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DEBT STATUS OF U.S. FARM OPERATORS AND LANDLORDS BY ECONOMIC CLASS, 1960, 1966, 1970

J. Bruce Hottel, Robert D. Reinsel and William D. Crowley*

Although debt is a growing and essential source of funds in the farm production sector, only slightly more than half of all farm operators were indebted when surveyed during the last census in December, 1970.1/ Does this mean that debt capital is not as important as normally assumed? Or does the lower than normally assumed proportion of operators indebted simply reflect the unique characteristics of certain farmers in the sector? Also, do the higher debt levels for some groups reflect less favorable economic situations or possible imply differences in the earnings and investment potential of various economic classes of farms?

Until 1960, no sound basis was available nationwide to determine the distribution of debt among different types or economic classes of farms. However, in 1960 and subsequently in 1966 and 1970, special surveys were made of both farm opertors' and landlords' financial status [1, 6, 7, 8].2/ Data from the 1970 survey, only recently available, now makes it possible to examine the distribution of debt and to compare changes over time. Although the data presented are highly aggregated, it is possible to examine changes in (a) who holds the debt and the magnitude of debt held by different groups and farm sizes, (b) the basis on which debt is supported and, (c) the economic indicators that reflect the ability of the sector to meet debt commitments.

Who holds debt?

Debt funds associated with the farm sector are held either by firms or by landlords. Survey estimates of debt outstanding indicate that farm

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* The authors are agricultural economists U.S. Department of Agriculture, Economic Research Service, Inputs and Finance Program Area, stationed at Washington, D. C. Paper presented at American Agricultural Economic Association Annual Meeting, Texas A&M University, College Station, Texas, August 20, 1974

operators tend to hold most of the debt associated with agriculture. Farm operators held 84 percent of all real estate debt and 98 percent of all non-real estate debt in 1970 (table 1). Although landlords owned an estimated 39 percent of the value of farmland and buildings, their total liabilities were relatively small. Thus current real estate debt obligations fall primarily on farm operators who own less than two-thirds of all land and building assets. Although the number of farm operators decreased nearly one-fourth from 1960 to 1970, total debt as estimated in the survey trended upward from $19.9 to $39.8 billion in 1970--more than double.

Concentration of operator debt

The proportion of operators having some debt at the time of the enumerations was greatest among larger economic classes of farms (figure 1).[3/] In 1970, for instance, only 53 percent of all operators had debt but the percentage by economic class ranged from about 80 percent for the larger Class I size farms down to less than 40 percent for the smallest sized units. For all farm operators, those with debt when surveyed declined from 58 percent in 1960 to 53 percent in 1970. Although the basis for this decrease is unknown, the percentage of farmers with debt was smaller for all economic classes except Class I where the percentage with debt increased from 75 percent in 1960 to 80 percent in 1970 (figure 1).

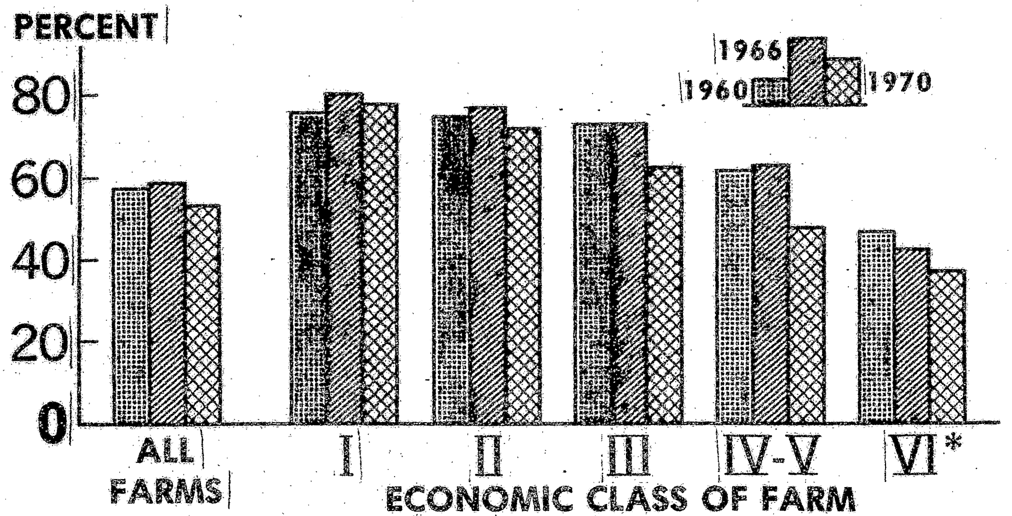
Even with fewer operators and a smaller percentage of all operators with debt, total operator debt grew rapidly from $16.8 billion in 1960 to $35.4 billion in 1970--a 111 percent increase. Thus the average level of operator indebtedness increased substantially (figure 2). For instance, the average debt level on farms with debt increased from $48,814 to $82,322 on Class I farms. On the smaller Class VI and noncommercial farms the increase was from $3,156 to $7,063 between the 1960 and 1970 surveys.

