ORGANIZATION AND STRUCTURE OF PRODUCER UNITS OF FARM PRODUCTS*

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Although the parameters of the modal farm firm\(^1\) of 1980 or beyond remain shrouded in a modicum of uncertainty and conjecture, the clustering of current opinions, projections and estimates in a direction far removed from the extant situation indicates beyond a reasonable doubt that the farm firm of that era will function in a vastly different environment and will itself be significantly different from the farm firm of 1967. Notwithstanding the wide range of views on the precise growth and development past of the farm firm, it is quite clear that farm firms will be fewer\(^2\) and

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1/ In a private enterprise economy, the firm may be viewed as an autonomous administrative unit transforming inputs into outputs pursuant to some entrepreneurial objective function and consistent with a technical production function. See Harl, "Research Methods Adaptable to Legal-Economic Inquiry; Linear Programming and Simulation," p. 75, Methods for Legal-Economic Research into Rural Problems, Monograph No. 8, Agricultural Law Center, University of Iowa (1966).

2/ See Ruttan, "Agricultural Policy in An Affluent Society," 48 J. Farm Econ. 1100, 1113 (1966) (if production were concentrated entirely on farms such as those with sales of $40,000 or more the total U. S. farm output could be produced on less than 400,000 farms); Clawson, "Aging Farmers and Agricultural Policy," 45 J. Farm Econ. 13, 26 (1963) (a "high" estimate of 730,000 farms by 2,000 and a "low" estimate of 418,000); Heady & Tweeten, Resource Demand and Structure of the Agricultural Industry 481-82 (1963) (number of farms to produce the 1980 food supply with scale of operations approaching but still short of minimum cost is around 750,000); Daly, "Agriculture: Projected Demand, Output and Resource Structure," pp. 82-119 supra (if past trends continue possibly fewer than a million commercial farms by 1980).
larger with sharply higher amounts of capital managed per farm.\(^3\)

Moreover, it appears that the incidence of multi-member farm firms\(^5\) will increase gradually over time for a variety of reasons. Coordination of input acquisition and output marketing by contract will probably increase; some belief exists that shifts in relative bargaining power in favor of the farm firm are likely to occur.

Projections of firm size are related, of course, to the configuration of cost curves. Available data on economies of size, although not indicating overwhelming economies of very large farm businesses, at the least point

\(^3\) Whether expressed in terms of acres per farm, capital per farm or output per farm, size of firm is increasing rapidly. Gross sales per farm have grown at about 6% per year on the average over the past 25 years. See Butcher & Whittlesey, "Trends and Problems in Growth of Firm Size," 48 J. Farm Econ. 1513 (1966). A comparison of 1959 and 1964 Census of Agriculture data indicates that substantial increases in farm size occurred for farms 500 acres or larger, particularly in the north central states, while the total number of farms decreased sharply.

\(^4\) It is likely that the growth of capital per firm will continue to exceed substantially the growth of capital for the agricultural industry because of farm consolidation. See Heady & Ball, "Economic Growth of the Farm Firm and Projected Changes in Farming," p. 18, Report No. 24, Center for Agricultural and Economic Development, Iowa State University (1965). From 1940 to 1966, capital per farm increased nationally from $6,158 to $64,960 while assets per farm worker during the same period rose from $3,326 to $35,958. The Balance Sheet of Agriculture, p. 17, Agriculture Information Bull. No. 314, ERS, USDA (1966).

\(^5\) By multi-member farm firm is meant a firm wherein ownership and management are provided by more than one individual.
toward nearly constant costs over a wide range of firm size. It may very well be that management is the key variable responsible for the behavior of the cost curve at high volumes. And the quality of management input on farms, particularly well-organized and financed commercial farms, is increasing at a relatively rapid rate. If the cost curve continues to decline at higher volumes, a centripetal tendency exists for farm firms to attain such size as will permit advantages of scale to be obtained. If the cost curve reveals nearly constant costs per unit or output beyond the initial low production stage of high costs, larger firms may enjoy higher incomes merely because of the larger volume of business. The need exists for research on the configuration of cost curves at higher volumes of production.

This paper recognizes the duality of the firm as an economic entity engaged in resource allocation and income distribution and also as a legal institution representing, embodying and participating in interfirm and intra-firm relationships. Legally, a relatively highly developed, finite structural framework is provided for the conduct of economic activity. Although it would undoubtedly be economically desirable if the legal framework provided an organizational continuum with an opportunity for entrepreneurs to select precisely the combination of organizational attributes desired from among an infinite array, the development of organizational forms over time has produced discrete alternatives. These alternatives are the well known sole proprietorship and its principal variant wherein major blocks of inputs are obtained contractually such as under the landlord-tenant or vertical coordination relationship, the general and limited

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6/ Butcher & Whittlesey, "Trends and Problems in Growth of Farm Size," 48 J. Farm Econ. 1513, 1516 (1966); Hunter & Madden, "Economies of Size for Specialized Beef Feedlots in Colorado," Agricultural Economic Report No. 91, ERS, USDA (1966) (technical economies of size attained beyond 1,500 head in terms of feeding cost per head are very small).


partnership, the trust, and the corporation. The economic adequacy of these traditional forms of organization is and will be increasingly open to question. No sector is more likely to dynamically test the sufficiency of the deeply rooted organizational forms during the next quarter century than farming. Enough alternatives should exist to permit attainment of relevant objectives without institutional restraint or obstruction.

As a research and policy matter, the legal framework, including that segment impinging upon the organization of the firm, should perhaps be viewed as legislatively and judicially malleable and amenable to change if properly cast in the role of a dependent variable. As elsewhere observed, "if the roots of law extend to knowledge and human experience examined by the social sciences, then legal change should ideally flow from and be directed in large part by the research results of the appropriate disciplines." By this view research designed to affect and influence the law in futuro becomes much more than a search for legal precedent. It involves, in a vital way, all disciplines that are demonstrably relevant to the social issue under study. The social scientist bears a responsibility in the molding of law to accomplish societally weighted objectives.

If social scientists were required to take an oath, it should include a firm commitment to take nothing, least of all the law, as given. With this approach, a plea that institutional restraints will likely limit the growth of firms irrationally constitutes either an indictment of the relevant disciplines or an implied criticism of the content or weighting of the societal objective function.

