no substantial difference between the averages in the second and third classes.

We can combine and summarize the results of these two studies in the form of a multiple regression equation as follows:[39]

Let

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it}, \qquad \begin{matrix} i = 1, 2, \cdots, 20, \\ t = 1, 2; \end{matrix}$$

where:

Y_{it} = average annual profit rate as a percent of equity (after income taxes) of the dominant firms in industry i in period t;

$X_{1it}=0$ if $t=1$, 1 if $t=2$;
$X_{2it}=1$ if industry i is classified as having "very high" entry barriers, 0 otherwise;
$X_{3it}=1$ if industry i has more than 70 percent of the market controlled by the 8 largest firms, 0 otherwise;
u_{it} is the unobserved error or disturbance term;
β_0, β_1, β_2, and β_3 are parameters to be estimated;
the two time periods are 1936–40 for $t=1$ and 1947–51 for $t=2$;
and the total number of observations is, of course, 40.

The data are given in Table 6.

Table 6. Profit rates and market structure classification variables[a]

Industry	Average profit rates		X_2	X_3
	1936–40	1947–51		
Automobiles	25.2	23.9	1	1
Cigarettes	21.1	12.6	1	1
Liquor	15.2	18.6	1	1
Typewriters	15.7	18.0	1	1
Fountain pens (quality grade)	18.0	21.8	1	1
Copper	8.5	14.6	0	1
Steel	3.8	11.2	0	0
Farm machinery and tractors	8.9	13.4	0	1
Petroleum refining	6.6	12.9	0	0
Soap	13.0	15.8	0	1
Shoes (high-priced men's)	10.6	13.4	0	0
Gypsum products	11.2	15.4	0	1
Metal containers	9.3	10.7	0	1
Canned fruits and vegetables	3.2	9.8	0	0
Cement	5.2	14.3	0	0
Flour	7.1	10.1	0	0
Meat packing	3.0	5.1	0	0
Rayon	13.2	18.0	0	1
Shoes (diversified)	8.1	11.0	0	0
Tires and tubes	7.8	12.7	0	1

[a] See text for definitions of variables. Data are adapted from Bain, *ibid.*, pp. 195–200. Also see Bain, *ibid.*, for more complete definitions of industries, profit rates and the bases of classification.

The least squares estimates of the β's in the regression equation, and related statistics, are given in Table 7.

The statistics presented in Table 7 are rather remarkable: two-thirds of the variation in the 40 observed average profit rates is explained by

Table 7. Regression results: Relation of industry profit rates to market structure classification variables

Classification variable:	Constant	X_1 (Time period)	X_2 (Entry barriers)	X_3 (Concentration)
Regression coefficient (b):	6.748	3.430	6.689	3.859
Standard error (s):		(0.993)	(1.300)	(1.149)
Ratio $t=b/s$:		3.456	5.147	3.360
Partial correlation squared:		0.249	0.424	0.239

Adjusted multiple coefficient of determination: $\overline{R}^2=0.668$

the three rather simple two-class classification variables, and each of the estimated regression coefficients is significantly different from zero (under the standard assumptions about normality of the error terms, etc.) at less than the one percent level of significance.[40] Interpretation of the estimated coefficients is straightforward: (1) if one goes from an industry in period 1 to an industry in period 2, holding X_2 and X_3 constant, the estimated average increase in profit rate is 3.43 percentage points; (2) if one goes from an industry with "substantial to low" entry barriers to an industry with "very high" entry barriers, holding X_1 and X_3 constant, the estimated average increase in profit rate is 6.69 percentage points; (3) if one goes from an industry with less than 70 percent of the total market controlled by the 8 largest firms to an industry with more than 70 percent so controlled, holding X_1 and X_2 constant, the estimated average increase in profit rate is 3.86 percentage points; and finally, (4) the constant term, 6.75, is an estimate of the average profit rate for an industry for which $X_1=X_2=X_3=0$.

The statistical results should not be taken too seriously, of course. As already noted, the sample of 20 industries was not random, and may well not be representative of the population of all industries. Also, there may be a possibility of biases entering unconsciously into the rather complicated and partly subjective procedures by which the entry barrier classifications were made. As in any regression analysis, there is the possibility of spurious correlation: the "explanatory" variables chosen may not be really causative, but happen to be correlated with the true but unconsidered causative variables. (One naturally raises the question, for example, why are some industries highly concentrated while others are not?) Nevertheless, Bain's work is at least suggestive of the possible potential for empirical analysis of at least some aspects of market performance (in this particular case, the determination of average profit rates) using the concepts of market structure.

Oligopsony

All of our theoretical discussion has assumed pure competition on the buyers' side of the market, but there may of course be interdependence among buyers as well as among sellers. The analytical problems suggested by this possibility are essentially similar in nature to those we have sketched for the sellers' side. A fairly exhaustive discussion, with special reference to markets for farm products, is presented by Nicholls.[41]

APPENDIX

Advertising in the Pure Monopoly Model. Let the demand function for the firm's product be represented by $p=f(x_1, x_2)$, with $f_1<0, f_2>0$, where p is price, x_1 is output, and x_2 is advertising expenditure. Total revenue is $TR=px_1=x_1f(x_1, x_2)$, total cost is $TC=\gamma(x_1)+x_2$, and net revenue is $NR=TR-TC=x_1f(x_1, x_2)-\gamma(x_1)-x_2$. Setting the partial derivatives of NR with respect to x_1 and x_2 equal to zero, we have the necessary conditions for maximum net revenue:

$$x_1f_1(x_1, x_2) + f(x_1, x_2) - \gamma'(x_1) = 0$$

and

$$x_1f_2(x_1, x_2) - 1 = 0.$$

The first condition is that marginal revenue equals marginal cost for x_1, and the second condition is that marginal revenue equals marginal cost for x_2. The two conditions jointly determine both x_1 and x_2. The second-order conditions for a maximum are

$$x_1f_{11}(x_1, x_2) + 2f_1(x_1, x_2) - \gamma''(x_1) < 0$$

(this is the familiar condition that the slope of MR must be less than the slope of MC for x_1)
and

$$(x_1f_{11} + 2f_1 - \gamma'')(x_1f_{22}) - (x_1f_{12} + f_2)^2 > 0.$$

(This requires, for example, $f_{22}<0$: "diminishing returns" to advertising.)

Multiple Products in the Pure Monopoly Model. Let the demand functions for the firm's products be represented by $p_i=f^i(x_1, \cdots, x_n)$, $i=1, \cdots, n$, where p_i is the price of product i, x_i is output of product i, and n is the number of products. Total revenue is

$$TR = \sum_{i=1}^{n} p_ix_i = \sum_{i=1}^{n} x_if^i(x_1, \cdots, x_n),$$

total cost is $TC=\gamma(x_1, \cdots, x_n)$, and net revenue is

$$NR = \sum_{i=1}^{n} x_i f^i(x_1, \cdots, x_n) - \gamma(x_1, \cdots, x_n).$$

Setting the partial derivatives of NR with respect to the x_i's equal to zero, we have the necessary conditions for maximum net revenue:

$$x_i f_i^i(x_1, \cdots, x_n) + f^i(x_1, \cdots, x_n) + \sum_{\substack{j=1 \\ j \neq i}}^{n} x_j f_i^j(x_1, \cdots, x_n) - \gamma_i(x_1, \cdots, x_n) = 0, \qquad i = 1, \cdots, n.$$

This is the familiar marginal revenue equals marginal cost for each product, but in the marginal revenue functions account must be taken of the cross-elasticities of demand. The second-order condition for a maximum is that the matrix of second-order partial derivatives of NR with respect to the x_i's be negative definite.

Price Discrimination when the Markets are not Independent. The situation is mathematically the same as the multiple products case, with p_i interpreted as price in market i, x_i as quantity sold in market i, and n as the number of markets.

CHAPTER 7

Advertising in the Marketing Process

ADVERTISING is a special form of promotion. Promotion may be defined as those activities of a firm whch are intended to enhance the output of the firm for consumers without altering either the physical characteristics or location of the output in time or space. In a profit-motivated firm all activities are intended to enhance the output of the firm. Manufacturing does so by altering the physical characteristics of a set of resources. Product development is intended to find new specifications for manufacturing which will further enhance the output of the firm for potential buyers. Distribution is intended to enhance specific products in the eyes of potential buyers by altering the position of the products in time or space. All of these activities are for the same purpose—increasing the value of the firm's output; they are all equally relevant to the selling or marketing problem.[1] The unique thing about promotion is that it alters the image of the firm's output rather than the output itself.

Firms may compete for sales in a variety of ways. Usually a sales program consists of a variety of related activities. The relationship among these activities may be such that the effort on one is wasted without meeting minimum requirements of the others. For example, advertising may be wasted if product identification, distribution, or product quality is inadequate. Factors considered in a sales program include product design, packaging, pricing, special merchandising deals, distribution, personal selling, advertising, and publicity. Each of these is a basis for competition. Advertising is not the most costly form of promotion. There is undoubtedly much more spent on promotion through per-

By JAMES D. SHAFFER. *This chapter has benefited from critical reviews from Kenward L. Atkin, Department of Advertising, Michigan State University; William S. Hoofnagle, Economic Research Service, U. S. Department of Agriculture, and many colleagues in the Department of Agricultural Economics, Michigan State University.*

sonal selling than through advertising—but advertising is the purest type of promotion and may fairly represent the problems involved with promotion activities in general.

"Advertising is mass, paid communication, the ultimate purpose of which is to impart information, develop attitude and induce action beneficial to the advertiser."[2] The function of advertising is to communicate such messages to potential buyers as will increase the propensity to buy products or services of the advertiser.

In the United States advertising is classified as to media and as to whether it is national or local. Table 8 shows the estimated volume of advertising expenditures for the United States in 1962 by these classifications. It is estimated that almost $12.4 billion was spent for advertising during 1962. This was about $600 million more than the $11.8 billion spent in 1961. The 1961 expenditures for advertising were 2.3 percent of gross national product and about 3.5 percent of personal consumption expenditures. Advertising expenditures were only about $1 billion less than net farm income.

As Table 8 indicates, the rank of media in terms of expenditures was newspapers, direct mail, television, radio, business papers, and outdoor (billboards). It is impossible to tell how much of this advertising was directed toward consumers and how much was directed at firms. However, we know that all of the $600 million spent on business papers and part of the expenditures for direct mail, miscellaneous, newspapers, and magazines was advertising directed at firms. This is significant to market structure because one of the incentives to vertical integration is the possibility of reducing selling costs.

The distinction between national and local advertising has special significance because it is a factor in determining rate structure. Newspapers, for example, usually charge much lower rates (lower by one-third to one-half, usually) for local advertising than for national advertising.

The Role of the Advertising Agency

The advertising agency is a highly specialized marketing institution devoted to the design and placement of national mass media advertisements. In the United States the role of the advertising agency in the organization of the market is greatly influenced by the informal rules governing the relationships of advertisers, agencies, and national mass media. The media practice is to give advertising agencies a 15 percent discount on all advertising they place at national rates. The result is that an advertiser has to pay 17.67 percent more for advertising space or time than an advertising agency. The bulk of agency income comes from the 15

Table 8. Advertising volume in the United States in 1962, preliminary estimates[a]**

Medium	Millions	Percent of total
NEWSPAPERS		
Total	$ 3,681.4	29.7%
National	781.6	6.3
Local	2,899.8	23.4
MAGAZINES		
Total	973.0	7.9
Weeklies	519.0	4.2
Women's	199.8	1.6
Monthlies	223.2	1.8
Farm national	31.0	0.2
TELEVISION		
Total	1,897.0	15.3
Network	975.5	7.9
Spot	611.0	4.9
Local	310.5	2.5
RADIO		
Total	736.0	5.9
Network	45.8	0.4
Spot	228.8	1.8
Local	461.4	3.7
FARM PUBLICATIONS (regional)	34.0	0.3
* TOTAL FARM PUBLICATIONS	(65.0)	(0.5)
DIRECT MAIL	1,933.0	15.6
BUSINESS PAPERS	597.2	4.8
OUTDOOR		
Total	170.5	1.4
National	115.0	0.9
Local	55.0	0.5
MISCELLANEOUS		
Total	2,358.7	19.1
National	1,400.0	11.4
Local	958.7	7.7
TOTAL		
National	7,660.9	61.9
Local	4,719.9	38.1
GRAND TOTAL	$12,380.8	100.0%

** Revised.

[a] *Printers' Ink*, January 31, 1964.

* Included in other media totals—not to be added.

percent discount. To earn the commission, an agency plans the advertising program for its clients, designs advertisements, supervises production and places the advertisements. Frequently the agency also conducts a certain amount of market research in connection with the development of marketing strategy for the client. The agency may also provide a variety of other related market services. The amount of services and research furnished without extra cost usually varies with the size of the account. Agencies may also service local advertisers on a fee basis and provide special service on a fee basis to national advertisers.

Theory as a Guide in Determining Advertising Appropriations

The problem faced by a firm in determining an optimum advertising budget is very complex. The problem is complex because the solution involves relationships between a number of variables which are difficult, if not impossible, to measure. Economic theory suggests the advertiser should, in order to maximize profit, spend on advertising until the last dollar spent just equals the profit from the sales produced by that dollar. More precisely, a firm should determine selling expenditures, price, and level of output by equating the marginal revenue of selling expenditures to its marginal cost, and equating the marginal revenue of output to its costs. This, of course, assumes a firm which has control of the quantity of the advertised product offered. This is a basic notion included in the analysis of selling costs in standard economic theory texts.[3] Economic theorists have established a number of further propositions for advertising and profit maximization under different conditions. Dorfman and Steiner, for example, provide a proof for the theorem, "A firm which can influence the demand for its product by advertising will, in order to maximize its profits, choose an advertising budget and price such that the increase in gross revenue resulting from a one dollar increase in advertising expenditure is equal to the ordinary elasticity of demand for the firm's product." They include as advertising any expenditure which influences the shape or position of a firm's demand curve and which enters the firm's cost function as a fixed cost. The proof assumes the functional relationship between quantity and price and advertising to be continuous and differentiable.[4]

Hoos formulates the theory of advertising appropriations as follows:

> If . . . we limit ourselves to a single-product, profit-maximizing firm which advertises and which is concerned with a single period under certainty and which borrows funds to supplement its own capital and also makes outside investments, the equilibrium static solution can be stated in the following necessary marginal conditions: output, advertis-

> ing expenditure, investment in the firm's own operation, and the firm's outside investment are carried to the point where the firm equalizes its marginal rate of internal return, marginal rate of advertising return, marginal interest rate of borrowing, and marginal interest rate of outside investment.

He elaborates this statement with a skeleton model.[5]

Theoretical development for adequately dealing with advertising expenditures is far from complete, however. Hoos says of his own model: "This type of solution suffers from the same shortcomings as those of the Buchanan and Dorfman and Steiner models, except that here borrowing and investment are explicitly reflected."[6] Such shortcomings in the treatment of advertising costs in the theory of the firm include, "for example, assumptions of a profit-maximizing firm operating under certainty in a static, monoperiodic, single-product setting."[7]

Chapter 6 dealt with the problems of price determination for firms in imperfect or monopolistic markets. The conclusion there was that the price set by a firm in interdependent markets will depend upon the assumptions made about the reaction of competing firms. The price is not specifically determinant. In determining the optimum appropriation for advertising, a firm must take into consideration the reaction of other firms.[8] Some attention has been paid to the application of game theoretic models to this problem.[9]

It has often been argued that no expenditures would be made for advertising under conditions of perfect competition.[10] But this is true because of the assumption of perfect knowledge. To assume this is relevant to firm policy is misleading. The fact that a firm is one of many producing a product and is facing a horizontal demand curve does not preclude the possibility of profitable advertising. Assuming the horizontal demand curve as ex-post, it would, of course, not be logical to advertise. However, the intent of promotion is to alter the demand for the product and if it is successful, the firm may not face a horizontal demand curve. It is not possible to say, on the basis of theory, whether or not a firm operating under conditions of pure competition could successfully differentiate its product. There is abundant empirical evidence of fungible products being packaged, branded and profitably differentiated by advertising.

There is a very significant gap between the economic theory of optimum advertising and the practices of firms in actually setting appropriations. This is not necessarily because firm managers do not understand that profits would be maximized by equating the marginal value product of advertising with its cost, but is due rather to the difficulties

of measuring both the relevant costs and the benefits in a complex problem of interdependent discrete variables. Variable production and physical distribution costs are usually functionally related to output and therefore can be budgeted and controlled. Promotion costs have no necessary or certain relationship with output.

Research and the Evaluation of Advertising

Can the effects of advertising on sales be isolated? Can the sales results of advertising be predicted? In some cases, the answer to both questions is probably yes—within limits, but in many cases the answer is practically no. The difficulty of the measurement problem starts with the fact that all advertising is not homogeneous. There is no reason to believe that two different advertising messages will have the same effect on consumers, and there is no reason to believe that the same message heard the second time or repeatedly will have the same effect as at the first exposure. The response of consumers depends not only on the message, but on the mental framework of the individual at the particular time the message is heard. This framework includes his response to previous competitive advertising, the world situation, and the weather. In fact, it cannot even be accepted with certainty that a particular advertising expenditure will enhance the product in the eyes of the consumer.

Colley,[11] in *Defining Advertising Goals for Measured Advertising Results,* argues that advertisers should not expect to be able to measure the isolated effects of advertising on sales. The complex of factors influencing sales is usually so interrelated and subtle that it is often impossible to assess the influence of the advertising expenditures. He argues that the results of advertising should be measured in terms of specific intermediate goals: that advertising should be viewed as a means of transmitting messages and measured in terms of the effectiveness of the communication. The effectiveness of advertising would thus be evaluated in terms of such measures as the percent of the population reached by the message, the percent understanding the message, the increase in the percentage knowing of the brand or product, the percentage change in the favorable attitude toward the product, and the percentage buying the product for the first time.

Advertisers in the United States spend millions of dollars each year for research on advertising. This research is designed to aid in the creation of advertising messages, to pretest advertisements, to aid in the selection of media, to measure the changes in exposure or attitudes, and to show changes in relative sales volume.

Media research provides the advertisers with estimates of the size and

characteristics of audiences of the various media. Audience research can provide such information as the number of persons who saw an advertisement, the number who read it, and the number who understood it. Surveys are made not only to find out how many listened, or read an ad, but also to find out the extent of comprehension of the message. Research services are also available to measure the effect of advertising on attitudes and changes in attitude toward products.

At least one research organization offers a service relating the advertisement to the purchase.[12] By survey they determine the number who read the particular advertisement and of these the percentage who purchased the product. This is then compared with the number who did not read the advertisement and the percent of this group who purchased the product during the time period considered. This provides the data for an estimate of the immediate effects of the advertisement. It is assumed that the difference in purchases between those exposed to advertising and those not exposed is due to the advertisement. It is possible, however, that persons who were planning to buy the product anyway would tend to read the advertisement but those not planning to buy it or a similar product would not.

Advertising research is conducted not primarily to prove that past decisions were good or bad but to aid in the planning of advertising expenditure in the future. Measurement of past results is useful only as it can be applied to improving future decisions. Thus, much of advertising research is designed to aid in evaluating alternative advertising programs and in the creation of advertising messages. Copy research, for example, consists of testing advertisements on samples of people before the copy is used in order to get consumer reaction. Surveys are made to identify buyers and nonbuyers or heavy and light buyers of products. Knowing the characteristics of the audiences of the various media and the characteristics of heavy and light users may provide an opportunity to use different messages to different groups. It may be important to direct different messages to different audiences, for a message which would sell one group might antagonize another. The uncertainty involved in determining effects of advertising is, however, illustrated by the fact that it is not yet clear whether it is more profitable to concentrate advertising expenditures on the groups which are heavy users of a product or on those which are light users.

Advertisers and their agencies also seek through various survey techniques to determine consumer's motivations, interests, attitudes, and habits in order to aid them in designing advertising that will make their

products more appealing. This information is also used to suggest product innovations which would increase sales.

Almost all large advertisers of branded products buy research which indicates changes in the market share of their brands. In many cases this information is made available by local areas and by characteristics of buyers. The success of advertising seems frequently to be judged more in terms of the change in market share than in change in total sales. This may well be a significant measure, since promotion is more likely to influence relative share of a market than the total amount of the product sold. Total sales are often influenced more by general business conditions, changes in population, and other factors than by advertising.

One of the major problems of measuring advertising results in terms of sales is that it is difficult to assign the effect of advertising to a particular time period. How long does the good will accruing from the presentation of an opera on television last? Should the expense of recruiting a new customer be charged to his first purchase? Such questions as these lead to the controversy of whether advertising should be treated as an investment or as a current operating expense. Waugh says, "Current sales and current profits do not depend upon current advertising expenditures. Rather they depend upon the 'advertising charge,' in other words, upon the accumulated effects of past and current advertising expenditures."[13] He suggests the concept of the advertising decay curve, analogous to the half-life concept for radioactive materials, as a way of looking at the longer-run effects of advertising. The concept suggests that there may be some regular rate of decline for a particular type of advertising.

There are, of course, statistical procedures for relating past advertising expenditures to past sales. While many such studies have undoubtedly been made by individual firms, they are not available to the public. However, since the late 1950's the U. S. Department of Agriculture has been working with agricultural commodity groups in an effort to evaluate certain aspects of their promotion programs. Hoofnagle,[14] in reporting on these quantitative studies, divides them into four groups based upon the measurement techniques used. These are: subdivided time series, test and control markets with matched cities, multiple regression analysis, and controlled rotational experiments.

The subdivided time series technique is based upon audits of sales, usually in a test market using a sample of stores, before, during, and after a promotion. The assumption is usually made that promotion is the only significant variable related to sales variation among the three periods. A lamb promotion study[15] using this technique, however, ap-

pears to have left much to be desired in obtaining definitive results. The assumption that other things would remain the same did not hold true.

The test and controlled market technique involves the selection of matched cities, using one set as control and the other as the experimental cities.

> The assumption underlying this technique is that all factors affecting sales, except advertising and promotion activities, will change at the same time, in the same direction, and to the same extent in the test and control cities. . . . The proper use of the technique entails the grouping of cities in matched pairs and then randomly selecting one city from each pair as a test city. . . . Of course, when the test and control city technique is used . . ., some variables do not necessarily remain constant or change to the same degree in both groups of cities even for a short period of time. As "insurance," the collection of data bearing on these factors to the extent available during the experiment, in both the test and control cities, will permit statistical adjustment to be made, if necessary, using multiple regression techniques, and will add materially to the reliability of the results.[16]

A study of the effect of promotion on cottage cheese used one control and two test cities.[17] In this case, considerable differences occurred between the control and the test cities in some variables, other than advertising, which might be expected to influence the sales. While data were available indicating the extent of the change in some of the variables, they complicated the analysis. With only a few observations it was impossible to adequately isolate the effects of promotion.

Two types of multiple regression studies have been made in an effort to evaluate the effects of advertising. One of these might be called experimental and the other historical. The experimental study is set up to estimate the effects of a particular promotion effort. An example of this type of study is one conducted by the United States Department of Agriculture with the objective of evaluating a nation-wide promotion campaign for orange concentrate conducted during September-November 1959.[18] Monthly price and quantity data from a national consumer purchase panel for the period August, 1954, through August, 1959, (base period) were used to predict the sales price relationship which would be expected each month following August through July (experimental period). The promotion was conducted from September through November, 1959, and consisted of expenditures of about $4 million by 22 cooperating processors for media advertising, consumer and dealer contests, and consumer price-off coupons in newspapers and magazines. In addition, the Florida Citrus Commission intensified dealer-service and public relations activities. It was estimated that the volume of concentrate that was sold would

have sold only at an average price of at least two cents less than the price received over the 6-month period had there been no promotion. If this is correct, the gain in revenue greatly exceeded the cost. By the end of the six months the effects of the 3-month promotion had apparently worn off, since the price was back to the predicted level without promotion. The basic assumption of this analysis is that the functional relationship between causative factors and sales determined for the base period continue to hold in the experimental period. Since sales in the experimental period may be beyond the experience of the base period, the assumption is that the relationships may be projected to higher levels of sales. The advantage of this technique over the simple segmented time series technique is that other variables affecting sales may be taken into consideration. This technique would not be adapted to the measurement of the effects of promotion where changes in sales due to promotion were small relative to the unexplained variation in the sales.

A study conducted by Nerlove and Waugh on the advertising of oranges over a 50-year period is an example of the use of the historical multiple-regression study.[19] The basic regression equation fitted took farm value of sales as the dependent variable. Quantity sold, consumer incomes, current advertising expenditures and average advertising expenditures over the preceding ten years were the independent variables. All data were in per capita terms and all dollar values were deflated by the consumer price index. The lagged variable was designed to estimate the carry-over effect of past advertising. The authors conclude:

> Organized orange growers are now spending about 1½ percent of their gross income for advertising and promotion. Our equation indicates that if orange production remained constant an added dollar of advertising would raise the gross returns to orange producers by over 20 dollars. Thus, if orange production were held constant, the orange growers would obviously find it profitable to spend more for advertising. But when supplies are uncontrolled, it is impossible to judge the long-run effects of advertising without taking account of such matters as the long-run elasticity of supply and external economies or diseconomies.[20]

This also points up one of the special difficulties related to advertising of agricultural products, the lack of supply control, which is discussed later in this chapter.

A number of other studies have been published using multiple regression analysis in the attempt to evaluate advertising.[21] This type of study suffers from the same statistical and conceptual problems as are involved in price analysis using regression techniques.[22] Variations in the procedures used can have a very significant effect on the outcome of

the analysis. Time series data for independent variables are often highly intercorrelated and it is difficult to isolate the effects of a single variable. Further, the cause and effect may be reversed. In some cases advertising expenditures are determined by taking a fixed percentage of expected sales, in which case changes in sales cause changes in advertising expenditures rather than the reverse.

Controlled rotational experiments have also been used in an attempt to assess the relationship of advertising to sales. An example is a United States Department of Agriculture study of apple promotion.[23] The study involved three treatments—an apple use theme, a general health theme, and a control with no advertising or promotion. These treatments were alternated among six cities in a Latin squares design with observations based upon sales records of twelve retail stores in each city. The data were subjected to analysis of variance and covariance. This design, according to the authors, ". . . makes it possible to obtain estimates of direct and subsequent one-period carry-over effects of each treatment."[24] By varying the treatments according to an experimental design a greater degree of control is provided than in the simple matched city experiment. In this particular study, sales of Washington state apples were significantly different from the control at the 95 percent level of confidence for one theme and at the 90 percent level for the other. No significant carry-over effect was detected for the subsequent four-week period. One of the difficulties with this type of study is that the number of observations is limited (because of expense) and thus, with the kinds of variation usually found, quite large changes are required before statistically significant results are obtained. In this study, for example, more than a 20 percent difference was required in order to obtain a significant test at the 95 percent level of confidence.

Because of the difficulty in measurement and accounting, most firms find it impossible or judge it unprofitable to do the necessary research to equate the marginal value product of advertising to its cost. As a result, they develop practices which may appear to an economic analyst as little more than arbitrary rules of thumb. Unfortunately, little is known of the details of the practices, and we can do little more than classify some of the most common of them in rather general terms. If we are to understand the behavior of firms and the possible effect this behavior may have on the structure of the market, it is important to review and discuss some of the practices followed.

Methods Used in Determining Advertising Appropriations

Hundreds of methods are used by firms in determining their actual appropriations for advertising. A single firm may use several different

techniques for different products depending upon the stage in the life cycle of the product, the predictability of advertising response, the nature of the competition, and the relative importance of the product in the firm's product line. The following is a classification of practices used in setting advertising appropriations.[25]

Arbitrary amount, residual funds, available funds. Some firms simply set an arbitrary amount for advertising often based upon trade practices. They do not know the relationship between advertising and profit and do not consider it worth the cost of finding out. Another technique is the residual funds approach. In this case the other claims against liquid resources are met first; the amount left is spent for advertising. The available funds approach may be followed by a firm with great faith in advertising but with limited liquid assets. It may be used by a new firm attempting to enter products into a highly advertised market area. In this case the firm spends all the money it can get for advertising. This would seem to include the case of Alberto-Culver, a producer of beauty products. The firm, in 1955, had gross sales of $400,000 and the next year spent $311,000 for advertising. In 1960, the company spent $10.1 million for advertising and had sales of $14.9 million. The sales goal of the company is $100 million by 1966, and the company president expects this amount will require an expenditure of $40 million in advertising. The company philosophy seems to be to offer distinctive products at prices high enough to support national advertising. Leonard Lavin, the president of the company, gives the following example of their advertising-price policy.

> In 1961, VO-5 Hair Spray was introduced in a seven-ounce size for the premium price of $1.50, while the parasites were selling 15 ounces for 99 cents. Naturally, at 99 cents the price brands were not able to advertise, and so were unable to market their brands on a national basis. . . . By the end of 1961, VO-5 Hair Spray was in first place and the market had grown to 90-million consumer dollars.

This was an increase of $15 million over the previous year.[26]

Percent of sales or profits. The most common practice of firms in the past seems to have been the percent-of-sales approach.[27] The percentage may be of past sales or of expected future sales. It is not clear what basis is used for establishing the percentage or how flexible the percentage might be. It would appear to differ little from the arbitrary approach. Those using this approach appear to look at sales as a source of funds for advertising rather than at advertising as a source of sales. There are several possible explanations for the popularity of this approach. It pro-

vides management with a budget technique relating sales and advertising; if there is no basis for evaluating the results of advertising, it may at least reduce the cost of making the appropriation decision. The approach may also be one of those rules of thumb, arrived at by trial and error, which provide satisfactory results for the firm. Another possible explanation is that the general adoption of this approach within an industry may contribute to competitive stability.

The average percentage of sales spent on advertising within an industry is generally known. By sticking to the common industry advertising percentage the firms may avoid an advertising war which might be as costly as a price war. Much advertising is of a defensive nature, and the general adoption of a common percentage of sales for advertising by an industry might lead to industry profits higher than would exist with unrestricted competitive advertising expenditures. Competitiveness in advertising is then reflected largely in the quality of the advertising rather than in the volume of expenditures. This comes to about the same thing as the meet-the-competition approach discussed below. An approach similar in appearance is the percent-of-profit method. There is little analytical justification of such an approach other than the fact that it sets a limit for advertising appropriations and is a method of arriving at them without expensive analysis.

Fixed dollars per unit of product. An approach similar to the percent-of-sales method is that of setting aside a fixed amount for advertising based upon past or projected sales. It appears to be the approach followed by many large manufacturers of consumer durables. We know little about how the number of dollars to be spent per unit is derived. These approaches have a special significance in terms of the business cycle. If advertising is based upon either a percent of sales or a fixed amount per unit sold, then it will tend to amplify the business cycle. Joyce reports on the behavior of the 100 largest advertisers in the United States during 1960-61 recessions:

> . . . 74 of the 100 leaders increased their budgets in 1960 over 1959, and 70 spent more on advertising in 1961 than they spent in 1960. Total expenditures by the 100 leaders, including the 30 who cut budgets, were higher in 1961 than they were in 1960. In contrast, expenditures by all advertisers in the United States decreased.

However, many of the leaders who did not decrease advertising were producers of foods and consumer soft goods which were little affected by the recession. These firms may have been basing their advertising appropriations upon a percent of sales or fixed amount per projected unit sold. Joyce continues:

> Among the less than one-third of leading advertisers who cut their

> budgets in 1960 were the four major automotive companies, two tire companies . . . two oil companies . . . and three appliance companies. . . . Auto makers, of course, set budgets on the basis of so many dollars per car sold, and are not regarded as forward-looking advertisers.[28]

In the case of durables, we do not know for sure if sales were down because advertising was down or if advertising was reduced because of lower sales. Nor do we know for soft goods if advertising was up or maintained because of higher sales or if the higher sales were the result of higher advertising expenditures.

Appropriations to meet the competition. An element of this approach probably enters into most of the other methods of establishing the advertising budget. Because the objective of most advertising is either to take sales away from a competitor or to keep him from taking them from you, the expenditures for advertising by competitors is a very important factor in the appropriations decision for many firms. There may develop an advertising leader in an industry just as there may be a price leader. The phenomenon is much the same. If each of a small number of firms attempts to maintain its historical share of the market, and advertising is an important factor in determining the share, advertising leadership is likely to develop. In discussing this approach, which he calls competitive parity, Dean states:

> The defensive nature of a large proportion of advertising outlay, designed to check the inroads of troublemakers, may account for the method's popularity. For example, in the antitrust case against the big three tobacco companies, the explanation advanced by American and by Liggett & Myers for following the lead of Reynolds in a 1931 price advance was that the revenue was needed to match Reynold's increased advertising.[29]

Objective and task approach. This approach involves the definition of objectives, the specification of the means or tasks to achieve the objectives, and the estimation of the costs of each task. The advertising appropriation is then the sum of these costs. Frey refers to this as the research-objective approach. Objectives are presumably based upon research and progress toward the objectives. In discussing this approach, Frey says:

> It has much to recommend it. It seems to avoid arbitrariness, to give some attention to the opportunity for advertising, and to relate expenditures to a specific goal. It avoids blind reliance on past conditions or on relationships within the company or the industry. Whether all those companies claiming to use the method—and the number has increased greatly over the years—actually are truly scientific in their approach is

> open to considerable question. . . . Advertisers who state that they use the method often have trouble in explaining just how they arrived at the amount of advertising necessary to reach the established objectives. They may find it difficult to explain how they arrived at the objectives The objectives themselves may be established with too little regard for their implications.[30]*

The method does not provide any clue as to how values are assigned to the various objectives or how the objectives are selected. This general approach seems to be the one advocated by the Association of National Advertisers.[31]

Dollar-contribution method. The dollar-contribution method starts the same as the objective and task method but carries the process on to an estimate of the contribution of each task. This may not be based upon research but rather on judgment or agreement among a management group. It is recognized that advertising may substitute for other selling expenditures, such as salesmen's salaries. Estimates are made of returns on expenditures for another salesman and compared with the same amount spent on advertising. Finally, the expected return from an investment in advertising is compared with expected returns from alternative investments. The dollar contribution will be estimated usually on the basis of expected increase in sales multiplied by a fixed estimated profit margin.[32]

The dollar-contribution method can be refined to a marginal analysis in the case of incrementally observable results. For example, a mail order firm soliciting by direct mail may very well be able to make the kinds of calculations suggested by the marginal analysis. However, the great majority of firms operate under conditions of considerable uncertainty in regard to the total long-run relationship between advertising expenditures and profit, and therefore tend to use one or more of the other techniques in setting the level of their advertising appropriations.

The Special Problems Facing Agriculture

Farmers are at a relative disadvantage in the profitable use of advertising and other promotion compared with large producers operating under conditions of imperfect competition. Farmers typically operate in a stage of production with increasing marginal costs and are faced individually with horizontal demand curves. Where this is the case they can benefit from promotion only if the farm price of the product is higher with promotion than without it. A firm selling under conditions of im-

* Albert Wesley Frey, *How Many Dollars for Advertising,* © 1955. By permission of the Ronald Press Company.

perfect competition may benefit from promotion by simply selling more of the product at the same price because of economies of scale in production or distribution. It may, therefore, be profitable for a processor or distributor to promote a product, though promotion of the same product might be unprofitable for the farmers producing it.

The products of most farms are fungible, frequently purchased by experts, and the quantity produced by any one farm is usually small. Even a relatively large expenditure for advertising per unit sold from an individual farm would provide too little total money to differentiate significantly the products of the farm.[33] Because of the difficulty in profitable product differentiation for individual farms, farmers have supported commodity promotion groups. In 1962 there were about 1,200 such groups with combined annual expenditures of over $700 million.[34]

The agricultural commodity promotion groups may be classified as farmer cooperatives, producer groups with voluntary membership, and producer groups organized by law such as councils, commissions, boards, and state agencies. A 1958 survey of agricultural promotion groups found the following situation:

> Groups depending primarily on voluntary support represented 30 percent of all groups reporting expenditures and accounted for 38 percent of the total spent by all groups. Farmer cooperatives ranked first in number of groups promoting, but were second to voluntary groups in expenditures. Groups such as councils, commissions, and boards, that depend primarily on taxes imposed by law or assessments and check-offs approved by the producers or processors through referendum, contributed substantially to the promotion of farm products. State departments of agriculture also reported promotional expenditures, thought not so large in total as the other three groups. . . . About 39 percent of the total promotional support was obtained through voluntary procedures, 38 percent through taxes, assessments, or check-offs, 22 percent through allocation from sales receipts. . . . Strictly commodity promotional programs (oriented toward a commodity, i.e., milk without further identification) received 57 percent of the total funds allocated. Remaining funds were about equally allocated between the promotion of branded products and products or commodities identified with a specific area of production.[35]

The situation of each of these types of commodity promotion groups is, of course, somewhat different. Cooperative groups which brand their products and are in a position to regulate the supply sold under the brand do not have promotion problems uniquely different from other firms and will not be considered further in this section.

Assessment and management problems. Voluntary groups promot-

ing a commodity rather than a brand have the special problem of obtaining contributions from the many producers of the commodity. Since the product of those contributing to the promotion is not distinguishable from the product of those not contributing, one will benefit as much as the other. There is, therefore, no direct relationship between the cost and the benefit to the individual farmer. Even if it is highly profitable for the group to advertise, the individual grower will benefit the same whether or not he, as an individual, contributes. This being the case, the job of organizing and maintaining the voluntary group is difficult and may be expensive.

There are three items of expense which are not encountered by an independent firm. (1) A considerable amount of money may be required to recruit members.[36] (2) Additional expenses are involved in collecting the money, which usually involves relatively small amounts from a large number of farmers. (3) Finally, there is a cost resulting from the propensity to advertise in such a way as to impress the sponsors rather than simply maximizing the impact of the promotion on consumers.

The effectiveness of commodity promotion groups is limited by the political nature of many of the decisions. The management has little flexibility, especially with respect to the total amount to be spent on promotion. This is fixed by legislation, vote of members, and the number participating. One frequent result is that too little money is made available to do any significant promotion, so that as a result that which is available is wasted. Similarly, it may be advisable from an economic point of view to spend more for advertising some years than others, but it is politically difficult to transfer funds from one year to the next. A commodity group may have more than one type of product to promote. Members produce different varieties and grades, for example. The tendency is to allocate expenditures among the products based upon "political" decisions rather than on strictly economic criteria.

A further management problem involves the relationship with the advertising agency. The boards of commodity groups are usually not specialists in marketing and fail to define clearly specific promotion objectives. Many critical decisions are left to the advertising agency. While most agencies are reputable, the method of agency compensation may encourage some to recommend media advertising in cases where field men, package design, or some other marketing activity might be more profitable.

As in all groups with specialized managers, there is a problem of differences in the objectives of the managers and the members. The efforts of the management may be directed toward the survival and growth of

the organization rather than the provision of maximum benefit to individual members.

The difficulty of organizing and maintaining voluntary promotion groups and the problem of the nonparticipator have led to the establishment of state agencies for the purpose of promoting specific products. These agencies are usually called commissions, councils or boards. They usually have the right to impose a tax on growers based upon units sold; a check-off plan is usually provided. The legislation may specifically establish the agency and the tax or it may be only permissive, requiring a vote of growers for activation of the program. The promotion legislation may be tied in with provisions for marketing orders. In some cases the law provides for a refund of the promotion tax on application.[37]

The particular assessment difficulty of the state commissions is that they control only those growers within the state, and most commodities are grown in a number of states. Consumer advertising without state-of-origin identification of the product will, of course, be simply commodity advertising benefiting products grown in other states as much as that paying for the promotion. Even where the product is adequately identified it may be difficult to convince consumers that identical products grown in different states are different. A state group may succeed in differentiating the product through brand identification and a quality control program. It may also be successful in promoting the product in the marketing channels and winning a place on more supermarket shelves without consumer advertising.

The distinction between the voluntary group and those with legally based assessments is not clear-cut. The revenue for the voluntary group may come from a check-off collected by processors or the assembly organization. A bargaining cooperative or a processor may, for example, vote to assess its members on the basis of their sales and send this money to the commodity promotion group. The assessment would be voluntary, since an individual producer selling to the processor or selling through the cooperative may apply for a refund or exemption from the assessment. However, there is a significant advantage to the promotion organization in requiring the farmer to make a special effort to be excluded rather than a special effort to be included.

Supply control problems. Agricultural commodity promotion groups usually lack control of the output of the product they promote. Access to the market is usually unrestricted, and initiating production does not require prohibitive amounts of capital or new skill, especially for those

already producing similar products. The cross elasticity of supply between many agricultural products is high. Because of this, promotion expenditures stimulating a demand response which would be profitable with controlled output may be unprofitable with no supply control. Promotion resulting in a higher price of one agricultural product may, therefore, also raise the price of products with a high cross elasticity of supply with the promoted product. Nerlove and Waugh have shown that the profitability of advertising depends not only on the demand response but also upon the elasticity of supply and the extent of external economies or diseconomies of scale.[38] In fact, under certain conditions promotion of a commodity may result in unstable prices and lower average prices than would have existed without promotion.[39] If, during a production period, promotion is successful in raising the price of the commodity and the higher price stimulates a large supply response, the price in the next production period may be below what it would have been without promotion. The result will depend upon the supply response. The production period is defined as the length of time required to bring a commodity into production. In the case of potatoes it is about one year and for cherries eight to ten years. During the production period changes in techniques and abandonment rates may alter quantities marketed, but major changes in output are limited to succeeding production periods. The response in initiating additional production may be spread over a considerable length of time, because farmers typically do not respond simply to the most recent price but to some estimate of future prices based upon a series of past prices. In the case of a product like cherries, advertising effective in expanding demand and raising prices would result in increased plantings of trees each successive season over the 8-year production period. It would not be until the ninth and succeeding years that most of the depressing effect on prices of the increased plantings of trees would be felt.

The problem for agriculture is further complicated by the "irreversible" nature of the supply curve due to the existence of fixed assets. It is relatively easy to attract capital to the production of an agricultural commodity, but capital which is committed to the product may not be easily transferred in response to lower prices. For example, plantings of cherry trees and specialized equipment for their care have little alternative use. Thus, a given price reduction would result in a smaller change in supply than a price increase of the same amount.[40]

A number of models could be developed, based upon various assumptions about the response patterns. The important point, however, is to recognize supply response as a major factor in the formation of promo-

tion strategy by commodity promotion groups. Successful promotion of some products may depend upon the development of methods of limiting excessive or uneconomic expansion of productive capacity. As a minimum, commodity promotion groups should see to it that good long-run price predictions are available and understood, and should time promotion activities to minimize the stimulus to supply expansion. The latter policy would probably include withholding promotion expenditures during periods of relatively high prices, accumulating resources for periods of large supplies and low prices.

Because of the nature of the supply-response and fixed-asset problem in agriculture, promotion may be most profitable for products with excess capacity. The promotions, if successful in raising the price of the commodity, would not attract new production and would increase the return to already committed assets which have little alternative use.

Promotion may also be profitably undertaken by groups producing commodities under government price supports. The purpose of such promotion would be to reduce the government-held stocks of the commodity and the tax expense of the support program, thus reducing the political pressure for lower support prices. Since the promotion would not have an immediate effect on the market or support price, it does not create the supply-response problem.

Marketing control problems. The marketing control problems originate because the commodity groups usually do not own, grade, package, or distribute the product they promote. This results in special coordination problems. Because of a lack of control of products, commodity promotion groups may have difficulty coordinating supplies with special promotion efforts. As Clement observes, ". . . some producer organizations have had the experience of launching a full-scale promotion only to find a shortage of supplies in the market, and prices unexpectedly at their peak."[41] Yet the success of the promotion may depend upon timing it with peak supplies, general availability in stores, and attractive consumer prices. Both consumer mass media advertising and point-of-purchase promotions may be wasted without some means of assuring adequate supplies of quality products in the markets and stores. The problem of quality is of special concern to the fruit and vegetable promotion groups. A state promotion group may do its product more harm than good by identifying and advertising a product of inconsistent quality. Large advertisers of branded products maintain consistent quality because it takes only one experience with poor quality to lose the favorable consumer image of a product. Where there is no mechanism of con-

trol over quality sold an individual shipper may be tempted to make a quick profit by selling low-quality products in conjunction with the commodity group's promotion efforts.

Most commodity groups also lack the control in the market necessary to utilize price promotions for the introduction of products and the advantages of coordinating package design with promotion themes.

It is clear that it is important for the commodity groups to think in terms of developing total marketing programs rather than simply advertising programs. The total marketing program would include coordination in marketing, insuring quality control, attractive complementary packaging, field men to insure availability in the markets to coincide with promotion, coordination of point-of-purchase efforts with mass media advertising, etc. Such coordination is impossible under the present organization of many of the commodity groups. A new type of institution designed to provide the market coordination of the products from the many independent producer-members is needed if they are to gain the full benefits of promotion.[42]

Advertising in Social Perspective

Advertising is one of the most controversial aspects of marketing. Critics have argued that it results in a waste of resources, misinforms consumers, distorts their natural desires, debases the culture, and contributes toward the concentration of market power. Proponents of advertising have argued that it reduces the cost of distribution, makes mass production with its low production costs possible, contributes to high levels of employment, encourages progress by stimulating hard work and quicker acceptance of new products, provides entertainment and education by subsidizing the mass media, and adds utility to the products advertised. The purpose of this section is to look briefly at some of the social issues involved in these arguments.

Information and utility. Advertising may add value to a product. If advertising adds to the usefulness of a product, it must then be considered a type of production, since production may be defined as the creation of utility. Knight observed, many years ago,

> Another factor of progress having exceedingly complex uncertainty relations is the changes in human wants. . . . Insofar as they result from a deliberate expenditure of resources, they become as all other economic operations. . . . In this respect the "production" of wants is like the production of goods. In fact, . . . the advertising, puffing or salesmanship necessary to create a demand for a commodity is causally indistinguishable from the utility inherent in the commodity itself.[43]

A product is valued or desired by a consumer because of the potential utility or satisfaction it offers. Satisfaction is a subjective or psychological measure. The satisfaction that a product yields for an individual, therefore, depends both upon its characteristics and upon the personality of the individual. If advertising somehow makes a girl feel more beautiful and desirable as a result of using a particular product, the advertising adds value or utility to that product for the girl. She will obtain more satisfaction from its use because of the advertising. In fact, the advertising may even contribute to the girl's beauty: if she feels more beautiful she may be more beautiful. Advertising may contribute a placebo effect similar to that which has been well documented in medical research.[44]

Advertising can also add utility to a product for a consumer by informing him of uses of the product. An advertisement linking a can of cherries with the image of a variety of delicious desserts in the mind of the consumer adds utility to a can of cherries for the consumer. Many products have been perceived as useless because of a lack of knowledge of their use. Tomatoes, for example, were not considered edible until information changed popular beliefs, thus creating a valuable food out of what had previously been a useless plant.

Advertising, especially local advertising, which more frequently offers price and availability information, may also significantly reduce the consumer's cost of searching for products. Information leading to a reduction in the costs in time and efforts of procurement is valuable.

Much has been made of the distinction between information and persuasion in advertising, with many favoring informative advertising but opposing persuasion. The argument seems to be that it is a good thing to be informed but that the consumer is sovereign and his wants should not be influenced. However, the distinction between information and persuasion in advertising is not at all clear-cut. The intent of the advertiser is always to persuade: that is, to encourage the purchase of his products. If the advertising is not persuasive, if it does not influence wants, it is not good advertising from the advertiser's point of view. Basic human wants are general and can usually be met with a wide variety of goods and services fulfilling specific desires. The specific wants may be influenced by all types of information. It seems impossible to differentiate between informative and persuasive advertisements.[45] It may also be argued with merit that creating wants is not bad, *per se,* for new wants are the basis for improving the standard of living.

However, there is another side to the argument that advertising adds utility to products. The advertisements may raise false hopes and bring disappointment rather than satisfaction. Advertising is not an unbiased source of information, and may therefore influence consumption in ways

which reduce rather than enhance satisfaction. Some wants are better than others, but there is little in the structure of our society which causes advertising to promote those which are better. (The effect of advertising on beliefs and values will be discussed later.) There are, of course, laws prohibiting "dishonest" or false advertising. But a wide latitude is given and the laws are difficult to enforce. The courts have consistently ruled that "puffing" is legitimate in advertising.

The relevant social question is not whether advertising provides a useful service to consumers, for it certainly does—one which people would be willing to pay for if it were not offered in inseparable combination with goods purchased—but whether it is the best method of providing this service. It has been argued that the total amount of unbiased information about products available to consumers may be reduced because of the large expenditures on advertising and the effect they have on the information media.[45a] Were it not for advertising offering a very large subsidy to the news media would consumer product information be treated as news and would more useful information be obtained for the expenditures?

Effects on production and distribution costs. Another question arises as to the balance of social costs and benefits resulting from advertising and other promotion which expand the market for a firm's product and thereby make possible the reduction in unit costs of manufacture and distribution as a result of economies of scale and location. The extent of the market limits the degree of specialization. Observations of modern industry indicate that major economies of scale do exist. The proponents of advertising argue that advertising creates the mass market which makes low cost mass production possible. Economies of scale exist in both manufacturing and distribution. The extent of the contribution of advertising to mass production and mass distribution is an unsettled empirical question. Advertising does seem to have the effect of making demand more homogeneous. There is evidence that advertising has expanded the demand for some products, and economies of scale have resulted.[46]

Hoselitz makes a point of the higher cost of manufacturing in a society with an undeveloped mass information system. He cites the example of small manufacturers of particular items concentrating physically in the center of cities of India to the extent that workers are literally so close together that they bump into each other. The lack of physical space is so restricted that the output per man is greatly reduced. Schemes to increase output by the government have included the building of spacious facilities at the outskirts of cities in so-called "industrial estates"

to be made available at rates no more expensive than those currently occupied. However, the owners refuse to move. They refuse because they are convinced the result would be loss of sales. They feel they must be present with all their competitors in the center of the city to get a chance to sell. They are afraid that they would be missed by potential customers if they were absent from the usual market place. The existence of an adequate means of promotion would probably make it possible for them to take advantage of the superior manufacturing location without the loss of sales.[47]

Advertising may also reduce selling costs by replacing some more expensive selling activity. Advertising may, for example, reduce the requirements for salesmen and sales clerks. Any significant savings in this labor could well pay the costs of advertising. This fact has recently been discovered in the U.S.S.R.:

> Russian marketing officials have suggested that, within limits, the added expenses resulting from advertising and product differentiation make possible somewhat larger savings in the operation of a self-service system. If the efficiencies of self-service are to be realized, the record shows, advertising and product differentiation seem essential.[48]

Advertising may also reduce the cost of distribution by reducing the loss from spoilage of perishables and the cost of maintaining inventories of products in excess supply. "For example, when a large shipment of herring suddenly arrived, Soviet trade officials were criticized for not advertising in order to broaden the market. It was felt that this would have prevented the spoilage that eventually resulted."[49]

The other side of this argument is that much advertising is simply a waste of resources adding to the cost of products. Most advertising is done by firms in monopolistically competitive or oligopolistic markets. Competition among a limited number of firms tends to be by advertising and other promotion rather than price. Much of their advertising is to meet the competition; the advertising of one firm simply cancels the effect of advertising by competitors. If real economies of scale exist could they not just as well be realized through price competition and would not the public benefit from the price competition? The relative potential for extending the market through advertising compared with price reductions is a largely unanswered empirical question.

