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Developing Financial Indicators for U.S. Farms by Type of Farm

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ABSTRACT

Aggregate financial data are inadequate for monitoring the farm financial position, given the heterogeneity of today's farm sector. This report summarizes current efforts to further develop a more disaggregated perspective of financial indicators. Balance sheets and various financial ratios are presented by type of farm for selected years. Although the analysis performed indicates that most types of farms experienced some deterioration in their financial position between 1969 and 1982, the development of micro measures is needed to obtain more reliable and accurate barometers of the financial well-being of farms.

Keywords: Type of farm, balance sheets, leverage position, debt burden, rate of return on equity capital.

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The author gratefully acknowledges the assistance and suggestions of Agapi Somwaru. The U.S. farm balance sheet was disaggregated by type of farm using a methodology similar to the one developed by Somwaru for disaggregating farm income by type of farm.

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* to the research community outside the U.S. Department	* * *

Developing Financial Indicators for U.S. Farms by Type of Farm

Sara D. Short

INTRODUCTION

The balance sheet for the U.S. farm sector originated after World War II. The farm sector balance sheet was an important tool by which farm financial positions could be monitored.

Agriculture during the forties was homogeneous enough for a farm sector balance sheet to represent micro conditions. But aggregate data inadequately show how changes in supply and demand in the sector affect today's heterogeneous farm sector.

This report summarizes current efforts to further develop a more disaggregated set of financial indicators $(\underline{1},\underline{5})$. $\underline{1}/$ The U.S. farm balance sheet, excluding farm households, was disaggregated by type of farm using the Standard Industrial Classification code. This coding procedure separates farms into types based on the proportion of sales from a particular commodity. At least 50 percent of sales must come from a commodity group for a farm to be classified as part of that group. This report reviews the methodology employed, demonstrates the uses of such balance sheets, and addresses the future direction of these efforts.

METHODOLOGY

Since the U.S. farm balance sheet is reported as of January 1 $(\underline{4})$, data from the censuses of agriculture and farm finance surveys were used to disaggregate by type of farm the two consecutive balance sheets corresponding with the census years (table 1). $\underline{2}/\underline{3}/$ For example, the January 1, 1969, and the January 1, 1970, balance sheets were disaggregated using distributions developed from the 1969 Census of Agriculture and the 1970 Farm Finance Survey $(\underline{6},\underline{7})$. This procedure allows for developing financial indicators before and after the income stream is generated. $\underline{4}/$ As a result, changes in the balance sheet measured at two consecutive points can be partially explained by the income generated during that period.

¹/ Underscored numbers in parentheses refer to literature cited in the References section.

^{2/} See appendix tables 1-16 for the resulting balance sheets.

 $[\]overline{3}$ / See (2) for a detailed description of census data by type of farm.

 $[\]frac{4}{5}$ See $(\frac{3}{3})$ for a detailed description of the procedures used to develop net farm income by type of farm.

Table 1--Distributors used to disaggregate the U.S. farm balance sheet (excluding farm households), by type of farm

	:	:	Data s		
Balance sheet component	<pre>Distributor used : :</pre>	: and	: and	: 1978 : and : 1979	: and
Physical assets: Real estate	Market value of land and buildings	1/	<u>1</u> /	<u>1</u> /	1/
Nonreal estate—					
Livestock and poultry	Livestock, poultry, and poultry products' cash receipts	<u>1</u> /	<u>1</u> /	<u>1</u> /	<u>1</u> /
Machinery and motor vehicles	Market value of machines and equipment	ry <u>1</u> /	1/	<u>1</u> /	<u>1</u> /
Crops stored	Crop and crop products' cash receipts	<u>1</u> /	<u>1</u> /	<u>1</u> /	<u>1</u> /
Financial assets					
Liabilities:					
Real estate	Real estate debt outstanding	<u>2</u> /	<u>1</u> /	<u>3</u> /	<u>4</u> /
Nonreal estate	Nonreal estate debt outstanding	<u>2</u> /	1/	<u>3</u> /	<u>4</u> /

^{-- =} Not available.

 $[\]frac{1}{2}$ / Census of Agriculture 1969, 1974, 1978, and 1982 (6). $\frac{1}{2}$ / 1970 Farm Finance Survey (7). Averages per farm, by type of farm, for 1970 were adjusted by the number of farms in 1969 in each category.

^{3/} 1979 Farm Finance Survey (7). Averages per farm, by type of farm, for 1979 were adjusted by the number of farms in 1978 in each category.

^{4/} Real and nonreal estate debt outstanding were not available. These two components were disaggregated using available data from the 1982 Census of Agriculture on total interest paid by type of farm (6). The allocation of interest paid on real and nonreal estate related debt within each type of farm was prorated using data from the 1979 Farm Finance Survey (7).

Because certain data by type of farm were not available, some assumptions had to be made in order to consistently disaggregate as much of the U.S. farm balance sheet as possible. The following variables were assumed to be identically distributed:

- 1. The value of livestock and poultry on hand as of December 31 and annual livestock, poultry, and poultry products cash receipts;
- 2. The value of crops stored as of December 31 and annual crop and crop products cash receipts;
- 3. Real and nonreal estate debt, respectively, within each type of farm for 1979 and 1982; and
- 4. Farm and nonfarm related debt.

However, it is possible that these distributional relationships do not necessarily hold. In the first two assumptions, little resemblance may be observed between the stock and flow measures because of storing practices, levels of carry-over stocks, production, marketing practices, and prevailing market conditions. Nevertheless, value of inventory data from the 1979 Farm Finance Survey seem to indicate that the distributions of livestock and crop cash receipts generally capture overall trends in inventories by type of farm. Thus, even though there are some strong conceptual weaknesses with these two assumptions, inventory values have historically accounted for a small portion of the sector's balance sheet. As a result, the distributions of livestock and crop cash receipts were the best available proxies by which inventories could be disaggregated by type of farm.