Societal Objectives

The performance of the legal framework giving identity to and functional basis for the firm can perhaps rationally be measured by the extent to which

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the relevant objectives are met. It would seem that, in the case of the farm firm, the set of objectives would include certain more or less well-defined national objectives plus the articulated or unarticulated objectives of the firm and of the individuals associated with the firm as owners or managers. It is especially important to recognize the role of objectives in dealing with firm structure inasmuch as a tendency has existed to use limitations on organizational form in the implementation of specific policies. 11/

National Objectives

Although certainly not beyond the pale of argument, a substantial consensus exists that certain pervasive objectives may be distilled from contemporary economic life. These include the performance goals of economic growth, efficiency, distributive justice with concern over optimal sharing in the benefits of firm activity, and political and economic stability. 12/ These are not, however, the only national objectives relevant for farm firm activity. The literature abounds with a plenitude of pronouncements on the merits of the family farm, small scale land holdings that are individually owned, freedom to produce and market without restraint and the exchange system as opposed to an integrative or contract or coordinative system. 13/ Whether these rise to the status of national objectives or are merely deeply cherished ideals of a declining but eloquently chauvinistic segment of society remains to be seen.

11/ For example, in an effort to remedy the projected consequences of foreclosure of mortgages on large quantities of land, an initiative measure was adopted in North Dakota in 1932 prohibiting corporations from engaging in farming in that state. See N. D. Cent. Code § 10-06-01 (1960). That provision was repealed in 1967 by the North Dakota legislature.

12/ See, e.g., Report of the President's Commission on National Goals, Goals for Americans (1960), especially Ch. 7.

At what would appear to be a lesser stage of national commitment, distinctly undesirable connotations seem to be associated in some circles with the corporate form (as well as a tendency to equate corporations and bigness of "factory farms"), vertical integration, nonfarm capital moving into agriculture, and increase in size of farms. It may be reasonable and appropriate to ask how viable are these ideals or objectives, to what extent is the country committed to them, and what will be the likely social costs of embarking upon courses of action destined ultimately to result in the demise of one or more of them.

In the past, these often rather loosely defined goals, objectives or ideals allegedly attributed to farm firms were not seriously competitive with economic growth and efficiency. The goals were attainable at a relatively low marginal cost. However, trends are beginning to point to areas of serious divergence between national goals. Attainment of such goals as a family farm system (as presently defined by some writers) or small scale landholdings that are individually owned may be possible only at a cost in terms of over-all economic efficiency. Social scientists should be probing for such divergencies and providing knowledge and information well in advance to policy makers. It may well be that, given such a divergence, society will be willing to sacrifice a measure of economic efficiency for maintenance of an otherwise desirable structural

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14/ See, e.g., Nikolitch, "The Expanding and the Contracting Sectors of American Agriculture," p. 23, Agricultural Economic Report No. 74, ERS, USDA (1965), "data presented does (sic) not support the notion that, under the advent of a revolutionary change in farm technology, our farm production is more and more falling under the dominance of a factory system of large corporate businesses in agriculture." See also Breimyer, "The Farm Firm in the Structure of the Agricultural 'System'," p. 9, Center for Agricultural and Economic Development Report No. 24, Iowa State University (1965).

15/ See, e.g., Nikolitch, "Our 100,000 Biggest Farms - Their Relative Position in American Agriculture," p. 5, Agricultural Economic Report No. 49, ERS, USDA (1964) (farms using less than 1.5 manyears of hired labor are considered to be family farms).
system. But the evidence is sparse that a majority of people would be willing to pay that price. With the influence of agriculture in the remainder of the economy declining and with agriculture itself oriented less and less toward agrarian fundamentalism and more and more toward identification with the classic urban model, perhaps only those harking back to childhood memories will evince serious doubt as to directions taken by this branch of farm policy.

It appears likely that, for a great majority of farms, the ownership of capital and management of the firm will be provided for many years to come by individuals who are related by blood or marriage. With this view of the "family farm," there would seem to be some assurance that the family farm will continue to be an important institution through the remainder of the Twentieth Century. However, it takes no particularly high degree of perspicacity to deduce that such a family farm could and probably would be quite different from the family farm of tradition and sentiment.

If nothing else, the family farm concept deserves rigorous redefinition in terms of the important ends ostensibly to be accomplished by adherence to a family farm structure. As has been suggested, expression of the degree of family farm dominance in acreage terms may not be wholly meaningful. 16/ Similarly, the number of paid employees may not completely specify the essential characteristics of the family farm.

From a research standpoint, it would be highly desirable if the essential attributes of the family farm as a concept were identified and related to the emerging patterns of firm organization. Perhaps then a family farm could be described. Given an acceptably workable definition of the family farm and assuming a sufficiently broad base of support to assure its continued viability, it then becomes important to identify the factors that are in derogation of the family farm and those that are in fact promotive of the concept. Appropriate public policy means could then be taken to perpetuate the family farm ideal.

If no more than a myth of shibboleth, the family farm idea deserves little more than a decent interment. To the extent that the concept continues to have meaningful and priority content, it deserves a fair and impartial hearing.

Individual and Firm Objectives

No less important than the national objectives, the micro objective component of the over-all objective function governing the firm merits concern and becomes acutely visible as choices are made at the firm level from among alternative organizational forms available and as decisions are made and policies pursued within the framework of the organizational form. The policies a firm pursues depend heavily upon the form of its objectives. In a small, closely-held firm, of the type dominating agriculture today and likely to remain characteristic for several years, the objective function may be a question of fact, ascertainable with appropriate empirical technique.

