




2008

FINBIN

Report on Minnesota Farm Finances

August, 2009

Center for Farm Financial Management
University of Minnesota

Acknowledgements:

- Contributing Minnesota producers
- Minnesota State Colleges and Universities Farm Business Management Education Program
- Southwestern Minnesota Farm Business Management Association

2008 in Review
FINBIN Report on Minnesota Farm Finances

Dale Nordquist and Matt Heers
Center For Farm Financial Management

The 2,457 Minnesota farms included in the FINBIN database represent a broad cross-section of Minnesota production agriculture. While there is no "typical" Minnesota farm, these farms include a large enough sample to provide a good barometer of commercial farming in Minnesota. FINBIN data is provided by farms that participate in MnSCU Farm Business Management Education programs and the Southwest Minnesota Farm Business Management Association. These farm represent about 3 percent of the farms in the state and 10% of the commercial farms – those that grossed over $100,000[1].

Highlights

- The median net farm income per farm was $90,039, down from $105,489 in 2007. Median income per operator was $81,250.
- The average farm earned a rate of return on assets (ROA) of 10.5% compared to 13.9% in 2007 (based on adjusted cost or book valuation of assets).
- The median farm income for crop farms was relatively constant at $132,748, a decrease of 2% from 2007.
- Dairy farm profits were down sharply. Their median net farm income was down 34% at $66,373. The average price received for milk increased to $19.46 per hundredweight, an $ 0.82 increase, but the cost of production increased to $18.09, increase of $2.47 per hundredweight.
- Hog farm profits were also down sharply. The median income for hog farms fell by 48% to $55,524. This group includes specialized finishing operations and traditional farrowing farms. The decrease was even more pronounced when farms that sold crops in addition to hogs are excluded. Farms that relied on hog sales for over 70% of their sales saw their median profits fall to $4,876.
- Beef farm profits were down for the average producer, although the median was relatively unchanged at $30,921. This group includes both cattle finishing and cow-calf operations.
- Government payments per farm totaled $19,234, 2.9% of gross revenue and 13.6% of net farm income.
- The average farm's net worth increased by over $106,000 while their debt to asset ratio remained unchanged at 47%.
- Profits were down in all regions of the state. The Northwest region, where there is comparably little animal agriculture, had only a very slight decrease. Farms in the Southwestern region still earned the highest median farm income. The median income of farms in the North Central/East Central region decreased by 40% after more than doubling in 2007.

[1] Farm Business and Household Survey Data: Customized Data Summaries from ARMS, Economic Research Service, United States Department of Agriculture, 2007.

Highlights (MN Average)	2006	2007	2008
Gross revenue ($)	546,567	671,637	704,697
Total expense ($)	450,135	515,624	564,085
Average net farm income ($)	96,432	156,012	141,754
Median net farm income ($)	60,777	105,489	90,039
Rate of return on assets (%)	9.3	13.9	10.5
Rate of return on equity (%)	12.2	20.9	14.5
Corn yield (bu.)	167	154	167
Soybean yield (bu.)	46	44	40
Spring wheat yield (bu.)	50	50	62
Corn price received (bu.)	$2.07	$3.01	$4.17
Soybean price received (bu.)	$5.52	$7.14	$10.30
Spring wheat price received (bu.)	$4.02	$5.16	$7.55
Milk cows per dairy farm	124	129	141
Production per cow (lbs)	21,432	21,300	21,344
Milk price received (cwt)	$13.34	$18.64	$19.46
Market hog price / cwt. sold	$46.34	$47.88	$49.92
Feeder pig price paid / head	$48.13	$46.93	$49.55
Finished beef price / cwt. sold	$83.07	$89.24	$93.10
Feeder calf price paid / cwt.	$114.94	$112.29	$106.88

Table 1: FINBIN Farm Financial Database Highlights, 2006 - 2008

- Consistent with 2007 results, net farm income and rates of return generally increased with farm size, but the largest farms earned slightly lower returns on assets than the next smaller farm size group.

- The average family needed to net $67,600 from farm and non-farm sources to cover family living, income taxes, and other ongoing non-farm uses of income.

Profitability

Median net farm income was $90,039 for the 2,457 Minnesota farms that participated in Minnesota Farm Business Management programs in 2008. The median income declined for the first year since 2001. Still, in both nominal and constant dollar terms, 2008 was the second highest profit year in the thirteen years of records included in FINBIN (Figure 1).