The negative argument continues with the assertion that advertising is a major factor creating imperfectly competitive markets through differentiation of products which are physically very similar. It is generally believed that the result is higher prices than might otherwise have existed. This leads us to the next topic.

Effects on market power and concentration. It may be argued that advertising, by making product information available to a large number of consumers over a wide area, reduces the possibility of local monopoly profits. Better informed consumers are less likely to be taken advantage of. However, as mentioned above, it is not clear that advertising results in the optimum distribution of product information. Further, the purpose of consumer brand advertising is to differentiate products which, if successful, will give the firm greater discretion in price policy (the demand curve will not be horizontal, but will slope downward to the right) providing the opportunity to obtain monopolistic profit.

The relationship between advertising and market concentration is much more complex than simply providing differentiated products. Advertising can be an important factor in market concentration and in limiting effective entry into a market. There are two sources of economies of scale in advertising. The effectiveness of advertising is related to the number of consumer exposures to the advertisements of the product. There is some evidence that a sequence of exposures has more impact than the sum of the single exposures. The impact is cumulative, due to the process of reinforcement. A one-time exposure may simply be forgotten and have little effect, while a continued sequence of advertisements keeps the consumer aware of the product. Also, many of the most effective advertising media require very large total outlay but offer more exposures per dollar than media requiring less total outlay.[50]

Most significant, however, is the fact that many more total advertising exposures can be purchased with a given expenditure per unit sold for a product with large sales than small sales. A hypothetical case will illustrate the process involved. Assume an industry with a large number of producers of a consumer product which is easily differentiated. Not all producers are of the same size. There are some economies of scale in manufacturing and distribution and it is found that sales can be increased more profitably by advertising than through price reductions. Therefore, several firms begin to advertise. In order to compete, the other firms also advertise. Assume the product sells for $10 and the largest ten producers sell 100,000 units, compared with 50,000 for the other competitors. The largest producers decide to spend $1 per unit of sales for advertising. At this rate they will be able to buy more than twice as many advertising exposures for their products as their competitors if they spend the same amount per unit of product sold. The result is that the largest producers' sales increase relative to competitors and this gives them a still greater advertising advantage. The advertising advantage will increase each successive year. The relatively small firms cannot compete in ad-

vertising because this would require them to sell their products at less than the cost of product plus the cost of advertising.

Entry into an industry which is already concentrated and uses extensive consumer advertising is especially difficult. In order to gain effective consumer and retail acceptance for a product in competition with established firms, the new firm might be required to spend more for advertising than could be obtained from gross revenue during initial years of the product's introduction.

The large advertisers also have an additional advantage due to the particular rate structures for many advertising media. Quantity discounts running as high as 30 percent are given to the large advertisers.[51] In other words, the same television spot announcement might cost a large advertiser 30 percent less than it would cost a small advertiser. Furthermore, the rate applies not to a particular product but to the total of advertising placed by a particular advertiser, thus giving an advantage to the large multi-product firms.

Kaldor observes, "Indeed, the problem is not so much to explain why this concentration should occur as a result of advertising, but why it should come to a halt."[52]

If the firms were subject to increasing average costs to scale, the increased costs of manufacture or distribution might offset the advantage from advertising. However, with modern management, distribution, and manufacturing techniques, the cost advantage seems rather to be in favor of the larger-scale producer of many consumer products. At least scale economies seem to exist for the total of processing and distribution within very large ranges.

However, several other factors seem to work toward the result of an oligopolistic market structure rather than monopoly. Consumers can become saturated with the advertising of a particular brand, and increases in exposure bring diminishing returns. (In order to overcome this limit to expansion, firms may market several brands of very similar products.) The sales of many consumer goods depend upon the availability of retail shelf space, much of which is controlled by a relatively few retail organizations. These larger retailers offer competition by allocating space to their own brands. They may also act as a countervailing power opposing the establishment of a monopoly in any product they buy. They would prefer not to have to buy from a monopolist.

Also, once the number of competitors is reduced to a few, they may find it more profitable as a group to limit both price and advertising competition. All of the firms will be large, and the smaller of the firms may have sufficient resources to maintain its share of the market even if

it requires larger expenditures for advertising per unit sold. The final restraint is the existence of public policies opposing monopoly. Firms may behave in such a manner as to maintain several competitive companies in order to avoid government regulation.

An alternative hypothesis suggests that advertising may contribute to increased product competition by aiding established firms in effectively marketing new products. Without advertising it might take many years for a new product or brand to obtain a place in the market. Also there appears to be a trend in the United States toward diversification by product line by major firms. Effective entry of these new lines may be enhanced by advertising. Thus while advertising may restrict entry of new firms or firms with limited resources, it may contribute to entry of new product lines by established well financed firms. A distinction therefore needs to be made between concentration in total productive capacity and concentration for a particular product. Advertising almost certainly contributes to concentration of the former, while it may not do the same for the latter under assumptions of realistic market situations. It is not at all clear that concentration would not occur in the absence of advertising in the real world of imperfect knowledge.

The Federal Trade Commission has recently recognized the significance of advertising and promotion as factors contributing to the restraint of trade. For example, this is a key point in the argument by the Commission hearing examiner who ruled that the acquisition of the Clorox Chemical Company, a manufacturer of a household bleach, by Proctor & Gamble was illegal, and issued an order which would require Proctor & Gamble to sell Clorox so as to restore it as a going concern. This was true even though Proctor & Gamble was not previously a producer of household bleach.

This finding was based upon the following factors, among others:

> Clorox's dominant market position was increased as a result of the acquisition and the various advertising campaigns, sales promotion programs and devices subsequently employed by P & G.
>
> P & G's financial and economic strength and advertising and promotional experience as compared with its competitors in the liquid bleach industry;
>
> Its ability to command consumer acceptance of its products and to acquire and retain valuable shelf space in grocery stores because of its advertising and promotional experience and financial resources; . . .
>
> Clorox's ability, through aggressive P & G inspired advertising and promotional methods, to prevent the entry of additional competitors

into the industry, and to prevent existing competitors from expanding by normal methods of competition.

. . . . . the ability of P & G's conglomerate organization to shift financial resources and competitive strength through a broad front of different products and markets and its ability to strategically alter the selected point of greatest impact as time, place and market conditions require.[53]

The basic social question is not whether advertising contributes to economic concentration and provides the means for effective restriction of entry to markets—for there is little doubt that this is true for products with the requisite production and promotion characteristics—but whether the resulting oligopolistic and oligopsonistic market structures are better or worse for society than a "competitive" structure of small firms. For one thing, in economic theory the judgment in favor of perfect competition assumes consumers' wants are independent of producer influence. What happens to this norm and the concept of economic efficiency under social circumstances where, because of advertising, wants are not independent of producer influence? It is not at all clear that farmers fare better when they deal with a large number of small processors rather than with a few large firms. It is not clear that large numbers of producing firms provide better quality or lower prices, or develop more new products or respond more to the needs of consumers than do a small number of large firms. Both the theoretical and empirical questions remain to be resolved.[54]

Effects on beliefs and values. Advertising is a marketing activity which has a number of indirect social effects. Some of these originate from the fact that advertising is specifically designed to modify the beliefs and values of the members of society. This can have a very significant influence on the character of the culture. The potential influence of advertising increases greatly as society becomes wealthier—because of greater gains to be obtained from advertising as a result of greater discretion in consumers' choices—and as the techniques of mass communication improve. This issue will, therefore, be more critical in the future.

Potter argues that advertising is an institution comparable to the school and the church in the extent of its influence upon our abundant society. He says that ". . . advertising . . . trains the individual for a role—the role of consumer—and it profoundly modifies his system of values, for it articulates the rationale of material values for him in the same way in which the church articulates a rationale of spiritual values."[55] He argues further that while the school and the church have

acted with a considerable degree of social responsibility and have been more or less answerable to society "advertising has in its dynamics no motivation to seek the improvement of the individual or to import qualities of social usefulness, unless conformity to material values may be so characterized."[56]

Modern advertising does not simply provide information about products but carries with it an attempt to define the good life in terms of the products being promoted. This good life is one of high levels of consumption, not one of service or contribution. The good life of advertising is having goods—not being good. Liberal use is made of prestige members of the society to identify specific products with this good life.

The effect comes not simply from the thousands of commercial messages of the mass media but also from the effect of the advertising support and consequent dependence of the mass media on advertisers for business success. This dependence affects the quality of entertainment and information available through the mass media, and also tends to promote this narrow commercial concept of the good life. The type of television programming available is especially influenced by advertising. For our population as a whole more hours per day are spent in contact with television programming than in school.[57] We also spend almost twice as much for advertising as for all of higher education.[58]

The power to influence beliefs and values leads to political power. In a democratic society advertising, public relations, and the mass media, subsidized by advertising, may be used to influence political decisions in favor of the advertiser. The most direct approach is the use of institutional advertising. Advertisers can also influence the editorial content and treatment of news in portions of the mass media. Public relations are usually more subtle. An important technique is the preparation of company or industry propaganda for release through the news media as if it were news.[59] An important institutional rule encouraging this type of activity is the fact that the cost can be included as a business expense and thus is deducted for the corporation income tax. Thus, in many cases at least 50 percent of the cost comes at the expense of tax revenues.

The power of large oligopolistic firms to influence the rules of the market, both formal and informal, through advertising and public relations has a potential to very significantly affect the allocation of resources, the distribution of income, and the adoption of new techniques. The concentration of industry concentrates this power in a relatively few hands.

Of special significance is the effect of advertising on the balance of community expenditures between privately produced goods and those publicly produced. This is the problem Galbraith identifies as "social

balance."[60] He argues that a serious social need exists for larger expenditures on such things as education, parks, safe highways, measures for control of delinquency, and basic research in both the physical and social sciences, and that an excessive part of our national income is allocated to relatively useless items of personal consumption. To what extent the existing balance is due to the force of advertising and promotion of privately produced goods and the relative lack of promotion of goods and services necessarily produced in the public sector of the economy is an important question.

The defenders of advertising, on the other hand, argue that advertising does not really formulate values but rather is simply a reflection of the values already held by society. Advertisers, they argue, simply find it profitable to identify with the things people already conceive as good.

It is also argued that the advertising support of the mass entertainment and information media results in more and higher quality information and entertainment being available to everyone in the society than would exist without advertising. Thus advertising is a positive force for advancing culture.

It may also be argued that many men have limited imaginations, that their need and ambition is to develop more and better wants rather than simply satisfy existing wants. Advertising supplies this need. In suggesting new products and new uses of products, advertising also provides the incentive for hard work, which contributes to economic progress a value held by most people in the American society. At the same time, by increasing demand, advertising stimulates production resulting in fuller employment—another socially approved goal.[61] The philosopher who asks to what purpose the increased production is put, whether it results in better people or happier lives, or who asks whether happiness might not better be served by reducing the discrepancy between wants and their satisfaction through limiting wants receives scant attention in our modern society.

The basic question, nonetheless, seems to be not whether advertising influences the beliefs and values of members of society—for it certainly does to some extent—but rather in whose hands should this power be permitted to reside, and under what social control.

CHAPTER 8

Quality Competition and Product Development

IN AN advanced capitalistic society most firms actively try to differentiate the quality of their product in order that the firm will not be "perfectly" competitive with others. Differences in quality of product are the normal rule rather than the exception. Quality competition among the majority of firms, including the food and farm supply industries, may be greater than price competition. Similarly, from the standpoint of social welfare quality competition may be a more "ideal" form of competition than the perfectly competitive model.

The purposes of this chapter are to discuss the concept of quality competition and the ways in which firms organize to utilize quality and product differences. Quality is defined in the broadest generic sense to include color, shape, materials, design, grade, services, and other qualitative characteristics. Products are differentiated if there are significant differences in any of the above attributes or characteristics. If quality competition or product competition is defined as all nonprice competition other than advertising and promotion, then it is difficult to imagine examples of many firms or industries in which quality competition does not significantly influence the action of firms.

As an economy changes from agrarian to industrialized, trade changes from dealing in raw agricultural commodities to dealing with finished industrial products; a much wider range of quality variation is brought into the market. From the standpoint of the consumer, quality variation in wheat and flour in the early commodity markets is now supplanted by competition among many brands of bread, cakes, macaroni, breakfast cereals, spaghetti, pie dough mixes, cake mixes, pancake mixes, and numerous other items. In the average United States supermarket there may be more than 100 items whose principal ingredient is wheat. For

By W. SMITH GREIG.

the consumer, although her ability to differentiate has become more sophisticated, real or imagined differences in quality become more and more difficult to discern and evaluate. For the firm, variations in size, colors, shape and availability of packages, brand images, service, as well as differences in wheat characteristics, and other quality factors may outweigh price as far as competitive relationships are concerned.

As education and income increase, the need for food to satisfy hunger changes to a want for a nearly unlimited number of kinds and varieties to satisfy eating experiences. Thus, quality differences and quality or product competition become more and more important not only in food but in almost all products as incomes, education, and industrialization increase.

If economics is defined as a study of how society employs scarce resources to satisfy wants, then homogeneity of product cannot be assumed in a normative model of market behavior. Since the degree to which wants are satisfied varies with variation in quality, the economizing of resources necessarily involves consideration of quality as well as price. As stated by one author, the desire for different product qualities is fundamental in welfare economics; and this means that "if marginal productivities cannot be equalized in every alternative use then this is a 'loss' we must accept."[1] If the consumer is willing to pay the extra cost, there is no reason for depriving him of this privilege of having a differentiated product.

Pure quality competition in which price remains constant and quality and output are variables is not usual in our society, but important examples exist, as in the case of passenger fares and freight rates set by governmental regulation, where the only competition among firms is in services. Radio and television programs also operate in this country on pure quality competition since there is no direct monetary cost to the consumer.

While these cases are important they are exceptions rather than the rule. Most economic activity involves variations in quality, in price, in promotion, and in output. With increasing industrialization and increasing product variation, however, prices tend to become more and more sticky or sluggish. This does not mean that competition decreases, only that the area of competition shifts to nonprice areas: to advertising and promotion and to product and quality competition.

Theory of Consumer Behavior

A general theory of quality competition has not been developed to the degree or to the preciseness of price theory. Yet the concept of quality competition has long been recognized both in theory and in prac-

tice.[2] If we are to explore this theory, or to gain some insight into the behavior of firms in quality competition, we must first analyze some characteristics of the consumers to whom firms sell their products.

All consumers have the desire for satisfying experiences, or all consumers have basic wants. Food is not purchased merely to satisfy hunger and to provide a balanced diet by the most economical method.[3] Food is purchased and prepared to provide a satisfying experience in its consumption. Each consumer may desire a very broad range of various combinations of foods and beverages to satisfy his wants in eating.

Basic wants or wants for experiences are translated into derived wants or the desire for particular products, when individuals think that a particular product will provide the means to a particular satisfying experience. A derived want is the desire for a product which actually or supposedly will provide the means to a particular experience. Derived wants are changed into demand for a product through purchases.

Each consumer has a broad constellation of basic wants. These wants are a function of tradition, mores and customs, and the social and economic status of the individual. While basic wants tend to remain constant, derived wants are changeable and are determined from basic wants and the limits of information concerning possible alternatives. Producer behavior in choice of product quality can be characterized in light of the imperfect knowledge consumers have of possible alternatives and in terms of the firm's efforts to produce products that will satisfy changeable derived wants of consumers.

Theory of Firm Behavior

Each firm produces products based on expected consumer wants. The quality of the product (shape, color, form, taste, size, and services attached to its sale) is determined by the firm's estimates of current or expected consumer wants. As the firm does not have perfect knowledge concerning current consumer wants, the product quality is constantly subject to change by the firm when new knowledge concerning wants is uncovered. The firm strives to exploit existing demand for its products and to create new demand. It can do the latter in two ways: (1) it can alter consumers' attitudes and beliefs concerning the product by advertising and promotion or (2) it can alter the quality of the product to more closely conform to consumers' current preferences or prejudices. In either method the firm by necessity must continually try to obtain better knowledge of consumers' activities, habits, tastes, wants, and customs. If new and better information is obtained, the firm can then vary the product and product quality experimentally to test new hypotheses concerning consumer wants. The firm not only can vary quality experimentally to try

to better meet consumer wants but it can actively search for innovations with the same end in view.

Producers seek to maximize profit, or rate of growth or sales volume or share of market, or to attain some other goal. In so doing, the quality of product chosen may be a function of the qualities of the product of competitors. The wants most readily served are those that have been neglected by other producers. Producers will not necessarily try to exactly match competitors' quality of product but will try to produce products unique in some details which the producer thinks will be judged superior by some consumers. Since consumers have a great diversity in their constellation of wants, the producer tries through quality differences to capture that portion of this constellation in which he may have the least competition.[4]

In trying to capture a unique position of consumers' constellation of wants the firm may utilize three general kinds of quality competition. *Vertical quality competition:* wherein the superior of any two qualities is considered preferable by most buyers and the superior quality involves greater costs. (An example of this is color television compared to black and white.) *Horizontal quality competition:* wherein various people rank different qualities in a different order and cost differences, if any, are purely coincidental. (An example is a black car compared with a red car, or a Ford with a Chevrolet.) *Innovational quality competition:* wherein changes are considered improvements by most buyers, and additional costs may or may not be involved. (An example is television compared with radio or the mechanical refrigerator compared with the ice box.) It should be noted that vertical quality changes have an effect similar to that of a price change, while horizontal and innovational changes do not.

Horizontal quality competition is important in an industrialized capitalistic society. Different makes of automobiles in the same price range, kinds of stoves, refrigerators, television sets, radios, clothing, feeds, farm implements, retail stores, and many specific food products compete primarily on the basis of horizontal quality differences. Although this is the actual basis of competition for most firms, each tries to lead consumers to believe its product is better because of innovation or a vertical quality difference. Many firms actively and continuously try to develop innovations. There is an initial competitive advantage in innovations, but this advantage is limited in duration as competing firms imitate the innovator, resulting in horizontal quality competition until another innovation is introduced. Thus, firm behavior in quality competition is a continual active contest between producers.

In the theory of quality competition, the size of a firm is seldom determined by demand. In order for this to be true, a distinction has to be made

between the concept of a firm producing a given product or group of products and the concept of a firm as an economic entity being potentially able to produce an unlimited number of different products. While the demand for a specified product will generally show a downward-sloping curve, this does not mean that the expected net revenue from additional units of investment by a firm ever need become negative. To say that the expansion of a firm which can produce an unspecified number of new products is limited by "demand" is to say that there are no additional products that the firm could produce profitably; or it is to say that there is no business activity in the economy which the firm could profitably enter.

Conditions for Unrestricted Quality Competition

If quality competition is to be active and effective and is to conform to a pattern that maximizes consumer satisfaction through the use of limited resources, several conditions are necessary. Dissimilar alternatives must be technologically feasible—it must be possible to vary products or product qualities and consumers' knowledge of them. Firms must be free to innovate or imitate. There must be no collusion among firms. Buyers must have access to information about quality differences. While in most societies producers are free to innovate, various forms of protection (such as patent laws) are often given the innovator, so that imitation is only possible within certain limits. Similarly, many societies have legal restrictions on the degree of collusion among firms, and governments may require compulsory informative labeling of product standards.

Indicators of Intensity of Quality Competition

The number of available products and available qualities of products is one measure of the intensity of quality competition. The degree of flexibility of the qualities of a particular product is also an indication of how well quality competition is working and a measure of how well the diversity of consumer wants are being satisfied. Changes in shares of the market, if correlated with changes in quality, and changes in the composition of an industry (the entry of a new firm and the exit of old firms), if associated with quality changes, are also measures of the intensity of quality competition. Typically, quality competition involves the challenging of the status quo by a firm with a new quality that may provide a competitive edge and evoke a response of the challenged firms, in turn, with their own improved quality. The rapidity and degree of both challenges and responses are a measure of intensity of quality competition.

Importance of Quality Competition

It has been suggested that innovations are the truly dynamic element in the economy, the source of credit, interest, and profit as well as busi-

ness fluctuations.[5] Innovation, or quality changes in products and the competition among firms that it creates, is often intense. This is pointed out by Schumpeter:

> But in capitalist reality as distinguished from its textbook picture, [the] . . . kind of competition which counts [is] the competition from the new commodity, the new technology, the new source of supply, the new type of organization . . . it is hardly necessary to point out that competition of the kind we now have in mind cuts not only when it is in being but also when it is merely an ever-present threat.—It disciplines before it attacks.[6]

Innovation or product development, while a creator of wealth and a creator of competition, is also a destructive force. Any new innovation must supersede the old. Whale oil replaced tallow, kerosene replaced whale oil and electricity replaced kerosene in lighting of homes. Schumpeter uses the term "creative destruction" to describe this phenomenon. However, in nearly every case where the new destroys the old, the new results in more total economic activity.[7]

Basically, quality competition is a process of adapting means (product quality) to ends (consumers' constellations of wants). The ultimate result is not perfect competition in the traditional sense and equilibrium is never obtained, except at some very distant point in time when no further products or product qualities can be produced that will better satisfy the wants of consumers at this point in time.

Socially useful entrepreneurial activity thus consists not only of activity dealing with production methods, costs, outputs and prices, but also of (a) activity that seeks to achieve greater precision in satisfying wants in connection with the sale of existing products, by altering the knowledge and attitudes of buyers, and (b) activity that seeks to achieve greater precision by altering the qualities of products. Furthermore, competition in quality and innovation necessarily results in economic development.

In the absence of price competition, quality competition not only performs much of the same function as price, but also promotes novelty, variety, and progress. Thus, even sluggish or sticky prices are not an indication of the lack of competition. Even in markets with administered and coordinated prices, quality competition may still be an active competitive force.

Determinants of Quality and Products Currently Produced

The qualities of products produced by a firm will be influenced by many things, including custom, standards, and the goals being sought by the firm.[8] Profit maximization is undoubtedly a strong force in deter-

mining product quality. In some cases there may be a tendency for firms to deteriorate quality to the minimum acceptable level as a means of maximizing profits. This is characterized by an adaptation of Gresham's law, "poor quality products drive good products off the market." Because of this tendency and because consumer knowledge of the value of quality differences becomes more difficult in an industrialized society, more and more standards of quality are covered by governmental regulations. These may include compulsory labeling, minimum legal specifications, and tolerances of grades. Society thus becomes the actual regulator of quality in many products. Many industries such as drug manufacturers and agricultural pesticide producers, as well as food product and apparel manufacturers, are restricted in regard to the qualities of products which may be produced because of governmental regulations concerning their safety and use.

Custom, habit, and past experiences of consumers are very important in determining what is currently being produced. Consumers may resist changes and innovations; their wants and horizons, though changeable, are limited. Yet it is nearly always possible to discover some new product or some quality change that serves a purpose better than an existing product. Generally new wants are created by a producer. Even where consumer resistance is strong, if the product is superior, the consumers can be taught over time to accept it and it will eventually replace the old product.[9]

An Increasing Competitive Strategy

A principal strategy of many firms is that of product planning or planning what to produce in the future. While in the Schumpeterian context innovation was an extraordinary event and the result of extraordinary efforts of new men and new business firms,[10] our thesis is that innovation is a planned, organized and managed normal activity of most large business firms in an industrial society. Innovation or product development as an integral part of firm activity is a fairly recent phenomenon, having for the most part developed during the 20th century. It has resulted not only from an increased technological base of firm activity but also from changing social institutions. As early as the 1930's, authorities in the field noted that the tendency toward large-scale organization, the outstanding characteristic of modern business, is largely a result of changing technology: better communications and transportation, better preservation methods for food, technological developments in manufacturing, and developments in managerial control equipment.[11]

Without seeking to exaggerate the role of these mechanical aids (the

> typewriter, telephone, cash register, computers) it should be emphasized that without them the division of labor and delegation of responsibility which are necessary for the management and control of large scale enterprises would be difficult or impossible.[12]

While largeness does have a technological base, it also has a social one.

> The adaptation of the corporation, or limited liability company to private manufacturing business removed the most important limitation on growth and ultimate size of the business firm when it destroyed the connection between the extent and nature of a firm's operations and the personal financial position of the owners.[13]

Thus, the technological base and the development of social institutions with limited liability for owners of firms have given rise to bigness in business. With bigness, technological developments and limited liability have come the birth of the company research laboratory with planned invention and planned innovation. Even if a firm reaches a monopolistic position in a given product, that firm's size is limited unless it makes other products. Penrose very succinctly sums up this competitive element, which necessitates planned innovation as a normal buisness activity:

> Even when a firm exploits to the fullest possible extent the opportunities for monopolistic gain available to it [through exclusive patents, or through destroying competition], the protection afforded, though often extensive, can neither be complete nor absolutely certain. For many, if not most firms, the more effective long-run protection both against direct competition as well as against indirect competition of new products will lie in the firm's ability to anticipate, or at least to match, threatening innovations in processes, products, and marketing techniques. In a society characterized by a widespread 'spirit of enterprise' and a highly developed technology, the threat of competition from new products, new techniques, new channels of distribution, new ways of influencing demand, is in many ways a more competitive influence on the conduct of existing producers than any other kind of competition. Its primary effect is to force a firm wanting to maintain itself in the market for any given product to learn all it can about the product, its market and, in particular, the relevant technology, and to endeavor to anticipate the innovations of other firms.[14]

Factors that Influence Decisions

The development of any new product which may better satisfy the consumer's constellation of wants and his changing parameters of wants may be profitable only if it is analyzed in the context of current social, economic, political and technological conditions, and the firm's projec-

tions of what these conditions will be in the future. Product planning for a firm is both strategic and long run: projections of social, economic, political, and technological factors which may affect the demand for a new or proposed product should be studied and analyzed. Within certain limits each of the factors may be predictable. Essentially, the success of a firm may depend upon how well it predicts changes and how early it discovers new growth fields and growth products.[15] A growth field is one in which there is substantial evidence that a real potential exists for expansion of sales of a product line. One of the most critical tasks in long-range product planning by a firm is the early identification of the basic reason why growth fields emerge and change. Historical studies[16] have shown that there is a high correlation between the rate of growth of an individual firm and the total market for its primary products.[17] Thus, the fact that company growth is related to growth product fields is significant because growth fields change frequently and often rapidly. Products, product quality, distribution channels, and even lines of business need to be changed with changing times if the generally accepted goals of firms are to be maximized. Thus, firm projections of trends in social, economic, political, and technological conditions often must be a continuous process. Sociological, economic, political, and technological determinants of growth fields and product development within growth fields are summarized below:[18]

Sociological Determinants of New Product Development

Shifting expenditure priorities—public versus private consumption; preference shifts within product groups; the acceptability of substitute and synthetic products; relative emphasis on personal needs, home, transportation, communication, entertainment, health, community, education, foreign versus domestic products, and so on. Also important have been factors such as increasing urbanization and the development of suburbia, the increase in leisure time, increased proportion of housewives employed, more younger people, more older people, and for agricultural marketing firms the trend toward greater and greater acceptance of convenience food products.

Public and legal attitudes toward business—attitudes toward bigness, toward patent sanctity, toward what constitutes monopoly, toward interstate commerce, restraint of trade, public control of prices, profits, labor and material costs, and so forth.

Labor conditions—Labor pressures against automation and the introduction of new products, the availability of a skilled labor pool, union-management balance (this can be social, political, and economic), management flexibility in hiring and firing, and so forth.

Education—the sophistication levels of consumers, the number of

trained scientists and skilled personnel, educational institutions as markets for products themselves, increasing output of research, progress of educational institutions.

Economic Determinants of New Product Development

The demographic structure of the market—the size, location, age, ethnic structure, sex, and economic structure of future populations (this is partly social and partly economic).

Expected consumer expenditures—incomes, distribution of incomes, inflation, depression, savings versus expenditures.

Changing cost relationships—changing labor costs, increasing foreign competition, higher advertising costs, changing distribution systems, changing freight rates, changing production areas for product inputs.

Political Determinants of New Product Development

The role of government—the activities of state, local, and federal governments as customers, investors, competitors, quasi-judicial controllers, coordinators of activities, and sources of information.

International affairs—the general political atmosphere, foreign markets, overseas resources, tariff barriers, continuation of foreign aid programs, international monetary stability, possible military involvements, or the political recognition of certain nations.

Technological Determinants of New Product Development

The increasing scientific discoveries, the increased rate of technological change, increasing rate of obsolescence, accelerated rate of innovation, birth of company research laboratories, increased research spending, the increasing number of scientific workers, and the increasing need for scientific manpower.

While all of these determinants of feasibility and potentials for new products will not be discussed in detail, each may have decided effects on the potential for any new product. Political aspects are becoming of more importance in agriculture and agricultural food processing, particularly as many new technologies are cost-reducing and weight- and freight-reducing; thus the international marketing potentials increase. Several large U. S. food dehydration firms were founded during World War II and initially financed by military contracts for their primary products. Thus, changing overseas commitments of U.S. armed forces alone may have decided effects on market development of and potentials for many new concentrated food products.

Procedures in Product Development

New product development is highly competitive and is conditioned by the changing social, economic, political, and technological climate. Since

the allocation of firm resources among products is a critical managerial decision, most large firms have a set of procedures by which possible new products are sought for and analyzed with a view to possible commercial production. The procedures, which may be classified in many ways, are basically these: (1) exploration for possible products, (2) screening possible products to select the most promising ones, (3) business analysis to determine if costs, prices, and profits would be in line with desired company goals, (4) development of pilot lines or commercial production facilities, (5) testing to determine marketability.

Exploration for new products and new ideas. The increased expenditure of commercial firms in industrialized societies in recent years for research and development is a well known and highly publicized phenomenon. In 1953 the National Science Foundation[19] estimated that U.S. industry expended around $5.4 billion on research and development. By 1958 the sum was estimated to be well over $10 billion; it has been increasing rapidly since then. A large share of the resources devoted to research and development is aimed toward innovation. There are many firms whose present size was based primarily upon innovations from patentable inventions, and clearly the inventive efforts undertaken in the research and development laboratories of private companies are strongly profit-motivated. In emphasizing the role of research and development in firm growth, Mees and Leermakers[20] state:

> It is asserted far too often that small business cannot afford to support scientific research. Few businessmen *can* afford to *support* research. They carry out their research, as they do the rest of their operations for profit, i.e., to be supported by it, and if they are successful, they do not remain small, they grow.

The increasing activity of business firms in science and technology is noted by Schmookler[21] after analysis of a large number of patents: "Invention changed [during the first half of this century] from an activity overwhelmingly dominated by independent individuals to one less overwhelmingly dominated by business enterprise." Nearly half of the current inventions now come from research and development staffs of business firms. More and more firms, in searching for new product ideas, start with their own research laboratories. Their research may be scientific or technological, fundamental or applied and may or may not result in patentable inventions.

While laboratories may be a source of new technological ideas for innovations, they may also be used as a means of checking the feasibility of new methods of satisfying consumers' wants. These activities are in

a sense two polar extremes: one of them uses scientific and technological research to develop products which are then fitted into the consumers' constellation of wants. Through the other activity, marketing staffs determine existing consumer wants that are not being adequately served, develop specifications for products, and then assign the ideas to technical and scientific staffs for research and technological development.

The firm research and development laboratory, though an increasingly important source of ideas for product development, is far from the only one. Sales staffs, competing firms, guesses, hunches, external developments, and other sources of ideas are used. Typically, a firm may review thousands of product ideas and not atypically review social, economic, political, and technological developments in many segments of the economy to try to determine new areas in which it may wish to allocate some of the firm's resources. A food product company may enter product development of airplanes (General Mills) and a machinery equipment company may go into furniture (Brunswick). The search for new product ideas can come from any number of sources.

Screening ideas. From thousands of new product ideas from hundreds of possible industries, a new product committee or the research and development staff may screen out one or two to several hundred ideas for further analysis and development. Nearly any well equipped research and development staff can typically discover many times the number of products or processes that the company is able to develop because of the limited physical and financial resources of the firm.

> Experience has shown, in fact, that results available for application are not lacking from any active research laboratory. The extension of scientific research in industry is limited by the financial requirements for the commercial development of results rather than by any shortage of developable results.[22]

The screening stage in product development is an extremely critical one. The cost of time and equipment in discovering a possible new innovation typically is minor compared with the cost of gearing up for a pilot line or for commercial production. Discovery may cost thousands of dollars but pilot lines or commercial facilities hundreds of thousands or millions of dollars.

Thus the possible products are screened in light of company resources, and in view of social, economic, political, and technological developments, and risks must be offset by potential financial gains.

Business analysis. Business analysis of ideas which have been explored and screened is a normal rule before further investment. Some

companies set standard requirements concerning profitability and return on investment. For example, one of the largest U.S. food distributors was founded on the basis of handling only those products in which there was a demand at a price at which one-third of the returns would be production costs, one-third distribution costs or marketing costs, and one-third profit.[23]

Preliminary business analysis is based upon empirical data and firm estimates of demand plus engineering projection or engineering estimates of cost of production. The "demand" for a new product as viewed by the firm is seldom a demand curve as defined by the economist. More typically, price will be set on the basis of costs, a "normal" return on investment, competing product prices, or some other rather arbitrary basis, and "demand" will then be the quantities the entrepreneur thinks he can sell at a specific price. Business analysis may also include factors such as unused plant capacity, complementarity of product line, utilization of by-products, economies of scale in distribution, and reduction of seasonality of business. If after preliminary analysis the new product appears to meet the goals of the company, the firm may develop a pilot line for production for further testing.

Experimental production. Each stage in product development typically becomes more costly. Exploration and discovery are relatively inexpensive compared to experimental production, and this in turn is relatively inexpensive compared with commercialization. Therefore any action subsequent to exploration, screening, and business analysis may be a major managerial decision, as further action may require the commitment of substantial resources.

A pilot line for manufacturing of the new product may be developed for many reasons, including further development of cost data, development of quality control procedures before commercialization, and to test consumer acceptance of the product. From laboratory or test-tube discovery of a product to pilot-plant operations can be an extremely involved and costly process, both from the standpoint of physical equipment and from that of the time of technical and scientific personnel required.

Testing. The new product from the pilot line may be tested for acceptance in many ways. Depending upon the nature of the product, it may undergo a series of chemical tests and physical tests, as well as consumer tests. For the latter there can be use tests, product tests, preference tests, sales tests, tests of advertising, elasticity of demand, and many other factors to attempt to answer, at an early stage, the questions "will it sell?" and "what will the market be?" Many tests are conducted from labo-

ratory-produced products, but a pilot line or pilot plant may be necessary for test marketing. As a pilot line may cost a small fraction of commercial installation and as most new product development is inherently risky, a pilot line and market testing are becoming more and more necessary as a hedge against risk of failure.[24] The final answer to the potentials for a new product, however, can only come through attempts to commercially market the new product.

Profitable New Products

In oligopolistic or monopolistic markets competitors can react almost immediately to price changes. Where demand is inelastic, price cuts will not expand market sales greatly; since competitors can react fast, price competition will quickly reduce profits to all producers. In new product innovation, on the other hand, there are two distinct time lags in adjustments by competitors.[25] The first is the time it takes a competitor to determine whether a rival firm's innovation is successful. This may not be easily measurable either by the innovator or by competitors at early stages of commercialization.[26] The second lag in time has to do with competitors' adjusting to the innovation after it has been thought successful. Depending on the nature of the innovation, this time lag could be a few days or many years. A radical innovation in ship design could take many years to duplicate or imitate by a rival firm; in tractor design it may be as much as three to four years, since most firms do not change models more than once a year; new packaging materials for agricultural products might be duplicated in a few months' time.

Before certain products can be commercially distributed or put on the market in large geographic or large population areas, many millions of dollars may have been expended. There can be no absolutely certain method of pre-predicting consumers' acceptance of the product.[27] Any new product is a calculated risk or a calculated gamble of money invested against potential profits. To offset this risk, patents protect the investor in many countries of the world. Many major food processing and food distributing companies within the United States have succeeded largely on the basis of patents which prevented duplication by rivals.[28]

Innovations based on patentable inventions may give a firm a monopolistic position in the production of specific products. In this case the time lag of competitors in adjusting to quality change could be many years. Profit potentials may, therefore, be greater from quality competition or product competition than from price competition, because of the time lags in a rival determination of whether the product is successful and in development of a substitute product to compete with new product or quality of product as well as because of protection by society.

Unless protected by some means, particularly patents, the life cycles of successful new products by individual firms often fall into a typical pattern.[29] Time is the principal variable (Figure 18).

A new product is introduced by a firm. Consumer knowledge is limited, initial sales are low, consumers resist change, the new product may be bought by only a few venturesome consumers. Purchases are tentative and experimental. As more and more consumers test the product, and as consumer knowledge becomes greater, sales of the new product

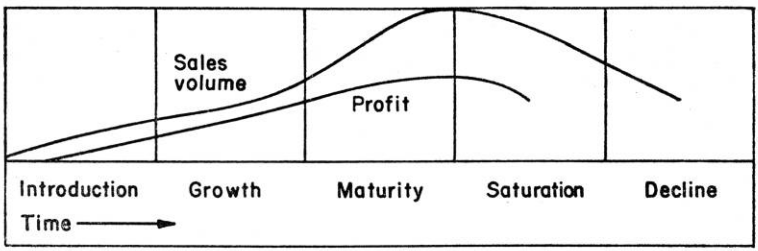


FIGURE 18. Typical life cycle of a successful new product.

gradually increase. As sales volumes increase, profits increase. At some point in time, sales and profits accelerate rapidly to a peak and then decline.

After introduction and growth of the new product, rival firms tend to identify and determine the market and profit potentials, and attempt to imitate the innovation. Introduction and growth by competitors may take a shorter period of time and their profits may be less and of shorter duration. It is likely that the market saturation point for each in an industry will thus be obtained at nearly the same time, with each having a different share of the market.

As new and improved products are introduced, the "new" product of the first time period becomes an "old" product, and sales and profits decline. If a firm expects to continue making profit from innovation, it thus must continually evolve new products, otherwise its own life cycle would be similar to that of a particular product.

ORGANIZATIONS WITHIN THE FIRM FOR PRODUCT DEVELOPMENT

The development of scientific and technical research departments of business firms has given rise to relatively new problems of administrative control.[30] Scientific research is necessarily nonstandard and individualistic. But the very circumstances which render it difficult to control also intensify the need for control. Essentially, "research workers must have freedom" and "management must manage" are both partially

true and partially mutually contradictory or inconsistent. Organization, then, must set up conditions for the control or management of researchers who must have freedom.

Research organization and strategy. Many firms have research and development departments, divisions, or committees. It should be pointed out that research and development, from the standpoint of management controls and of firm resources and entrepreneurial activity, are related but essentially different functions. Research, invention, patents, and development are not synonymous. Redman illustrates the economic difference between research and development in the following manner.

> The rank and file of men in business, and not a few in the halls of learning, appear to have the impression that knowledge gained in research, if of potential value in industry, is ordinarily capable of immediate application. They have heard it said that research is a gamble, but in this they fail to distinguish between research proper, which is relatively inexpensive, and the industrial exploitation of research, commonly called "development," which may be a costly procedure. They are surprised when told that it is not unsuccessful research that gives most cause for concern but it is the successful research that is to be exploited (commercially) in terms of a workable process.[31]

In this light it is not an uncommon experience to find that the cost of impressing the name of the new product upon the public may be ten times that involved in experimental and developmental work leading to its production. Research may be "managed" within certain limits and research or scientific investigation, discovery, and patenting may be relatively inexpensive. To "develop" a product normally requires significant allocation of firm resources. Thus, the organization of a firm for research and the organization of a firm for development, although overlapping, are of necessity different. The research operations should be such that scientific or technical feasibility can easily be combined with the commercial aspects of the firm (i.e., marketing, production, finance, legal, personnel, management) and such that research results can be shifted to commercial operations. The guidelines for organization listed here are principles for long-range planning for a firm in product development or in research and development.[32]

Within the framework of goals, technological needs, and social, economic, and political climate and forecasts of these factors, the firm develops a research strategy. This strategy has to do with concentration of research and development, and also with how to keep in touch with external competitive developments, so that sudden advances by compe-

titors will not cause a serious loss of business and also so that the firm will not overlook exceptional exploitational ideas.

Project selection within a research strategy may be broadly classified as (1) planning for improvements of current products, (2) planning for foreseeable new products, (3) planning for entirely new applications. Other classifications may be fundamental (scientific) or applied (technological). Many examples can be cited where technology has much preceded science: photography, for instance, had developed to a great degree before any scientific basis for the processes was developed. The

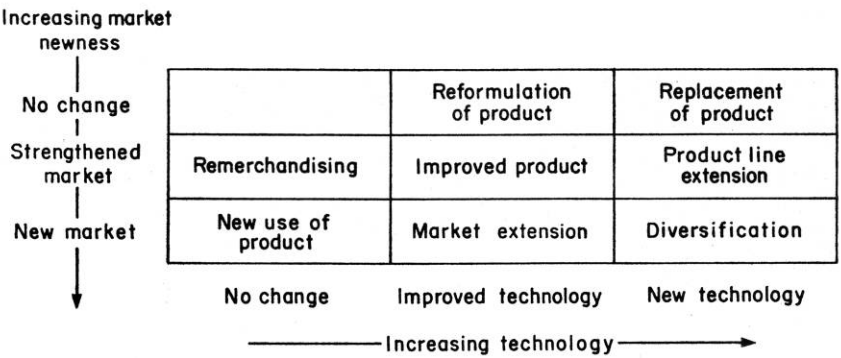


FIGURE 19. Classification of new products in terms of market and technological newness.

steam engine was developed before fundamental knowledge of gaseous heat exchange.[33] Similarly, the development of products through pure fundamental research can also be cited. Carothers' work in linear superpolymers began as an unrestricted foray into the unknown as part of Du Pont's research in fundamental chemistry—from this effort Nylon resulted.[34] Relative merit of fundamental versus applied research may to a large extent depend upon the size of the enterprise.

A useful classification of project selection for a firm in terms of technological and market newness is given in Figure 19.

Some research strategy requires activity only by market researchers (e.g. new use of product) and some only by technologists (e.g. reformulation of product). Other strategies may require interrelated and coordinated research by both market and technological research staff. The interrelation between market factors and technological factors is apparent in diversification. This requires new markets and a new technology, and both must be considered at the same time.

Integrating research results into business operations. Firm organization should be such that technical feasibility of product changes or quality changes resulting from internal research can be easily integrated into the firm's operations, and that managerial discernment or external discovery of market opportunity can be matched to the firm's technological capability. Any basic change in product lines may affect the complete firm organization: the marketing, production, personnel, finance, legal, and management functions. Thus each major new product or major quality change should be evaluated for feasibility by each of the functional departments of the firm.[35]

The shift of research results to commercial operations or commercialization, however, is not easy. The inherent differences in the nature of research and the nature of operations compound the difficulty of the shift. Some literature suggests that entrepreneurial optimism and entrepreneurial ambition make up one of the major factors contributing to the growth of a firm. Subjective human elements also are thought to be a major factor in the facility with which research is shifted to operations. By their very nature, researchers may be unwilling to release research results at early stages of development; also researchers may not be aware of the commercial feasibility of their discoveries. Market gains through early initiation of a semiperfected product or process may be of considerably more value than those from a later marketing of a perfected product or process. From the operations standpoint, operational divisions may resist new technology because of high short-run costs affecting short-run profit statements. Organizational structures to alleviate these problem areas vary widely. Research and development divisions may operate on profits from pilot operations. Staff bonuses to researchers may be paid on the basis of profits from commercialized ideas. Market introductions may be charged to a general fund rather than to an operating division. And operational efficiency may be based on "technological proficiency" as well as on profit statements. Strict accountability of profits either to research and development or to operations may be a poor method of evaluating a firm or firm potential for growth and profits. Some firms which are highly research oriented and highly diversified make a practice of allocating funds to their various subsidiaries on the basis of returns on investment. The divisions are allotted funds for expansion based on past performance.

There can be no one form of organizational structure for the most effective research and development or product development effort for all firms. Yet general criteria or a general framework can be developed which will facilitate firm activity in this area. Product development by

its very nature is often a direct responsibility of top management, since major decisions in organization and in product development may have to be made jointly and these may well predetermine the long-run position of the firm.

The Importance of Product Development

In evaluating the role of product development in agricultural marketing, perhaps the most important factors are the numbers of products available in food markets and the increasing ability of the average consumer to purchase them. Since the end of World War II, the number of food items available to the average U.S. consumer has probably increased by over one third. The number of items carried in a U.S. supermarket has increased from less than 4000 items in 1948 to nearly 6000 items by 1962. The average cost of these items has been decreasing whether measured in proportion of total income, constant dollar values, or the physical work necessary to purchase them. Recent studies of the cost of highly processed convenience food products at retail indicated that these products were in many cases cheaper than their unprocessed counterparts.[36] Because of decreasing costs of production, handling, and marketing and increasing productivity of labor, the average American worker is able to buy increasing varieties of food at less real cost.

The development of a new food product through new processing methods can have a decided effect on relocations of agricultural production areas, and cause shifts in market structure and changes in per capita consumption of particular products. For example, the development of frozen orange juice concentrate accelerated the shift of orange production from California to Florida. Per capita orange production increased decidedly and total orange production has increased rapidly. The shift of potato production to Idaho from the North Central United States and from Florida, Texas, and California has been associated with the development of frozen French fried potatoes and dehydrated potato products in Idaho. Onion production is shifting to California from the rest of the United States; this shift is associated with the relatively recent development of onion dehydration there. Poultry production shifted from the Midwest to concentrated areas in the South because of product improvement and innovations in production methods.

Some questions on possible developments in product technology might appropriately be asked. If an acceptable dry whole milk powder is developed, what will be the changes in location and structure of the dairy industry? If freeze drying of meat becomes feasible, what will be the changes in location and structure of the livestock industry? What

will be the economic effects on the food industry if preservation by irradiation becomes practicable?

The rate of development of new food processing technologies and new food products has been very rapid. From a historical standpoint canning of food is a relatively recent innovation. Commercial freezing of food has primarily been developed since the 1940's. During and subsequent to World War II, concentration of frozen fruit juices by several commercial methods, dehydro-freezing (currently being used on apples, potatoes, pimentoes, apricots and peas), and freeze drying were also developed, as well as many other drying technologies: spray drying, foam-mat drying, tunnel drying, flake drying on metal rolls and the "explosive puffing" process as an adjunct to tunnel-drying methods. These are but a few of the food processing methods that have been developed in a very short period of time. Moreover, irradiation is the subject of intensive research. Many of these technologies result in more convenient products at reduced cost. From these technologies hundreds of new products are being produced.

Each successful new commercial product results in some redirection of economic activity and often in its expansion. For example, the recent development of many new potato products has apparently increased per capita consumption of potatoes and has greatly increased the retail sales value of the potato crop. U.S. per capita consumption of potatoes dropped from 198 pounds in 1910, to 132 pounds in 1930, and to 106 pounds in 1950. In the early 1950's consumption was nearly stabilized and during the 1956-1961 period the trend in per capita consumption has reversed. During the 1956-1961 period a large number of processed potato products were rapidly developed. These included processed frozen French fried potatoes and other frozen prepared dishes, and dehydrated mashed and other dehydrated products. The production and consumption of potato chips also increased. In 1961 as many as 30 different kinds of processed potato products were on the market. Between 1956 and 1961 annual per capita potato consumption of all potatoes increased by 9.2 pounds. Annual per capita use of processed potato products increased by 14 pounds while per capita use of fresh decreased by 4.8 pounds. The success of these new potato products is indicated by the fact that in the five years from 1956 to 1961 per capita annual consumption of processed potato products increased from 15 pounds to 29 pounds, and by 1961 processed potato products represented 25 percent of all potatoes used as human food.[37] However, the 25 percent by volume of processed products was nearly equal in dollar sales at retail to the 75 percent of the crop sold fresh in unprocessed form. Sales of processed potato products in 1961 were over $800 mil-

lion—nearly equivalent to all sales of fresh potatoes.[38] Thus through the development of these processed potato products, several additional hundred million dollars are spent for potatoes each year by consumers. Much of this may be new economic activity for the economy; some, however, is a redirection in use of funds.

Just as there are economies of scale in advertising (Chapter 7), so are there in product development and quality competition. In the marketing of many new products, product quality and advertising and promotion are intricately associated, and it is sometimes difficult to determine where one leaves off and the other begins. In the development of new agricultural products, often a change in form, as from raw to processed, is associated with a great decrease in the number of firms marketing the product. In the case of orange juice processing, approximately 65 percent of the Florida crop is now handled by half a dozen large firms, as compared with the hundreds of grower-packer-shippers who previously sent oranges to market. Thus the market structure of orange marketing has changed from an approximation of the perfect market to an oligopoly. This change is associated with product development costs and with advertising and promotion costs. Similar results occurred or are occurring in potatoes, onions, poultry, and many other agricultural commodities affected by new processing technologies. The economies of scale in research, product development, and market development (including advertising and promotion) are so great that there might be some speculation on whether in the future there will be any more food processing and distributing firms than there are automobile manufacturers.