The third assumption also presents a tenuous relationship, inasmuch as the relative share of real and nonreal estate debt within each type of farm was assumed constant between 1979 and 1982. The 1982 total interest expenses by type of farm were allocated to the real and nonreal estate related debt within each type of farm according to the observed 1979 allocation of real and nonreal estate debt. Distributions of these interest expense estimates were developed and used to disaggregate the U.S. real and nonreal estate debt components by type of farm. As a result, changes in the composition of liabilities by type of farm between 1979 and 1982 are not captured.

Available census data for interest expenses and for outstanding real and nonreal estate debt represent the amount arising only from the operation of the farm business. The disaggregation of the sector's balance sheet was based on levels of debt which were not totally farm-business related. Subsequently, the reliability of the liabilities component is weakened by the assumption that farm and nonfarm related debt were equally distributed among different types of farms.

With regard to the liabilities component, a third assumption was that average levels of debt per farm, by type of farm, for calendar year 1969 and 1978 were the same as those reported for 1970 and 1979, respectively. These average levels were then multiplied by the number of farms in each type category for 1969 and 1978 to derive debt estimates by type of farm. Thus, although the distributions developed from these estimates reflect general debt trends, they do not capture yearly changes in debt levels by type of farm.

After calculating proxy percentage distributions for each component of the balance sheet, based on available census data, U.S. levels of the individual components were multiplied by their respective allocator to yield a disaggregated balance sheet

by type of farm. The data presented in the first column of each appendix table are from (4), while subsequent columns show the results of the above mentioned multiplication. To analyze the estimates developed, various financial indicators were derived (that is, the debt/asset and interest coverage ratios and the rate of return on equity capital). The following section demonstrates how the disaggregated balance sheets and financial indicators can be used to describe financial characteristics of different types of farms. However, given the limitations of the assumptions, the data in this report are intended to be used as relative measures of general trends in financial characteristics of specific types of farms.

DESCRIBING THE FINANCIAL CHARACTERISTICS OF FARMS

One of the most widely used measures of financial strength (security) is the debt/asset ratio (leverage position). The higher the value of this ratio, the larger the claims on the farm business are, relative to the value of total assets. Table 2 shows debt/asset ratios developed from data presented in appendix tables 1-16.

These ratios are generally consistent with the trends in the seventies and eighties: increasing levels of asset values (mainly in the value of farmland) and debt during the seventies; and increasing debt levels in conjunction with declining farmland values during the eighties. Between 1970 and 1979, the debt/asset ratio for all crop farms increased by only about 6 percent, while the ratio for all livestock farms decreased by less than 2 percent. The relatively small change in the ratio for all crop farms during this period was due to a faster rate of increase in the level of total liabilities than the rate of increase in total asset values. Ratios for all livestock farms presented are indicative of the greater rate of increase in the value of assets than that of liabilities.

However, the debt/asset ratio for all crop farms increased almost 25 percent between 1979 and 1983, while the ratio for all livestock farms increased more than 33 percent. These changes resulted from a 50-percent increase in total liabilities during this period and an almost 10-percent drop in the value of real estate assets between 1982 and 1983. Debt/asset ratios increased the most in dairy, poultry and egg, and general livestock farms between 1979 and 1983-well over 50 percent. However, cash grain, cotton, tobacco, and vegetable and melon farms also experienced rapidly escalating ratio values, approximately 30 percent. Overly optimistic expectations during the seventies of continued growth in earnings and/or low to negative real interest rates likely contributed to the large changes in these particular farms' debt/asset. For the most traditionally organized farms (such as cash grain), rapidly escalating farmland values also provided the rationale for farmers and lenders to expand and roll over debt. However, the abrupt reversals of conditions in 1980-81 (declining product demand and farmland values and increasing real interest rates) did not stop the rapid increase in debt levels as farmers experiencing recurrent shortfalls in cash flow continued to borrow funds.

Even though debt/asset ratios have changed throughout the years, the relative position among farm types by debt/asset ratio has generally remained stable. The rankings shown in table 2 are consistent with known organizational patterns of different types of farms. For example, livestock farms are generally capable of operating with relatively higher debt/asset ratios without experiencing serious financial problems because smaller portions of their costs are committed to asset ownership. Thus, although increases in debt/asset ratios indicate deteriorating leverage positions, they do not always reflect the strength or weakness of the farm business.

Table 2--Debt/asset ratios, by type of farm, January 1, selected years, 1969-83

Type of farm	: : : : : : : : : : : : : : : : : : :	1970 :	: 1974 :	: 1975 :	: 1978 :	: 1979 :	: 1982 :	1983
	: :			Percent				
All farms	: : 17.94	18.07	16.25	17.15	17.44	16.79	19.24	21.48
Crop	: 15.62	15.90	14.47	14.63	17.22	16.83	18.79	20.98
Cash grain	: 15.03(7)1/	15.30(6)	12.94(12)	13.07(12)	16.52(10)	16.13(10)	18.68(8)	20.90(8)
Cotton	: 9.21(12)	9.37(11)	18.26(7)	18.29(9)	19.73(4)	19.38(3)	21.93(3)	24.56(3)
Tobacco	: 37.36(1)	37.92(1)	11.24(13)	11.36(13)	13.88(13)	13.57(13)	15.52(13)	17.18(13)
Other field crop	: 20.39(5)	20.69(4)	17.16(9)	17.32(10)	19.08(7)	18.67(6)	17.97(11)	20.03(11)
Vegetable and melon Fruit and tree nut Horticulture specialty General crop	: 15.02(8)	15.26(7)	13.30(11)	13.40(11)	16.13(11)	15.87(11)	18.28(10)	20.21(10)
	: 20.71(4)	21.17(3)	21.70(3)	22.04(4)	19.28(6)	18.80(5)	19.06(6)	21.11(7)
	: 10.58(10)	10.78(9)	21.90(2)	22.07(3)	21.18(3)	20.90(2)	21.32(4)	23.18(4)
	: 9.02(13)	9.17(12)	18.09(8)	18.54(8)	19.70(5)	19.17(4)	20.15(5)	22.53(5)
Livestock Cattle, hog, and sheep Dairy Poultry and egg Animal specialty General livestock	: 21.65	21.63	20.04	22.25	19.03	17.94	21.24	23.94
	: 22.58(2)	22.62(2)	18.86(5)	20.56(6)	18.12(9)	17.19(9)	18.34(9)	20.74(9)
	: 21.25(3)	21.17(3)	24.92(1)	27.79(1)	23.34(1)	21.85(1)	32.22(1)	36.03(1)
	: 19.41(6)	18.74(5)	15.24(10)	20.97(5)	21.29(2)	18.18(7)	26.60(2)	29.33(2)
	: 11.52(9)	11.55(8)	21.07(4)	23.40(2)	18.52(8)	17.58(8)	15.70(12)	17.67(12)
	: 9.57(11)	9.68(10)	18.63(6)	19.79(7)	14.53(12)	13.96(12)	19.00(7)	21.45(6)