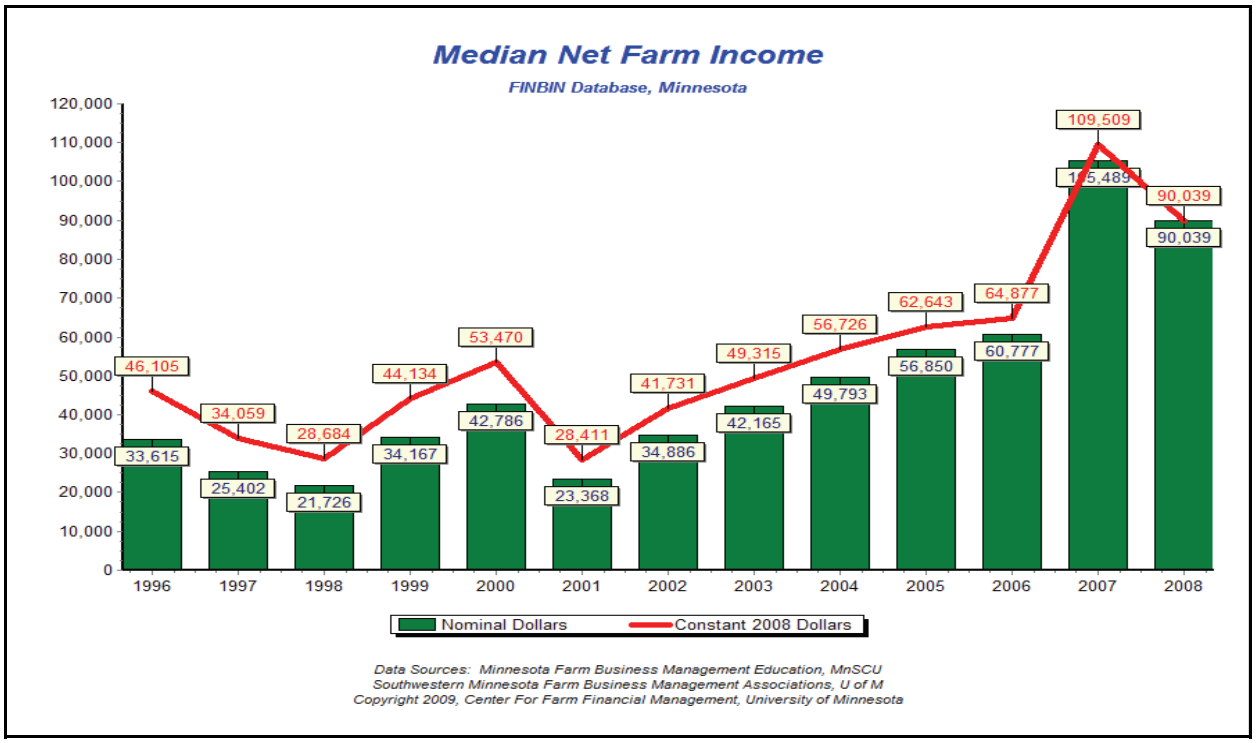

Figure 1: Median Net Farm Income

The average net farm income was $141,754, much higher than the median. This indicates that the most profitable farms were so profitable that they increased the average for all farms. A number of those farms are much larger, in terms of sales volume, than the median farm and many support multiple families.

Looking only at averages disguises the wide variation in profitability across farms. The median farm income for the most profitable 20% of these farms was $351,970; the median income for the least profitable 20% was $-4,494.

Crop farms, on average, were very profitable again in 2008. Profits for most of animal agriculture declined. The high crop prices that enabled many crop farms to produce outstanding profits for the second straight year had the opposite effect on livestock farms. Historically high milk prices made it possible for most dairy farms to show modest profits but the convergence of high feed prices and relatively low sales prices resulted in many hog and beef farms reporting net farm losses.

Government payments of all types received in 2008 were slightly higher than 2007. The average farm received $19,234 of total government payments in 2008 compared to $15,794 in 2007. Government payments represented 2.9 % of gross farm revenue and 13.6% of net farm income. Crop related government payments in 2008 were almost exclusively direct payments, with virtually no LDP or counter-cyclical (CCP) income.

The average farm earned a 10.5% rate of return on assets (assets valued at adjusted cost basis[2]) and a 14.5% rate of return on equity in 2008. While these key measures of profitability declined from 2007 levels, they still reflect very strong profitability from a historical perspective. Figure 2 shows the relationship between rate of return on assets (ROA) and rate of return on equity (ROE) over the past thirteen years. This relationship is a good barometer of sector profitability. The goal for any farm or for the industry as a whole is for ROE to be higher than ROA. When this is the case, borrowed capital earned more than it's cost (ROA was higher than the average interest rate paid on borrowed capital). This has been true for this group of Minnesota farms for each year since 2003.

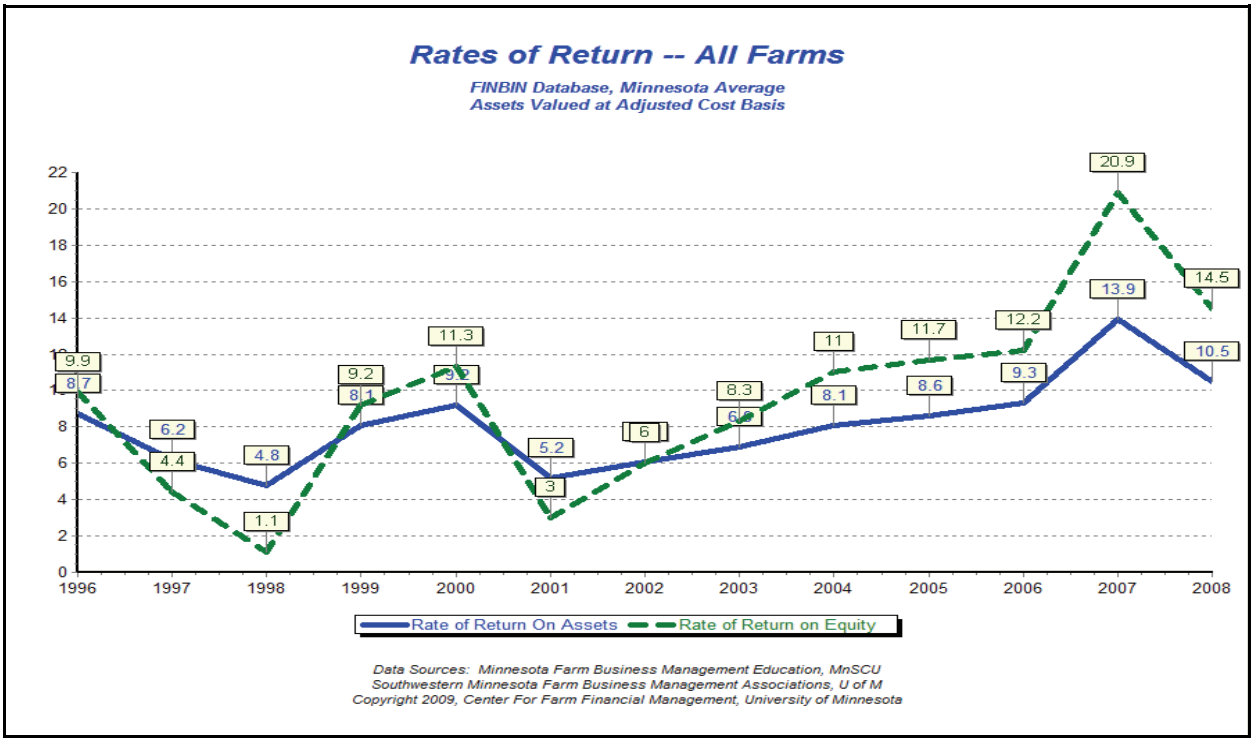

Figure 2: Rates of Return on Assets and Equity

Asset valuation is a major factor in measuring rates of return. Figure 2 is based on the adjusted cost or book value of assets, under the presumption that this provides the best picture of returns on funds actually invested by the business owners. When assets are valued at estimated market value instead, ROA and ROE were lower, at 8.7 % and 12.3%, respectively. This might be a better measure to evaluate potential future movement of investment into and out of these farms. Measuring at either adjusted cost or estimated market value, these rates of return appear to be attractive compared to returns from potential alternative investments.

[2]FINBIN includes assets valued at cost and at their estimated market value. Cost valuation of capital assets is based on "economic depreciation" which depreciates assets at a rate generally slower than allowed by tax law. The profitability measures discussed here are based on the cost value of assets.