Table 1--U.S. Farm operator and landlord debt and value of real estate survey years a/

Item	Unit	Years 1960	1966	1970
umber of Farm Operators				
Total	Thousand	3,247	3,435	2,409
Operators with debt	Thousand	1,897	2,041	1,288
umber of Landlords				
Total	Thousand	1,494	2,244	1,855
Landlords with debt	Thousand	428	n/a c/	297
arm debt				
Farm operators	Bil. dols.	16.8	29.1	35.4
Landlords b/	Bil. dols.	3.1	6.8	4.4
Farm	Bil. dols.	n/a	n/a	1.3
Nonfarm	Bil. dols.	n/a	n/a	3.1
Total debt	Bil. dols.	19.9	35.9	39.8
Proportion of debt held by farm operators:				
Total	Percent	84	81	89
Real estate	Percent	80	77	84
Non-real estate	Percent	92	90	98
eal Estate				
Operated	Mil. dols.	129.1	192.0	219.4
Owned by operator	Mil. dols.	79.2	116.7	133.5
Rented	Mil. dols.	49.9	75.3	85.9
Proportion of real estate value:				
Owned by farm operators	Percent	61	61	61
Rented	Percent	39	39	39

/ Estimates are as of December 31, 1960, mid-May 1966 and December 31, 1970.
/ Farm landlords rent land out to others but also farm units of their own. Nonfarm andlords are not involved in farming operations.
/ Not available.

Figure 1--PERCENT OF ALL U.S. FARM OPERATORS IN DEBT



*NON-COMMERCIAL FARMS.

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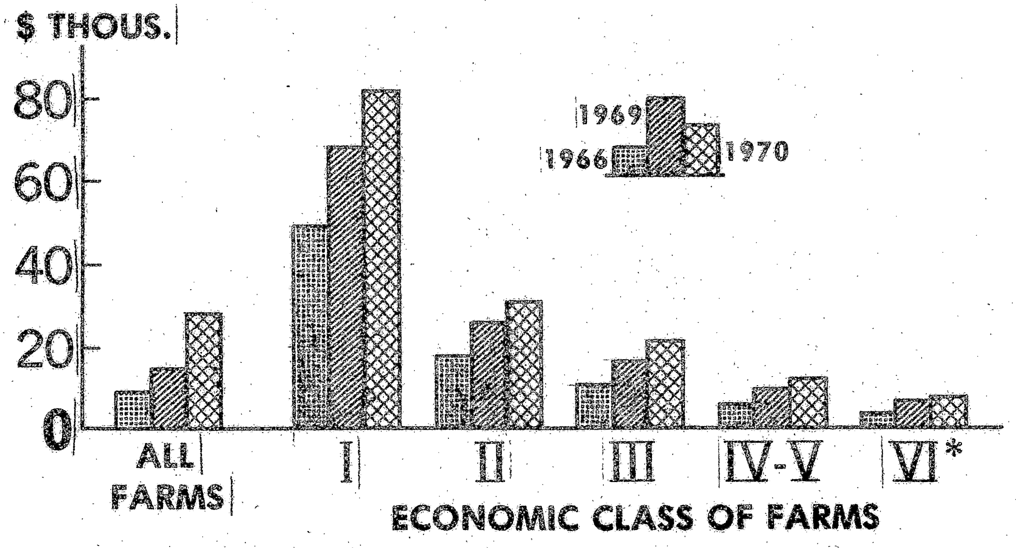
Figure 2--AVERAGE TOTAL DEBT OF U.S. FARM OPERATORS WITH DEBT



*NON-COMMERCIAL FARMS.

