

The family farm; economies in farm size; capital requirements; leasing arrangements; problems in building up equity.

Farm Size, Capital, and Tenure Requirements

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FOR EVERY 100 FARMS in 1940 there were only 75 in 1958, but the average farm in 1958 had 1.4 times as much land and produced products with nearly twice the value with 46 percent less labor.

What do these astonishing rates of change mean for rural society in the future? Do they mean that rapid technical advance is incompatible with the historic institution of family farms, or is it merely incompatible with as large a number of farms as we now have? Do these rates of change mean that most potential economies of scale are beyond or within the size limits of well-operated family farms? To what extent are they expanding the capital re-

quirements of farms? Are land and capital requirements expanding beyond the ability of families to retain major control over their farms? If so, what tenure changes are likely to occur?

CONCEPT OF THE FAMILY FARM

In handling these questions, our concept of the family farm is a family unit of production. In industry, such units are called the family store, the family shop, the family mill, and the like. In farming, they are called family farms. In both industry and farming, a family unit of production is a business organization in which most of its labor and managerial activities are combined in the same individual or family. This means that a given farm — the King ranch, for example — is not a family unit of production if the family that supplies most of its managerial direction is not also the family that supplies most of its labor. Conversely, a given farm, such as a sharecropper unit, is not a family unit of production if the family that supplies most of the labor is not also the family that supplies most of the managerial direction.

Conceivably, the whole of U.S. agriculture could be made up of farms of sizes falling chiefly within the labor capacities of individual families but with no one of them qualifying as a family unit of production. Each farm might be small enough for each family to do most of the work, but with tenure arrangements that lodged most of the management in someone else. The Delta plantation system, for example, was characterized by this situation under the older sharecropper regime. This may be true also of some “integrated” farms, as in broiler production, for example.

Two farms may not possess the same degree of “family-ness,” if in one instance, the family supplies all labor and management, and in the other instance, only 75 percent of each. One may quibble over how much hired labor on a farm is consistent with the family farm and over the degree of restrictions on the operator’s managerial powers.

A perfect definition of the family farm is not possible. For example, at one extreme, we may conceive the family farm to be any farm unit on which all the labor and managerial roles are lodged in the same skin. But this "perfect definition" would exclude many large farms that are viewed as family units in the everyday meaning of the word. At the other logical extreme, we may conceive a family farm to be any farm unit that lodges the complete managerial function in a single family but does not limit the amount of permissible hired labor. According to this definition, the Ford Motor Company was until recently a family production unit, and its counterpart in farming would be a family farm.

To avoid the realistic absurdities of either of these logically "perfect" definitions, this chapter conceives the family farm to be *any farm on which most of the labor and managerial activities are carried out by the same individual or family.*

Thus conceived, the family farm ties into four broad facts that are relevant to our problem:

1. It involves the close association of the household and the farm business, but the farm need not be the place of family residence. The latter is accidental. For example, the widespread separation of crop and livestock production on the same farms in the Great Plains has been associated with a 7 to 15 percent shift of family residence from farms to towns. But this change has not altered the fact that the families who do most of the managerial direction of farm activities also do most of the farmwork. Thus the farms of this region remain as much family units of production as before.

2. The possibility of family farms does not rest on the ownership of capital resources but upon the family's possession of managerial power to direct farm operations. This possession of managerial power may be accomplished through various tenure forms. Any particular tenure form

may or may not be compatible with family farms, depending on how it is actually drawn and implemented in practice.

For example, there are instances of full-owner operators ceasing to be family farmers because they have so bargained away control over farm operations that they have become virtually hired laborers. Such instances are found most frequently in cases of very perishable crops, where timing is of the essence and where alternative market outlets are not available.

Again, tenancy is compatible with family farms because, generally speaking, tenants make managerial decisions with little or no interference from landlords except when permanent improvements are involved. Thus, the Corn Belt is commonly recognized as second to none in the dominance of family farms and yet for decades the percentage of renter-operators in this region has been among the highest in the nation. But in some forms, tenancy may be incompatible with family farms. For example, the share-cropper system generally lodges so much managerial power in landlords that tenants are essentially directed laborers, paid with a share of the crop instead of money.

Contract farming arrangements may or may not be compatible with family farms. Certainly they are incompatible with family farms to the extent that they are merely an adjunct to complete "integration." Under this circumstance contractual arrangements are so drawn and implemented that they are merely a mechanism by which processors and distributors of farm products take over so much control of farm operations that the farmer is reduced essentially to a worker status.

But contract arrangements may be so drawn and implemented that they do not materially shrink the farmer's managerial power. This has been true of contract production of fruits, sugar beets, and vegetables throughout the Intermountain states and elsewhere. In these instances,

contract farming is essentially a system of negotiated prices which shifts price risks to marketing agencies without altering other risks peculiar to farm production. Thus, in making production decisions, farmers know the prices they will receive for their products. Under this circumstance, contract farming is no more incompatible with family farming than is wheat production with its marketing quotas and price floors. The same principle might be applied to hog production and cattle and sheep feeding.

Finally, corporate tenure may be compatible or incompatible with family farms. It is incompatible if controlling stock is taken over by absentee owners who in turn hire professional managers to direct completely the farm operations. This reduces self-bossed farmers to the status of foremen or directed workers. However, if most of the controlling stock is vested in the farm-operating family, as is frequently the case, corporate tenure is as compatible with the family farm as is fee simple ownership of land.

3. Either subsistence or commercial farming is compatible with family units of production, but these two characteristics trace to quite different concepts of freedom. Historically, subsistence farming is rooted in the self-sufficient-man ideal, according to which a completely free man contains within his control all the capabilities and other resources to meet his needs. Thus he enjoys a freedom of action that is wholly independent of willingness of others to take off his hands the products he does not need in exchange for those he does need. To the feudal system of land tenure, for example, it was a contradiction to think of men as free and at the same time as dependent for their livelihood upon a market exchange. No one has bespoken this noncommercial concept of freedom more truly than did Jefferson in his saying that commerce involves dependence on "the caprice of customers," which "begets subservience and venality," which in turn "suffocates the germ of virtue"

and therefore renders men the "fit tool for the designs of ambition."¹

By combining the managerial role of feudal lords and the labor role of serfs, the rise of the institution of family farms in the New World in great measure enabled our forefathers to transmute the ancient self-sufficiency concept of a free man into a democratic way of life. In Jefferson's time, for example, family units of production were as characteristic of industry as they were of farming. But in contrast to the family farm of his day, the family shop or family store was a highly commercialized institution. The livelihood of the operator depended upon "the caprice of customers" which in turn begat "subservience and venality."²

The family farm of the youthful United States was a vehicle through which common man achieved a high approximation of the ancient and medieval self-sufficiency ideal of freedom. It was also a prime vehicle of the enterprise concept of freedom, which stemmed from the seventeenth century natural rights philosophers, and of the deep-seated ethic of industry stemming from the Protestant founders of the sixteenth century.³ At the heart of the enterprise concept of freedom is the judgment that owners or their legal agents have the exclusive right (power) to prescribe the rules under which their businesses shall operate; therefore, a chief function of government is to prevent any encroachment upon this complete managerial power of proprietors by others, including government itself. The key ethic belief in industry is that one fails in his obligation to do the best he can for himself, his family, his country, and even all men, if he places love of the "easy" or backward ways above excellence in any employment of his choice.

