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Financial Performance of Specialized Hog Farms, 1987

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Specialized hog farms--those with at least 50 percent of their production value from hogs and with at least $40,000 in total crop and livestock production--had more favorable financial conditions in 1987 than most other types of commodity specialty farms. Since 1985, net returns have increased 87 percent and the number of financially stressed farms has decreased 61 percent. Small farms with sales of $40,000 to $100,000 had the least favorable costs and returns. Production was concentrated in four adjoining areas: the Northern Plains, the western Corn Belt, the eastern Corn Belt, and the Southeast. Specialized hog farms in the eastern Corn Belt had the highest net returns and lowest costs.

U.S. farms earned $10.3 billion in cash receipts from hog production in 1987, the highest since 1982. About 90,000 of the Nation's 2.2 million farms had 50 percent or more of their production in hogs in 1987. About 41 percent, or 36,700 hog farms, also had at least $40,000 in total agricultural production. This report focuses on these farms, termed specialized hog farms, and their revenues, costs, and finances in 1987.

The financial rewards of producing hogs are best illustrated by examining the costs and returns of specialized hog farmers. Facilities and livestock equipment are intensively used throughout the year when producers specialize in hog production. Efficiencies that tend to be found in larger hog operations would be most evident among specialized producers.

Specialized hog producers both sell the bulk of U.S. hogs and generally rely on farm income and hog sales for a substantial portion of their households' total income. Only 18 percent of all U.S. farms that produced any hogs were classified as specialized hog farms, but they produced over 65 percent of the hogs in the United States. Hogs, in turn, amounted to about 76 percent of the specialized hog farms' value of production in 1987.

The 53,000 farms that specialized in hogs, but had total production under $40,000, accounted for less than 5 percent of U.S. hog sales in 1987. The remaining 30 percent of hog sales were from 115,000 farms with over $40,000 total production but for which hogs were only a minor enterprise.

Hog farm statistics are from the 1987 Farm Costs and Returns Survey. Cash receipts for States producing hogs are provided from the *Economic Indicators of the Farm Sector*, a periodical of the Economic Research Service, U.S. Department of Agriculture (USDA).

Gross Revenues and Net Returns

Net returns, the principal shortrun measure of financial health, averaged $36,376 for all specialized hog farms in 1987. Even though the average net returns for all specialized farms was high, over 14 percent had negative net returns. Off-farm income was a major portion of farm operator household cash income for many specialized hog farms and averaged $12,548. Net returns for specialized hog farms were higher than for specialized cattle and dairy farms (table 1). Average direct Government payments of $16,526 were exceeded by the payments to specialized corn-soybean, wheat, and cotton farmers.

Because average net returns are usually related to farm size, comparisons of net returns to gross revenues (the returns margin) or comparisons of net returns to assets (the returns/assets ratio) are more meaningful indicators of profitability. The average returns margin for specialized hog farms was 20 percent, and the average returns/assets ratio was 8 percent. These figures compare very favorably with other types of specialized livestock farms (table 1).

Returns varied significantly by farm size. Average gross revenue ranged from about $78,714 to $638,584 across the four size classes (table 2). The composition of gross revenue was relatively stable across sizes, but with some differences. The largest

General Terms and Returns Definitions

Commercial farms annually produce $40,000 or more in agricultural commodities.

Specialized hog farms are commercial farms whose value of hog production accounts for 50 percent or more of the value of the farm's total crop and livestock sales.

Gross revenue equals the sum of livestock commodity sales, the value of crop production (less that fed to livestock), direct Government payments, income from rental of farmland, the rental value of hired laborers' dwellings, and other cash farm-related income.

Net returns equals gross revenue less total expenses (or costs) for the farm business. This measure does not include off-farm income, farm operator household expenses, or expenditures for capital items and depreciation. Thus, net returns equals residual returns to owned inputs and own labor and management before capital replacement.

Total expenses are all cash variable and fixed business expenses, except for capital consumption, but including share rental expenses, inkind payments to hired workers, and purchased livestock.

Capital expenditures are for purchases of farm machinery, office machines, and construction costs.

Returns margin equals net returns divided by gross revenue. This measure provides an indicator of how effectively gross revenues are converted to net returns.

Returns/assets ratio equals the sum of net returns and interest expenses divided by the value of assets. This measure of performance represents returns to assets, labor, and management before capital replacement.

