

STARTING

Farming

IN SOUTHEASTERN MINNESOTA



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Starting Farming in Southeastern Minnesota

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A YOUNG MAN starting to farm faces many problems. He must acquire the needed capital, experience, and managerial skill and then combine them in the most effective way. Some of these problems confront any young man starting out in business or the professions. Others are peculiar to agriculture. Among the latter are the large capital needs of modern farming. Increasing mechanization and changing technology require both a larger farm unit and more working capital for effective use. Much attention has been given to this and similar problems as they affect farm business but little attention has been given to the beginning farmer.

This study tells how a group of veterans became established as farm operators in southeastern Minnesota during the post-war period. It investigates their family background, previous experience, and the source and ownership of their capital. Effectiveness with which these men use capital and other resources is appraised, and some suggestions made for increasing size and effectiveness of new farm units.

The information in this study was obtained from farmers enrolled in the veterans' agricultural training program. Data, gathered from 20 schools in southeastern Minnesota, consisted of:

1. **A group of 488 schedules dealing with personal and occupational experience.**
2. **Inventories of farm capital and net worth statements of 224 beginning farmers.**
3. **Complete farm accounts on 116 newly-established units.**

In addition some data were obtained from the 1945 Census of Agriculture

and from records of the Southeastern Minnesota Farm Management Service.

Age and Marital Status

The average age at which the veteran farmers included in this study started farming was 28.3 years. Ages ranged from 18 to 50. They had spent an average of three years in the service. This may have delayed their start as farm operators, but many would otherwise have spent this time working as laborers on the home farm or on some nonfarm job while awaiting a farming opportunity. Most farm operators become established in their twenties, although this varies among individuals and with economic conditions.

Seventy-three per cent were married. Most of the remaining 27 per cent were operating at home as partners in father-and-son arrangements.

There is a very close association between the date of marriage and the date of establishment as farm opera-



Wives play an important role as partners on the farm. Seventy-three per cent of the veterans cooperating in this study were married.

tors. When a young man marries, he often receives the full weight of available aid from his family or his wife's relatives. Then, too, the important role the wife plays as a partner in the farm business causes many young men to postpone establishment as farmers until marriage even though the opportunity to begin farming previously existed.

Number of Sons Farming

A large proportion of the farm operators were members of families from which more than one son became a farm operator (table 1).

The burden of assisting in establishing new farm units falls more heavily on some farm families than others. Some farm couples have no sons, and others have none who become farmers. In case several sons from one family become established as farm operators, the help their parents can give each one is limited. The number of farms that can be transferred intact from father to son is also limited. Farm families are characteristically larger than urban families. This limits the

amount of property that a farmer can transfer to each of his children.

Age Differences Between Fathers and Sons

If the son becomes a partner on the father's unit, the father must be willing to accept a declining role in the farm operation, or the scale of operation must be increased to provide adequate employment and income for both parties. Otherwise, the partnership may involve a financial sacrifice for both.

A substantial proportion of the veterans' fathers had not reached 64 by

Table 1. Cumulative Distribution of Number of Sons Farming in Families from Which Operators Came*

Number of sons farming	Farm operators	
	number	per cent
1 or more	829	100.0
2 or more	571	68.9
3 or more	279	33.7
4 or more	138	16.6
5 or more	46	05.5
6 or more	6	00.7

* Only those families in which all sons were 25 or over were included.

the time their sons were 25 (table 2). Individual farmers vary considerably in their physical capacity for work and in their desire to remain active in later life, but most of them are retired or semiretired by the time they reach 64.

Even after making some allowance for the fact that not all farmers retire by the time they are 64 there is a good deal of overlapping of active careers between fathers and sons. This becomes particularly important in small families where sons are more apt to reach the age when they will wish to farm while fathers are still active.

Financial Resources of Parents

Because the family plays an important role in helping sons to start farm-

ing, one would expect a greater proportion of the sons from well-to-do families to become farmers than of sons from poorer families. The assumption was made that owner-operators would tend to have greater net worth than renters and that there would be a close positive relationship between acres owned and net worth. Information was obtained concerning the present tenure status of the operators' fathers who are now farming. In those cases where the father was dead or retired, the tenure arrangement under which he farmed immediately before death or retirement was obtained. For use in this comparison, the families being considered were classified into owners and renters, the latter group including all renters regardless of the terms or types of leases. As indicated in table 3 a higher proportion of sons of owners 25 years of age and over are engaged as farm operators than is the case with sons of renters. The data presented in the table also indicate that a higher portion of the sons of owners became farm laborers than did sons of renters.

Another comparison was made between the amount of land owned by fathers and the proportion of sons engaged as farm operators, farm laborers, and in nonfarm occupations (table 4). The acres owned by retired and deceased farmers were not reported by the beginning operators, and consequently those cases could not be included in the summary. As the acres of land owned by the father increased, there was a tendency for a greater portion of sons to become farm operators.