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NOTE: Commercial farms are grouped into six economic size classes by the value of gross farm sales; I, $40,000 and over; II, $20,000-$39,000; III, $10,000-$19,999; IV, $5,000-$9,999; V, $2,500-$4,999; and VI, $50-$2,499. Class VI commercial farms (sales of less than $2,500) were grouped with noncommercial farms which consisted of part-time, part-retirement, institutional farms and Indian reservations.

The proportion of total debt held by farm operators was higher among larger economic class farms, and the proportion of debt held by the larger farms increased substantially from 1960 to 1970 (table 2).[4/] In 1970, for instance, Class I, II and III farms combined increased relative to the total. In that year, they comprised approximately 41 percent of all operators, accounted for 29 percent of all operators in debt and 83 percent of all debt. In 1960, these same three classes accounted for only 25 percent of all operators, and less than two-thirds of all debt. Class I operators held a greater proportion of both real estate and nonreal estate debt outstanding in 1970--44 percent and 55 percent--compared with 21 and 26 percent, respectively in 1960.

Basis of debt support

Three factors appear to be closely associated with the substantial increase in the volume of operator debt as well as to changes in the proportion of debt held by different economic size categories of farms. These are changes in the value of land and buildings owned by farm operators, the level of net cash farm income, and income earnings from off-farm sources.

Land and building values: The value of land and buildings owned by farm operators was $79.2 billion in 1960. This climbed to $133.5 billion in 1970--an increase of 69 percent (table 3). Indebted operators owned 64 percent of this value in 1970. The relationship between real estate debt and the value of land owned was generally consistent among economic classes over the 10-year period. Increases in the value of real estate, however, were relatively less than increases in the level of real estate debt. This resulted in a general upward trend in the ratio of real estate debt to the value of land and buildings owned by indebted operators for each economic class. Class I operators, for instance, had real estate debts equal to 18 percent of the value of land and buildings owned in 1960

Table 2.--Number of U.S. farm operators and those debt, and proportion of debt held by economic class of farm, survey years a/

Year and economic class	Number of farm operators: Total	Number of farm operators: With debt	Operator debt: Total	Operator debt: Real estate	Operator debt: Non-real estate
	Thousand		Billion dollars		
All farms					
1960	3,247	1,897	16.8	10.0	6.8
1966	3,435	2,041	29.1	18.9	10.2
1970	2,409	1,288	35.4	22.0	13.4
Proportion of total (1970):	Percent				
All farms	100	53	100	100	100
I	11	9	48	44	55
II	14	10	21	21	21
III	16	10	14	15	13
Total I - III	41	29	83	80	89
IV-V	29	13	11	13	8
VI-N.C	30	11	6	7	3

a/ Estimates are as of December 31, 1960, mid-May 1966, and December 31, 1970.

Table 3. Relation of Real Estate Debt to the Value of Land and Buildings Owned by Operators, by Economic Class of Farm, for Survey Years United States a/

Class of Farm	Farm Operators - 1970			Real Estate Debt to Value of Land and Buildings Owned		
	Total Number	Real Estate Debt	Value of Land and Buildings Owned	1960	1966	1970
	Thous.	Bil. Dols.	Bil. Dols.	- - - Percent - - - - -		
All Farms	2,409	22.0	133.5	13	16	17
Operators with Debt:	- - - - - - percent - - - - - -					
All Farms	53	100	64	20	24	26
I	9	44	26	18	23	28
II	10	21	13	21	26	27
III	10	15	10	23	26	25
IV-V	13	13	10	19	24	23
VI-N.C.	11	7	5	20	23	22
Operators without Debt:						
All Farms	47	0	36	n/app. b/	n/app.	n/app.
I	2	0	9			
II	4	0	6			
III	6	0	5			
IV-V	16	0	9			
VI-N.C.	19	0	7			

a/ See footnote Table 1.

b/ Not applicable.

but this ratio increased to 28 percent in 1970. The ratio increased for Class II operators from 21 to 27 percent over this same period. For Class III and smaller economic sizes, the amount of debt in relation to real estate value was also higher in 1970 than in 1960 but the relative increase was less than for the larger farms. Thus, each dollar of owned real estate was associated with a greater quantity of debt in 1970 than in 1960, especially for the larger sized operators.