Liquidity

During 2008 these Minnesota farms, as a group, maintained or improved on the liquidity gains that they made in 2007. Liquidity is a major factor in the ability of a business to withstand financial stress. The average farm in the FINBIN database had a current ratio of 1.94 (Figure 3) at the end of 2008 ($1.94 of current assets available to cover each dollar of current debt).

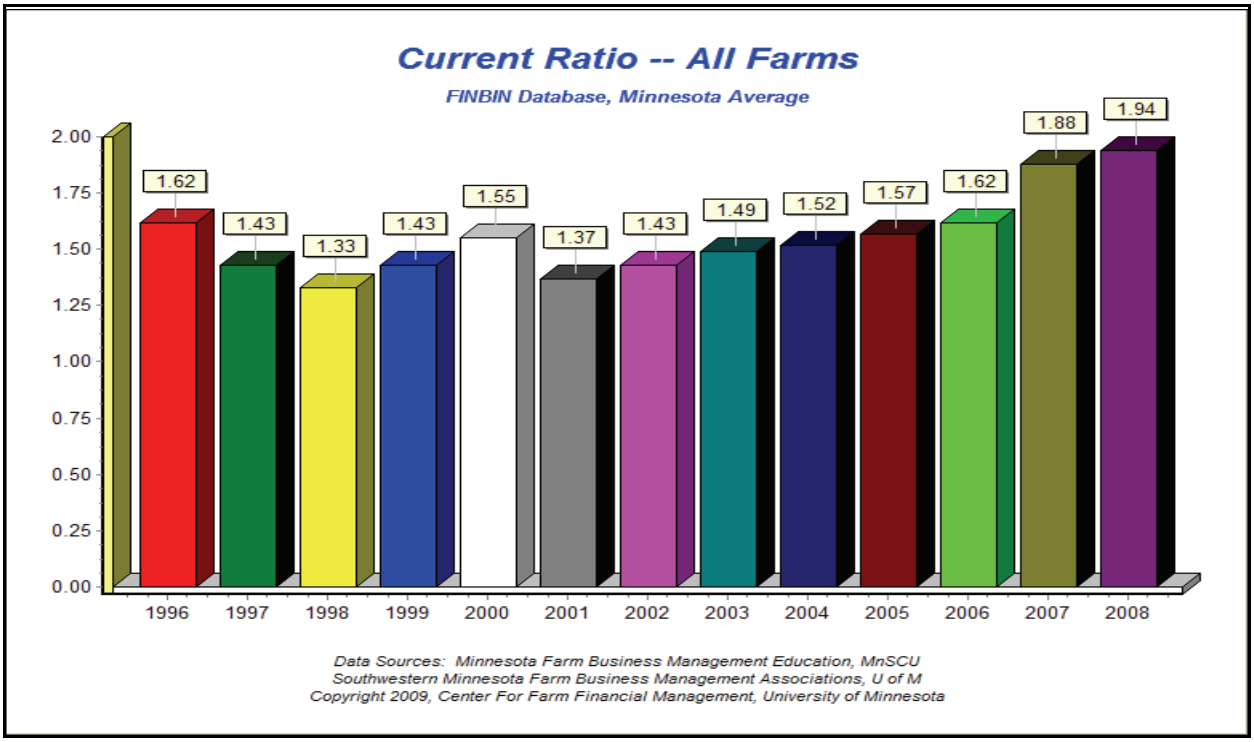

Figure 3: Current Ratio

Current ratios were reduced in 2001 by low crop yields and prices. Since then, the current ratio of these farms have steadily improved. The improvement in the past two years has been primarily due to increased current assets and not due to reduced current liabilities. Current assets increased by $54,000 while current liabilities increased by only $22,000 for the average farm in 2008.

Unfortunately, this improvement in liquidity was not equally shared across farm types. Crop farms as a group provided most of this improvement. This increase in liquidity puts most crop farms in a better position to withstand potential years with lower yields, lower prices, or increased costs.

Dairy, hog and beef farms all lost liquidity based on the current ratio during 2008. While not unexpected given the current state of profitability of these industry groups, it does re-affirm the financial plight these farms will face if profitability does not return to animal agriculture soon.

Another way to look at liquidity – probably a more meaningful measure – is to relate the amount of liquidity to the size of farm. Figure 4 shows the relationship between working capital (current assets - current liabilities) and gross revenue for these farms over the past thirteen years. This shows a more dramatic improvement in liquidity levels over the past several years. For this group of farms, working capital was 31.4% of gross revenue at the end of 2008, the highest level in the thirteen years of data included in FINBIN.