Table 2. Cumulative Distribution of Fathers' Ages at the Time the Son Reaches 25 For Families in Which Father's Occupation Is or Was Farming and in Which the Father Is Living

Age	Number	Per cent of total
42 and over	979	100.0
43 and over	978	99.9
46 and over	968	98.9
49 and over	934	95.4
52 and over	849	86.7
55 and over	713	72.8
58 and over	572	52.3
61 and over	426	43.5
64 and over	296	30.2
67 and over	171	17.5
70 and over	102	10.4
73 and over	48	04.9
76 and over	21	02.1
79 and over	7	00.7
82 and over	2	00.2

Table 3. Number and Per Cent of Sons 25 and Over Engaged in Farming, Employed as Farm Laborers, and Working in Nonfarm Occupations by Tenure Status of Father

Tenure status of fathers	Employed as farm operators		Employed as farm laborers		Employed in nonfarm occupations	
	number	per cent	number	per cent	number	per cent
Owners (619)	417	67.4	32	05.2	170	27.4
Renters (149)	89	59.7	5	03.4	55	36.9
Total (768)	506	65.9	37	04.8	225	29.3

Table 4. Number and Per Cent of Sons of Owner-operators 25 Years of Age and Over Engaged in Farming, Employed as Farm Laborers, and Working in Nonfarm Occupations by Acres Owned

Acres owned by fathers	Employed as farm operators		Employed as farm laborers		Employed in nonfarm occupations	
	number	per cent	number	per cent	number	per cent
1- 99.9	41	57.8	2	02.8	28	39.4
100-199.9	155	62.0	13	05.2	82	32.8
200-299.9	227	64.3	17	04.8	109	30.9
300 and over	293	66.1	22	05.0	128	28.9

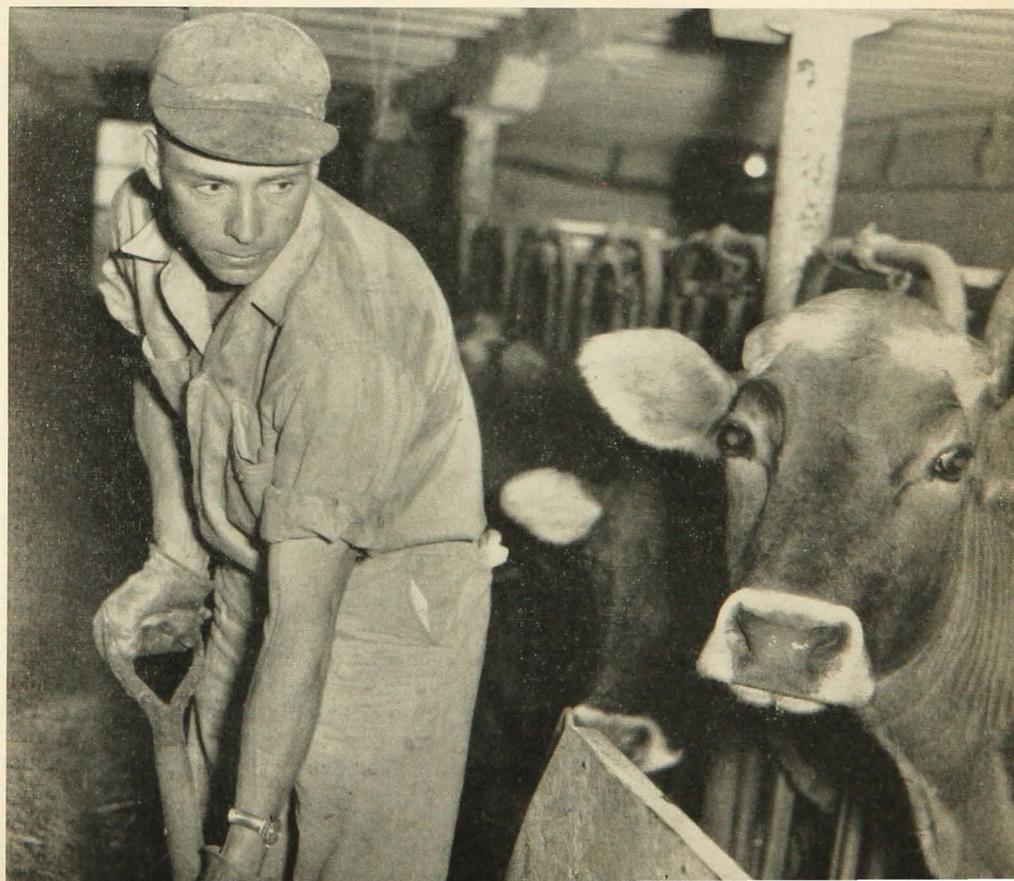
Area Where Beginners Farm

An individual ordinarily establishes his farming unit in or near the locality in which he was reared. Out of 473 farmers, 360, or 76 per cent, were reared in the same county where they

were farming, and 49, or about 10 per cent, were reared in a county adjacent to the one in which they began farming.¹ Another group of 28, or 6 per

¹The county in which the individual lived for the greatest length of time prior to reaching 15 was designated as the county in which he was reared.

Most young farmers start farming in or near the localities in which they are reared and in the type of farming most likely to be adapted to the area in which they are farming.



cent of the total, were reared in other parts of Minnesota. Only 36, or approximately 8 per cent, were reared outside Minnesota. The fact that family aid plays a vital role in the establishment of most beginners is probably largely responsible for the tendency of young farmers to operate farms close

to home. The majority of beginners farm in an area where they are familiar with the prevailing type of agriculture. For this reason most beginners approach their farming careers with "apprenticeship training" in the type of farming which is likely to be adapted to the area where they are farming.

Obtaining Control of Resources

BEGINNING OPERATORS usually start farming by (1) renting land and working capital, (2) using their own capital, or (3) borrowing money.