 $[\]frac{1}{2}$ Numbers in parentheses indicate relative ranking among types of farms within a specific year by debt/asset ratio.

Sources: Calculated from appendix tables 1-16.

Two other indicators were developed to understand how events of the seventies and eighties affect specific types of farms. The interest-coverage ratio 5/ measures debt burden, and the rate of return on equity capital 6/ describes the returns per dollar of equity invested in the farm business.

Between 1969 and 1982, the interest-coverage ratio for all crop farms (table 3) increased almost 200 percent, while the ratio for all livestock farms increased more than 150 percent. This reflects the much higher rate of increase in interest payments relative to net cash income (tables 4 and 5). Cash grain, cotton, and dairy farms experienced the largest increases in the ratio.

Table 3--Interest coverage ratio, by type of farm, selected years, 1969-82

	:		:		:		:	
Type of farm	:	1969	:	1974	:	1978	:	1982 1/
	:							
	:				Pero	cent		
All farms	:	13.97		13.85		21.34		36.63
_	:							
Crop	:	11.60		9.00		20.15		33.61
Cash grain	:	11.44(8)			-	26.81(3	•	47.54(4)
Cotton	:	4.72(13	-	12.27(7)	19.50(6	-	19.05(10)
Tobacco	:	16.11(6))	5.64(1	2)	12.82(9)	21.40(9)
Other field crop	:	9.82(10))	7.92(1	1)	21.60(5)	23.29(8)
	:							
Vegetable and melon	:	4.74(12	2)	3.90(1	3)	6.17(1	3)	11.30(13)
Fruit and tree nut	:	14.61(7))	13.57(5)	12.12(1	0)	31.55(6)
Horticulture specialty	:	-109.75(2)	3/	10.42(8)	7.86(1	2)	12.87(12)
General crop	:	50.13(3)		13.54(6)	23.10(4)	36.32(5)
•	:	•				•		
Livestock	:	15.97		26.33		22.76		40.58
Cattle, hog, and sheep	:	20.66(5))	37.12(1)	29.39(2)	51.44(3)
Dairy	:	10.13(9)		18.05(2		14.92(8	•	31.48(7)
Poultry and egg	:	6.59(1		17.14(3		9.84(1	•	18.46(11)
Animal specialty	• :	25.88(4)		9.77(9		53.78(1	-	65.57(2)
General livestock	:	-181.92(1)		16.69(4	-	19.44(7	-	57.77(1)
	:				•		•	

^{1/} Although interest payments by type of farm were available from the 1982 Census of Agriculture, this ratio was developed using the methodology described in table 5, footnote 1. However, rankings by interest coverage ratio, by type of farm, were the same regardless of whether actual or estimated interest payments were used to develop this ratio.

Sources: Calculated from tables 4 and 5.

 $[\]underline{2}$ / Numbers in parentheses indicate relative ranking among types of farms within a specific year by interest coverage ratio.

³/ Implies that cash income generated could not cover all cash expenses incurred.

^{5/} Interest payments divided by net cash income and interest payments.
6/ Net farm income less returns to operator and unpaid family labor and management, divided by farm business net worth.

Table 4--Net farm income (before inventory adjustment) and net cash income, by type of farm, selected years, 1969-82

	:	: Net cash income														
Type of farm	:	1969	:	1974	:	1978	:	1982	<u>:</u>	1969	:	1974	:	1978	:	1982
	:															
	:						<u>Mil</u>	lion dol	lar	<u>s</u>						
	:													06 116		06 040
All farms	:	14,194		28,918		26,835		24,898		17,855		34,202		36,116	1	36,843
	:															01 057
Crop	:	6,832		22,773		14,030		14,933		8,376		26,106		19,864		21,857
Cash grain	:	3 , 572		13,526		4,660		2,885		4,540		15,562		8,574		7,992
Cotton	:	665		779		781		1,802		844		993		1,181		2,352
Tobacco	:	552		1,147		945		1,040		605		1,200		1,126		1,302
Other field crop	:	587		3,023		1,181		2,749		699		3,527		1,721		2,601
•	:															
Vegetable and melon	:	762		1,480		1,937		2,365		873		1,643		2,163		2,773
Fruit and tree nut	:	656		1,266		2,397		1,525		796		1,464		2,727		1,941
Horticulture specialty	:	-146		448		1,200		1,701		-52		554		1,328		1,830
General crop	:	184		1,104		929		866		71		1,073		1,044	•	1,066
1	:			-												
Livestock		7,362		6,145		12,805		9,965		9,479		8,186		16,252		14,986
Cattle, hog, and sheep	:	4,109		2,441		6,514		3,935		5,063		3,161		8,135	,	5,906
Dairy	:	2,364		2,780		4,355		4,348		3,265		3,792		5,619)	6,374
Poultry and egg	:	958		489		1,709		2,180		1,143		692		1,971	-	2,385
Animal specialty	:	1		273		7		[*] 39		40		298		82		130
General livestock	:	- 70		162		220		-537		-32		243		445	,	191
General livestock	•	, ,		-0-												

Source: (3).