Farm Income and total Farm and off-farm income: Total net cash farm income was $8.2 billion in 1960. This advanced to $13.6 billion in 1970--a 56 percent increase (table 4).[5/] Concurrently, total net income from both farm and off-farm sources was $14.6 in 1960 and this rose to $26.2 billion in 1970--an increase of 76 percent (table 6).

As a proportion of total net cash farm income and total net income, Class I and II indebted operators collectively held the largest share. Similarly, these two classes of indebted operators held the largest share of total debt. But even more important in evaluating the financial base on which debt is supported is the extent to which different farm sizes changed their ratio of income to debt. From 1960 to 1970, farm income to debt ratios were lower for all farms as a whole. This would appear to indicate a less favorable position in terms of the ability to repay debt from farm income if loan conditions are assumed the same for the three survey periods. However, all economic size categories of farms were not effected the same. Class I operators showed an increase in their income to debt relations. Class II operators showed only a slight decrease. Class III and smaller size operators showed a substantial decline. This indicates that size III and smaller categories, with an estimated 31 percent of all debt, experienced a relatively less favorable change in their ability to repay debt from farm income alone. Class I or II categories, with 69 percent of total debt, were either in an improved or relatively stable position with respect

Table 4. Total Net Cash Farm Income to Total Operator Debt, by Economic Class of Farm, for Survey Years, United States. a/

Class of Farm	Farm Operators - 1970: Total	Farm Operators - 1970: Total Debt	Farm Operators - 1970: Net Cash Farm Income b/	Net Cash Farm Income to Total Debt: 1960	Net Cash Farm Income to Total Debt: 1966	Net Cash Farm Income to Total Debt: 1970
	Thous.	Bil. Dols.	Bil. Dols.	- - - - Percent	- - - -	
All Farms	2,409	35.4	13.6	48	35	38
Operators with Debt:	- - - - - -	Percent	- - - - - -			
All Farms	53	100	67	29	25	25
I	9	48	41	28	25	31
II	10	21	16	32	31	30
III	10	14	7	35	30	21
IV-V	13	11	3	32	23	12
VI-N.C.	11	6	0	08	07	n/app. c/
Operators without Debt:						
All Farms	47	0	33	n/app.	n/app.	n/app.
I	2	0	13			
II	4	0	8			
III	6	0	6			
IV-V	16	0	6			
VI-N.C.	19	0	1			

a/ See footnote Table 1.
b/ Includes Government Payments.
c/ Not applicable.

to debt repayment capacity when farm income is used as the sole measure of repayment capability. However, the basis of debt support in farming is also influenced by sources of income from off-farm sources. For all operators, 48 percent of total income in 1970 was from off-farm work or other sources (table 5). Fifteen percent of total income for Class I and 25 percent for Class II farms was from off-farm work or other off-farm sources. As the economic size of the farm decreased, off-farm income from work or other sources increased in relative importance, rising from 45 percent of total income for Class III to 96 percent for the smallest units.

These additional sources of income appear to have had a major impact on the capacity of the farm production sector to handle additional levels of debt, especially for smaller size units (Table 6). Class IV and smaller sized farms held 17 percent of all operator debt in 1970 and, with the addition of off-farm income, the income to debt ratio was substantially higher and improved from 1960 to 1970 in contrast with the less favorable situation that appeared to have arisen when only farm income was considered. Although the income to debt ratio for Class II and III operators was also higher when off-farm income was considered, the ratio decreased from 44 in 1960 to 41 in 1970 for Class II and from 47 to 44 for Class III operators. This appears to indicate that the 20 percent of operators in these two groups with 35 percent of operator debt were in a less favorable economic position relative to other farm sizes. These farm sizes represent a size generally too large to allow the operator to engage extensively in off-farm work, but yet not large enough to benefit from the economies of size attributed to Class I farms. Resource adjustment on Class II and III farms will likely be more evident in future years as firm consolidation and efforts to increase income levels continue.