Changes in the factor markets, as well as product markets, have been important. Cost to produce the abundance of kinds and qualities of food has decreased rapidly because of product development in factor inputs such as mechanization, increasing yields of crops and livestock, gains from fertilizers and feeds and new crop varieties, and increasing innovation in production processes. In 1940 one farmer in the United States produced enough food and fiber for about 13 people; by 1960 one farmer produced enough food and fiber for about 28 people. An index of farm output per man hour using 1957-59 as 100 gives an increase from an index of 37 in 1940 to an index of 120 in 1960. The index of output per man hour of livestock and livestock products increased from a value of 50 in 1940 to 122 in 1961, crops from 38 to 118. Thus, the physical output per unit of labor input has more than doubled in 20 years for livestock and livestock products and tripled in production of crops. Agricultural productivity, a ratio of total outputs to total inputs, has been increasing rapidly. Using 1957-59 as a base of 100 the index

of agricultural productivity within the United States has increased from an index value of 72 in 1940 to 106 in 1961. Again this is primarily due to product development in factor inputs, mechanization, fertilizer, better seeds and better yields both in livestock and animals because of advances in technology and science.[39]

The output per man hour in factories processing farm food products has also increased rapidly but not as rapidly as that in farm production. Output per man hour in factories was approximately 30 percent higher in the United States in 1958 than in 1947-49.[40] This again has largely been due to innovations resulting from technological developments in materials handling, packaging, electronic controls and continuous processes. During this period of time there was no appreciable substitution of fixed capital for labor. Technological improvements were at least as much fixed capital saving as labor saving.

Innovations resulting from scientific and technological discoveries largely account for the great increases over time in productivity per man hour. One recent study has indicated that only 13 percent of the national increase in output per worker between 1910 and 1950 could be statistically explained by increases in capital equipment per worker; the remaining 87 percent was due to invention, changing technology, and innovation as well as improvements in quality of labor and better allocation of resources.[41] Though this study was conducted under recognized conceptual difficulties and limitations, the results are illustrative of the effect of innovational developments in factor inputs on labor productivity.

CHAPTER 9

Firm Growth, Diversification, and Integration

ONE of the most dynamic elements in agricultural marketing in recent years has been the general increase in the size, diversification, and integration of firms. In the United States the integration of broiler production has brought about great changes in marketing. Retailing has been similarly affected as firms have increased in size and branched out to offer a greater number of products. Since this growth and expansion have become so important in the overall marketing complex, it is appropriate to devote some time to consideration of the factors involved.

The dynamic nature of the processes involved renders ineffective the static theory of the firm, designed to answer questions of price, output, and resource allocation given certain assumptions. An analysis of growth cannot be static because management does learn from experience and research. In solving the various problems of a firm, management gains experience which allows it to obtain new knowledge as well as to improve its ability to use new knowledge as it becomes available.[1] Where knowledge of importance to management increases, the productive opportunities facing a firm will normally change. This implies that from the same set of physical resources a firm may be able to increase the quantity or improve the quality of its output over time. Further, there is an interaction between the use of resources and the capacity of management. The services that resources yield depend on the capacities of the men using them. But the development of the capacities of men is partly shaped by the resources with which they deal. The two together interact to create the special range and magnitude of services or productive opportunity of a particular firm.[2]

In addition, as implied in the previous chapter in analyzing growth, it is no longer useful to assume that demand is fixed. New products

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By JOHN BRAKE *and* GEORGE DIKE.

come into existence without any prior demand. Hence, in a growth context, it may be useful to treat the concept of demand as the opinion of the firm's entrepreneurs as to its alternative selling opportunities. To realize growth expectations, the firm may actively pursue policies of want creation.

Measures of Firm Growth

Various means could be used to measure growth: physical size, capacity of plants, or gross assets controlled by the firm. For purposes of this discussion, however, we have chosen gross sales, first, because the increase of sales seems to represent an important goal of many agricultural market firms, and second, gross sales represent what the firm is doing rather than its potential or capacity. In addition this measure is probably the most popular one with the firms themselves.

For many purposes it seems to be useful to consider firm growth in relative rather than absolute terms. To say that a particular firm increased its sales by $50,000 in the past year could be impressive if sales the year before were but $75,000. On the other hand, a $50,000 increase in sales for a firm which grossed $5,000,000 the year before would indeed be considered a modest, or perhaps even insignificant, rate of growth. But while rate of growth tends to put a given increase in sales in perspective by relating that increase to a base, it does not include all the useful information one might desire. For example, a growth rate of 10 percent for a firm with .01 percent of an industry's business may give an incorrect impression when compared with a growth rate of 5 percent for a firm with 10 percent of that same industry's sales.

Factors that Influence Firm Growth

Type of firm. These vary from single proprietorships to corporate bodies and public utilities. To consider growth as though all firms were similar in nature would be misleading. For one thing, growth and potential for adjustment of the firm may be closely related to the make-up of the decision-making unit of that firm—its management. To the extent that different types of firms have different management organizations and abilities, they may adjust very differently.

There are several important differences other than management. Particularly important are the differences between firm types with respect to taxation, financing, and continuity of organization. For example, a small sole proprietorship may have advantages in accumulating capital from a tax standpoint over a small corporation because of differences in tax schedules. But when the business becomes very large the advan-

tage may change, since the maximum corporate tax rate is lower than the maximum rate for a sole proprietor.

From another viewpoint, the sole proprietorship may be at a relative disadvantage compared to the corporation, because it must transfer ownership every generation. If the transfer of ownership requires a great deal of credit, the purchaser of a sole proprietorship may be required to use all available funds for transfer purposes and little, if any, will be available for modernization, innovation or expansion. Consequently, the sole proprietorship could be at a relative disadvantage compared to the corporation, since the latter need not transfer ownership when its management is replaced.

Social and cultural environment. Societal or environmental variables establish the business climate in a market economy. In effect they set the stage for managers of firms in their role as decision makers. The implications of social and cultural environment are often subtle and invariably complex. The many linkages between the social-organizational aspects of the society and the physical-economic aspects of production discussed in Chapter 2 become particularly relevant to decisions on firm size and organization. Many elements of human behavior may become customary; specialization and ways of doing things (role structure), when habitual, restrict the flexibility needed for major organizational change. Also social organization influences such things as values related to lending and credit transactions, the general level of sophistication of the exchange system, the extent to which businessmen receive the benefits from their efforts, and the general status of the businessman in the community. In their more specific form, social values become reflected in legal regulatory rules, including antitrust and other public policies the manager must take into account. Societal variables affect economic climates, the possible variety of business constructs, and the incentives of managers.

Risk and uncertainty. Planning done by business firms is based on expectations about the future. Different managers undoubtedly hold their expectations with varying degrees of confidence. A manager who envisions expansion for his firm must consider the effect of uncertainty and risk on those plans. Johnson and Haver[3] examined five situations which provide a broad general framework for the manner in which managers treat uncertainty. At one end of the spectrum they find managers dealing in an area of subjective certainty in which knowledge is complete enough to act as though perfect knowledge existed. At the other extreme is subjective uncertainty.

Often the larger the expansion the firm contemplates, the greater is the risk and uncertainty it must face. This is because the larger gamble, if incorrect or poorly planned, will increasingly curtail the firm's ability to increase its market, to obtain further capital for expansion or perhaps even to survive: as Penrose points out, even though the probability of loss is the same in both of two cases, the risk is greater with a larger gamble because the loss of a larger amount endangers something more than money.[4]

While risk and uncertainty tend to limit expansion, it is not necessarily true that firms will accept risk and uncertainty without attempting to do something about it. In general managers react in one of two ways to risk and uncertainty. They may (1) discount future returns or deliberately overestimate costs to arrive at a discounted flow of future net returns, or (2) try to obtain more information to reduce the risk and uncertainty. Discounting is done in a large degree to compensate for the possible overestimation of profit. Obtaining further information to reduce the risk and uncertainty about an action entails cost of increased use of management services to gather and analyze the information. Eventually, the firm reaches a point in its learning process at which the cost of gathering new information is prohibitive. At this point several strategies of risk aversion may be considered. The firm may expand in such manner as to remain flexible with respect to further changes it could make. It may decide to keep a high proportion of its assets in liquid form so as to be in a position to change directions if conditions warrant. Or it may simply decide to be conservative in its approach to the particular expansion plan under consideration—in effect, to feel its way. These and other strategies are possible means for averting risk.

Handling risk and uncertainty involved in expansion often requires the intensive use of managerial services. Expansion plans thus will be affected by the quality and quantity of managerial resources available to deal with them. When a firm has a given quantity of managerial resources available (the usual case), there is a limit to the amount of time these resources will be able to devote to expansion plans. The more uncertainty and risk associated with any particular expansion plan, the more managerial time will be required in analyzing it, and, with a given quantity of managerial resources, the slower the firm must move on expansion plans.

Markets. Various aspects of markets influence expansion plans. In viewing the market as a conditioning factor in the growth of firms, three aspects should be considered: prices, factor markets, and product markets.

If gross sales are used as a measure of growth, then it follows that the price of the product will affect growth, since a change in price will directly affect volume of sales. In this respect the nature of price competition in oligopolistic markets may be particularly important as a limiting factor. In addition, advertising is often used as a means of attempting to increase the demand for a specific firm's product within a given industry demand.

Factor markets may also condition firm growth. These markets could include the market for the raw product as well as that for other inputs, such as labor and capital. If the firm encounters shortages of inputs used in its production processes, growth will be reduced. Firms in agricultural markets use many strategies to insure against such shortages. Contracts for supplying of raw products are one means. Another means is integration, which may take the form of a company's gaining control of its source of raw product. This happens, for example, when a processing firm is the integrator. Or an integrated firm may benefit from increased availability of capital from the integration arrangement.

Finally, the firm may be limited in growth because of the market for its production. The demand for the firm's product or product mix may be stable or even decreasing. In either case expansion may be possible only through a major reduction in production costs or through diversification into new product lines. If a lower unit cost can be obtained, the firm can be more competitive in its regular market. In addition, if producers are widely dispersed geographically, the firm which reduces unit costs may be able to move into and effectively compete in markets further from its production point.

Probably the most important strategy a firm can use when it faces a stable or declining demand for its existing product mix is to diversify into new lines of production. Often this new product line will be one for which there is a certain amount of similarity to its original line. Since it is such an important means of growth in agricultural industries, a more complete discussion of diversification follows later in the chapter.

Managerial capabilities. The fundamental limit to the productive opportunity of a firm is its managerial capacity. This statement results from considering that profitable opportunities in the market place are not simply tied to one set of conditions or circumstances: a firm can shift its supply of resources, its location, and its selection of products in its search for profitable opportunities. In short, one fundamental limit to the growth of the firm is an internal variable resting on the capacity of its management. Managerial capabilities may influence firm expansion

through the ability to recognize opportunities for growth and the ability to state objectives or goals and work toward them through skillful management.

All managers need to be able to deal competently with the basic question of how plants and firms demonstrate profitability. In addition they must consider why a variety of relevant facts may yield various results when put together differently. The managers need to be able to analyze relevant facts of demand, supply, and production processes. They also need to study such variables as population and income trends and project these into the future. In all cases management must demonstrate competence in the areas of personnel, technology and finance, and the functional areas of planning, organizing, directing, coordinating, and controlling, which are fundamental aspects of management centering on plants and firms. A manager's ability to control any one of these important variables can trigger a chain of events changing the rate of growth of the firm.

One of the broadest areas of subjectivity in developing a discussion on growth concerns the temperament or personal qualities of individuals who perform the management functions. The personal qualities discussed here are aggregated under what we term *enterprise*. The concept of enterprise deals with an important part of the work a manager does, yet this concept is not easy to handle. For purposes of this discussion we define enterprise as "those actions taken by a manager to commit effort and resources to speculative activity in the hope of gain." It involves decisions that must be made prior to the descriptive and analytical activities involved in decision making. It is a search for opportunities that must precede the economic decision to go ahead with the examination of opportunities for expansion.[5]

Penrose lists four aspects of the quality of enterprise that are not amenable to economic analysis, but which nevertheless cannot be ignored.[6] These are versatility, fund raising ingenuity, ambition, and judgment.

One way to define versatility is to say that to be versatile a manager must be an innovator. This is different from the administrative and technical versatility ordinarily demanded of a manager and is apart from the need for competence in administrative and technical areas.

Attention must also be drawn to the fact that there is a relation between managerial ability and the financing a firm can attract. Capital acquisition is a problem for small or new firms, in that cautious and skeptical investors may prefer old and established lines. However, it is suggested that competent management will include the ability to seek out new

sources of capital in the same sense that it will seek new horizons for product placement.

Managerial ambition refers to those traits which focus attention on the profitability and growth of the firm as an organization for the production and distribution of goods and services. This characteristic is presented as being distinct from another trait of management sometimes referred to as empire building, which will not be discussed here.

The lack of sound judgment in managers is an obvious limiting factor with respect to growth. Good judgment and foresight can narrow the limits of error and reduce uncertainty, and thus will be reflected in a positive contribution to the rate of growth.

Motivations of management. Closely associated with ability as a factor influencing firm growth is the nature of management's motivation. Penrose argues that profit may be the major motive of management, but that profit over time may best be achieved by a rapid growth rate. Some amount of present profit can be foregone in an attempt to put the firm in a position where a sufficiently greater rate of profit will be earned in future years. It is also true that managers have other motivations. For example, it is desirable from the managerial standpoint to be associated with a firm which has a good image. They appreciate the respect and admiration of other businessmen and the public. Generally, management will obtain personal satisfaction from their association with a fast growing firm which is rapidly increasing its sales revenue.[7]

Probably the above arguments hold to some degree in all types of firms, but the reaction of management may differ with the type of firm. In the larger corporation, ownership becomes separated from management, and the motivations and rewards may have quite different emphasis. In general we suggest that profits tend to be a reward to ownership, whereas management's reward may or may not be tied to profits alone.

There has recently been renewed interest in the possibility that gross sales or total revenue may be a more immediate goal of firms than profit. Baumol suggests that it might be useful to consider such a model in analyzing firm behavior.[8] His argument is essentially that businessmen attempt to maximize gross dollar sales subject to some minimum profit level. So long as profit is at least as great as the minimum acceptable level, sales maximization is the primary goal. However, if absolute sales maximization would lead to profits below this minimum acceptable level, then management would reduce gross sales to the highest point consistent with the minimum acceptable level of profits.

Baumol points out the reasons why businessmen might be concerned with gross sales:

> Declining sales can bring with them all sorts of disadvantages: there is a reason to fear that consumers will shun a product if they feel it is declining in popularity, though their information on these matters is doubtless often spotty. Banks and the money market will tend to be less receptive to the desires of a firm whose absolute or relative sales volume is declining. Perhaps even more important in this connection is the very real danger that firms whose sales are declining will lose distributors—a major marketing setback. Management also is not unmoved by the fact that in a declining firm personnel relations are made much more difficult when firing rather than hiring is the order of the day. The firm which declines (or remains small when others expand) can lose monopoly power and the power to adopt an effective competitive counter strategy when it is called for. And it may become more vulnerable to a general deterioration in business conditions. For all these reasons the executive may reasonably conclude that maintenance of as large a sales volume as possible is the only way to succeed in business.[9]

More recently evidence has been presented consistent with Baumol's sales maximization hypothesis. McGuire, Chiu and Elbing, in a study of executive incomes, found strong evidence that executive incomes are related to gross sales rather than to profits of the firm.[10] Correlations indicated that management is rewarded from an income standpoint on the basis of increases in past and present sales. The correlation was greater between sales and income than between profits and income.

Whether one is more influenced by the arguments of desirable firm image or satisfaction from association with a growing firm, or by the arguments concerning gross revenue maximization, it appears evident that there are, in fact, powerful motivations of managers in the direction of increasing gross sales. And increasing gross sales identify a growing firm.

Forms of Growth in Agricultural Industries

Growth through diversification. In general a firm may expand in two ways in the total revenue dimension. It can either increase total revenue by producing and selling more of the same kinds of products as in the past or it can diversify. A large share of this discussion refers to diversification, since it is a common form of growth and is less easily analyzed with traditional economic tools.

Diversification implies that a firm begins to produce new products which it had not previously produced in addition to its present line. In a definitional sense this suggests that the ratio of the firm's sales of its major product to its total sales decreases with diversification. Reasons for diversification, or growth into new lines of production, are many. Di-

versification may come about simply because the firm recognizes an opportunity for a new product. Demand for the new product may be expanding rapidly, thus presenting an opportunity for the firm. On the other hand, it may be that the firm believes it could sell a product which up to that time had not been produced. It is also possible that a firm attempts to expand into new lines because the demand for products in its previous line is diminishing. In this case the firm may be forced to diversify in an attempt to utilize unused productive resources and to offset the reduction in volume of business from the decreased demand.

A second reason for diversification may lie in reaction to changes in factor supply. A firm may wish to diversify as a means of protecting itself from changes in the supply of factors needed for its production. Then a change in the raw-product supply needed in the production of any one good would have a less pronounced effect on its overall production.

Still another important incentive for diversification is protection from risk and uncertainty. By emphasizing the production of goods for which changes in demand are unlikely to be highly correlated, the firm reduces risk of large losses in a disastrously poor year. However, this diversification over a wide range does have its cost in money, knowledge, and requirements for managerial ability. On the other hand there are limits of a practical nature on the extent that diversification can reduce uncertainty. Many firms, even when diversified, tend to produce in the same general type of industry and are still subject to fluctuations in that industry. In addition, a general downturn in the business cycle is likely to affect a number of industries, so that, while diversification may reduce the loss in some lines, it is not a foolproof guarantee against loss.

Diversification may result because a firm recognizes a new application for which its knowledge and experience would be useful. There is resource complementarity with respect to knowledge and human skills. The technical competence of personnel is such that their training and experience could be of great use in the production of other products. For example, a firm with a large staff of electrical engineers might very well be able to draw on their competence in the production of items as different as radio, television, radar, and electronic computers.

Yet another reason why firms grow by moving into the production of new products stems from results of their own research. Many, if not most, industrial firms carry on a continuous program of research and development. When their research units develop a new product, the firm will usually go into the production of that product if there is reason to believe consumers will accept it.

A firm may diversify its production simply because it is forced to do so by its competition: if competitors are developing new products, it may be necessary for each firm to do so as a defensive strategy to protect its relative market position. Some firms in the food industries diversify simply because, though they have as large a share of the market as they think is safe under antitrust laws, they still desire to grow.

Diversification, for whatever reason, can take several forms. The firm may add the production of the new item in the present plant or build a new plant in which to produce the new product. The firm may diversify by acquiring new firms or by merging. It is often possible to acquire an existing plant at less than the cost of a new plant. Other advantages of acquisition or merger are possible, too. Of particular importance is the fact that acquisition or merger allows the diversifying firm to obtain access to the market for its new product immediately, and not to have to break into the market from the outside. Moreover, acquisition or merger allows the diversifying firm to acquire the experience of the acquired firm's management in the particular new product line.

From an economic standpoint, a firm's decision on whether to grow internally or to acquire existing firms would seem to hinge on a comparison of costs and returns from the two alternatives. If for a given flow of future returns it is cheaper to build new plants than to acquire an existing firm and plant, then the growth would be expected to be internal. However, in making cost-return comparisons, there may be factors other than productive capacity alone to take into account. For example, the firm to be acquired may hold patents which could be of great value to the acquiring firm above and beyond the purely productive capacity of the acquired facilities. In addition, some managers might be classed as empire builders rather than profit maximizers, and for them the time required for internal expansion might be prohibitive. Hence they choose to grow through acquisition and thereby minimize growth time.

Finally, logic suggests that, in the case of merger, the present value of the future income stream of each firm in combination with the other is greater than the sum of the present value of their individual future incomes. This might occur in situations where the two firms had products of a highly complementary nature or where such combination might give economies in resource purchases, management, or selling, or might give access to a new market. For example, merger would appear profitable for two farm equipment companies, one of which specialized in harvesting equipment and the other in tractors and power equipment.

Growth through vertical integration. Firm growth may also take the form of vertical integration: that is, by carrying out more of the economic

stages of production. In other words, the firm may produce some of the raw products it previously acquired from other firms (integration backward), or it may further refine products (or sell services) previously done by another firm (integration forward). For example, if a farm machinery manufacturer decides to make its own transmissions, which it previously purchased from another firm, it is integrating backward. Similarly, a meat packing firm which establishes a retail meat market is integrating forward.

Mighell and Jones discuss incentives for vertical integration in agricultural industries as follows:

> A listing of incentives for vertical integration or contracts might include: Reducing risk, reducing costs, improving management, gaining bargaining power, improving market position, assuring adequate inputs, investing surplus reserves, developing new technology, and obtaining additional capital. These are often interrelated. Several may be involved in one situation. In particular instances, it is difficult to determine the dominant objective and what are means and what are ends. Business strategies other than vertical integration or contracts may be involved in achieving the objectives. Horizontal expansion must often be employed if the vertical expansion is to accomplish its purpose.
>
> Most decisions to integrate vertically (or to disintegrate) can be explained partly by the motivation for profits. The action is taken either to increase profits or to prevent losses. The focus on profits may be long or short run. The integration may be "economic" in the sense of being a cheaper or better way of doing a job. Or the objective may be to gain profits by means of monopolistic activity, delaying adoption of improved techniques and methods, and putting consumers and competitors at a disadvantage.
>
> At the farm level in agriculture, the economic reasons are usually the more significant, particularly those related to cost and efficiency. Among other economic reasons frequently cited for contracting, or vertically integrating are the desires to offset risk and uncertainty, to obtain financing, and to introduce new methods. Uncertainties are of various kinds. For example, there are uncertainties with respect to market outlets and prices, technical control of quality, flow of perishable materials, and the like. Financing is bringing together resources in the proper quantities at the proper time and place to carry out a production process. The introduction of new methods can be an educational process that greatly speeds up learning.[11]

From a profit standpoint vertical integration may result in certain economies of production, with a resulting net reduction in selling costs.

This comes about because certain stages of production can be economically combined under the control of a single firm to reduce total costs of production. The potential gain from integration depends in part on complementarity of resources used in the present production and those needed for the integrated production, existence of excess managerial services, and the technical possibilities for combination.

Mighell and Jones also point out that obtaining market advantage or market power is an important motive for vertical integration as well as the profit motive.[12] Firms may integrate as a means of protecting their existing markets or of aggressively expanding their range of market influence. It is generally true that firms in agricultural industries have more often integrated forward than backward to gain market advantage. Yet integration backward has tended to occur more often in recent years as quality specifications for raw material have become more precise.

Growth of Firms over Time

Decisions of management affect firm growth over time. As we have noted, an important determinant of a firm's ability to perceive and profit from its opportunities is the managerial services available to that firm. A firm with a large enough pool of managerial services for a significant part to be devoted to expansion is likely to achieve a more rapid rate of growth than a comparable firm with fewer managerial services. In other words, if the present administrative task requires nearly all of the management's time and capacity, it is unlikely that the firm will be in a position to recognize or exploit opportunities for expansion and growth. The existence of unused or underemployed managerial resources, on the other hand, creates an incentive for the firm to somehow use those resources.

Another important aspect of growth for a firm is the extent of innovation. Mansfield found that firms which had successfully innovated consistently achieved a faster growth rate after an innovation than non-innovators.[13] Yet beforehand there had been no noticeable difference between them.

The rate of growth over time will depend also on the type of expansion being undertaken. If the expansion is of a type that requires complex new productive facilities, the growth rate will necessarily be slower while the firm is learning how to use them. If the expansion is in new lines of products rather than in old lines, it may be slower because the firm will not have had previous experience. Hence, expansion into new lines will require more managerial planning or services than expansion in old lines.

The rate of growth over time also will vary with the method of expansion. Expansion by merger or acquisition of new firms allows the firm to increase its size more quickly than if it expands by building new plants or new capacity. For this reason, emphasis may be placed on merger and acquisition of new firms rather than on expansion from within.

It is to be expected that expansion over time might differ according to whether the firm is large or small. A small firm may be at a competitive disadvantage especially if it is a new small firm, as will often be the case. In general, larger, older firms have three advantages: they will have established connections among other businesses in important related industries, they will have easier access to capital than the new or small firm which represents a riskier, more uncertain investment for bankers or creditors and they have a successful record which other businessmen and consumers respect. With this established record, consumers are likely to feel that the firm's product can be depended upon and that it will not soon disappear from the market.

In the report mentioned above, Mansfield studied the size changes of firms in a few selected industries.[14] He found that the rate of growth was not independent of firm size. Small firms had the highest death rates. But the small firms that survived had a higher and more variable growth rate than the larger firms. Probably this was because very large firms can not continue to grow indefinitely at a fast rate without substantial increases in demand in their industry. Small firms, on the other hand, can achieve a rapid rate of growth without a very large relative effect on the industry's production.

Implication of Firm Growth in Agricultural Markets

Historically, in American agricultural industries changing structure has led to greater concentration, with relatively few firms handling a large proportion of the volume in many industries.[15] Growth through diversification has led to a significant degree of multi-industry operation by firms whose primary activity is in food marketing.

Firm growth through vertical integration has also created a pattern of adjustment in agricultural industries through time. Backward integration by retailers, forward integration by processors, and extensive integration to sources of raw material by input industries have developed. Recently integration between farm supply and marketing firms in agriculture has become important. Though quantification of the overall extent of this development is difficult due to an ambiguity in the definition of vertical integration, almost complete integration exists in some industries.[16]

To raise the question of the implication of changing structure of firms in agricultural industries is little different from raising that about changes in the structure of agricultural markets. A broad set of questions related to efficiency of market operations, market margins, pricing methods, and numerous other performance criteria is involved. These questions are considered in the section dealing with overall adjustment in agricultural markets.

CHAPTER 10

Group Action in Agricultural Marketing

AGRICULTURAL marketing in the United States has undergone rapid change. Farm producers, processors, and distributors have acted and reacted to this change in a variety of ways. As individuals, they have persistently reorganized existing resources, attempting to gain competitive advantage in the market place. They have been quick to adopt new ideas, new organizational forms, improved handling methods, and, in the case of farmers, to up-date cultural practices. We now consider a more general type of adjustment which affects agricultural marketing: those made through group organizations and actions in the market place.

In a sense, group action in U.S. agricultural and supporting industries is so pervasive that it can easily be overlooked. We have become so accustomed to the functioning of organized business and agricultural groups that we tend to forget the meaning implied in titles such as: association, institute, foundation, mutual, council, and cooperative.

Group action in agricultural marketing can occur in a variety of ways. Two neighboring farmers act as a group when they combine resources to haul a crop to market. Two or more processors take a form of group action when they meet to discuss a new labor-saving production technique. And there are examples of more formalized types of group organizations and actions in agricultural marketing: the wholesale and retail trade organizations, the general farm organizations, and farm cooperatives. The actions taken by such groups may be very complex in comparison with those taken by farmers and processors. These complex actions may require constant planning, evaluation, and administration.

For purposes of this chapter, we define a group quite simply as two or more agricultural firm managers (or their agents) who have a common set of formalized goals and who actively and jointly pursue these

By DENNIS OLDENSTADT *and* DAVID CALL.

goals through coordinated efforts. Active pursuit of a common set of goals implies that the decision-making process is carried through to its action phase in problem-solving situations which confront the group. It then follows that the group must assume the responsibility for whatever actions are taken.

In this context, the several plants in a corporate chain are not considered to be a group since they make up one firm. However, two or more corporate chains acting in defense of a joint set of formalized goals would be considered a group. A distinction can be made between private and public (or governmental) group action. For purposes of this chapter, however, this distinction is not important and will not be made.

The literature of agricultural marketing contains many references describing the financial, legal, and organizational structure of marketing groups.[1] We will not summarize and evaluate these structural aspects of group action. Rather we will attempt to provide a broad, general framework within which to analyze and explain the actions and outcomes of joint action in agricultural marketing.

There are sufficient numbers of organizations and associations in contact with agricultural producers and distributors so that one might wonder how, or whether, they fit together. Questions might be raised concerning goals or objectives of the various organizations. Are they conflicting goals? Are they reasonable and attainable?

Questions of participation may arise. An individual producer, processor or distributor of agricultural products might wonder how to make a rational decision on whether or not to participate in the activities of several groups. Will the added benefit to the participant be worth the cost of active membership?

Finally, members of a group face important questions with respect to the operation and management of programs of actions. Will an advertising program which attempts to induce consumers to buy more milk at higher prices be in conflict with a supply restriction program?

These questions point up some of the problems which confront potential and actual participants in an agricultural marketing group. Before attempting to outline a framework of analysis with which to answer these and similar questions, we will discuss the conceptual and historical bases of group action.

Organization and Power

Group formation and action in agricultural marketing may be likened to the formation of power groups in society. There are two general models describing the exercise of power in issue resolvement, the so-called "negative" and "positive" models of power.[2]

Both models are premised on the notion that "either implicitly or explicitly the locus of power lodges in large-scale organizations." As Sower and Miller point out, "Though there are a few instances of individuals having unusual influence, most studies of power—for the community, states, regions or the nation as a whole—indicate that the roles of organizations are crucial to resolving issues."[3]

The negative model of power is so named because it views power as a "zero-sum" concept, i.e., power is obtained and exercised by one (or several) organization at the expense of another (or several others). Galbraith appears to have subscribed to such a model in his concept of countervailing power.[4] He states, "The development of countervailing power requires a certain minimum opportunity and capacity for organization, corporate or otherwise." His development of this concept appears to have stemmed from an historical perspective of the evolution and disappearance of the classical form of competition and the growth of private power in the American economy rather than from a sociological study of power structures. The negative model of power holds that power vested in distinct groups will be used to the disadvantage of other groups and individuals rather than to the advantage of society as a whole. The net social return could be stable or negative because of the actions of an inner-directed power-wielding organization.

The model has been criticized by Parsons on the grounds that it implies that at any point in time society is predetermined by its power structure.[5] This, he contends, exaggerates the empirical importance of a study on power. He is also critical of the model because it tends to cast aspersions on the concept of power and its use by organizations.

The positive model of power, on the other hand, views the manipulations and gyrations of power organizations as a dynamic force which can move a society toward new heights of accomplishment. The prime benefit of historical power struggles between groups has been the "organizational interplay which has succeeded in producing one of the most 'powerful' achievements in human history: the recent transformation of the American farmer to a scientific and technically competent producer of commodities."[6]

Thus the two models of power permit opposing viewpoints regarding the potential societal benefits of organizations. Yet neither would deny the cardinal role played by the organizations in a developed society.

It seems unnecessary to subscribe to either one or the other of these two models in analyzing group action in agricultural markets. Both can contribute to such study. The negative model suggests that it might be fruitful to analyze the actions taken by a subset of organizations within

a sector of the economy in terms of its impact on the complementary set of organizations in the sector. The positive model suggests looking at the actions and reactions of groups within an economic sector in terms of the results to the sector as a whole.

It does seem important, however, not to confuse the two concepts in an evaluation of group action. If the negative model were adopted, the evaluation of group action would depend upon showing the comparative gains and losses accruing to the participating groups. If the positive model were employed, the emphasis in evaluation would be placed on the overall gains (or losses) to the industry, the sector or the society rather than to the individual participants.

The preceding paragraphs provide a discussion of the role of group action in resolving issues. The term "bargaining power" has been used by many authors to define ability to establish buying and selling prices and to influence terms of trade. Individual firm owners and managers operating in isolation, along with many similar businesses, often have very little bargaining power. They have been characterized as being price takers, meaning that they accept the price someone offers for their production, or that they cannot affect the prices which they pay for purchased inputs. *Individual firm owners and managers find in group formation and action an alternative way of relating themselves, as individuals, to the market.* Through their organizations they may attempt to gain barganing power generally inaccessible to them as individual, separate entities.

Social-Organizational Aspects

Historical developments surrounding the growth of group action in agricultural marketing are of importance and interest. Several social, economic, and political phenomena are correlated with the growth of group action, although their relative influence cannot be readily determined.

Agricultural marketing has undergone considerable change, partly resulting from the evolving rural-urban balance of our population. This in turn is associated with the industrial revolution which occurred in this country during the latter half of the 19th century. Rapid technological advance, specialization in production and increased trade were associated with the upheaval in the social and industrial complex. Not the least important has been the development of communications and transportation systems permitting vastly better informed buyer-seller relationships.

Political organizations and various federal, state, and local agricultural programs have also helped set the stage for expansion of group

action. Organizations have been developed to extend the benefits of these governmental programs: the local Agricultural Stabilization and Conservation committees, and soil conservation groups are examples. Other organizations have developed to counter programs, based on public education and self-help plans. One example is the public pronouncements against Federal Marketing Orders by various producer and marketing groups.

Finally, it must be suggested that group formation may tend to provoke group formation. The concentration of power through mergers, horizontal and vertical integration, and tacit forms of collusion often results in procurement, merchandising, and pricing policies which can only be effectively countered through some form of group action.[7] The growth of retail food chains was quickly followed by the organization of voluntary wholesale and retail groups. More recently there has been renewed grower interest in marketing and price bargaining associations.

Kinds of Agricultural Marketing Groups

Before attempting to analyze how groups can act to reach their individual goals, we present a classification of groups important in agricultural marketing. There are several possible methods of classification. One is to consider all groups which have an interest in a particular commodity or group of commodities. Another is to classify groups by their major type of function in agricultural marketing. A third is to consider their organizational structure, such as the legal arrangements, membership characteristics, and management framework.

The classification scheme presented in this section is patterned after the normal way people tend to categorize agricultural marketing groups. It does not provide categories of mutually exclusive groups.

Agricultural cooperatives. This group includes bona fide cooperatives whose members are either farmers, wholesalers, or retailers. Among the farm groups are the marketing or selling associations, the supply and service cooperatives, and the bargaining cooperatives. This group also logically includes cooperatively held wholesale facilities of independent retail firms as well as other types of cooperative wholesaler-retailer groups.

Non-cooperative agricultural groups. These organizations have grown rapidly in number since World War II. The category includes groups formed around state and federal marketing orders, commodity promotional organizations, and such groups as the voluntary group wholesalers. They are generally single-commodity or service-oriented. Two types of organizations are common: those with voluntary membership

and assessments and those whose contributions are mandatory through legislative fiat. There may be institutions, boards, and associations linking together the state organizations at the regional or national levels.

Special interest groups. Agricultural marketing firms, farmers, and related agencies may jointly pursue a common goal, the formation of which usually depends on a problem requiring study and action. For example, enabling legislation might be at issue, and a group be formed to study, evaluate, and educate other interested parties. This type of group is usually short-lived, although it can lead to the formation of a more lasting formalized organization. Often the formation of the special interest group is spurred by an already established organization.

Trade associations. Trade associations provide a variety of services to member firms and often engage in legislative matters of common interest to their members. Many trade organizations gather and publish pertinent trade data such as commodity statistics, merger data, and other related information. Examples are the National Canners Association and The National Association of Frozen Food Packers.

General farm organizations. These provide a wide range of services to their members, including some which overlap with those provided by farmer cooperatives. Some offer their members social as well as economic facilities. Their considerable legislative influence and many subsidiary activities have had and continue to have an important impact on the agricultural marketing industry.

Coordination of Groups

Several problems of coordinating are characteristic of agricultural marketing groups. It is not uncommon, for example, to find individual members actively participating in several different groups or organizations. This might appear to be illogical or inconsistent when one considers their sometimes divergent policy position, but under the assumption that the ultimate goal of all groups is increased economic returns, such action seems more rational.

Despite their common goals and amalgamation of membership, the cooperation and coordination among the various groups are sporadic and often inadequate. Competition and, occasionally, open conflict seem to be the rule rather than the exception. Programs and actions are partly determined by people in leadership positions who draw strength and support from their constituents. Actions and programs are thus subject to the vagaries of human nature, as is true in any democratic organiza-

tion. Differences of opinion as to methods, timing, the role of government, and other considerations partly explain the different philosophies expounded by the various agricultural marketing groups.

Objectives of Group Action

The broad objective of most agricultural marketing groups is to increase economic returns to the members of the group. Related goals include parity of income, freedom of choice, price stability, reasonably priced inputs, improvement in technical methods of production, an increased standard of living, maintenance of the family farm, and better bargaining power. But to a large extent these goals are closely linked and instrumental to the objective of increased economic returns. Consider this statement by Babcock:

> I regard a farmer-owned, farmer-controlled cooperative as a legal practical means by which a group of self-selected, selfish capitalists seek to improve their individual economic positions in a competitive society. . . . It seeks to deal with society as it is (rather than to reform it). . . . It deals with first things first, and as it finds them, it leaves big things until it gets to them. Withal, it is a legal, honest, and honorable enterprise. . . . The real end is the improvement of the economic positions of the individual members, without leveling them off or averaging them down.[8]

Hoos has concluded, "Thus, one might say that the major objective of a bargaining cooperative is to obtain for its membership the highest returns consistent with current and prospective economic conditions and the long-run welfare of growers."[9]

Kinds of Actions Taken

The major actions groups take to influence their economic returns can be classified into five categories. They may attempt to: (1) influence the demand for their product, (2) influence the supply of their product, (3) influence the efficiency of production, (4) influence the efficiency of marketing, (5) obtain government payments in addition to market price. Each of these methods is considered briefly in the following sections.

Influencing demand. Various agricultural marketing groups have spent considerable time and resources attempting to increase the demand for their product. In terms of economic theory, they attempt to shift their demand curve to the right or make it more inelastic, thus selling a given quantity at a higher price per unit, selling more units at the same per

unit price, or some combination of the two. Three general methods are commonly used: advertising and promotional programs; product development, including the determination of new uses; and the stimulation of government purchase and diversion programs.

Advertising and promotional programs are undertaken by groups in an effort to stimulate sales. A wide variety of advertising and promotional techniques have been used. The effectiveness of various programs is difficult to determine. One prominent advertiser has stated that "half of my investment in advertising is wasted. The trouble is, I don't know which half."[10]

Large sums of money are collected for commodity advertising and promotional programs. While many contributors disagree on the magnitude of monetary returns from this activity, they usually agree that advertising on an individual basis is an uneconomical proposition.

Market development is broadly defined as the process of introducing new products and opening new markets, both domestic and foreign. Advertising and promotional programs are often used in conjunction with market development.

Governmental agencies are large purchasers of agricultural commodities. Commodity groups can often exert considerable influence on these agencies, thus affecting demand. If such purchase and diversion programs are to be effective they must increase total sales and not be substituted for normal purchases. Purchases for welfare, school lunch programs, and Public Law 480 programs are examples of government stimulated demand.

Influencing supply. A method of increasing total revenue which is used by some groups is to limit or regulate the supply of a commodity placed on the market.[11] Supply control in its broadest form can be attempted through improved information, including price and crop prospects or outlook information. Advanced information regarding potential market gluts would presumably cause producers to alter production plans. More restrictive programs fostered by groups include limiting the number of cows each dairy producer can maintain and suggesting the optimum total crop acreages to plant. Agricultural marketing groups also exert considerable pressure in either encouraging or discouraging supply control programs embedded in agricultural policy.

One of the more effective methods of controlling supply is through contractual arrangements between growers or producers and handlers. This method is used extensively throughout the United States in the vegetable industry. Processors or packers usually agree to purchase only lim-

ited acreages of various vegetable products from selected growers. This effectively controls the number of acres used to grow the various commercial vegetable products.

Another method of supply control is the market quota. As used in a few milk marketing areas, part of the effect of market quotas is to limit entry of additional producers. Farmers desiring to produce and market grade A milk may have to buy out a dairy operation with an established quota or build a production base through the sale of lower-grade, lower-priced manufacturing milk. Financial limitations may restrict the outright purchase of an established dairy. Building a production base may not be practical if alternative enterprises provide a higher net return than the sale of low-priced milk. Such quotas are used in certain state milk marketing programs but have not been used in federal marketing programs.

A more indirect method of limiting inputs in the production of agricultural product is the application of health restrictions. The sanitary requirements on milk production are often so rigid that only a highly mechanized, highly capitalized plant can meet them. These sanitary requirements are frequently favored by established producing and marketing firms to effectively halt low-cost competition from potential local or distant producers.

Once resources are committed, the problem of controlling supply becomes somewhat more difficult. Restricting output has been attemped in a variety of ways, from pulling up tobacco plants to plowing under crops, and more recently dropping fruit to the ground before it has ripened. A less obvious output restriction results from a quality control program. This not only limits production but may restore consumer confidence in the product and hence have a secondary effect on consumer demand. State marketing orders and agreements have been used for controlling quality. Grower or packer associations can also upgrade product quality of at least that portion of the output controlled by the membership. The quality control program and sanitary and health regulations have many characteristics in common.

In most instances output is difficult to control by direct means. A group that achieves price and revenue advantages is likely to eventually experience difficulty. Entry of non-member firms into the production of the advantaged commodity may occur. Or a new cost-reducing technology may be developed, expanding production and thereby partially nullifying the effects of the price increase. Only a few groups in agricultural marketing direct major efforts toward controlling output *per se*.

Regulation of commodity flows in both the time and place dimensions is often referred to as orderly marketing. By timing the flow of a

commodity on the market, price-depressing market gluts can sometimes be avoided. When a commodity group faces an inelastic demand in the relevant range of production, a sudden rush of commodity sales, such as that which occurs at harvest time for perishable fruits and vegetables, can mean a proportionately greater decline in per-unit price. This, in turn, is associated with a decline in total revenue.

One alternative approach is for an organized marketing group to form a commodity pool or other suitable control device to regulate sales of the product to the normal marketing channels. This regulation can be attained in several ways depending on the nature of the commodity and the financial resources and storage capacity available to the group. In the case of perishable crops, a producer group may finance the processing and storage of the crop in order to regulate quantities reaching the market. For less perishable commodities, harvest or shipping dates can be synchronized to avoid extreme price-depressing market gluts. There are numerous examples of measures to attain orderly marketing. Federal marketing orders for grapes and cranberries provide for pooling and surplus diversion. Information on prices in various markets is another orderly marketing measure.

The regulation of commodity flows between markets has been widely discussed in the literature. In general, a market diversion program seeks to divert supply of the commodity in a market with an inelastic demand (with respect to price) to a market with a more elastic demand. Theoretically, this process would be continued until marginal revenues in both markets are equal to each other and to marginal cost, which is assumed to be the same in both markets. Two requisite conditions are that the price elasticities of demand must be unequal and that the markets must be separate. There need not be geographical separation of the markets: they can be as effectively separated by consumer habit and custom as by geographical barriers.

The short-run effectiveness of a supply-control program depends on several factors related to the supply and demand conditions of the particular industry in question. A demand relation has varying point elasticities depending upon the shape of the demand curve and the point at which demand is measured. If the objective is to increase total revenue through a supply-control program, demand in the relevant range must be inelastic with respect to price, for if demand were elastic, a movement to the left in the supply relation would be associated with a greater per-unit price but a smaller total revenue.

A short-run price enhancement through supply control could be partially or totally offset by imports of the product from abroad. In addition, secondary effects would influence the ultimate success of a supply

control program. These secondary effects are usually dealt with by the *ceteris paribus* assumption, but they are worth noting briefly. Assume that a supply control program were initiated for butter, moving the supply relation from S_1 to S_2 in Figure 20.

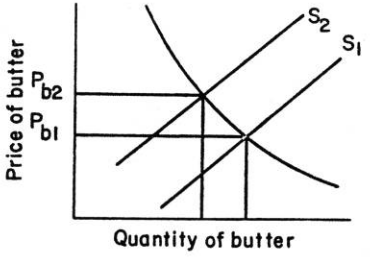


FIGURE 20. Hypothetical supply and demand curves for butter.

The new price P_{b2} is above the old price P_{b1}. The demand for oleomargarine is affected by this change in price for its substitute, butter. The expected result is an increase in demand for oleomargarine from D_1 to D_2 in Figure 21.

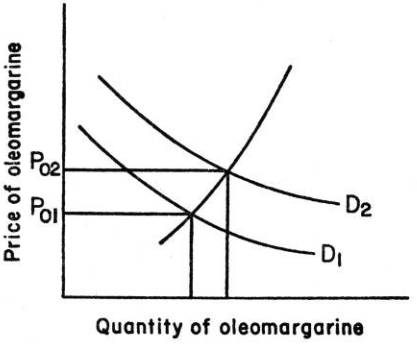


FIGURE 21. Hypothetical supply and demand curves for oleomargarine.

This change in the demand for oleomargarine is associated with an increased price for oleomargarine from P_{01} to P_{02}. This in turn exerts a secondary effect on butter. The increased price of oleomargarine results in an increased demand for butter as consumers adjust for the increased price of oleomargarine. These adjustments are constantly occurring, as consumers alter their purchases to take advantage of changes in price of products and of substitutes and complements.

The long-run effectiveness of a supply control program can be greatly diminished by the entry of new producers, the expansion of output by established ones, and by loss of sufficient volume to dominate the market. No effective method has been devised to guard against these eventualities. It is paradoxical that a successful supply control program may increase the need for more restrictive supply control measures, or for additional expenditures for market development.

Influencing production efficiency. Groups of agricultural marketing firms have promoted programs designed to increase efficiency in production. Technically such programs affect the supply relation of individual firms. They generally advocate cost-reducing schemes which, if price remains constant, should result in increased net returns. Methods utilized by groups to increase efficiency include: providing members with education and information on new techniques, new methods of production and other cost-reducing innovations; financing research to develop new and improved production techniques; and attempting to reduce the delivered costs of inputs through collective purchases, cooperatively financed services and supplies, and other means.

Information-gathering during a decision-making process can be an expensive and time-consuming job. Individual firms can realize economies by pooling their resources to gather, study, and disseminate relevant information. In addition, the member firms may make funds available to professional research agencies or institutions to study industry problems of general interest to a majority of the members.

Individual firms marketing food products require certain quantities of market and price information, which becomes an input to the firm's production function. Each unit of this information has an associated cost. The unit cost may be too high to be economically feasible for the individual producer. However, since the same information can be utilized by a group of producers, it may be feasible for them to pay for this service jointly.

Influencing marketing efficiency. Although similar in terms of possible actions, production and marketing efficiency have been separated in this discussion. Justification rests on the authors' arbitrary decision to separate group actions which affect their internal operating costs and hence lead to improved production efficiency and actions undertaken to influence conditions external to their firms but affecting their returns or costs.

Reduced costs of marketing are associated with narrower margins received by agricultural processing and distributing firms. Some of the

benefit of reduced margins is passed on to the consumer and some reverts to other participants in the market. Although costs and margins to agricultural processing and distributing firms have generally increased, the potential gains to be obtained from reduced marketing costs and margins have prompted groups to continue to work toward these ends.

Group programs of research and action have been adopted to increase efficiency in marketing. Emphases have been placed on both technical and economic or pricing efficiency. Much of the research effort on new and improved techniques has been conducted by public and private institutions, often at the request of various agricultural groups.

Attempts to reduce marketing costs and to improve economic efficiency have come largely from the agricultural marketing groups themselves. Cost-reducing innovations mean increased profits to the firm, at least in the short run. Another example is provided by the growth of producer bargaining cooperatives and associations which often attempt to provide regional and temporal price stability and other services to processors and distributors. Such stability tends to reduce risk and uncertainty, thereby reducing the safety margins required by these agencies.

Obtaining direct payments in addition to the market price. Groups may attempt to increase member revenues through the receipt of direct payments over and above the market price. These have been referred to as direct subsidies or income payments. The method, while seldom used, has been suggested on several occasions and remains potentially quite important. The group role in receiving direct payments would be primarily one of influencing legislative bodies in this direction.

The five types of actions for increasing economic returns as cited above can be carried out by individual firms, provided they are large enough to make their impact felt. Yet they are more applicable to group organizations where usually more financial resources and other necessary requirements can be amassed.

These actions, designed to increase members' economic returns, rest upon the fundamental theory of economics: the laws of supply and demand, the concepts of derived demand, production and cost function analysis, and equilibrium price. In addition, there are many refinements which could be discussed if space permitted. One example will demonstrate this point. When considering a market supply diversion program, careful consideration should be given to the different demand schedules. Restriction of supply to a particular market will increase total gross revenue in that market only if the relevant price elasticity of demand is less than unity.

Factors Influencing Success

The success of group action is associated with the following factors:

The economic soundness and practical aspects of a program. Money spent on advertising may be wasted unless there are sufficient funds to insure an adequate merchandising program to complement the advertising effort. Money used to advertise a nondifferentiable product may not be economically sound. Also the group undertaking must not be so large or broad in scope that it is not operational.

Able management. There are a myriad of functions to attend to, including planning, coordinating, education, and evaluation. Good management can mean the difference between a good program and one that is ineffectual or a failure. The need for sound management is crucial at both the operating and director levels.

Size and composition of membership. Members of a group provide the financial and physical support for most action programs. It is thus essential that a sufficient number of members play an active role in backing a program. But numbers alone may not be sufficient if the membership composition is inadequate. For example, a bargaining cooperative's membership may be made up of a relatively high percentage of the total number of producers, but unless it includes large producers the controlled volume may not be sufficient to give the cooperative an effective voice in price establishment.

Membership loyalty. This is a prerequisite for a long-range consistent program of group action. It is related to membership education and information. There appears to be a constant need for membership reeducation among voluntary agricultural marketing groups.

Relationship of members to nonmembers. Many voluntary groups find that their programs benefit nonmembers as well as members. It is most desirable if an organization's members benefit more than nonmembers even if the difference is only nominal. Involvement of all members in some degree of responsibility may provide the mechanism whereby there is at least a psychic return. It is possible, however, for a group to continue to function without any tangible added returns.

Evaluation of Group Action

In evaluating group action we must return to the two models of power discussed in the introduction. In the discussion of the negative model of

power it was suggested that an evaluation would take the form of measuring the transfer of returns to the group over and above those which would have existed without the group formation and related programs. Reallocation of economic returns is the principal measure of success. This method of evaluation might, in the short run, suggest the dissolution of many agricultural marketing organizations, since increased returns are frequently nominal or nonexistent.

However, if actions are evaluated in terms of the positive model of power, programs would be evaluated in relation to the growth and well-being of the industry or economic sector as a whole. Thus, in a year when additional economic returns are nil, their existence could often be justified on the basis of their long-run contribution to the industry. In this way an erroneous short-run decision to cease operation may be averted.