Although traditional theory of the firm long has posited net revenue or profit maximization as the dominant if not singular goal of the firm, it has been suggested that firms are likely to pursue goals other than or different from profit maximization. It has been argued that a primary objective of the firm may be long-run security of profit or survival, maximization of sales subject to a minimum profit constraint, maximization of profit subject to a minimum sales constraint, or attainment of "satisfactory" profits. Entrepreneurial motives may also include diverse

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17/ See, e.g., Henderson & Quandt, Microeconomic Theory - A Mathematical Approach 43 (1958). See Shubik, "Objective Functions and Models of Corporate Optimization," 75 Q. J. Econ. 345, 347 (1961). Shubik has observed that, "the less the firm is able to influence its environment, the less needs to be known about the motivation of the management of the firm for most purposes of policy." Shubik, supra at 374.


personal goals (such as security, power and prestige) as well.\textsuperscript{21} Recent investigation has contributed to a "behavioral" theory of the firm in the way business firms make economic decisions.\textsuperscript{22} This view considers the firm to be an adaptive organism dealing with problems as they arise and not striving to maximize any specific objective function. In the short run, the emphasis is on moving performances to aspiration levels and, in the long run, on adjusting aspiration levels to experienced performance.\textsuperscript{23}

Increased attention has been given in the near past to growth objectives of firms and the development of a growth theory as the dynamic counterpart to the classical static theory of the firm.\textsuperscript{24} Of course, growth objectives and profit objectives are not only intertwined but sometimes virtually indistinguishable. Profit is the main source of funds for growth\textsuperscript{25} and serves as a major inducement for

\textsuperscript{21}See Katona, \textit{Psychological Analysis of Economic Behavior} (1951). An entrepreneur as a decision maker is also a member of a household which has maximization of utility as its assumed objective. If the profit maximization objectives of the firm and utility maximization goals of the individual are not in complete consonance, a modification of one or both may result.

\textsuperscript{22}E.g., Cyert & March, \textit{A Behavioral Theory of the Firm} (1963).


\textsuperscript{25}For industrial corporations, an estimated 60\% to 65\% of all capital is internally generated by retaining earnings and accumulating depreciation allowances. See Berle, \textit{supra} note 23 at 29. New-issue financing has typically contributed less than 10\% of the total funds employed for expansion by established corporations. See Marris, "A Model of the 'Managerial' Enterprise," \textit{77 Q. J. Econ.} 185 (1963).
growth with growth as the sine qua non of long run profits. However, analysis of the firm from a growth standpoint may be more realistic than a static appraisal and offers highly promising research opportunities.

Since well before the publication of Berle and Means' well-known book, *The Modern Corporation and Private Property*, in 1932, interest has been expressed in the implications of separation of ownership and control under the corporate form and the nature and source of objectives governing the firm. The emerging theory of the "managerial" corporation has given new vitality to the ideas and recognizes that the objective functions of decision makers in the firm may not always coincide with those of the owners of contributed equity capital. As farm firms become larger and involve greater separation of ownership and management, research attention will likely focus on similar problems in agriculture. If so, much can be gained from the theoretical framework now being worked out for sectors dominated by large corporations.

Sub-sets of Firm and Individual Objectives

Because of the effects of the family firm cycle and the close relationship traditionally of the firm and the household in agriculture, additional objectives in the nature of sub-systems or sub-sets are identifiable. At any point in time, farm firms may be grouped loosely in accordance with a clustering of objectives. This is neither a precise nor necessarily a complete classification, however.

A substantial group of farmers, nearing or within the third and final stage of the family firm cycle, are likely to pursue objectives within a framework of reduced planning horizons if it is assumed that the firm will not continue to function beyond their lifetimes and that the capital resources involved will be recombined with those of other firms at retirement or death. For this group, short-run profit maximization, security of

\footnote{26/ See, e.g., Marris, *The Economic Theory of Managerial Capitalism* (1964).}

\footnote{27/ See generally Heady, Back & Peterson, *Interdependence Between the Farm Business and the Farm Household with Implications on Economic Efficiency* 403, Iowa State University Agricultural Experiment Station Research Bull. 398 (1953).}
income and capital, retirement planning, equitable disposition of family wealth among the heirs, and prevention of erosion of family wealth in the intergenerational transfer process because of taxes and estate settlement costs are likely to be paramount. From the standpoint of over-all economic efficiency, such firms may operate in the final stages of the cycle at reduced efficiency levels comparable to the lower efficiency in the early stages of the cycle.28/

A rapidly growing segment of farm firms, those wherein plans have been made for continuation of the firm as a functioning economic unit beyond the life cycle span of the senior (and, generally, majority) owner or owners, may pursue objectives in addition to, in lieu of or quite different from those of farmers who are willing for the life cycle of the firm to parallel the life cycle of the household. For these firms, strong emphasis is rationally placed upon arrangements to move individuals and their capital into and out of the firm in keeping with their own personal life cycle but without disrupting the firm or causing the firm cycle to parallel or even be influenced significantly by personal life cycles.

Objectives of this latter group of firms are likely to include maximizing long-run efficiency within the firm in terms of resource allocation, income distribution and extended planning horizons. The objective of perpetuating the higher efficiency levels characteristic of the mid-phase of the family farm cycle by injecting successively overlapping personal life cycles may be rewarded in sustained operation at minimum cost levels through time. The gradual divestment of ownership and control by senior members of the firm during their lives to younger members often serves to dampen modulation of the family firm cycle. The firm may be quite interested in minimizing the effects of death or departure of owners and enhancing capital availability. The senior members of the firm are frequently concerned about devolution of family wealth (much or all of which is often committed to the firm) to their heirs, including those who may be junior members of the firm and those who may have no association with the firm, as well as about preventing erosion of that wealth by costs and taxes in the intergenerational wealth-transfer process. Simplicity and economy in organization and maintenance of the organizational form may also be relevant objectives of the firm.

28/ See Heady, Back & Peterson, supra note 27.
It is explicitly recognized that many farm firms fall into neither category. In general, these are the firms operating in the early and mid-stages of the family firm cycle and that have not made a definite decision as to the future of their particular time.

Partial Analysis of Discrete Points on the Institutional Spectrum

Neither space nor time permits a detailed economic analysis and critique of the various organizational alternatives available for the accomplishment of specific firm and individual objectives. However, it is recognized that only through such analysis and critique will inadequacies of present forms be identified.

Research on incidence of use of alternative forms of organization is hampered by lack of reliable data. The Census of Agriculture does not enumerate farms by method of organization (corporation, partnership, trust, sole-proprietorship) although the resulting data would be most helpful, particularly as time series information could be built up for analysis and correlation with other data. Information published by the Internal Revenue Service indicates that fewer than 25,000 corporations classified as "agriculture, forestry and fisheries" have filed income tax returns in recent years. Limited data are available in a few states on farm corporations. Even less is known about the extent of use of the partnership or trust. Quite clearly, a pressing need exists for reliable, primary data on farm-firm organization.