¹ Notes on the State of Virginia, 1782, Query XIX.

² *Ibid.*

³ These concepts are treated in detail in the senior author's paper, *American Creeds and the Problem of Excess Capacity in Agriculture*, USDA, Agr. Res. Serv., Farm Econ. Res. Div. pp. 34-47.

4. Given the low productive farm and farm marketing technology characteristic of the early years of the United States, the family farm is compatible with each of the three value systems just cited. (a) It is compatible with the self-sufficiency view of freedom as nondependence on market relationships. With such technology even the most diligent family can scarcely do otherwise than produce mainly for its own subsistence. (b) It is also compatible with the enterprise concept of freedom. Neither trade nor the absence of trade necessarily involves interference by outsiders with complete managerial prerogatives of proprietors to run their businesses as they please. (c) Finally, the low productive farm technology in the youthful Republic was eminently compatible with the key belief of industry; there was no impediment to families directly investing their time and energies in producing capital goods instead of wasting themselves in unproductive leisure. In this way, most capital formation of the nineteenth century United States stemmed from striving for excellence by relatively non-commercial family farmers. As Moulton has aptly observed:

Under conditions of pioneer life in America. . . capital goods were largely created by direct apportionment of the farmer's energy to that purpose. The farmer. . . devoted those portions of the year during which it was impossible for him to plant, cultivate, or harvest his crops, to the clearing and improving of land, the digging of ditches, and the construction of fences and farm buildings. . . . Since the farming classes until the middle of the nineteenth century made up the bulk of our population, the larger proportion of capital equipment in America until comparatively recent times was the result of an individual process of utilizing off seasons of the year which could not . . . be turned to account in the creation of consumer goods.⁴

This industriousness (practice of the work ethic) destroyed the subsistence type of farm which was the exponent of the age-old belief in freedom as personal independence

from the "caprice of customers." The highly productive commercial farm of the 1960's is the nation's chief perpetuator of the enterprise concept of freedom as noninterference with the natural right (or power) of proprietors to run their businesses under what rules they please.

There is no assurance that continued allegiance to the work ethic of industry may not lead eventually to the destruction of the modern commercial family farm. For this ethic:

. . . includes the judgment that esteem and acceptability of any institution is merited by superior proficiency in performing a social function such as feeding and clothing the nation. Therefore, should technological advance appreciably outstrip its capacities to keep in step, even the most efficient family farms possible would soon be identified with wasted manpower, land, and other resources. Under this circumstance, it is difficult to see how the family could escape the doom of the very work ethic it has so long and conspicuously fostered. . . .⁵

Increasing Proportions of Farms Qualify As Family Farms

The upper size limit of family farms is considered here as the amount of land and other resources whose labor requirements are approximately 3 man-years. The labor force of an ordinary farm family is approximately 1.5 man-years.

The lower size limit of any self-supporting family farm is the smallest amount of land and other resources needed to support farm operating and family living expenses from farm earnings. Whatever the limit may be, we know it is rising rapidly. For every 100 commercial farms with less than \$10,000 worth of sales in 1949, there were only 85 in 1954, the latest year for which data were available (Table 8.1). Furthermore, farms with smaller sales disappear more

⁴ Harold G. Moulton, *The Formation of Capital*, The Brookings Institution, Washington, D. C., pp. 11-12. 1935.

⁵ John M. Brewster, "Technological Advance and the Future of the Family Farm," *Jour. Farm Econ.*, 40:1604-5. 1958.

TABLE 8.1

CHANGE IN NUMBER OF FARMS BY ECONOMIC CLASS, UNITED STATES AND REGIONS, 1949 AND 1954*†

Region and year	Unit	All commercial	Economic class ‡						All non-commercial
			<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>	
United States:									
1949.....	Thous.	3,705	103	381	721	882	901	717	1,673
1954.....	Thous.	3,327	134	449	707	812	763	462	1,455
Change.....	Pct.	-10.2	29.8	17.8	- 2.0	- 8.0	-15.3	-35.5	-13.0
Northeast:									
1949.....	Thous.	283	12	46	74	69	53	29	160
1954.....	Thous.	254	14	51	67	59	43	20	123
Change.....	Pct.	-10.1	21.8	9.7	- 8.9	-15.1	-18.3	-30.6	-23.0
Corn Belt:									
1949.....	Thous.	771	20	118	207	192	146	88	223
1954.....	Thous.	705	30	150	192	156	117	60	196
Change.....	Pct.	- 8.6	50.1	26.7	- 7.5	-18.4	-20.0	-31.3	-12.1
Lake States:									
1949.....	Thous.	410	4	38	118	130	84	36	93
1954.....	Thous.	379	6	49	113	133	72	26	78
Change.....	Pct.	- 7.4	46.5	28.8	- 3.8	-13.1	-13.9	-27.1	-16.3
Appalachian:									
1949.....	Thous.	568	4	15	47	113	193	176	402
1954§.....	Thous.	522	5	19	62	140	171	125	348
Change.....	Pct.	- 8.1	27.1	22.5	32.2	5.2	-11.2	-29.0	-13.6
Southeast:									
1949.....	Thous.	355	4	10	22	63	119	137	251
1954 	Thous.	303	7	16	33	72	96	79	222
Change.....	Pct.	-14.8	50.5	57.6	50.0	15.0	-19.3	-42.5	-11.5
Delta States:									
1949.....	Thous.	340	4	9	17	47	117	146	217
1954**.....	Thous.	298	7	13	26	65	111	76	175
Change.....	Pct.	-12.5	77.7	43.8	47.3	38.3	- 4.5	-48.3	-19.7

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TABLE 8.1 (Continued)

Region and year	Unit	All commercial	Economic class ‡						All non-commercial
			I	II	III	IV	V	VI	
Southern Plains:									
1949	Thous.	319	14	39	58	75	77	56	154
1954 ††	Thous.	256	15	34	46	59	61	41	156
Change	Pct.	-19.8	1.8	-12.6	-20.4	-21.3	-20.7	-26.1	1.3
Northern Plains:									
1949	Thous.	338	10	47	103	101	55	22	32
1954	Thous.	316	10	55	101	89	45	16	29
Change	Pct.	-6.4	7.6	17.4	-2.3	-12.2	-18.4	-26.0	-10.3
Mountain:									
1949	Thous.	149	12	27	38	35	25	12	45
1954	Thous.	136	13	28	34	30	22	9	43
Change	Pct.	-8.8	11.0	3.3	-9.3	-16.1	-14.9	-20.3	-3.8
Pacific:									
1949	Thous.	172	19	31	37	37	34	14	94
1954	Thous.	157	27	34	33	29	26	8	85
Change	Pct.	-8.7	39.7	10.2	-11.2	-20.7	-23.9	-40.9	-9.7

* Farm prices approximately the same in 1949 and 1954.