Some of the advantages of group action which are related to increased economic returns but difficult to measure in financial terms include:

(1) Ability to amass technical and economic knowledge and expertise.
(2) Opportunity to educate members, customers, public, and other groups.
(3) Ability to influence the appropriation process.
(4) Access to many beneficial institutions.
(5) Possibilities for interaction with other groups.
(6) Opportunity for dynamic interaction of membership.
(7) Provision of an issue-resolving mechanism unavailable to individual members.

It would be erroneous to view group action as a panacea for the ills of agricultural marketing. While organizations have enabled groups to do what individuals could not accomplish, there are certain restrictions. Some kinds of firms, for example, cannot work together because of organizational differences. Another restriction to group action is administrative in nature. While it is difficult to separate administrative from administrator difficulties, it is the case that many groups have been ineffectual for these reasons. A host of legal restrictions also prevent many actions deemed advisable by marketing groups. Sherman antitrust legislation restricts the kind and degree of association and action in which food processors and distributors can participate. Finally there are the less measurable value and belief restrictions which inhibit group formation and action. These are socially oriented. To the extent that these restrictions can be overcome in the future, new and different group action may be observed.

CHAPTER 11

Cooperatives in Agricultural Marketing

THIS chapter deals in greater detail with cooperatives, one of the particular types of group action outlined in the previous chapter. The reasons for this special treatment are that cooperatives are generally recognized as an important part of the agricultural marketing structure, and that in many countries they have become more dominant in agricultural marketing than in other sectors of the economy. Cooperatives will be examined here in terms of: (1) characteristics and development, (2) objectives, (3) the advantages and limitations of the form of organization, (4) their future.

Characteristics and Development of Cooperatives

The term "cooperative" is a generic one, covering many efforts of people working together. Under consideration here, however, are certain formal institutions engaged in marketing farm produce, purchasing farm supplies or consumer goods, supplying production or consumption services, and supplying production and consumption credit. This would also mean activity at the wholesale level, such as retailer-owned food wholesale cooperatives as well as federations formed by local cooperatives.

Without attempting to arrive at a specific definition of a cooperative in either legal or theoretical terms, we will consider as cooperatives those private property organizations whose voting members are generally patrons of the organization and where most patrons are also voting members. More elaborate and differing definitions are given by Emelianoff,[1] Phillips,[2] Robotka,[3] and others.[4] These authors generally hold that a non-cooperative organization, whether a household, an individual proprietorship, a partnership, or a stock corporation, is defined as an acquisitive economic unit which strives toward economic individuality.

By Henry Larzelere.

They contend that a cooperative is not such an acquisitive economic unit. Instead, a cooperative is an aggregate of such units, each of which retains its individuality as an acquisitive economic unit. This is a well-conceived theoretical distinction, but it is difficult to apply it in practice. In reality, organizations generally considered as successful cooperatives tend to become acquisitive economic units in themselves and ask that the member-patrons as individual acquisitive economic units surrender part of their individuality so that the cooperative may grow. Of course, the advantage of success can be said to accrue eventually to the individual members. This process, though well-intended, is frequently illusory, as cooperatives are often no different from the definitely non-cooperative organization. Through a board of directors and a manager, the members have entrepreneurial and decision-making responsibility similar to the completely investor-oriented firm. The directors of either type of organization have a legal responsibility to render decisions that are for the benefit of the group of members or stockholders of the firm and not for themselves solely as patrons or investors. Furthermore, directors in both types must make decisions regarding the accumulation of capital in the firm versus the making of cash disbursements to their patrons, members, or stockholders.

The real distinction arises when the entrepreneur-member has an interest as a buyer from or seller to his firm as well as interest in the return of his investment in the firm. The user of the service, be it marketing, purchasing, or credit, in addition to influencing the service and its price at the market place, can affect the service by his vote at the meeting of members. A broad definition of a patron, however, must be limited. Each organization has patrons whom it sells to or buys from but usually has only one group of patrons who are eligible for membership.

Dairy farmers selling milk to or through a milk-marketing cooperative might be called primary patrons. In that case those individuals or firms to whom the cooperative sold the dairy products would technically also be patrons, but in this concept are not likely to become members, and therefore might be considered as secondary patrons. Whether a particular group of a cooperative's patrons are primary or secondary depends on the purpose of its organizers and its successive groups of members. Some organizations have dual purposes serving two sets of patrons. There is, for instance, the credit union, a type of cooperative credit organization, where both sets of patrons, borrower and lender, are shareholders and become voting members. Credit unions can operate this way partly because of the possible periodic change in status of individual patrons from shareholders to borrowers and partly because they

have the dual purpose of encouraging saving by and supplying credit to their members. Other types of cooperatives have been established in some instances to serve both sets of patrons. An inherent difficulty in this is the resolving of the conflict of interest.

Other characteristics that are frequent but not universal in the cooperatives as defined above can be classified in three categories: distribution of financial gains, source and ownership of capital, and voting procedures.

Distribution of financial gains is generally made on the basis of patronage, usually after some payment in the form of interest on loans and limited dividends on stock.

The goal in regard to the source and ownership of capital in present cooperative thinking is that the member-patrons should supply capital in proportion to the amount of patronage. Cooperatives, however, have used loan capital, both private and public, extensively as interim sources of capital. Of course, capital needs in proportion to the capital available from members have influenced the extension of loan capital particularly from public sources. In the United States, loan capital in cooperatives served by the Farm Credit Administration and by the Rural Electrification Administration has been substantial.

The first two characteristics, while indicating procedures that yield advantages to the eligible patrons, also reflect the basic interest in doing business or performing at cost the function for which the organization was formed.

Membership control in cooperatives generally has been on the basis of "one man, one vote," or of voting according to patronage. The one-man one-vote principle is not only based on a goal of economic democracy but is also a reflection of nearly equal patronage among the individual members of early organizations and the limited capital needs of the business operation. The voting by patronage has grown because variation in amount of patronage among individual patrons has become significant and because capital supplied according to patronage dictates the need for organization control to protect the large suppliers of capital.

As indicated in the previous chapter, a cooperative as a form of group action enables the individual, as either a natural person or a firm, to have a closer link with the market. By such an extension of an individual private enterprise, the individual member gains bargaining power not only in the price discovery area but also in the role the member can play in stimulating the cooperative to become more efficient and to become an actual pace setter. In return for this extension of influence,

the individual may find his freedom of decision limited. He must comply with a membership agreement defining the conditions under which he must operate if he is to be a member-patron of the cooperative. Furthermore, in some instances membership and patronage in a cooperative may be either literally compulsory or nearly so if the individual is to engage in a particular type of business in a particular location. In some instances cooperative management has been permitted to represent the entire membership in voting on various governmental market orders and the various amendments thereto. This arrangement increases the influence of the cooperative and permits decisions by producer representatives without the necessity of each individual member becoming familiar with all the elaborate details involved.

From a social point of view the cooperative can become relatively large without socially harmful monopolistic practices developing, as far as the member-patron transaction is concerned.[5] It must be recognized however, that secondary patrons (those who cannot become members or share in the distribution of proceeds) and potential patrons who are not accepted as active patrons represent the "outs" who may not gain as much as do the "ins" (the member-patrons). Investor-oriented business firms that perform comparable functions and are in competition with one or more cooperatives have also claimed that cooperatives have inherent advantages over other types of businesses, including the advantage of paternal treatment from government.

Cooperative organizations that have the characteristics described were formed as "self-help" devices that would enable individuals to improve their economic welfare by increasing returns or decreasing costs. Early cooperative efforts are reported to have begun in the latter part of the 18th century in England.[6] Some took the direction of the general store, where individuals could buy food and supplies for household industries, in order to resist the economic power of the merchant. Later some food stores in factory towns were formed to break the monopoly of the company store. In Germany, credit cooperatives developed the procedure of combining groups of individual personal or agrarian loans through a cooperative, a measure which reduced some of the risks of making a large number of individual loans and which provided a better bargaining position in negotiating the cost of the capital, interest rates, and loan terms.

In the agricultural marketing sector both in Europe and America, cooperatives were initially formed as one of the ways to deal with the "farm problems," or more specifically low prices of farm products. In the agricultural marketing sector in the United States the middleman seemed

to be the villain. This was a readily understandable reaction. We observe that marketing margins tend to be sticky, even today. Along with attempting to perform all or part of the middleman's function better (or at least cheaper), cooperative leaders saw the need for bargaining power in marketing even to the point of near monopoly control of all or some portion of the supply of a particular product. The growth of these organizations in the United States can be characterized as starting at the bottom with small local groups and later pyramiding into large regional and national organizations.

In contrast with the agricultural marketing cooperatives, the agricultural credit and electric cooperatives in the United States were organized from the top down, with some direction from government agencies remaining even after the equity capital had become locally owned. The access to relative large amounts of capital was essential at a time in the mid-1930's when farmers generally had only limited funds for investing in their own organizations. Credit unions, although primarily in urban areas, have been organized as independent nongovernment-sponsored organizations in rural areas in some cases to provide a means of saving and a source of credit for their members.

Objectives of Agricultural Cooperatives

Cooperatives, like the other examples of group action in agricultural marketing, have been formed with various objectives in mind. Furthermore, their beginning form and structure depended upon the objectives which the original leaders felt were most important and upon their historical familiarity with various types of organization. Some of the principal objectives sought are considered below.

Reduction of marketing margins and costs. Efforts to reduce marketing margins originally concentrated on elimination of the middleman, particularly his profits. Some cooperative enthusiasts probably oversimplified this type of action, but it was the spark that started many cooperatives and provided some balancing of economic power at the market place.

Improving operating efficiency became a companion objective that was more likely to be stressed after the cooperative was formed. It was often discovered that in order to effectively reduce the marketing margin, efficiencies had to be developed in which the cooperative could do the job more economically than other agencies. A cooperative with the aim of providing the best service for a number of patron-members would

very likely be eager to adopt the most recent economies of scale that technology had developed.

In order to increase the efficiency of the cooperatives and thereby the returns of their member-patrons, agricultural cooperative leaders representing relatively large numbers of farm members and patrons were able, particularly during the 1920's, to get sympathetic treatment by public agencies in regard to education and promotion, tax considerations, and violations in restraint of trade. In fact, in that period cooperatives were generally considered a major thrust by which these agencies could help farmers with their price and marketing problems.

Providing the basis for raising capital was also an integral part of cooperative activity aimed at reducing marketing costs. This was done in various ways. Some cooperatives in the United States were begun as farmers' stock companies. These organizations were frequently formed before many states had special provisions for their incorporation. Often local businessmen as well as farmers were stockholders. These organizations were formed to raise capital for such functions as building a grain elevator and assembling and forwarding grain.

Other cooperatives were formed as pool organizations. A typical example was a cheese factory in an isolated valley. Equality was a feature of this form. The building was probably built by a "bee," with the local resident-members contributing labor and material. Much of the rest of the capital needs was represented by two weeks' or more supplies of milk of the patrons. In other words, some of the capital was contributed on the basis of volume of business done with the organization. Payments to the patrons were not made until the milk had been processed and the processed product sold. Frequently, membership or participation went with the farm rather than with the individual.

Influencing market supply. Managing the supply of products also was considered a desirable objective. It was expected that a cooperative could, by contracting with its members, control the marketing of a significant portion of a product and thereby obtain higher prices for its members. It might thus counteract the effects of near monopsony or monopoly conditions.

Organizations using this method had little success at first for two reasons. First, it was difficult to get enough of a given product under contract. Second, it was expensive to keep members under contract: nonmembers were obtaining significant benefits by dealing with competing firms that might temporarily give their customers the same or better prices, free of any investment or membership responsibility. A more mod-

erate approach in controlling supply was the concept of "orderly marketing," the theme of the cooperative development plans of the Federal Farm Board in 1929.

Bargaining associations that have developed successfully have combined enough volume of produce under a contractual arrangement with producers so that better price and fringe benefits can be obtained than if producers were marketing their products individually. They have exerted some supply control by requiring high quality standards and (in the case of the milk associations particularly) have used sanitation requirements to limit the supplies of milk coming into a market from nonmembers.

Other types of cooperatives used the device of paying for produce according to the quality of each individual patron's shipments. This development, in the case of egg marketing, was certainly one which cooperatives were the first to initiate in many areas. The procedure provided individual producers with an incentive to improve quality. It also had an important effect on prices and returns to producers by identifying the relative supplies of various levels of quality rather than considering one homogeneous supply and its effect on price.

Influencing demand. Cooperatives have dealt with the objective of affecting demand by frequently leading the way among marketing agencies in improving the quality of the product handled. In some cases they have developed differentiated products, including advertised brands. Temporarily, at least, some cooperatives and their members thus gained real economic advantages.

Advantages and Limitations

In analyzing the advantages and limitations of cooperative organizations it is apparent that many of the reasons for success or failure of marketing firms are common to all such firms regardless of the form of organization. Such general reasons are good or poor management, adequate or inadequate capital, and adequate or inadequate volume of business.

As was hinted above, the successful cooperatives have been those that served as pace setters in their particular industry, either through internal efficiencies of plant operation or through consolidating and reducing the number of links in a market channel.

Why did some of the existing firms of the traditional entrepreneur type (investor-oriented) not serve as pace setters? Why did a new but traditional firm not come in and profit by being the pace setter? These

developments did take place in some situations and cooperatives may not have undertaken operation in those cases. An important role that the cooperative was able to play was that of a market researcher as well as that of an operating unit. By virtue of starting under the impetus of a number of potential patron-members who wanted something in service or products at a price that they were not able to get from existing firms, cooperatives were frequently able to reflect the needs and wants of individual members effectively.

In the course of operations, desirable changes were frequently brought to their attention by their patron-members. In a sense some cooperatives, particularly in their early history, were really informal customer preference polling places. Today modern marketing firms place considerable emphasis on learning the wants and needs of their customers. This kind of information was not common among many marketing firms until recent years and was probably almost nonexistent in the rural marketing centers where many of the agricultural cooperatives began operations.

While the fact that many patrons in a cooperative are also members and therefore have a vote has some advantage, it also has a limitation. It is difficult for a board of directors who have been elected by the members to make decisions which might be good for the organization as a whole but unpopular with a sizable group of member-patrons. The same type of difficulty may also extend to the manager, who has been selected by the board of directors. Management of cooperatives frequently states that it is difficult to handle patron relations while carrying out policies on credit extension or price-volume differentials.

Circular authority is also involved when cooperatives provide automatic membership for patrons. This practice has some advantages in providing a strong interrelationship between patronage and membership. However, sometimes automatic membership is almost involuntary and meaningless. Members thus acquired generally have little interest in the organization as a unit and its long-range objectives and may be inclined to milk the cooperative for their own benefit.

The pace-setter objective may mean that all producers in a particular market benefit from the action of the cooperative as well as the member-patrons. As a result, a member (especially of the second or third generation) may be inclined to ask "What is the organization doing for me now?" or "Why do I need to belong?" Such questions suggest that members need to be continually informed regarding both short- and long-run objectives of the organization and how they are achieved.

An increasingly important problem is the conflict of interest between the idea of equality of treatment of all patron-members and the possible differentials in cost based on volume or other differences.

Cooperatives have generally followed the idea of having equity capital supplied in proportion to the patronage of the individual patron-member. At a time when increased capital is needed both by the cooperative and by the individual farm, there is a limitation to growth, since capital for the cooperative may be difficult to get from member-patrons. In fact it may be better allocation of resources to have the organization obtain significant amounts of capital from general capital sources rather than require its member-patrons to divide their capital resources between their farms and their cooperative.

Turning to cooperatives that are sponsored by government agencies, there are likewise some limitations. If we assume that a cooperative is an organization controlled by its member-patrons, sponsorship by a government agency should be only a temporary device. The major drawback lies in the procedure for the gradual transition from government sponsorship to independent control.

The fact that the government was involved at all probably means that support will be necessary for a fairly long period of time, difficult to estimate at the start. This uncertain arrangement then makes it difficult for the individual members and the board of directors, in particular, to generate the incentive needed to acquire the experience and know-how to assume full responsibility for the operation of the organization. Also this arrangement tends to provide a government agency with a propensity for holding on to the control of these organizations. Successful operating results which on one hand might mean that the cooperative could operate independently might on the other hand lead a politically-oriented agency to hang on to the operation as an evidence of political success.

It is revealing to compare the effects of the cooperative with the investor-oriented type of organization as regards certain elements of operation and results.[7] Significant areas include distribution of income, accumulation of capital, facility in adoption of new technology, and concentration of control.

The patronage refund procedure employed by the cooperative represents a different distribution of income from other types of firms. Some would say that the distribution would thereby be more equitably or more evenly made among the recipients. This cannot necessarily be held as a unique feature because of the type of organization. For example, differences in patronage among individuals could be as great as differences in investment. In terms of overall distribution of income, a cooperative firm would reflect some differences from and some similarities to an investor-oriented organization if each were in two comparable monopolistic positions. A farmers' marketing cooperative might be able to yield monopolistic gains to those farmer patrons who were sharing in the distribu-

tion, but patrons to whom the cooperative firm was selling its products would fare little differently from the comparable patrons of the investor-oriented firm.

It must be admitted that cooperatives have been able in some situations to accumulate capital without deductions for taxes that must be paid by non-cooperative organizations. This advantage, however, has to be weighed against the limited dividends or interest on stock or certificates that a cooperative is usually permitted to pay and the difficulty of reflecting the so-called growth factor of investment securities in a cooperative form of organization.

In the adoption of new technology, a cooperative at its inception has a strong advantage; however, in its later history it becomes difficult to move a large number of complacent members to permit significant changes such as those requiring large increases in capital equipment or mergers.

Cooperatives are usually referred to as highly democratic organizations, principally because of the frequent practice of "one man, one vote." In practice, however, management tends to perpetuate itself. In fact success seems to be consistent with a benevolent but strong leader as an executive officer who maintains consistent management. The investor-oriented firm management maintains this position by the proxy device, the cooperative management by satisfying an often complacent membership.

Future of Cooperatives

The future role of cooperatives in agricultural marketing depends on their abilities to adjust to changing conditions.

In the emerging areas of the world, cooperatives[8] have been encouraged as an example of a democratic institution. The general shortage of capital in these areas has made the need for credit cooperatives paramount. As development proceeds, the need for marketing cooperatives becomes evident. As the agricultural enterprise in these countries becomes more commercial and as urbanization increases, interest in and need for farm supply and consumer product cooperatives will very likely become more apparent. It has also been felt that cooperatives can make a contribution to social development. In societies where experience of property ownership has not been great, the feeling of ownership and belonging which goes with a cooperative can become a stabilizing force.

Many of the cooperatives in the emerging countries have developed as top-down organizations, with the respective governments taking an

active role in the organization and supervision of their operation. The reasons for this procedure are clear. Difficulty of capital accumulation when individual incomes are low means that initial capital must come from government or other outside agencies. Furthermore, a low degree of literacy and the resulting limited economic organizational knowledge of the potential members makes the formation and operation of an independent local cooperative difficult. Government supervision and business education are therefore certain needs. As these limitations of capital, experience, and education are met, greater responsibility can be and often is passed to the individual members.

In more highly developed areas of the world, cooperatives have achieved varying levels of the success hoped for in the emerging areas. Regardless of the achievements in the past, however, the cooperatives must still be alert to changes in their respective economies if they are to maintain an influence in the market results. Currently four changes need to be examined even by those cooperatives that seem to have reached a mature stage of development.

First, patronage and membership in a cooperative will need to appeal to the largest and most efficient producers. If unit costs vary with volume, differential treatment may be necessary.

Second, ever-changing technological developments will almost inevitably require continuing adjustments to economies of scale. Also fewer alternative firms will be available to a given group of producers both in marketing produce and in purchasing inputs. As such situations tend to develop near monopoly or monopsony conditions, the need for supporting the relative bargaining power on the part of the producer in his dealings with investor-oriented firms will be increased. In fact (though this is probably a remoter possibility), the consumer may find an increasing need for improved bargaining conditions in purchasing goods and services. Such a bargaining form of organization may be a cooperative.

Third, closer ties between the individual patron-members and their organization will be needed. Scheduling and quality requirements will need to be established with a view to matching the production facilities of the members with the most efficient level of processing and merchandising of the organization. The enforcement of some requirements, especially if the scheduling does not yield the same returns to all growers, can lead to integration where the organization may own some of the production factors, especially the non-fixed ones on members' farms. In this instance, the member-patron might receive a substantially uniform rate of return for each unit product, with the association absorbing the risks of the seasonal and short-time fluctuation in market prices.

Fourth, the capital needs of cooperatives have been steadily increasing. These needs are likely to continue as further development occurs. The implication is that cooperative leaders will be continuing to hunt for methods of getting their members to invest more capital in their organization. At the same time, changes in agriculture have expanded the need for capital in individual farm operations. This suggests that some changes will be needed in the direction of greater efficiency in the use of capital. It may be necessary to revise the idea that each member-patron should be obligated to supply capital to the cooperative in proportion to the volume of business he does with it.

PART III

AGGREGATE ADJUSTMENT AND PERFORMANCE IN AGRICULTURAL MARKETS

CHAPTER 12

Equilibrium and Overall Adjustment

MANAGERS of farms and marketing firms, administrators of farm programs, and consumers must make decisions which require some understanding of the market environment and the adjustments within that environment. Earlier chapters outlined various economic models under different forms of competition and considered the nature of price-output and other merchandising behavior by firms in agricultural markets. This chapter synthesizes these concepts into an overall framework which encompasses farm supply, consumer demand, and marketing margins and relates firm behavior to some of the dynamic aspects of overall short-run market adjustment.

The end point in the marketing process is and should be the ultimate consumer. Organization of the marketing machinery must be built around the task of detecting, understanding, predicting, and satisfying consumer wants and, as many would argue, shaping consumers' preferences. Thus as a starting point in this discussion we ask, what do we know or hypothesize about the structure of consumer demand as it relates to agricultural products?

Factors Influencing Consumer Demand

The relationship between the consumption of a food product and those factors that affect consumption is designated here as the demand function. As indicated in an earlier chapter, factors that influence consumption would include population, age distribution of the population, size of household, per capita incomes, frequency distribution of income, asset position of the consumers, price of the products, prices of substitutes and complements, promotion and merchandising, product innovation, knowledge about nutrition and health, occupations, educational

By John N. Ferris.

level of consumers, regional influences, religious beliefs, race and nationality, patterns of living, special events, a general category known as "tastes," and other factors too numerous to mention.

Consumption, as used in this context, refers to the amounts people would consume under the conditions specified by the determining variables. The demand function conceptually describes boundary conditions rather than points. That is, it defines attainable consumption levels—maximum amounts people would consume under the specified conditions. Our *a priori* knowledge of the demand function for food and fiber allows us to hypothesize what certain characteristics of this function will be. We can construct a market demand model with high predictive value by using a limited set of variables from the entire set of those variables which could have at least some influence on consumption. The effect of each of these variables can be hypothesized from our accumulated knowledge of human behavior and physiology.

Population. Population could be expected to have a proportional effect on consumption. If population doubled, amounts demanded for consumption would be expected to double, *ceteris paribus*. Of course, all other things do not remain constant over time, including price, the age composition of the population, and income.

Income. The relationship between income and total food consumption was explained by Engle as follows: "The poorer a family, the greater the proportion of the total outgo that must be used for food." Saying this in another way, "as incomes rise, consumers spend a smaller proportion of their incomes on food." This applies primarily to the farm value of food purchased. The expenditures for certain services and processing may well represent an increasing proportion of rising incomes. Also great variation exists between products (and grades of the same product). The relationship between income and consumption of individual products, known as the income elasticity of demand, can be either positive or negative, depending upon the product. The preference pattern of consumers would determine this relationship. Products with a positive relationship are designated here as "normal" goods if consumption increases less than proportionally to a rise in income and "superior" goods if consumption increases more than proportionally to income. Goods which decline in consumption as income increases are often called inferior goods. Probably, the rate of increase for normal or superior goods or rate of decrease for inferior goods would tend to slacken as income increases beyond a certain level because of a desire for variety

in diets. Consumers with rising incomes give more attention to variety and to quality.

Not only does current income affect consumption: expected income and the asset position of the consumer condition his expenditures, as well. Friedman treats income in a given time period as the sum of two components. The first of these, a permanent component, reflects physical assets and the earning capacity of the individual, i.e., the discounted value of his expected lifetime earnings. The second component is transitory, reflecting all other factors, those likely to be considered by the individual as accidental or chance occurrences.[1] Friedman regards consumer expenditures in a given time period as likewise consisting of permanent and transitory components. The transitory component reflects unexpected developments such as sickness, low food prices due to a bumper crop, unusually cold weather and non-recurring factors. He hypothesizes that permanent consumption is a function of permanent income, the rate of interest, the relative importance of property and non-property income, and the consumer units' tastes and preferences for consumption versus addition to wealth.

Price. The relationship between price and amounts purchased is known as the demand curve. The demand curve for food and fiber is generally a negative relationship. The price elasticity of demand for a given product depends upon the closeness of substitutes, the level of consumer income, the distribution of income among the population, the relative importance of this product in the budget of consumers, the storability of the product, and the length of time being considered in defining the relationship.

For the time interval over which the product can be stored without appreciable loss of quality, we actually have two demand functions: the demand for current consumption and the demand for storage. The amount demanded for storage is primarily a function of current prices, expected prices, storage costs, and the risk element. Holding the latter three factors constant, the effect of current prices on the amount demanded for storage would be the price elasticity of demand for storage. This could be quite different from the price elasticity of demand for current consumption over this period.

Specifying the time period under consideration is important. An abrupt drop in price accompanied by an advertising campaign, as used by retailers in "specials," can generate a substantial response from consumers. This is because the consumers are aware of the lowered prices and expect them to be of short duration. The response may reflect the elasticity of demand both for consumption and for storage.

But generally, the elasticity of demand for consumption is greater for longer time spans (say, one or two years) than for shorter spans (say, a three month period). People may not be easily induced to change their consumption habits by relatively short-run variations in price. But if a price change persists for a long period, consumers can adjust their diets gradually, and are more receptive to the change.

The price elasticity of demand for most farm products is less than one, or inelastic, in the relevant portion of the demand curve. The elasticity of the demand curve would normally vary from point to point along the

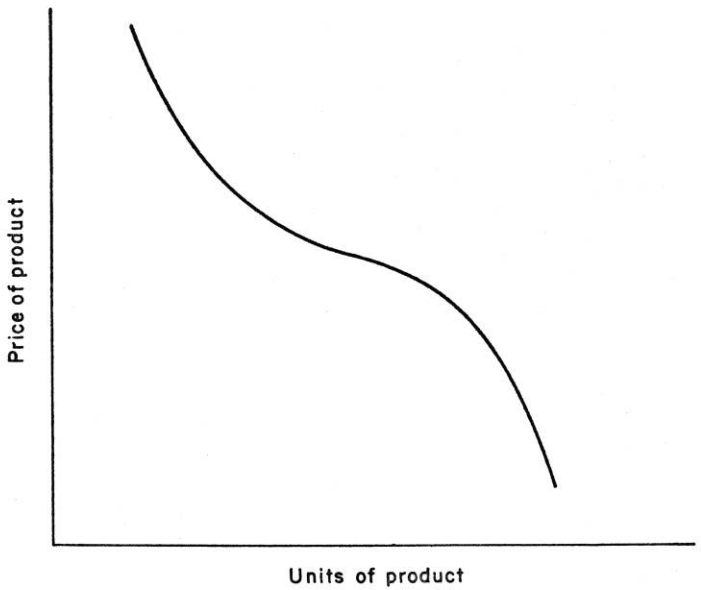


FIGURE 22. A typical market demand curve for an agricultural product.

curve. These features of the demand curve have special significance in agricultural marketing.

The particular shape of the demand curve is seldom known in empirical work, although statistical techniques have made it convenient to assume a linear function, either arithmetically or in logs. Realistically, demand curves are probably not linear (arithmetically or in logs) through the entire range of prices and consumption. A linear representation may be adequate, however, for a narrow range of prices and consumption.

There seems to be a tendency for demand curves to be "S" shaped.[2] The demand curve drawn in Figure 22 might well be typical for farm products. At extremely high prices, only a small number of individuals

might purchase a product. But because these individuals are not price-conscious, demand may be very inelastic in this range. At lower prices more can afford the product: it begins to displace substitute products. At extremely low prices the demand again becomes very inelastic as the market becomes saturated and alternative uses of the product are exhausted. Because of differences in income levels and the distribution of incomes, the shape of a demand curve would differ from one market area to another, from one country to another.

In a perfect market, the shape of the demand curve is of interest to producers and consumers only in the effect it might have on stability of price. The more inelastic the demand, the more unstable the price for a given variation in production. If some control can be exercised over marketings, the shape of the demand curve becomes more relevant. Decision makers may endorse policies of price discrimination or market stabilization depending on the shape of the demand curve.

Prices of substitutes and complements. Other variables affecting consumption of a product are the prices of substitutes and complements in consumption. The relationship between prices of substitutes and complements and the consumption of the product being considered is expressed quantitatively as the "cross elasticity of demand." This elasticity would be positive for substitutes and negative for complements.

Other factors. Tastes, preferences, promotion, and advertising, along with many other factors, affect food and fiber consumption. The theory of consumer behavior is not well developed with regard to these variables. Cochrane and Bell point out that the theory of consumer behavior has not been helpful in suggesting how tastes and preferences are formed or how or why they change.[3] Because some of these factors do not change very rapidly over time, their effect can be ignored for short-term predictions. Over the long run, their influence may be substantial. To some degree this influence can be measured. In statistical demand analysis the combined effect of several variables over time is often lumped together and considered a function of time. But until the understanding of consumer behavior is much further advanced, the predictive power of such models will be weak.

The vagaries of human behavior often defy analysis, particularly in terms of the "rational economic man." The difficulty becomes apparent when we consider the motivations of consumers. Using Cochrane and Bell's classification of human wants, there are those individual physiological requirements and inborn proclivities for food, protection against

the elements, sex and family, and communal or social activities.[4] In the second category are certain social, or group-created, wants. This category includes custom, conspicuous consumption, fashion, imitation, and wants that are "producer-made" through advertising and product innovation.

The combined effect. The relationships discussed above were each in the context of *ceteris paribus:* all of the other factors are assumed constant. Usually these factors change simultaneously. This presents substantial measurement problems. One important interrelationship is the effect of income on price elasticity of demand. The presumption is that people become less price-conscious as incomes increase. Rising incomes not only shift the demand but render it more inelastic.

The demand function may not be completely reversible. A low price which attracts new consumers may generate a shift in the demand curve at higher prices. A promotional effort may have some lasting effects long after the program is terminated.

In the preceding discussion no differentiation was made between the domestic demand and the export demand. This was because the discussion was in general terms and related to both the domestic and the foreign consumer. But substantial differences appear to exist in the form of the demand among countries. Tastes and preferences differ greatly from one country to another, and even within a country. These differences are separate from those due to disparity of income.

The export demand for a given product from a given country or area is generally less stable than the domestic demand, since the export demand is influenced by production of the same or similar product in the importing country and in other exporting countries. And production does vary from year to year. Production in these other countries may be viewed as a very close substitute for production in the home country. By this interpretation, export demand can be included in the general model of consumer demand described in this section. Of course, the *world* demand for the *world's* production is relatively stable from year to year.

The Supply of Farm Products

The second important concept needed to explain overall market adjustment is that of supply. The amount of a product that farmers are willing to supply to the market is explained in large part by expected price of the product, expected prices of inputs, technology, expected prices of substitutes and complements in production, and costs of producing substitutes and complements in production. This, which we desig-

nate as the "supply function," can be considered as describing the boundaries of attainable areas; it is analogous to the "demand function." The relation between the expected price and the amount supplied is known as the supply curve.

The elasticity of supply. The elasticity of this relationship for agricultural commodities depends partly on the slope of the rising portion of the marginal cost curves of farms, which in turn depends on the ease of shifting resources into and out of the production of a particular product. This includes shifting resources from one enterprise to another or

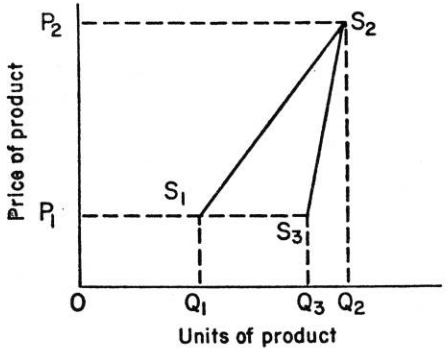


FIGURE 23. Hypothetical supply curves with rising and declining prices.

shifting resources into and out of agricultural production. The elasticity of supply also depends on the differences in the level of average costs among the farms in production and the submarginal potential producers.

Because of fixed costs, the supply curve is not completely reversible. As expected prices increase, new firms tend to enter production at the point where prices are equal to or above the minimum point on their average total cost curve. But as expected prices decline, these firms do not exit from production immediately unless prices drop below their average variable cost curve. Such action results in a more inelastic supply as prices decline than as prices increase. The difference would tend to be the greatest on products with high fixed costs relative to total costs.

This can be illustrated in the accompanying Figure 23. If the price were raised from P_1 to P_2, production would increase from Q_1 to Q_2; but if the price were then dropped back to P_1, production would decline only to Q_3.

Another factor determining the elasticity of supply is time. A lag exists between a change in the actual price and a change in the amount sup-

plied. This lag has essentially three components, psychological, physical, and economic. The psychological lag refers to the time between a change in actual price, the recognition that the price has changed, and an adjustment of expectations based on that change. In addition, some lag might exist even after expectations had been revised, due to resistance to change. In some cases, adjustments would be made only after present producers had retired or died. New producers would not be so encumbered by habit.

The physical lag refers to the minimum time necessary to alter production. This time will vary depending on the kind of product involved. It will be one year for most crops, three to four months for broilers, and a greater time for most other products.

The economic lag involves the time necessary to change so-called fixed assets. When prices decline, some producers find themselves covering their variable costs and part of their fixed costs. As long as they recover at least part of their fixed costs, they will continue to produce, but will eventually cease producing when the discounted value of expected earnings of the assets falls below the salvage value of the assets. This point would theoretically be the level where the salvage value is equal to or greater than the discounted expected return from the asset during the remainder of its life. Stated algebraically:

$$Vs \geq \sum_{i=1}^{n} \frac{Ei}{(1+r)^i}$$

where Vs is the salvage value, i is the year, n is the number of remaining years of the lifetime of the asset, Ei is the expected returns in year i, r is the rate of return available to the farmer in an alternative investment of comparable risk.

Johnson defines a fixed asset (in a single use) as an input where the marginal value product exceeds salvage value and is less than acquisition cost.[5] This establishes the price below which the asset would be withdrawn and the price above which more of the asset would be added. For many farm inputs, such as roughage, buildings, and machinery, there is a considerable difference between the acquisition cost and salvage value.

In these formulations of asset fixity, it is clear that the transition from fixed to variable assets is not strictly a matter of time, but is dependent on expected returns from the asset. The expected returns, and the salvage values, are of course partially a function of time.

Shifters of supply. The other factors in the supply function can be considered as "shifters" of the supply curve. The price of inputs is an

important element in the supply function, especially of those inputs which represent a large part of the total cost of production. For example, the price of corn is nearly as important an influence as hog prices in determining hog output. The supply function itself is subject to "structural" changes. New technology may be viewed as changes in the production function, which thereby alter the cost structure, which in turn affects the supply curve. Technology which lowers cost would tend to shift the supply curve to the right. Changes in organization of resources, such as vertical integration and contract farming, would similarly reshape the supply curve.

An increase or decrease in the price of products that are close substitutes in production would tend to have an opposite effect on the amount of a given product supplied to the market. An increase or decrease in the price of a complement in production would tend to change the amount of a product supplied to the market in the same direction. Also, changes in the cost structure of substitutes and complements in production would alter the attractiveness of these enterprises and so affect the supply of the product in question.

Nature, through weather, diseases, insects, etc., influences the amounts actually produced and enters the supply function as a random element not subject to prediction except in the relatively short run. Stallings, in his study of the influence of weather on farm production, estimated that the coefficient of determination between a weather index and an index of crop production per acre was .68 in the United States for the period 1900-1957.[6] Also of interest is the fact that the variance due to weather in crop yields did not change in this period. Because yields have increased rapidly, the relative variance of yields has declined. This suggests that weather becomes a relatively less important source of production instability as new technology and improved organization of resources increase yields.

The role of expectations. Implicit in the definition of the supply function are expected prices of the product, its inputs, and substitutes and complements in production. Measurement of the supply function for a specific span of time is complicated by the difficulty of measuring both expectations and their "strength." Farmers are conscious of many of the important factors affecting price, such as production, consumption, consumer incomes, prices of competing products, and the government's support program. Partenheimer concluded that a high proportion of farmers surveyed in the Midwest use so-called supply, supply-demand, and government action expectation models.[7] The particular expectation model used depends upon the commodity in question. If the government

support program was instrumental in establishing price, then farmers would be attentive to the prospective government program. Outlook information influences expectations. The selection of an appropriate expectation model involves implicit assumptions about farmers' level of knowledge and understanding of economic relationships.

Farmers may recognize some of the important factors affecting product and input prices. But in formulating expectations they may not go through the complex process of attempting to forecast these variables and assess their relative importance in establishing price. The magnitude of this undertaking may force even the best informed farmers to construct simple mechanistic expectation models.

Such mechanistic models would usually incorporate time series information. Price expectations are normally some function of present and past prices. The expectation model most commonly used by farmers is to assume that present or recent prices will continue for the coming production period. The condition specified in the "Cobweb Theorem," that farmers expect present prices to continue, represents a special case of a more general model which specifies that expectations are some function of present and past prices. Logically, the most recent prices would be given the greatest weight. Information retained by the human mind is usually a declining function of time. These phenomena are analyzed in terms of "distributed lag" models. The analytical techniques have been developed by several authors.[8]

The "distributed lag" approach is also used to measure economic lag in production adjustment. Some farmers can adjust immediately to a change in expectations because they are marginal—their fixed cost position may allow them to shift easily in or out of production. Others cannot economically so adjust until certain time periods have elapsed. Distributed lags allow for these differences. When actually trying to measure supply response, however, it is difficult to separate the lag due to slow adjustment of expectations and the lag due to fixed assets and other factors which hinder adjustments to revised expectations.

An underlying theoretical explanation of just how producers form expectations is only in the development stage. Although considerable work has been accomplished in survey procedures, that is, in asking people what their expectaions are, attempts to construct behavioral models have been feeble.

Katona has criticized the great body of economic theory which draws only upon mechanistic psychology—the assumption that under given external conditions human actions are entirely determined by those conditions.[9] Because human behavior is pliable and modifiable,

and because human beings are capable of using past experiences, he is skeptical about broad generalizations that assume invariable interrelationships.

Katona points out that economic behavior is sometimes habitual and does not involve expectations. In some cases, expectations are so weak that entrepreneurs (or consumers) do not respond and, in other cases, little doubt enters the expectation and the appropriate response follows. But in the majority of instances of uncertainty, Katona notes that expectations influence action, especially if that action is in line with the hopes and desires of those concerned.[10]

About expectations, Katona states:

> The study of expectations forms a part of the psychology of learning since expectations are not innate or instinctive forms of behavior but rather the results of experience. Therefore, expectations are explained by the same two principles by which all learning is explained, that is, by repetition or understanding (or both). The theory of expectations based on repetition alone is: "I expect those things to happen that have happened before, and the frequency of my past experience (the number of reinforcements) determines the strength of my expectations."[11]

But Katona points out that the strongest and most influential expectations originate in understanding. New understanding results from a restructuring of the psychological field, the whole situation which involves a change in the perception of the environment. What people perceive depends on the organization of their perceptions, which differs from person to person and in the same person from time to time. Changes in the organization of perceptions are conditioned by motives, past experience, attitudes, and emotions. Reaction to stimuli depends upon the particular structure of the perceptions. Changes in the structuring of the psychological whole and consequently of understanding are infrequent.

Katona reasons that if understanding is the source of strongest expectations, the expectations of businessmen are not constantly being revised. But when there is a revision, the change is likely to be substantial. In addition, many individual businessmen are likely to revise their expectations at the same time and in the same direction.

The field of information theory offers some guides as to how producers might extract certain information from prices.[12] Using the terminology of this field, prices may be thought to serve as signals which impart certain information to producers. In formulating expectations, the signals must first be received (actual prices must be known) and decoded. The signal is composed of information and noise. The problem of the

receiver is to separate the information from the noise and glean from the signal guides for future production.

Noise is a random element, an interference in the transmission of the signal. A change in price may not be a message to change long-range production plans if the change originated from a random and temporary disturbance.

Production and price are much more unstable for certain farm products than others. Year-to-year fluctuations in onion production and prices are much greater than those for milk, since the former are more dependent on weather, a random element. This would suggest that a given percentage change in onion prices would very likely impart less information about a basic long-run (more than one year) adjustment in the level of onion prices than the same percentage change in milk prices would about adjustments in the level of milk prices.

Producers' price expectations are not single-valued but a range, with probabilities attached to price intervals within that range. As these intervals approach zero, the expectation would then be a density function.[13] In a free market this might well be a normal distribution about the most likely price. If the prices were supported, the standard deviation of the expected market price would be reduced. If the price support was through nonrecourse loans, which protect producers from a price drop but allow him to take advantage of a price rise, the distribution function of the expected price would be skewed to the right. The support price adds strength to the expectation, removing an element of uncertainty. At each expected price, the amount supplied would be likely to be greater if the price was supported than if it was not.

The Concept of Marketing Margins

Consumer demand for food and fiber is an order for a very complex bundle of goods and services. The product of the farm is only a part of this demand. The transportation, storage, processing, grading, packaging, merchandising, and other services between the farm and the consumer are very real and important additions complementary to the farm product. Indeed, in the United States the marketing bill for domestically produced farm foods has been twice as great as the amount actually received by farmers.

Each marketing firm adds certain utilities to the product—time, place, form or possession utilities or some combination of these. A farm is actually a marketing firm which adds primarily form utility, but may also add the others. The concept of a farm as a marketing firm is clearly seen in the United States, where two-thirds of the scarce resources going

into agriculture are purchased inputs. The firms supplying inputs to agriculture, in turn, are also marketing firms. Product identification is, of course, difficult at the early stages of the marketing process. Nevertheless, the concept that each firm is marketing its labor, capital, and management through products which eventually satisfy consumer demands is a useful one.

The equilibrium margins. Within this frame of reference we can conceive of a supply-demand model at each point in the marketing chain where a product (or factor, depending on which stage is being considered) changes ownership. Each marketing firm "adds value" to the product (factor). Commonly, the difference between the price of the commodity as a product and as an input is known as the "marketing margin." In competitive markets, the marketing margin is determined by the demand for marketing services (and goods) and the supply of marketing services (and goods) as shown in Figure 24.[14] The intersection of the curves representing the demand for and supply of marketing services establishes the quantity of services produced (Q_1) and the market margin (MM).

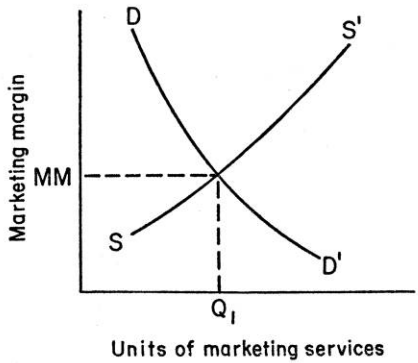


FIGURE 24. Hypothetical demand and supply curves for marketing services.

The total marketing margin between the farm and the consumer is the aggregation of marketing margins of the various firms in between. Hence the farm demand curve may be considered a demand derived from the consumer and intermediary demand functions.[15]

If the marketing industries were perfectly competitive, then the marketing margin would equal the costs of providing the services.[16] Seasonal price increases would equal storage costs. Price differences from place to place would equal transportation costs. Commission fees would equal the cost of placing the product into hands which can make better

use of it. Lower costs in marketing would tend to shift the supply curve of marketing services to the right, resulting in lower marketing margins. Rising consumer incomes might increase the demand for marketing services and result in higher marketing margins. A change in the volume handled would change the marketing margin only to the extent that the unit costs would be affected. If marketing firms are operating within the rising portion of their average cost curves, then an increase in production would widen the marketing margin, and a decrease in production would lower the margin.

Factors that influence margins. Agricultural marketing industries are not perfectly competitive, but rather tend to be oligopolistic (or monopolistically competitive). Knowledge is imperfect. Typically, business volume is concentrated in a relatively small number of farm supply companies, food processors, and retailers. But the many smaller firms in these same industries cannot be neglected. Because of these characteristics of the market structure, marketing margins may fluctuate considerably in the short run (less than one year). Over the longer run, however, the threat of entry of new firms or social condemnation may limit excess profits and keep margins near the cost level.

The structure of agricultural marketing in the United States is such that margins have been relatively stable from year to year, except in time of war and severe depression, and when the amount marketed changes substantially. Price leadership, market sharing, informal collusion, various forms of non-price competition, and government regulation of rates charged by certain marketing firms (e.g., railroads, livestock markets) have evidently added certain rigidities to marketing margins. Large multi-product firms that possess a degree of market power may tend to establish target returns on investment and vary margins as a percent of sales accordingly. Other agricultural marketing firms use a fixed amount mark-up. These fixed amounts may be established by custom, convention, by what is thought to be reasonable, by competitive pressure, or by a genuine effort to maximize profits.

Processors and other marketing firms face rigidities due to high fixed investments in plant and facilities, labor costs, and commitments to deliver a finished product. In the United States, labor represents one-half of the cost of marketing food. Because of strong labor unions and minimum wage legislation, wage rates are relatively fixed. For certain periods of time, the number employed cannot be changed appreciably.

Over time, however, marketing margins do change following long-term trends in costs, consumer demands for marketing services, and

new technology. Wage rates have been rising consistently, but year-to-year changes are gradual. As mentioned earlier in this chapter, certain consumer demands tend to change slowly, but over a few years can mean substantial adjustments in the marketing services required. The development and diffusion of new technology generally occur over a period of years, and affect both the demand for marketing services and the costs.

Derived Demand

The demands for factors of production and marketing services are derived from the demand for the ultimate product. The farm product as well as marketing services can be considered as factors of marketing. The demand for the farm product and the demand for marketing services are thereby "derived" demands. The demand curve at retail and the "derived" farm demand curve would be about parallel, as shown in Figure 25, if unit marketing costs were little affected by volume. Such a

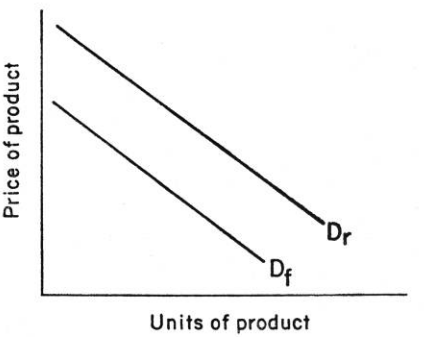


FIGURE 25. Hypothetical demand and derived demand curve.

representation is fairly typical of most farm products, although substantial departures are noted when marketings fluctuate sharply in the short run. Volume can have a major impact on unit costs in the very short run because a large proportion of the inputs in marketing firms are often fixed for that period.

The demand curve at the farm is generally more inelastic than at retail.[17] Marshall has stated some principles governing the elasticity of a derived (in this case farm) demand curve.[18] These can be applied to the farm-retail demand relationship as follows: the farm demand curve will be more inelastic (1) the more essential the farm product is to the retail product (this relates to the closeness of substitutes); (2) the more inelastic the demand for the retail product is; (3) the smaller proportion

the farm price is of the retail price; (4) the more inelastic is the supply curve for the marketing services (and the supply curves for products which can be substituted for the farm product in question). These four principles are exemplified by the highly inelastic demand for wheat used for food domestically. (1) Wheat is an essential ingredient in bread, with rye as a not-too-close substitute. (2) The retail demand for bread is relatively inelastic. (3) Wheat prices represent a small proportion of the retail price of bread. (4) The facilities for handling and milling wheat, and for baking bread, are relatively fixed.

Marketing margins vary greatly between products, because of the differences in the costs of collecting, processing, transporting, storing, and handling of different products.[19] The farm demands for products requiring considerable marketing expenditures, such as wheat, are more closely allied to the requirements of handlers and processors than to consumer demands.

The Relationship between Supply, Demand, and Derived Demand

If we assume that both the supply and demand functions are reversible within the period of time specified, we can diagram demand and supply as shown in Figure 26. The farm price (P_F) and the amount sup-

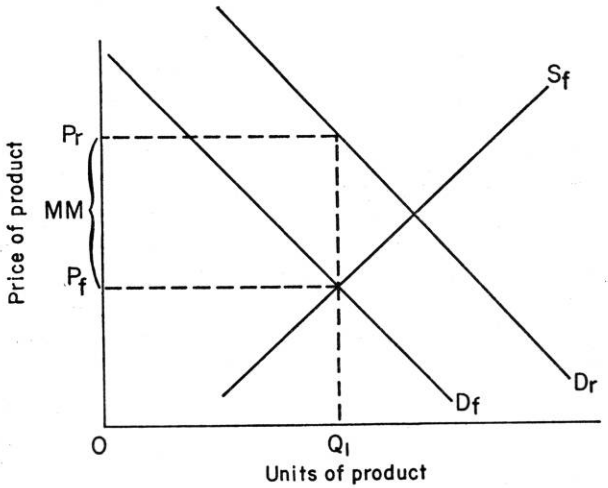


FIGURE 26. Hypothetical supply and demand curves.

plied (Q_1) would be determined by the intersection of the farm demand (D_F) and the farm supply (S_F) curves. Since the same amount will be

supplied at retail, with allowances for inventory adjustments and waste, etc., the retail price (P_R) reflects what consumers are willing to pay for that amount of the original product and for the services (including information or advertising) that are involved in marketing. The difference, then, between the retail price and farm price is labeled the marketing margin (MM).

The other factors besides price influencing the amount supplied and the amount sold determine the relative position of these curves. The farm price and also the retail price as determined by these variables refer to a particular product, at a particular place, and at a particular time. Conceptually, we can visualize a multi-dimensional price surface in which price is established in a given market, but emanating from that point are geographic price differences due to transportation costs, price differences over time due to storage costs, price differences between forms due to processing costs, and price differences between agents due to selling costs.

The entire model can be represented algebraically. For illustration, assume a linear model with the following structural equations.