Size classes are based on the sum of the value of crop production (less that fed to livestock or otherwise used on the farm) and gross sales of livestock commodities. The categories are set at:

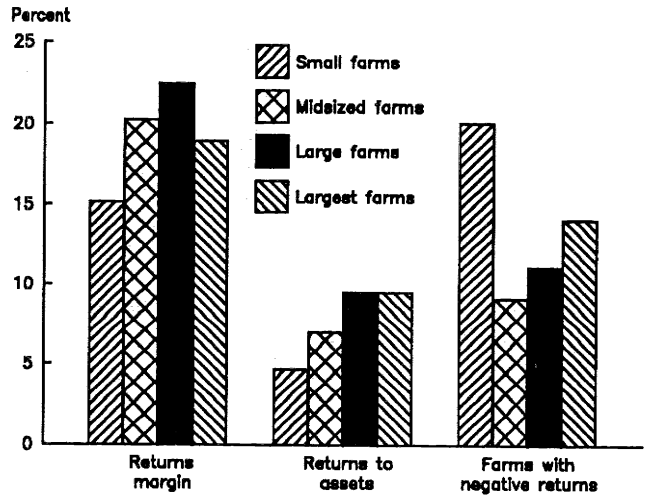
$40,000 to $99,999 (small commercial farms),
$100,000 to $199,999 (midsized commercial farms),
$200,000 to $299,999 (large commercial farms), and
$300,000 or more (the largest farms).

farms were the most specialized, with hog sales accounting for 72 percent of their gross revenues. Large commercial farms relied less on other livestock (2 percent of gross revenues) and more on crops (19 percent of gross revenues) than the other size classes. Government payments were a larger proportion of gross revenues for midsized and large farms.

Small farms had the poorest financial performance in 1987 with average net returns of $11,947. The small farms had the lowest returns margin and the lowest returns/assets ratio and were most likely to have negative net revenues (fig. 1). Small farms were twice as likely to have negative net returns as midsized commercial farms.

All size classes of specialized hog farms had positive average net returns in 1987. As farm size increased, net returns generally increased. However, the largest farms were more likely to have negative returns than midsized farms.

Figure 1
Large specialized hog farms fared well in 1987



Source: 1987 Farm Costs and Returns Survey.

Table 1--Key financial indicators of specialized farms, 1987

Type	Net returns	Off-farm income	Government payments	Margin	Returns to assets	Negative net returns
	Dollars			*Percent*		
Hogs	36,376	12,548	16,526	20	8	14
Dairy	26,541	10,752	4,965	15	5	20
Cattle	19,616	22,577	12,026	10	3	26
Corn-soybean	40,703	14,999	28,733	27	8	13
Wheat	36,620	15,807	44,787	22	5	19
Cotton	62,345	22,180	50,519	23	10	13
Tobacco	43,196	13,812	4,801	32	14	9

Source: 1987 Farm Costs and Returns Survey.

Table 2--Average net returns, gross revenue, and components of gross revenue for specialized hog farms by size class, 1987

Size class	Average net returns	Average gross revenue	Average share of gross revenue per farm from--				
			Hogs	Other livestock	Crops	Government payments	Other farm-related income
	Dollars		*Percent*				
$40,000-$99,999	11,947	78,714	67	8	14	8	3
$100,000-$199,999	32,638	160,352	64	6	17	10	3
$200,000-$299,999	63,521	282,175	67	2	19	10	2
$300,000 or more	121,183	638,584	72	5	15	6	2
All	36,376	186,011	66	6	16	9	3

Source: 1987 Farm Costs and Returns Survey.

Most U.S. farm operator households receive some income from off-farm sources. As farm size increased, average off-farm income generally increased, except for the households associated with the largest farms which generally earned less off-farm income than midsized farms. For specialized hog farms, however, the largest farms had the highest average cash off-farm income, $32,766. The average off-farm income for small, midsized, and large specialized hog farms was $11,132, $9,833, and $11,317, respectively.

Cost Structure of Specialized Hog Farms

Total 1987 production expenses for the farm sector were less than in 1985. Declining total expenses, however, are deceptive if returns are also declining. Financial ratios help in comparing costs and returns. This section examines the cost structure of specialized hog farms with an analysis of cost/returns ratios.

Specialized hog farms generally received adequate returns to cover their costs. For all farms combined (table 3), costs were less than $1 for each $1 of production, whether capital expenditures were included (99 cents) or not (88 cents). Only by including an estimate of the cost of unpaid labor does the cost/returns ratio ($1.09) for all specialized hog farms exceed $1 per $1 of production.

Variable livestock inputs (feed, livestock purchases, veterinary and other livestock services and supplies, and livestock equipment purchases) were the largest components of total expenses in 1987. Feed cost 29 cents per $1 of production. Capital-related expenses (capital purchases, equipment leasing, equipment maintenance and repair, and land improvements and maintenance) were another major expense at 17 cents per $1 of production. The expenses for labor were sizable, 16 cents per $1 of production when an estimate for unpaid labor is included. Interest and rent (both cash and share) cost 15 cents per $1 of production.