† Percentages computed from unrounded data.

‡ Class limits fixed by value of sales: Class I, \$25,000 and over; Class II, \$10,000 to \$24,999; Class III, \$5,000 to \$9,999; Class IV, \$2,500 to \$4,999; Class V, \$1,200 to \$2,499; Class VI, \$250 to \$1,199, including only farms with 100 days or more of off-farm work by operator or income of farm operator and members of his family from nonfarm sources greater than value of all farm products sold.

§ Includes disappearance of 18,000 sharecroppers.

|| Includes disappearance of 30,000 sharecroppers.

** Includes disappearance of 25,000 sharecroppers.

†† Includes disappearance of 6,000 sharecroppers.

Source: Census of Agriculture, 1954.

rapidly. For every 100 commercial farms with less than \$5,000 worth of sales in 1949 there were only 82 five years later.

While the minimum size limit of farms is increasing sharply, the really serious question is whether larger-than-family farms are increasing more rapidly than family farms. Evidence shows that these larger farms are qualifying as family farms by cutting back on the amount of hired labor used. Preliminary results of a study by Radoje Nikolitch, USDA, indicate this is so. Farms in census economic classes I and II appear to be increasingly within the size limit of family farms (see Table 8.1). Thus for every 100 farms in 1949 with sales of \$10,000 or over that used 1.5 man-years or more of hired labor, there were only 95 in 1954. Also, for every 100 farms in this group that had less than 1.5 man-years of hired work in 1949, there were 132 in 1954. The same trend is apparent even if not more than 1 man-year of hired labor, or even no hired labor, were allowed on family farms.

These trends were the same in all regions except the Pacific, where the percentage of farms using 1.5 or more man-years of hired labor increased slightly faster than farms using less than this amount.

Assuming that hired labor was as productive as family labor, it is estimated that family labor accounted for 31 percent of total production of all farms in economic classes I and II in 1949, compared with 39 percent in 1954.

The foregoing trends suggest no incompatibility between technological advance and the institution of family farms. This is precisely the result to be expected on conceptual grounds, because there is a fundamental difference in the nature of the "Industrial Revolution" in agriculture and in industry. This fact is evident from the vantage point of earlier times when farming and manufacture were alike with respect to the sequence in which production steps were carried out. Normally in both instances they were done

sequentially, one after another, usually by the same individual or family.

The shift to machine methods quickly wiped out this age-old similarity. With minor exceptions of certain specialized poultry and livestock operations,⁶ a shift to machine farming leaves relatively undisturbed the sequential pattern of operations that has prevailed in farming since the domestication of plants and animals. In contrast, the same shift to industry transmutes this older sequence of operations into the modern simultaneous pattern characteristic of the factory system. Thus in farming, the "Industrial Revolution" is merely a spectacular change in the gadgets with which operations are performed, whereas in industry it is a further revolution in the sequence of productive operations.⁷

This second aspect of technical change is the one that demolishes the older order of family production units. It multiplies the number of concurrent operations far beyond the number of workers in a family. From the standpoint of sheer physical necessity, in industry such advance has long since replaced the premachine system of family units with immensely larger ones. They often require thousands of workers fastened to different concurrent tasks that must be coordinated and guided by layer upon layer of supervisors and managers.

Technical advance in farming, which is merely spectacular change in the gadgets with which operations are performed, remains by-and-large as compatible as hand techniques with either family or larger-than-family units of production. This compatibility with family units lies in the fact that with the minor exceptions noted, farm operations remain as widely separated by time intervals after mechanization as before. Hence the number of things that can be

⁶ For discussion of these exceptions, see John M. Brewster, "Technological Advance and the Future of the Family Farm," *Jour. Farm Econ.*, pp. 40:1606-7. 1958.

done at the same time in farming remains as close as ever to the number of workers in an ordinary family. But machine methods are equally compatible with larger-than-family units, as they introduce no new obstacle to expanding farm size beyond the capacity of an ordinary family to do the work in any particular operation. This means that either in the pre-machine era or the present, the conditions responsible for the predominance of family or larger-than-family farms lie outside the operating requirements of farm technologies.

As the total acreage of land available for farming is now approximately fixed and as machine methods increase the area of land and other materials which one man can handle per unit of time, the only necessary consequence of technical advance, as thus far experienced in farming, is a reduction of the total farm population. When land and capital are organized into larger family units of production, this reduction in population is accompanied by a declining number of family farms, such as is now occurring.

ECONOMIES OF FARM SIZE

These facts suggest that most potential economies of larger farm units are realized within the size limit of family farms. No systematic study of this matter has yet been made, although some studies have been made for particular areas and types of farming. These studies indicate that only negligible economies of scale are achievable beyond the upper size limit of family farms. Four of these studies are cited.

1. In his study of optimum sized corn-livestock farms for given combinations of equipment in northeastern Nebraska, Scoville found that virtually no additional economies of size were realized beyond a 2-man, 2-tractor farm, representing 440 acres. Under 1935-45 cost price relation-

⁷ As explained elsewhere, this fundamental difference between machine industry and agriculture stems from the contrasting nature of materials handled in each case. (John M. Brewster, "The Machine Process in Agriculture and Industry," *Jour. Farm Econ.*, p. 70, February 1950.)

ships, the total cost per dollar of production on a farm of this size was 87 cents compared with 86 cents for a 7-tractor, 5-man farm, representing 1,760 acres.⁸

2. Using least-cost machine combinations for farms of different sizes in north-central Iowa with a corn-oat-meadow rotation, Heady and his colleagues found that cost per \$100 of value of crops decreased sharply for farms up to 160 acres in size. Appreciably lower per unit costs were realized up to 320 acres, but from there on up to 880 acres only negligible economies were achieved. Beyond this point, costs per units of production began to rise somewhat, "because of lack of timeliness in operations resulting in declines in per acre yields."⁹ The physical yields employed in this study were averages for a 10-year period. Costs and investments were based on prices at 1949 levels.