Consumer Demand function

$$Q_t = \alpha_1 - \beta_{12}P_{R_t} + \beta_{13}Y_t + \beta_{14}P_{s_t} \tag{1}$$

Farm Supply function

$$Q_t = \alpha_2 + \beta_{22}P_{F_{t-1}} - \beta_{23}P_{A_{t-1}} - \beta_{24}C_{t-1} \tag{2}$$

Demand for Marketing Services

$$MS_t = \alpha_3 - \beta_{32}MM_t + \beta_{33}Y_t \tag{3}$$

Supply of Marketing Services

$$MS_t = \alpha_4 + \beta_{42}MM_{t-1} - \beta_{43}W_{t-1} - \beta_{44}Q_t \tag{4}$$

Farm Demand

$$P_{F_t} = P_{R_t} - MM_t \tag{5}$$

Where: Q_t=Quantity produced or consumed. P_R=Retail price. Y =Consumer income. P_s=Retail price of a substitute in consumption. P_F=Farm price. P_A=Farm price of an alternative crop. C=Index of prices paid for inputs. MS=Marketing services. MM=Marketing margin. W=Wage rates. t=current year and $t-1$=preceding year. The variables lagged by one year are assumed to be the expected value of these variables in t. In other words, this is the simple expectation model that present values will continue in the following year. The α_i and β_{ij}

represent the structural parameters of this model which we may want to estimate. Our interest in the parameters may be to assist us in making policy decisions as well as predictions. However, in this model predictions can be obtained without estimating all of these parameters.

Since the quantity of the product supplied is a function of lagged variables, this variable is predetermined. The predicted value of Q_t, labeled $\hat{Q}_t$, from equation (2) can be used in equation (1) as an independent variable with P_{R_t} dependent.

$$P_{R_t} = \frac{1}{\beta_{12}} [\alpha_1 - \hat{Q}_t + \beta_{13} Y_t + \beta_{14} P_{s_t}] \tag{6}$$

If both Y_t and P_{s_t} can be determined independently of P_{R_t} and $\hat{Q}_t$, then this process will allow us to predict P_{R_t}. We also assume that in period t, P_{R_t} cannot influence $\hat{Q}_t$. Otherwise, a system of simultaneous equations would have to be estimated.

The farm price can then be determined by the following procedure. By subtracting equation (3) from equation (4), MS_t is canceled out and a function with MM as the dependent variable can be derived.

$$MM_t = \frac{1}{\beta_{32}} [\alpha_3 - \alpha_4 - \beta_{42} MM_{t-1} + \beta_{43} W_{t-1} + \beta_{33} Y_t + \beta_{44} \hat{Q}_t] \tag{7}$$

All the independent variables are predetermined or exogenous. We now have prediction equations for P_{R_t} and MM_t, and can thus determine P_{F_t} from the identity,

$$P_{F_t} = \hat{P}_{R_t} - \hat{MM}_t. \tag{8}$$

This system of equations is a so-called "recursive model," which Wold and others have argued is appropriate for representing most economic relationships.[20] There are a few cases in which the endogenous variables are jointly determined, requiring additional equations and special estimating techniques.[21]

For example, if Q_t was partly influenced by P_{F_t}, then Q_t is not completely predetermined. The estimates of the structural coefficients are then biased. As an illustration, the price of Choice steers in a given year is largely determined by the number on feed on January 1. However, the price may also determine how heavy these cattle are fed out, which in turn affects the price at some time during the year. Similarly, the quarterly price of hogs is primarily a function of the number of pigs marketed in that quarter. But the price of hogs may also affect the amount of pork placed into storage, which in turn affects the price of hogs. Separate equations accounting for these effects would be necessary

to obtain accurate estimates of the structural parameters of the model. Whether in the final analysis the structural coefficients could actually be identified would depend on the number and distribution of endogenous and exogenous variables in equations of the system.[22]

The model diagramed and described above is based on perfect, or at least "workable," competition. Such models have been very serviceable in price analysis, but have not been able to explain all of the variations in prices, quantities and other variables of interest.

Agricultural marketing industries, of course, are not perfectly competitive. There are a large number of farm producers and ultimate buyers, but characteristically the marketing is concentrated in a few relatively large firms. Knowledge at all levels is imperfect. The product is not homogeneous. Evidence suggests some discriminatory practices.

Short-term price changes, in particular, are difficult to explain and predict. Short-term adjustments in agricultural prices develop not only from variations in the factors of demand and supply but also from the imperfections in the markets. In markets where there are only a few buyers, the pressure for informal or formal collusion is strong. Prices during the trading period may fluctuate because of the degree of competition. Advertising and merchandising activities, possible only in an imperfect market, affect demand but are difficult to predict with existing theories on monopolistic competition.

Even in a highly competitive market, professional buyers and sellers (commission men) in their negotiations may not arrive at the equilibrium price dictated by supply and demand conditions. Knowledge is imperfect. Price making under these conditions is a trial and error procedure. Consequently, if the price is too high on one day, the price may be below the equilibrium the following day in compensation. Supply and demand determine prices. But the negotiations of traders in the market place "discover" prices. The actual price at any point in time may not equate given supplies with market demand. Some time is necessary for the market to feed back to the participants the impact of the negotiated price on sales. In the meantime, conditions of supply and demand may have changed. But even if they had not changed, some time would elapse before actual prices would converge on the equilibrium level.

Related to this activity of discovering price is the problem of discovering quality. Since agricultural products are not homogeneous but represent a continuum of quality, farm products cannot be perfectly standardized even with grades. Grading does segment the quality into classifications which should be meaningful and helpful in price discovery. Nevertheless, some of the apparent price changes which occur in

agricultural markets are not price changes at all, but rather quality variations not measured by the existing grading system. "Noise" is thereby introduced into the pricing mechanism.

Price Fluctuations

A feature of agricultural prices, and indeed a major problem, is extreme variation over time. For purposes of analysis, variations can be arbitrarily classified into short-term, seasonal, annual, cyclical, trends, and sporadic.

Short-term variations. The short-term variations in price are those occurring from hour to hour, day to day and even week to week. Such changes may be due to variations in receipts; such temporary fluctuations in consumer demand as may be caused by weather, a strike, or promotional activities of a large chain store; the acquisition of new information about supplies and demand; the trial-and-error process of price discovery, and similar short-term influences. Wide variations in the quantity placed on the market may occur. With many producers making independent decisions on when to sell, there would be no particular problem if these decisions were randomly made. However, large numbers of producers tend to react to the same stimuli (prices, outlook) in a similar manner, with short-term gluts and shortages resulting.

Seasonal patterns. The seasonal variation in agricultural prices is much more predictable than short-term variations, because farm production is highly seasonal. There are also some seasonal changes in demand. The extent of seasonal price variation depends on the storage cost of the product, or if the product is not storable, the additional cost of producing (and transporting) the product in the off season.

Conceivably, production in a given area could be programmed so as to eliminate seasonal variation in market receipts, but under conditions of present technology and prices the costs of providing a constant climate through the year would be prohibitive. Wheat, for example, could be grown under glass, but the additional cost would be much greater than the cost of storing wheat after harvest.

For nonstorables, the off-season price would depend not only upon the cost of production in a given area, but also upon the cost of production in other climates and the cost of transportation to the market in question. If the cost of production in the distant area plus the cost of transportation from this area is less than these costs in the nearby production areas, then the supplies in the off season will be furnished by the

distant producers. This assumes no regional differences in the quality of the product.

Demand varies by season due to the changing temperature, humidity, and other climatic influences. Temperature affects the demand for meat and ice cream, for example. Cultural and religious influences, such as special feast days, holidays, fasting, etc., have a seasonal effect upon demand. Outdoor barbecuing in the summer creates a demand for special cuts of meat. Other such examples could be listed.

Annual variation. Annual variations in price can be attributed to supply response to price; they can often be attributed also to support-program changes, the random variation of weather, disease and pests, and to changes in domestic and export demand. These influences will frequently be of a shorter-term nature, but for the most part can be considered elements of annual price fluctuations.

The elements of supply response have been discussed. How important are the changes in the domestic and export demand? The domestic demand for food products normally does not change much from year to year, unless incomes change drastically. Population, tastes, and other factors affecting demand change slowly over time. The export demand, however, being related to production in other major exporting countries and in importing countries as well, does vary greatly from one year to the next. But the total world demand, just like the domestic demand, changes slowly through time.

Cycles. Cyclical patterns can be detected in farm prices over time. Within the year, the seasonal price variation clearly exhibits a cyclical pattern, but for definitional purposes only those regular oscillations not related to the season will be considered as cycles.

Cycles exist in the demand for and in production of farm products. No two cycles in demand or in production are exactly alike. The length of the cycle varies; the amplitude of the swings and continuity of cycles are somewhat irregular. But there are certain characteristics of cycles useful for intermediate predictions.

Business cycles of the magnitude of the pre-World-War-II period in the United States had a pronounced effect on the demand for farm products and the alternative employment opportunities for agricultural resources. Business depressions not only caused farm prices to drop drastically but they also closed alternative employment opportunities to farmers. As a result, total agricultural production was maintained rather than reduced in the face of lower prices. In fact, in the 1930's, there was an actual net migration of labor into agriculture.

In areas where the income elasticity of demand for food is relatively high and the nonfarm economy subject to wide cyclical variations, problems of unstable demand exist. But as the nonfarm economy becomes more stabilized and consumers' incomes rise, the demand for farm products becomes even more stabilized than for other products. As incomes rise, the income elasticity of demand tends to decline. The post-World-War-II period in the United States has been characterized by generally rising incomes and a steady growth in the domestic demand for all farm products, particularly food. The business cycles in this period have been manifested in minor recessions. And as incomes have fluctuated at these higher levels, the adjustment in expenditures has been made on durable goods and not food.

Cycles persist in the production of certain farm commodities for some of the same reasons that business cycles characterize free enterprise economies. There are many producers making independent decisions, but they are guided by the same stimuli, mainly price. A physical lag exists between the decision to change production and the actual change. On annual crops this lag is one year. On broilers, it is three to four months. On hogs and lambs it is one year. On cattle, the full adjustment may not be completed until four to five years have elapsed. In livestock some adjustments can be made almost immediately by feeding to heavier weights; then over a somewhat longer span more or fewer animals can be fed out to maturity; then finally the size of the breeding herd can be altered. On fruit crops, very little can be done in the short run to increase production, although a reduction in output or the amount harvested can be accomplished within a year. The lag on fruit and nut crops and forestry products may be a decade or more.

To the extent that expectations are a function of present and recent past prices, the adjustment of production to actual prices will require at least the length of time represented by the physical lag. This delays the feedback of price information to producers, introducing instability into the system. The forthcoming overproduction may not be recorded in the price mechanism immediately, and as a consequence periods of extreme overproduction develop before producers recognize this fact. This drawback is minimized on commodities traded in futures markets. Then in the process of reducing supplies, production may be cut well below the equilibrium level before this fact is conveyed to producers through the price mechanism. The physical lag determines the minimum length of a cycle and is considered a part of the "endogenous" mechanism of the cycle. Cycles tend to be longer than would be predictable from the physical lag, due to the psychological and economic lags discussed earlier in this chapter.

Another element of the endogenous mechanism is the process by which production is changed. To expand livestock production, additional breeding stock must be retained. This immediately reduces the marketings of these classes. This in turn raises price, which in turn generates higher price expectations, and even more breeding stock is retained for expansion. The snowballing effect tends to reinforce the instability of the industry. An opposite action develops when production is reduced. More breeding stock is marketed, contributing to the decline in price and generating additional pessimism. This process applies to a less degree to other farm products as well.

Whether such an industry would eventually converge toward an equilibrium would depend upon the elasticity of the supply function relative to the demand function (Cobweb Theorem) or on the characteristics of the expectation and adjustment functions. Important here, too, is the presence or absence of "exogenous" disturbances such as wars, depressions, and droughts that tend to throw agricultural industries with cyclical tendencies into oscillation, or keep them in oscillation.

The persistence of cycles is not the problem as much as the wide amplitude of the swings, which disrupts production, processing, distribution, and consumption patterns and results in uneconomic uses of resources. Ideal systems adjust rapidly to equilibrium following exogenous "shocks," with a minimum of "overadjustment." But because of the benefits which accrue from independent decisions by individuals, some fluctuation about the equilibrium could well be tolerated. Value judgments are necessary in deciding how much freedom of individual action should be sacrificed for increased stability. Various pricing schemes and controls have been suggested to inject more stability into farm production and prices, including forward pricing, price supports, supply management, and contract farming.

Trend. Another time element in farm prices is trends. This classification includes those influences which are relatively minor from year to year, but quite significant over a period of several years. Generally, such factors have a monotonic influence on the market, as opposed to cyclical. We cannot rule out the possibility that a trend might level off and actually move in the opposite direction, but we observe no regular pattern of such reversals.

Major elements in long-term changes in supply would be the development of new technology and its adoption.

Technological development is a positive, though irregular, function of time, as the fund of human knowledge is continually being augmented. The rate of adoption is affected by cyclical, trend, and irregular influ-

ences, such as the capital position of farmers, their age and level of education, educational efforts of such agencies as the Extension Service, educational and sales efforts of private firms, and development of communications.

Management and organization of agricultural industries are continually being improved. The level of education of entrepreneurs is generally increasing. New developments in the science and technology of management and organization are shifting cost functions and thereby affecting supply functions and marketing costs.

On the demand side, the trends in population, income, tastes, living patterns, development of substitutes, improved products and packaging, knowledge about health and nutrition, educational level of consumers, and occupations are all factors that become very significant for food products, although these may be of minor importance in the year-to-year fluctuations in farm prices. Adjustments to these trends present problems in the quality and grades of commodities as well as in the quantities produced. Resistance to change commonly results in substantial lags between changes in preferences and production adjustments to these changes. Institutional factors, such as the grading system, do not adjust immediately, with resulting imbalances between qualities of products. Nevertheless, the price feedback does eventually generate the desired adjustment.

Sporadic. Sporadic influences on agricultural markets are those irregular and relatively unpredictable events such as drought, war, and depression. These events have been prominent in major changes in the level of farm prices over recorded history. So extreme have been the effects of depression in reducing farm prices and of war in raising them that government has often intervened, supporting prices in depression, controlling them during war. Improvements in transportation, storage, and production technology have reduced the effects of natural phenomena such as drought, disease, and insect damage. In some cases, governments have underwritten costs of storage to provide some stability in supplies as well as to provide for contingencies such as war. War or threat of war encourages stockpiling of certain strategic items such as food, causing abrupt changes in price. Over time, the effect of these sporadic influences may be lessened as man gains more control over nature, business cycles and, hopefully, international conflicts.

CHAPTER 13

Market Organization and Performance

IN the previous chapter, the discussion of market equilibrium and overall market adjustment was cast in a short-run framework of fixed institutional patterns, given the technology, tastes and preferences, and input-output relationships. This chapter is concerned with certain aspects of overall market adjustment in a longer-run context, where the normally fixed elements of economic analysis are allowed to vary.

American agriculture has moved from a position of near self-sufficiency in colonial times to the current advanced state of commercialization and industrial development. Changes that have brought this about are the result of a long history of growth and development by firms at all levels of the agricultural production and marketing system. Business firms have an impact on market organization when they grow, diversify, integrate, specialize, relocate, cooperate, or otherwise change in composition or in the way they relate to other institutions in the market.

Individual decisions by firms have both a qualitative and a quantitative content when considered from the viewpoint of market reorganization. For example, when the first California farmer decided to raise cotton on a large irrigated basis a fundamental change in market relationships occurred. Because this farmer changed his production plan he needed to establish contact with new and different suppliers of inputs and buyers of products, and his interrelationship with government changed. New kinds of market information and new kinds of price programs became relevant. Though this was a major change for the individual farmer, it did not become a major factor in market organization until numerous California farmers made the same decision. The accumulated adjustments by many farmers resulted in a new locational pattern of cotton production—a significant organizational adjustment of the

By VERNON L. SORENSON.

market. Likewise, the decisions of individual firms to develop integrated broiler operations did not significantly change market organization until a large total volume was involved. At the other extreme, a single merger decision by large firms may have an immediate and important effect on market organization. Some changes by market firms that are qualitatively less significant may not have a major implication for change in market organization even if generally adopted. Decisions by firms thus may have widely differing effects on market organization because of both qualitative differences in the change and differences in the extent of its adoption.

Causes of Change in Market Organization

A wide variety of environmental factors and internal conditions as well as the motivations and judgments of management influence actions taken by firms. However, in looking with historical perspective at the factors that have greatest relevance to change in the organization of American agricultural markets, three factors seem to have played dominant direct roles of causation: technological innovation based on technical discovery, changes in consumer preferences and incomes, and changes in government market policies and programs.

Technological development. There are numerous examples of technical discoveries that provided the basis for major adjustments in the organization of American agricultural industries. The Western plains area was opened for grain production only after the discovery of the reaper provided the basis for extensive cultivation of land. The discovery and adaptation of refrigeration and the refrigerator car provided the basis for large-scale centralized meat packing and the concentration of livestock production in Western areas far removed from major population centers. More recent farm technology in chemicals, machinery, varieties and breeds, and other developments have changed agricultural production methods and led to larger-scale and often highly specialized farm units.

Scientific discovery may arise from either public or private sources. Both sources do basic work on new biological and physical concepts that improve handling, storing, preserving, and processing methods. These efforts are focused on product development as well as on technological discovery that leads to internal adjustment of firms, improved production processes, and cost reduction. "The economic impact of technological change is felt first through its effect on the cost structure or the product mix of the individual firm in which the techniques are adopted."[1] These, in turn, often lead to changes in industry organization that are ultimately reflected in changes in overall demand for factors of produc-

tion, supply of products, and the basis for exchange and distribution in the market.

Changing demand conditions. The agricultural marketing system has also been changed by new wants, preferences, and incomes. One of the basic phenomena that determine the extent of the market and the need for commodities and services is the composition and level of consumers' wants. In early stages of industrialization, expanding population, the locational concentration of consumers, and specialization of production require institutional patterns that provide basic time, form, and space utilities in the market. As the extent of consumer concentration and the size of the economy increase, the physical complexity of handling these functions increases. Another important change in the handling of market functions occurs in response to the change from a producer-oriented scarcity economy to a consumer-oriented economy of plenty. Agriculture and food industries in the United States have had to adjust to this kind of change. The demand for increased quantities of food by individual consumers has been virtually filled. Instead, consumers are demanding higher-quality food and more built-in services. Precise specification by retailers and consumers for product quality, packages, and variety must be met. While the tasks of pricing and creating time, place, and basic types of form utility in earlier eras could be handled through central markets, this is not the case in the current consumer-oriented U.S. society. As the requirements for consumer products become more specific (e.g., differentiation of items for size, color, for freezing, processing, etc.), the coordinating requirements of the market become more stringent, and require a different form of market organization.

Market policies and programs. The implication of rules or public policy and social climate on overall development of markets was considered in earlier chapters. More specifically, a continuing flow of policies and programs has influenced the kind of organization in agricultural markets that has developed through time. Among these policies are those that establish corporate franchise; provide grades, standards, and market information; represent the basic institutional framework within which firms adjust their organizational forms and make production plans. In addition, specific legislation related to price support, antitrust, cooperatives, and many other things has provided specific restraints or opportunities that change production or distribution patterns and lead to changed organizational forms. Public policies and programs thus encompass a large number of controlled influences on market organization that play a continuing part in creating change and adjustment.

Organizational Structure in U.S. Agricultural Markets

Agriculture and input industries. Although all segments of agricultural industries have adjusted continually to new technological and market possibilities, one of the most spectacular recent aspects of this has centered around farming and input industries. The production unit in agriculture remains the family farm. Its character and relation to other agricultural industries, however, have changed dramatically. Technology has permitted the organization of farm production into increasingly larger and more highly specialized units. This has resulted in greatly in-

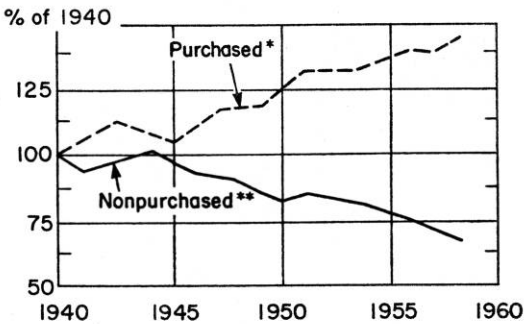


FIGURE 27. Purchased and nonpurchased inputs.

* All inputs other than nonpurchased inputs.

** Operator and family labor and operator-owned real estate and other capital inputs.

Source: Ralph A. Loomis and Glen T. Barton, *Productivity of Agriculture: United States, 1870-1958,* Tech. Bul. No. 1238, U.S. Department of Agriculture, ARS, April 1961, p. 18.

creased capital requirements in agriculture, increased output per worker, and a steadily increasing total output from the nation's farms. Farm employment in the post-war period has declined at the rate of about 3 percent per year, while output has continued to increase. The increasing requirements for capital, the increasing complexity of farm technology, and the more precise quality requirements for farm raw materials have led to a closer interdependence between farming and both food processors and input industries. Vertical integration and contract relationships have become more important and are almost complete in some products. The increasing interdependence between agriculture and supporting industries is reflected in the increasing proportion of purchased inputs used in agricultural production. The extent of this development is indicated in Figure 27. A qualitative analysis of these data would show an

even greater relative importance of purchased inputs. Farm supply industries have become an increasingly important part of the production plant for food products.

This growth in the development of technological improvements in farm supply industries has been closely intertwined with industrialization and development of the entire economy. As stated by one writer:

> In large measure, agricultural technology has been borrowed from the cities where early applications were made. Tractors, pumps, electrical devices, refrigeration, chemical fertilizers, insecticides and antibiotics were developed in most instances from products originally manufactured for industrial or consumer use. The recent rapid growth of nitrogen fertilizer production is a case in point. The original research and development was for war purposes.[2]

Large-scale input industries are often integrated into major industrial firms whose principal business is not directly related to agriculture.[3] Because farmers have been willing to adopt technology at a relatively rapid rate, there is a competitive premium on the ability of farm supply firms to continually provide new and better techniques. As a result, extensive research is a continuing activity by large firms that are attempting to gain economic advantage through quality competition in the market. Though varying organizational patterns exist in input industries, this competition has led to a general condition of concentration and the existence of large producing units. Though one would have to largely venture a guess to suggest the total effect of development in farm supply industries on recent adjustment in agriculture and farm production, it is clear that the historical development and expansion of productivity in American agriculture has been strongly related to changes in specialized input industries and more broadly to the entire industrial structure of the economy.

Food processing. The other side of the coin in looking at organizational changes in agricultural industries is change in food processing and distribution. Food processors have been quick to adjust to changing farm production patterns and to take advantage of technology and methods that have altered procedures for handling, storing, transporting, and processing products. They have also responded to changes in market size, consumption patterns, assembly problems for raw products, and merchandising potential for food products and services. The extent of recent adjustments in overall magnitude of food processing due to increased food marketing, shifts from processing on the farm, and more processing per unit of product marketed is shown in Figure 28.

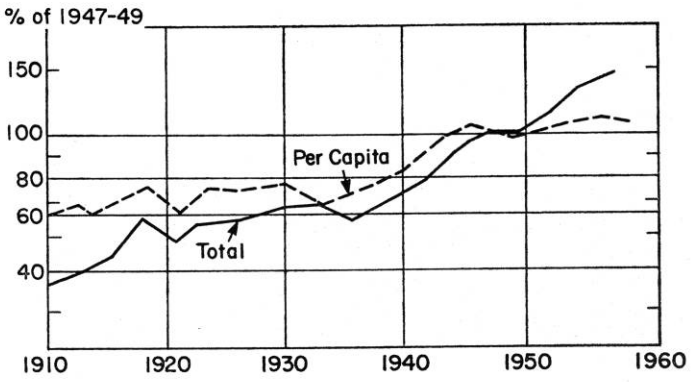


FIGURE 28. Factory production of processed farm foods.

Source: *The Marketing and Transportation Situation,* MTS-134, U.S. Department of Agriculture, AMS, July 1959, p. 25.

Existing organizational structure in food processing industries reflects technological processes that permit assembly line production and other methods amenable to large-scale procurement, processing, and selling. Because these methods have been adopted, a substantial degree of horizontal and vertical integration as well as concentration of ownership tends to be characteristic of most industries. The extent of concentration as reflected in percent of total shipments is shown for selected industries in Table 9.

Although the size structure of various individual food industries is continuing to change, overall concentration has remained relatively stable in recent years. Leading firms in many food industries accounted for about the same proportion of shipments in 1958 as they did in 1947. Increasing proportions in some industries were offset by declines in others. Of the 25 industries listed in Table 9, the proportion of shipments made by the four largest firms declined in each of 13 industries, stayed the same in one, and increased in 11 during this period. The level of concentration tends to be relatively greatest in certain bakery products, sugar, and certain parts of dairy processing, where four leading firms handle 50 percent in all segments except prepared meats, poultry dressing plants, creamery butter, fluid milk, and bread and related products.

The general pattern of organization in food processing industries is thus one of generally high concentration but with relative organizational stability in recent years. Major adjustments to new processing technology, changing farm production patterns, and consumer requirements for higher quality and greater variety of food and for increasingly large amounts of processing services continue to be made.

Table 9. Food manufacturing industries: Number of companies in industry and share of total shipments accounted for by largest companies, 1958.

Industry and year[a]	Companies	Concentration Ratio: Percentage[b] of value of shipments accounted for by—		
		4 largest companies	8 largest companies	20 largest companies
	Number	Percent	Percent	Percent
Meat packing plants[c]	2,646	34	46	57
Prepared meats[c,e]	1,432	17	25	36
Poultry dressing plants	1,041	12	16	25
Creamery butter	997	11	18	28
Natural cheese	1,095	35	42	50
Concentrated milk	149	50	60	73
Ice cream and ices	1,171	38	48	59
Special dairy products	186	51	62	75
Fluid milk[e]	5,008	23	29	37
Canned fruits and vegetables[f]	1,347	29	39	55
Dehydrated fruits and vegetables	130	45	66	82
Pickles and sauces[f]	637	35	48	62
Frozen fruits and vegetables[e,f]	246	31	43	67
Flour and meal	703	38	51	68
Cereal breakfast foods	34	83	95	99
Rice milling	61	43	64	84
Flour mixes	109	75	86	94
Bread and related products	5,305	22	33	42
Biscuit and crackers	253	65	72	82
Raw cane sugar	45	38	52	78
Cane-sugar refining	16	69	88	100
Beet sugar	15	64	94	100
Shortening and cooking oil	66	49	75	97
Margarine	22	62	86	—[d]
Corn wet milling	53	73	92	99
Macaroni and spaghetti	205	25	41	64
Cottonseed oil mills	125	42	54	71
Soybean oil mills	66	40	63	86
Food preparations not elsewhere classified[e]	2,596	29	36	49

[a] Industry categories are based on the 1945 version of the Standard Industrial Classification so internal comparability is maintained, but differences exist from 1958 Census of Manufactures.

[b] Percentages are sums of value of shipments of 4 largest (or 8 or 20) companies divided by the total value of shipments of the industry.

[c] Concentration ratios are based on value added by manufacture, because the value of shipments contains a substantial and unmeasurable amount of duplication arising from interplant shipments.

[d] Not available.

[e] Data not available for 1947.

[f] Ratios computed value of production.

Source: *Marketing and Transportation Situation*, August 1962, U.S. Department of Agriculture, Economic Research Service, Marketing Economics Division, Table 10, pp. 21–23.

Retailing-wholesaling. Unlike the relative stability that has recently prevailed in processing, retail and wholesale distribution has undergone recent major changes. This has been stimulated by a complicated mixture of technological and market factors. Only a relatively short time ago retailing was predominantly based on the very small, often family-owned, store that merchandised the product of numerous processors obtained through wholesalers. Currently food retailing is organized around one-stop shopping at a supermarket with individual store sales normally in excess of $1 million annually and often as high as $6 and $7 million. The extent of this development is shown in Table 10.

Table 10. Growth of Supermarkets.

Year	Number of Supermarkets
1932	300
1936	1,200
1937	3,066
1940	6,175
1945	9,575
1950	14,217
1955	20,537
1957	24,336
1958	29,920

Annual sales of $375,000 or more.

Source: Willard F. Mueller and Leon Garoian, *Changes in the Market Structure of Grocery Retailing* (Madison: The University of Wisconsin Press, 1961), Table 5, p. 14.

Along with the growth in size of individual firms, various kinds of integration between retailing and wholesaling have developed. Food distribution is handled predominantly by corporate chains, where retailing and wholesaling are incorporated within the same firm or through voluntary and cooperative chains where close affiliation exists between wholesalers and retailers. Recent estimates indicate that in 1958 corporate chains accounted for 43 percent of grocery sales, cooperative and voluntary chains accounted for 41.6 percent, and unaffiliated independents accounted for only 15.4 percent.[4]

Changes in food distribution have significance both from the viewpoint of its impact on the operating methods employed in the wholesale-retail segment itself and because of its impact on changes in processing industries and farming. The growth of integrated wholesaling-retailing has resulted in retailers' developing price brands, promotion policies, and commodity mix designed for large-scale merchandising.

Wholesaler-retailer operational methods currently require the handling of a large number of standardized items. The average number of items per store has increased from less than 1000 in about 1930 to 6000 or more at the present time. Self-service merchandising requires standardized packing and quality, while large-scale merchandising, to be handled efficiently, requires large-scale buying. Because this kind of retailing provides a different set of physical specifications to market processes and, most importantly, because there is the market power to make them effective, this segment of the food industry has become the focal point of a coordinated market system of which product planning, manufacture, farm production, and retailing are related parts. Effective market power by retailers is reflected throughout all segments of agricultural industries. The line of effect for industry groups is neither direct nor uniform, but it is unmistakably present and increasing.

The increasing impact of retailers has led to a greater need for precise coordination of activities throughout the market system. The market system has evolved from one that absorbed any quantity of farm produce, of whatever quality, to one that requires more precise specification of product delivery attributes. Temporal and spatial stability of delivery as well as close quality specification are more important. The consequences of this for market coordination have been summarized succinctly as follows:

> Very often, the physical operations of production, processing, and distribution must be carefully coordinated to achieve the kind of attributes ultimately desired at the retail level. Nearly always, the physically optimum scale of farm production is relatively small as compared with the physically optimum volumes of production for processing or distribution. The old-fashioned procedure of grading and sorting on terminal markets is no longer satisfactory as food processing and distribution changes from the old "batch" hearth to a modern continuous-flow process. To facilitate such a system at the processing and retailing levels, the producers' decisions with respect to basic stock, management, timing and other operations must be geared directly into the requirements of the processing and retailing segments.[5]

Overall market organization. In essence then, the American marketing system has moved from a simple coordinating system that relates price and quantity of undifferentiated commodities in a central market to one characterized by highly coordinated operation by relatively large-scale producing units that often perform a number of functions. Evolution to this status has been gradual. Some food processing and farm supply industries have operated on a large-scale basis sufficient to es-

tablish brands, promote, and possibly influence price for a long time. Some elements of farm production have also been highly specialized and have long used a large proportion of nonfarm inputs. Recent changes have centered around the development of large-scale retailing and increasing specialization and scale of agricultural production. Changes in retailing have brought about new requirements in market coordination and product engineering throughout the production process all the way back to the farmer. The specialization and technological sophistication of agricultural production have greatly changed the relationship between farmers and supporting industries, especially input ones. The importance and variety of purchased inputs has increased steadily. The development of new techniques and methods has progressed at a rate often beyond the capacity of agriculture to finance or manage. This has tended to stimulate integration or contractual arrangements where both capital and management are provided by input or food marketing industries. In sum, a food industry able to accommodate advanced technological methods, incorporate large amounts of capital, and utilize mass production and merchandising techniques has reached a high degree of development in the United States.

The Interdependence of Market Organization and Performance

The implied assumption underlying any inquiry into the nature of market organization is that in some way market organization influences the outcomes or results of market activity. The evaluation of these results, however, is a difficult problem. The reasons for this are many. First, it is necessary to recognize that the ultimate test of the adequacy of performance, the appropriateness of behavioral patterns by firms, and the adequacy of the institutional patterns in agricultural markets must be evaluated within the context of the social good or general welfare. As stated in Chapter 2:

> The question of what is a good marketing system cannot be separated from the more fundamental question of what is a good society, for the evaluation of a market organization has meaning only within the context of a broader view of the "good society" or "good life." . . . The system cannot be evaluated simply in terms of material measures, but must be evaluated in terms of human relationships and its effect on the character of people.

Because this is the case, industry structure, firm behavior, and market organization need to be judged by such criteria as equity, stability, contribution to economic growth, which in sum represent a summarization

of the basic value system of society. When placed in this context, it becomes apparent that absolute standards are rarely definable for welfare criteria but are continually the province of the social, political, and legal system of society and the ethical system of the business community.

We will not attempt to consider all of the issues required to evaluate market organization and performance in terms of a general system of social values or welfare criteria. The question of market performance norms has been dealt with extensively in literature on industrial organization. Though many versions of what represents relevant performance criteria exist,[6] no generally accepted set of measurable norms has yet emerged. The purpose here is to limit ourselves to those factors that are closely subsumed under the term "economic measures" and to discuss certain performance issues related to them.

Even within this limited context, a number of obstacles get in the way of adequate evaluation of market results and the implication of market organization for their attainment. The first of these is simply the problem of identifying and choosing the specific ends that are most relevant to agricultural market analysis. Available literature suggests such ends as an adequate quantity and variety of food, an equitable distribution of income, economic freedom, adequate economic growth, and others.[7] These values should, in some way, be judged within the context of how they relate one to another and to other ends. Unless this is done, it is impossible to select, place priorities on, or weigh the importance of one end relative to the other.

A second question that arises is how to identify, measure and choose among alternative working criteria (or dimensions) related to performance or firm behavior the one that implements, fosters or improves the attainment of broader economic aims. As suggested by Sosnick:

> There is considerable room for speculation and dispute on the factual question of what effects in the direction of particular aims—say progress or equity—would be produced by alternative states of particular dimensions of performance—for example, by "high" or "low" profits. Secondly, a need inevitably arises to choose among alternatives—say in advertising controls—which further some aims against others—perhaps aims furthering freedom as consumers instead of freedom as producers or citizens.[8]

Despite these questions as to how precisely either the normative or factual elements of the question can be identified, measured, and dealt with objectively, it seems relevant within the context of this volume to attempt to approach the problem of market organization and market results in agricultural industries under three general headings. These are

the implication of market organization on competitive behavior and resource use, its implication for efficiency in the pricing and distributive functions of the market, and its implication for growth in agricultural industries.

Implication for competitive behavior and resource use. Economic theory has long suggested that industry organization has an impact on short-term adjustment by firms. Somewhere along the spectrum of firm numbers, moving from the "large number" of pure competition to the single firm monopoly, lies a point at which market behavior undergoes a complete change.[9] Much of this change is built around the fact that as firms become large enough to exercise a degree of market power, they are then capable of taking additional kinds of actions to further their individual objectives. Individual firms that are not in a perfectly competitive market can take action and commit resources to creating wants and to developing new products as well as determining price and production policy. They possess an advantage of size and can further expand through mergers and direct acquisition and hence can take the initiative in integrating into other segments of the market; they can exert pressures to create a favorable political climate and can extend their influence into other segments of the market to alter production methods. This has been done effectively by large-scale retailers. Large firms thus possess the power to influence both the general and the market environment within which they operate. They also often possess a competitive advantage from their superior knowledge of market and economic conditions. Small firms, on the other hand, must adjust to market and environmental conditions which they neither understand nor control.

When this diversity in kind of organization exists, a number of questions related to market performance need to be raised. Variations in the level of market performance of firms and groups of firms need to be evaluated in terms of such specific operational issues as whether there is attainment of reasonable relationship between prices and costs (e.g., no excess profits are attained), whether allocation of resources to promotion is appropriate and used for information rather than coercive purposes, whether excess capacity (e.g., an overcommitment of resources) exists, whether highest production functions are attained, whether economies of scale (both internal and external) are achieved, whether product development is of the form that adds to consumer satisfaction or unnecessarily proliferates numbers of items based on artificial differentiation, whether producer rationality is maintained in the sense that production planning is not badly misguided in relation to alternatives, and whether procurement is at the best places, times, and quantities. Specific per-

formance criteria such as these provide a guide to evaluating the resource commitments and the market organizations in terms of the broader goals of society.

Many of the recent changes in specific agricultural industries have a strong positive influence on achieving desirable economic ends. Increasing specialization of the farm firm provides economies of scale. Management and labor skills are required for a smaller number of operations, thus shortening the necessary learning period and permitting the attainment of more thorough knowledge. Machinery costs per unit of output can often be reduced, because most modern equipment is designed for high-volume operation. Marketing costs can be reduced since fewer outlets need be found.

In marketing and supply firms, scale increases and vertical integration of the functions into one firm avoid "needless" duplication of market outlets, market studies, input procurement, and sales and management staffs. Cost of transporting raw materials to the plant and product to market can often be significantly reduced. Widening of the product line reduces risk to the firm. Integration of functions of different stages in the marketing system into the operations of one firm permits savings by avoiding sales costs between the two stages, coordinating the demand and supply of the product over time, space, and form, and reducing the staff required for management.

On the other hand, certain negative effects may arise. Product differentiation permits the firm to establish prices that are higher or lower than those of competitors. Market power may provide the basis for unethical competitive behavior, excessive use of resources for advertising, and other activities that do not have general social approval.

Implication for pricing and market coordination. One of the implications of the development of large-scale organization in agricultural industries is the extent to which firms extend their influence and control to different levels in the market process and thus change the relationship between individual units in the market. As indicated in previous chapters, this relationship may take several forms and possess a great many dimensions. The one that is central to classic concepts of marketing analysis is the bargaining relationship. Procedures for establishing the terms of trade must be available. Transactions may be consummated in open markets with many buyers and sellers or in unilateral agreements between a single buyer and seller. A transaction normally calls for the performance of an economic service or the transfer of rights to a good. The nature of the functions to be performed and the kinds of incentives and rewards to be received are specified.

In the case of vertical integration, individual firms expand into two or more levels of the market. When this happens, pricing and distribution processes in the market are handled administratively and not through the transaction process. In other cases, contracts and other forms of arrangements have largely replaced buying and selling in the open market. When either ownership integration or contract arrangements develop extensively, change will occur in the circumstances under which commodities produced in one level of the market are transferred to a second stage. With ownership integration, pricing in the traditional sense is no longer necessary, while with contracting, pricing may be unilaterally determined rather than through the interaction of buyers and sellers in the open market. These methods of market coordination have the advantage of facilitating the transfer of price signals to products in a more precise understandable manner and prior to the time that production activity occurs. The greater precision with which signals are transmitted improves the basis for production coordination and increases the efficiency with which production processes and exchange are accomplished. In addition to integration and contracting, the existence of fewer large firms increases the extent to which bilateral transactions occur in the market.

Because of these developments, and because of the dominant position of retailers in determining product specification, a more direct reflection of consumer wants is transmitted throughout the market. In order to do this with the precision required, retailers extend institutional control over wholesaling. They further succeed in strongly influencing the product and delivery characteristics of processors who, in turn, must have closer specification of raw materials in order to provide products with specifications needed by consumers. The activities of all firms are guided by the requirements of retailers.

In addition to providing closer market coordinations, a new basis for price formation and hence income distribution is created. There is no longer a price and income determination through the classic meeting of many buyers and many sellers. The mix of rules, policy variables, competitive interrelationships, costs, and personal motivations of management become paramount to the impersonal forces of the market.

These changes in organization and methods of pricing and coordination raise the question of what outcomes are attained and how people's welfare is influenced. Outcomes are determined by the nature of the contracts made and their implications for quantity and quality sold, the level of price, the distribution of gains from production and trade between buyer and seller, the amount of transfer costs incurred, and the extent to which producer rationality is attained in making production deci-

sions. These are the basic issues involved in evaluating power relationships between buyers and sellers in the market, in determining the need for specific kinds of antitrust actions, and in assessing the gains versus the costs of various forms of vertical coordination in agricultural markets.

Implications for growth in agricultural industries. A third major performance issue is that of growth and progress in agricultural industries. In many parts of the world, an inadequate capital base exists and the rate of accumulation is too slow for adequate economic growth. In the developed countries, on the other hand, excess capital commitments are not uncommon. The result is long-term excess output of products, low prices, and low income in farming. In other agricultural industries, the result is excess capacity and inadequate use of committed resources.[10]

Another facet of the relation between industry organization and growth is the extent of its influence on technological innovation and improvement in human resources. Firms must be of substantial size before an internally generated program of product development, technological discovery, organizational innovation and upgrading of human resources can be developed. Large-scale firms capable of technical discovery, research, development, and promotion and imbued with profit and growth motivations may be a necessary part of the process. In addition, food processing and input industries can contribute to developing and stimulating the adoption of new technology only if farms are organized to absorb it and if the interlinking or distribution processes facilitate the transfer of ideas and methods. If farms are independent business firms, they must be of adequate size to adopt technology and have adequate managerial capacity to use it. Where this is not the case, adoption may be very slow, or it may be accomplished only through integration of processing or input industries and agriculture. Hence the question of how industry organization influences growth and progress is embedded not only in the traditional concept of industrial structure and competitive interrelationships between members of a particular industry, but also in the nature of the interaction between groups. This is particularly relevant to the process by which farm supply and food market industries transmit technology and knowledge to farmers and, in turn, stimulate growth in agriculture as such.

Conclusion

This chapter has looked at the nature of industry organization in U.S. agricultural markets and raised questions and issues related to the interdependence of market organization and market results. In broad perspec-

tive, there seems to be little question but that organization does influence the functioning of markets and thus is inextricably related to the welfare of society. But the nature of market organization in any society, as well as the behavior of firms, is influenced by the totality of social organization and by the policy framework within which market forces operate.

As previously suggested, governmental intervention in production and marketing has an important influence on American agriculture and agricultural industries. The multiple nature of the performance criteria that society establishes, the variation in organizational status and functional purpose of different segments of the food industry, and the increasing magnitude and complexity of the job of producing, processing, and distributing food, have resulted in a continual expansion in the role of market policy. As stated by other writers:

> Governments are taking an increasingly active hand in agricultural marketing. This is true of local, state and Federal governments. It is true not only in the United States, but also in most other countries throughout the world. Before World War I, governmental programs in this field were small, inexpensive and quite limited in scope. Since that time, they have grown in size, expense and scope. The growth has not been steady: rather, it has been in a series of spurts. The biggest spurts came during the two World Wars and the Great Depression of the 1930's. Some of these programs (wartime food rationing and price control, for example) have been temporary and have been dropped as soon as an emergency has passed. But many others have continued and expanded.
>
> For example, the first big impetus to grades and standards for farm products in the United States came during World War I. But since then the program has grown much larger. Then in the last 1920's and the 1930's, agricultural surpluses led to a variety of governmental programs aimed at raising and stabilizing the prices of farm products. Although these programs have changed a great deal, they are still very active—not only in the United States, but in most agricultural countries. Again, World War II, and food relief after that war, resulted in many international food marketing programs. Today national governments have a good deal to say about amounts to be imported and exported, and especially about prices of farm products in international trade. This may, or may not, prove to be a temporary trend. But clearly the trends since World War II have not been toward free international trade in farm products; rather, they have been toward government controls and subsidies of various kinds (usually under some more acceptable name).[11]*

* Bowring, Southworth and Waugh, *Marketing Policies for Agriculture,* © 1960. By permission of Prentice-Hall, Inc.

Some of the most important recent changes in the institutional environment of market transactions have thus been those resulting from public policy actions. These actions have taken many forms. Market performance and hence welfare is inextricably related to the policy environment that is developed. The nature of this environment and the basis for its development thus become a significant part of market analysis. Discussion of this policy framework and the nature of specific programs that have become important parts of agricultural market policy are undertaken in the succeeding three chapters.

PART IV

PUBLIC POLICY IN AGRICULTURAL MARKETS

CHAPTER 14

Formulation and Purpose of Public Policy in Agricultural Markets

A STUDY of the economic history of any society reveals, among other things, a pattern of activity going on within a more or less well-defined system of institutions, values, taste characteristics, and mores. Such systems define the social and political framework within which societies shape their efforts in attempting to achieve objectives like growth, stability, income allocation, or peace.

When broadly viewed, there are three major ways that society can organize to handle its allocation and distribution processes: through status, through bargaining, and through administrative processes. Our particular concern here is with the methods used in a society where primary reliance in fulfilling economic objectives is placed on the operation of a market system in which independent buyers and sellers interact through the bargaining or transaction process. Previous chapters have examined the ways that management decisions within this system guide firm activity and hence influence market results. They have also elaborated on the nature of certain internal and environmental variables that influence management decision processes.

A second major area of decision and action to guide market activity is that which operates through the political system. This, too, can be a rational decision-making process. Two broad types of approach to public policy formulation may be distinguished. One involves maintaining or modifying the environment within which private management decisions are made, but depending upon private managers to make the detailed decisions within the economic system. The other is to make allocations through government itself, by taxing some and distributing income to others or by purchasing products from some firms and giving or selling the product to other firms or individuals, perhaps under special arrangements.

By GLYNN MCBRIDE.

The particular method or mix of methods used determines the nature of the linkage between a society's social organizaton and its use of physical resources. A framework for conceptualizing this relationship has been set forth in Chapters 2 and 3. Such a framework is essential in specifying variables relating to the process of growth and evaluating performance levels of a marketing system. Only by examining marketing in its social context can we understand why physical and human resources are applied in certain ways and in certain activities rather than others. Further, it is only when an economic system is viewed as a part of a social system that it is possible to understand the reciprocal human relationships involved in marketing.

Some rules specifying limits to behavior of individuals in particular positions are formally defined in written laws and regulations. Formal rules, together with those which have not been codified, provide the integrative elements in institutions such as markets and business firms. Stability and predictability are thus provided. Change occurs, however, as individuals react with their environment and as issues arise.

This chapter and the two succeeding ones are primarily concerned with those rules, formally defined in laws, regulations, and decrees, which have specific relevance to agricultural markets. Stress is laid on the emergence of issues which gave rise to a more explicit formulation of rules. Public management, societal decisions, and national strategies which influence the environment in the market and inject the notion of public policy as a variable that influences market performance are important to the discussion.

Influence of Values and Beliefs

Formalized rules are the explicit expressions of a society's efforts to maintain or alter the environmental conditions in which marketing is conducted. Back of these outward expressions of the working rules, however, is a far more complex arrangement of the society's beliefs, values, and ideas. These have shaped the basic policies regarding general objectives and, as issues have arisen, have determined which rules should be formalized. An awareness of what is involved in the terms *beliefs* and *values* might be helpful in setting our perspective.

An examination of the bases for beliefs and values which are held by a society takes us into cultural areas of a most illusory nature. That any society has imbedded within it certain ideas, attitudes, and beliefs regarding right and wrong, good and bad is not questioned.[1] The manner in which beliefs and values are established and transmitted includes tradition, common sense, experience, authority, intuition, and reasoning.[2]

Tradition plays a large role. It suggests stability and predictability of a system, but to the extent that questioning, reasoning, and the search for newness and betterment enter as accepted norms of a society, the notion of change arises. Concepts relating to progress, inventiveness, and risk-taking then become appropriate. Under some systems it seems normal for men to be free to invent and to engage vigorously in making and selling goods as efficiently as possible. Striving is good and staidness and status quo are bad. This kind of a value system becomes apparent in the manner in which business is conducted, goods produced, and new machines invented, as well as in the general aggressiveness of the population. Explanations for the attitudinal prerequisites for such activity, however, must be sought in the areas which are much less explicit or measurable.

The movement from the cultural area of human ideas, beliefs, and values to the expression of the aims and objectives of these beliefs in the form of policies and programs can at best be described only in general terms. Society is composed of individuals. Each individual is exposed to the traditional ideas and beliefs of those who surround him. The individual becomes a part of the system by accepting the positions, roles, institutions, and unwritten arrangements of the system.[3] He then, as a part of a system, assumes a role and position and becomes a part of the institutional framework with its accepted system of constraints and incentives, formal and informal.

The marketing system operating within this climate then views the components of the climate as variables which must be taken into account in going about the business of supplying goods and services. Because it is a part of the social system which defines the rules of the game, clearly in some cases, very fuzzily in others, it is conscious of such rules. It reacts to and reacts upon them. Through the knowledge and skills of its entrepreneurs, themselves a product of the system, it seeks to provide a production mix in accordance with the desires of the society of which the system is a part. The system of rewards to the various factors of production and their acceptable limits are also determined by the society. Standards relating to efficiency in techniques, competitiveness, aggressiveness, and other performance criteria are all contained within the environmental package.

It is within such a general framework that any marketing system works. Differences between societies become reflected in the role and positions assumed by the participants and the limits of action and performance criteria set forth in the society's concept of norms.

The basic determinants of public policy of any society thus are grounded in its cultural and value system. The content and meaning

given to such terms as freedom, truth, value, and equality are a product of the cultural arena and serve as guidelines within which some degree of orderliness of activity is made possible. Though many of the guidelines are never set forth explicitly they are fully as effective as those which have been formalized through the political process. Our interest here, however, is primarily with the latter type.

Policy Expression and the Political Process

The political process results in definition of the formal rules of community organization. Usually a position is created which is vested with the authority to apply sanctions. Both a statement of objectives and provisions for enforcement are necessary for effective policy implementation. The results come forth in the form of explicit policies and programs. These become the working rules of the economic system, and as such are taken into account in managerial processes. Often, because they lack concrete form and precision, policies and programs are subject to different interpretations at different times and under different circumstances. An example of different interpretations is found in the case of the Sherman Antitrust Act in the United States. This legislation was aimed at preserving competition, and collusion of firms was thought to be a practice most likely to lead to its lessening. Initially mergers, consolidations, and certain other means of securing control were ruled acceptable. Later interpretation included these as actions tending to lessen competition and hence subject to prosecution. An example of lack of preciseness is shown by the great reliance on the term "intent" in a great deal of the legislation pertaining to lessening of competition through certain tactics. Perhaps this apparent looseness of terminology is in keeping with the value system of this society, since a primary objective has been to encourage initiative and aggressiveness while keeping power potential within acceptable limits.