Livestock services and marketing costs varied little per dollar of production as farm size increased (table 3). But inputs such as rent, interest, taxes and other business costs, and unpaid labor (estimated cost of operator and family labor) varied substantially as farm size increased. Because of relatively high expenses for fuel and supplies, leasing and repair, and unpaid

Table 3--Ratios of costs to value of production for specialized hog farms by size class, 1987

Cost components	Value of total production				All
	$40,000 to $99,999	$100,000 to $199,999	$200,000 to $299,999	$300,000 or more	
	Cents per dollar of production				
Variable crop inputs	10	11	10	8	10
Variable livestock inputs	40	40	37	41	40
Feed	30	27	26	33	29
Livestock purchases	8	11	9	7	9
Livestock services	2	2	2	2	2
Fuel and supplies	6	4	4	3	4
Labor:					
Paid labor only	3	4	5	8	5
Including estimated value of unpaid labor[1/]	26	17	12	12	16
Marketing	1	2	1	1	1
Interest	7	10	6	6	7
Capital expenditures	13	10	10	11	11
Leasing and repair	8	6	5	5	6
Rent	8	9	10	6	8
Taxes and other business costs	10	6	6	5	6
All costs, excluding capital expenditures and unpaid labor	97	91	83	83	88
All costs, including capital expenditures:					
Including only paid labor	110	101	92	95	99
Including estimated value of unpaid labor[1/]	132	113	100	98	109

[1/] Based on the average wage rate for farm laborers.
Source: 1987 Farm Costs and Returns Survey.

labor, small farms had the highest overall cost/returns ratios of the four size classes.

Small farms were more labor intensive (26 cents per $1 of production) and relied more on unpaid labor. Paid labor costs of 3 cents per $1 of production were the lowest for small farms; on the other hand, the estimated value of unpaid labor (operator and family members) was the highest for small farms at 23 cents per $1 of production. Other cost/returns ratios that were greatest for small farms included capital, capital-related expenses, fuel and supplies, and taxes and other business costs.

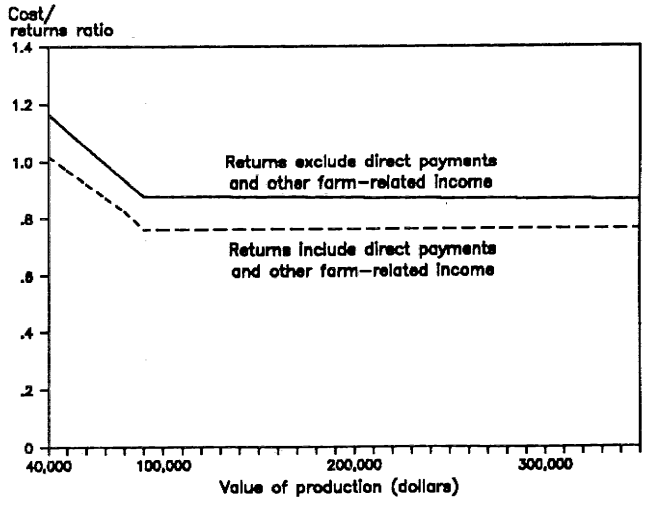
Interest expenses of 10 cents per $1 of production were highest for farms with $100,000 to $199,999 in production.

Large farms with $200,000 to $299,999 in production had the lowest cost/returns ratio for two of the three overall measures. When capital expenses are included in returns, large farms had 92 cents of costs for every $1 of return. Feed costs per $1 of production were noticeably low for large farms.

The ratio of costs to the value of production is a measure of the economic efficiency of converting inputs into outputs. Government payments and other farm-related income can be added to the value of production to obtain gross revenues. Over 16 percent of gross revenues were from crop sales, and some of these crops were included in Federal programs. The ratio of costs to gross revenues presents a more comprehensive measure of the farm's financial performance than costs divided by value of production.

When returns include all direct Government payments and other farm income, the cost/returns ratios are significantly lower (fig. 2). Gross revenues, on average, exceeded costs for all size classes.

Figure 2
Small farms had higher costs per dollar of returns



Financial Strength and Loan Default Problems Among Specialized Hog Farmers

The pork industry expanded greatly during the late 1970's, largely through the building of new facilities. Thus, returns from hog production were depressed from 1979 to mid-1986 except for a brief period in 1982 and the first half of 1983. High costs of production inputs contributed to a cost-price squeeze and widespread debt and asset restructuring during 1984, 1985, and early 1986. Land values in the Midwest fell about 50 percent from their 1982 level, and nearly 10 percent of all agricultural debt was written off as a loss by farm lenders. A loan default indicates the inability to adjust to adverse business conditions. This analysis focuses on loan default problems to identify financial stress among hog farmers.

Loans are usually considered in default by lenders if debt servicing is in arrears or if full repayment of loan principal is not likely to occur. The latter is a problem of insufficient collateral or assets in relation to debt.

We classified farmers as experiencing default problems if their debts exceeded assets (insolvent), their debts were very high and they made only partial payment of scheduled principal and interest, or their debts were high and they could make no loan payments from available farm and off-farm income.

Our discussion will use the following terms as defined:

Debt/asset ratio. The ratio of farm debt to farm assets shows the relative burden of debt compared with the asset base of the farm: high debt (40-70 percent), very high debt (70-100 percent), and insolvent (more than 100 percent).