3. Using "synthetic farm models" in "determining the relationship between size of farm businesses and long-run unit costs" for New England dairy farms, I. F. Fellows and others found that "operators of one-man farms can achieve a unit cost level approximately equal to the level on farms of larger size when a similar level of management efficiency is achieved."¹⁰

4. In his 1954 study of northern Illinois farms, Mosher found that "the optimum use of land, labor, and capital was on farms 260 to 339 acres. The net earnings per acre, per \$100 invested, and per man were smaller for farms under 260 acres and were no larger for farms of 340 or more acres." These were mainly hog-grain farms. The average total labor on farms in this size group was 20.5 months.¹¹

⁸ Orlin J. Scoville, *Relationship Between Size of Farm and Utilization of Machinery, Equipment and Labor on Nebraska Corn-Livestock Farms*, USDA Tech. Bul. 1037, Tables 14, 17, 19, pp. 40, 42, 44. 1951.

⁹ E. O. Heady, Dean E. McKee, and C. B. Haver, *Farm Size Adjustments in Iowa and Cost Economies in Production for Farms of Different Sizes*, Iowa Agr. Exp. Sta. Res. Bul. 428, p. 427, and Fig. 18, p. 434, 1955.

¹⁰ I. F. Fellows, G. E. Frick, and S. B. Weeks, *Production Efficiency on New England Dairy Farms*, Conn. Agr. Col. Bul. 285, 1952. See especially Fig. 6, p. 35.

¹¹ M. L. Mosher, *Farms Are Growing Larger*, Ill. Agr. Exp. Sta. Bul. 613, pp. 40-41 and Fig. 5, p. 14, 1957.

Studies such as these indicate that significant economies of size are achieved in moving up the scale to the point at which a "line of equipment" is fully utilized, which is well within the size limits of family farms. Beyond this point, little additional economies of scale are realized.

This is precisely the result to be expected on conceptual grounds, because up to 1960, as previously explained, technological advance in agriculture with minor exceptions had not changed the older sequential pattern of operations into the modern simultaneous pattern characteristic of the factory system. This means that expanding farms beyond family size limits merely multiplies the same units of technology that are already on well-organized family farms. In general, there is nothing technologically unique about larger-than-family units of production in farming. This means that now, as in the pre-machine era, virtually all potential economics of scale are realized well within the size limits of family farms.

Although the evidence shows no appreciable cost advantage for larger-than-family units, well-operated family farms may be at a serious competitive disadvantage with integrated firms that carry on farm operations, such as broiler production, mainly as an adjunct to other operations such as merchandizing feed or farm products themselves. For what is vital to the integrated firm is profits on its operations as a whole rather than on each specific operation. Thus its overall profit position may be improved, even though it may take a loss on its farm operations, provided the loss is more than offset by the assurance of steady flow of products of uniform quality from its farm operations. The family farm could hardly withstand this kind of competition, even if it were able to produce as cheaply as the integrated firm at the farm level.

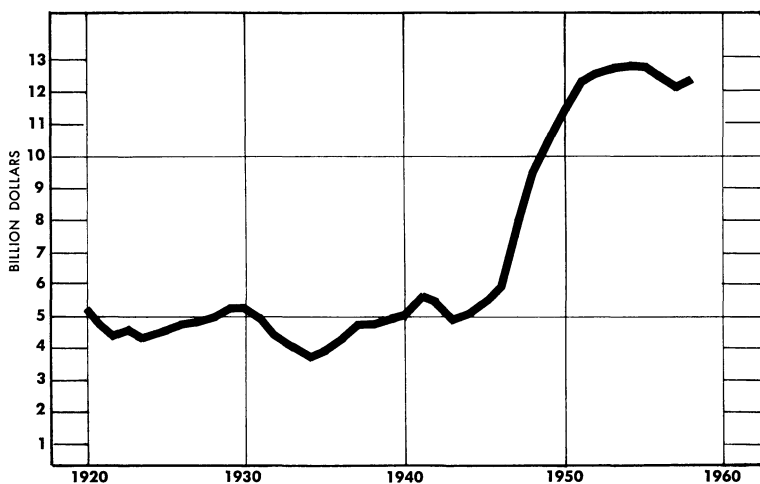
INCREASING CAPITAL REQUIREMENTS

Increasing the amount of land and other materials, which one man can handle and the rapid substitution of machine power and equipment for horsepowered equipment

has led to marked expansion of capital requirements per farm in the last two decades. Five observations from available data are especially pertinent.

1. Net investment in farm power and machinery increased by \$5.4 billion during the 1946–51 period, about 90 percent of which took place on commercial farms (Fig. 8.1). This was equivalent to nearly \$1,500 per commercial farm.¹² By increasing the acreage and other materials a man can handle per unit of time, this new machine technology generated great pressure for larger farms and hence a smaller total number of farms. From 1949 to 1954, acres per farm increased by more than 12 percent, reflecting an 11 percent decline in total farms and nearly 16 percent reduction in the farm population.

2. Although annual purchases of new farm power and equipment have been less than depreciation on past invest-



*Net investment equals total purchases minus depreciation, includes tractors, trucks, automobiles for farm use and all machinery and equipment.

Source: Derived from "The Farm Income Situation," FIS-169, July 1958, AMS, Dept. of Agriculture

Fig. 8.1 — Net investment in farm power, machinery, and equipment in the United States, 1920–58 (1947–49 prices).

¹² This average is based on the 1950 number of commercial farms. Figure 8.1 was developed by our coworker, Radoje Nikolitch.

TABLE 8.2

CAPITAL ASSETS OF SELECTED TYPES OF AVERAGE SIZE COMMERCIAL FARMS, SPECIFIED YEARS, 1939-59*

Type of farm, region, item	Unit	1947-49 Dollars					Index 1939 = 100			
		1939	1944	1949	1954	1959	1944	1949	1954	1959
Dairy farm (Eastern Wisconsin):										
Gross cash income	Dol.	4,723	6,248	6,395	7,801	9,133	132	135	165	193
Total land	Acre	116	122	126	132	140	105	109	114	121
Value land & buildings	Dol.	13,777	14,490	14,965	15,678	16,628	105	109	114	121
Power & machinery	Dol.	2,140	3,303	4,197	4,992	4,762	154	196	233	222
Livestock	Dol.	4,275	5,282	4,890	5,770	6,086	124	114	135	142
Total capital	Dol.	20,192	23,075	24,052	26,440	27,476	114	119	131	136
Hog-beef fattening (Corn belt):										
Gross cash income	Dol.	12,683	17,537	20,508	21,679	27,157	138	162	171	214
Total land	Acre	178	188	193	198	212	106	108	111	119
Value land & buildings	Dol.	24,987	26,390	27,092	27,794	29,760	106	108	111	119
Power & machinery	Dol.	3,062	3,737	4,531	5,652	4,735	122	148	185	155
Livestock	Dol.	7,704	9,743	9,952	9,537	10,991	126	129	124	143
Total capital	Dol.	35,753	39,870	41,575	42,983	45,486	112	116	120	127
Cotton (Texas Black Prairie):										
Gross cash income	Dol.	3,619	3,879	6,397	6,493	6,620	107	177	179	183
Total land	Acre	141	149	159	174	187	106	113	123	133