In the belief that the corporation or some derivative therefrom may well be the most rapidly growing form of organization for farm firms in the next several decades, special attention is devoted to the corporation in the following paragraphs. It should be recognized that the major use


30/ In Iowa, data have been obtained in an annual search of records in the Office of the Secretary of State (where corporate articles of incorporation must be filed) with data verified by mail questionnaire. Recently, state income tax data have been made available. The Iowa data indicate that the rate of farm incorporation has increased since 1958.
of the corporate form in agriculture in recent years has been by larger family operations. Reported studies reveal that fairly general agreement exists among decision makers for incorporated farm firms as to why the corporation was selected over alternative organizational forms. The corporate form has generally been selected to facilitate accomplishing objectives of estate planning or intergeneration transfer of property, business continuation over time, avoidance of full owner liability for business obligations and income tax minimization.31/

It is deceptively easy to consider current characteristics of specific organizational forms to be inherent in the form itself. In the remainder of this paper an attempt is made to concentrate primarily on the truly inherent nature of the particular organizational form. Detailed characteristics that may be either advantageous or disadvantageous and thus take on significance in the short run may have little permanence in the long term.

Static Firm Efficiency

Prior research on the firm, involving specifically the landlord-tenant relationship, has produced a set of static conditions deemed necessary to encourage operation of the firm at maximum efficiency from the combined resources of the owners.32/ (1) Each owner's share of the factory of variable input must be the same as the share of product output obtained therefrom, (2) each resource owner should receive the full share of the product earned by each unit of fixed and variable resource contributed, and (3) the shares of all products must be the same for each resource owner if one party can make decisions as to level of output. Attainment of these conditions may be facilitated in firms with functional unity of ownership and management. One characteristic of the corporation or other single economic entity that has both theoretical and practical micro implications is the unity of ownership of production resources and unity of decision making in the sense of providing a mechanism for a single management voice.

Frequently, in a multi-member farm firm, the informal organizational ties among the members do not rise to the separate entity status of a recognized form of multi-member firm organization. In many cases, the various parties own different shares in the various inputs of production. Some assets may be owned solely by one member and contributed to the firm, some assets may be owned by the other members, and others may be owned in co-ownership with varying undivided interests from asset to asset. This pattern of resource ownership and control creates problems of accounting, income distribution and resource allocation.

Conventional analysis of the farm firm is based upon the implied assumption that one owner-operator makes decisions, bears the costs and receives the returns from production. If two or more individuals own production resources or their services, the sharing of costs and returns within the firm becomes a factor potentially affecting resource allocation and firm efficiency. Under perfect association of costs and returns, the resource owner receives the marginal value product of the contributed resource or resource service. To the extent there is not perfect association between input contributor and return receiver within the firm, motivations and pressures are generated for other than efficient resource allocation. The problem is basically the same whether the parties are associated together as landlord-tenant under a crop or livestock-share lease, as father and son operating under a contractual operating agreement, as an integrated firm or under some other form of relationship encompassing multiple ownership of the resources of production. Imperfections in the negotiating or bargaining process may seriously hamper attainment of this condition where the entity obtains substantial amount of inputs by contractual means.

The corporation or other economic entity, to the extent that it is the owner of production resources and also the decision maker, occupies a position similar to that of the sole proprietorship. As the contributor of variable inputs and the recipient of the entire amount of additional product, the corporation theoretically applies the variable

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Although the corporation frequently involves multiple membership at the three management levels - shareholders, board of directors and officers - the corporate control structure produces a single management voice.
input until the last unit of input equals in value the last unit of output.

The sharing of costs and returns in a corporation owned by multiple shareholders is therefore automatic and attainment of the economic optimum for the firm is therefore encouraged.

The second condition for maximum firm efficiency, that each resource owner should receive the full share of the product earned by each unit of fixed and variable resource contributed, is facilitated by the corporation by virtue of its structural design. Taking, as the simplest case for illustration, the corporation issuing a single class of stock upon incorporation, the holders of stock have rights to corporate income that vary only with the number of shares held. In dividing the product among the production resources as compensation for inputs utilized in the production process, the corporation still faces the problem of compensating the labor hired, capital borrowed and property leased on the basis of market values or the marginal productivity of each resource. Once this is accomplished, however, the remainder of corporate net income from production (after taxes) is available for distribution to shareholders on the basis of a uniform amount per share of stock. Thus, the holder of stock, representing prior ownership of a specific item or items of property, receives compensation precisely equal to that of the holder of another share of stock representing prior ownership of a different item of property. The amount imputed to each share can be paid out as dividends or retained in the corporation for expansion or investment. The corporation, by being the owner of productive resources of various types, amounts and values and by being owned by individuals with identical rights to corporate income, greatly simplifies the problem of compensating resources on the basis of their marginal value productivities. Moreover, the problem of continually adjusting returns to resource owners as resource values and productivities change does not arise where resources

34/ If the resource services purchased by the corporation in the form of labor hired, capital borrowed and property rented are compensated on the basis of marginal value productivities, and if the corporation's production function is homogeneous of degree one, then the amount of product imputed directly to corporate capital assets (and indirectly to holders of corporate stock) should equal the marginal value product of such property by Euler's theorem and the total product would be exactly exhausted. See Henderson & Quandt, Microeconomic Theory - A Mathematical Approach 64-66 (1958).
are owned by the corporation. The problem of compensating resources rented, leased, hired or borrowed by the corporation remains however, and is much the same as for unincorporated firms.

A necessary condition for fulfilling the requirement that each resource owner should receive the full share of the product earned by each unit of resource contributed is that assets transferred to the corporation must be exchanged for stock and securities at fair market value or a uniform percentage of fair market value. Otherwise, a system of product sharing is established which may operate perpetually to misallocate the corporate product among shareholders.