Table 5--Interest payments, by type of farm, selected years, 1969-82 1/

	:		:		:		:	
Type of farm	:	1969	:	1974	:	1978	:	1982
	:							···
	:			Millio	n do	ollars		
	:							
All farms	:	2,900		5,500		9,800		21,300
_	:							
Crop	:	1,099		2,574		5,011		11,066
Cash grain	:	586		1,531		3,140		7,242
Cotton	:	42		139		286		554
Tobacco	:	116		72		166		355
Other field crop	:	76		303		474		790
· ·	:							
Vegetable and melon	:	43		67		142		353
Fruit and tree nut	:	136		230		376		895
Horticulture specialty	:	27		64		113		270
General crop	:	71		168		314		608
-	:							
Livestock	:	1,801		2,926		4,789		10,234
Cattle, hog, and sheep	:	1,318		1,866		3,386		6,257
Dairy	:	368		835		985		2,929
Poultry and egg	:	81		143		215		540
Animal specialty	:	14		32		95		248
General livestock	:	$\overline{21}$		49		107		261
	:							

^{1/2} An implicit average interest rate for all farms in a given year was calculated as the ratio of total interest paid and the average total debt presented in two consecutive balance sheets. This average interest rate was applied to the average total debt, by type of farm, presented in two consecutive balance sheets to arrive at an estimate of interest payments.

Sources: Calculated from (4) and appendix tables 1-16.

Between 1969 and 1982, the relative position among farm types by interest coverage ratio experienced some dramatic changes. For example, in 1969 cash grain farms had the eighth largest ratio; but by 1978 and 1982, these farms had the third and fourth largest ratios, respectively. These and other changes observed were primarily due to highly fluctuating levels of net cash income in conjunction with rapid increases in interest expenses.

Increasing debt and interest payment levels, fluctuating income levels, and decreasing asset values have generally led to substantially lower rates of return on equity capital (table 6). Between 1969 and 1982, the rate of return on equity capital for all crop farms decreased 16 percent, while this rate decreased about 60 percent for all livestock farms. Between 1974 and 1982, the rate of return on equity capital for all crop farms decreased almost 75 percent, while the rate for all livestock farms decreased about 12 percent. This reversal in deterioration levels is directly related to the point of focus (1969-82 versus 1974-82). Although 1974 was the highest net farm income year on record, livestock farms did not experience the substantial increases in income experienced by crop farms. Instead, the net farm income generated by cattle, hog, and sheep and poultry and egg farms decreased more than 40 percent between 1969 and 1974 (table 4).

CONCLUSION

Although most types of farms experienced some deterioration in their financial perspective between 1969 and 1982, the severity of this deterioration differed markedly by type of farm. However, this does not imply that all farms within a specific type experienced the same level of financial instability.

Financial statements and indicators such as the ones developed here provide a better base from which indications about the financial well-being of farms can be drawn. Aggregate statistics tend to mask changes in the financial structure and situation of specific farms. As a result, changes in aggregate indicators are often attributed to all types of farms and may provide misleading signals with regard to the financial well-being of the farm sector.

However, the development of more micro measures (similar to the work initiated in (1)) is needed to obtain more reliable and accurate barometers of the financial well-being of farms. Because of the problems associated with the availability of a continuous financial data series and the subsequent assumptions made to disaggregate the U.S. balance sheet, future efforts in this area will be directed toward developing annual, more disaggregated, financial indicators based on information obtained from the Farm Costs and Returns Survey. 7/

^{7/} For a detailed description of The Farm Costs and Returns Survey, see (1).

Table 6--Rate of return on equity capital, by type of farm, selected years, $1969-82 \frac{1}{2}$

			:		:		:		
Type of farm	:	1969	:	1974	:	1978	:	1982	
	:								
	:			Pe	erce	<u>nt</u>			
	:								
All farms	:	3.08		5.42		2.82		1.85	
	:								
Crop	:	2.65		8.53		2.73		2.23	
Cash grain	:	4.92		8.67		1.36		•23	
Cotton	:	5.84		5.62		3.10		9.35	
Tobacco	:	7.19		10.00		3.81		3.30	
Other field crop	:	3.68		12.00		2.23		7.09	
Vegetable and melon	:	7.92		16.19		15.03		14.00	
Fruit and tree nut	:	 84		3.63		7.69		1.99	
Horticulture specialty	:	-25.03		-6.81		10.31		12.43	
General crop	:	-1.72		6.77		3.59		2.62	
-	:								
Livestock	:	3.85		1.79		3.17		1.57	
Cattle, hog, and sheep	:	3.12		•42		1.85		• 34	
Dairy	:	6.67		5.98		8.14		6.35	
Poultry and egg	:	11.00		1.08		12.13		14.48	
Animal specialty	:	-9.35		7.48		-3.08		-2.06	
General livestock	:	-4.78		3.99		1.41		-6.84	
	:								

¹/ Total returns imputed to operators' labor and management were disaggregated by type of farm using available census data for hired labor expenses and number of farms, respectively. In a given year, net worth was calculated as the average of the values presented in two consecutive balance sheets.

Sources: Calculated from table 4, appendix tables 1-16, and (4).

REFERENCES

- (1) Johnson, James D., Stephen Gabriel, and Kenneth Baum. "Aggregate Indicators of Financial Conditions in the Farm Sector: Some New Approaches and Insights," <u>National Credit Conference Proceedings</u>. North Central Regional Committee NC 161. St. Louis, Oct. 31-Nov. 2, 1984.
- (2) Simunek, Richard, Agapi Somwaru, Sandra Suddendorf, and Gary Lucier.
 "Statistical Problems and Economic Implications of Estimating Farm Income by Type of Farm," forthcoming, U.S. Depart. Agri., Econ. Res. Serv.
- (3) Somwaru, Agapi. "An Analysis of Economic Trends in Farm Income and Structure by Type of Farm, 1959-1982," forthcoming, U.S. Depart. Agri. Econ. Res. Serv.
- (4) U.S. Department of Agriculture, Economic Research Service. Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1983. ECIFS 3-3, Sept. 1984.
- (5) . "The Current Financial Condition of Farmers and Farm Lenders." AIB-490, March 1985.
- (6) U.S. Department of Commerce, Bureau of the Census. <u>Census of Agriculture</u>. Washington, DC, various years.
- (7) Farm Finance Survey. Washington, DC, various years.