TABLE 8.2 (Continued)

Type of farm, region, item	Unit	1947-49 Dollars					Index 1939 = 100			
		1939	1944	1949	1954	1959	1944	1949	1954	1959
Value land & buildings.	Dol.	12,157	12,847	13,709	15,002	16,123	106	113	123	133
Power & machinery....	Dol.	1,139	1,643	1,929	2,351	2,202	144	169	206	193
Livestock.....	Dol.	1,040	1,236	1,147	1,318	1,278	119	110	127	123
Total capital.....	Dol.	14,336	15,726	16,785	18,671	19,603	110	117	130	137
Wheat-grain sorghum (Southern Plains):										
Gross cash income.....	Dol.	3,647	12,393	12,303	7,958	15,991	340	337	218	438
Total land.....	Acre	599	663	688	714	744	111	115	119	124
Value land & buildings.	Dol.	38,132	42,207	43,798	45,453	47,363	111	115	119	124
Power & machinery....	Dol.	2,988	3,448	5,125	5,875	5,376	115	172	197	180
Livestock.....	Dol.	2,086	3,881	3,033	3,645	4,540	186	145	175	218
Total capital.....	Dol.	43,206	49,536	51,956	54,973	57,279	115	120	127	133
Cattle ranch (Intermountain):										
Gross cash income.....	Dol.	8,216	12,147	11,365	11,372	15,086	148	138	138	184
Total land.....	Acre	1,595	1,697	1,610	1,690	1,730	106	101	106	108
Value land & buildings.	Dol.	26,286	27,967	26,533	27,851	28,510	106	101	106	108
Power & machinery....	Dol.	2,198	2,579	2,792	3,225	3,468	117	127	147	158
Livestock.....	Dol.	33,248	35,756	35,521	38,321	42,802	108	107	115	129
Total capital.....	Dol.	61,732	66,302	64,846	69,397	74,780	107	105	112	121

* Excluding crop inventories.

Source: Unpublished data, Costs, Income, and Efficiency Research Branch, Farm Economics Research Division, U.S. Agricultural Research Service.

ments since 1951, acreage expansion per farm was greater in the 1954-59 period for each of the selected types of farms (Table 8.2) than in the previous 5-year period. For example, the average wheat-grain-sorghum farm increased by 30 acres in 1954-59 compared with 25 acres in the previous 5 years. This pressure of new power technology for larger farms was reflected in a 16 percent decline in all farms in the 1950's, compared with a 10 percent decline in the 1940's.

3. In 1959, the total investment of selected types of farms of average size in given areas was a third larger than at the beginning of World War II (Table 8.2). The total ranged from nearly \$20,000 for a cotton farm of average size in the Texas Black Prairie area to nearly \$75,000 for a cattle ranch of average size in the Intermountain region.

4. The total investment for farms of average size is much below the capital requirements of larger well-operated family farms toward which U.S. farming is tending. For example, as shown in Table 8.2, the average hog-beef fattening farm of the Corn Belt represented a total investment of more than \$35,000 (1947-49 dollars). In contrast, Mosher's study of central Illinois farms shows investment for family farms ranging to more than \$230,000, with \$100,000 frequently found (Table 8.3). Average invest-

TABLE 8.3
INVESTMENT BY SIZE OF FARM, NORTHERN ILLINOIS, 1954

Size group (acres)	Number of farms in sample	Number of men per farm	Investment per farm (dollars)
50- 99	50	1.1	41,146
100-179	50	1.3	72,553
180-259	50	1.4	101,481
260-339	50	1.7	130,839
340-419	50	2.1	167,959
420-499	50	2.4	194,920
500-579	50	2.5	230,567
580 or more	50	3.2	293,139

Source: From Table 1 of M. L. Mosher, *Farms Are Growing Larger*, Ill. Agr. Exp. Sta. Bul. 613, 1957.

TABLE 8.4

CAPITAL REQUIREMENTS FOR FARMS RETURNING SPECIFIED EARNINGS
(Budgeted for selected farms under projected cost-price relationships)*

Type of farm, area, and item	Unit	Annual earnings of farmer's labor and mgt.			
		\$2,500	\$3,500	\$4,500	\$5,500
Beef-cattle ranch (cow-calf), (South Central Oklahoma):					
Gross cash receipts	Dol.	19,408	26,620	35,879	45,180
Total land	Acre	1,953	2,687	3,650	4,386
Total investment	Dol.	166,772	229,275	308,186	371,620
Land and buildings	Dol.	114,181	156,788	212,250	255,500
Power and machinery	Dol.	3,014	4,636	4,660	5,500
Livestock	Dol.	41,986	57,408	77,376	93,120
Fences and water ponds	Dol.	7,591	10,443	13,900	17,500
Dairy (Willamette Valley, Oregon):					
Gross cash receipts	Dol.	15,525	17,825	21,850	25,300
Total land (irrigated cropland)	Acre	54	62	76	88
Total investment	Dol.	50,321	55,702	65,119	73,191
Land and buildings	Dol.	28,190	31,622	37,627	42,774
Livestock	Dol.	10,071	11,563	14,174	16,412
Irrigation equipment	Dol.	2,673	3,069	3,762	4,356
Fence	Dol.	416	477	585	678
Power and machinery	Dol.	8,971	8,971	8,971	8,971
Potato-general (Snake River Valley, Idaho):					
Gross cash receipts	Dol.	11,000	15,626	20,252	27,500
Total land	Acre	80	100	120	160
Total investment	Dol.	29,712	43,886	56,617	72,862
Land and buildings	Dol.	20,040	28,733	36,023	48,876
Power and machinery incl. irrigation equipment	Dol.	9,672	14,153	20,594	23,986
Cotton (Mississippi Delta, loam soil):					
Gross cash receipts	Dol.	9,924	13,287	20,459	23,324
Total cropland	Acre	128	172	264	301
Total investment	Dol.	28,782	35,743	62,019	67,675
Land and buildings	Dol.	21,231	27,746	43,145	47,698
Power and machinery	Dol.	7,551	7,997	18,874	19,977

* Preliminary

ment for the group of farms of optimum size (260 to 339 acres) was above \$130,000.

Similar high-level investment requirements are indicated by preliminary results of a study underway on minimum resource requirements needed to return given levels of earnings for the farmer's labor and management. Under projected cost-price relationships, budgeted farms (Table 8.4) show that the minimum total investment needed for \$2,500 farmer's earnings ranged from nearly \$30,000 for a potato farm in Snake River Valley, Idaho to more than \$166,000 for a beef-cattle ranch in south-central Oklahoma. For farmer's earnings of \$5,500, the estimated investment ranged from nearly \$73,000 to more than \$371,000 for the same types of farms and areas. All these units fell within the size limits of family farms. They also fell within census economic classes I and II, (\$10,000 annual sales or more) which are the only classes that are expanding in agriculture as a whole (Table 8.4).