An aspect of benefit sharing other than the perfect or imperfect nature of the scheme should be noted. The accounting system needed to maintain an orderly allocation of returns among resource owners may become quite complex if specific assets or resources of production are individually owned or held in co-ownership. For example, if a widow and children succeed to the ownership of an unincorporated firm upon death of the owner-operator (with the widow getting the customary one-third share pursuant to statute and with the remaining two-thirds interest divided among the children), operation of the firm under that division of ownership over time might result in a complicated system of benefit and cost sharing unless all transactions with respect to the firm are in complete consonance with the initial ownership pattern.

A third condition considered necessary to encourage maximum firm efficiency under multiple ownership of resources is that the shares of all products must be the same for all resource owners if one party can make decisions as to level of output or specific enterprises. This condition is frequently not met in father-son contractual agreements or landlord-tenant relationships and may not be met in integrated firms. Under the corporate form of organization, all income from the various corporate enterprises is divided among the shareholders on a predetermined, fixed basis that is uniform for all enterprises. Each shareholder receives or is entitled to receive a proportionate share of corporate net income from each enterprise.

**Dynamic Efficiency Considerations**

With the injection of time as a dimension of resource allocation and income distribution, the structural and organizational framework of the
firm takes on added importance. Basically, for maximum efficiency, each resource owner should have an opportunity to receive return on investment in fixed and variable resources made in one production period and not forthcoming until a subsequent period. In theory, the form of organization should not increase firm uncertainty or result in a shift in resource use between time periods.

In many firm relationships involving multiple-resource owners, the intrafirm associations are pursuant to contractual, time or other linkages that are frequently of indefinite or limited duration. Thus, in a life tenant - remainderman association, the linkage is the life of the life tenant (or another measuring life), either of which is the subject of substantial uncertainty, both when viewed from the standpoint of the life tenant and that of the remainderman, with respect to investments in the property over time. Likewise, in a landlord-tenant association, the contractual linkage, whether based upon a specific term or at will, is again the subject of some uncertainty for periods beyond the certain term of the lease contract. For a partnership, which technically dissolves upon death or expulsion of a partner, admission of a new partner, bankruptcy, insanity or other legal disability, or fraud or misconduct, substantial uncertainty exists as to the term of the relationship.

In a corporation, intrafirm relationships are pursuant to linkage of, arguably, a more permanent nature. Corporations in most states may be organized for a term of years or perpetually. From the standpoint of the firm, perpetual organization is advantageous inasmuch as renewal of the term of existence may disrupt the firm and result in erosion of equity capital through pay-outs to dissenters. But from the standpoint of minority shareholders, limiting the organizational form to a term provides some measure of protection in the event that withdrawal of capital from the firm becomes desirable. Except for expiration of term, a corporation can be dissolved only by operation of law or by necessary vote of the shareholders. Even if dissolution should occur, the rights of shareholders to receive their pro rata share of immature and unrecovered firm investments may be substantially greater than that provided by law for life tenants (or their heirs) or lessees.

35/Nine states limit maximum corporate duration to terms ranging from 25 to 100 years. See 1 Model Business Corporation Act Annotated § 4(a), ¶ 2.02.
Theoretically, corporate life does not depend upon the lives of shareholders. Upon death of a shareholder, his stock and noncorporate property pass through the probate process to pay costs of estate settlement and for distribution in accordance with a will or state law of descent and distribution. The corporate assets underlying the stock are not affected by shareholder death, thus simplifying estate settlement. If corporate ownership and management succession are planned, multi-member corporation continues to function much the same after death of a shareholder as before.

By removing a portion of the consequences of owner liability, a properly organized and adequately financed corporation may limit the liability of shareholders for deficiency obligations against the firm and thus lengthen the planning horizon of decision makers. While limited liability has been a major factor enabling corporations to attract investors and assemble substantial amounts of capital, limited liability serves to protect shareholders from the full consequences of catastrophically large corporate obligations even in a small, closely-held corporation. By isolating their noncorporate assets from obligations of the farm business, the officer-director-shareholder group may be more willing to allocate resources among enterprises involving greater uncertainty than if personal as well as business assets would be subjected to satisfaction of business obligations. 36/

In two situations, however, the corporate form may affect the uncertainty and planning horizons of decision makers adversely compared with noncorporate forms. Although neither individual farmers nor farm partners can be declared bankrupt involuntarily under federal law, farm corporations may be subject to involuntary bankruptcy. 37/ Also, the privilege accorded a debtor of holding specified items of property exempt from execution to

36/ While limited tort liability (such as from employee negligence) may obtain in a corporation properly organized, adequately financed with equity capital and properly operated with due attention to corporate formalities, limited contractual liability is sacrificed for specific obligations if the shareholders are required to affix their personal signatures to corporate contractual obligations.

pay debts\textsuperscript{38} is generally available only to natural persons or heads of families and not to corporations. Therefore, upon conveyance of exempt property to a corporation, a debtor loses the privilege of holding the property free from creditors. Moreover, the stock received in exchange for the exempt property is not exempt from execution of creditors.

The net effect of the corporate form of organization upon the decision makers' planning horizons is unknown. Undoubtedly, the effect varies from time to time and from firm to firm. Additional research is needed to ascertain the precise effects of organizational forms upon decision making activities.

Capital Availability and Accumulation

With capital serving as one of the important limiting factors for growth of the firm\textsuperscript{39} and with capital needs of individual farm firms likely to increase still further with the expansion anticipated, the matter of capital availability will likely take on added significance for the years ahead.

1. Equity capital. Traditionally, each generation of farmers has furnished its own equity\textsuperscript{40} capital for use in the business, supplemented by debt capital obtained from external sources. Even land rented to farm firms by nonfarmers on a variable-rent basis with payment of rent in kind cannot be characterized as full risk bearing capital inasmuch as landlords

\textsuperscript{38}Exemption statutes of the middle-western and western states generally favor the debtor more than those of the eastern states. Exemption statutes of heavily rural states reflect a generous policy of protecting farmers as a class from deprivation at the hands of creditors. See, e.g., Iowa Code §627.6 (1966).

\textsuperscript{39}Irwin, "Discussion: Firm Growth Research Opportunities and Techniques," 48 J. Farm Econ. 1532 (1966).