Appendix table 1—Crop farms balance sheet components (excluding farm households), January 1, 1969

Item	: Total, : all : farms <u>1</u> /	: Total, : crop : farms <u>1</u> /	: Cash : grain	: : Cotton :	Tobacco	: Other : field : crop :	Vegetable and melon	and tree:	Horti- : culture : specialty:	General
	:			м1	llion dol	llars				
Physical assets:	•									
Real estate	: 188,400	89,601	51,005	5,913	3,771	4,244	3,496	8,809	2,599	9,764
Nonreal estate—	:									
Livestock and poultry	: 20,200	1,184	632	29	62	54	16	21	4	367
Machinery and motor vehicles	: 27,500	13,239	7,504	869	646	925	444	708	505	1,637
Crops stored	: 10,600	8,931	3,500	471	521	781	701	1,007	1,024	926
Financial assets	: 13,100	_				_		•••		****
Total assets 1/	259,800	112,955	62,641	7,282	5,000	6,004	4,657	10,545	4,132	12,695
Liabilities:	:									
Real estate	: 24,700	10,107	5,425	373	864	584	353	1,548	260	701
Nonreal estate	: 21,900	•	3,991	298	1,004	640	347	636	177	444
Total liabilities 1/	: 46,600	17,644	9,416	671	1,868	1,224	699	2,184	437	1,145
Net worth	: 213,200	95,311	53,225	6,611	3,132	4,780	3,958	8,361	3,695	11,550

^{— =} Not available.
1/ Totals may not add due to rounding.

Appendix table 2—Crop farms balance sheet components (excluding farm households), January 1, 1970

Item	: Total : all : farms	: crop	: : Cash : grain	: : Cotton	: : Tobacco	: Other : field : crop	:Vegetable : and : melon	:and tree	: Horti- : : culture : :specialty:	General
	:			<u>1</u>	illion do	ollars				
Physical assets:	:									
Real estate	: 194,2	92,360	52,575	6,095	3,887	4 , 375	3,604	9,080	2 , 679	10,065
Nonreal estate—	:									
Livestock and poultry	: 23,5	00 1,377	735	34	72	62	19	24	4	427
Machinery and motor vehicles	: 28,4	00 13,672	7,750	897	667	956	459	732	521	1,691
Crops stored	: 10,9	9,184	3,599	484	535	803	721	1,035	1,053	953
Financial assets	: 13,6 : 270.6		 64,659	7,510	- 5,161	6,196	4,803	10,871	 4,257	13,136
Total assets 1/	: 270,6	.0 110,595	04,029	7,510	2,101	0,190	4,003	10,071	4,201	13,130
Liabilities: Real estate Noureal estate	: 26,2 : 22,7		5,755 4,136	395 309	916 1 , 041	619 663	374 359	1,642 659	276 183	744 460
Total liabilities 1/	48,9	00 18,533	9,891	704	1,957	1,282	733	2,301	459	1,204
Net worth	: 221,7	98,060	54,768	6,806	3,204	4,914	4,070	8,570	3,798	11,932

^{-- =} Not available.
1/ Totals may not add due to rounding.

Appendix table 3—Crop farms balance sheet components (excluding farm households), January 1, 1974

Item	: a		: Total : crop : farms	•	Cash grain	: : Cotton	: : Tobacco	: field	:Vegetable : and : melon	:and tree	: Horti- : : culture :	General
	:						Million o	iollars				
Physical assets:	:											
Real estate	: 29	7,100	172,4	34	116,277	7,361	5,973	16,508	4,459	10,563	2,374	8,918
Nonreal estate—	:								-	-	•	•
Livestock and poultry	: 4	2,400	3,9	31	2,804	61	131	304	29	40	5	558
Machinery and motor vehicles	: 39	9,500	23,7	32	16,234	1,058	979	2,311	5 9 6	968	374	1,212
Crops stored	: 2	2,000	20,0	24	11,185	951	812	2,759	1,123	1,495	892	807
Financial assets	: 18	8,000				••••			****	_		
Total assets 1/	: 41	9,000	220,1	21	146,500	9,431	7,895	21,882	6,207	13,066	3,644	11,496
Liabilities:	: :											
Real estate	: 3!	5,800	18,0	19	10,512	795	558	2,041	420	2,136	422	1,136
Nonreal estate		2,300	13,8		8,438	927	330	1,713	406	699	376	944
	:		•		-,	•		-,	.00	0,7	5.0	,,,
Total Liabilities 1/	: 68	3,100	31,8	52	18,950	1,722	887	3,754	826	2,835	798	2,080
-	:		-		-	•		•		•		
Net worth	: 350	900,	188,2	68	127,550	7,709	7,008	18,128	5,381	10,231	2,846	9,416

^{- =} Not available.
1/ Totals may not add due to rounding.