Debt service. The cash-flow required to meet scheduled loan principal and interest payments. Cash-flow available for debt service is what is left after the farmer covers operating expenses, capital replacement costs, and family living expenses.

Cash-flow. The sum of commodity sales and other farm income such as custom work and off-farm income.

Interest/sales ratio. The ratio of interest paid to sales is a reliable indicator of debt's relative burden upon farm earnings. Because it is a ratio, direct comparison can be made across both small and large farms.

One of every twelve specialized hog farmers was at risk of defaulting on loans in January 1988, compared with one in five during 1984-85 (table 4). Thus, default stress problems dropped by half between 1984 and 1987, partly because many insolvent farmers had already gotten out of the business. Other farmers reorganized their farm operations and had a portion of their loans restructured or forgiven. But, three factors were largely responsible for the recent financial gains of most hog producers--higher hog prices, lower feed costs, and rising land values:

- During 1986-87, hog prices averaged more than $50 per hundredweight (cwt), a 15-percent increase over 1985.
- Feed costs in 1986-87 were the lowest since the early 1970's. For example, the average price of corn dropped from $2.76 per bushel during 1980-85 to $1.74 during 1986-87.

Table 4--Eight percent of all specialized hog farms had loan repayment problems on January 1, 1988

Debt service category	Debt/asset ratio: No debt (0 percent)	Low debt (0 to 40 percent)	High debt (40 to 70 percent)	Very high debt (70 to 100 percent)	Insolvent (more than 100 percent)	All
Fully able to service debt	Financial strength: 33,762 farms (92 percent of all farms); $3,223 million debt (68 percent of all farm debt)			Financial stress: 2,952 farms (8 percent of all farms); $1,499 million debt (32 percent of all farm debt)		26,908 farms; $2,812 million debt
Partly able to service debt						6,306 farms; $1,554 million debt
Not able to service debt						3,500 farms; $356 million debt
All	4,871	19,239	9,047	2,489	1,069	36,714 farms
	$0	$1,593 million	$1,137 million	$867 million	$524 million	$4,722 million debt

Source: 1987 Farm Costs and Returns Survey.

Table 5--Financial position of specialized hog farms fully or partly able to meet debt obligations by stress, 1987

Item	Nonstressed (31,103 farms)		Stressed (2,111 farms)	
	Total	Per farm	Total	Per farm
	Million dollars	*1,000 dollars*	*Million dollars*	*1,000 dollars*
Net worth	11,398	366	-0.9	-0.4
Real estate interest	248	8	37	18
Non-real estate interest	111	4	19	10
Debt--				
Total	3,448	111	918	435
Farmers Home Administration	496	16	282	133
Farm Credit System [1/]	712	232	22	105

[1/] Members of the Farm Credit System include the Federal land banks, production credit associations, and Bank for Cooperatives.
Source: 1987 Farm Costs and Returns Survey.

- Land prices in the Corn Belt, Lake States, and Northern Plains, which include 9 of the top 10 hog States, rose an average of 8 percent from February 1, 1987, to February 1, 1988. Higher land prices translate into increased value of loan collateral. Loan defaults tend to be limited by stable or rising loan collateral.

The financial strength of specialized hog farmers is best indicated by two measures. First, 66 percent had debts of less than 40 percent of assets. Total farm debt, including livestock, machinery, and real estate loans, averaged only $66,100 for these 24,100 specialized hog farmers. This average debt was only 13 percent of the $490,200 average debt of the 1,070 farms with debts that exceeded their assets. Second, 73 percent of the specialized hog farms were able to fully service debt obligations with farm and nonfarm earnings in 1987. Only 9.5 percent were unable to service any interest and principal obligations. Thus, specialized hog farmers were characterized by both low debt burdens and adequate income to cover operating expenses and loan service commitments.

Nonstressed farms that fully or partly serviced their scheduled loan payments had $11.4 billion of net worth, compared with less than $900,000 of negative net worth among the stressed farms that fully or partly serviced debt in 1987. The burdensome debt accounts for a major difference in the financial structure of stressed versus nonstressed farms:

- Net cash income would have been $16,000 higher for stressed farms with full or partial debt service had their interest payments not exceeded those of the nonstressed farms (table 5)
- Total debt was nearly four times greater for the stressed versus nonstressed farms with full or partial debt service.
- Stressed farms relied heavily upon Government and Farm Credit System (Government-sponsored) financing. This type of debt was 55 percent of the total debt for stressed farms with full or partial debt service.