5. As previously explained, in most types of farming, ownership of both land and capital is not an essential characteristic of family farms, although most of the farm equipment and livestock usually is owned by the farmer. From this standpoint, expansion of working capital requirements is more significant than total capital requirements. From available data, two points stand out:

a. For the selected types of farms shown in Table 8.5, operating capital for 1959 ranged from nearly \$10,000 for an average size wheat-grain-sorghum farm in the southern Great Plains to more than \$46,000 for an average size cattle ranch in the Intermountain states (1947-49 dollars). Operating capital represented well over a third of the total investment in the average dairy farm, and more than 60 percent of the total for the cattle ranch of average size.

b. More striking than these absolute amounts is the rate at which operating capital requirements have been expanding. During the 1939-59 period, this increase ranged from more than 30 percent for the average cattle ranch in

the Intermountain states to more than 95 percent for the average wheat-grain-sorghum farm in the Southern Plains.

TENURE AND ACQUIRING FARM RESOURCES

Two questions are involved in the abilities of farmers to acquire farm resources: (1) Is the farmer able to control (with reasonable certainty) sufficient land and capital with which he combines his management and labor to

TABLE 8.5
TOTAL INVESTMENT AND WORKING CAPITAL FOR SELECTED TYPES OF FARMS,
1939 AND 1959 (1947-49 DOLLARS)

Type of farm, region, and item	Unit	1939	1959	Percentage increase
Dairy farm (Eastern Wisconsin):				
Total investment	Dol.	20,192	27,476	36.1
Working capital:				
Power and machinery	Dol.	2,140	4,762	122.5
Livestock	Dol.	4,275	6,086	42.4
All	Dol.	6,415	10,848	69.1
Proportion of total investment . . .	Pct.	31.8	39.5
Hog-beef fattening (Corn Belt):				
Total investment	Dol.	35,753	45,486	27.2
Working capital:				
Power and machinery	Dol.	3,062	4,735	54.6
Livestock	Dol.	7,704	10,991	42.7
All	Dol.	10,766	15,726	46.1
Proportion of total investment . . .	Pct.	30.1	34.6
Wheat-grain sorghum (Southern Plains):				
Total investment	Dol.	43,206	57,279	32.6
Working capital:				
Power and machinery	Dol.	2,988	5,376	79.9
Livestock	Dol.	2,086	4,540	117.6
All	Dol.	5,074	9,916	95.4
Proportion of total investment . . .	Pct.	11.7	17.3
Cattle ranch (Intermountain):				
Total investment	Dol.	61,732	74,780	21.1
Working capital:				
Power and machinery	Dol.	2,198	3,468	57.8
Livestock	Dol.	33,248	42,802	28.7
All	Dol.	35,446	46,270	30.5
Proportion of total investment . . .	Pct.	57.4	61.9

Source: Unpublished data, Costs, Income, and Efficiency Research Branch, Farm Economics Research Division, ARS, USDA.

yield an adequate current and expected future income; and (2) Is the farmer able to obtain equity in land and capital? In considering the tenure aspects of acquiring land and capital, these two questions, even though related, may be treated separately.

Getting Control of Farm Resources

The means by which farmers gain control, or obtain the services of, land and capital without owning them can be grouped into five types of arrangements. Although a farmer may use any one or a combination of these arrangements with or instead of owner proprietorship, their relationship to farm size is best treated individually as: (1) leases; (2) partnerships and family arrangements; (3) corporations; (4) transactions with off-farm industry; and (5) integration through contract.

LEASES

Leasing is the most common means of separating ownership and control of the resources used in farming and is expected to remain so in the near future.¹³ Although the number and proportion of census-defined "tenants" is declining, the proportion of land under lease remains relatively constant. Improvements in the tenure structure, therefore, might start with refinements in leasing practices and rental markets.

The inferior status of tenancy carried over from earlier periods is rapidly disappearing in commercial farm areas in which landlord-tenant arrangements are used effectively to combine resources for higher income. For example, more than 42 percent of the farmland in the high farm income areas of the Corn Belt and the eastern Great Plains is rented. Areas of low farm income, on the other hand, have

¹³ Denman makes a similar observation about the "mature" agricultural economy of Britain: ". . . the obvious merits of the contractual tenant system in the eyes of the typical British farmer is likely to secure its dominant place in the future economy of agriculture." D. R. Denman, "The Future of Ownership of Rural Land in Britain," *Land Econ.*, 36(1):62, 1960.

small percentages of land under lease. The Southeast has less than 25 percent of its farmland under lease; the Northeast, only 14 percent.

In most commercial farm areas, leasing is associated with increasing farm size and decreasing farm numbers. As a general rule, rented farms must be larger than owned farms in order to provide the operator with the same total income. Except in the South, the size of tenant farms ranges from a fifth larger to more than twice as large as full owner farms.

The potential for farm size expansion through leasing separate tracts of land from several owners has scarcely been scratched. Theoretically, there is no limit to the number of farms a tenant may rent but, in fact, half of the tenants rent from only one landlord and very few rent from more than two. Given the present incentives to expand farm size, particularly those of younger operators, multiple-leasing probably will become more frequent among renters.

Information available suggests that increasing numbers of operators of large farms prefer to balance the amount of owned land with a minimum level of use of their machinery (or livestock) and add leased land up to the maximum capacity of their machinery (or livestock). These part owners are increasing in importance both numerically and proportionately, and their combinations of owned and rented land suggest a new role for farm leasing arrangements. Leasing is a means of expanding farm size to utilize unused labor, management, or capital capacity without the risk and equity problems of acquiring ownership.

The limitations of farm leases to permit farm expansion are found not in the broad classes of leases but in the specific terms of the leases which are determined more by habit and custom than by leasing in general. For example, livestock-share leases often are useful in expanding dairy operations. The custom of 50-50 sharing, however, may force a manager with limited capital to a small farm where his contributions would represent about 50 percent of the total.

With the small farm, his labor and management may be so under-utilized that capital formation is impossible. In this case, a 30-70 livestock-share arrangement on a larger farm with the tenant providing a smaller share of the resources might afford the operator greater opportunity for higher income and expanded farm size.¹⁴

As a form of tenure, leasing has the advantages of increased operator mobility and flexibility, with more rapid farm expansion. The main disadvantages of the lease as a means of expanding farm size are: (1) less certainty of continued access to the land than unencumbered ownership; and (2) obstructive terms and conditions of particular leases. From the standpoint of research, extension, and public programs, energies might be directed more effectively toward improvements in leasing conditions and arrangements than toward converting tenancy into owner-proprietorship.