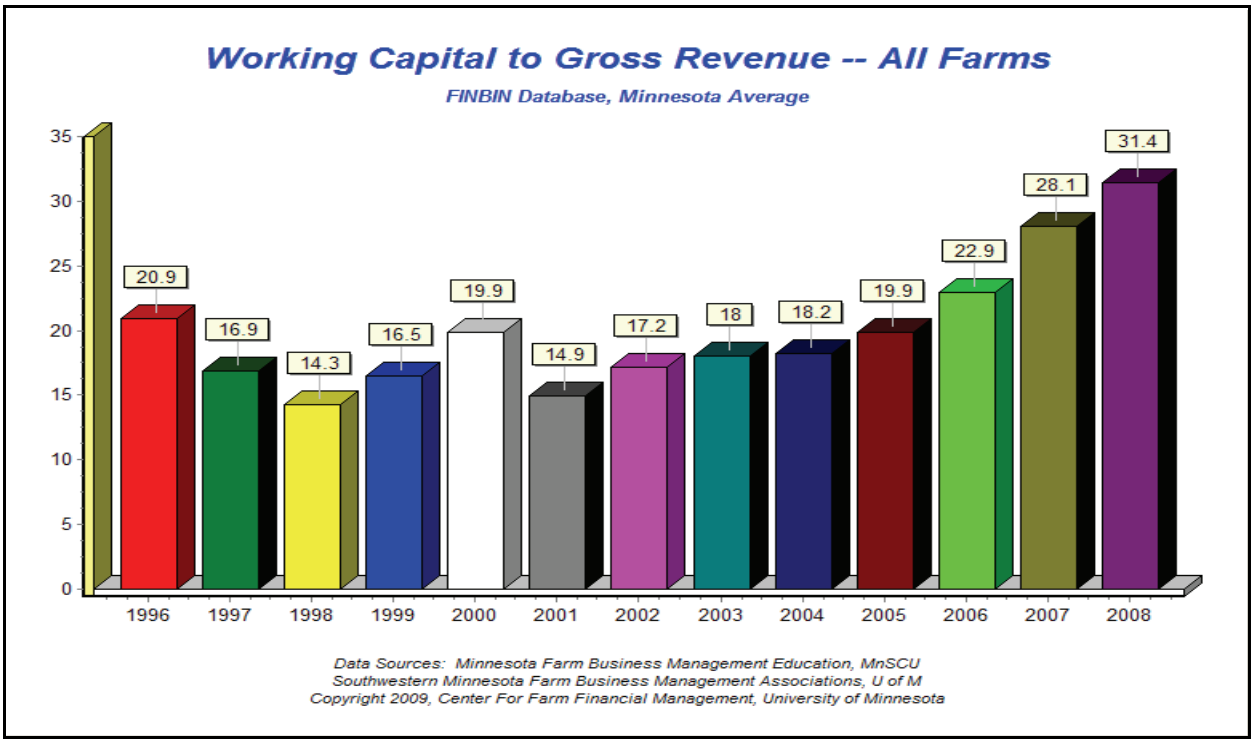

Figure 4: Working Capital to Gross Revenue

While the average farm was in a strong liquidity position at the end of 2008, there was a great deal of difference within the group.

- Dairy farms, on average, had only 16% of their gross income in working capital.
- Specialized hog farms, those without significant crop sales, averaged 11% working capital to gross.
- Highly leveraged farms, those with debt to asset ratios over 60%, had only 11% working capital to revenue while those with less debt (debts to assets under 40%) had over 52% of their gross income in working capital.

Solvency

The debt to asset ratios shown in Figure 5 are based on the estimated market value of all assets, farm and non-farm. Debts include deferred liabilities, an estimate of the taxes that would have to be paid if assets were liquidated. While the debt to asset ratio for the farms included in this report increased very slightly in 2008, solvency levels have generally improved since 1998.

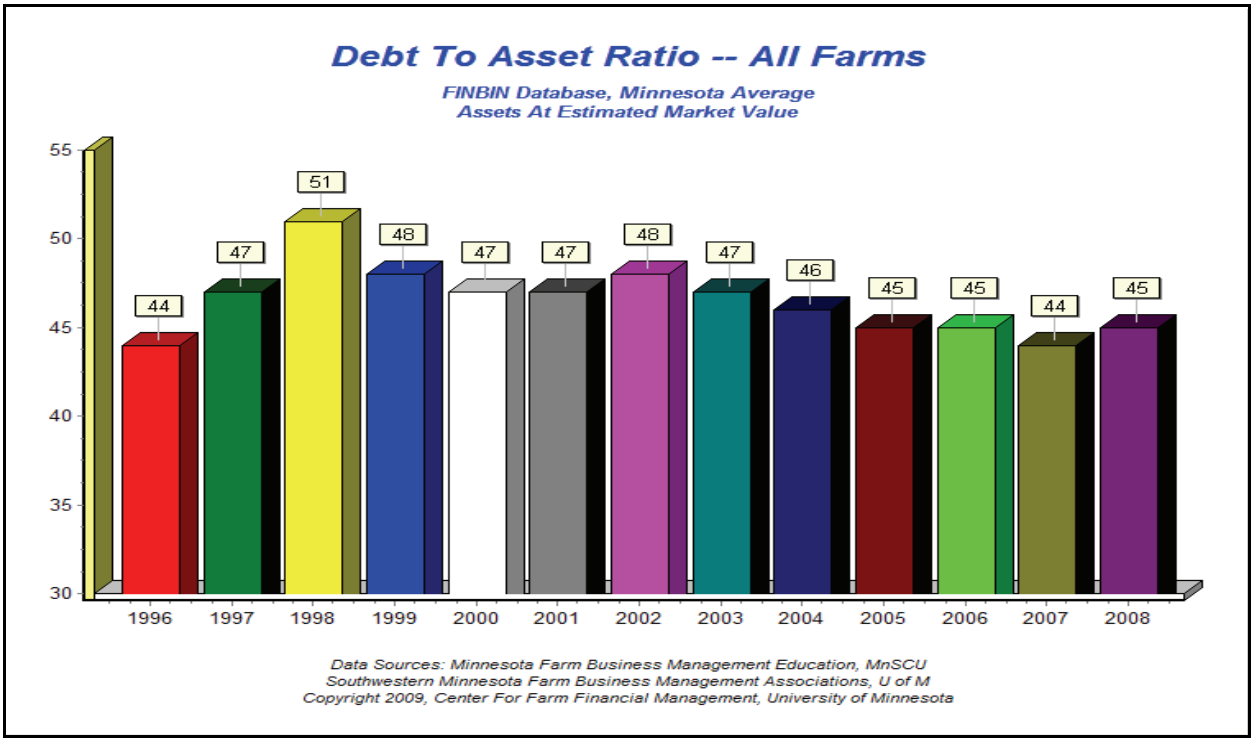

Figure 5: Debt to Asset Ratio

Table 2 shows the impact of financial leverage (or debt to asset position) on financial performance for these farms. As often happens in profitable years, highly leveraged farms earned much higher returns on their limited equity than did farms with lower debt levels. However these high debt farms had very little liquidity, based on working capital equal to 11% of a year's gross revenue. These high debt farms have performed well in the past few profitable years but they are very susceptible to a financial downturn.

Debt to Asset Ratio	Under 40%	Over 60%
Number of farms	922	609
Rate of return on assets	9.7 %	11.4 %
Rate of return on equity	11.1 %	28.3 %
Current ratio	3.50	1.26
Working capital to revenue	30.8 %	11.2 %
Term debt coverage	3.60	1.76

Table 2: Impact of Financial Leverage

While debt to asset ratios have not changed a great deal in recent years, there have been major changes on the balance sheets of these Minnesota farms (Figure 6). The average farm is growing rapidly. In constant dollars, total assets have increased by more than $880,000 over this thirteen year period. Total debt increased by just over $400,000 over the same period. As a result, the average farm has gained over $480,000 of real net worth growth over the past twelve years. This equates to 10% growth in net worth per year.