The farm financial problems of the mid-1980's focused attention on differences in financial and organizational characteristics of financially stable farms compared with those with loan defaults (table 6). Stressed farmers tend to be significantly younger than nonstressed farmers. The large capital requirements to begin farming usually require young farmers to borrow heavily during the startup of their operation. Heavily indebted farmers became the most stressed because

Table 6--Characteristics of nonstressed and stressed operators of specialized hog farms, 1987

Item	Nonstressed	Stressed
		Percent
Operator's characteristics:		
Full time	84	86
Sole proprietors	83	86
Age less than 35	27	27
		Number
Dependents	3.4	3.4
		Dollars
Income, sales, and finance:		
Off-farm income	13,023	7,116
Direct Government payments	16,171	20,592
Value of production	164,718	158,679
Sales	155,158	143,720
Farm cash-flow	38,503	10,369
Debt	109,311	349,387
Net worth	380,419	43,146
Machinery assets	75,552	67,669
Interest	11,298	21,837
		Percent
Financial ratios that highlight farm stress:		
Interest to value of production	7	14
Cash rent paid to value of production	3	6
Off-farm income to value of production	8	4

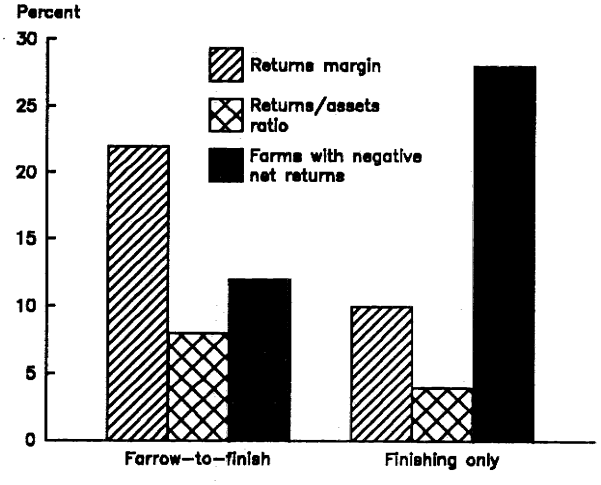
Source: 1987 Farm Costs and Returns Survey.

Advantages of Farrow-to-Finish Production

Almost 84 percent of specialized hog farms practiced farrow-to-finish production in 1987. That is, they bred sows and raised their feeder pigs. Farrow-to-finish instead of buying feeder pigs and then finishing them is expanding in hog operations, because farrowing tends to generate higher returns. The purchase of feeder pigs, typically at weights of 30-50 pounds, is often less economical because of higher marketing and transportation costs and a greater risk of disease. Hog farms tend to either farrow or purchase feeder pigs. Few farms do both.

The finishing-only operations were, on average, only slightly larger in terms of gross revenue and assets. But, the returns margin and the returns/assets ratio of farrow-to-finish farms were double those of finishing operations.

Farrow–to–finish farms have higher returns



Source: 1987 Farm Costs and Returns Survey.

Lower costs for producers, compared with finishers, are evident in the 15-cent difference in overall costs per $1 of production. Finishers spent 33 cents more per $1 of production on purchases of hogs. However, finishers spent 10 cents, 4 cents, and 3 cents less per $1 of production on feed, capital, and labor, respectively.

Financial indicators of specialized hog farms by farrowing, 1987

Item	Finishing operations	Farrow to finish
	Dollars (per farm averages)	
Net returns	20,042	39,547
Gross revenues	201,186	183,064
Hog sales	130,088	124,494
Other livestock sales	8,850	8,481
Crops sold	24,320	19,512
Total value of production	171,246	162,870
Hog purchases	57,602	3,343
Government payments	17,000	16,434
Capital expenditures	11,547	18,640
Debt	141,638	126,095
Interest	14,969	11,597
Equity	394,092	345,382
Assets	535,186	470,464
	Percent	
Cost ratio[1/]	1.11	0.96

[1/] All costs (including capital expenditures and excluding unpaid labor) divided by total value of production.
Source: 1987 Farm Costs and Returns Survey.

of high interest rates and inadequate profits for full debt service in the mid-1980's. They were hit by declining land values, and land accounted for about half of their farm assets. Net worth accumulates slowly in farming. Stressed farmers tended to have three times as much debt and only 11 percent the net worth as nonstressed farmers.

Heavy capital spending in the late 1970's and early 1980's contributed to financial default problems, but not in 1987. Stressed farmers spent only 7 percent of the value of their production on capital purchases, compared with 11 percent for nonstressed farms.

Three of the factors most associated with farm stress were high interest and high cash rent compared with the value of farm production. Off-farm income earned by households with stressed farms was only 55 percent of that earned by nonstressed farm households.

The wide yearly variability in both commodity prices and yields has made farm financial goals difficult to develop and implement. However, before expanding production, specialized hog farmers probably should ensure a better balance between the quantity of production and the related cost. For example,

nonstressed farms successfully limited interest expense to less than 10 percent of the value of their farms' production. Generating off-farm income equal to 5-10 percent of the value of farm production apparently increased the financial stability of many nonstressed hog farms.

Thus, the following guidelines may constitute a "rule of thumb" for hog producers who are considering expansion: (1) make sure production costs are competitive, (2) ensure that suddenly higher interest rates will not substantially reduce profit, and (3) if possible, have off-farm income to stabilize family earnings during periods of low hog profits.