PARTNERSHIPS AND FAMILY ARRANGEMENTS

The liability features of most partnerships call for close family relationships. One of the most significant aspects of partnerships and family arrangements is the restrictions placed on outsiders getting into farming. Very widespread use of tenure arrangements that require a personal, or family, "in" could restrict farming opportunities to a favored few. At the extreme, efficiency in farming could suffer.

The full extent of personal or family relationships between farm owners and farm operators is not known, but in some regions they are substantial. For example: (1) A study of leasing practices showed that some areas of the Midwest had about two-thirds of the leases from parents.¹⁵

¹⁴ See, for example, Howard Hill and Sydney Staniforth. *A Modification of Leasing Arrangements to Expand Farm Opportunities*, Wis. Agr. Exp. Sta. Res. Bul. 213, 1959.

¹⁵ Virgil L. Hurlburt, *Farm Rental Practices and Problems in the Midwest*, Iowa State Univ. Bul. 416, 1954. p. 107.

(2) Another study of leasing agreements between individuals in the Great Plains revealed that as high as 35 percent were with relatives.¹⁶

The partnership also is often used to own land in the Great Plains. For example, 26 percent of the land is held by partners or owners who hold at least some land in partnership (not including husband-wife partnership).¹⁷

Perhaps most important of the partnerships is the father-son agreement. This type of partnership, common among livestock-share arrangements, may be useful in providing a smooth transfer of the farm enterprise between generations. To the extent to which such arrangements prevent disruption in the intergenerational turnover in management, they may be helpful in expansion of farm size. From a societal viewpoint, disadvantage may be that entry into farming would be restricted to sons or sons-in-law.

CORPORATIONS

Among production industries, farming has a conspicuous lack of incorporated firms. Although available data are not specific, the number of farm corporations in the United States is almost certainly less than 5,000. The primary reason for the very limited use of the corporation in farming has been the small size of operating units.

When revisions in the federal income tax law removed one of the barriers to incorporation of some family farms, a surge of interest in this device occurred. Although tax advantages are apparent mainly to operators of the comparatively few large family farms, the general awareness of the corporate organization in farming will almost certainly increase its use. In Iowa, for example, 35 of the 116 family-farm corporations were formed in the year fol-

¹⁶ *Great Plains Survey of Tenure and Finance*, 1958. More than half of these leases were with parents.

¹⁷ R. W. Strohbehn and G. Wunderlich, *Land Ownership in the Great Plains States*, 1958. USDA Statis. Bul. 261. 1960.

lowing the tax change and in Oregon, 25 percent of these corporations were formed in 1957-58. Data from the Internal Revenue Service also suggest a recent increase in the number of farm corporations.

In other industries, the corporation is a proved sire of large organizations. Why has the corporation not been used in farming? The nature of the production process in most types of farming permits efficient operation of relatively small, widely dispersed units. Beyond a certain point in farm size, the corporate farm will find its advantages simply in replication of these farm units. Economies might come in centralized purchase of supplies, large-scale buying or renting of capital items, central farm management, transportation and storage, and direct selling. Under such a multiunit corporation, what happens to the operator on the individual farm unit?

The farmer in the capacity of a "unit manager" is subject to general policies of the central management. The resources he uses are furnished, negotiated for by him, or subject to audit by central management. The broad outlines of management are provided, but he has wide discretion within a season or a rotation. He retains all attributes of a manager and may, in fact, contribute a larger amount of management than under the precorporation organization. Special services, such as machinery repair, insemination, spraying, and transportation can be provided by the central management. Even research and education might be part of a larger corporation's activities. As resources are not owned or rented by the farm operator but by the corporation, the transfer and replacement of the operator-manager need not interfere with production.

The aggregation of resources by multiunit firms under conditions such as those suggested could be extended virtually without limit. The economies of increased numbers of farms, however, would be overcome eventually by difficulties resulting from geographic and bureaucratic dispersion. The giant, centralized corporation in farming is possible, but its economic advantages are doubtful at this time.

The limited family-farm corporation, however, has the well-known qualities of limited liability, perpetual life, flexible organization, and (if it uses the partnership option) possibly a tax advantage. As only rather large operations can gain a great deal by incorporation, it is unlikely that very great numbers of farms will incorporate in the near future. The farms that do incorporate, however, will be large, will account for production out of proportion to their small number, and will set the pattern for the not quite-so-near future.

TRANSACTIONS WITH OFF-FARM INDUSTRY

Many large-scale industries furnish farm supplies for sale, such as fertilizer, gasoline, herbicides, and pesticides.¹⁸ The resources employed by these farm supply industries are just as much a part of the capital of farm production as are the resources found on farms. Widespread and intensive use of these supplies from off the farm may alter considerably the nature of contracts and other *tenure instruments used to obtain those supplies*. At one extreme is a primitive, self-sufficient agriculture requiring few or no supplies that originate outside the farm. At the other extreme, we could imagine a farm business with all productive capital owned by someone other than the farmer and with essentially all resources rented, hired, or bought from off-farm industry. Farming is tending toward the latter. Davis and Goldberg, in their analysis of agribusiness, show that between 1947 and 1954 the value of off-farm supplies used for farm production increased nearly 50 percent.¹⁹ Information available suggests that the value of these supplies has continued to rise since 1954.

If such off-farm supplies become an important part of the total resources of the farm, the farm family may be relieved from much of the responsibility of furnishing its own capital. The burden of capital formation, although paid

¹⁸ In a slightly different context, Ogren and Scoville discuss these inputs in greater detail in Chapter 19.

¹⁹ John H. Davis and Ray A. Goldberg, *A Concept of Agribusiness*, Boston, Harvard Univ. Press, 1957, p. 12.

for from farm production, would fall on nonfarm corporations. To some extent, the vertical integration of the broiler industry is an extreme case in point.

VERTICAL INTEGRATION

In certain types of farm production, vertical integration through contracts has been a means of drawing together relatively large quantities of resources.²⁰ For many years, contract farming in a number of enterprises caused little notice, even though there was some transfer of managerial control in cropping practices, use of resources, and marketing. Real concern appeared at the development of widespread separation of resource ownership and the operator resulting from contracts such as those found in the broiler industry.

A most, if not *the* most, critical feature will be the nature of the contract instrument (oral or written) that determines the ownership, use, and return for the resource use in farm business. With ownership of a specific resource goes a roughly proportional amount of control.²¹

In summary, does the tenure system permit the accumulation of large enough quantities of resources for a farmer to earn an adequate income, even though he may contribute only his labor and management? The answer is a qualified "yes." The various means discussed above may be useful in earning adequate income and in expanding farm size. Tenure impediments to income and farm expansion stem not from a particular *type* of tenure arrangement but from the unsuitability of a *particular* arrangement to a *particular* economic circumstance.