\textsuperscript{40}Equity capital constitutes the risk bearing fund of the firm. Equity holders have less certainty of income, greater management rights and greater opportunity to share in positive or negative firm growth than creditors as holders of debt securities.
are generally granted legal priority over the tenant's creditors in sharing in firm output. The landlord's payment is not necessarily a function of the firm's net profit.

Direct investment of equity capital in farm firms from sources outside the agricultural sector has not become widespread and is not comparable to direct equity investment in larger firms in other industries. This may be because of relative return on investment, relative uncertainty, size of capital-using firm or the fact that convenient and satisfactory means have not been generally available for channeling nonfarm equity capital to farm firms. It would appear reasonable to hypothesize that utilization of nonfarm equity capital would have a beneficent effect upon farm firms in that a portion of the risk and uncertainty of agriculture would be shifted to the nonfarm sector. Moreover, the absence of a fixed payment burden on this portion of firm capital should entail perhaps a lesser modification of production planning because of expectations concerning weather, price or other uncertainty. However, the quid pro quo would be a partial shifting of control and management rights out of agriculture. This problem has been faced most squarely by researchers in the area of vertical integration and coordination.

With agriculture dominated by sole proprietorships, many firms are "born" and also "die" within a generation. Over time, discontinuities in management and ownership occur in the transition from generation to generation. If family linkage in firm ownership continues from one generation to the next, a portion of the capital from a terminating farm business may be channeled to successors by testamentary succession, gift, or bargain purchase transaction. However, substantial amounts of equity capital are removed from farm firms (and may flow out of the agricultural sector) with each generation because of the relatively high rates of out-migration of farm reared people. State laws

41/ See, e.g., Iowa Code § 570.1 (1966) (landlord's lien on all crops and tenant's nonexempt personal property).


43/ See Harris & Massey, Vertical Coordination Via Contract Farming (forthcoming).
of intestate succession uniformly divide estates equally among the
children after setting apart the share for the surviving spouse; and,
with testate devolution, parents generally endeavor to distribute their
property equitably among their children, whether on the farm or
pursuing off-farm vocations. Upon completion of estate settlement,
any one of more of the heirs generally may demand legal partition of
the property into shares or judicial sale of the property and division
of the proceeds. Thus, the result may be distribution of accumulated
farm firm capital among the various heirs and liquidation of the firm
or imposition of a debt obligation on the successor in order for pay­
ments to be made to nonfarm heirs without liquidation of the firm.

It is in the area of capital accumulation and retention over time
that the corporation has the greatest potential advantage. With most
farm corporations, the original shareholder group is limited to members
of a family who were farming together as a partnership, father-son
arrangement or a landlord-tenant relationship before incorporation.
Assuming the non-admittance of new nonfamily equity investors, which
is discussed below, a major concern is maintaining and expanding the
firm's equity capital in (1) bridging the transitional ownership gap
between generations, (2) lessening the impact of capital withdrawal by
nonfarm heirs upon vesting of testamentary devolution rights, and (3)
minimizing erosion of equity capital by estate settlement costs and
taxes levied upon the estate or property passing therefrom. 44/

Although property transfers within and between generations are
possible under any form of organization, certain attributes of the
Corporate form facilitate intergeneration and intrageneration property
transfers. These attributes include the opportunity for making gifts
or sales of stock with retention of working control over the firm, 45/
restricting retransfer of corporate stock by donees or vendees, divis­
ibility of asset ownership into easily transferred shares of stock making
possible the concept of farm business transfer as opposed to specific
asset transfer, and possibilities for using corporate stock as an income

44/ At this point it is assumed arguendo that continuation as an intact
economic entity over time is an objective of the firm.

45/ But see Rev. Rul. 67-54, I. R. B. 1967-8, p. 10 providing that
retention of indirect control over transferred stock may result in
inclusion of the value of the transferred stock in the estate of the
transferor for federal estate tax purposes.
channeling device for minimizing family income tax liability. The choice of stock transfer alternatives (gifts and sales during life, dispositions by will, disposition at death under state law and stock redemption or purchase arrangements at death) and the time path of property distribution are generally functions of the transferor's specific objectives to be accomplished by the transfer.

Stock transfers by gift or sale during the life of a shareholder result in a partial shift in farm business ownership to the recipients of the stock, who become holders of an equity in the business. Thus, continuation of the business after the death or retirement of the principal shareholder or shareholders is promoted. Such transfers also reduce the amount of stock susceptible to passage through the probate process at death. Stock transfers to younger members of the firm during life provide security and the possibility of additional income through dividends. These factors may contribute to attraction and retention of qualified management personnel whose employment alternatives offer similar opportunities for ownership security. If stock is made available by parents to children remaining on the farm, purchases may be made by such on-farm heirs during the years of high earning capacity. Such purchases (along with gifts) may ameliorate the burden frequently falling upon those heirs of acquiring the balance of the farm business assets upon death of the parents.

To the extent that stock passes to nonfarm heirs by gift or by inheritance, two problems may arise: (1) whether such heirs would be willing to continue as shareholders for a period of time, and (2) whether, as a matter of policy, the stock should gradually be purchased by those actively associated with the firm or whether the stock should be permitted to pass to the heirs, devisees, donees or vendees of the nonfarm heirs with the stock thus likely to become publicly held after the passage of a few generations. These problems relate, of course, to the matter of feasibility and acceptability of off-farm ownership of stock in general.

From the standpoint of maintaining the equity capital of the firm intact, the disposition of a decedent's interests therein and the rights of a distributee including rights to a liquidating distribution are important. For a firm whose objective is to remain closely-held through succeeding generations, it is essential for stock ultimately to be channeled to the successors in the "inner circle" of ownership and management. If
stock passes to all the heirs or legatees of shareholders at death, firm ownership may become widely diffused in a short time. If stock passes to nonfarm heirs or legatees, the equity of the firm is preserved intact inasmuch as the holder of stock cannot obtain partition and sale as can co-owners of property generally. Thus, no diminution of equity capital occurs since there are no pay-outs to heirs or legatees, neither is there imposition of a debt obligation for the same purpose.