Appendix table 4—Crop farms balance sheet components (excluding farm households), January 1, 1975

Item	: Total : all : farms	. : Total, : crop <u>1</u> /: farms <u>1</u> /	: Cash : grain	: Cotton	: : Tobacco	: field	:Vegetable : and : melon	:and tree	: Horti- : culture :specialty	: General
	:				Million d	lollars				
Physical assets:	:									
Real estate	: 326,90	00 189,729	127,940	8,099	6,572	18,164	4,906	11,622	2,612	9,813
Nonreal estate—	:							00	•	202
Livestock and poultry	: 24,5		1,620	35	76	175	17	23	3	323
Machinery and motor vehicles			20,179	1,315	1,217	2,872	741	1,203	465	1,507
Crops stored	: 23,3	00 21,207	11,846	1,007	860	2,922	1,189	1,584	944	854
Financial assets	: 18,20	00 —		-				Contract Con		
Total assets <u>1</u> /	: 442,0	242,708	161,585	10,456	8,725	24,133	6,853	14,432	4,024	12,497
Liabilities:	:									
Real estate	: 40,5	20,385	11,892	899	631	2,309	475	2,417	477	1,285
Nonreal estate	: 35,30	•	9,221	1,013	360	1,872	443	764	411	1,032
Total liabilities 1/	: 75,8	35,502	21,113	1,912	991	4,181	918	3,181	888	2,317
Net worth	: 366,2	207,206	140,472	8,544	7,734	19,952	5,935	11,251	3,136	10,180

^{-- =} Not available.
1/ Totals may not add due to rounding.

Appendix table 5—Crop farms balance sheet components (excluding farm households), January 1, 1978

Item	: Total, : all : farms <u>1</u> /	: Total, : crop : farms <u>1</u> /:		Cotton	: : Tobacco	: Other : field : crop	:Vegetable : and : melon	:and tree	: Horti- : culture :specialty	:General
	•				Million	dollars				
Physical assets:	:									
Real estate	: 507,600	276,022	183,493	13,249	10,754	23,310	7,571	18,620	4,046	14,980
Nonreal estate—	:									
Livestock and poultry	: 31,900	2,072	1,423	47	94	121	20	31	5	331
Machinery and motor vehicles	: 70,300	40,124	26,257	2,148	1,994	3,711	1,133	1,907	748	2,227
Crops stored	24,800	22,168	11,199	1,504	1,126	1,936	1,578	2,294	1,456	1,077
Financial assets	22,500				_	_				
Total assets 1/	657,100	340,387	222,372	16,948	13,968	29,078	10,302	22,851	6,255	18,615
Liabilities:	•									
Real estate	: 57,800	30,629	18,878	1,482	1,095	2,940	819	2,814	699	1,901
Nonreal estate	: 56,800	27,989	17,849	1,861	844	2,608	843	1,592	626	1,766
Total liabilities 1/	: : 114,600	58,618	36,727	3,343	1,938	5,549	1,662	4,406	1,325	3,668
Net worth	· 542,500	281,769	185,644	13,605	12,030	23,529	8,640	18,446	4,930	14,947

^{— =} Not available.
1/ Totals may not add due to rounding.

Appendix table 6—Crop farms balance sheet components (excluding farm households), January 1, 1979

Item	:	Total, all farms <u>1</u> /	: Total, : crop : farms 1	:	Cash grain	:	Cotton	: : Tobacco	:	Other field crop	:	getable and melon		: Horti- : culture :specialty	:General
	:						1	illion o	lol	Llars					
Physical assets:	:						_								
Real estate	:	600,900	326,757	,	217,220		15,684	12,731		27,594		8,963	22,042	4,790	17,733
Nonreal estate—	:													_	500
Livestock and poultry	:	51,300	3,332	2	2,289		76	151		194		33	50	7	532
Machinery and motor vehicles	:	78,700	44,919)	29,394		2,405	2,232		4,154		1,268	2,135	837	2,493
Crops stored	:	28,000	25,029)	12,644		1,698	1,271		2,185		1,781	2,590	1,644	1,216
•	:									-					
Financial assets	:	25,500	_	-											-
	:														
Total assets 1/	:	784,400	400,03	7	261,547		19,863	16,385		34,127		12,045	26,817	7,278	21,974
_	:	•													
Liabilities:	:														
Real estate	:	65,400	34,657	7	21,361		1,677	1,239		3,327		927	3,184	791	2,151
Nonreal estate	:	66,300	32,670		20,834		2,172	985		3,044		984	1,858	730	2,062
	:				•		•								
Total liabilities 1/	:	131,700	67,32	7	42,195		3,849	2,224		6,371		1,911	5,042	1,521	4,213
1001 110111110 5	:	,	J. ,		, ,		•	•		,		·	•	-	
Net worth	:	652,700	332,710)	219,352		16,014	14,161		27,756		10,134	21,775	5 , 757	17,761

^{— =} Not available.
1/ Totals may not add due to rounding.

Appendix table 7—Crop farms balance sheet components (excluding farm households), January 1, 1982

Item	: Total, : : all : : farms 1/:	Total, crop farms <u>1</u> /	Cash grain	Cotton	: : Tobacco :	Other field crop	:Vegetable : and : melon	:and tree	: Horti- : culture :specialty	: :General : crcp
	:			1	illion do	ollars				
Physical assets:	:			_		,				
Real estate	: 754,600	425 ,0 45	281,585	18,090	15,598	31,596	13,188	35,265	7,817	21,906
Nonreal estate—	•									-
Livestock and poultry	: 53,600	3,654	2,738	48	161	144	28	39	8	488
Machinery and motor vehicles	: 103,000	59,928	41,261	2,352	3,000	4,604	1,611	3,092	1,192	2,814
Crops stored	: 36,300	32,833	17,619	1,798	1,503	2,575	2,269	3,346	2,211	1,512
Financial assets	32,300		_							
Total assets 1/	979,800	521,460	343,203	22,288	20,263	38,919	17,096	41,742	11,228	26,721
Liabilities:	· :									
Real estate	: 97,000	52,110	33,501	2,208	1,803	3,765	1,567	5,145	1,284	2,837
Nonreal estate	: 91,500	45,884	30,608	2,679	1,342	3,227	1,558	2,812	1,110	2,546
Total liabilities 1/	: 188,500	97,993	64,109	4,887	3,145	6,993	3,126	7,956	2,394	5,383
Net worth	: 791,300	423,467	279,094	17,401	17,118	31,927	13,970	33,786	8,834	21,338

^{- =} Not available.