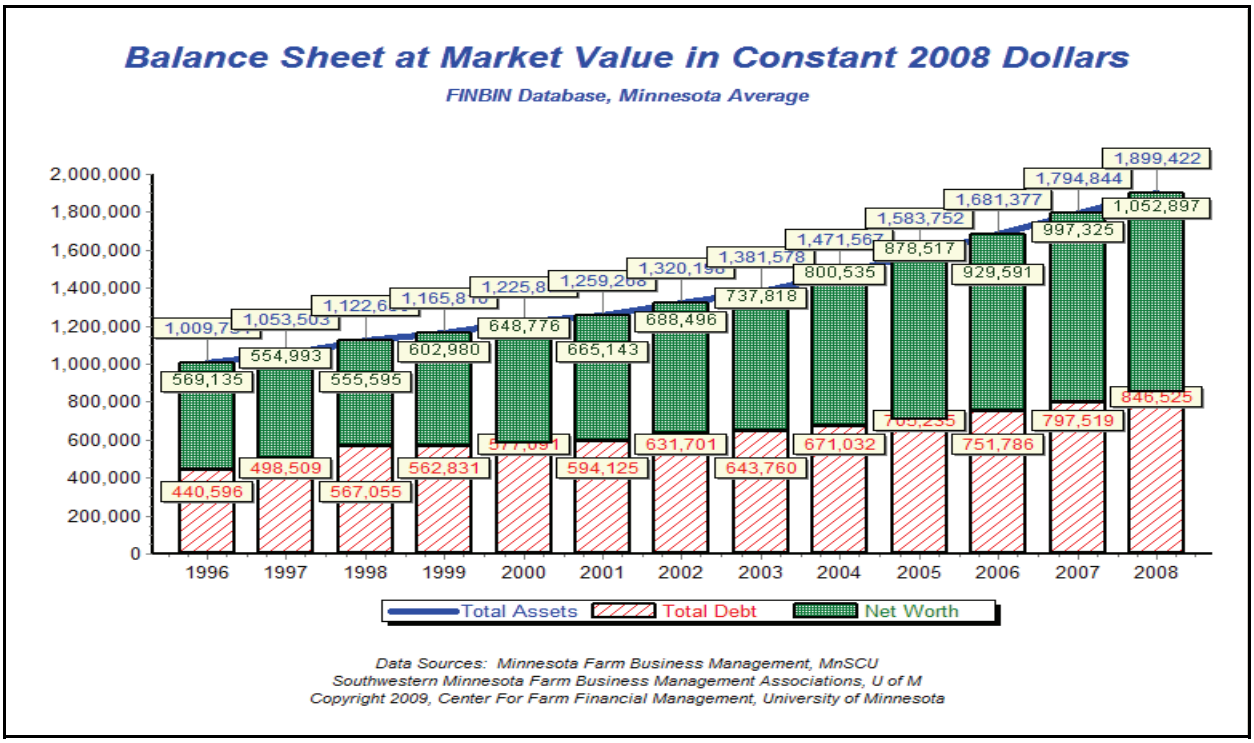

Figure 6: Balance Sheets at Market in Constant 2008 Dollars

Net worth increases can have two major sources – those resulting from earnings, either farm or non-farm, and those resulting from asset appreciation. The producers who contribute to FINBIN track both cost and market values of their assets so it is possible to separate these components.

- Over this thirteen year period, approximately 20% of the average net worth increase resulted from asset appreciation.
- The remaining 80% of the net worth growth was earned. Retained earnings result when farm and non-farm income exceed the amount consumed by family expenditures and income taxes.

It should be noted that the farms included change somewhat each year, as some farms exit and new farms join the contributing educational programs.

Debt Repayment Ability

Term debt coverage ratio (TDCR) compares dollars available for debt repayment after family living and taxes versus scheduled debt repayment on intermediate and long-term debt. While other measures of business soundness, such as current ratio and debt to asset ratio, tend to change very little from year to year, TDCR shows much more variation. Therefore, it is probably a better indicator of year-to-year financial stress. A TDCR of 1.0 indicates that dollars generated for debt repayment exactly equaled scheduled payments.

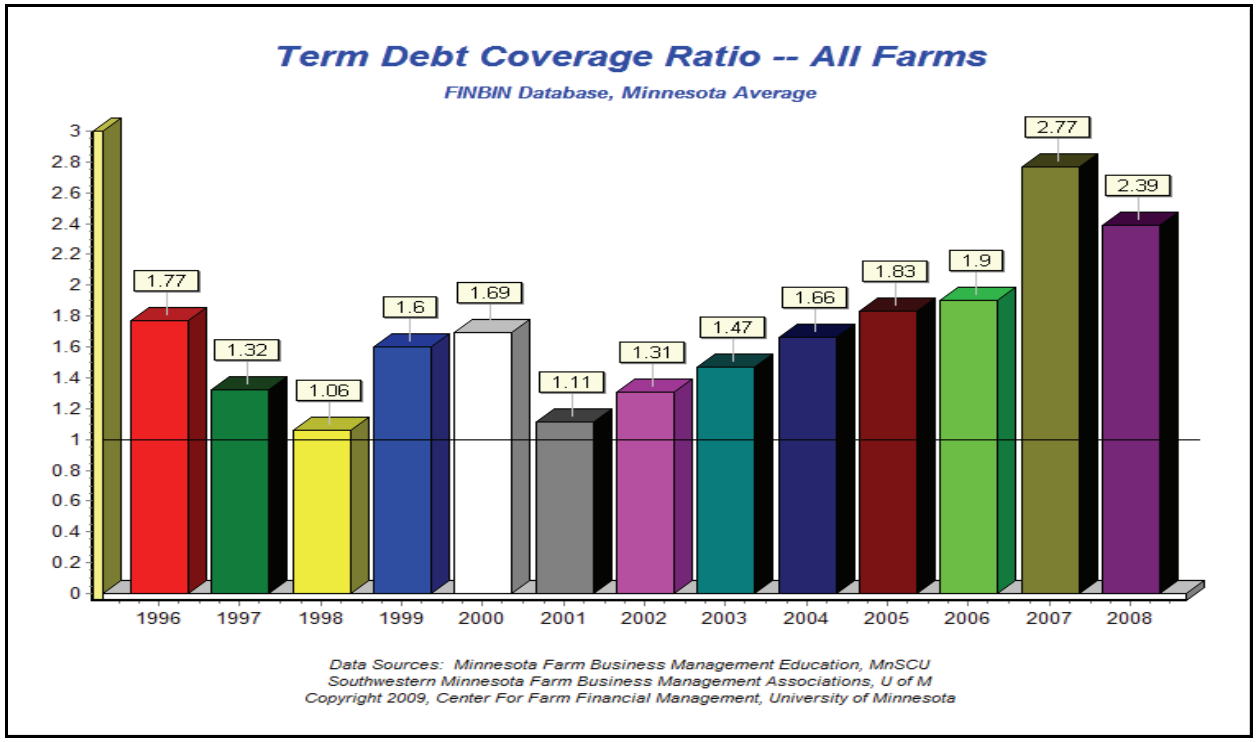

Figure 7: Term Debt Coverage Ratio

The debt repayment capacity of these farms, while down slightly from the previous year, was very strong in 2008. The average farm generated $2.39 of earnings to pay each $1.00 of scheduled term debt payments (Figure 7).