Leasing Arrangements

Information was obtained from 153 individuals regarding the resources which they were using in farming.² The value and the source of working capital and land and buildings employed by tenure groups is shown in table 5.

Information regarding types of leasing arrangements used by these beginning farmers is given in table 6. The proportion owning all or part of the land they operate, 27 per cent, compares with 69 per cent of owners and part owners among all farmers in this area in 1945. If we regard partnership arrangements as a classification apart from renters, the leasing systems used by beginning farmers are the usual ones in the area and are distributed in about the same proportions.

Partnerships

Partnership arrangements include a wide range of agreements which depart considerably from the traditional rental contracts employed by established far-

mers. It is difficult to classify these accurately because of the diversity of the terms they contain. However, they generally are characterized by two operators each of whom ordinarily furnishes a portion of the working capital employed on the farm. The majority of partnerships consist of father-son arrangements. Out of the 488 operators surveyed, 179 were farming under partnership arrangements. Of these only seven were between parties who were not related.

In most situations the major contribution of the junior partner was his labor and a portion of the managerial function. Practically without exception, the senior partner furnished the land. In addition, he generally supplied the major portion of the livestock and machinery and in a few cases all of it.

There was little similarity in the manner in which the product was divided. Because family relationships play such an important role in partnership arrangements, their terms appear to be dependent largely upon the generosity of the senior partner and his desire to contribute to the financial progress of the junior partner.

A common arrangement is for the son to receive the returns from a portion of the land operated by the partnership. Frequently, additional land is rented for this purpose. This type of arrangement amounts to the junior member exchanging labor on the senior

² The information concerning working capital and land used in their farming operations pertains to January 1, 1947. The majority of the group had started farming during 1946. The individuals studied had been farming an average of 8.6 months as of January 1, 1947.

Table 5. Farm Capital Employed by Beginning Farmers by Tenure Groups

	Owner-operators	Tenants			Partnerships
		Cash	Crop share*	Crop and livestock	
Acres per farm	136	142	173	166	205
Working capital					
Supplied from operator's equity	\$ 2,587	\$ 2,267	\$ 2,569	\$ 1,868	\$ 888
Borrowed by operator	1,305	2,413	1,647	2,215	363
Supplied by landlord	0	0	101	3,340	9,106
Total working capital	\$ 3,892	\$ 4,680	\$ 4,317	\$ 7,423	\$10,357
Land and buildings					
Supplied by operator	7,133	0	0	0	0
Supplied by landlord	0	9,552	10,968	14,206	14,689
Total farm capital					
Supplied from operator's equity	\$ 4,733	\$ 2,267	\$ 2,569	\$ 1,868	\$ 888
Supplied by operator's creditors	6,292	2,413	1,647	2,215	363
Supplied by landlords	0	9,552	11,069	17,546	23,975
Total	\$11,025	\$14,232	\$15,285	\$21,629	\$25,226

* Crop share and cash leased farms are both included in the crop share group.

Table 6. Tenure Arrangements Under Which the Operators Began Their Farm-operations

Tenure arrangement	Number	Per cent of total
Owners		
Full owners	71	14.5
Part owners	28	5.7
Partnership owners	31	6.4
All owners	130	26.6
Renters		
Crop share	26	5.3
Cash and crop share	13	2.7
Cash renters	85	17.4
Crop and livestock share	55	11.3
All renters	179	36.7
Partnerships	179	36.7
Total	488	100.0

partner's farm for the use of machinery and sometimes for aid in defraying expense incurred in operating his land.

Father and son partnerships have been emphasized as a method by which the father's farming unit can be transferred to the son with the least disruption. It appears, however, that many father and son arrangements help sons accumulate capital to start farming on

their own away from the home farm. In this way the father can help several sons get started in farming. In many cases, the operators began farming as a party to a father and son agreement and later either rented or purchased other units which they farmed independently. Their place on the home farm was then taken by one of their brothers.

Sources of Capital

The majority of beginning farm operators supplied some farm capital of their own. Only in a few exceptional partnership arrangements did the beginning operator report no equity in the farm capital. In addition he generally possessed household and personal assets.

Most of the young farmers' farm capital came either from savings or gifts and inheritance. The following sections deal with the major sources of income prior to their starting to farm and the part each played in building up their net worth.

Wages as Farm Laborers

The importance placed on farm labor experience by veterans as an aid in accumulating capital is presented in table 7. Time spent working on the home farm was included only if they had a definite arrangement for being paid. Their limited experience as farm laborers doubtless accounted, at least in part, for the low ratings given farm labor. Forty-one per cent reported less than six months farm work for wages and 61 per cent less than three years. Of the 288 individuals who worked more than six months, only 32, or 11 per cent, considered the money they saved a big help.

That these beginning operators attached little value to the hired man stage as a step to farm operation may be due in part to the fact military service tended to shorten this stage for

them. However, most of them felt that little money could be saved from a farm laborer's wage.³ This attitude exists even though farm wages have more than kept pace with the increase in capital required to start farming. Increased opportunities and incentives to spend his wages have limited the farm laborer's ability to save. Social pressures may compel him to own an automobile. The radio, motion picture, and modern advertising have created new wants. While the costs of things which he must buy have not risen in proportion to his wages, he wants and purchases more things than formerly.