^{1/} Totals may not add due to rounding.

Appendix table 8—Crop farms balance sheet components (excluding farm households), January 1, 1983

Item	:	Total, : all : farms <u>1</u> /:	Total, crop farms <u>1</u> /	:	Cash grain	: : Cotton	: : Tob	:	Other field crop	:Vegetable : and : melon		: Horti- e: culture :specialty	: :General : crop
	:						H111:	lon do	llars				
Physical assets:	:												
Real estate	:	709,200	399,47	3	264,644	17,002	14	,660	29,695	12,394	33,143	7,346	20,588
Nonreal estate—	:												
Livestock and poultry	:	53,000	3,61	3	2,707	47	,	159	142	28	39	8	482
Machinery and motor vehicles	:	105,800	61,55	7	42,383	2,416	3	,082	4,729	1,655	3,177	1,225	2,891
Crops stored	:	41,300	37,35	5	20,046	2,045	1	,710	2,930	2,581	3,807	2,516	1,721
Financial assets	:	34,700 944,000	- 501,99	-	329,780	 21,510	. 10		37,496	16,658	 40,166	11,095	<u> </u>
Total assets 1/	•	344,000	201,99	o	329,700	21,010	19	,011	77,450	10,000	40,100	11,093	23,002
Liabilities: Real estate Nonreal estate	:	100,800 102,000	54,15 51,14		34,814 34,120	2,295 2,987		,873 ,496	3,913 3,598	1,629 1,737	5,346 3,135	1,334 1,238	2,948 2,839
Total liabilities 1/	:	202,800	105,30	0	68,934	5,282	3	,369	7,511	3,366	8,481	2,572	5,787
Net worth	:	741,200	396,69	В	260,846	16,228	16	,242	29,985	13,292	31,685	8,523	19,895

^{-- =} Not available.

1 Totals may not add due to rounding.

	Total, all farms <u>1</u> /	: Total, : : livestock : : farms <u>1</u> /:	hog,	;	: Poultry : and : egg :	: Animal : specialty :	General livestock
			М	illion do	llars		
Physical assets:	:						
Real estate	: 188,400	98,799	72,639	18,915	3,199	1,494	2,553
Nonreal estate—	:						
Livestock and poultry	20,200	19,016	11,325	4,394	2,774	248	275
Machinery and motor vehicles	27,500	14,261	8,630	4,276	645	193	517
Crops stored	10,600	1,669	1,218	273	54	6	117
Financial assets	13,100			_			
Total assets 1/	259,800	133,745	93,812	27,858	6,672	1,941	3,461
Liabilities:							
Real estate	24,700	. 14,593	10,665	2,903	669	153	203
Nonreal estate	21,900	14,363	10,521	3,016	626	71	129
·	;	•	•	•			
Total liabilities 1/	46,600	28,956	21,187	5,919	1,295	224	331
Net worth	213,200	104,789	72,626	21,939	5,377	1,717	3,130

^{- =} Not available.

Appendix table 10—Livestock farms balance sheet components (excluding farm households), January 1, 1970

Item	:	Total, all farms <u>1</u> /	: Total, : :livestock : farms 1/:	hog,	:	:	Poultry and egg	: Animal : specialty:	General livestock
	:			Н	illion d	011	ars		
Physical assets:	:			_					
Real estate	:	194,200	101,840	74,875	19,497		3,297	1,540	2,631
Nonreal estate—	:								
Livestock and poultry	:	23,500	22,123	13,175	5,112		3,228	289	320
Machinery and motor vehicles	:	28,400	14,728	8,913	4 , 416		666	200	534
Crops stored	:	10,900	1,716	1,253	281		55	6	121
	:								
Financial assets	:	13,600							
	:								
Total assets <u>1</u> /	:	270,600	140,407	98,216	29,306		7,246	2,035	3,606
	:								
Liabilities:	:								
Real estate	:	26,200	15,479	11,313	3,079		709	162	215
Nonreal estate	:	22,700	14,888	10,906	3,126		649	73	134
	:								
Total liabilities 1/	:	48,900	30,367	22,219	6,205		1,358	235	349
	:								
Net worth	:	221,700	110,040	75 , 997	23,101		5,888	1,800	3,257
									

^{1/} Totals may not add due to rounding.

^{— =} Not available.
1/ Totals may not add due to rounding.

Item	: all	: Total, : livestock : farms 1/		:	: Poultry : and : egg	: Animal : specialty	: : General : livestock
	:		<u>!</u>	Million do	llars		
Physical assets:	:						
Real estate	: 297,100	124,666	90,925	26,036	4,009	1,364	2,332
Nonreal estate—	:						
Livestock and poultry	: 42,400	38,469	21,284	9,653	6,735	378	418
Machinery and motor vehicles	: 39,500	15,768	8,994	5,449	799	143	383
Crops stored	: 22,000	1,976	1,381	392	95	5	102
Financial assets	: 18,000			-			_
Total assets 1/	: : 419,000	180,879	122,585	41,530	11,638	1,890	3,234
Liabilities:	: :						
Real estate	: 35,800	17,781	11,148	5,077	980	248	328
Nomreal estate	: 32,300	18,467	•	5,274	794	151	274
Total liabilities 1/	: 68,100	36,248	23,123	10,350	1,774	398	602
Net worth	: 350,900	144,632	99,462	31,180	9,865	1,492	2,632

^{- =} Not available.