The involuntary nature of the equity investment by nonfarm heirs or legatees raises problems as to the stability of the investment relationship, however. Problems may arise stemming from: (1) a desire by off-farm shareholders for larger dividend declarations while on-farm shareholders prefer low dividend payments, if any, and instead may prefer to utilize corporate funds for expansion; (2) intervention in decision making by uninformed, technically unqualified off-farm shareholders; and (3) the relatively narrow market for shares in a closely-held corporation encountered by off-farm shareholders as they desire to dispose of their holdings. The latter difficulty may be compounded by restrictions on stock transfer that reduce the market substantially so that, in effect, the only permissible purchasers are the corporation or other shareholders. Moreover, with little or no history of dividend declaration, and with control vested in individuals whose objective functions may not include dividend declaration, a minority shareholder’s block of stock may be additionally unattractive to investors. Off-farm shareholders in nearly all farm corporations having off-farm shareholders studied in a 1959 Iowa survey were in the first generation of off-farm residence. It is arguable that family ties to the firm and farm minority investors who are first generation heirs. It is largely conjectural whether the investment functions of second and succeeding generations off the farm will be similarly oriented. Much will likely depend upon a comparison with alternatives investment opportunities as to whether continued ownership of farm corporation stock will be acceptable to these individuals.

46/However, participation in management, beyond the minimal management rights of minority shareholder, is likely only if the off-farm shareholders singly or in combination can muster majority or working control of the firm.

47/Absolute restrictions on stock transfer are legally void, however.
As the form of immediate and direct compensation for equity capital contributions to the firm dividends are an important factor in attracting and retaining off-farm investment interest. Dividends occupy a position in input compensation similar to that of salaries as compensation for labor inputs or interest as compensation for debt capital inputs. One key difference, however, is that dividend payments at rates less than marginal value productivities would specify are evidently not unusual, and amounts of earnings not so declared and paid out as dividends increase stock value, thus inuring ultimately to the benefit of the shareholders.

The matter of immediate compensation in the form of dividends or mediate compensation in the form of stock value appreciation has important economic implications for off-farm ownership of stock. Shareholder compensation in the form of stock value appreciation may be realizable at a future time. Thus, compensation in such form is subject to discounting. The discount rate may be substantial inasmuch as the date of payment or realization of input compensation is generally accompanied by substantial uncertainty. In a corporation in which stock is publicly traded, shareholder compensation in the form of appreciation in stock value due to retention of corporate earnings may be realized at any time by sale of the stock. However, stock in a closely held corporation is generally not publicly traded, restraints may be placed on alienation of the stock and only minority interests with few management rights are usually made available for purchase. These factors militate against sale of stock by a shareholder seeking to realize previous compensation amounts imputed to corporate stock. Sale may be possible, but often at a price less than the fair market value of the stock as determined by the value of underlying assets. As an alternative to sale, shareholders generally must await dissolution of the corporation and liquidation of its assets before previously imputed

48/ One reason for low rates of dividend declarations in many corporations is that while salaries and interest are tax deductible from corporate income, dividends are not. Therefore, an incentive exists to pay out corporate earnings in tax deductible form thus skewing the income distribution schedule in favor of higher salaries for example. Only in the tax-option or Subchapter S corporations are dividends, interest and salaries treated substantially alike tax-wise.
capital compensation could be realized. It would appear that the mediacy or immediacy of receipt or equity capital compensation would be of particular importance to prospective investors in a closely-held corporation, and to off-farm heirs who receive corporate stock as all or part of their testate or intestate share of a decedent shareholder's estate or by inter vivos gift.

The attractiveness of farm corporation stock as an investment is allegedly influenced by considerations in addition to relatively low dividends, limited market for the stock, and little if any voice in management as a minority shareholder. The level of resource earnings in agriculture, compared with nonagricultural investment opportunities, is likely to affect, not only the purchase of minority interests in operating farm corporations by nonfarm investors and retention of stock by off-farm heirs, but also the important matter of whether off-farm investment groups are likely to form corporations for the purpose of engaging in farming with management and control clearly vested in the off-farm group. It is somewhat ironic that higher levels of prosperity in agriculture are likely to be accompanied by increased investment activity by nonfarmers in agriculture with the result that more management and control rights are vested in off-farm groups.

If outside equity capital were solicited for farm firms, either private placement of securities or an organizational grouping of several firms for capital acquisition purposes would be a necessity because of the relatively small size of farm firms now and for the foreseeable future. As

49/ An incentive exists to receive capital compensation in the form of appreciation in stock value rather than currently as dividends in that stock value appreciation is eligible for capital gains treatment (long term if stock is held more than six months) while dividends are treated as ordinary income.

50/ Several instances of formation of operating farm corporations by nonfarm groups have been reported in recent months. The availability of competent management inputs is likely to be a crucial factor in whether such firms succeed and ultimately increase in number. Of course, formation of incorporated farm landlords has become relatively common wherein nonfarm investors form a corporation which in turn purchases land and rents it out to tenants under a conventional lease arrangement.
a general rule of thumb, if the growth potential of the business is not such that $300,000 or more of stock can be sold, the business is not in a position to seek capital through widespread capital solicitation or from the large capital markets because the cost for small public offerings is prohibitive. The Securities and Exchange Commission has reported that more than 20 percent of public common stock issues running less than $1 million is used for expenses of issuance, compensation to underwriters and other fees. Costs for larger flotations are relatively less. If off-farm ownership of equity capital is deemed desirable, perhaps efforts should be expended in developing a suitable capital market for efficient allocation of investment capital.

2. Debt capital. As to debt capital availability, farm corporations are constrained somewhat in the short-run by nonavailability or restrictions upon loans from federal agencies. And in some cases credit extenders may be reluctant, without the personal commitment of shareholders, to continue lending at preincorporation levels if shareholder limited liability was unduly "manufactured" upon incorporation.

52/ Farmers Home Administration real estate loans, operating loans and rural housing loans and grants may not be made to farm corporations 6 C. F. R. §§ 321.5(c), 331.3(c), 332.6(g) (1) (1966).
53/ Federal Land Bank loans may be made to a farm corporation if more than one-half of its income is derived from farming and if a substantial portion of the capital stock is owned by individuals engaged in farming operations of the farm to be mortgaged. In addition, one or more individuals owning a substantial portion of the corporate stock must assume personal liability for the loan. 75 Stat. 750 (1961), 12 U. S. C. § 771 (1964); 6 C. R. R. § 10.3 (1966). Production Credit loans may be made to a farm corporation engaged in actual farming operations or livestock production provided 75% or more of the stock is owned by individuals actually engaged in its farming or livestock operations, or the major portion of corporate assets consists of property actually devoted to farming or livestock production and at least half the gross income is derived from these operations. 6 C. F. R. § 50.102 (1966). Holders of a majority of the shares must personally guarantee the indebtedness. 6 C. F. R. § 50.103 (1966).
On the plus side however, shareholders may be a source of debt capital and take a mortgage or pledge of corporate property in return. These are the typical manifestation of incorporation on debt capital availability.