The hired man stage under present conditions appears to be a way for future farmers to busy themselves while they are awaiting the retirement of their fathers or until their parents or other relatives help them start farming. In addition, the farm labor period gives the prospective farmer more and diverse farm experience.

Nonfarm Jobs

Half of the farmers had worked at jobs other than farming for three months or longer. The importance veterans placed on money saved working at nonfarm jobs is presented in table 8. The interviewee did not include time spent in the service in evaluating nonfarm jobs. For the most part the jobs

³ The reaction of each group of beginning farmers to possibility of starting to farm with money saved from farm wages was solicited. The overwhelming response was that it was impossible.

Table 7. Evaluation of Farm Labor as an Aid to Establishment in Farming by Those Who Had Worked Six Months or Longer as Farm Laborers and by All Beginning Operators

Evaluation	All beginning operators		Operators who worked six months or longer as farm laborers	
	number	per cent	number	per cent
A big help	32	6.6	32	11.1
Some help	91	18.6	91	31.6
Very little help	75	15.4	61	21.2
No help	230	59.4	104	36.1
Total	488	100.0	288	100.0

Table 8. Evaluation of Jobs Other Than Farm Jobs as an Aid to Establishment in Farming by All Operators and by Those Reporting Having Worked at Jobs Other Than Farm Jobs for Three Months or Longer

	All operators		Those working at jobs other than farm jobs	
	number	per cent	number	per cent
A big help	41	8.4	41	16.8
Some help	90	18.4	90	36.9
Very little help	58	11.9	43	17.6
No help	299	61.3	70	28.7
Total	488	100.0	244	100.0

did not take the individual out of the farm community. Working as mechanics in local repair shops and truck driving were the off-farm jobs most frequently reported. Most of these were in local agricultural industries or commercial concerns serving agriculture and a few in war industries.

The evaluation of these nonfarm jobs indicates that they were not important for accumulating money. The time spent working at nonfarm jobs, like farm labor experience; probably tides the individual over until an opportunity to begin farming comes.

Service Experience

Service experience offered an opportunity for saving not ordinarily available to future farmers. In addition to service pay a number of other benefits such as mustering out pay and terminal leave compensation were available. The on-the-job training program with the subsistence allowance is also

a by-product of the service period. The subsistence payments, however, did not become available until after the veteran actually started farming.⁴

The farmers surveyed were asked to evaluate the money they saved in the service and the money received from the on-the-job training program separately. (table 9). The money received for service activities was significant in the accumulation of the operator's equity in his farming enterprise.

Use of Credit

Seventy-eight per cent used some credit in obtaining capital. The sources of credit are given in table 10. No attempt was made to distinguish between

⁴In considering the effects of the subsistence payments it is more realistic to regard establishment in farming as a process. Even after the initial farming activity the beginner spends a good deal of time in gathering together resources. In evaluating the part subsistence payments played in contributing toward the equity the beginner operator reported on January 1, 1947, it is well to consider that many beginners had already participated in the program several months.

Table 9. Evaluation of Money Saved in the Service and of Subsistence Received in the On-the-Job Training Program as an Aid to Establishment in Farming

Evaluation	Money saved in service		Subsistence received in the on-the-job training program	
	number	per cent	number	per cent
A big help	98	21.5	361	79.1
Some help	225	49.5	91	19.8
Very little help	68	14.9	4	.9
No help	64	14.1	1	.2
Total	455	100.0	459	100.0

Table 10. Sources of Credit Used by Beginning Operators and the Number and Per Cent of Total Operators Who Borrowed Money from Each Source

	Number	Per cent
Bank	212	43.4
Relatives	134	27.5
Did not use credit	107	21.9
Used guarantee provision of the Servicemen's Readjustment Act	63	12.9
Individuals not relatives	46	9.4
Farmers Home Administration	38	7.8
Production Credit Association	21	4.3
Store credit	9	1.8
Insurance companies	6	1.2
Finance and mortgage compa- nies	4	.8
Federal Land Bank	2	.4

long term and short term credit. Banks appear to have been the most popular source of funds. However, relatives were also important sources.

Two provisions of the Servicemen's Readjustment Act tended to condition the borrowing process.

1. It guaranteed 50 per cent of the value of loans up to \$8,000 made for such purposes as starting farming.⁵

2. It provided, as previously mentioned, for an on-the-job training program with subsistence payments.

The provisions for the guarantee of the loans undoubtedly tended to make credit easier to get. However, in many areas there was widespread prejudice against guaranteed loans both on the part of lenders and borrowers. Lending institutions were reluctant to make loans beyond what they considered "safe" for both themselves and their clients. To the extent that they did

adhere to this policy there was little to be gained by the creditor in taking advantage of the "guarantee provision."

In addition there was a real and widespread aversion among both lenders and borrowers to the administrative detail involved in guaranteed loans. To borrowers who have an aversion to the risk involved in borrowing, the guaranteeing of loans was of little benefit since no provisions were made to lessen the risk for the beginning operator.

The subsistence payments for participation in the veterans' training program indirectly made credit more readily available to the beginning operator. In effect these payments gave the veteran a guaranteed minimum income for a specified period early in his farming career. Such a guarantee had an effect on both the creditor and borrower. Because the lender was assured that the individual would have a steady and certain income for several years, he was more willing to advance capital. The borrower also took less risk, and tended to borrow more since he was certain of some of his future income.