Should Farmers Grow Corn for Feed?

Farmers may benefit from growing their own feed during periods of high grain prices for three reasons. First, efficient crop producers can often grow corn for less than the market price. Second, diversification between both crops and hogs reduces the risk of relying on hog sales only. High crop prices translate into high feed costs that can lower hog profits. But for diversified hog/crop producers, overall earnings are bolstered by high crop prices, offsetting low hog income. Third, crop commodity programs often result in Government payments to farmers, and also present additional marketing options through Commodity Credit Corporation loans and, in some years, payment-in-kind crop marketing certificates.

Corn is the major crop grown by farmers for hog feed. In 1987, over 25,875 of the 36,714 specialized hog farms fed more than $5,000 of corn grown on their farm. Farms that grew corn for feed purchased $26,500 less feed per farm than farms that purchased most of their feed. Larger farms were more likely to grow corn for feed.

Financial statistics do not show a definite advantage for 1987, however (see table, at right). Farms that grew corn (using the above definition) had a $6,000 higher average net return, a higher returns margin, more assets, and higher direct Government payments resulting in higher gross revenues. However, these farms also had a lower returns/assets ratio, more debt, and more interest, and were more likely to face financial stress or negative net returns. The total value of production for both types of farms was about equal, but the composition of their production shows a major difference. Farms that produced their own corn for feed operated, on average, 186 more acres than those that did not; thus, they had more crop production. Real estate assets were significantly higher for farms producing feed ($261,121), compared with the others ($176,260). Thus, farms that produced feed had higher returns except when compared to asset levels.

The benefits from growing corn for feed were minimized in 1987 because of low commodity prices. The average farm price of corn was only $1.55 per bushel in 1985, compared with $3.25 in 1983. The advantage of raising feed will increase substantially in 1988 and 1989 because of higher grain prices after the 1988 drought.

Financial indicators of specialized hog farms by production of corn for feed, 1987

Item	Corn for feed	
	Produced up to $5,000	Produced $5,000 or more
	Dollars (per farm averages)	
Hog sales	140,179	119,219
Other livestock sales	7,318	9,052
Crops sold	12,042	31,584
Total value of production	163,602	164,496
Crops used on farm	5,128	34,288
Government payments	7,377	20,356
Gross revenues	175,456	190,259
Net returns	32,000	38,038
Capital expenditures	14,978	18,538
Debt	92,8301	43,605
Interest	8,953	13,481
Assets	332,048	540,772
	Percent	
Returns margin	18	20
Returns/assets ratio	10	7
Farms with negative net returns	13	15
Debt/asset ratio	29	31
Interest/sales ratio	6	9
Hogs' share of gross revenue	73	63
Stressed farms	6	9

Source: 1987 Farm Costs and Returns Survey.

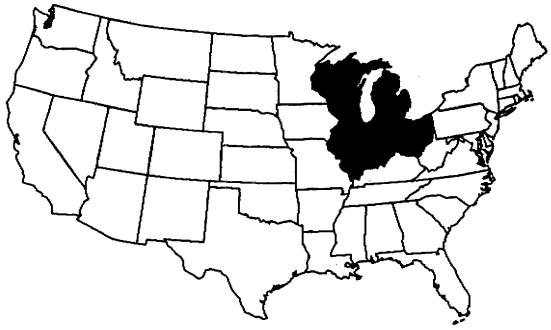
Regional Comparisons of Hog Farms

Hogs are produced throughout the United States but with a distinct concentration in and around the Corn Belt. The two States with the highest hog cash receipts for the last 25 years have been Iowa and Illinois. In 1987, Iowa had 26 percent of national hog receipts and Illinois had 10 percent. The remaining top 10 States in hog cash receipts in 1987 were Minnesota, Indiana, Nebraska, Missouri, North Carolina, Ohio, South Dakota, and Wisconsin.

Specialized hog farms are also concentrated in these States. We have examined four major hog-producing regions. These four regions accounted for 95 percent of U.S. specialized hog farm sales of hogs in 1987. Table 7 summarizes key financial information about specialized hog farms by region.

Eastern Corn Belt

Wisconsin, Illinois, Michigan, Indiana, and Ohio, combined, had over 25 percent of 1987 hog receipts in the United States. Hogs accounted for 17 percent of total State agricultural receipts in Illinois in 1987, just below corn and soybeans. Over 50,600 farms produced hogs in this region, and almost 14,000 were classified as specialized hog farms. The other 36,600 hog-producing farms in the region either had hogs as a minor commodity (8,500 farms) or hogs were their major commodity but they were not of a commercial size (28,100 farms).



The following facts pertain to the specialized hog farms in the eastern Corn Belt:

- Eastern Corn Belt farms had the highest returns margin, the highest returns/assets, the lowest costs, and the lowest percentage of farms with negative net returns. However, relatively high debt caused high debt/asset and interest/sales ratios. Thus, the eastern Corn Belt had the highest percentage of stressed hog farms.