Table 5. Total Income from Farm and Off-Farm Sources and Proportion of Operators with Off-Farm Work, by Economic Class of Farm, 1970.

Class of Farm	Proportion of Total Net Income from:			Operators with Off-Farm Work		
	All Sources	Net Cash Farm a/	Off-Farm Sources	All Operators	From 1 to 100 Days	Greater than 100 Days
	Percent			Percent		
All Operators:						
All Farms	100	52	48	51	13	38
I	100	85	15	25	15	10
II	100	75	25	32	18	14
III	100	55	45	40	15	25
IV-V	100	25	75	58	8	50
VI-N.C.	100	4	96	83	2	81

a/ Includes government payments. In 1970, government payments were 9 percent of total income for all farms, 12 percent for Classes I, II, and III, 7 percent for Classes IV and V and 3 percent for Classes VI and noncommercial.

Table 6. Relation of Total Net Income (Farm and Off-farm) to Total Operator Debt, by Economic Class of Farm, for Survey Years, United States. a/

Class of Farm	Farm Operators - 1970: Total No.	Total Debt	Total Income (Net-farm and off-farm)	Total Net Income to Total Debt: 1960	1966	1970
	Thous.	Bil. Dols.	Bil. Dols.	- - -	Percent	- -
All Farms	2,409	35.4	26.2	87	83	74
Operators with Debt:	- - - - - -	Percent	- - - -			
All farms	53	100	64	55	55	47
I	9	48	24	33	32	36
II	10	21	12	44	42	41
III	10	14	8	47	46	44
IV-V	13	11	11	71	64	72
VI-N.C.	11	6	9	109	111	115
Operators without Debt:						
All farms	47	0	37	n/app. b/	n/app.	n/app.
I	2	0	7			
II	4	0	5			
III	6	0	5			
IV-V	16	0	9			
VI-N.C.	19	0	11			

a/ See footnote table 1.
b/ Not applicable.

Average resource and income relations

The average value of assets, debts, and income flows for indebted operators are shown for different economic class farms (table 7). As the size of farm increases, the absolute value of assets utilized increases substantially and indicates the relatively large quantity of capital resources required to generate the level of income associated with these units. In addition, several other factors change as the size of unit increases and indicate again the kinds of average economic relations likely to be experienced on different size farms.

With larger farms, the relative mix between resources utilized and other financial components differs from those on smaller farms. Larger operators make more extensive use of debt in relation to equity in owned assets, and the debt to equity ratio is greater on larger farms--changing from 29 percent on the smaller farms to 39 percent on Class I units. Rented land also becomes a greater component of total assets utilized on larger farms. This results in the value of total resources utilized in relation to equity capital being greater on larger farms--changing from 1.50 on the smaller farms to 2.07 on Class I units. As the farm size increases the ratio of total resources utilized per dollar of farm income (net cash farm income plus government payments) declines, indicating greater economic productivity with increasing farm size. Class I operators, for example, utilized about $17 of total resources per dollar of farm income compared with over $30 on Class III and smaller farm sizes. The substantial difference between the ratio of resources utilized and the level of farm income indicates that factors in addition to farm income are likely important in determining the smaller operators' debt repayment capabilities. Their apparent heavy dependence on off-farm sources is reflected by the average levels shown in table 7.

Table 7. Average resource and income relations of indebted operators, by economic class of farm, 1970.

Item	Economic class: I	II	III	IV-V	VI-N.C.
Value of assets utilized:	Average dollars per farm				
Land and buildings:					
Owned	165,870	71,070	56,515	38,018	26,126
Rented	144,217	61,300	36,670	15,645	5,171
Other assets owned a/	127,920	50,215	31,927	14,958	5,309
Total asset value	438,007	182,585	125,112	68,621	36,606
Liability of operators:					
Real estate debt	46,692	19,177	14,056	8,513	5,658
Non-real estate debt	35,630	11,461	7,210	3,464	1,405
Total debt	82,322	30,638	21,266	11,976	7,063
Equity in owned resources:	211,468	90,647	67,176	41,000	24,372
Net cash income:					
Net cash farm income	21,798	7,683	3,494	1,003	-263
Government farm payments	3,485	1,535	940	382	197
Off-farm	4,707	3,461	4,948	7,230	8,207
Total	29,990	12,679	9,382	8,615	8,141
Ratios:	Percent				
Value of rented land to assets utilized	33	33	29	23	14
Operator debt to equity	39	34	32	30	29
	Dollars				
Total value of assets utilized to equity	2.07	2.01	1.86	1.67	1.50
Total value of assets utilized to farm income b/	17.32	19.80	30.26	49.34	n/app. c/