Some beginners apparently borrow all that creditors will advance, while others borrow none at all. The average net worth of 224 beginning operators by tenure groups along with the average net worth to debt ratio of each group is given in table 11. A low ratio indicates that the operator's equity in the farm capital which he owns is low. Owner-operators who rented nothing had the lowest net worth to debt ratios, while partnership operators who rented the greatest portion of the farm capital they employed had the highest.

The extent to which credit was used within each group varied widely (table 12). There were many beginning farmers with exceedingly low equities in their total assets. This probably reflected liberal lending by relatives. On the other hand there were many who relied on credit very little or not at all.

⁵Title II of Public Law 346, amended by Public Law 268, 79th Congress, made provisions for the guarantee of loans or insurance of credit through private lending institutions to World War II veterans who desired to purchase or construct homes, farms, and business property. Amount of the guarantee may not exceed 50 per cent of the loan or a maximum of \$4,000 on real estate and \$2,000 on non-real estate loans. If a veteran receives loans on both types, the maximum guarantees are prorated on these amounts. Farm realty loans must be paid off within 40 years and non-real estate loans within 10 years.

Table 11. Assets, Liabilities, and Net Worth of Beginning Farmers

	Owner-operators	Tenants			Partners
		Cash	Crop	Crop and livestock	
Total farm capital	\$11,025	\$4,680	\$4,216	\$4,083	\$1,251
Outside investments and accounts receivable	689	296	725	264	641
Cash on hand and in the bank	163	217	239	274	520
Household and personal assets	887	897	852	1,019	350
TOTAL ASSETS	\$12,764	\$6,090	\$6,032	\$5,640	\$2,762
Real estate mortgages	5,085				
Other liabilities	1,207	2,413	1,647	2,215	363
TOTAL LIABILITIES	\$ 6,292	\$2,413	\$1,647	\$2,215	\$ 363
Net worth	6,472	3,677	4,385	3,425	2,399
Net worth to debt ratio	1.03	1.52	2.66	1.54	6.6

Even among those who used only a limited amount of farm capital in their farming operations there were some who did not borrow at all or who borrowed only a fraction of what they could have indicated by their high net worth to debt ratios.

Assistance From Parents and Other Relatives

Assistance from relatives helps the beginning farmer start farming through building up of his net worth, through renting, and through credit. The exact amount of aid given by relatives is difficult to gauge because of the many different forms it takes.

In an attempt to appraise the significance of the aid given by relatives, the beginners were asked to list the ways in which they had been helped. The most frequently mentioned means are listed in table 13 along with a summary of the number who reported they had received aid through that means.

Many were given outright gifts. However, in many cases the concessions received, particularly from parents, were, in part at least, pay for working on the home farm. Many individuals spent considerable time working on the home farm without any definite arrangement for compensation. However, the aid given by parents is apparently more in line with their ability to help and the

Table 12. Distribution of Beginning Operators by Net Worth to Debt Ratio, All Operators and by Total Farm Capital Employed

Net worth to debt ratio	All operators		Operators by amount of farm capital employed			
			\$5,000-10,000	\$10,001-18,000	\$18,001-24,000	\$24,001 and over
	number	per cent	number	number	number	number
.1-1	47	20.9	10	24	7	6
1.1-2	37	16.5	12	17	5	3
2.1-3	20	8.9	3	8	3	6
3.1-5	24	10.8	9	8	2	5
5.1-9	12	5.3	3	3	2	4
9.1-30	7	3.2	0	4	0	3
Over 30	5	2.3	2	0	2	1
No debt	72	32.1	14	17	11	30
Total	224	100.0	53	81	32	58

Table 13. Ways in Which Parents and Other Relatives Helped Beginning Operators in Becoming Established in Farming

Loaned machinery, equipment, and livestock	141
Lent money	139
Gave money, equipment, or livestock	61
Rented out farm below prevailing rental rates	54
Helped with farm work without wages	42
Sold machinery, livestock, or equipment below market value	34
Rented out better farm than available elsewhere	32
Furnished room and board	22
Sold land below prevailing market price	6
Lent money at lower interest rate	4

needs of the beginner than with the size of the contribution made by the young man to the home farm. Selling livestock and machinery at some price they think is normal value is common among relatives helping young farmers. This procedure constituted a sizeable subsidy in many cases.

Of the 179 renters, 65 (or 36 per cent) were renting from relatives. Of these, 54 thought they were getting concessions on rental terms. In addition, the majority of those farming in partnership with relatives recognized that they were getting cheaper rent. Probably, many who did not report receiving favorable leasing terms were in reality renting a higher quality unit than they could have on similar terms from someone else. In many cases the beginner rented the home farm which the parents spent a lifetime improving for the same rent received for poorly improved farms in the community.

Relatives were also a source of credit. The lending of money, if the rates charged are comparable to the market rates, is not a subsidy in itself. But a large portion of the loans by relatives could not have been obtained from established credit institutions. Many relatives endorsed notes for loans from lending agencies. Thus, relatives make possible a greater reliance on credit by bearing a portion of the risk inherent

Table 14. Evaluation of Relatives' Help as an Aid in Starting Farming

Evaluation	Number	Per cent
A big help	226	47
Some help	147	30.6
Very little help	40	8.3
No help	68	14.1
Total	481	100.0

in lending to inexperienced farmers with limited net worth.