Again, the averages mask the variation in repayment capacity between farms and different groups of farms.

- Specialized hog operations (those that generated over 70% of their income from hog sales) had a negative TDCR (-0.26), indicating that they did not earn enough to cover even interest payments.
- Specialized beef operations (those that generated over 70% of their income from beef sales) had a TDCR of only 0.62.

Regional Profitability

Median farm income decreased in every region of the state in 2008. The largest percentage decrease was in the North Central/East Central region, where the median net farm income decreased by 40%. The Northwest region, where there is less animal agriculture, had the smallest decrease (1%). Consistent with past years, the Southwestern region had the highest median earnings.

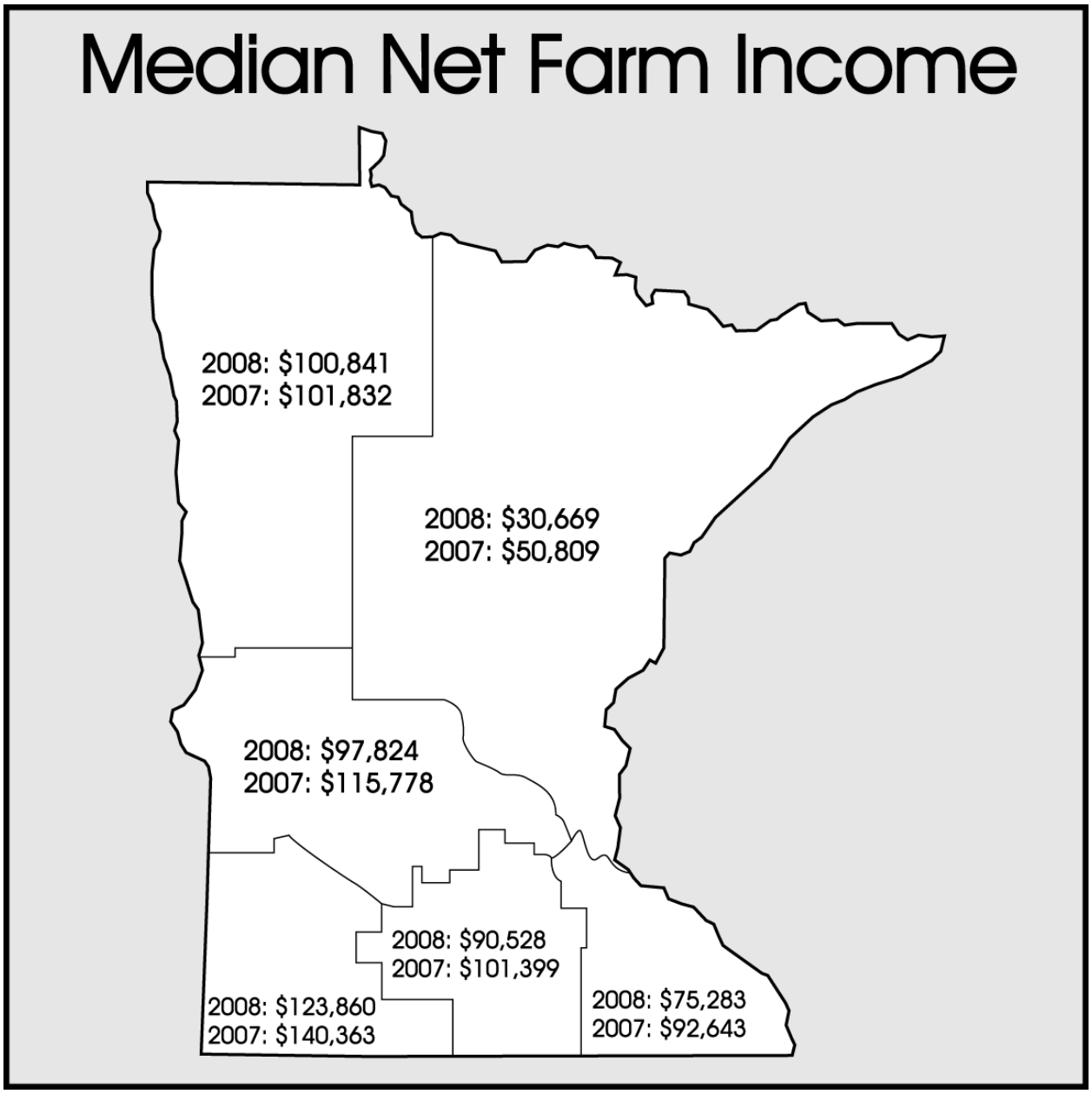

Figure 8: Median Net Farm Income by Region

Type of Farm[3]

The one item that stands out in the 2008 numbers is the difference between the profitability of crop farms versus virtually any type of animal agriculture. High prices for corn, soybeans, and most other crop commodities resulted in the continuation of historically high profits for Minnesota crop farms. Those same factors translated into high feed costs for livestock producers and resulted in decreased profits for all livestock sectors.