- Eastern Corn Belt farms were the most self-sufficient in producing feed and feeder pigs. Over 82 percent of the farms raised more than $5,000 worth of corn for feed. Over 88 percent of the farms were farrow-to-finish operations. These proportions were the highest of all regions.

Table 7--Financial indicators of specialized hog farms by region, 1987

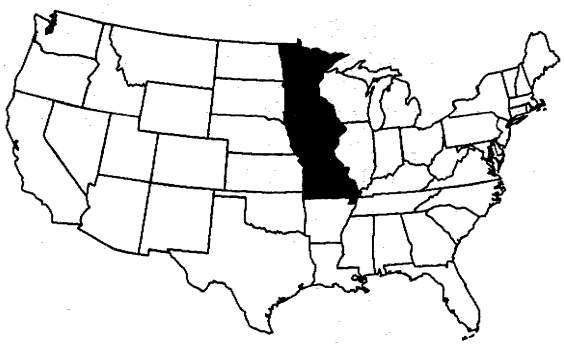
Item	Northern Plains	Eastern Corn Belt	Western Corn Belt	Southeast	All [1]
			Dollars (per farm averages)		
Gross revenues	160,213	185,472	187,754	36,978	186,011
Government payments	15,153	20,113	17,010	8,788	16,526
Hog sales	110,517	114,270	125,927	187,952	125,404
Other livestock sales	29,295	29,383	21,979	8,643	21,161
Crops sold	22,267	34,838	32,044	26,780	29,760
Crops used on farm	21,581	18,762	22,819	15,260	19,776
Capital expenditures	13,992	15,626	18,828	13,355	17,487
Debt	111,321	135,238	125,737	137,846	128,662
Interest	10,852	13,166	12,298	11,538	12,145
Net returns	26,758	46,176	35,299	49,306	36,376
Equity	262,886	311,993	418,865	423,124	353,302
Assets	373,726	443,495	552,981	558,183	480,987
			Percent		
Returns margin	17	25	19	21	20
Returns/assets	7	10	7	9	8
Farms with negative net returns	13	11	16	17	14
Cost ratio [2]	87	80	90	83	87
Debt/asset ratio	28	36	26	25	30
Interest/sales ratio	8	10	9	5	9
Hogs' share of gross revenue	67	62	66	78	66
Stressed farms	4	13	5	1	18

[1] Includes 1,506 specialized hog farms outside the four regions.
[2] All costs (including capital expenditures and excluding unpaid labor) divided by gross revenue.
Source: 1987 Farm Costs and Returns Survey.

- The eastern Corn Belt accounted for 37 percent of the value of production of all specialized hog farms, but over 48 percent of the direct Government payments to specialized hog farms went to the region. Over 84 percent of the farms received direct Government payments, the highest share of all regions. The large amount of Government payments and the high participation rate relate to Federal crop programs rather than hog production. Over 45 percent of the crops sold by all specialized hog farms were from the eastern Corn Belt.

Western Corn Belt

Minnesota, Iowa, and Missouri produced over 40 percent of total U.S. hog cash receipts in 1987. Iowa led the Nation in production, and hogs accounted for 31 percent of all agricultural cash receipts there, more than for any other commodity. For the region as a whole, over 11,146 farms were classified as specialized hog farms in 1987. Almost 38,800 more farms in the area produced some hogs that year. Nearly 10,300 of those farms had most of their production in hogs, but their total production was valued at less than $40,000.



The following facts pertain to the specialized hog farms in the western Corn Belt:

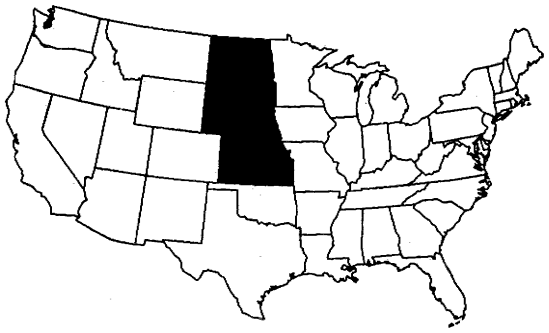
- Average capital expenses of $18,830 per farm were $3,200 higher than any other region. Taxes (excluding income taxes) and other business expenses of $12,948 per farm were $3,620 higher than any other region.

- Average expenses on variable crop inputs such as fertilizer, chemicals, seed, and irrigation were the highest of any region at $20,260 per farm.

- Over $6 billion of specialized hog farm assets were in the western Corn Belt, about 33 percent of all specialized hog farm assets in the United States.

The Northern Plains

North Dakota, South Dakota, Nebraska, and Kansas accounted for 14 percent of total 1987 U.S. hog cash receipts. Nebraska's 1987 hog cash receipts ranked first in this region and fifth in the Nation. The Northern Plains had 6,966 specialized hog farms, 3,051 farms that produced mainly hogs but had less than $40,000 in production, and 19,348 farms that produced hogs as only a minor enterprise.