An examination of the evaluation placed on help from relatives reveals the importance which the operators themselves attached to this source of aid (table 14). Relatives' help was the most significant factor in enabling the beginning operators to accumulate resources to start farming.

Inheritance

Of the beginning operators studied 17.5 per cent came from families in which the father was not living. While in these cases direct parental assistance was curtailed, a number did inherit money. Out of the group, 39, or 8 per cent, had inherited money or property valued at from \$85 to \$10,000 with a mean of \$2,323. Of those inheriting property or money, 17 reported that both their father and mother were living. No attempt was made to ascertain from whom the money was inherited, but apparently it came from relatives or individuals other than parents. Nine indicated that they had received property through bond-of-maintenance and other arrangements which gave them title to property while their parents were still living in exchange for contributing to the support of the parents. This is a surprisingly small portion taking advantage of a system which has proved highly successful in the transfer of farm operatorship in some areas.⁶

⁶ Parsons, Kenneth H. and Waples, Eliot O. *Keeping the Farm in the Family Res.* Bul. 157, Wisc. Agr. Expt. Station, Madison.



Father-and-son partnerships are common arrangements for beginning farmers. Such partnerships provide for the transferring of the farming unit from father to son with minimum disruption or enable the sons to accumulate capital with which to start their own units.

Comparison of Beginning and Established Farms

THE BEGINNING farm operator faces many obstacles which prevent him from obtaining maximum returns from his and his family's efforts. Most of these obstacles grow out of his inability to obtain adequate farm capital to carry on farming operations. This section of the study deals with the combination of resources and the scale of operations on beginner-operated farms. It rests on the premise that established farmers who have had a number of years to accumulate resources more nearly ap-

proach the best combination of farm capital with labor and management than beginning operators. The comparisons are between beginning farmers and all farmers in southeastern Minnesota. Some comparisons also are made between beginning units and farms operated by members of the Southeast Minnesota Farm Management Service. Farms in this group probably approach conditions necessary for best use of resources even more than in the "all farmer" group.

Table 15. Operators' Labor Earnings for All Farmers, Beginning Farmers, and Farm Management Service Farmers, 1947

	Number of farms	Work units per farm	Operators' labor earnings*
Established farms†	56,268	372	\$3,354
Beginning farms			
Owner-operated	23	243	2,072
Cash, crop share and cash renter-operated	40	270	2,277
Crop and livestock share and partnership renter-operated	53	420	3,754
Farm Management Service farms			
Owner-operated	94	563	7,233
Renter-operated	39	608	7,090
Part-owner-operated	40	594	8,462

* Adjusted for changes in inventory values

† From 1945 Federal Census of Agriculture

Operators' Labor Earnings

Comparisons in the operators' labor earnings⁷ during 1947 of groups of established, beginning, and farm management service farms are given in table 15.

The beginning farmer group was divided into three tenure classes as follows: (1) owner-operators, (2) cash and crop share and cash renters, and (3) livestock and crop share renters and those operating under some form of partnership arrangement. This division was made on the basis of the types of farm capital rented.

The owner-operators, of course, rented none of their resources while those using cash leases and the crop share and cash leases rented only land. All individuals farming as a party to a crop and livestock share lease or a partnership arrangement were considered together because they rented some livestock and machinery in addition to land. The differences set forth in table 17 are substantial and suggest that be-

⁷ Operators' labor earnings, as it is used here, was computed as follows: Total farm sales plus family living from the farm plus increase in farm capital minus the sum of total farm purchases, decrease in farm capital, and board furnished hired labor plus interest on farm capital. The charge made for interest on farm capital was 5 per cent per annum and the charge for family labor was \$150 a month.

ginning units make less efficient use of farm resources.

Average Value of Product Per Worker

The average value of product per worker is presented in table 16 as a measure of the productivity with which these beginning farmers use their resources as compared with established operators. The value of product added by the production process on the farm was computed by subtracting farm purchases from farm receipts. Interest paid and labor hired were not regarded as farm purchases, but depreciation on all depreciable items was subtracted from farm receipts. As the term is used here farm capital includes the land and buildings in addition to the inventory value of working capital, i.e. livestock, machinery, and feed. Inputs of farm capital were determined by averaging the opening and closing inventories. Labor is stated in terms of man years, a man year being the equivalent of one man working full time for one year. Labor includes the operator, unpaid family workers, and all hired workers.

The lower labor productivity of the beginning farmers is not due to a lower quality of labor since, if anything, their labor would be of a higher quality. The quality of management, however,

Table 16. Average Value of Product Added Per Man Year of Labor and Value of Working Capital, Land and Buildings, and Total Farm Capital Employed Per Man Year of Labor on Beginning Operated Farms, Established Farms, and Farm Management Service Farms, 1947

	Number of farms	Value of product added per farm	Man years of labor per farm	Value added per man year	Working capital per man year	Land and buildings per man year	Total farm capital per man year
Established farms	56,366	\$ 5,855	1.54	\$3,802	\$ 5,931	\$ 9,634	\$15,566
Beginning farms							
Owner-operated	23	3,686	1.50	2,457	3,763	5,939	9,703
Cash, crop share and cash renter-operated	40	3,793	1.46	2,599	4,298	7,801	12,099
Crop and livestock share and partnership renter-operated	53	6,456	1.96	3,293	5,255	7,404	12,658
Farm Management Service farms							
Owner-operated	94	10,786	2.06	5,313	9,433	11,809	21,242
Renter-operated	39	10,594	2.01	5,270	9,361	12,942	22,303
Part-owner-operated	40	12,435	2.13	5,838	10,853	13,196	24,049