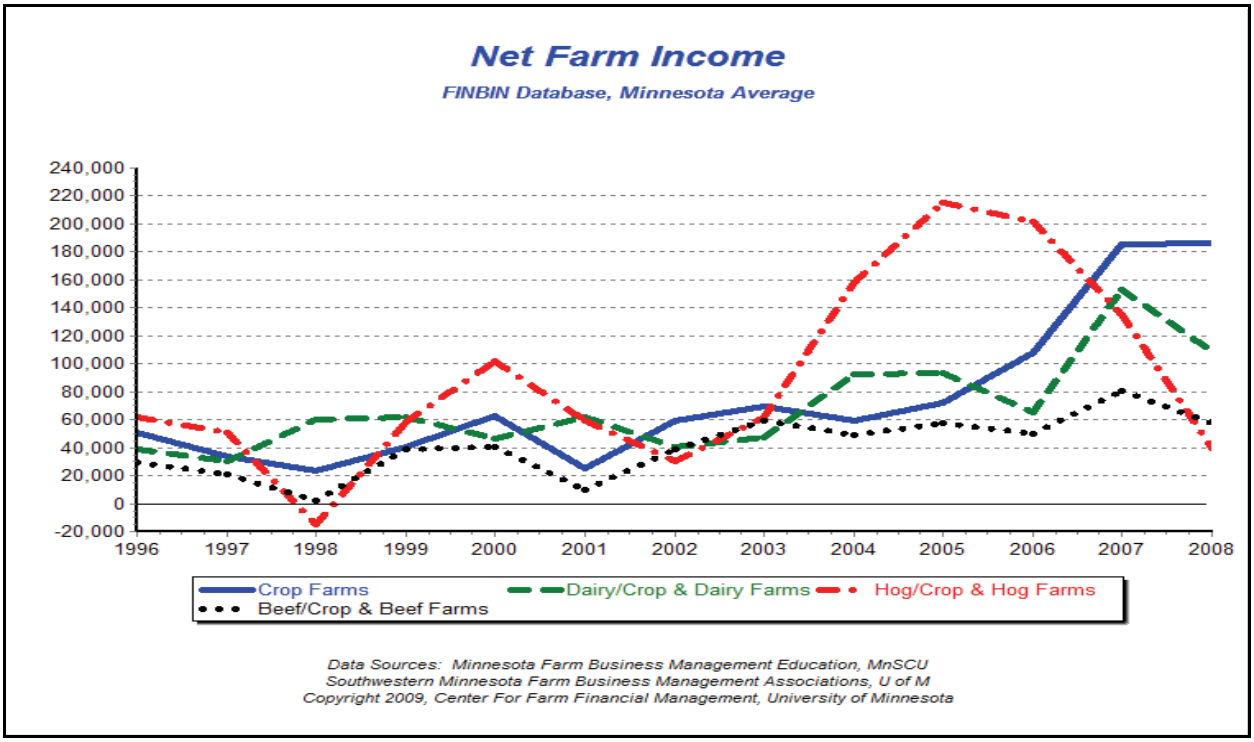

Figure 9: Net Farm Income by Farm Type

Crop Farms

The 1,275 crop farms in the 2008 group earned a median net farm income of $132,748, down slightly from 2007. Prices received for corn, soybeans, wheat and most other cash crops were substantially higher than 2007 levels. Average corn and spring wheat yields were up but soybean yields were down from the previous year. The average rate of return on assets (ROA) for crop farms (assets valued at adjusted cost basis) was 13.5% compared to 16.5% in 2007.

Crop Farms	2006	2007	2008
Median net farm income	$80,907	$136,633	$132,748
Rate of return on assets	10.8%	16.5%	13.5%

Table 3: Crop Farm Returns

[3]Farms were categorized based on 70% of gross receipts from the respective enterprise. For this report, hog, dairy and beef farms were categorized based on 70% of gross receipts from the livestock enterprise or a combination of that enterprise plus crop sales.

Corn	2006	2007	2008
Yield (bu.)	168	157	167
Price received / bu.	$2.07	$3.00	$4.16
Cost of production / bu.	$2.35	$2.83	$3.24
Cost per acre	$396.90	$436.85	$554.24
Soybeans			
Yield (bu.)	45	43	39
Price received / bu	$5.52	$7.08	$10.25
Cost of production / bu.	$5.30	$6.15	$7.38
Cost per acre	$248.40	$265.40	$331.26
Spring Wheat			
Yield (bu.)	51	51	62
Price received / bu.	$4.00	$5.14	$7.57
Spring wheat cost / bu.	$4.09	$4.61	$5.17
Spring wheat cost per acre	$213.85	$235.07	$314.82

Table 4: Crop Yields, Prices and Cost of Production

Even with historically high crop commodity prices, profits declined slightly due to increased production costs. Production costs increased for nearly all crop inputs. Corn seed cost was up 19%, fertilizer increased by 41%, fuel and oil by 33%, and rent by 16% on a per acre basis.

Dairy Farms

The median net farm income for the 560 dairy farms in this group was $66,373 in 2008, down 34% from 2007. The average dairy farm earned a 8.1% rate of return on assets, with assets valued at adjusted cost.

Dairy Farms	2006	2007	2008
Median net farm income	$42,676	$100,530	$66,373
Rate of return on assets	5.9%	14.2%	8.1%

Table 5: Dairy Farm Returns

Dairy profits decreased even with historically high milk prices. The average price received per hundredweight of milk increased from $18.64 to $19.46, an increase of $0.82. At the same time, costs of production increased by over $3.00 per cwt. Total expense per cow increased by 13%. Feed costs increased by 22%. Production per cow was virtually unchanged.

Dairy Farm Highlights	2006	2007	2008
Number of dairy enterprises	557	575	499
Average number of cows	124	129	141
Production per cow (lb)	21,432	21,300	21,344
Price received / cwt	$13.34	$18.63	$19.46
Cost of production / cwt	$12.68	$15.62	$18.09
Cost per cow	$2,520	$2,961	$3,343

Table 6: Dairy Farm Highlights

Hog Farms

The 155 hog farms earned significantly lower profits in 2008, with a median net farm income of $55,524 compared to $107,888 in 2007. This group includes all types of hog operations, including those who produce pigs and those who only finish hogs. These farms are larger, on average, than the other farm types with total assets of over $2.5 million compared to the average of all other farm types at just over $1.8 million. The average pig producer earned a rate of return on assets of 2.0%, down from 7.7% in 2007 and obviously far below their cost of capital.

Hog Farms	2006	2007	2008
Median net farm income	$122,109	$107,888	$55,524
Rate of return on assets	12.6%	7.7%	2.0%

Table 7: Hog Farm Returns

The decrease in profitability of hog farms was primarily cost related. The average price received per hundredweight, based on carcass weight, actually increased in 2008 for these operations. That increase was not enough to offset an $11.00 per hundredweight increase in the average cost of production, resulting in losses for both farrow to finish and specialized finishing enterprises.