Policy Issues and the Stage of Economic Maturity

A form of generalization which might be helpful in viewing the emergence of public policy issues and the manner in which they are handled by a society might be developed within an economic growth framework. A brief sketch of the economic history of the United States can be used for this purpose.

The stages of designated growth are as follows: the emergent society, the transitional stage, and the age of maturity.[4] A major objective is to identify policy issues and the manner in which these became reflected in programs during the different stages of growth. Although temporal specifications could be applied to the stages, this is not done here. Rather,

this discussion rests on the assumption that though fundamental societal aims may not differ with the particular stages of growth, policies and programs for implementing the aims undergo change. Further, the variables upon the basis of which market managers react are different at different stages.

Certain basic aims were set forth fairly explicitly at an early stage in U. S. history. These include a concern with general welfare, which has implications for employment levels, efficient use of resources, technology, individual initiative, role of the state, legal procedures, and variety and quality of goods, among other things. It can be argued that other long-standing aims have a temporal specification such that their instrumentation is closely related to the stage of development of the society.

Policy issues in the emergent stage. A central economic fact about the emergent era in the United States, as in most societies, is that it was a period of limited economic production and scarcity. Limitations of technology imposed a ceiling on the volume and composition of the nation's output. The scale and pattern of marketing activity reflected the fact that food production absorbed a high proportion of the working force and that incomes above minimum consumption levels were not generally prevalent. During this period, production, largely of an agricultural nature, was for family subsistence. Marketing was meager in volume and was limited spatially. Trade between and among neighbors was largely of a barter nature.

Under such a system of not producing for a market there was little need for programs designed to influence the market environment. Price information between and among markets was not necessary, since the marketers were neighbors. Grades and standards were not needed, for all trading was done on the basis of inspection. Economic power was not an issue, because firms were small. Supply and demand balancing was relatively easy, since it was simply a process of trading a small excess of a commodity for the amount of other commodities which a neighbor's family might have in excess of their needs. If no extras were available for barter, supply and demand were balanced within the family by simply eating more of one product and less of another. Under such circumstances programs aimed at the production sector with a view to its stimulation were logical avenues to pursue in attempting to meet the objectives of the general policies of the era.

Policy issues in the transitional stage. The transitional stage is that in which the bases for the movement toward modern industrialization were developed. These included a build-up in social overhead capital,

especially in transportation, technological progress in agriculture, a growing population and its concentration in urban centers, and increased capital imports.

The technological implications of these conditions relate primarily to a widened market, more trade, more specialization, increased interregional dependency, enlarged institutions of finance, and increased market incentives to create new production functions. Although changes during this period appear to have been largely technologically oriented and greater intensity in use of capital appears to have been characteristic of different economic sectors, there are certain discernible movements related to the extension of the market and the resultant alignment of interests of different economic groups.[5] Although the same tools of production may have been used, numerous technological developments, particularly in the area of transportation and communications, made market extension possible. The emergence of the retailer, wholesaler, merchant, capitalist-investor, and manufacturer or specialized functions proceeded rapidly. The change from a self-subsistence economy to one of specialization brought different groups to key positions in regard to price bargaining and economic power. The groups lagging in influence turned to labor movements and state governments in an effort to protect themselves.[6]

Conditions leading to possible cleavage are related to the economic conditions that determine the forms of organization. These conditions may be found not so much in the instruments of production as in the development of new markets and the resultant functions necessary in exploiting those markets. This can be illustrated by examining some of the economic stages of market extension as portrayed by the dairy industry in the United States.

During the emergent stage of growth, milk and dairy products were produced for a custom order market, a producer's family, and (to a very limited extent) nearby neighbors. Each producer's product, in the terminology of the 17th century industry, was a "bespoke" product. In his own person he was employer, merchant, and manufacturer. Next, some of the producers, tending toward specialization, began to produce and process more milk and dairy products than could be used by the family and nearby neighbors. Extra amounts were available for a larger marketing area. This required an investment of capital not only in raw material but also in finished products and personal credits. In addition to custom work on a much larger scale, the producer-handler undertook the retailing function. The individual became a manufacturer, employer and retail merchant capitalist. Next, outside or foreign markets for dairy

products were sought. Orders or contracts were taken for products to be made and delivered to distant points. Producer-handlers became wholesale merchant-employers carrying a large amount of capital invested in material, products, and longer credits, and hiring a larger number of employees.

The widening of the market and the separation of functions created a specialization that destroyed the identity of the producer-processor-distributor as being one and the same person. Their community of interests was split. The area between the producer and consumer was widened. New economic forces or a different combination of the same forces came into play. Each step away from the emergent society stage brought with it different economic alignments and different considerations regarding policies and programs which might be needed to effectively serve the public interest.

The producer, once facing an immediate and direct market, performed all the functions necessary in providing an acceptable product to his consumers. He bargained for price directly with those who paid it and he knew, first-hand, the conditions regarding quality and other requirements which were agreed upon. His profits proceeded from his ability as a producer, processor, distributor, merchandiser, and bargainer. As the market for manufactured dairy products became one of national and international scope, differences in consumer desires relating to quality and price preferences provided further areas for price bargaining. Less economic control and greater uncertainty came with the ever-widening gulf between the producer and the consumer of his products. There arose a need for physical facilities to take care of long-distance distribution and for orderly procedures for market transactions.

This same general pattern was characteristic of most agricultural commodities. The role of the state in facilitating market processes was primarily that of supplying social overhead capital and of providing market information, grades and standards and other methods needed to handle physical distribution and consummate transactions in the market. These were necessary to permit market expansion and the exploitation of natural resources. New public attitudes regarding the place of the state in market affairs made effective government rule and participation possible. A national government came into being not only capable of providing a peaceful order which encouraged economic activity but also willing to take a degree of direct responsibility for the build-up of capital, the establishment of institutions necessary for appropriate marketing procedures, and the diffusion of new agricultural and industrial techniques.

Policy issues in the maturity stage. The next growth period is designated as the age of maturity. During this period the proportion of population engaged in agriculture was drastically reduced. The proportion of semi-skilled and white-collar workers increased and became effectively organized in the labor market. Specialization in production and in marketing functions was carried to a high degree. Great interdependency among areas, regions, and other sectors of the economy developed. The society had come to perceive that its industrial make-up had the potential of offering levels and types of consumption not previously considered realistic.

While the stage of economic maturity brought greater specialization in physical production and marketing processes, there also came about the development of large-scale integrated business units in the food and farm-supply industries. In this respect agricultural marketing and farm supply firms followed the path of general industrial development. This included a concern with application of technology and its relation to a firm's ability to compete with other firms in supplying the growing and varied needs of consumers. Most industries in the farm supply and food handling sector did lend themselves to use of the production line process and, as a result, greater scale economies were realized. The results were extremely heavy investment in production equipment, large capital needs, large-scale operations, and difficulty in entry because of heavy investment requirements, all to the advantage of those firms already in the industry. In addition, scale or other advantages of control appeared desirable from a management standpoint, and mergers, consolidations, special directorate arrangements, and acquisition of control through other means became a part of the industrial scene. Attrition through acquisitions of various kinds and through economic failure brought about an agri-business sector of agriculture made up of relatively few firms of relatively large size. New avenues of competitive activity such as the use of brand names in product differentiation and generous outlays for advertising came to be used in attempting to influence the demand for a firm's products. Agricultural production, however, retained most of the characteristics of firms which are independent of other firms insofar as pricing and output policies are concerned.

Thus a more explicit concern developed with issues related to economic power in the market. Policies were designed not only to regulate the activities of those with market power but also to create an advantage to those without it.

In agricultural markets, concern with the issue of market power and advantage led to greatly increased effort in establishing and applying an-

titrust legislation in agricultural industries. It is also reflected in public encouragement of producer bargaining cooperatives. This recognition of the concept of countervailing power was formalized when agricultural cooperatives were provided special status with respect to antitrust legislation by declaring them exempt from certain provisions of such legislation. In addition to bargaining for price, cooperatives made some movement in the direction of attempting to combine the price-income bargain into one negotiation. This desire prompted a movement of cooperatives into the processing and distributing area in an attempt to regain the positive aspects of the vertical alignments which had prevailed in previous stages of growth.

Concern with low incomes to producers and power relationship in the market led to formalizing pricing plans and procedures into national legislation calling for federal orders and agreements. Parity of income was an explicit objective in the beginning. In time, the objectives came to focus on orderliness, stability, and adequacy of supplies, with the public interest as the overriding consideration. Also legislation was extended to provide direct price income support to agriculture, to expand markets for farm products, and in other ways to offset the realignment of economic power and advantage in the market.

Public Policy and Market Performance

It has been suggested previously that certain basic social aims had been expressed at an early stage of development in the United States. It was further suggested that the explicit reflection of these aims has taken different forms at different times and that the extent of use of policies, as well as the types of programs used in influencing the marketing environment, has varied with the stage of economic growth. The type and extent of use of programs were cited as an expression of the set of values and beliefs held by society at any given time. These, although not subject to radical change on short notice, were themselves amenable to change.

Some notion of social performance on the part of a marketing system or of the entire economic system is contained in any concept of market results. According to Sosnick, . . . "what is really intended by the term 'market performance' . . . are the attributes of production and exchange in a segment of the economy that directly influence the welfare of the participants and the society."[7] Sosnick further states:

> . . . evaluation of the attributes of a market that directly influence welfare involves consideration of at least the following twelve issues: (1) production efficiency, (2) technological progressiveness, (3) product suitability,

(4) profit rates, (5) level of output, (6) exchange efficiency, (7) cost of sales promotion, (8) unethical practices, (9) participant rationality, (10) conservation, (11) external effects and (12) labor relations.[8]

If these dimensions of market performance are accepted as being reasonable by a society, then it is reasonable to assume that policies and programs which the society evolves would have as their major objective the fostering of an environment within which the marketing system could operate in such a manner that their objectives would be approximated. The specific objectives sought varied in relation to the stages of growth and the structure of the agricultural production sector and that of the processing, distribution, and supplier sectors as they had evolved in movement toward the stage of economic maturity. The most recognizable features of the methods brought to bear on the economic environment through the political process also changed.

In the early stages of agricultural and industrial development a major societal concern was with assuring means of exploiting natural resources. The major economic interest was agricultural-production-oriented and structural differences between and among sectors had not emerged. Basic to such exploitation was the creation of social overhead capital and use of the energies of the people. Farm-to-market roads were built, patent laws were passed, agricultural experiment stations were authorized and supported, and land was alienated in such a way that the individual initiative and private enterprise concepts held by the society could be implemented. Production efficiency and technological progressiveness were probably the dimensions of performance most relevant at this stage, as reflected in the business environment through the political system.

In moving to maturity, significant structural differences arose between and among sectors and great intersectoral interdependency developed. New potentials appeared for the use of strategy and tactics by business firms in their competitive methods. No longer did firms in the nonagricultural production sectors accept demand conditions as given, but efforts were made to influence demand in their favor. The use of economic power in "unethical practices" had become possible. This meant that performance dimensions which were not relevant before became important. This meant, too, that society, through its political system, would make use of additional criteria in formulating steps to influence the marketing system.

Broadly speaking, these steps can be referred to as procedural steps and as substantive steps. Procedural steps mean that society, through its political system, imposed certain operating procedures upon marketing

firms. These steps imply, among other things, that society has recognized the potential for firms to employ tactics which might not be in keeping with acceptable operating procedures. It also implies that the weights given to various performance dimensions may shift through time. For example, some production efficiency, in an engineering sense, may be sacrificed by society in order to have other dimensions more closely approximated.

Such steps include antitrust legislation, unfair trade practices legislation, and that designed to improve the market position of disadvantaged groups. The first two are negative in nature in that they prohibit certain actions which are deemed predatory and destructive of competition. The latter is positive in that it is of a permissive nature and among other things sanctions certain activities of cooperative groups by exempting them from some provisions of antitrust legislation.[9] This step also includes efforts to equalize access to information through reporting of prices and other relevant data and through other means such as experiment-station research and extension-service activities in disseminating information. Product grades and standards, market standards, and futures market regulation are also included.

Steps of a substantive nature go farther than designating operating procedures for marketing firms. These include objectives for reallocating incomes. Such steps have involved a parity concept and have been concerned with overall market adjustment. Measures used have included those directed at influencing both the supply of and demand for agricultural products. Production control techniques and price support operations have been widely used.

SUMMARY

Society has thus accepted some notion of market performance as involving the welfare of the market participants and has taken certain steps, through policy formulation and implementation through the political system to formulate policies which it believes will improve performance. Implicit in the concept of market performance are the welfare positions of both marketers and society. Society anticipates firm operations within industries to be remunerative for ownership in accordance with some scale of priorities which society has set for the goods and services offered by the industry.[10] On the other hand society seems to expect of its marketing system a concern with production efficiency, progressivity, its impact on the remainder of the economy, and its exploitative policy regarding unrenewable resources. Further, society has expectations with respect to volume of suitable products which are prop-

erly described regarding quality, size, contents, etc.; that the resources used in influencing consumers to accept certain products be held within reasonable bounds, and that participant rationality be a major objective; that unethical practices will not be condoned; and that economic power will not be used in a predatory manner. These objectives in part are all implemented through the establishment of appropriate public policies and programs.

CHAPTER 15

Policies for the Regulation of Competitive Behavior

A SOCIETY can take one of three general approaches to preserving competition within a private free enterprise system. One approach would involve taking the steps necessary to preserve a competitive market structure through such measures as reducing market concentration, barriers to entry, and product differentiation, without consideration as to how the market structure developed. A second approach would involve regulating the methods by which firms compete, through such measures as delineating the types of actions or specific acts that are anti-competitive, and thus defined as illegal. Prohibited action includes such things as price fixing, market sharing, tying arrangements, and certain mergers. A third approach would involve regulating firms and industries on the basis of their performance. This would be more in accordance with the workable competition approach. In general, no steps would be taken against firms if they were reasonably progressive, provided a good product at a reasonable price, and in other ways performed satisfactorily.

Of the three general approaches that might be taken to insure competition, the second, that aimed at regulation of firm behavior, has been relied upon most heavily in the United States. Upon examination the reason for this is fairly clear: it has fewest disadvantages.

The market structure approach to antitrust has several drawbacks. Some of these include: the sometimes nebulous relationship between market structure, behavior and performance, particularly when there are several market structure variables interacting, the inapplicability of the same economic standards to different industries or to the same industry over time, the difficulty of writing laws in terms of such things as market concentration, barriers to entry, and product differentiation, the mass amount of information on industry conditions that would be

By JOHN R. MOORE.

needed to enforce the law, the difficulty of resolving the conflict between market concentration and economies of scale, and the difficulty firms would have in knowing when they were violating the law. For example, such an approach would be blind to a situation in which a firm may end up as a monopoly due to the demise of a rival.

The market performance approach to regulation of competition has its drawbacks as well. Its standards would have to be written in terms of such things as progressiveness, efficiency, innovations, profits, product variety, output, employment, growth, stability, and prices, some of which are rather vague. Consideration of the effects of such outside factors as changes in technology and long-run demand would also be very difficult. Enforcement, at best, would still result in making changes in either market structure or behavior or, at worst, if the free enterprise system were thought important *per se,* might lead to direct public regulation or ownership.

The market behavior approach to antitrust may not be perfect but it offers several advantages. In the first place, it looks at the core or essence of competition, rivalry among firms. Second, this approach can be written into a reasonably definite law that can be interpreted without too much vagueness, particularly after judicial precedents have been set. Third, in most cases it takes a positive act to violate the law and these acts can often be proved in court. The need for an overt act to violate the law explains why the largest firms in an industry are sometimes left alone while their smaller competitors are prosecuted for their mergers.[1]

The Development of Antitrust Legislation

Antitrust policy in the United States developed over a long period of time. Prior to the passage of our first federal antitrust statute, the Sherman Act of 1890, antitrust action was largely a state matter and was enforced in state courts using English common law precedents. Some American courts invalidated corporate combinations and consolidations if the participating corporations acted beyond powers granted in their charter.[2]

The Sherman Act provided for a coordinated prosecution which was lacking at the state level and was without precedent in other countries. In fact, few countries outside of Canada and the United States had any antitrust legislation prior to World War II, and such legislation as existed is now in part breaking down.[3] In 1914 the two additional antitrust laws were passed, the Clayton and Federal Trade Commission Acts.

The Sherman Act has two substantive sections directed toward firm behavior. Section 1 is aimed primarily at conspiracies among firms

that restrain competition, while Section 2 applies mainly to the attempts of individual firms to monopolize markets on their own.

Though the Sherman Act was a substantial step forward in the regulation of competition, it was soon found to have certain weaknesses. These included its inability to strike at monopoly in its incipient stages, thus preventing Sherman Act violations from occurring in the first place, and its use to curb collective bargaining by labor and agriculture. It was also felt that an administrative agency of antitrust experts should be established to help in the enforcement of any broadened antitrust laws. It was primarily for these reasons that the Clayton Act and the Federal Trade Commission Act were passed in 1914.

The Clayton Act prohibits four major types of activities or practices that might lessen competition or tend toward monopoly. These are price discrimination, tying clauses and exclusive dealing arrangements, certain types of mergers and interlocking directorates.

The Federal Trade Commission Act was designed primarily to provide an expert administrative body to speed up the enforcement of the Clayton and Sherman Acts. It also provides for the regulation of false and misleading advertising, wool products labeling, misrepresentation, disparaging competitors or their products, using lottery devices, and a number of other things.

Enforcement of the Antitrust Laws[4]

Enforcement of the antitrust laws has run hot and cold since the passage of the Sherman Act in 1890. It took fourteen years, despite a gigantic wave of mergers, before the first dissolution, ordered in 1904, resulted in separation of the Great Northern and Northern Pacific railroads.[5]

The government antitrust program was considerably more active in the next ten years, however. Antitrust highlights of the period include the dissolution of the American Tobacco and the Standard Oil companies[6] in 1911 and the passage of the Clayton and Federal Trade Commission Acts in 1914.

Antitrust in the United States reached its lowest ebb between 1915 and 1935. In this period U. S. Steel was left intact because it was a "good" trust and did not abuse its power.[7] The decision was seconded in the International Harvester case of 1927.[8] The lowest point in antitrust enforcement was reached in 1933, when the antitrust laws were suspended for industries which had a government-approved NRA code of fair competition. Businessmen and others felt that too severe competition was reducing prices and wages.

Antitrust enforcement picked up considerably after 1935. The Robinson-Patman Act was passed in 1936, and in 1938 Thurman Arnold started a bold antitrust campaign as chief of the antitrust division. The Temporary National Economic Committee was set up in the same year. In 1945 the U.S. Steel precedent was reversed when it was held in the Alcoa case that monopoly was illegal even when it was not abusive.[9]

In 1946 the courts "brought wholly tacit, nonaggressive oligopoly within the reach of the conspiracy provisions of the Sherman Act" in their decision in the second American Tobacco case.[10] This was a victory for the "new breed" of imperfect competition theorist. In 1950 the Celler-Kefauver amendment to the Clayton Act made the acquisition of the assets of a competitor subject to antitrust action. Only the acquisition of a competitor's stock had previously been subject to the Clayton Act.

Application of Antitrust Laws to Agriculture

The antitrust laws have been applied to agricultural marketing firms from the early antitrust period to the present, and with relatively high frequency. The first agricultural case involved the American Sugar Refining Company in 1892. Several new ones come up each year.

The following is a discussion of the type of antitrust cases being brought against agricultural marketing firms. Emphasis is on recent cases, but reference is made to some of the more important ones historically. The cases are divided into single and group firm (conspiracy) cases and then subdivided into those brought because of actions that tended to reduce rivalry among firms directly, and those brought because of overly competitive actions that tended over time to eliminate rivals and lessen competition.

Application to Actions Directly Lessening Competition (Single Firm)

Over the years the courts and antitrust officials have settled upon several types of firm behavior which they believe restrict business rivalry and thus under certain circumstances violate the antitrust laws. These include: acts that reduce the number of rivals and increase market concentration (such as mergers and interlocking directorates), acts that restrict a rival's access to one's customers (such as tying arrangements, exclusive dealing contracts, full line forcing and long term supply contracts), acts that restrict rivalry among the resellers of a supplier's product (such as resale price maintenance), and acts limiting the amount and timing of product sales in an industry (such as surplus purchasing).

Most of these types of practices have been used by firms in the agricultural industries, some much more than others. Some examples follow.

Mergers. One of the more interesting antitrust periods was from 1904 to 1920, when the early trusts, formed largely between 1890 and 1910, were brought under attack. Several of these trusts were within the agricultural industries. The industries involved included sugar, corn products, tobacco, meat, tin cans, and farm machinery.

The government lost the sugar trust case, brought in 1892 to dissolve the American Sugar Refining Company, which had acquired 90 percent of the industry's capacity, because the court ruled that sugar manufacturing was not commerce, an interpretation that has since been reversed.[11]

In 1916 the government obtained a decree dissolving part of Corn Products Refining Co., which had acquired control of all the glucose plants and 64 percent of the starch production in the United States in 1906.[12]

In 1911 the government obtained a divesture of the American Tobacco Company, which had acquired 90 percent of the industry's sales in 1890 through merger. The company's direct tobacco manufacturing assets were divided among four firms, the American Tobacco Co., the R. J. Reynolds Tobacco Co., Liggett and Myers, and P. Lorillard Co.[13]

No actual meat trust was ever formed but one was nearly consummated in 1903. It failed because of the financial panic of that year. The assets that had been acquired in preparation of the trust were distributed to the firms involved in the formation of the trust, Armour, Swift, and Morris, after threat of an antitrust suit.[14]

The government lost in its efforts to break up the "tin can" trust in the form of the American Can Company, because its share of the market had dropped from almost 100 percent to less than 50 percent in 15 years.[15]

The harvester trust, in the form of the International Harvester Company, entered a consent decree in 1918 requiring them to dispose of their three lesser harvesting lines, Osborne, Milwaukee, and Champion and to eliminate all but one of their representatives or agents in any town or city.[16]

The early trust cases are interesting in two respects. In most cases the trusts had lost considerable market share before antitrust action, in spite of their initial dominant position. This fact was used in their defense. The government achieved some success in breaking them up in all cases except sugar and metal containers. The government's success against mergers declined after the U.S. Steel decision in 1920 and the

decision that the law applied only to stock acquisition and not to the acquisition of assets. This latter ruling was changed with the passage of the Celler-Kefauver Act of 1950 amending Section 7 of the Clayton Act.

Since 1950 the government has initiated about a dozen suits for mergers by agricultural firms, several of which have been decided at least at the lower court or Federal Trade Commission level. These include the order for Pillsbury Mills, Inc., to divest itself of assets acquired from Ballard Company and Duff Baking Mix Division of the American Home Foods, Inc.;[17] a consent order requiring Continental Baking Co., the nation's largest commercial bakers of white bread, to sell Omar, Inc., of Omaha, Nebraska, which at the time of its acquisition in 1958 was the nation's eighth largest bread baker;[18] a consent judgment against United Fruit requiring it to create a new competitor out of its own assets with 35 percent of United Fruit's 1957 volume;[19] a consent judgment requiring Minute Maid to dispose of or discontinue two frozen juice concentrating facilities;[20] a consent order in 1962 requiring National Sugar Refining Company, the second largest refiner, to divest itself of Godchaux Sugars, Inc., the nation's seventh largest cane refiner;[21] a consent order requiring National Dairy Products Corporation to divest two large fluid milk and ice cream firms and limit acquisitions for ten years;[22] and an order requiring Foremost Dairies to divest ten acquisitions.[23] Merger cases are pending against National Tea Co.,[24] Kroger Co.,[25] Von's Grocery Co.,[26] the Borden Co.[27] and Beatrice Foods Co.[28]

Interlocking directorate. Interlocking directorates, where one man serves as a director for two or more competing firms, logically may tend to lessen competition. Prosecution of interlocking directorates is relatively rare. One example was a consent judgment enjoining existing interlocking directorates and officers among certain dairies in Minneapolis. This civil action was in conjunction with a criminal action charging price fixing to which the defendants had pleaded *nolo contendere*.[29, 30]

Tying arrangements, exclusive dealing, full-line forcing and long-term contracts. There are at least four trade practices that have been determined to be unfair under certain circumstances because they tend to exclude rivals from normal access to customers. These practices are tying arrangements, exclusive dealing, full-line forcing and long-term contracts. None of these practices has received a great deal of attention from antitrust officials with respect to firms in the agricultural industries, though a few cases have occurred.

In 1946 American Can Company[31] and Continental Can Company[32] were charged by the Department of Justice with leasing their can-closing

machinery at a low rate to canning companies on the condition that the lessees purchase their total requirements of containers from the leasor and for refusing to sell the machines at all. This prevented can manufacturers without comparable machines from competing for these accounts. A decree was entered in 1950 enjoining the defendants from entering into long-term requirements contracts with canners for cans, from refusing to lease or even sell closing machines to accounts not using their cans, and from allowing quantity discounts in the sale of cans.

A second case of alleged exclusive dealing involved three large manufacturers of farm machinery, J. I. Case,[33] International Harvester,[34] and Deere and Company.[35] The government alleged their dealership contracts prohibited their dealers from handling other lines of equipment and thus restrained competition. The complaints were dismissed in 1951, when the government failed to show appreciable coercion, unreasonable restraint on commerce or a tendency to substantially lessen competition and to create a monopoly.[36]

Resale price maintenance. Processors with a unique product may try to insure the profitability of the item for their customers and thus the stability of their wholesale prices by trying to fix the price at which their customers may resell the item. This tends to eliminate competition among retailers on the item at the expense of consumers. For this reason retail price maintenance is contrary to antitrust philosophy, though it is permitted by law in some states. Only a few cases of this type have been brought against agricultural processing firms. One involved a breakfast cereal manufacturer who tried to enforce resale price maintenance by printing the following notice on its packages.

> This package and its contents are sold conditionally by us with the distinct understanding, which understanding is a condition of the sale, that the package and contents shall not be retailed, nor advertised, nor offered for sale at less than 10 cents per package. Retailing the package at less than 10 cents per package is a violation of the conditions of sale, and is an infringement on our patent rights, and renders the vendor liable to prosecution as an infringer.

This resale price maintenance plan was held illegal and perpetually enjoined.[37]

Application to Overly Competitive Practices

Individual firms may engage in practices that are overly competitive and thereby eliminate competition and lessen competition. Control of these types of practices was the main emphasis for the passage of the Clayton and Federal Trade Commission Acts and their amendments.

Many types of activities are in the overly competitive category. Some of the more important include discrimination, sales below cost, false and misleading advertising and disparagement of competitor products.

Discrimination. This is the offense most frequently cited in antitrust cases. It is thought to injure competitors in two ways. It injures the competitor who loses the account or who would otherwise gain it from his rival and it injures firms trying to sell in competition with firms who have been favored by the discrimination.

Discrimination takes many forms. The simplest is to give one customer a lower price than another for a product of like grade and quality. Discounts can also be provided in the form of promotional allowances, brokerage fees and providing customers with services, facilities, and extended credit. Discrimination is a difficult charge to prove because of the many defenses a defendant may offer. These include assertions that a competitor's price had to be met, that the goods sold at different prices were of unlike kind and grade, that competition was not injured, and that price differences reflected differences in cost of production or distribution.

Charges of discrimination have been levied at firms in nearly all the agricultural industries. The examples that follow involve fluid milk, feed and grain, grocery retailing, fruits and vegetables, and flour and baking.

In 1957, Chestnut Chevy Chase Dairy was ordered by the Federal Trade Commission to cease giving promotional allowances to wholesale customers on a discriminatory basis in the Washington, D.C. area. Over an 18-month period their allowances per retailer ranged from $3.08 to over $16,000 and the allowances were not given on a proportional basis.[38]

Three large-scale feed mixers[39] recently consented to cease and desist from offering such sizeable discounts to their largest dealers that their smaller dealers could not compete with them. The quantity discounts for one of the mixers, for example, ranged from $0.25 to $2.50 per ton.

In 1938 the Federal Trade Commission ordered the Great Atlantic and Pacific Tea Company to cease accepting brokerage allowances from suppliers for groceries it purchased on its own account. This was one of the first cases testing Section 2-c of the newly passed Robinson-Patman amendment to the Clayton Act. The Commission rejected the respondent's defense that the allowances were justified since the respondent gave advice to their suppliers, aided them in disposing of their surpluses, and saved them the cost of employing brokers.[40]

Most of the discrimination cases involving firms in the fruit and vegetable industry have been filed against shippers of citrus fruit for allegedly

making illegal brokerage payments to favored customers. Forty-five[41] of these were filed after the Commission's first use in 1960 of the broad powers of Section 6 of the Federal Trade Commission Act to conduct an investigation by mail on an industry-wide basis. All the complaints resulted in consent orders to cease and desist from the alleged practice. The industry-wide questionnaire was viewed by the Commission as the most equitable way of halting an unlawful practice common throughout the industry.

Illegal brokerage fees usually arise in one of the following two ways. A broker will take shipment of produce from a packer, deduct a brokerage commission from the invoice price, pay the packer for it at the deducted rate and then sell the produce on his own account at a higher price. Or the packer will bill the favored buyer (usually a large one) at the price normally billed brokers, but bill nonfavored buyers a price that includes the broker's normal commission.[42]

Price discrimination takes several forms in the flour and baking industry. The most common form is a larger discount to favored purchasers. Other methods include giving larger promotional allowances to some retailers than others, even though they may have the same amount of sales, and discriminating in demonstrator services.

Prior to 1962, the Federal Trade Commission had filed fifteen cases alleging price discrimination in the flour and baking industry, which were concluded in orders or consents to cease and desist. Ten cases of the same type were pending in 1962, indicating that activity is being stepped up considerably in this area.

Sales below cost. Setting prices below cost can be an effective device for accomplishing two objectives, particularly by a large diversified firm. It can be used to squeeze out weaker rivals in a market; it can be used to discipline competitors using selling practices that a dominant firm finds objectionable, such as failure to follow its price leadership, discrimination hurting the dominant firm, and introduction of new products and nonprice inducements.

Sales below cost can violate both the Sherman Act and the Robinson-Patman Act, the former where it tends to create a monopoly, the latter where it is discriminatory but not covered by the former. A few examples follow. In 1959 Fairmont Foods Co. of Wisconsin pleaded guilty to Sherman Act charges of selling milk to a distributor in Houghton County, Michigan, at prices lower than they sold for in Wisconsin and at prices below Fairmont's cost of doing business.[43] In 1955 the government charged Safeway Stores, Inc. with attempting to monopolize grocery retailing in Texas and New Mexico by selling below cost. The

defendants pleaded *nolo contendere* and were fined $187,500. This was the first time the maximum penalty under the amended Sherman Act had been imposed.[44] In 1956 the Maryland Baking Co. was ordered to cease and desist from engaging in predatory price cutting in the sale of rolled sugar cones.[45]

False and misleading advertising. Occasionally a firm will attempt to mislead buyers with false claims about its product or its type of business. This violates Section 5 of the Federal Trade Commission Act. Examples of these cases include a firm representing its citrus as coming from Indian River when in fact it came from elsewhere,[46] a firm representing itself as a growers' exchange when in fact it was not,[47] a firm falsely advertising that its feed is highly effective in elimination of Bang's disease,[48] and a firm misrepresenting the calorie content and therapeutic properties of bread.[49]

Disparaging competitors' products. Disparaging competitors' products is an unfair trade practice, though the charge is rarely brought, presumably because the offense seldom takes place. No examples involving firms in the agricultural industries were found in a review of antitrust actions against firms in these industries.

Application to Group Action (Conspiracy Cases)

The basic objective of antitrust law is to preserve and maintain free competition in open markets. It logically follows that any agreement among firms not to compete violates the spirit if not the letter of the antitrust laws. Most types of agreements restricting competition among firms are in violation of the antitrust laws. These include price fixing, some trade association activities and cartel arrangements, basing point pricing, market division, nonsolicitation of competitors' customers, group boycotts, and surplus purchasing. A discussion of these violations and some examples in the agricultural industries follow.

Price fixing. Price fixing takes two basic forms: explicit agreement not to charge below a certain price, and tacit price agreement or conscious parallelism. The former is more frequently found in antitrust suits; however, the latter doubtlessly is the more commonly practiced.

Price-fixing agreements seem particularly prevalent in industries with few sellers or buyers and a homogeneous product such as the wholesale market for fluid milk and bakery products. Numerous cases of both types have arisen. One of the more recent in the dairy industry was a case of alleged rigging of bids for milk for government installations by

three Nebraska dairies to which two defendants pleaded *nolo contendere;* a third was found guilty.[50]

There have been seven antitrust cases involving price fixing in the baking industry in which the defendant bakers were fined, or ordered to cease and desist. In six of the cases, the defendants pleaded *nolo contendere.* In each case, two or more bakers allegedly agreed on one or more matters such as prices to be charged for certain types of bakery products, discounts to be allowed buyers, prices to be bid on government contracts, whether or not to give prizes and premiums, and disposition of day-old bread.

Examples of price fixing in other agricultural industries include: four cases of alleged price fixing among cheese assemblers for the cheese they bought and sold[51] and two cases of alleged price fixing by butter exchanges.[52]

In the feed and grain industry the government obtained some relief in two cases. They were for alleged attempts of the Washington Cereal Association, and the Oregon Cereal and Feed Association, to coordinate the exchange of prices and terms of sale by its members to which the members were required to adhere,[53] and the Michigan Bean Shippers Association's alleged attempt to fix rates for functions performed by middlemen and to publish "close" prices.[54]

The leading antitrust case of conscious parallelism involved the largest tobacco companies. The government alleged they had combined to control the marketing of leaf tobacco as well as the cigarette distributing system. Leaf tobacco marketing was allegedly controlled by buyers refusing to bid unless all the other buyers were present and by setting ceiling prices on tobacco in advance of the sale. The strongest support for the government's charge of controlling the cigarette distribution system was a uniform price rise for cigarettes by the largest manufacturers in the depths of the Depression in 1931. They later dropped their prices to regain a large share of the market which they had lost to the so-called "10 cent" brands after the price increase.

The case resulted in fines of $312,000. It was not followed up with a civil suit that would enjoin any particular practices. As a consequence the defendants were left in some doubt about which of their practices were legal and which were not.

Trade association activities. Trade associations are natural vehicles for conspiracies among firms in an industry. The associations can be a party to many activities that will affect price but do not necessarily involve direct price fixing. These include the collection and dissemination of

data on prices, costs, discounts, brokerage fees, output and shipments, the standardization of products and terms of sale, providing credit information, joint purchasing of supplies, interchange of patent rights, and the promulgation of codes of business ethics. These practices may be encouraged by boycotts, fines, loss of deposits with the association, and campaigns of education and exhortation. In more than two hundred cases, trade associations (agricultural and nonagricultural) have been found to have eliminated competition in some way.[55]

The line between legal and illegal trade association activities sometimes becomes quite fine. To say the least, the less coercion involved the better. In some cases involving trade associations in the agricultural industries the government got some relief. These include: a linseed-oil crushers' association that allegedly coordinated the exchange of detailed prices of its members and assessed penalties for violation of an agreement among them to exchange information and attend meetings,[56] the Sugar Institute's alleged coordination of sugar refiners' price reporting system, abolition of long-term contracts, and prohibition of quantity discounts;[57] the Corn Derivatives Institute's alleged practice of exchanging information among members, corn product refiners, on price and other terms of sale to which members were to adhere until later notice;[58] and the alleged continuance of the NRA Fertilizer Recovery Code by the National Fertilizer Association, which resulted in the defendants fixing uniform prices and terms of sale, circulating information facilitating the computation of uniform prices, adopting uniform discounts to dealers and agents, and dividing sales territories.[59] Other trade association cases include the alleged refusal of a milk dealers' association to permit nonconforming dealers to use their local milk bottle leasing service,[60] and the alleged refusal of the Chamber of Commerce of Minneapolis, the local grain exchange, to permit its members to do business and exchange information with the Equity Cooperative Exchange and the St. Paul Grain Exchange.[61]

Cartel arrangements. Cartels are trade associations on an international scale. In general they do not have to worry about antitrust laws except in the United States. Cartels involving agricultural firms have been most common in the fertilizer industry. At one time they controlled U.S. imports of nitrogen, phosphate, and potash.

In the 1930's the Department of Justice initiated an investigation that developed information indicating that Allied Chemical and Dye and Dupont interests had cooperated closely with the two principal foreign nitrogen cartels, Chilean Nitrate-Sales Corporation and Synthetic Nitrogen Products Corporation, to control the prices, production, sales, im-

ports, and exports of fertilizer nitrogen from 1929 through 1938. Five indictments were obtained, all of which were finally disposed of by consent decrees which broadly enjoined the American companies from agreeing with each other or with foreign interests to fix and maintain prices for fertilizer nitrogen in the United States, to prevent or restrict imports into or exports from the United States, or to restrict the licensing and use of specified patents to particular industrial fields.[62]

In the 1930's the country's two phosphate rock exporting associations were asked by the Federal Trade Commission to change their methods of operation. The associations, Phosphate Export Association and Hard Rock Export Association, had allegedly entered into cartel agreements with foreign rock producers under which phosphate rock sold in international markets at fixed prices subject to a system of fines and penalties. The commission recommended that the associations rescind all their cartel agreements and the restriction of patent licensing for equipment used in mining or processing Florida pebble rock. As a result of the Federal Trade Commission order and recommendations, one of the trade associations was dissolved and the second filed a letter of compliance.[63]

As in the phosphate and nitrogen industries, international trade in potash with the United States has been dominated by cartels. In 1938 American potash companies formed an association to negotiate with the cartels and to sell through them to European buyers.[64] In 1940 a civil antitrust complaint was filed alleging three domestic sellers and the cartel's American sales agency with conspiring to maintain uniform prices and other terms of trade in the United States, and refusing to sell to some buyers. A consent decree was entered enjoining the American firms from fixing prices, refusing to sell at f.o.b. prices, and refusing to sell to individual farmers, farm cooperatives, or fertilizer mixers not recognized or approved by all the defendants.[65]

Basing-point pricing. This involves using one or more locations as the points from which freight charges will be determined for a product shipped from other than one of these points. This pricing method tends to discriminate in favor of buyers located closer to the basing point than to the actual shipping point and against others. At present, basing-point pricing is permitted by one firm but becomes questionable when more than one firm at different locations use the same basing point, because this sets the stage for noncompetitive pricing. It becomes too easy for firms using the same freight rate books to have identical prices.

The most widely known cases of basing-point pricing involving an agricultural industry were initiated by a series of Federal Trade Com-

mission complaints in 1939. It was alleged that the principal wet corn refiners had restrained trade by using Chicago as a basing point and that this had discriminated against buyers located closer to the plants than to Chicago. The Supreme Court supported the Federal Trade Commission on the two cases that reached them.[66]

Nonsolicitation of customers. An agreement not to solicit a competitor's customers has an obvious effect on the degree of rivalry between them. This type of case has not been too common. One instance of it involved a dairy union in Iowa that allegedly prohibited its members from soliciting other drivers' accounts.

Division of markets. Division of markets, granting certain firms an exclusive franchise in certain areas, has rarely been a cause for an antitrust suit involving an agricultural firm. It is, however, commonly practiced by international cartels.

Surplus purchasing. Price manipulation can be accomplished by the purchase of excess supplies on the market. The practice is not too common because in most cases these supplies must be placed on the market at a later date. In 1941 the government charged a trade association of butter dealers and others with conspiring to fix wholesale prices by purchasing surplus butter in the market.[67]

Exemptions from Antitrust Laws

Some industries or groups have partial or complete immunity from the antitrust laws. These include the regulated industries (transportation and the public utilities), petroleum, labor unions, and agricultural and fishing cooperatives. The partial exemption of the latter three apparently stems from Congressional belief that they have little bargaining power when unorganized and need it if they are to obtain their share of the national income.

The first statutory exemption of agricultural cooperatives from the antitrust laws was provided in Section 6 of the Clayton Act. It was designed to protect agricultural cooperatives from the conspiracy provision of the Sherman Act, which had been applied against them. The exemption was clarified in the Capper-Volstead Act of 1922, which specified that agricultural producers may act together in associations for the purpose of collectively processing, handling, and marketing their products. The act also empowers the Secretary of Agriculture to order any such group to cease and desist if he finds that it "monopolizes or re-

strains trade to such an extent that the price of any agricultural product is unduly enhanced by reason thereof." The Capper-Volstead Act exemption was further strengthened by the Cooperative Marketing Act of 1926, which permitted agricultural associations to legally acquire and exchange "past, present and prospective" pricing, production, and marketing data, something that several non-cooperative trade associations had been fined for or enjoined from doing. An even greater latitude was given by the Agricultural Marketing Agreement Act of 1937, which not only permits group action but provides for government enforcement if an order is approved by two-thirds of the producers.

The exact extent of the cooperatives' exemption from the antitrust laws is unclear. The most recent leading case in the area was *U.S.* v. *Maryland and Virginia Milk Producers,* decided by the Supreme Court in 1960. The case involved the legality of the Maryland and Virginia Milk Producers Association's buying out Embassy Dairy in Washington with the alleged purpose of foreclosing the market to non-M.V.M.P. members. The Court ruled that the Capper-Volstead Act permitted cooperatives to organize but did not permit them to participate in trade practices not allowed to non-cooperatives. This decision still left many issues in doubt, including the extent of the immunity of qualified cooperatives from Section 7 of the Clayton Act, the right of competing cooperatives to enter merger agreements with each other and the right of competing cooperatives to federate.[68]

Quasi-Antitrust Regulations

In addition to the standard antitrust laws, agricultural firms are subject to one or more other laws designed to regulate firms in specific industries. This emphasis is on the regulation of trade practices rather than on preventing conspiracies and monopoly. These laws include the Packers and Stockyards Act, the Commodity Exchange Act, and the Perishable Agricultural Commodities Act. Some marketing orders also regulate trade practices.

The Packers and Stockyards Act. This was passed in 1921 to regulate trading of livestock in stockyards and of live poultry. It was in part an outgrowth of the F.T.C.'s 1918 investigation of the meat packing industry and is enforced by the U.S. Department of Agriculture, though the F.T.C. has jurisdiction in some areas.

The Packers and Stockyards Act specifically regulates meat packers, poultry processors, packer buyers, dealers, market agencies, and stockyards of 20,000 square feet or more. Under the Act meat packers

are prohibited from manipulating prices, creating a monopoly, restraining commerce, discriminating, or using deceptive practices. Livestock markets and market agencies are required to charge reasonable and nondiscriminatory rates. Market agencies and dealers must furnish bond and all weights must be correct, visible, and on properly tested scales.[69]

The Commodity Exchange Act. This is the present name of an act passed in 1922 to regulate futures trading on the thirty-odd commodity exchanges in the United States. Commodities regulated include wheat, cotton, rice, corn, oats, barley, rye, flaxseed, grain sorghums, millfeeds, butter, eggs, Irish potatoes, wool tops, all fats and oils, cottonseed meal, cottonseed, peanuts, soybeans, and soybean meal. Persons or firms subject to regulation include futures commission merchants, floor brokers, and boards of trade. The Act was passed to maintain equity in the pricing and marketing of farm products not only for the specific futures transactions involved but also for the many transactions based on the futures prices.

The Commodity Exchange Act has many requirements. Some of these include licensing of markets, registration of brokers, maintenance of trading records, prevention of price manipulation and corners, prevention of dissemination of false and misleading crop or market information, restraints on heavy speculation, recognition of rights of cooperatives to membership on exchanges, safeguarding hedging services, protection against fraud, keeping of clients' funds in separate accounts, and prevention of "bucketing" and "wash sales" (fictitious sales).[70]

The Perishable Agricultural Commodities Act. This was passed in 1930 to promote more orderly marketing and suppress unfair and fraudulent practices in interstate commerce of perishable agricultural commodities. The Act applies to commission merchants, dealers, and brokers who handle fresh or frozen fruit or vegetables in interstate commerce; it is enforced by fines and the revocation of licenses.

The Act prohibits many types of trade practices. Over one-half of the 2,300 complaints per year are for failure of a buyer to account and pay for produce received. About one-fourth of the complaints are for rejection and failure to deliver without cause. Other kinds of complaints include making false and misleading statements, misrepresenting grade, quality, condition or place of origin, and altering federal inspection certificates. About 90 percent of the complaints are settled informally with annual recoveries sometimes running over $1 million.

State Antitrust Laws

In addition to the federal antitrust laws, forty states[71] have some type of state antitrust legislation. These, however, are poorly enforced on the whole because of low appropriations, the difficulty of controlling out-of-state firms, and the fact that the federal government already has a large amount of resources in this area.

State antitrust laws differ somewhat from the federal statutes. State laws put less emphasis on controlling monopoly and more emphasis on sales below cost and preventing unfair and discriminatory practices within specific industries. Those industries most commonly regulated in this respect are dairy, petroleum, insurance, and alcoholic beverages. A recent count showed that forty-two states had general trade practice laws or specific trade practice laws regulating trade practices in the dairy industry,[72] twenty[73] of which permitted the setting of prices by the government either at the farm, processor or retail level, or all three.

Evaluation of Antitrust Action

The effectiveness of the government's antitrust program, like the effectiveness of most government programs, is difficult to assess. In the case of antitrust this stems largely from inadequate knowledge about market structure, behavior, and performance, and the relationship among them.

Honest and intelligent men take several differing points of view toward the value of government antitrust programs. One view is that the antitrust laws have been detrimental because they are vague and ambiguous; they restrict firm size and thus economies of scale, and research and development.

A second point of view is that they don't do any good so why bother with them in their present form. This group has two subsets: (a) the subset that believes they are not nearly strict enough, pointing as evidence to the high concentration ratios and firm size in some industries, (b) the subset that thinks we would have the same market structure had we had no antitrust laws in the first place. This group could look at the agricultural industries and point out that the sugar, harvester, tin can, and corn product trusts lost market share even before they came under antitrust attack. They could also note that despite antitrust suits A & P is still selling about 10 percent of the groceries; meat packers not under the consent decree have not found grocery retailing profitable anyway; the largest dairies are still growing relatively faster than the dairy industry; and that rather than antitrust laws the major factor affecting the

structure of the nitrogen industry was the government's disposal of surplus plants after World War II.

The third point of view on antitrust, the one probably held by most economists,[74] is that though the present American antitrust program may not and cannot be perfect it has done considerably more good than harm and is probably better than any alternative at present available in the United States. This group can point to the fact that American antitrust laws have prevented the cartelization of industry in the United States on the European plan, have prevented the development of large trusts through merger, have set standards of fair practice, and have preserved freedom of entry and equality of opportunity.[75] Many businessmen and others would seem to prefer an antitrust program that provides these conditions in the framework of a free enterprise system rather than move closer to laissez faire or toward more closely regulated private enterprise or public ownership.

CHAPTER 16

Policies to Influence Overall Market Adjustment

THE previous chapter has analyzed a group of public policies and evolving programs concerned primarily with the regulation of firms. The reasons for agricultural market policies, however, have stemmed at least as much from the possible effects of certain inter-firm relationships upon the producers and consumers of the commodity, as from a desire to protect the small or weak production and marketing firm. This chapter briefly considers a number of other public policies and programs. Each of these policies stems from public action, and usually attempts to change the level and distribution of income among producers, marketers, or consumers of a particular commodity, but it may also reduce costs, remove instabilities, increase food output, and attain other objectives.

Public action to modify the functioning of the market has been used throughout the world. The principles discussed here have been applied in international as well as in national markets, and within many national markets, not just the United States. These policies have been established because some of the results of the market exchange system as it actually operated were in conflict with values held by certain members of society. In some cases groups of market firms, in other cases groups of consumers or producers, and in still other cases groups of citizens urged the adoption of certain policies and the implementation of particular programs in the belief that a situation they viewed as undesirable could be corrected. The corrective action in turn affected the market exchange system, but also tended to give more emphasis to the administrative exchange system, particularly so in the third and fourth of the general policies discussed below. Four general groups of programs will be discussed: programs to equalize information, programs to reduce marketing costs, programs to promote orderly marketing, and policies and programs of direct redistribution.

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The first group of programs includes those designed to improve the basis for rational decision-making within and among firms through providing information on grades, standards, prices, and similar product characteristics. Such programs involve the expenditure of public funds to make the market exchange system work more effectively.

The second group of programs is geared to directly influence the cost structures of the firm involved. Research expenditures and educational programs are supported through public funds, often because the individual firms are too small to support research leading to recommended new output-increasing, cost-reducing, or quality-improving practices. The programs operate so that such information is made available to market firms. Public benefits may greatly exceed the cost of the program as the practices are adopted and market margins are reduced or rise more slowly than they otherwise would. Even more important, benefits may occur as larger quantities and higher qualities of products are provided.

The third group includes programs to promote the more orderly marketing of products. Such policies are adopted because society has accepted the views of some of its member groups that the prices and returns for certain commodities (and to the resources that produce them) are not fair. Those favoring such policies believe that measures promoting less violent fluctuations in prices and market supplies will lead to a desirable redistribution of income, in favor of those groups considered important by the decision-makers.

The fourth group of policies stems from similar conflicts between the payments received through the market and people's concept of rightness and fairness, with respect to income (or levels of consumption), but in this case more than a temporal or spatial reallocation of supply or demand is required. Demand may be expanded through subsidies or curtailed through rationing; similarly, supply may be controlled or deficiency payments may be made to bring incomes to a "satisfactory" level.

As suggested above, the four sets of policies shift from a primary emphasis on improving the market exchange system to supplementing that system through transactions by administrative rather than bargaining processes. The discussion below suggests that each of these four sets of policies finds acceptance in many other countries, but that priorities will vary with the economic characteristics and circumstances. Policies that affect direct redistribution are part of the political system for allocating returns rather than part of the economic system for allocating income, but as indicated in Chapters 2 and 11 they are capable of being fully as rational a distribution process as the market exchange system.

Programs to Provide Information

One of the prerequisites for effective operation of a market system and for rational decision-making by participants is adequate and reliable information. Evolving out of this need and out of market grievances are programs which provide prices, production, grades, shipments, and other market information.