The following facts pertain to the specialized hog farms in the Northern Plains:

- Northern Plains farms were the smallest if measured by asset or equity levels. Interest payments and debt were also low. Thus, only 4 percent of the Northern Plains farms were considered stressed.

- The average net returns, the returns margin, and the returns/assets ratio were the lowest of all regions. Although 19 percent of all specialized farms were in the Northern Plains, only 13 percent of all specialized hog farms with negative net returns were in this region.

- Average off-farm income of $8,060 in this region was $5,260 less than the next lowest region. This low off-farm income further compounded the farm household's financial situation.

- Less than 15 percent of the Nation's $17.6 billion of specialized hog farm assets were in this region.

- Average per farm costs of livestock purchases, fertilizer, and chemicals were the lowest of all regions.

The Southeast

The Southeast region is composed of Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Georgia, Alabama, and Mississippi.

North Carolina's 1987 hog cash receipts ranked first in this region and seventh in the Nation. This region had 3,100 specialized hog farms, 15,577 farms that produced mainly hogs but had less than $40,000 in production, and 20,067 farms that produced hogs as only a minor enterprise.

The following facts pertain to the specialized hog farms in the Southeast:

- Over 31 percent of the farms were classified as finishers and purchased their feeder pigs, the highest for all regions.
- Farms in the Southeast relied the most on purchased feed. Average purchased feed costs of $70,850 per farm were $27,000 more than any other region. Furthermore, 52 percent of the farms raised less than $5,000 worth of feed used on their farms. Almost 34 percent of the farms received no direct Government payments, indicating they did not participate in crop commodity farm programs.
- Farms in the Southeast were the most specialized, with more than 78 percent of gross revenues from hog sales.
- Average paid labor costs of $15,660 per farm were $6,000 more than any other region. However, the average estimated value of unpaid labor was the lowest at $15,250 per farm.
- Capital expenses of $13,355 per farm were low compared with the other regions. Average equipment and building leasing expenses were 25 percent of the national average.

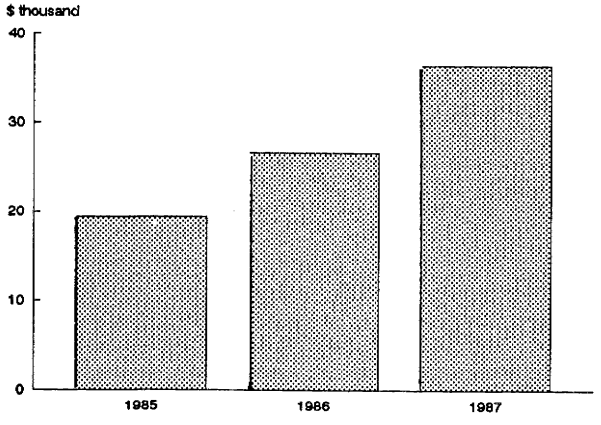
Financial Improvements Since 1985

Specialized hog farms faced disadvantageous conditions in 1985, but 1986 and 1987 were favorable years. Returns improved because of cheaper feed and very strong hog prices in 1987. Feed costs per $1 of production dropped from 33 cents in 1985 to 29 cents in 1987. Strong corn prices and weak hog prices led to losses of as much as $10 per hog during 1985. By mid-1987, net cash returns had risen to $50 per hog.

Net returns rose from $19,444 in 1985 to $36,376 in 1987. Margins and returns/assets ratios improved, and the number of farms with negative net returns declined (see figure below and table at right).

The average value of assets, including real estate, increased over 30 percent. Land values around the Corn Belt have increased more than the national average. For instance, Iowa farmland and building values increased 19 percent in 1986-87. Average debt decreased from $145,518 to $128,622. Thus, the debt/asset ratio and percentage of stressed farms also declined significantly (see table below).

Net returns were ascending



Source: Farm Costs and Returns Surveys, 1985-87.

Financial indicators of specialized hog farms

Item	1985	1986	1987
	Dollars (per farm averages)		
Hog sales	125,550	133,940	125,404
Other livestock sales	10,079	8,355	8,541
Crops sold	27,222	28,037	20,293
Total value of production	162,852	170,329	164,233
Crops used on farm	29,457	22,863	19,776
Government payments	4,448	9,562	16,526
Gross revenues	171,570	185,112	186,011
Net returns	19,444	26,651	36,376
Capital expenditures	8,560	10,741	17,487
Debt	145,518	129,660	128,622
Interest	16,369	14,003	12,145
Assets	366,634	381,266	480,987
		Percent	
Returns margin	11	14	20
Returns/assets ratio	5	7	8
Farms with negative net returns	34	26	14
Debt/asset ratio	41	34	27
Interest/sales ratio	10	9	8
Hogs' share of gross revenue	71	72	66
Stressed farms	22	12	8

Source: 1987 Farm Costs and Returns Survey.

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FOR ADDITIONAL INFORMATION. . .

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