Table 17. Average Resource Combinations Required to Produce \$1,000 Output on Beginning Farms, Established Farms, and Farm Management Service Farms, 1947

	Number of farms	Working capital employed on farm	Value of land and buildings per farm	Total farm capital employed per farm	Man years of labor per farm	Value added per farm	Working capital per \$1,000 value added	Land and buildings per \$1,000 value added	Total farm capital per \$1,000 value added	Man years of labor per \$1,000 value added
Establishment farms	56,268	\$ 9,134	\$14,837	\$23,971	1.54	\$ 5,855	\$1,560	\$2,534	\$4,094	.26
Beginning farms										
Owner-operated	23	5,645	8,909	14,554	1.50	3,686	1,531	2,417	3,948	.42
Cash, crop share, and cash renter-operated	40	6,275	11,389	17,664	1.46	3,793	1,654	3,003	4,657	.39
Crop and livestock share and partnership renter-operated	53	10,299	14,511	24,810	1.96	6,456	1,595	2,247	3,842	.30
Farm Management Service farms										
Owner-operated	94	19,431	24,327	43,758	2.06	10,786	1,801	2,255	4,056	.19
Renter-operated	39	18,816	26,014	44,830	2.01	10,594	1,776	2,455	4,231	.19
Part-owner-operated	40	23,117	28,108	51,225	2.13	12,435	1,859	2,260	4,119	.17

was doubtless higher on the established units. Probably the most important reason for the difference was the larger amount of capital per worker on the established farms. The substitution of labor for capital on the beginning units, particularly on the owner-operated and renter-operated farms, apparently has reached the point at which it takes a comparatively large amount of labor to replace a small amount of capital.

Combination of Resources

In an attempt to refine the study of the relative productivity in the use of resources on beginning and established units further comparisons between the combinations of farm capital and labor were made. The amounts of labor and capital which were employed per \$1,000 value added are set forth in table 17.

The value of product added by production on the farm was computed in the same manner as described in the preceding section. The beginning and the farm management service farms were divided into tenure groups, but the type of data used in computing the value added figure for the established group did not permit considering this group by tenure classes. It is readily apparent (table 19) that significant differences in resource combinations exist between the groups of beginning farms and the established and farm management service farms. While the beginners use considerably more labor in producing \$1,000 of output than is the case for the established operators, the differences in the amounts of capital employed are not great between any of the groups.

Renting

In the comparisons made of operators' labor earnings in table 15, owner-operators lagged behind the two groups of beginners who rented part of their farming resources. The farmer whose

land and parts of whose livestock and machinery were rented had the highest operator's labor earnings. The beginning operators who rented their land and part of their working capital produced \$1,000 output with both less labor and less capital than did the owner and renter operators.

Frequently, beginning operators have to choose between greater productivity with resulting higher income during their early years of farming and the independence and the other advantages of farm ownership if they buy a farm. The advantages of ownership are often more apparent than the disadvantages. Beginning operators should be made aware of the difficulties involved in attaining debt-free ownership particularly when they start with inadequate land, livestock, and machinery.

Included in the livestock share and partnership group of farms were a wide variety of leasing arrangements. Aside from the conventional fifty-fifty livestock share leases there were a number of arrangements on which there were two active operators. On many of these farms, the services of both operators were not being fully utilized. For instance, if the 27 farms on which there were two operators are considered apart from the livestock share farms, \$3,950 of farm capital and .41 man years of labor were used to produce \$1,000 output. Undoubtedly, a portion of the older farmers who were farming in partnership with younger operators were reducing their work load. While this type of operator actually might have spent the major part of his time working he probably was busying himself in part doing jobs which ordinarily would not be done. To the extent that these individuals were reported as full-time workers the labor utilized on these farms is reported higher than it actually is.

A similar problem existed in evaluating the services of family laborers on all of the farms studied. It was diffi-

cult to ascertain to what extent the jobs performed by family workers were necessary tasks. Because the amount of family labor available shifts from season to season and from year to year it would be difficult to alter the farm organization to utilize effectively the family labor available. However, from the standpoint of the comparisons which were made in the combinations of labor and capital between the owner and renter operated beginning units and the established units the discrepancies arising out of the inability to appraise accurately family labor would probably mean that the distortions in resource combination on these beginning units actually was under estimated. This is true because we are apt to over estimate the labor used where family labor is involved since not all the tasks done by family laborers are essential jobs and the owner and renter operated beginning units used very little family labor compared to the farm management service farms and the established units. The fact that the labor per unit of product appears to be relatively high on the partnership-operated farms emphasizes that partnership arrangements must be set up to provide control over adequate working capital and land if the services of two active operators are to be used effectively.