It is a great convenience to domestic merchants, to exporters, and to importers to have a code which more or less precisely describes the characteristics of the commodity. Transactions can be consummated both more easily and at less cost. In the earlier markets and also today, quality was associated with and guaranteed by a particular merchant, or perhaps by a group of exporters. There are many other products, especially farm products, that are not closely associated with a particular grower, or even if they are, may change so much while being marketed (e.g., perishables shipped across the country) that recognized grades help greatly to facilitate the exchange process. An impartial grader can interpret the standard and protect each side of the transaction from possible exploitation: the state frequently takes on this role. For example, the U.S. and state Departments of Agriculture provide market news and grading services on a cooperative basis.

Market standards also may be established at the behest of consumer interests to protect the unwary consumer from dangerous products. Thus, the Pure Food and Drug Act established as a national policy a federal concern with the contents and characteristics of products available to consumers. A minimum requirement may be full and accurate labeling. There may also be laws against false advertising, or misrepresentation of the product.

Price, production, and shipment information substantially affect the relationships between large and small firms, and between the market decisions of producing firms and those of distributing firms. By spreading the cost over a larger volume, a large firm can support a private crop and marketing reporting system which gives it superior information on expected production compared with a small local firm. However, federal state crop reports substantially reduce and perhaps eliminate this competitive advantage. In economically advanced nations, many firms demand a wide dissemination of prices reigning in today's markets; this provides producing or retailing firms with information enabling them to bargain within a much narrower range of prices.

Where such systems of market information do not exist, for example in minor products in a less-developed country, itinerant merchants can

purchase or sell at prices deviating substantially from wholesale. One of the purposes of the Colombian Coffee Grower's Federation—an organization something between a producers' cooperative and a government marketing organization—is to provide minimum buying prices at cities and towns throughout the coffee-producing region. It thereby limits the spread between producer and export prices, assuring to the producer a higher price. Consumers in buying countries may also benefit from such programs in the long run. Low prices to producers due to wide marketing margins will attract less production than a smaller margin and higher producer prices. With lower margins the consumer probably will have both larger quantities and lower prices than with wide margins.

The public policy objectives attained by these information programs are four: less marketing advantage for the large firm compared with the small firm, a reduction in operating costs for all distributive firms, consumer protection, and benefits in higher producer prices or lower consumer prices than might otherwise prevail.

Programs to Reduce Cost and Increase Firm Efficiency

In contrast to the previous section, this one concentrates on the creation (and dissemination) of new information, much of it of a physical and technical character. The broad purpose is to reduce inputs relative to output or to increase output relative to given inputs, with an ultimate objective either of providing desired food and marketing services at less cost to society, or of helping an underprivileged sector make a better living. Implicit in such programs is the assumption that such increases in efficiency will be passed on to consumers or appropriately allocated to producing units through relative price changes. In advanced societies these programs often are supported by the general public because of a vague belief-value relationship that "marketing costs too much." In poor societies more direct concern is given to increasing the output of food. Greater output and lower marketing margins through improvements in technology—storage, protection against spoilage, improved containers, better time and space distribution—can provide the basis for expanded food output and improved market processes.

Programs to reduce costs may be sponsored publicly or privately. Publicly sponsored research has its rationale in the small size of the individual firm, too small to support the expenditures necessary to obtain significant research results. Through tax funds, with a small assessment on thousands or millions of small units, research can be supported which creates new varieties, discovers new nutritional relationships, im-

proves shipping or storage procedures, or sponsors improved merchandising techniques. Privately sponsored research may flow from the activities of certain firms which supply inputs to the market firms and, over time, develop better products; the adoption of this research increases the efficiency of the users of the inputs. Or, as argued in a previous chapter, private research may be sponsored by some of the larger firms primarily in an effort to gain a competitive advantage, but often leading to industry-wide changes in operations.

In the United States, there is a combination of public and private efforts which complement, supplement and sometimes overlay each other. The Land Grant colleges—particularly their agricultural experiment stations and extension services—and much of the United States Department of Agriculture constitute large institutions devoted to research and the dissemination of information. A number of private colleges and universities and some non-Land-Grant public institutions also contribute. Many of the activities of these educational institutions have primary relevance to the firms producing the physical commodity and preparing it for the first receivers, but increasing effort in recent years is directed towards firms processing and distributing the product. Similar public efforts are found in most other nations, but with wide differences in the organizational structures, type of programs, and amount and effectiveness of effort. In some cases they are oriented to certain commodities, often export products; in others they are more closely tied to the farmers' organizations and the concerns of the rural people, and may be rooted in political or cultural conflict. The value judgment that marketing or distribution costs too much often leads to public outcries against the speculator who is assumed reponsible or against the foreigner or other cultural group accused of making monopoly profits, be he a Chinese merchant, a Wall Street banker, a capitalist exploiter, a Jewish middleman, or a Lebanese trader. Rational analysis and reasonable evaluation sometimes are not possible.

Finally, it needs to be reemphasized that advances in research and the communication of the results to operating decision-makers go hand in hand. The latter is essential if the research is to be meaningful. Knowledge is communicated and adopted with greater difficulty when illiteracy is common, when credit is limited and costly, when rural institutions make change difficult, or when the cultural and psychological environment tend to emphasize the status quo.

Briefly a feeling that distribution costs too much and the recognition that small firms are unable to support major research programs lie behind public programs to discover cost-reducing techniques. The market

structure (or degree of competition) influences the rate of adoption of research. New ideas may be sought as a competitive device, or dominant firms may very slowly adopt innovations. Both in the United States and in other nations, there may be times when drastic changes are desired but difficult to discover and implement.

Programs to Promote Orderly Marketing

Many raw materials often show wide variations in prices and incomes. Sometimes production and market supplies are stable; sometimes they move in the opposite direction from prices, and sometimes they move in the same direction. Nonetheless, when such swings occur the producers and occasionally the consumer urge actions which will reduce the amplitude of such fluctuations. When the product affected is important to the nation, and those who produce it have political power, then some sort of program is likely to be adopted leading toward orderly marketing. Chapter 10 discussed group actions in several areas, including public action. Here we discuss public policy for orderly marketing, including the international flow of commodities.

Federal and state marketing orders. Marketing orders and agreements permit farmers and processors to organize and establish control over the marketing of commodities. They are most common with respect to urban milk markets and for fruits and vegetables. Since the primary objective is to stabilize and improve producers' incomes, primary political support comes from producers' organizations. The accomplishments of these programs generally are less than the producers' aspirations. Marketing agreements are an economic-institutional device authorized by the federal and state governments, and apply only to producers who sign the agreement. Marketing orders, however, bind the entire industry or group producing and handling the commodity.[1] The Secretary of Agriculture at the federal level and the Director of the state Department of Agriculture on the state level usually are the responsible administrators in legally establishing an order. Consumer interests and their possible reactions become part of the background of opinion in determining the content of both marketing orders and marketing agreements. (For an analysis of supply controls, see Chapter 10.)

The most used of the two forms is market orders. There are a number of reasons why there has been greater use of marketing orders in American agriculture during the past several decades. Better roads and more rapid communication have reduced the price-making role of central wholesale markets. Local auctions, decentralized packing sheds, itinerant

truckers, and particularly direct buying by chain stores or grocery groups have helped to decentralize the process of price making. Producers believe their bargaining position has deteriorated; periodic market gluts sometimes reduce prices to unprofitable levels; and in any case, producers easily become dissatisfied with the returns likely to be paid by a market over which they believe they have little control. Thus they have sought control through orders as a way to stabilize and improve their income position, particularly for milk, fruits, and vegetables.

To a substantial degree, market orders are an institutional device peculiar to the United States. There are numerous examples in other countries, however, of institutional devices that utilize some of the same principles. For example, in Canada the federal government has established delivery quotas on grains. At harvest time only a designated fraction of the production can be delivered to the local elevator; the remainder must be stored at or near the farm. As exports and domestic consumption empty some of the elevator space, additional fractions of the crop may be delivered and sold. This program is combined with advanced payment by the government of a large fraction of the expected selling price, providing farmers with a part of expected income, but keeping the grains from clogging trade channels and depressing current market prices.[2]

Logically, orderly marketing may involve pulling products into marketing channels as well as discouraging or postponing their admittance. In socialized states delivery quotas have this latter connotation. Here they refer to required amounts of production which farms must turn over to the state at specified prices as part of their contribution to the overall economic plan. During war or periods of stress other nations have made similar assessments on producing units in order to have food for the urban economy. In recent years, Pakistan has tried to meet its food problems in part by government purchase of about 10 percent of the food grains and their subsequent distribution to areas of more severe shortages. Pakistan has imported U.S. surpluses also, to strengthen this role.[3]

Commodity loans and storage. Some aspects of the Canadian program bear more resemblance to the non-recourse loans implemented by the Commodity Credit Corporation (CCC). The basic idea of the ever-normal granary is an orderly marketing program with the supplies more evenly distributed over a series of years. The present program embodies a second objective—an increase in farm income via higher commodity prices—and this has overshadowed the original valid stabilizing objective of the program. A number of farm commodities are subject to sig-

nificant variations in the level of production due to uncontrolled variations in rainfall and other natural conditions. Private marketing institutions generally are unable to finance the volume of storage required to stabilize the flow of supplies over a period of years, in view of the uncertainties as to the length of storage and its costs relative to gains in higher prices. Through national programs the uncertainties are reduced and some of the costs absorbed through countervailing gains and losses by consumers and producers.

The existing U.S. loan and storage program has been extensively reviewed, analyzed and criticized.[4] The positive contribution of the program for orderly marketing is overshadowed by the price-raising objectives and by the secular increase in the production of affected farm products. There are lessons in this experience appropriate for other wealthy nations, as in Western Europe, which are seeking to use higher prices to raise incomes in agriculture. The experience also has many implications for international commodity agreements: implications both as to techniques of operation and as to the interplay of political forces. We turn to these.

International controls. Marketing controls across international borders stem from problems similar to those often faced by raw material producers within the domestic economy, unstable prices and consequent wide variations in income. The problem is amplified, however, because of national frontiers. A drop in world prices brings lower foreign exchange earnings, a foreign exchange gap between earnings and desired expenditures, pressure for currency depreciation and a loss of purchasing power for the entire economy. A number of economists, concentrating on the downward pressures and arguing that this is the secular trend, have proposed forced industrialization, import substitution industries, national planning, common markets, and export control programs to maintain higher prices.[5] Attention is directed to three of these, primarily because they have been implemented for some period of time and because they do involve modification of the operations of the market exchange system for agricultural commodities. These are *International Commodity Agreements, Marketing Boards* and *export controls.* By and large, policies have evolved around single commodities, although there may be similar programs for two or three export products, and many resemblances to other products produced in other countries.

There are certain political and economic characteristics which give rise to these policies. Among the political items are the following:

1. There are numerous producers of the commodity within the country.

2. The producers of the product are likely to have substantial political power within their country.
3. A few countries produce a major part of the world supply, and at least the major producing country is desirous of intervening to advance the income of itself and its producers. It is possible to establish close working relationships among these producing countries.
4. There is sufficient competence in public administration to carry out the specific rules adopted.
5. Important consuming countries are sympathetic to the problems of producing countries, and will not protest vigorously against modest corrective measures.

The economic characteristics which tend to prevail include the following:

1. The commodity is a major export for the important producing countries, or for an important area of the nation. Thus it is a prime source of foreign exchange.
2. World prices are quite unstable due to substantial short-run inelasticities of supply and demand. This implies that there are few substitutes in consumption, and no close production in other countries.
3. A closely related point is that production often tends to be unstable because of weather or characteristics peculiar to the crop, yet fixed assets tend to maintain the existing production potential for a substantial number of years. Many of these programs apply to tree crops.
4. A substantial and relatively stable marketing margin exists between producers and consumers, including transportation, processing, and tariffs.

Internationally traded commodities which incorporate these characteristics and for which efforts at international supply controls have been proposed or adopted include: wheat, coffee, cotton, cocoa, tea, quinine, wool, sugar, tin, and rubber.[6] A number of other commodities present the same economic characteristics, but are marketed by a relatively few organizations. Cartel arrangements or implicit understandings keep aluminum, lumber, bananas, and a number of industrial products from joining the list. Complex and conflicting national policies make it impossible to operate international market programs for tobacco. Reasons of health and morality have led to international agreements or understandings on narcotics. The preservation of an adequate annual resource flow requires that the annual catch of whales, seals, and certain fish be limited.

Early efforts at international market control involved a type of export control. The physical volume of exports was reduced or distributed more evenly over time, as a buffer stock operation. This procedure, of-

ten overly rigid, sometimes led to even wider price fluctuations, charges of consumer exploitation, efforts to develop substitutes, and the expansion of production in other countries. Later efforts have sought more flexible quantity controls, or have defined minimum price objectives and held supplies back so long as prices were below this level. The social objectives were defined as price stabilization for producers, and less instability in export earnings for the nation. A closely related policy for the same general objective is an export subsidy program whereby the national government, or a major production entity, follows a two-price program, exporting the amount necessary to maintain internal prices. These policies were designed to be counter-cyclical and have become increasingly so in their effect as economic judgments improved with experience; they still fall far short of their objectives in many cases, however.

A second objective has been more and more emphasized in recent years. Many countries depend on tariffs as an important source of revenue. Some also collect taxes on exports to support general government activities and some special programs related to the export product. The drive for development has led to an increased pressure to use a portion of export revenues to support development activities in other sectors. This may be seen in several ways. Cocoa and palm oil marketing boards in West Africa followed conservative policies: they paid producers less than world prices in the majority of the post war years, consequently accumulating a substantial fund. The leaders of the newly independent countries, not unnaturally, soon created projects to use parts of these funds for development, rationalizing by arguing that they were for the producers' long-run benefit. In Venezuela and other oil-producing countries, harder bargaining is providing a larger share of petroleum earnings for investment in development or improvement in human welfare by government or semi-autonomous agencies. In Argentina under Peron, part of the sales receipts from meat and grains went to the support of industrialization, with unhappy results for a once highly productive, efficient agriculture. In Colombia a combination of an export tax and an exchange rate below market levels on coffee and several other exports provides the government with revenues. For many years part of these revenues has gone to support the activities of the Colombian Coffee Grower's Federation in behalf of coffee production and coffee producers. However, a substantial amount of the revenue now is diverted to other national purposes.

A variety of other devices is used to control exports and imports, but few of them are in the framework of orderly marketing. Export and

import taxes may be used for this purpose, if kept flexible. The procedure is easy to describe, fairly easy to administer, but not very easy to apply effectively in a counter-cyclical manner. A variable export tax is established, with higher rates when prices are high, thus leading towards income stability for producers. The best examples are for rubber in Malaya and wool in Australia during the Korean action. To a degree, these procedures resemble marketing board operations, to be described shortly. Variable import levies also can have market effects. Those recently imposed by the European Economic Community control internal prices and quantities of imports so as to provide price stability within the Community, but at the cost of greater instability for outside producers.

Marketing Boards become agents of government with exclusive export rights. Their operations usually include the provision of internal marketing facilities, buying stations, and sometimes educational activities on improved production and processing techniques. Internal purchase policies, which become rather firm for the marketing season, are established. Export prices may be higher or lower than internal prices depending upon the world production and the strength of demand. Rather than sell at low world prices, supplies may be accumulated for sale when prices are higher. Gains when prices are high are expected to offset losses when world prices are low.

International Commodity Agreements define policies for international trade but may need to be backstopped by internal production and marketing policies. In world markets the policies of the participating countries are for more orderly marketing but usually also involve holding back supplies, e.g., stockpiling to promote more favorable world prices. Each nation usually is given an export quota which it is expected to observe, at least for world commercial markets. Quotas are reviewed periodically, with adjustments in the aggregate amount as demand curves shift, and occasionally with revisions for shares provided by individual countries. Supplemental sales, such as barter transactions or local currency sales to countries with weak currencies, may be condoned as exports which presumably do not affect commercial markets. Such concessional sales or gifts outside the framework of the commodity agreement may or may not be specified.

For the individual firm marketing its own product, or engaged in buying and selling operations, these policies create a wide range of possible problems. Where marketing boards are established there is only one seller so far as exports are concerned. In the case of export taxes, these are passed back to producers in lower prices; in addition, there is one more

step in the export process. For International Commodity Agreements, much depends upon the process by which the agreement is implemented. Because favoritism may be shown in issuing export rights, political pressures may be required to gain a pro rata share of the total quota. The operating agency also must make decisions on how much and where surplus stocks will be held, and the extent to which financing will be provided.

In the last several years other suggestions have been formulated to meet some of the problems of unstable prices in international agricultural markets. One of the more interesting involves a sort of balance-of-payments guarantee scheme. In general terms, it would involve a payment of foreign exchange to exporting countries when export prices are low, and a similar payment by the exporting country when export prices are high.[7]

Clearly each type of export supply control changes the social and economic environment of marketing. Some of the changes in rules within which decisions are made help make the marketing firms, in effect, an agent of public policy. As a result, the interaction between the market firm and society functions in a different framework.

Policies and Programs to Influence Market Supply

Some of the programs just discussed have within them certain aspects of direct reallocation of income, and some of the programs discussed below lead to more orderly marketing. Both groups of programs generally stem from a dissatisfaction with the returns to individuals and resources. While there are many ways in which returns may be modified without materially affecting the specific policies under which the market exchange system operates (e.g., income taxes, free public services, government investments), the political decision often has been made that it is easier, less costly, or morally better to seek certain income improvements through changes in market policies. Thus public policy has evolved a number of market programs for macro-adjustments in production and consumption. These programs have evolved out of particular problems and have changed as experience provided evidence that certain programs did not fully attain the ends desired. While such programs affect the operation of firms that process and distribute food, there is greater concern with the results on farmers and on consuming units. In fact, supply adjustment is more likely to bring new problems to processors and distributors through such things as reduced volume, increased administrative chores, and a necessity to seek information for management decisions from another group of people and institutions. Despite the controversy that surrounds them, the persistence of policies to govern the flow of

products indicates that a substantial fraction of the interested public finds the results of this modification of the market acceptable, and that the results are in accordance with their concepts of fair returns to individuals and resources.

There are many occasions when modest adjustments of supply or demand do not bring the results which political decision-makers, under pressure from interested groups, deem adequate. Under such circumstances, more drastic measures are proposed and often taken. They may involve supply restriction or expansion, and demand expansion or restriction, implemented through direct action upon producers via subsidies, taxes, or legal regulation, and similar actions upon consumers. While such programs affect activity in the market, they may function without changing the traditional pattern of market operation. Some, in fact, may distribute products directly to low-income consumers and not affect the market at all.

Acreage allotments and acreage retirement. Supply control through acreage adjustment has been an important part of policy for income reallocation in the United States. Acreage allotments are attempts to reduce total production by limiting the use of a single factor of production—land. To the extent that the program is effective the volume of product to be marketed is reduced. However, the increased use of other inputs often offsets much of the effect of reduced acreage planted—hence, to this extent, there is little effect on the marketing process. Schultz has estimated that land today in the United States represents little more than 10 percent of the total agricultural inputs.[8]

Acreage retirement may take out a fraction of the land widely scattered over the country, in which case it has effects similar to those under acreage allotments. However, acreage retirement may take out entire farms and may be far more important in some areas than others. In such cases the local marketing firms may undergo highly differential impacts, in some areas going out of business, in others not.

There are few programs in other countries in which public policy directs the non-use of agricultural resources. Most countries are plagued with food deficits and a need for imports, rather than a surplus. Perhaps the closest to acreage allotments is the Brazilian requirement, during the Thirties and Forties, that no new coffee trees be planted. Even this modest effort to reduce supply in line with world demand was more honored in the breach than in the observance. Low coffee prices, rather than the prohibition of planting, was the primary reason for a gradual decline in Brazil's productive capacity.

Overall supply management. A comprehensive system of supply management has been proposed in recent years for U.S. agriculture.[9] In a sense, the proposal is for sufficiently rigid production restrictions to attain the supply and price objectives stated in earlier legislation but not attained (except for tobacco and sugar) because of factor substitution for the restricted input. The agricultural programs of 1933-1962 attained part of their farm income objectives by the allocation of some government revenues to the storage price support and market diversion program. It can be debated whether market prices (as compared with no program), were raised by government intervention or lowered because uncertainty was reduced substantially. In any case, with the production capacity now available, it is clear that a decision to eliminate the program would lead to much lower prices.[10]

Farmers and consumers have become accustomed to a program in which only part of the price and income objectives have been attained, and this by government purchase of a fraction of the crop. Protests about the size of the public expenditures required has emphasized a half-forgotten element: sufficient restrictions on production so that surpluses do not accumulate and present supplies can be gradually reduced. Such a procedure requires (1) effective supply controls, (2) a reduced volume of marketing per farm, (3) a higher farm price so that the reduced volume will bring the same or higher net farm income, and (4) higher prices to consumers. Several kinds of value conflicts appear, partly for the individual within a group, partly among groups in the society.

Effective supply management implies a new pattern of decisions for the production unit—a reallocation of resources and less use of total resources so as to produce only a specified total quantity. Up to now, there have been few restrictions on day-to-day production decisions once the land is set aside. Most farmers probably would prefer more freedom even though it means more federal taxes spent in agricultural programs. Moreover, farmers' alternatives appear to them to imply no change in income but more restrictions; hence, they are inclined to prefer the present over the proposed program—this at a time when technology allows them to handle more acres, grow more bushels, and increase output per man.

Supply management, effectively implemented, means a smaller volume of product to be processed and marketed. It also implies a much smaller storage operation. Firms engaged in processing, transporting, and distributing commodities can expect a smaller volume of business and consequent adverse effects on profits, even if they try to increase margins. The specific means by which supply management is implemented are

likely to increase rather than reduce unit marketing costs—though this is not certain.

An effective control of supply will raise farm prices and probably increase the market margins. Prices to consumers are likely to increase. Consumers will be far more conscious of the higher food prices than of the probable lower tax costs; moreover, the incidence of higher food costs will be far more regressive than the incidence of the lower tax cost (or changes in the use of tax revenues).

Effective supply management leading to higher consumer prices is likely to have substantial effect on wage levels. The first reason for this is that many wage contracts are tied to the index of the cost of living; thus, higher food prices will lead to an automatic increase in wages and pressures for inflation.[11] The second reason is that higher food prices could lead to pressures for renegotiation of wage and salary contracts—a less immediate but nonetheless direct relationship between food prices and pressures for higher wages.

In less developed countries, the pressures tend to be the other way. There the need is for greater production, preferably at lower prices to consumers, so that the urban workers are less likely to be mobilized for political protests. Compulsory quotas, higher prices to producers but not to consumers, subsidies to farm inputs (such as cheap fertilizer), and prestige incentives may be drawn upon to stimulate farm production, along with the more usual production incentives: technical information, production credit, land reform, and more effective marketing facilities.

In summary, in the United States the direction of value resolution outside the market as such seems to lead towards a decision to have mild and partially effective production controls and large expenditures of public funds, with no substantial increase in food prices even if it means higher taxes or an unbalanced budget. This position is based in part on a concern with holding food prices down to prevent a wage price spiral which would press towards dollar devaluation or further balance-of-payments difficulties. Firms operating within the food market would appear to benefit from programs which do not involve a reduction in the volume of commodities handled. There are other values which affirm that the role of the government should be reduced and that government expenditures should decline, but these do not seem to be strategically as relevant as those discussed above. The legislative difficulty of proposed supply-management programs suggests that political decision-makers prefer budget deficits and federal expenditures for farm programs to rigid controls and higher food prices. In less-developed nations overall supply management implies the equitable movement of food products to con-

sumers. It also implies attaining an increase in the amounts of food products moving in market channels and, therefore, measures which encourage the farmer to expand producton.

Policies and Programs Affecting Demand and Consumption

Most of the programs which affect demand and consumption form part of an administrative system of allocating returns to individuals. In many cases the additional income does augment the possible flow of commodities through the bargaining exchange system in whole or in part. Little effect on the market occurs, however, when schools and orphanages receive commodities directly rather than by purchase in retail stores, or when medical help is provided in free clinics located in slum areas.

There are many types of programs which fall into this general category.

1. Domestic welfare programs provide income to unemployed people, to dependent children and to people unable to work. A food stamp plan is also a way in which purchasing power for food can be augmented.
2. The direct distribution of food to schools or to other institutions increases the amount consumed and usually uses only a part of the regular market exchange system.
3. Another broad category of public policy which influences demand includes the programs to stimulate growth and to change the structure of the economy. Public investment programs, government-influenced private investment programs, the tax system, the fiscal-monetary policies, the nature of the labor-management settlements on wage levels and policies all have significant effects upon the nature and level of demand for commodities and services.
4. Public programs sometimes affect the industrial demand for certain products. Public research may increase the uses for some products, or prevent a decrease as private research develops substitute products. Subsidies, for example to highways, may vastly expand the demand for a commodity (autos and trucks) or may induce greater use of one raw material than another (synthetic rubber for natural rubber).
5. Similar measures may operate in the international arena, including school lunches, local currency sales, subsidized exports, and dollar loans and grants (for broad development purposes).
6. There may also be programs to reduce demand, such as the British campaign against tobacco, the high taxes on tobacco and alcohol in many countries, and the Italian ban on tobacco ads on television.

This brief discussion of direct distribution indicates that there clearly is an interaction with, and sometimes a substantial modification of, the market processes because of real or fancied grievances about the past operations of the system. Many modifications have changed the rules by

which the market exchange system functions, or, when this is not possible, supplemented the results of the system by distributing goods and services outside the market system. A modern society includes significant elements of both modifications. The specific programs and the policy objectives are subject to periodic review and change as new problems come into view, or as existing programs fail to attain their objectives.

Summary

We have tried to point out ways in which public attitudes and the views of decision-makers can establish policies. These policies lead to programs which affect the market in a variety of ways. Policy is a variable in the market. Whether they approve or disapprove of the policies, those engaged in marketing activities either are forced into certain actions or find it to their advantage so to act. Through such responses the validity and effectiveness of the policies and programs are tested, giving the political decision-makers an opportunity for periodic review. In such reviews the market firm participates along with other interested parties. Thus the market also may become a variable in policy.

Notes

CHAPTER 2

1 The concepts of transaction and exchange may be applied to all types of economic interaction just as the concept of the transformation function may be applied to physical changes in production, distribution and consumption. While the special interest of this book is marketing, it is important to develop concepts that can be used to study the connection between all parts of the economy.

2 For an introduction to the literature of this area see Gardner Lindzey (ed.), "Role Theory," *Handbook of Social Psychology* (Cambridge, Mass.: Addison-Wesley Publishing Co., Inc., 1954), I, Chap. 6.

3 See John F. A. Taylor, "Politics and the Human Covenant," *Centennial Review*, VI, 1 (Winter 1962), 9.

4 "Personality is the dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought." Gordon W. Allport, *Patterns and Growth in Personality* (New York: Holt, Rinehart & Winston, 1961), p. 28.

5 A limited number of studies have been made attempting to relate personality characteristics (the result of socialization) to economic activity. Two of these dealing specifically with the relationship to some measures of economic growth are: Everett F. Hagen, *On the Theory of Social Change: How Economic Growth Begins* (Homewood: The Dorsey Press, 1962), and David McClelland, *The Achieving Society* (Princeton: D. Van Nostrand Co., 1961).

6 For a discussion of these see Stephen H. Sosnick, "Operational Criteria for Evaluating Market Performance," paper presented at Market Structure Workshop, Purdue University, June 1962. Also, "A Critique of Concepts of Workable Competition," *Quarterly Journal of Economics*, LXXII (August 1958), 380-423.

7 See Corwin D. Edwards, *The Price Discrimination Law* (Washington, D.C.: The Brookings Institution, 1959). Also see Chapter 15 of this book, on regulation of competition.

8 Similar distinctions have been made by others, such as reciprocity, redistribution and market by Karl Polanyi, Conrad Arensberg and Henry Pearson, *Trade and Market in the Early Empires* (Glencoe: The Free Press, 1957); rationing and bargaining by John R. Commons, *Institutional Economics* (New York: Macmillan, 1934); and integrative, threat and exchange by Kenneth E. Boulding, "Towards a Pure Theory of Threat System," *American Economic Review*, LIII, 2 (May 1963), 424-34. Also see Robert Dahl and Charles Lindblom, *Politics, Economics and Welfare* (New York: Harper and Brothers, 1953).

9 Raymond Firth, *The Elements of Social Organization* (London: Watts, 1951), p. 142. For additional references to cases of status see I. Schapera and A. J. H. Goodwin, "Work and Wealth," in Schapera (ed.), *The Bantu-Speaking Tribes of South Africa* (London: G. Routledge, 1937), p. 166; George Dalton, "Traditional Production in Primitive African Economies," *Quarterly Journal of Economics*, LXXVI (August 1962), 360-78, and Paul Bohannan and George Dalton (eds.), *Markets in Africa* (Evanston: Northwestern University Press, 1962). What we have called a status exchange system has generally been referred to as a reciprocity system in the sociological literature.

10 Monopoly has some elements of both an administrative and a bargained exchange system in that managers of a monopoly hold positions granting considerable discretion in establishing exchange rates but with some limits to bargaining power. This is recognized when we speak of "administered prices" in the United States economy.

11 Robert L. Clodius and Willard F. Mueller, "Market Structure Analysis as an Orientation for Research in Agricultural Economics," *Journal of Farm Economics,* XLIII, 3 (August 1961), 529.

12 See Kenneth E. Boulding and Pritam Singh, "The Role of Price Structure in Economic Development," *American Economic Review,* May 1962, p. 33.

13 See John M. Clark, *The Economics of Overhead Costs* (Chicago: University of Chicago Press, 1923).

14 For a related discussion see Glenn L. Johnson, "Stress on Production Economics," *Australian Journal of Agricultural Economics,* June 1963.

15 This often leads to the suggestion that these services in fact be bought and sold in the market, or that attempts be made to guess what their price would be if they were in the market. This still begs the question of the appropriate exchange rules.

16 Frank Knight, *The Economic Organization* (New York: Augustus M. Kelley, 1951), p. 67.

17 Care must be taken by the researcher to avoid circular analysis. To some extent, the values people hold are influenced by the type of economic system they live in. Then, if the existing economic system is to be evaluated in terms of the values which it in part produced, the analysis becomes circular.

18 Alfred Marshall, *Principles of Economics* (8th ed.; New York: The Macmillan Co., 1949), p. 134.

CHAPTER 3

1 Simon Kuznets, "Economic Growth and the Contribution of Agriculture: Notes on Measurement," *International Journal of Agrarian Affairs,* III (April 1961), 56.

2 Simon Kuznets, *Six Lectures on Economic Growth* (Glencoe: The Free Press, 1959), pp. 24-25.

3 S. J. Patel, "Rates of Industrial Growth in the Last Century," *Economic Development and Cultural Change,* LX, 1 (April 1961), 329.

4 *Ibid.,* p. 328.

5 A. G. B. Fisher, "Production, Primary, Secondary and Tertiary," *Economic Record,* XV (1939), 24-38.

6 Colin Clark, *The Conditions of Economic Progress* (2nd ed.; London: Macmillan, 1951), pp. 395 ff.

7 See Robert L. Heilbroner, *The Making of Economic Society* (Englewood Cliffs: Prentice-Hall, 1962).

8 Richard H. Holton, "Economic Development and the Growth of the Trade Sector in Italy," *Banca Nazionale del Lavoro, Quarterly Review,* 62 (September 1962), p. 250.

9 Harold Barger, *Distribution's Place in the American Economy Since 1869* (Princeton: Princeton University Press, 1955), p. 52.

10 Kuznets, *Six Lectures on Economic Growth, op. cit.,* Table 5, p. 45.

11 *Ibid.*

12 Barger, *op. cit.,* p. 5. Also see Fred M. Jones, *Middlemen in the Domestic Trade of the United States* (Urbana: University of Illinois, 1937). For British data see J. B. Jeffreys, *Retail Trading in Britain, 1850-1950* (Cambridge: Cambridge University Press, 1954), and Margaret Hall, John Knapp and Clement Winston, *Distribution in Great Britain and North America* (Oxford: Oxford University Press, 1961).

13 Richard H. Holton, "Economic Development and the Growth of the Trade Sector in Italy," *Banca Nazionale del Lavoro, Quarterly Review,* 62 (September 1962), pp. 240-57.

14 Richard H. Holton, "Marketing Structure and Economic Development," *The Quarterly Journal of Economics,* LXVII (August 1953), 361; S. W. Mintz, "The Jamaican Internal Marketing Pattern: Some Notes and Hypotheses," *Social and Economic Studies,* IV (March 1955), 96-103; Alice Dewey, *Peasant Marketing in Java* (New York: The Free Press of Glencoe, 1962), and Paul Bohannan and George Dalton (eds.), *Markets in Africa* (Evanston: Northwestern University Press, 1963).

15 P. T. Bauer and B. S. Yamey, "Economic Progress and Occupational Distribution," *Economic Journal,* December 1951, pp. 741-55. In addition to these data from West Africa, the case of Lebanon, where two-thirds of the national income in the early 1960's is generated in the service sector, should be examined. See Yusif A. Sayigh, *Entrepreneurs of Lebanon* (Cambridge: Harvard University Press, 1962), p. xi.

16 Kuznets, *op. cit.,* pp. 59-60.

17 Douglass North, *The Economic Growth of the United States, 1790-1860* (Englewood Cliffs: Prentice-Hall, 1961).

18 United Nations, *The United Nations Development Decade: Proposals for Action,* New York, 1962, p. 2.

19 A. J. Youngson, *Possibilities of Economic Progress* (Cambridge: Cambridge University Press, 1959), p. 284.

20 Robert M. Stern, "A Century of Food Exports," *KYKLOS,* XIII (1960), 46.

21 "Increasing Returns and Economic Progress," *Economic Journal,* December 1928, pp. 527-42.

22 E. A. G. Robinson (ed.), (New York: St. Martin's Press, 1960).

23 Bela Balassa, *The Theory of Economic Integration* (Homewood: Richard Irwin, 1961).

24 Richard Holton, "Economic Development and the Growth of the Trade Sector in Italy," *op. cit.,* pp. 251-54.

25 For a critical review of some of these, see Everett E. Hagen, *On the Theory of Social Change: How Economic Growth Begins* (Homewood: The Dorsey Press, Inc., 1962), chap. 3.

26 Charles Kindleberger, *Economic Development* (New York: McGraw-Hill, 1958), chap. 6.

27 A review of the literature on measures to reshape the structure of trade in

agricultural produce is found in P. T. Bauer and B. S. Yamey, "The Economics of Marketing Reform," *The Journal of Political Economy,* LXII (June 1954), 210-35.

28 Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge, Mass.: Harvard University Press, 1962).

29 Albert O. Hirschman, "Comments on a Framework for Analyzing Economic and Political Change," in *Development of the Emerging Countries: An Agenda for Research* (Washington, D.C.: The Brookings Institution, 1962), p. 41.

30 *Resource and Output Trends in the United States Since 1870,* Occasional Paper 52 (New York: National Bureau of Economic Research, 1956).

31 For a review, see Richard L. Kohl, *Marketing of Agricultural Products* (2nd ed.; New York: Macmillan, 1961), chap. 7, "The Cost of Marketing."

32 See Geoffrey S. Shepherd, *Marketing Farm Products* (3rd ed.; Ames: Iowa State University Press, 1955), chap. 20, "Reducing Marketing Costs by Co-operation."

33 Rome, 1958.

34 "Market Structures for Economic Development," *Journal of Farm Economics,* XLI (December 1959), 1323-26.

35 "The Role of Marketing in the Development of Backward Agricultural Economies," *Journal of Farm Economics,* XLIV (May 1962), 349-62.

36 Frank Montgomery Dunbaugh, *Marketing in Latin America* (New York: Printers' Ink Book Company, 1960), pp. 186-91. See also Richardson Wood and Virginia Keyser, *Sears Roebuck de Mexico, S.A.* (Washington, D.C.: National Planning Association, 1953).

37 Peter F. Drucker, "Marketing and Economic Development," *Journal of Marketing,* II (January 1958), 257-58. For additional cases of the effects of changes in distribution on production see F. J. Fischer, "The Development of the London Food Market: 1540-1640," *Economic History Review,* April 1935, pp. 46-64; George A. Elgass, "Marketing in Japan: An Expanding Economy," in William D. Stevens (ed.), *The Social Responsibilities of Marketing* (Chicago: American Marketing Association, 1962), pp. 425-33; H. A. Wooster, " A Forgotten Factor in American Industrial History," *American Economic Review,* March 1925, pp. 14-21; L. E. Atherton, *The Pioneer Merchant in Mid-America* (Columbia: University of Missouri. 1939).

38 Frank Montgomery Dunbaugh, *op. cit.,* pp. 186-87.

39 Gustav F. Papanek, "The Development of Entrepreneurship," *America Economic Review,* LII (May 1962), 46-58, and P. T. Bauer, *Economic Analysis and Policy in Underdeveloped Countries* (Durham: Duke University Press, 1957).

40 N. R. Collins and R. H. Holton, "Programming Changes in Marketing in Planned Economic Development," *KYKLOS,* XVI (January 1963), 124, and Douglass North, *The Economic Growth of the United States, 1790-1860* (Englewood Cliffs: Prentice-Hall, 1961).

41 Robert L. Clodius and Willard F. Mueller, "Market Structure Analysis as an Orientation for Research in Agricultural Economics," *Journal of Farm Economics,* XLII (August 1961), 515-24.

42 Joe S. Bain, *Industrial Organization* (New York: John Wiley and Sons, 1959), p. 7.

43 Sol Tax, *Penny Capitalism: A Guatemalan Indian Economy* (Washington, D.C.: Smithsonian Institution. Institute of Social Anthropology Publication No. 16, 1953, reprinted by University of Chicago Press, Chicago, 1963). Alice Dewey, *Peasant Marketing in Java* (New York: The Free Press, 1962).

44 See Willard F. Mueller, "Some Market Structure Considerations in Economic Development," *Journal of Farm Economics,* May 1959, pp. 414-25.

45 Gideon Rosenbluth, "Measures of Concentration," in *Business Concentration and Price Policy* (Princeton: Princeton University Press, 1955), pp. 57-95.

46 "Industrial Organization and Economic Progress," in Harvey J. Levin (ed.), *Business Organization and Public Policy* (New York: Rinehart, 1958), p. 133.

47 Mueller, *op. cit.,* p. 416.

48 Joe S. Bain, *op. cit.,* p. 11.

49 By production unit or distribution unit is meant the primary economic unit of organization, such as the firm. For a particular analytical purpose, one might also consider an industry or some primary economic sector to be the basic unit.

50 This is not the traditional consumption function of Keynesian analysis or the indifference framework of general equilibrium theory. Rather it is the transformation relationship between (1) the input of specific goods and services consumed within the context of a particular set of social organizational rules, and (2) an output which constitutes the nature and quality of human life.

51 The term "conventional input" is used here to draw the same distinction that now has some vogue in the literature in discussions of education and technological change as (nonconventional) economic inputs.

52 We understand marketing as previously defined in Chapter 2 to include both the physical transformation processes of distribution and the social organizational matrix in which the physical distribution processes are embedded. It should be noted that the authors of Chapter 2 use the term "exchange system" to describe the subset of the social system which is linked to the distribution processes. The term is used in the same sense in this chapter.

53 North, *op. cit.,* chap. 4 and 5.

54 Percy W. Bidwell and John I. Falconer, *History of Agriculture in the Northern United States* (New York: Peter Smith, 1941), p. 126. Also see Marvin W. Towne and Wayne D. Rasmussen, "Farm Gross Product and Gross Investment in the Nineteenth Century," in *Trends in the American Economy in the Nineteenth Century,* Studies in Income and Wealth, National Bureau of Economic Research, 24 (Princeton: Princeton University Press, 1960), p. 265.

55 North, *op. cit.,* p. 56.

56 Everett Edwards, "American Agriculture—The First 300 Years,'" *Yearbook of Agriculture,* 1940 (Washington: U.S. Department of Agriculture, 1940), p. 194.

57 *Fletcher* v. *Peck,* 6 Cranch 87.

58 Carl C. Taylor, *The Farmers' Movement* (New York: American Book Co., 1953), pp. 23-27.

59 B. J. Wright, *The Contract Clause of the Constitution* (Cambridge, Mass.: Harvard University Press, 1938), p. 56.

60 John B. McMaster, *A History of the People of the United States* (New York: D. Appleton and Co., 1892), III, 415.

61 *Sturges* v. *Crowninshield.*

62 *Ogden* v. *Saunders,* 12 Wheaton 213.

63 Much evidence can be found in H. W. Dickinson, *Robert Fulton* (New York: John Lane, 1913).

64 *Ibid.,* p. 159.

65 *Dartmouth College* v. *Woodward,* 4 Wheaton 518.

66 Carl Swisher, *American Constitutional Development* (Boston: Houghton Mifflin Co., 1954), p. 157.

67 *Gibbons* v. *Ogden,* 9 Wheaton 1.

68 Alpheus T. Mason and William W. Beaney, *American Constitutional Law* (Englewood Cliffs: Prentice-Hall, Inc., 1959), p. 349.

69 *Charles River Bridge* v. *Warren Bridge,* 11 Peters 420.

70 W. W. Rostow, *The Stages of Economic Growth* (London: Cambridge University Press, 1960), p. 38.

71 Willard Hurst, *Law and Social Process in United States History* (Ann Arbor: University of Michigan Law School, 1960), pp. 82-83.

72 Bidwell and Falconer, *op. cit.,* p. 236, and Louis B. Schmidt and Earle D. Ross, *Readings in the Economic History of American Agriculture* (New York: Macmillan, 1925), p. 375.

73 Robert W. Fogel, "A Quantitative Approach to the Study of Railroads in American Economic Growth," *Journal of Economic History,* June 1962, p. 168.

74 The Slaughterhouse Cases, 16 Wall 36.

75 34 U.S. 113.

76 John R. Commons, *Legal Foundations of Capitalism* (Madison: University of Wisconsin Press, 1924, 1957), p. 34.

77 *Ibid.,* p. 52.

78 See Fogel, *op. cit.*

79 *Chicago, Milwaukee and St. Paul Railway Co.* v. *Minn.,* 134 U.S. 418 (1890).

80 165 U.S. 589 (1897).

CHAPTER 4

1 See, e.g., Leon Festinger, *A Theory of Cognitive Dissonance* (Evanston: Row, Peterson & Co., 1957).

2 See Frank H. Knight, *Risk, Uncertainty and Profit* (New York: Kelly & Millman, Inc., 1957). See also R. D. Luce and H. Raiffa, *Games and Decisions: Introduction and Critical Survey* (New York: John Wiley & Sons, 1957), p. 13.

In general, certainty situations are defined as those in which factual and normative concepts are treated as if perfectly known by the firm. Risk situations imply that a good deal is known about the probability distributions regarding future events. Thus, managers can buy protection in the form of insurance. Under uncertainty situations, probability distributions are unknown; therefore, the firm cannot handle the situation with insurance schemes and so

forth, and hence must use other strategies. For the sake of simplicity in discussion here, we will use the term *uncertainty* to include all situations not covered by the usual assumptions of certainty. We might add that this includes most of the situations in the real world.

3 John McDonald, "How Businessmen Make Decisions," *Fortune,* August 1955, pp. 84 ff.

4 For further insights on the formulation of expectations by firms see Mary Jean Bowman (ed.), *Expectations, Uncertainty, and Business Behavior* (New York: Social Science Research Council, 1958); *Proceedings of Research Conference on Risk and Uncertainty in Agriculture,* Great Plains Council Publ. No. 11, North Dakota Agr. Expt. Sta., August 1955; Glenn L. Johnson, Albert N. Halter, Harald R. Jensen and D. Woods Thomas, *A Study of Managerial Processes of Midwestern Farmers* (Ames: Iowa State University Press, 1961).

5 See, for example, Frank H. Knight, *Risk, Uncertainty and Profit* (Boston: Houghton-Mifflin Co., 1921); Paul A. Samuelson, *Foundation of Economic Analysis* (Cambridge, Mass.: Harvard University Press, 1947), chap. XI; William Baumol, *Economic Dynamics* (New York: Macmillan, 1959); and J. March and H. Simon, *Organizations* (New York: John Wiley & Sons, 1958).

6 A. Wald, in particular, has done noteworthy work on sequential analysis and statistical decision functions. Wald's theory recognizes that "experimentation in several stages is frequently preferable to experimentation in a single stage since in the former type of experimentation, the selection of the chance variables to be observed in the next stage may be dependent upon the observed values obtained in all the preceding stages." See his *Sequential Analysis* (New York: John Wiley & Sons, 1947); A. Wald, *Statistical Decision Functions* (New York: John Wiley & Sons, 1950).

CHAPTER 5

1 Milton Friedman, *Essays in Positive Economics* (Chicago: The University of Chicago Press, 1953), p. 7. Pages 7-43 deal with the methodology of positive economics; they include a discussion of the invalid proposition that a hypothesis can be tested by the realism of its assumptions, and a discussion of the significance and role of the assumptions of a theory.

2 *Ibid.,* p. 14.

3 For a detailed discussion leading up to these results, see Warren H. Vincent, (ed.), *Economics and Management in Agriculture* (Englewood Cliffs: Prentice-Hall, Inc., 1962), chap. 3-5.

4 The unit of measurement along the abscissa in Figure 4 is not the same as in Figure 5. For the industry it might be thousands of pounds, whereas for the firm it is just pounds.

5 For a concise discussion of the theory of monopoly, including good examples, see George J. Stigler, *The Theory of Price* (New York: The Macmillan Co., 1952), pp. 204-22.

6 *Ibid.,* pp. 222-28.

7 For examples of methods used in developing competitive classification see A. G. Papandreou and J. T. Wheeler, *Competition and its Regulation* (Englewood Cliffs: Prentice-Hall, Inc., 1954), chap. 2, 3, and 4.

CHAPTER 6

1 See for example Milton Friedman, *Price Theory, A Provisional Text* (Chicago: Aldine Publishing Co., 1962), especially Appendix B, "Problems," pp. 268-85.

2 Augustin Cournot, *Researches into the Mathematical Principles of the Theory of Wealth,* 1838, trans. Nathaniel T. Bacon (2nd ed.; New York: Macmillan Co., 1927).

3 For an exposition of developments prior to 1950, see William Fellner, *Competition Among the Few,* 1949 (Reprint; New York: Augustus M. Kelley, 1960). Examples of more recent attempts are Martin Shubik, *Strategy and Market Structure* (New York: John Wiley and Sons, Inc., 1959), and William J. Baumol, *Business Behavior, Value and Growth* (New York: Macmillan Co., 1959). Baumol's model, although he calls it oligopoly, is really pure monopoly, except that instead of the firm maximizing net revenue it maximizes total revenue subject to the constraint that profit be not less than some minimum level. A good review of both Shubik and Baumol is by Carl Kaysen, *The American Economic Review,* L, 5 (December 1960), 1036-40.

4 This statement is perhaps somewhat unfair, in that it implicitly puts the burden of proof on the proponents of alternatives to the pure competition and pure monopoly models. The justification for it is that the alternatives are (generally) both more complicated and more specialized than pure competition or pure monopoly, and therefore the burden of proof *should* be on their proponents.

5 Joe S. Bain, *Industrial Organization* (New York: John Wiley and Sons, Inc., 1959), p. 7.

6 Various authors offer various lists of decision variables which should be considered or included in an "ideal" or complete theory of firm behavior. Shubik (*op. cit.,* p. 251) lists eight: pricing, advertising, production and inventory scheduling, styling, model change, innovation, capital investment, and financing, and says, "depending upon the specific structure of a market, some subset of these decision variables will dominate the competition."

7 It is mathematically straightforward to generalize the pure monopoly model to take account of such things as, for example, advertising, or the production of multiple products. See the appendix to this chapter.

8 Through most of this chapter, we use the terms "net revenue" and "profit" interchangeably, and take total cost to include a "normal" return on the capital invested. The "normal" return may be defined as the minimum required to keep capital from moving out of the firm or industry being discussed.

9 It should perhaps be emphasized that we do not need to assume that the firm knows its marginal revenue or marginal cost functions, or even the demand function it faces. It might, for example, maximize net revenue simply by trial and error, and the equality of marginal revenue and marginal cost follows as a result.

10 Baumol, *op. cit.,* p. 28.

11 Independence is not a necessary condition for price discrimination, but the solution becomes more complicated in its absence. See the appendix to this chapter.

12 The practice of price discrimination by individual firms in agricultural markets is well documented. For specific cases see Chapter 15 of this book. By substituting industry demand for firm demand and the industry supply curve for

the firm's marginal cost curve, this analysis also becomes applicable to many other situations in agricultural marketing (e.g. fluid and manufactured milk, domestic and foreign markets).

13 George J. Stigler, *The Theory of Price* (revised ed.; New York: Macmillan Co., 1952), p. 229. A better musical analogy might be an improvising jazz group.

14 For one example of a recent empirical study of an agricultural market in which some evidence of collusive behavior was suggested, see John N. Moore and Robert L. Clodius, "Market Structure and Competition in the Dairy Industry," Wisconsin Agricultural Experiment Station Research Bulletin 233, March 1962.

15 To give an example, suppose there are three firms in the industry; let S_1, S_2, S_3 denote the slopes of their respective marginal cost curves, with S_m denoting the slope of the industry marginal revenue curve. Then the second-order conditions for maximum industry profit are

$$S_m - S_1 < 0,$$
$$S_m(S_1 + S_2) - S_1S_2 < 0, \text{ and}$$
$$S_m(S_1S_2 + S_1S_3 + S_2S_3) - S_1S_2S_3 < 0.$$

16 Industries with several large national firms and many smaller ones are a fairly common form of organization in agricultural markets.

17 Some of the many theories which have been proposed are discussed by Fellner, *op. cit.*, Shubik, *op. cit.*, and Baumol, *op. cit.* See also H. Gregg Lewis, "Some Observations on Duopoly Theory," *American Economic Review*, XXXVIII, 2 (May 1948), 1-9.

18 A necessary and sufficient condition for stability of the equilibrium (under the stated assumptions about behavior) is $S_{r1}S_{r2} < 1$, where S_{r1}, S_{r2} are the slopes of the firms' respective reaction functions. Let S_p be the slope of the market price function and for $i = 1,2$, let S_i be the slope of the i^{th} firm's marginal cost function and S_{mi} the slope of its marginal revenue function; then $S_{ri} = (S_{mi} - S_p)/(S_i - S_{mi})$; and $-S_{ri} < 1$ if $S_i > S_p$.