Obtaining Equity in Land and Capital

If the farm family that has no resources other than its own labor and management seeks to own all or part of the

²⁰ L. A. Jones and R. L. Mighell, *Vertical Integration as a Source of Farm Capital*, Symposium on Capital and Credit, Knoxville, Tenn., 1960.

²¹ Walter G. Miller, "Farm Tenure Perspective of Vertical Integration," *Jour. Farm Econ.*, 42(2):307-14, 1960.

land and capital of the farm, it will require a surplus of income above that necessary for family consumption. In simplest terms, the family has two alternatives: (1) lower its level of consumption; or (2) use more of its labor and management (i.e., work harder).

The latter alternative can be accomplished by: (1) making intensive use of available resources; (2) contracting for the use of additional resources owned by someone else (such as leasing, integrating, as discussed above); or (3) supplementing farm income with off-farm employment.

The choice taken by the farm family will depend largely upon the relative rate of return of each alternative.

Our estimates show that a relatively large proportion of the farms do not have sufficient resources to yield a labor and management return to a farm family of at least \$2,500. Between 60 and 75 percent of the commercial farms today could not meet this standard. Of the 11 major types of farms examined, average investment in the period 1950-59 of farms with \$2,500 net farm family income ranged from \$12,306 for peanut-cotton farms in the southern Coastal Plains to \$124,082 for winter-wheat farms in the Southern Plains.²²

For farmers who do not already have equity in their land and capital, the acquisition of equity may be difficult. The gains in value of farm capital have been beneficial, in a sense, to those who owned their capital, but to those who now seek to obtain equity, increasing capital values represent only a mounting obstacle.

Total farm assets increased from \$53 billion in 1940 to \$208 billion in 1960. Grove estimates that 30 percent of this increase was a net investment and 70 percent was a capital gain to owners. Eighty percent of this capital gain in the 1940-60 period was in land values.²³ Even to those

²² Estimates are based on proportion of farms meeting the capital requirement of 1950-59 average of 11 major types of farms. Source: *Farm Costs and Returns, Commercial Family-Operated Farms by Type and Location*, USDA Agr. Info. Bul. 176, 1959.

²³ Ernest Grove, "Farm Capital Gains — A Supplement to Farm Income?" *Agr. Econ. Res.*, 12(2):41-42, 1960.

who have gains in the value of the land they own, this "paper prosperity" means little unless the land is sold. When it is sold, the "gain" to the seller is an "expense" to the buyer.

More than three-fifths of the total farm investment is in real estate.²⁴ Unless the operator has nonfarm sources of capital or inherits or marries land, he can acquire land ownership only with savings earned from his labor, management, and capital. If the owner holds title before he holds full equity, the return to the land can be used to pay for the land. If the earnings from the land are inadequate to pay for the land, the purchaser must pay for it from returns on his other resources. In the long run, the land is supposed to pay for itself. In the short run, of course, such a large fixed investment could require the owner to dip deeply into his labor and management return to preserve his equity. Although land values have been rising, the return to land has been declining and is currently below the mortgage rate of interest.²⁵ If the returns to land continue to fall, some major adjustments in the land market, and possibly in the entire tenure arrangements, may be anticipated. Although the mortgage debt load of farmers is light compared, say, with the 1930's, a downward adjustment of land values could wash out a portion of their anticipated savings and retirement income. Buyers with mortgages or purchase contracts would be faced with even more serious problems.

The recent increase of interest in low-equity finance, particularly the installment land contract,²⁶ represents, in part, a demand for farm enlargement. Under the land contract, recovery of the land by the seller upon default by the buyer usually is swift and final — much more so than

²⁴ About three-fourths of "productive assets" are real estate. (Scofield).

²⁵ W. H. Scofield, *Current Developments in the Farm Real Estate Market*, ARS 43-118, 1960, p. 24.

²⁶ In 1958, the installment land contract was used in about 20 percent of farmland transfers. Between 1946 and 1958, the percentage of transfers by contract doubled. Paul L. Holm, "Financing Farmland Transfers," *Agr. Fin. Rev.* 21:24, 1959.

with the conventional mortgage. Rather than affording greater "opportunities," the recent trends in methods of selling real estate may present serious difficulties for farmers with the misfortune to incur a loss of their land's earning capacity.²⁷

Resources with productive values are traditionally transferred by law or will to descendants of the owner on his death. Land (or real estate) comprises most of this class of resources. Nearly a third of the owners acquire part or all of their farmland through inheritance or gift. Another 15 percent buy land from relatives and, although the relationship may not affect price, it may affect the opportunity to buy. As the quantity of resources necessary for successful operation increases, the opportunity for operators to acquire equity in land probably will depend more and more upon inheritance and other family arrangements.

A relatively small proportion of all farms seems to be capable of amassing capital internally. Thus a need for external capital sources will continue. Expectations are that widespread ownership of resources by persons other than the farmer and his family will persist. Foretelling the way in which this external capital will be supplied is difficult, if not impossible, because it will depend most upon where and by whom tenure and finance innovations are made.

EXPANDING RESOURCE REQUIREMENTS AND MANAGERIAL CONTROL BY FARM FAMILIES

The family farm as a production unit has strong likelihood of survival in the foreseeable future. But farm units require larger and larger bundles of resources. The means by which the farm family acquires these resources vary but in one way or another, a substantial amount of separation between resource ownership and resource use is likely to continue. In some types of farming, separation of resource ownership and use may increase.

²⁷ The Balance Sheet of Agriculture does not include the unpaid balance of installment land contracts as a liability. If installment contracts were included, "real estate debt" would be increased by \$2 to \$3 billion.

The separation of resource ownership and control is not inherently incompatible with our concept of the family farm. Furthermore, all major types of tenure arrangements provide for wide variations in the distribution of control over resources between owner and user. Control over farm operations may depend more upon the particular agreement than on a class of tenure arrangements.

However, widespread separation of ownership and use of resources could diminish the role of the farm operator in making decisions that affect the size and character of the farm. Management is not easily identified and measured, so a reduction in the relative importance of operators of family farms may not be readily apparent. The effects of changes occurring in farm corporation and contract farming, for example, have had time to do no more than arouse speculation. If the family farm does disappear, it will have been through loss of control over the use of land and capital. Ownership of land and capital is not a necessary condition for farm operators to maintain control of their farms, but unless adaptations in the tenure structure are made, loss of ownership of resources probably will mean loss of control of the farm unit. Much depends upon the farmers themselves. If farmers grow in their capacity as managers as resource requirements grow, separation of ownership and control could enhance their economic power — perhaps in the same way as in other major production industries in America.²⁸

²⁸ Adolphe Berle Jr., *Power Without Property*, Harcourt Brace and Co., New York, 1959.