Among those renting indications are that the leasing of a greater amount of resources would be profitable for many. Father-son agreements are particularly effective in establishing new farm operators because, among other things, they permit the beginning operator to rent a considerable portion of resources needed for an adequate farming unit. Because, however, a large proportion of beginning operators come from families in which more than one son becomes a farm operator, their use in the traditional sense is limited. But many of the desirable features of father-son agreements, particularly those facilitating the leasing of a large portion of

the farm capital employed, could be incorporated into leases involving beginners and landlords who are not relatives. Leasing practices of this nature would enable more beginners to share any economies which would arise out of farming on a larger scale. In addition, by increasing the amount of machinery and livestock with which the beginning operator worked, his own labor and management could be used more fully and productively.

Use of Credit

For many of the beginning operators reluctance to depend heavily on credit restricted the resources with which they operated. Many expressed a real fear of debt and so restricted their use of credit. Borrowing too little also can be costly for many beginning farmers. Here the cost is in terms of income sacrificed because of small farms with insufficient livestock and machinery.

Promoting a greater utilization of credit among beginning farmers who could profitably use more credit is fundamentally a part of the broader task of increasing income stability in agriculture. This is the case when viewed either from the side of the borrower or the lender.

While the limiting factor in the use of credit for some beginners is their own unwillingness to risk their equity, for others it is the reluctance of the lender to advance credit beyond some definite percentage of the equity. In either case, the uncertainty in income arising out of unpredictable economic conditions plays a major role in holding down the size of loans. If fluctuations in farm income due to economic factors were eliminated, borrowers might be willing to borrow and creditors willing to lend up to perhaps 90 per cent of the value of farm land and 70 or even 80 per cent of the value of livestock and equipment. Furthermore, the pressure which now exists to hurry



Modern farming requires a large investment in machinery and equipment. To reduce costs, the beginning farmer may buy used machines, hire custom machine service, or share ownership machine services with other farmers.

the repayment of principal would be lessened. We cannot reasonably hope to gain this degree of stability in farm incomes. However, all measures which lessen the instability of income make feasible a greater use of credit by beginning farmers.

Investment in Farm Machinery

Beginning farmers often tie up a large proportion of their limited capital in farm machinery. This may not be justified in view of their limited volume of production. Capital thus used may not be as productive as that invested in livestock and feed. The beginning farmer on the small farm has essentially three avenues open to him for reducing his investment in machinery and equipment and hence the cost of its service to him. He may (1) buy used machines (2) hire custom machine service or (3) share ownership machine services with other farmers.

In effect purchasing used machinery makes possible buying only a small portion of the machine service represented by a new machine. In a restricted sense, farming with worn machinery also substitutes labor for machine service. When a beginner invests

in used implements he can anticipate a greater number of breakdowns and more time spent in repairing. The operators of smaller beginning units however, would be less pressed for time than would the typical established operator and hence, could better afford to make use of used machinery. The importance of timeliness of operations on farms serves as a limit in the use of badly worn machines. There is also a considerable variation in mechanical aptitude and skill among beginning farmers. Other things being equal, those with the greatest skill in operating and repairing machinery would be in the most advantageous position to make use of worn implements.

Beginning operators hire custom services. The advantages of having work done on this basis are obvious. The custom worker covers a much larger acreage than do most farmers making the fixed costs, such as interest and, even to a large extent, depreciation, less per acre. There are, of course, some disadvantages. Few machines can be hired without also securing the services of the operator. This would mean beginning farmers hiring custom work would also be hiring additional labor even though they themselves are

underemployed. In some situations where timeliness of operations is important failure to secure the services of the custom operator at the right time is a serious disadvantage.

In many cases beginners have not taken advantage of the opportunities for owning machinery in partnership with other farmers. This eliminates many of the disadvantages of custom work and at the same time holds down machinery costs. For those individuals

who do not like owning machinery in partnership, arrangements for exchanging machines can be worked out. Two individuals can arrange to exchange machines under a system where each owns a different machine and does work for the other. Such an agreement can contain provisions concerning the order in which the work is to be done thus overcoming, in part at least, the problem of timeliness of the various farm operations.

Summary

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INCREASING mechanization and changing technology make larger farm units, more capital, and greater experience necessary for beginning farmers. In this study the labor and capital used and the financial returns of 488 ex-servicemen starting farming in southeastern Minnesota were analyzed. Of these veterans, 26.6 per cent were farm owners, either wholly or in part, 36.7 per cent were tenants, and 36.7 per cent were partners with their fathers or other established farmers. These facts were brought out by the study:

1. The farm owners had the largest net worth. However, because of large liabilities, their ratio of net worth to debt was only 1.03 compared with approximately 2.0 for the tenants and 6.6 for the partners.

2. Work for wages, either farm or nonfarm, were unimportant sources of capital to start farming.

3. Help from relatives together with money saved from service pay and subsistence received in the on-the-farm training program were the principal sources of starting capital.

4. Twenty-two per cent of these beginning farmers used no credit.

5. The principal sources of credit were commercial banks and individuals (largely relatives). Apparently, veterans were cautious in using credit and were more concerned with security than with maximum current earnings or financial progress.

6. Beginning farmers had lower earnings and lower production per man and used more labor to produce \$1,000 of product than other farmers in the area.

7. Their resources often were unbalanced in that they had a relatively large amount of labor compared with capital.

8. Owner-operators, although they had the largest net worth, were using the least capital and had the lowest earnings.

9. The partners had the lowest net worth but used the largest amount of capital and had the highest earnings. The larger size of business made possible by renting or borrowing capital resulted in a more effective use of resources and higher earnings than was possible for the operator who limited the size of his business to what he could finance with his own capital.