a/ Other assets include items such as machinery and motor vehicles, livestock and poultry, and stored crops and supplies determined from unpublished data.
b/ Farm income equals net cash farm income plus payments from government farm programs.
c/ Not applicable.

Summary and Conclusions

About 90 percent of the debt in the farm sector is held by farm operators who own only 61 percent of the value of land and buildings. Census survey estimates in December 1970 indicated only 53 percent of these operators had debt outstanding. However, larger scale farms made more extensive use of debt-ranging from about 80 percent of operators on Class I farms down to 40 percent on the smallest units. The concentration of debt on larger farms also increased from 1960 to 1970. Similarly, larger farms increased their share of farm income earned and land and buildings owned during this period.

The repayment ability on larger farms appears favorable in relation to current debt levels and, thus, appears to explain why most debt is so closely related to size of farm. However, the use of debt also appears to be a primary factor in explaining growth in farm size. Under this condition, debt is more of a factor determining size than a corresponding result. As the size of farm increases the relative mix between resources utilized and other financial components differs substantially from those on smaller farms. Debt in relation to equity in owned assets is higher on larger units and external capital in the form of rented land is a greater component of total assets utilized. Although the use of aggregate estimates can be misleading, there appears to be evidence of greater economic efficiency associated with larger farm sizes where most of the debt occurs. Class I farms, for instance, used only near $17 of total assets per dollar of farm income as compared to $20 for Class II and over $30 on Class III and smaller size units. Thus, a substantial incentive exist for increasing size and consequently greater debt utilization.

Income from off-farm sources is an additional factor important in debt carrying capacity, especially on smaller units. As the economic size of farm decrease, off-farm income increased in relative importance, rising from 15 percent of total income in 1970 for Class I to 96 percent for the smallest units. However, Class II and III sizes appeared to represent a size generally too large to allow the operator to engage extensively in off-farm work but, yet, not large enrough to benefit fully from the greater returns evident on larger units. Resource adjustments among the 20 percent of operators in these two groups will likely be more evident in future years as firm consolidation and efforts to increase income levels continue. Alternatively, some may seek to expand their incomes by depending more fully on off-farm employment if such opportunities exist.

Footnotes

1/ From 1960 to 1970, farm debt outstanding at the end of the year doubled and the percentage of total cash flows financed by loan sources during the year increased from 17 to 37 percent [3, 4].

2/ Estimates of debt from census surveys are not identical with published reports by the U.S. Department of Agriculture. The basis for these differences are briefly described and evaluated in references 6 and 8.

3/ Commercial farms were grouped into six economic size classes as follows: I, $40,000 and over; II, $20,000-$39,999; III, $10,000-$19,999; IV, $5,000-$9,999; V, $2,500-$4,999; and VI, $50-$2,499. For this study, classes IV-V were combined to reduce the number of groupings. Also, the Class VI commercial farms (sales of less than $2,500) were grouped with noncommercial farms which consisted of part-time, part-retirement, institutional farms and Indian reservations.

4/ This increased concentration of debt reflects the movement of farms into the larger economic units where a greater proportion of operators were indebted and with relatively large debts. Since the gross value of farm sales reflects changes in farm prices and farm output, the proportion of farms in each size class necessarily reflects changes in these factors. From 1960 to 1970, overall farm prices increased by 17 percent and total output increased 14 percent. Thus, each factor contributed about the same to the relative upward shift to larger economic sizes [2,5].

5/ Net cash farm income is defined as gross farm income plus government payment minus cash operating expenses. No deduction has been made for depreciation, operator or family labor, or management.

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