Appendix table 12-Livestock farms balance sheet components (excluding farm households), January 1, 1975

Item	: Total, : all : farms <u>1</u> /	: Total, : livestock : farms <u>1</u> /		:	: Poultry : and : egg	: Animal : specialty	: General : livestock
	:		1	Hillion do	llars	6	
Physical assets:	:						
Real estate	: 326,900	137,171	100,046	28,648	4,411	1,501	2,565
Nonreal estate—	:						
Livestock and poultry	: 24,500	22,228	12,298	5 , 578	3,892	218	242
Machinery and motor vehicles	: 49,100	19,600	11,180	6,773	994	178	476
Crops stored	: 23,300	2,093	1,463	415	101	5	108
Financial assets	: 18,200					_	_
Total assets 1/	: 442,000	181,092	124,987	41,414	9,398	1,902	3,391
Liabilities:	: :						
Real estate	: 40,500	20,115	12,612	5,743	1,104	. 280	371
Nonreal estate	: 35,300	20,183	13,087	5,764	867	165	300
Total liabilities 1/	: 75,800	40,298	25,699	11,507	1,971	445	671
Net worth	: 366,200	140,794	99,288	29,907	7,427	1,457	2,720

^{- =} Not available.

^{1/} Totals may not add due to rounding.

^{1/} Totals may not add due to rounding.

Appendix table 13-Livestock farms balance sheet components (excluding farm households), January 1, 1978

Item	: all	: Total, : livestock : farms <u>1</u> /		: : Dairy	: Poultry : and : egg	: Animal specialty	: General : livestock
	•			Hillion do	llars		
Physical assets:	:						
Real estate	: 507,600	231,578	179,060	34,741	5,750	5,089	6,937
Nonreal estate—	:						
Livestock and poultry	: 31,900	29,828	17,933	6,366	4,640	420	468
Machinery and motor vehicles	: 70,300	30,176	19,409	7,876	1,347	510	1,034
Crops stored	: 24,800	2,632	1,969	364	98	9	191
Financial assets	: : 22,500		_		_	_	-
Total assets 1/	: 657,100	294,213	218,371	49,347	11,835	6,028	8,630
Liabilities:	:	07 171	10.05/	F (00	1 //5	(5)	50/
Real estate	: 57,800	27,171	18,854	5,602	1,465	656	594
Nonreal estate	: 56,800	28,811	20,721	5,914	1,055	461	660
Total liabilities <u>1</u> /	: 114,600 :	55,982	39,575	11,516	2,520	1,117	1,254
Net worth	: 542,500	238,231	178,796	37,831	9,315	4,911	7,376

^{- =} Not available.

Appendix table 14—Livestock farms balance sheet components (excluding farm households), January 1, 1979

Item		Total, livestock farms 1/		: : Dairy	: Poultry : and : egg	: Animal specialty	: General : livestock
	:			Million do	llars		
Physical assets:	:						
Real estate	: 600,900	274,143	211,972	41,127	6,807	6,025	8,212
Nonreal estate—	:					-	-
Livestock and poultry	: 51,300	47,968	28,840	10,237	7,462	676	753
Machinery and motor vehicles	: 78,700	33,781	21,728	8,817	1,507	571	1,158
Crops stored	: 28,000	2,971	2,223	411	111	10	216
Financial assets	25,500		_		_		
Total assets <u>1</u> /	784,400	358,863	264,763	60,592	15,887	7,282	10,339
Liabilities:	:						
Real estate	: 65,400	30,743	21,334	6,338	1,658	742	672
Nonreal estate	: 66,300	33,630	24,187	6,904	1,231	538	771
Total liabilities 1/	: 131,700	64,373	45,521	13,242	2,889	1,280	1,443
Net worth	: 652,700	294,490	219,242	47,350	12,998	6,002	8,896

^{-- =} Not available.

^{1/} Totals may not add due to rounding.

^{1/} Totals may not add due to rounding.

Iten		Total, livestock farms 1/		:	: Poultry, : and : egg	Animal specialty	General livestock
	:		<u>H</u>	illion do	llars		
Physical assets:	:						
Real estate	: 754,600	329,555	245,536	53,649	8,471	11,901	9,998
Nonreal estate—	:						
Livestock and poultry	: 53,600	49,946	27,506	13,182	7,610	982	666
Machinery and motor vehicles	: 103,000	43,072	25,994	12,930	1,798	1,091	1,258
Crops stored	: 36,300	3 , 467	2,468	617	131	18	233
Financial assets	: : 32,300		_		,		-
Total assets 1/	: 979,800	426,040	301,504	80,378	18,010	13,992	12,155
Liabilities: Real estate Nonreal estate	: 97,000 : 91,500	44,890 45,616	26,823 28,486	12,820 13,080	2,825	1,308 889	1,114 1,196
Total liabilities 1/	: 188,500	90,507	55,309	25,900	4,791	2,197	2,310
Net worth	: 791,300	335,533	246,195	54 , 478	13,219	11,796	9,845

^{- =} Not available.

Appendix table 16—Livestock farms balance sheet components (excluding farm households), January 1, 1983

Item	:	all	:	Total, livestock farms <u>1</u> /	: hog,	:	Dairy	:	Poultry, and egg	:	Animal : specialty :	General livestock
	:					Мі	llion do	11	ars .		¥.	
Physical assets:	:											
Real estate	:	709,200		309,727	230,763	3	50,421		7,962		11,185	9,396
Nonreal estate—	:											
Livestock and poultry	:	53,000		49,387	27,198	3	13,035		7,525		971	658
Machinery and motor vehicles	:	105,800		44,243	26,70	Ĺ	13,282		1,847		1,121	1,292
Crops stored	:	41,300		3,945	2,80	3	702		149		21	265
	:											
Financial assets	:	34,700				-					-	
	:											
Total assets 1/	:	944,000		407,302	287,470)	77,440		17,483		13,298	11,611
	:	-										
Liabilities:	:											
Real estate	:	100,800		46,649	27,87	ŧ	13,323		2,936		1,359	1,157
Nonreal estate	:	102,000		50,851	31,75	5	14,581		2,191		991	1,333
- •	:											
Total liabilities 1/	:	202,800		97,500	59,62)	27,904		5,127		2,350	2,490
	:											
Net worth	:	741,200		309,802	227,84	1	49,536		12,356		10,948	9,121

^{- =} Not available.

^{1/} Totals may not add due to rounding.

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1/ Totals may not add due to rounding.

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