The quantitative change in availability of debt capital by incorporation alone (assuming a given amount of equity capital) has received attention in the literature, although no objective factual data have been published upon incorporation. The effect of the corporate form itself is not great. However, it would seem that the corporation offers convenient means whereby its debtor status may be affected favorably if the corporate form is used deliberately to take advantage of the factors that impinge upon exogenous capital rationing. By providing opportunity for continuity of operation and more certain organizational posture, the corporation may appear a more stable borrower to a credit extender. If ownership and management succession is planned, the corporation offers less change of business disruption on death of a shareholder. By providing an ownership and management framework for larger scale operations, the corporation may permit greater specialization by employees, resulting in improved management in the long term. However, exogenous capital rationing may be increased by incorporation if substantial amounts of assets previously subject to satisfaction of firm obligations are not transferred to the corporation. Thus, shareholder limited liability may operate to reduce credit availability unless shareholders commit personal assets to liability for the obligation. Research is clearly needed in this area.

Employee Status for Farmers

Important consequences attach to the fact that a partner in a partnership or the proprietor in a sole proprietorship may become an employee upon incorporation of the farm business. The transformation may be accompanied by psychological adjustments as well as by shifts in both legal and economic relationships with the firm.

Employee status casts the matter of compensating labor and management inputs in bold perspective as salaries and bonuses are established, ostensibly without regard to the shareholder status of the employee. This fact may have a salutary effect upon intrafamily bargaining for shares of income of the firm where-in a tendency often exists to lump all inputs, including labor, management and capital, together in making determinations for income sharing.

Employee status automatically brings higher social security taxes, along with eligibility to participate in tax privileged fringe benefits such as group term life insurance, pension plans and profit sharing plans. With a fixed annual salary, farm employees may become eligible for higher social security benefits than a fluctuating income would produce. Retirement planning may be facilitated for employees since earnings received as dividends or interest do not reduce social security benefits.

Research Models

Considerable progress is being made in the development of techniques, models and methodology for research on the farm firm as a small, closely-held economic unit. Heidhues has developed a recursive programming model that explicitly includes savings, investment and growth. Using simulation techniques, Halter and Dean have applied a model to a situation where an attempt was made to find some improved management policies to deal with the uncertain environment in which farm firm decisions are made.

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55/ For 1967-68, self-employed farmers pay social security tax on the first $6,600 of earnings from self employment. Int. Rev. Code, §§ 1401, 1402(b). By comparison the tax is levied at a rate of 4.4% on employees' compensation up to $6,600 per year with a like amount imposed on the corporation for a total of 8.8%. Int. Rev. Code, §§ 3101, 3111. This differential is presently projected through 1987 when the difference will be a maximum of $231.00 per employee per year.


Patrick has constructed a behavioral simulation model. In research carried on at Iowa State University, this writer has developed a functional linear programming-simulation model for multi-period analysis for growth of the firm and for testing the economic efficacy of various components of the legal structure within which firms operate. Recently, interesting work on models for investigating growth of the firm has been going on in other quarters.

Simulation is a promising and exciting analytic tool and may provide the most workable approach for analyzing the firm, particularly under uncertainty. Although it has clear disadvantages, such as complexity of models, paucity of workable tests of significance and the need for a multiplicity of models because of their specificity with respect to a particular problematic situation, the flexibility and adaptability of simulation commend it for research on the firm.

The ISU-USDA model developed at Iowa State University utilizes both linear programming and simulation in tracing firm growth through time and measuring the economic effects of the legal form of firm organization. To date, the model has been used to test the corporate form; however, the model is adaptable for use in testing and comparing the sole proprietorship, general and limited partnership, trust, landlord-tenant relationship or partially or totally integrated firm. The deterministic model is recursive, involving n years of firm activity. The linear programming segment of the model first generates, for a particular year, an optimum production plan based upon ex ante price and yield expectations. The linear programming matrix, which contains several additional resource rows and activity columns to adapt the model to multi-period analysis and more finite capital accounting, then computes an ex post solution using actual prices and yields.

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Relevant portions of the solution are transmitted to the simulation portion of the model as shown in block diagram form in Figure 8.1. Also, necessary accounting and inventory information is transmitted directly to the next year's linear programming matrix, thus providing an interyear production function link. The simulator, composed of almost 60 equations and containing more than 200 variables, reflects with reasonable fidelity the legal form of business organization and the legal framework for the households and estates of the firm's shareholders. The simulator produces a solution in several variables and provides input data for the next year's linear programming matrix and the next year's simulator. The process is repeated for the second year and for each of the n years under study. Various "runs" can be made for different assumptions as to the technical production function, the decision-making model, or the legal structure of the firm or the household.

Conclusion

The farm firm may well be entering an era of dramatic and far reaching structural and organizational change, perhaps the most dramatic and far reaching in its long and colorful history. Structurally, the firm has changed relatively little from the birth of the family farm concept down to the present time. But forces are already in motion to bring about significant change. The family farm will likely continue, at least for a time, if the term is redefined to encompass principally ownership and management concepts.
Farm firms of the future will be owned and managed in a great many instances by more than one individual, will be more detached from the household than currently, and will be less subject to the family cycle of its owners and managers than it traditionally has been. Substantially greater use will likely be made of the corporation and its variants and derivatives. It would appear that more equity capital will be provided to agriculture from outside the sector.

It is hypothesized that commercial farmers are prepared to accept the structural and organizational changes that appear almost inevitable. In fact, farmers may be more willing to accept the change than some nonfarmers whose contact and experience with agriculture in an earlier day has created a Procrustean mold that rejects out of hand any structural or organizational change.