19 Occasional statements in the economic theory literature to the effect that something called perfect knowledge is a necessary condition for something called perfect competition can be true only by tautological definition, and they suggest a relationship between "knowledge" and applicability of the competitive model which is the opposite of the relationship which probably actually exists. The pure competition model can be applicable to markets in which participants have comparatively little knowledge, and if knowledge ever approached being perfect, it appears more likely that perfect collusion, rather than perfect competition, would result. See Shubik, *op. cit.*, pp. 169-71.

20 The originators of the theory of games were John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (3rd ed.; Princeton: Princeton University Press, 1953). A good exposition is by J. C. C. McKinsey, *Introduction to the Theory of Games* (New York: McGraw-Hill, 1952). Perhaps the most extensive, if not entirely successful, effort to formulate a combined game-theoretic, "market structure" approach to oligopoly analysis which might at least potentially be given empirical content is that of Shubik, *op. cit.* Another such endeavor, less formalized than Shubik's, is that of Andreas G. Papandreou and John T. Wheeler, *Competition and Its Regulation* (Englewood Cliffs: Prentice-Hall, Inc., 1954).

21 The kind of behavior just described is called "maxmin" behavior, or, if the payoff matrix is written in terms of losses rather than gains, "minmax" behavior. The assumption that players "do" or "should" behave in this way

makes pretty good sense in a "zero-sum" game, i.e., a game in which one player's loss is always equal to the other player's gain. It makes considerably less sense in the duopoly situation, which is typically not a zero-sum game, but it is not inconceivable that it could occur.

22 Considerations of this kind have led some theorists to conclude that duopolists should always be treated as in collusion "against the market" to maximize joint profit, and that the only interesting analytical problem is how the profit gets divided—a problem which, as already mentioned, we are not considering here.

23 In the theory of games the concept of "mixed (or probabilistic) strategies" is introduced, and a fundamental theorem is that every zero-sum two-person game with mixed strategies is "generally strictly determined." Duopoly and oligopoly situations are, however, not generally zero-sum, and in any case it is questionable whether a model based on the use of a random device to make major decisions would have very general applicability. Shubik, for example, made little use of mixed strategies in his analysis of market structure and competitive behavior, *op. cit.*, page 16.

24 In addition to Shubik, *op. cit.*, and Papandreou and Wheeler, *op. cit.*, see, for example, E. A. G. Robinson, *The Structure of Competitive Industry* (revised; London: Nisbet and Co. Ltd., 1935), and Joe S. Bain, *Industrial Organization* (New York: John Wiley and Sons, Inc., 1959).

25 Bain, *op. cit.* "Concentration" is typically measured by the percent of the total output of the industry which is produced by the X largest firms, where X is some small number such as 4 or 8.

26 Firm 1 can clearly always impose a net loss on Firm 2 by choosing Q_1 large enough, no matter what is the level of Q_2. The resulting level of Q_1 may or may not result in a net loss to Firm 1.

27 It is assumed that with $NR_2 \geq 0$, Firm 2 will not go out of business, since the total cost function was defined to include a normal rate of return on the investment.

28 It can be shown that, given $NR_2 \geq 0$, $\partial NR_1/\partial Q_1 > 0$ for all possible values of Q_1 and Q_2. Also of course $\partial NR_2/\partial Q_1 < 0$. Hence the restriction $NR_2 \geq 0$ reduces to the simpler $NR_2 = 0$; to maximize its own profit, Firm 1 forces Firm 2 to operate at zero profit, in this case.

29 See, for example, Shubik, *op. cit.*

30 Edward Chamberlin, *The Theory of Monopolistic Competition* (6th ed.; Cambridge, Mass.: Harvard University Press, 1948). The main difference is that in Chamberlin's model each firm takes other firms' prices (rather than outputs) as given. (*Ibid.*, page 90.) In his discussion, Chamberlin puts much emphasis on product differentiation and selling costs. Our view is that the main characteristics of "monopolistic" or "imperfect" competition are: (a) free entry, with consequent zero or near-zero profit levels and (b) industry equilibrium *without* equality of price and marginal costs. These conditions could conceivably prevail in a variety of circumstances, one of which is illustrated here.

31 Thus m is typically not an integer, but it is not illogical to introduce the notion of a "fractional" firm, for illustrative purposes. A "half size" firm, for example, is a firm with cost functions such that it always produces just half the output, and at just half the total cost, of a "full size" firm.

32 For a critical evaluation of monopolistic competition theory in general, see George J. Stigler, *Five Lectures on Economic Problems* (London: Longmans, Green and Co.; 1949), chap. 2, "Monopolistic Competition in Retrospect."

33 *Ibid.*, chap. 4, "The Mathematical Method in Economics."

34 This is one of many hypotheses we have not discussed. For a clear statement of the hypothesis and a critical analysis of it, see George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," *Journal of Political Economy,* LV, 5 (October 1947), 432-49; reprinted in George J. Stigler and Kenneth E. Boulding (eds.), *Readings in Price Theory* (Chicago: Richard D. Irwin, Inc.; 1952), 410-39.

35 William H. Nicholls, *Price Policies in the Cigarette Industry* (Nashville: The Vanderbilt University Press, 1951).

36 Joe S. Bain, "Relation of Profit Rate to Industry Concentration," *Quarterly Journal of Economics,* LXV, 3 (August 1951), 293-324. We shall omit discussion of how Bain resolved such problems as how to define "industry" and "profit rate," or how to quantify the concept of "barriers to entry." Problems of this nature, which can be somewhat glossed over in a theoretical discussion, must be resolved in some way (sometimes largely by arbitrary definition) in any empirical investigation.

37 The term "profit" here is used essentially in its ordinary accounting sense, rather than in the sense we have used it in preceding sections.

38 Joe S. Bain, *Barriers to New Competition* (Cambridge, Mass.: Harvard University Press, 1956).

39 Bain himself confined his statistical analyses primarily to two-way tabular comparisons, perhaps partly because the sample of industries used was not random.

40 That is, the probability of obtaining an estimated regression coefficient as large as was obtained, if the corresponding true $\beta = 0$, is less than 1 percent.

41 William H. Nicholls, *Imperfect Competition Within Agricultural Industries* (Ames: The Iowa State College Press, 1941).

CHAPTER 7

1 To define selling costs as "costs incurred in order to alter the position or shape of the demand curve for a product" (Edward H. Chamberlin, *The Theory of Monopolistic Competition* [6th ed.; Cambridge, Mass.; Harvard University Press, 1948], p. 117), seems to beg the question since, in effect, all activities of a firm are intended to affect the demand for the firm's output. This usual definition of selling costs rests on the definition of a product.

2 Russell H. Colley, *Defining Advertising Goals* (New York; Association of National Advertisers, Inc., 1961), p. 51. This book, sponsored by the Association of National Advertisers, was written to assist advertisers in specifying meaningful goals for advertising and in measuring the results of advertising in terms of these goals. It includes 23 case examples.

3 See George J. Stigler, *The Theory of Price* (New York: Macmillan, 1947), pp. 260-63, and Kenneth E. Boulding, *Economic Analysis* (Rev. ed.; New York: Harper & Bros., 1948), pp. 717-25.

4 Robert Dorfman and Peter O. Steiner, "Optimal Advertising and Optimal Quality," *The American Economic Review,* XLIV, 5 (December 1954), 826-36.

5 Sidney Hoos, "The Advertising and Promotion of Farm Products—Some Theoretical Issues," *Journal of Farm Economics,* XLI, 2 (May 1959), 349-63. This is a thought-provoking survey article.

6 *Ibid.*, p. 353.

7 Hoos, *op. cit.*, p. 351.

8 See Robert S. Weinberg, *An Analytical Approach to Advertising Expenditure Strategy* (New York: Association of National Advertisers, 1960), p. 127.

9 Lawrence Friedman, "Game-Theory Models in the Allocation of Advertising Expenditures," *Operations Research,* September-October 1958, p. 699.

10 Boulding, for example, says, "It is clear that a firm with perfect markets will not have any selling costs; there is no point in trying to increase the amount that can be sold at the market price when any amount within the limits of the firm's capacity is salable." *Op. cit.*, p. 591.

11 Colley, *op. cit.*

12 Daniel Starch, "How to Measure Product Sales Made by Advertising," *Printers' Ink,* January 25, 1963, pp. 58-63.

13 Frederick V. Waugh, "Needed Research on the Effectiveness of Farm Products Promotion," *Journal of Farm Economics,* XLI, 2 (May 1959), 367.

14 William S. Hoofnagle, "How to Measure Impact of Promotion," address before the 1962 National Marketing Service Workshop, Louisville, Kentucky, November 27-29, 1962. Copies available from the U.S.D.A. Much of this section dealing with the review of quantitative methods used by the U.S.D.A. was drawn from this speech.

15 V. Davis Grubbs, Wendell E. Clement and J. Scott Hunter, *Results of a Promotional Campaign for Lamb in Sacramento, California,* MRR No. 200 (Washington, D.C.: Agricultural Marketing Service, U.S. Department of Agriculture, October 1957).

16 Peter L. Henderson, *Methods of Evaluating the Sales Effectiveness of Agricultural Commodity Promotion Programs,* Paper at 1960 National Marketing Service Workshop, Biloxi, Mississippi (Washington, D.C.: Agricultural Marketing Service, U.S. Department of Agriculture, November 1960).

17 E. J. McGrath, P. Campbell and M. Myers, *Cottage Cheese: Its Sales Potential in Selected Markets,* MRR 391 (Washington, D.C.: Agricultural Marketing Service, U.S. Department of Agriculture, April 1960).

18 Peter L. Henderson and Sidney E. Brown, *Effectiveness of a Special Promotional Campaign for Frozen Concentrated Orange Juice,* MRR 356 (Washington, D.C.: U.S. Department of Agriculture, March 1961).

19 Marc Nerlove and Frederick V. Waugh, "Advertising without Supply Control: Some Implications of a Study of the Advertising of Oranges," *Journal of Farm Economics,* XLIII, 4, Part I (November 1961), 813-37. This article also includes an analysis of optimizing conditions for industry advertising.

20 *Ibid.*, pp. 835-36.

21 The most comprehensive of these is N. H. Borden, *The Economic Effects of Advertising* (Chicago: Richard D. Irwin, 1947). Another good example is Lester G. Telser, "Advertising and Cigarettes," *The Journal of Political Economy,* LXX, 5 (October 1962), pp. 471-99.

22 For a discussion of some of the analytical problems involved, see Richard J. Foote, *Analytical Tools for Studying Demand and Price Structures,* Ag. Handbook No. 146 (Washington, D.C.: U.S. Department of Agriculture, August 1958).

23 Peter L. Henderson, James F. Hind and Sidney E. Brown, "Sales Effects of

Two Campaign Themes," *Journal of Advertising Research,* I, 2 (December 1960).

24 *Ibid.,* p. 4.

25 See especially Albert Wesley Frey, *How Many Dollars for Advertising* (New York: Ronald Press, 1955), chap. 3, "Current, Actual Approaches to Determining Appropriations"; Walter Taplin, *Advertising/a New Approach* (London: Hutchinson, 1960), chap. 7, "Appropriations"; and Joel Dean, "How Much to Spend on Advertising," *Harvard Business Review,* January 1951, pp. 65-74.

26 Leonard Lavin, "Premium Pricing: The Way to Drive a Market Up," *Printers' Ink,* January 18, 1963, pp. 12-15; and Lawrence M. Hughes, "The 'Daringest Investor' in TV!" *Sales Management,* December 15, 1961, pp. 37-41, 65-69.

27 Neil H. Borden, *The Economic Effects of Advertising* (Chicago: Richard D. Irwin, 1952), chap. 25.

28 Walter Joyce, "Advertise Out of a Recession" *Printers' Ink,* November 2, 1962, pp. 25-32.

29 Dean, *op. cit.,* p. 72.

30 Frey, *op. cit.,* pp. 62-63.

31 Colley, *op. cit.*

32 Cyril Freeman, "How to Evaluate Advertising's Contribution," *Harvard Business Review,* July-August 1962, pp. 137-48. This article discusses the dollar-contribution method, illustrating its use in several case examples. However, in no case are the optimizing conditions of marginal analysis mentioned. In most cases the alternatives considered are fairly large increments.

33 Like almost everything else that can be said about advertising, there are exceptions. An individual farm may successfully develop a specialized retail market for products which are unusual or of special quality, in which case specialty advertising may be successfully used.

34 Wendell E. Clement, "Some Unique Problems in Agricultural Commodity Advertising," *Journal of Farm Economics,* VL, 1 (February 1963).

35 Robert E. Frye and Violet Davis Grubbs, *Promotion of Farm Products by Agricultural Groups,* MRR No. 380 (Washington, D.C.: Agricultural Marketing Service, U.S. Department of Agriculture, January 1960), pp. 3-4.

36 The American Dairy Association, probably the largest voluntary commodity group, spent, for example, $259,087 out of a budget of $7,009,838 for its membership department. This most likely underestimates the cost of membership relations, which are to a large extent carried on by state and regional associations. See *Dairy Promotion Topics,* March-April 1963, for a financial statement of the association.

37 This is the case with the Kansas Wheat Act, Kansas Senate Bill No. 396. See John A. Schnittaker and William L. Ruggels, "Advertising and Promotion of Wheat and Other Foods," Kansas Agricultural Experiment Station Circular, 353, February 1958.

38 *Ibid.*

39 Clement, *op. cit.*

40 See Warren H. Vincent (ed.), *Economics and Management in Agriculture* (Englewood Cliffs: Prentice-Hall, 1962), chap. 7, "Supply Responses."

41 *Op. cit.,* p. 190.

42 For a discussion of current advertising practices by commodity promotion groups and suggested procedures for improving them, see Robert E. Frye, Harper W. Boyd and Ralph Westfall, *Advertising Procedures and Practices of Agricultural Commodity Promotion Groups,* MRR No. 567 (Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, November 1962), p. 22.

43 Frank H. Knight, *Risk, Uncertainty, and Profit* (Boston: Houghton Mifflin, 1921), p. 339.

44 See Vincent Norris, "Advertising and Value Added," C. H. Sandage and Vernon Fryburger (eds.), *The Role of Advertising* (Homewood: Richard D. Irwin, 1960), pp. 145-56 for a more complete discussion of the "value added" concept. This book of readings has a number of good articles placing advertising in social perspective.

45 See Walter Taplin, *Advertising* (London: Hutchinson, 1960), for a development of this argument.

45a See Nicholas Kaldor, *Essays on Value and Distribution* (Glencoe: The Free Press, 1960), chap. 6, "The Economic Aspects of Advertising." This is an excellent discussion of advertising within the framework of economic analysis.

46 See, for example, Neil H. Borden, *The Economic Effects of Advertising* (Chicago: Richard D. Irwin, 1942), p. 501.

47 Hoselitz' point was presented in a seminar at Michigan State University during the summer of 1961.

48 Marshall I. Goldman, *Soviet Marketing* (Glencoe: The Free Press, 1963), p. 197.

49 *Ibid.,* p. 195.

50 The response to advertising appears to follow the pattern of a production function, including all three stages.

51 Commerce Clearing House Par. No. 15,773, November 1962, Trade Regulation Reports, Procter & Gamble Co., Second Initial Order to Cease and Desist.

52 *Op. cit.,* p. 117. See Kaldor for a more complete analysis of this subject.

53 Commerce Clearing House, *op. cit.* This case has not yet been decided in court.

54 For a discussion of some of the problems involved in dealing with advertising within the frame of reference of current economic theory see Alfred Sherrard, "Advertising, Production Variation, and the Limits of Economics," *The Journal of Political Economy,* LIX, 2 (April 1951), pp. 126-42.

55 David M. Potter, *People of Plenty* (Chicago: University of Chicago Press, 1954), p. 192.

56 *Ibid.,* p. 168.

57 This conclusion can be inferred from the following data. About 90 per cent of U.S. homes had TV sets in 1962. The average TV home had the set in use about 35 hours per average week with an average audience of about two people. (Based upon data from *Television '62,* a report by A. C. Nielson Company.) The census reports the average size of household to be about 3.3. By comparison, only about 25 per cent of the population attends school. (Fritz Machlup, *The Production and Distribution of Knowledge* [Princeton: Princeton University Press, 1962] pp. 71, 88). Persons in school average between 20 and 25 hours per week in school over a year. Thus the difference between more than one-half of 35 and one-fourth of 25 is a rough estimate of the

difference in proportion of time spent watching TV and time in school for the population as a whole.

58 Expenditures for higher education in the U.S. were $5,529,000,000 in 1960 (*Statistical Abstracts of the United States*) compared with an expenditure of $11,900,000,000 for advertising (*Printers' Ink*).

59 See Stanley Kelley, *Professional Public Relations and Political Power* (Baltimore: Johns Hopkins Press, 1956).

60 J. K. Galbraith, *The Affluent Society* (Boston: Houghton Mifflin, 1958), chap. 18.

61 Advertising does not appear to reduce the unemployment related to the business cycle since the tendency seems to be for advertising expenditures to follow consumer expenditures, thus contributing to the cycle rather than serving as a countercyclical force. See Walter Joyce, *op. cit.*

CHAPTER 8

1 Alex Hunter, "Product Differentiation and Welfare Economics," *Quarterly Journal of Economics,* LXIX (November 1955), 547.

2 Many of the ideas contained in this and the following three sections are from Laurence Abbott, *Quality and Competition, an Essay in Economic Theory* (New York: Columbia University Press, 1955).

3 George J. Stigler, in "The Cost of Subsistence," *Journal of Farm Economics,* May 1945, pp. 301-14, indicated that the nutritional needs for a grown man for a year's time could be obtained for $39.93 (at 1939 prices). Similarly, Victor E. Smith in "Linear Programming Models for the Determination of Palatable Human Diets," *Journal of Farm Economics,* May 1959, pp. 272-83 indicated that a family of three could have a nutritionally balanced diet for four weeks for $28.33 (at 1955 prices). Stigler's diet for a family of 3 for 4 weeks at 1955 prices would have been approximately $25.44, yet within the United States the average expenditure for food for 3 people for 4 weeks was approximately $82.80 in 1955.

4 For example, one firm found that approximately 85 percent of the consumers preferred a light-colored and -flavored chocolate cake mix over a darker colored, more heavily flavored mix. The firm immediately put out a darker colored and more heavily flavored chocolate cake mix. There were four principal firms each with a light-colored and -flavored chocolate cake mix on the market. Each firm's share of the market was slightly over 20 per cent of the chocolate cake mix market. The innovating firm therefore wanted to get its share (slightly over 20 percent) of the light chocolate cake mix field plus all (15 percent) of the dark chocolate for a total of approximately 35 percent of the market for chocolate cake mixes.

5 Carolyn Shaw Solo, "Innovation in the Capitalist Process: A Critique of the Schumpeterian Theory," *Quarterly Journal of Economics,* 1951, p. 427.

6 Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (2nd ed.; New York: Harper's, 1947), pp. 84-85.

7 See Joseph A. Schumpeter, *The Theory of Economic Development* (Cambridge, Mass.: Harvard University Press, 1949), p. 66. The introduction of new products is specifically covered as a means of economic development for an economy.

8 See E. H. Chamberlin, *Toward a More General Theory of Values* (Oxford: Oxford University Press, 1957), chap. 6, "The Product as an Economic Variable."

9 The aluminum industry offers an example. Consumer resistance to aluminum products was very strong but entrepreneurs went ahead in the face of it. The companies found very early ". . . the greatest truth in all business: that no matter what you have to offer it takes a vast amount of study and ingenuity to fit it into the world's needs and an unbelievable amount of persistent argument and shoe-leather to sell it." An official of ALCOA quoted by Robert R. Updegraff in "Aluminum Tells its Story," *The Magazine of Business,* I (August 1929), 56.

10 Joseph A. Schumpeter, *Business Cycles* (New York: McGraw-Hill, 1939), I, 84-86.

11 A. C. Hoffman, "Large-Scale Organization in the Food Industries," TNEC Monogram No. 35, 76th Congress, 3rd Session.

12 *Ibid.*

13 Edith Tilton Penrose, *The Theory of the Growth of the Firm* (New York: John Wiley and Sons, Inc., 1959), pp. 31-32.

14 *Ibid.*

15 John B. Stewart, "Functional Features in Product Strategy," *Harvard Business Review,* XXXVII, 2 (1959).

16 *Ibid.*

17 Only the potential effects of product development on firm growth will be discussed here. Chapter 9 deals with the general theory of growth of a firm.

18 See John B. Stewart, *op. cit.,* and also James B. Quinn, "Long-Range Planning of Industrial Research," *Harvard Business Review,* July-August 1961, pp. 88-102.

19 The National Science Foundation publishes many data on the statistics of scientific and technological research in the United States. See, particularly, *Funds for Research and Development in Industry,* 1957, 1960.

20 C. E. K. Mees and J. A. Leermakers, *The Organization of Scientific Research* (New York: McGraw-Hill Book Co., Inc., 1950).

21 Jacob Schmookler, "Inventors, Past and Present," *Review of Economics and Statistics,* August 1957.

22 Mees and Leermakers, *op. cit.*

23 See A. S. H. Kaplan, J. B. Dirlam and R. F. Lanzillotti, *Pricing in Big Business/a Case Approach* (Washington, D.C.: Brookings Institution, 1958), *s.v.* The General Foods Corporation, p. 215.

24 For a detailed discussion of procedures in test marketing see F. Ladik, L. Kent and P. C. Nahl, "Test-Marketing of New Consumer Products," *Journal of Marketing,* April 1960, pp. 29-34.

25 See H. Brems, *Product Equilibrium Under Monopolistic Competition* (Cambridge, Mass.: Harvard University Press, 1961).

26 An illustration of this: one major ice cream manufacturer developed an apple ice cream which supposedly would especially appeal to children. Within weeks after its initial introduction several competing firms had geared up and were producing a similar product—none of the firms was successful in marketing the product, and it was withdrawn from the market by all the major firms.

27 The introduction of the Edsel car is a case in point. Millions were spent by the Ford Motor Company in consumer research and in development but the car was not a commercial success.

28 A. C. Hoffman, *op. cit.*, and A. S. H. Kaplan *et al., op. cit.*

29 See Booz, Allen and Hamilton, "Management of New Products," Management Report, Chicago, 1956.

30 See R. N. Anthony and John N. Day, *Management Controls in Industrial Organizations* (Boston: Graduate School of Business Administration, Harvard University, 1952).

31 L. V. Redman, *Industrial and Engineering Chemistry,* XX (1928), 1242.

32 See J. B. Quinn, *op. cit.*

33 See Mees and Leermakers, *op. cit.*

34 See R. R. Nelson, "The Economics of Invention: A Survey of the Literature," *The Journal of Business,* April 1959.

35 Many check lists for new product development are available. *Ibid.*, also R. C. Christian, "Industrial Marketing—A Check List for New Industrial Products," *Journal of Marketing,* July 1959.

36 "Convenience Foods in the Grocery Basket," *U.S.D.A. Marketing Bulletin,* No. 22, September 1962.

37 Olman Hee, "Factors Affecting Consumption of Processed Potato Products," Economic Research Service, U.S.D.A., May 3, 1963.

38 Irvin C. Feustel, "Recent Developments in Potato Utilization," Federal Extension Service, U.S.D.A., Albany, March 12, 1962.

39 "Changes in Farm Production and Efficiency," A Summary Report, U.S.D.A. Stat. Bul. No. 233, September 1962.

40 "Output Per Man Hour in Factories Processing Farm Foods," U.S.D.A. Tech. Bul. No. 1243, 1961.

41 Solow, R. M., "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics,* August 1957.

CHAPTER 9

1 Edith Penrose, *The Theory of the Growth of the Firm* (New York: Wiley, 1959), p. 53.

2 *Ibid.*

3 G. L. Johnson and C. Haver, *Decision-Making Principles in Farm Management,* Bul. 593, Kentucky Agricultural Experiment Station, January 1953.

4 Penrose, *op. cit.*, p. 57.

5 *Ibid.*, p. 34.

6 *Ibid.*, p. 36.

7 *Ibid.*

8 W. J. Baumol, *Business Behavior, Value and Growth* (New York: Macmillan Co., 1959).

9 *Ibid.*, p. 46.

10. J. W. McGuire, J. S. Y. Chiu and A. O. Elbing, "Executive Incomes, Sales and Profits," *American Economic Review,* September 1962, pp. 753-61.

11 R. L. Mighell and L. A. Jones, *Vertical Coordination in Agriculture,* Agricultural Economic Report No. 19, USDA: Economic Research Service, Farm Economics Division, February 1963, p. 18.

12 *Ibid.,* pp. 36f.

13 E. Mansfield, "Entry, Innovation and the Growth of Firms," *American Economic Review,* December 1962, p. 1038.

14 *Ibid.,* p. 1044.

15 For a recent compilation of concentration ratios, see *Concentration Ratios in Manufacturing Industry 1958,* Parts I and II, Subcommittee on Antitrust and Monopoly, Senate Committee on the Judiciary, 87th Congress, 2nd Session, 1962.

16 For an industry-by-industry review, see USDA Agricultural Information Bulletin No. 198, *Contract Farming and Vertical Integration in Agriculture.* Also see a variety of recent studies in the *Journal of Farm Economics,* including: Stanley K. Seaver, "An Appraisal of Vertical Integration in the Broiler Industry," XXXIX (December 1957), 1487-99; Willard F. Mueller and Norman Collins, "Grower-Processor Integration in Fruit and Vegetable Marketing," XXXIX (December 1957), 1471-86; H. K. Leckie, "Dynamics of the Integration of Agricultural Production and Marketing," XL (December 1958), 1356-69; R. C. Engberg, "Credit Implications of Integration in Agriculture," XL (December 1958), 1370-82; Raymond J. Penn, "Tenure Innovations and the Tenure Problems Associated with Vertical Integration," XL (December 1958), 1383-92; Emery N. Castle, "Vertical Integration and Farm Management Research," XL (May 1958), 434-38; Raphael Trifon, "Guides for Speculation about the Vertical Integration of Agriculture with Allied Industries," XLI (November 1959), 734-46; Robert L. Clodius and Willard F. Mueller, "Market Structure Analysis as an Orientation for Research in Agricultural Economics," XLIII, 3 (August 1961), 515-53.

CHAPTER 10

1 For example see Frederick V. Waugh, *Readings on Agricultural Marketing* (Ames: The Iowa State College Press, 1954), sec. 7.

2 Christopher Sower and Paul A. Miller, "Changing Power Structure in Agriculture and Rural Society," Department of Sociology mimeograph, Michigan State University, 1961.

3 *Ibid.,* p. 1.

4 J. K. Galbraith, *American Capitalism: The Concept of Countervailing Power* (Boston: Houghton Mifflin, 1952), pp. 118-62.

5 Talcott Parsons, *Structure and Process in Modern Societies* (Glencoe: The Free Press, 1960), pp. 219-20.

6 Sower and Miller, *op. cit.,* p. 6.

7 J. K. Galbraith, *op. cit.,* pp. 118-62.

8 H. E. Babcock, "Cooperatives, the Pace-Setters in Agriculture," *Journal of Farm Economics,* XVII, 1 (February 1935), 153-56.

9 Sidney Hoos, *The Role of Cooperative Bargaining Associations in the Integration of Agricultural Marketing.* Address at the Spring Conference of the California State Chamber of Commerce, Central Coast Council, April 6, 1960, San Francisco, p. 4.

10 Department store owner John Wanamaker, quoted by *Time,* LXXX, 15 (October 12, 1962), 87.

11 While it is conceivable that some groups may expand total revenue by increasing output, it is implicitly assumed here that increased revenue is associated with smaller output.

CHAPTER 11

1 Ivan V. Emelianoff, *Economic Theory of Cooperation* (Washington, D.C.: Ivan V. Emelianoff, 1942).

2 Richard Phillips, "Economic Nature of the Cooperative Association," *Journal of Farm Economics,* XXXV (February 1953), 74-87.

3 Frank Robotka, "A Theory of Cooperation," *Journal of Farm Economics,* XXIX (February 1947), 93-114.

4 Some of the other authors who have commented on this distinguishing feature of cooperatives are: Job K. Savage, "Comment on Economic Nature of the Cooperative Association," *Journal of Farm Economics,* XXXVI, 3 (August 1954), 529-34; Addvar Aresvik, "Comments on Economic Nature of the Cooperative Association," *Journal of Farm Economics,* XXXVII, 1 (February 1955), 140-44; Addvar Aresvik, "Member Behavior and Optimal Pricing in Marketing Cooperatives," *Journal of Farm Economics,* XXXIX, 1 (February 1957), 169-72; Raphael Trifon, "The Economics of Cooperative Ventures—Further Comments," *Journal of Farm Economics,* XLIII, 2 (May 1961), 215-35; Peter Helmberger and Sidney Hoos, "Cooperative Enterprise and Organization Theory," *Journal of Farm Economics,* XLIV, 2 (May 1962), 275-90.

5 See Chapter 15 for a discussion of government policy regarding competitive practices of cooperatives.

6 For a more complete discussion of early cooperative efforts, see Henry H. Bakken and Marvin A. Schaars, *Economics of Cooperative Marketing* (New York: McGraw-Hill Book Co., 1937), pp. 25-115.

7 For additional discussion of cooperatives and other types of business organization, see Martin A. Abrahamsen and Claud L. Scroggs, *Agricultural Cooperation* (Minneapolis: University of Minnesota Press, 1957), pp. 333-55.

8 There are situations, however, particularly in Communist-bloc nations, where so-called cooperatives are used as direct instruments of government with no intention of giving local control.

CHAPTER 12

1 Milton Friedman, *A Theory of the Consumption Function* (Princeton: Princeton University Press, 1957), pp. 7-37.

2 Frederick L. Thomsen and Richard J. Foote, *Agricultural Prices* (2nd ed.; New York: McGraw-Hill Book Co., Inc., 1952), p. 56.

3 Willard W. Cochrane and Carolyn Shaw Bell, *The Economics of Consumption* (New York: McGraw-Hill Book Co., Inc., 1956), p. 141.

4 *Ibid.*, pp. 84-92.

5 Detailed discussion of this formulation as it relates to shifting resources between enterprises on farms, between farms, or between agriculture and the nonfarm sector may be found in an unpublished manuscript by Glenn L. Johnson, "The Over-Production Trap." Also see Glenn L. Johnson, "The State of Agricultural Supply Analysis," *Journal of Farm Economics,* XLII, 2 (May 1960) 435-52.

6 James L. Stallings, "Weather Indexes," *Journal of Farm Economics,* XLII, 1 (February 1960), 180-86.

7 Earl J. Partenheimer, "Some Expectation Models Used by Selected Groups of Midwestern Farmers," unpublished Ph.D. dissertation, Michigan State University, 1959.

8 F. L. Alt, "Distributed Lags," *Econometrica,* X, 1942. Irving Fisher, "Note on a Short Cut Method for Calculating Distributed Lags," *Bulletin de l'Institut International de Statistique,* XXIX, La Hague, 1937. L. M. Koyck, *Distributed Lags and Investment Analysis* (Amsterdam: North-Holland Publishing Co., 1954). Marc Nerlove, *The Dynamics of Supply: Estimation of Farmers' Response to Price* (Baltimore: The Johns Hopkins Press, 1958). H. Theil, *Economic Forecasts and Policy* (Amsterdam: North-Holland Publishing Co., 1958).

9 George Katona, *Psychological Analysis of Economic Behavior* (1st ed.; New York: McGraw-Hill Book Co., Inc., 1951), pp. 6-7.

10 ———, "Expectations and Decisions in Economic Behavior," *The Policy Sciences: Recent Developments in Scope and Method.* Daniel Lerner and Harold Lasswell (eds.) (Stanford University Press, 1951), pp. 230-31.

11 ———, *Psychological Analysis of Economic Behavior, op. cit.* p. 53.

12 Some selected references on this subject are: C. E. Shannon, "A Mathematical Theory of Communication," *Bell System Technical Journal,* 1948; Norbert Wiener, *Cybernetics* (New York: John Wiley and Sons, Inc., 1961); David A. Grant, "Information Theory and Discrimination of Sequences in Stimulus Events," in *Current Trends in Information Theory* (Pittsburgh: University of Pittsburgh Press, 1953).

13 A density function gives the relative frequency of the occurrence of the separate values of some variable. In this case the variable would be expected prices.

14 For a discussion of the perfect market in time, form, and space see G. S. Shepard, *Marketing Farm Products* (Ames: The Iowa State College Press, 1963), chap. 2.

15 Frederick L. Thomsen and Richard J. Foote, *op. cit.*, pp. 51-55, and Milton Friedman, *Price Theory* (Chicago: Aldine Publishing Co., 1962), pp. 148-61.

16 G. S. Shepard, *op. cit.*, chap. 2.

17 Price elasticity of demand $= 1/\text{slope} \cdot P/Q$. Since Q is the same at the farm and at retail, and the slopes of the retail and farm demand curves are assumed to be the same, the only difference between the elasticity formula for the demand at retail and the demand at the farm is P. Obviously the price at retail is greater than the price at the farm. Therefore the price elasticity of demand at retail is greater than at the farm level.

18 Alfred Marshall, *Principles of Economics* (8th ed.; New York: Macmillan, 1920), pp. 385-86.

19 Richard L. Kohls, *Marketing of Agricultural Products* (2nd ed.; New York: Macmillan, 1961), pp. 103-106.

20 Herman Wold and Lars Jureen, *Demand Analysis* (New York: John Wiley and Sons, Inc., 1953).

21 For an explanation and critical review of simultaneous equation estimates, see Mordecai Ezekiel and Karl A. Fox, *Methods of Correlation and Regression Analysis* (3rd ed.; New York: John Wiley and Sons, Inc., 1959), pp. 413-33.

22 See Richard J. Foote, "Analytical Tools for Studying Demand and Price Structures," Agricultural Handbook No. 146, U.S.D.A., August 1958, for a discussion of alternative estimation procedures and the appropriateness of each technique.

CHAPTER 13

1 Vernon W. Ruttan, "The Economics of Technical Change in Agriculture," *Journal of Farm Economics,* XLII, 4 (November 1960), 735-54.

2 E. C. Young, *The Interaction between Technical Change on the Farm and Technical Change in Marketing and Distribution,* Proceedings of the International Conference of Agricultural Economists, August 1955 (London: Oxford University Press, 1956).

3 This is particularly true of agricultural chemicals (e.g., the E. I. Dupont Co.) and industries producing mechanical equipment for agriculture (e.g., Ford Motor Co., Tractor Division).

4 Willard F. Mueller and Leon Garoian, *Changes in the Market Structure of Grocery Retailing* (Madison: The University of Wisconsin Press, 1961), p. 121.

5 George Mehrens, "Marketing Coordination and Buyers' Requirements," *Policy for Commercial Agriculture,* 85th Congress, 1st Session, November 1957. For a recent comprehensive study of the problem of market coordination in American agriculture see Ronald L. Mighell and Lawrence A. Jones, "Vertical Coordination in Agriculture," Economic Research Service, U.S. Department of Agriculture, Washington, D.C., 1962, review manuscript, for an extensive consideration of economic stages and integration.

6 See Stephen H. Sosnick, "A Critique of Concepts of Workable Competition," *The Quarterly Journal of Economics,* LXXII (August 1958) for a discussion of these. Also see Paul L. Farris (ed.), *Market Structure Research* (Ames: Iowa State University Press, 1964).

7 *Ibid.,* also F. Waugh, *Readings in Agricultural Marketing* (Ames: Iowa State College Press, 1954), pp. 20-26, and chap. 2 of this volume.

8 Sosnick, *op. cit.,* p. 393.

9 Jesse W. Markham, "Changing Structure of the American Economy: Its Implications for Performance of Industrial Markets," *Journal of Farm Economics,* XLI, 2 (May 1959).

10 A recent study indicates that in 1958 only 38.2 percent of the capacity of 76 ice cream plants in Wisconsin was actually being used. See Hugh L. Cook, *Consequences of Structural Change in the Ice Cream Industry,* Research Bulletin 236 (Madison: University of Wisconsin, June 1962).

11 James R. Bowring, Herman M. Southworth and Frederick V. Waugh, *Market-*

ing Policies for Agriculture (Englewood Cliffs: Prentice-Hall, Inc., 1960), pp. 209-10.

CHAPTER 14

1 To regard beliefs and values with the intention of judging them is philosophizing. This is a fruitful pursuit of the human mind, but it has no place here.

2 Neal W. Klausner, and Paul G. Kuntz, *Philosophy—The Study of Alternative Beliefs* (New York: Macmillan, 1961), pp. 14-20 and *passim.*

3 This does not imply lack of change or simple acquiescence. It does imply, however, that changes in this area, in most societies, are not of a dramatic nature and do not usually express themselves in the form of overt action except as a result of a cumulative process.

4 Similar stages were used in a different context by Rostow. See W. W. Rostow, *The Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960), pp. 4-16. Some of the stages may not be applicable to societies such as that of the United States, which derived many of the preconditions from an already advanced British society.

5 Some of these movements in the earliest steps of transition were considered in Chapter 3.

6 For a most interesting account of such movements see John R. Commons, "American Shoemakers 1648-1895," *Quarterly Journal of Economics,* XXIV (November 1909), 39-84.

7 Stephen H. Sosnick, "Operational Criteria for Evaluating Market Performance," paper presented at Purdue University on June 19, 1962, mimeograph, p. 6.

8 *Ibid.,* p. 14.

9 All measures could be considered both positive and negative in nature—positive from the standpoint of society or perhaps other firms and negative from the standpoint of those for whom they are constraints.

10 Adequacy cannot be specified in absolute amounts or rates. Some notion of reasonableness must serve the purpose.

CHAPTER 15

1 For a discussion of alternative approaches to antitrust see Joel B. Dirlam and Alfred E. Kahn, *Fair Competition, the Law and Economics of Antitrust Policy* (Ithaca: Cornell University Press, 1954), chap. 2.

2 For a discussion of the legal antecedents of the Sherman Act see Thorelli, *The Federal Antitrust Policy—Origination of an American Tradition* (Baltimore: The Johns Hopkins Press, 1955), pp. 51-53.

3 *Wall Street Journal,* August 28, 1962, p. 1.

4 For two concise summaries of the history of antitrust enforcement see Clair Wilcox, *Public Policies Toward Business* (Homewood: Richard D. Irwin, Inc., 1960), pp. 124-61 and Simon N. Whitney, *Antitrust Policies* (New York: The Twentieth Century Fund, 1958), pp. 5-9.

5 *Northern Securities Co.* v. *U.S.,* 193 U.S. 197, 1904.

6 *U.S.* v. *American Tobacco Co.*, 221 U.S. 106, 1911; *Standard Oil Co. of N.J.* v. *U.S.*, 221 U.S. 1, 1911.

7 *U.S.* v. *U.S. Steel Corp.*, 251 U.S. 417, 1920.

8 *U.S.* v. *International Harvester Co.*, 274 U.S. 693.

9 *U.S.* v. *Aluminum Co. of America*, 148 F. 2d 416, 2d Cir. 1945.

10 William H. Nicholls, "The Tobacco Case of 1946," *American Economic Review*, XXXIX, 3 (1949), 284-96, 285.

11 *U.S.* v. *E. C. Knight Co.*, Civil 38, 156 U.S. 1.

12 *U.S.* v. *Corn Products Refining Co.*, 234 Fed. 964, 249 U.S. 621.

13 *U.S.* v. *American Tobacco Co.*, 55 L. ed. 964, 695.

14 *Report of the Federal Trade Commission on the Meat Packing Industry*, Part I, Federal Trade Commission, Washington: Government Printing Office, 1919, p. 48.

15 *U.S.* v. *American Can Co.*, Equity 40, 230 Fed. 859.

16 *U.S.* v. *International Harvester Co.*, Equity 624, 214 Fed. 987.

17 *In the Matter of Pillsbury Mills, Inc.*, FTC Docket 6000, 1960.

18 *In the Matter of Continental Baking Co.*, FTC Docket 7880.

19 *U.S.* v. *United Fruit Co.*, Civ. 4560.

20 *U.S.* v. *Minute Maid Corp.*, Civ. 6429M.

21 *In the Matter of National Sugar Refining Company*, FTC Docket 6852.

22 FTC Docket 6651.

23 FTC Docket 6649.

24 FTC Docket 7453.

25 FTC Docket 7464.

26 *U.S.* v. *Von's Grocery Co.*, Civil No. 336-60.

27 FTC Docket 6652.

28 FTC Docket 6653.

29 *U.S.* v. *Northland Milk and Ice Cream Co.*, et al., Cr 8222, 1953 and Civil 4361, 1955.

30 *Nolo contendere* is a plea to an indictment meaning "I will not contend." Such a plea does not mean the defendant admits guilt. The defendant may be sentenced, but such a sentence does not set the base for a civil proceeding for the same cause.

31 *U.S.* v. *American Can Co.*, Civil No. 26345-H.

32 *U.S.* v. *Continental Can Co., Inc.*, Civil No. 26346-R.

33 *U.S.* v. *J. I. Case*, Civil 2834.

34 *U.S.* v. *International Harvester Co.*, Civil 2833.

35 *U.S.* v. *Deere and Company*, et al., Civil 2832.

36 *U.S.* v. *J. I. Case Co.*, Civil 2834, 101 F. Supp. 856, 1951.

37 *U.S.* v. *Kellogg Toasted Corn Flake Co.* et al., Equity 5570, 1915, 222 Fed. Rep. 725, 1 D and J 405.

38 53 FTC 1052, Docket 6465.

39 *In the Matter of Central Soya Co., Inc.,* FTC Docket 5696, 1951. *In the Matter of Early and Daniel Co.,* FTC Docket 5973, 1952 and *In the Matter of Ubiko Milling Co.,* FTC Docket 5972, 1952.

40 *In the Matter of the Great Atlantic and Pacific Tea Co.,* Federal Trade Commission Docket 3031.

41 See, for example, *In the Matter of Keen Fruit Corp.,* FTC Docket 7918, 1961.

42 See, for example, *In the Matter of Fruitvale Canning Co.,* FTC Docket 5989, 1956, where large buyers paid 5 to 10 cents less per dozen cans. 52 FTC 1504.

43 *U.S.* v. *Fairmont Foods of Wisconsin,* Cr. 3634, 1959.

44 *U.S.* v. *Safeway Stores, Inc.,* et al., Cr. 9584.

45 *In the Matter of Maryland Baking Co.,* FTC Docket 6327, 1956, 243 F *2d* 716, 4th Cir., 1957. Also see *Moore* v. *Mead's Fine Bread Co.,* 348 U.S. 115, 75 S. ct. 148.

46 *In the Matter of Indian River Fruit and Vegetable Distributors, Inc.,* et al., FTC Docket 4730, 1944.

47 *In the Matter of Dixie Pecan Growers Exchange, Inc.,* FTC Docket 1548, 1930.

48 *In the Matter of Pratt Food Co.,* FTC Docket 2582, 1936.

49 *In the Matter of Bakers Franchise Corporation,* FTC Docket 7472, 1959.

50 *U.S.* v. *Beatrice Foods,* et al., Cr. 0351, D, Nebraska, 1961.

51 *U.S.* v. *Kraft Cheese Co.,* Cr. 110-344, S.D. N.Y. 1941-1944.
U.S. v. *The Great Atlantic and Pacific Tea Co.,* Cr. 110-345: S.D. N.Y., 1941-1944.
U.S. v. *Kraft Cheese Co.,* Cr. 11814: W.D. Wis., 1941-1944.
U.S. v. *National Cheese Institute, Inc.,* Cr. 33197: N.D. Ill., 1942-1950.

52 *U.S.* v. *Chicago Butter and Egg Board,* Civil 30042: N.D. Ill., 1914, 1 D.A.J. 259.
U.S. v. *Elgin Board of Trade,* Eq. 31051: N.D. Ill., 1914.

53 *In the Matter of Washington Cereal Association, Oregon Cereal and Feed Association,* et al., FTC Docket 1345, 1927.

54 *In the Matter of the Michigan Bean Shippers Association,* et al., FTC Docket 3937, 1940.

55 Clair Wilcox, *Public Policies Toward Business* (Homewood: Richard D. Irwin, Inc., 1960), pp. 74-79.

56 *U.S.* v. *American Linseed Oil Co.,* 262 U.S. 371, 43 S. Ct. 607, 67L. Ed. 1035, 1923.

57 *U.S.* v. *The Sugar Institute,* Equity 59-102: 297 U.S. 553. The District Court did not dissolve the Institute but did enjoin 45 of its activities. The decree was affirmed by the Supreme Court in 1936. It is the latest comprehensive Supreme Court treatment of a trade-association open-price filing plan.

58 *U.S.* v. *Corn Derivatives Institute,* Eq. 11634. A consent decree was accepted dissolving the Institute.

59 *U.S.* v. *National Fertilizer Association, Inc.,* Cr. 1167: M.D. N.C. 1941. Ninety-nine fertilizer companies pleaded *nolo contendere* and were fined $260,000 and the superphosphate association was dissolved.

60 *U.S.* v. *Universal Milk Bottle Service,* et al., Cr. 7399, 188F (2d) 959, S.D. Ohio, 1950. The defendants pleaded *nolo contendere* and were fined $25,000 in total.

61 *In the Matter of Chamber of Commerce of Minneapolis,* et al., FTC Docket 694 13 F 2d 673, 1926.

62 *Report of the Federal Trade Commission on the Fertilizer Industry,* Washington, U.S. Government Printing Office, 1950, pp. 151-52.

63 *Report of the Federal Trade Commission on the Fertilizer Industry,* pp. 79-82.

64 *Report of the Federal Trade Commission,* p. 155.

65 *Ibid.,* 156.

66 *Corn Products Co.* v. *FTC* 324 U.S. 726; *FTC* v. *A.E. Staley Manufacturing Co.,* 324 U.S. 746.

67 *U.S.* v. *Produce Exchange of Los Angeles,* Cr. 15000: S.D. Calif., 1941-1943. *Nolo contendere* was pleaded by fifteen defendants and fines of $11,000 were imposed.

68 Donald D. Stark, "Capper-Volstead Revisited," *American Cooperation 1960* (Washington, D.C.: American Institute of Cooperation, 1960), pp. 464-65.

69 *The Packers and Stockyards Act, What It Is and How It Operates,* PA-399, Agricultural Marketing Service, U.S. Dept. of Agriculture, Washington, D.C., 1961.

70 *Marketing, Yearbook of Agriculture, 1954* (Washington, D.C.: U.S. Department of Agriculture, 1954), p. 330.

71 Wilcox, *op. cit.,* p. 54.

72 T. A. Wilson and E. F. Baumer, *Trade Practice Regulations with Special Reference to the Dairy Industry,* Research Bulletin 816, Ohio Agricultural Experiment Station, Wooster, June 1958, p. 42.

73 *Dairy Situation,* U.S. Dept. of Agriculture, August 1962, p. 26.

74 See, for example, the general acceptance of antitrust laws by sixty lawyers and economists in the report of the Attorney General's National Committee to Study the Antitrust Laws, 1955.

75 Simon N. Whitney, *Antitrust Policies* (New York: The Twentieth Century Fund, 1958), II, 436-37.

CHAPTER 16

1 For an extensive discussion of these programs see Murray R. Benedict and Oscar C. Stine, *The Agricultural Commodity Programs* (New York: The Twentieth Century Fund, 1956), especially chapters 9 and 11.

2 This operation differs from marketing boards (discussed later) in that the major emphasis is to regulate the flow to market, not the variation in prices.

3 "A Note on the Utilization of Agricultural Surpluses for Economic Development in Pakistan," Economic Commission for Asia and the Far East, Bangkok: 1961, mimeo.

4 See Dale E. Hathaway, *Government and Agriculture* (New York: Macmillan, 1963), especially chapter 5.

5 Hans Singer, "The Distribution of Gains between Investing and Borrowing Countries," *American Economic Review,* May 1950, pp. 473-85; Raul Prebisch, "Commodity Policy in the Underdeveloped Countries," *American Economic Review,* May 1959, pp. 251-73.

6 Carl K. Eicher and Lawrence W. Witt (eds.), *Agriculture in Economic Development* (New York: McGraw-Hill, 1964), contains articles by Ragnar Nurkse and Gerda Blau which review the economic purpose and current status of commodity agreements.

7 The United Nations has a number of reports on these problems and proposals, e.g., *Instability in Export Markets of Under-Developed Countries,* 1952; *Commodity Trade and Economic Development,* 1953; and especially *International Compensation for Fluctuations in Commodity Receipts,* 1961.

8 Theodore W. Schultz, "Connections between Natural Resources and Economic Growth," *Natural Resources and Economic Growth,* Joseph J. Spengler (ed.), (Washington, D.C.: Resources for the Future, 1961), pp. 16-19.

9 Willard Cochrane, *Farm Prices: Myth and Reality* (Minneapolis: University of Minnesota Press, 1959), and "Changing Structure of the American Economy: Its Implications for the Performance of Agricultural Markets," *Journal of Farm Economics,* May 1959; George Brandow, "Supply Control: Ideas, Implications, and Measures," *Journal of Farm Economics,* December 1960, pp. 1167-82; and H. W. Halvorson, "Direct Management of Market Supplies, Economic Policies for Agriculture in the 1960's, Implications for Four Selected Alternatives," Joint Economic Committee, 86th Congress, 2nd Session, November 1960, pp. 49-64. See also Boris Swerling, "Problems of International Commodity Stabilization," Papers and Proceedings, *American Economic Review,* LIII, 2 (May 1963), 65-74.

10 See, for example, *Report on Farm Prices and Income Projections, 1960-65,* 86th Congress, 2nd Session, Senate Document No. 77; and also Geoffrey Shepherd, *et al., Production Price and Income Estimates and Projections for the Feed-Livestock Economy under Specified Control and Market-Clearing Conditions,* Iowa Agricultural and Home Economics Experiment Station, Special Report 27, August 1960.

11 Dale Hathaway, "Potentials and Limitations of Comprehensive Supply Control: An Independent Viewpoint," *Journal of Farm Economics,* December 1960, pp. 1190-95.

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