Hog Farm Highlights	2006	2007	2008
No. farrow-to-finish ents.	53	46	28
Average number of sows	232	224	301
Pigs weaned per sow	18.53	20.37	20.56
Price received / cwt (carcass)	$62.61	$63.44	$66.02
Cost of production / cwt	$56.01	$64.77	$68.58
No. pig finishing enterprises	135	133	103
Number of pigs finished	7,700	8,108	7,243
Lb of feed per lb of gain	3.02	2.86	2.81
Price received / cwt (carcass)	$63.07	$63.65	$65.28
Cost of production / cwt	$59.64	$64.76	$75.75

Table 8: Hog Farm Highlights

Beef Farms

There were 140 beef operations in this group of farms. Based on median profits, beef operations earned profits consistent with 2007 levels but lower than any other farm type. The median beef producer earned $30,921 in 2008, compared to $30,116 in 2007. This group includes beef cow-calf operations and cattle grow/finish operations. The average beef farm earned a 6.1 % ROA in 2008 with assets valued at adjusted cost basis.

Beef Farms	2006	2007	2008
Median net farm income	$19,001	$30,116	30,921
Rate of return on assets	5.9%	9.3%	6.1%

Table 9: Beef Farm Returns

For the fourth consecutive year, cattle finishers did not cover their costs of production. Cow-calf operators saw their price received per hundredweight decline at the same time as their costs were climbing, resulting in losses of over $30 per hundredweight produced.

Beef Farm Highlights	2006	2007	2008
No. of cow-calf enterprises	128	175	124
Number of cows	77	74	66
Calf weaning percentage	89.6	88.3	88.5
Calf sales price / cwt	$110.47	$108.64	$101.21
Calf cost of production / cwt	$90.59	$105.13	$116.50
No. beef finishing enterprises	112	102	89
Number of head finished	197	186	193
Average daily gain	2.46	2.41	2.22
Purchase cost per cwt.	$114.94	$112.29	$105.23
Finished beef price / cwt	$83.02	$89.24	$92.26
Finishing cost of production / cwt	$88.19	$91.97	$99.44

Table 10: Beef Farm Highlights

Size of Farm

Figure 10 shows the disparity between the average earnings of the smallest farms and the largest farms in this group. Four-hundred-nineteen (419) of the 2,457 farms grossed over $1,000,000 in 2008. Those largest farms netted $340,104 (Figure 10), down from $402,780 in 2007. It is important to note that the largest farms often support multiple families. Farms that grossed under $500,000 supported 1.1 operators per farm, on average, while those that grossed over $1,000,000 had 1.6 operators.

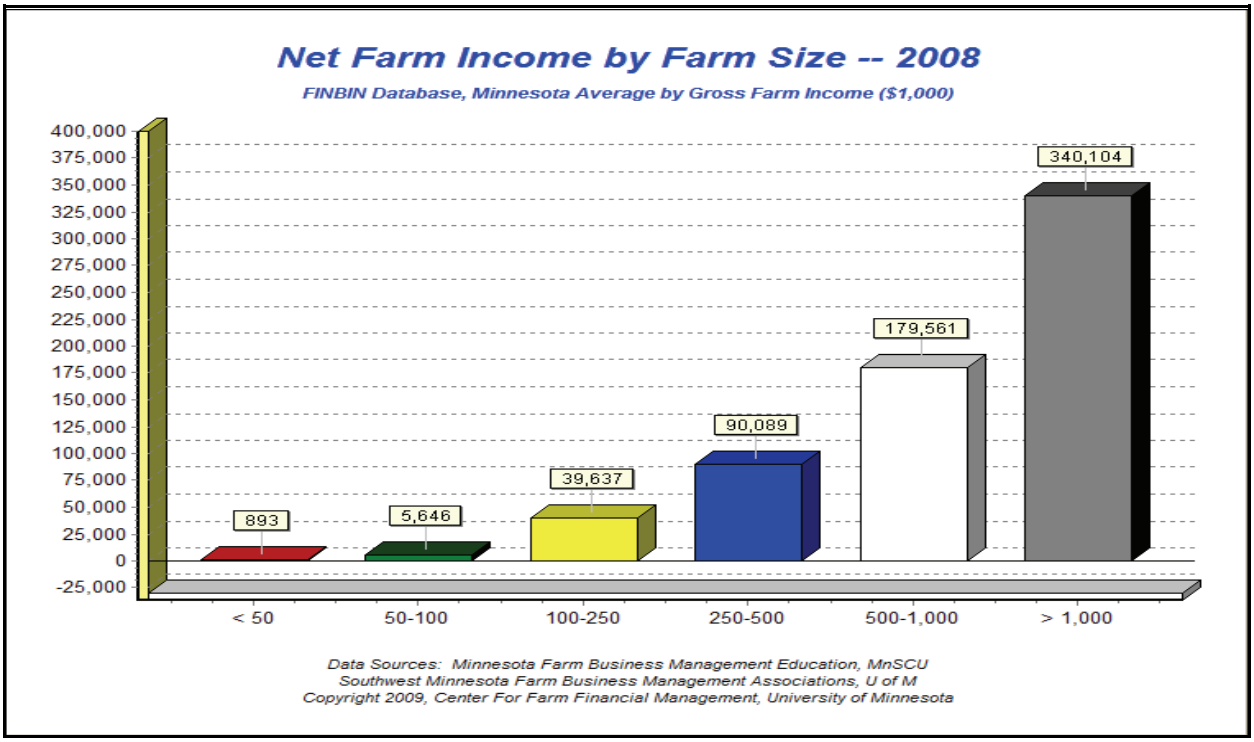

Figure 10: Net Farm Income by Farm Size

Also consistent with previous years, the smallest farms had very low or negative earnings. There were 205 farms that grossed $100,000 or less in 2008. These farms are a combination of beginning farmers who may be farming with the help of parents, exiting farmers who are maintaining a connection to the farm, and part-time operators. Farms that grossed $100,000 or less netted $4,191, on average. There are exceptions, but generally farms had to gross over $100,000 before they made significant earnings. The smallest farms generally rely on non-farm sources for most of their income. The average farm that grossed less than $100,000 earned $42,182 in non-farm income in 2008.

While the larger farms earned higher net incomes than their smaller neighbors, they also had high investments in land, machinery and other capital. Did larger farms also earn higher returns on capital investment? Figure 11 compares the rates of return on assets for these different size groups. Returns generally increased with size up to farms that generated $500,000 to $1 million. In 2008, as in 2007, there was a slight downturn for farms that earned over $1 million, although those farms were still very profitable. This is a change from prior years. From 2004 through 2006, the largest farms consistently earned the highest average return on assets.

As in previous years, very small farms, as a group, earned very low rates of return. On average, farms needed to gross over $100,000 before they earned profitable returns on investment.

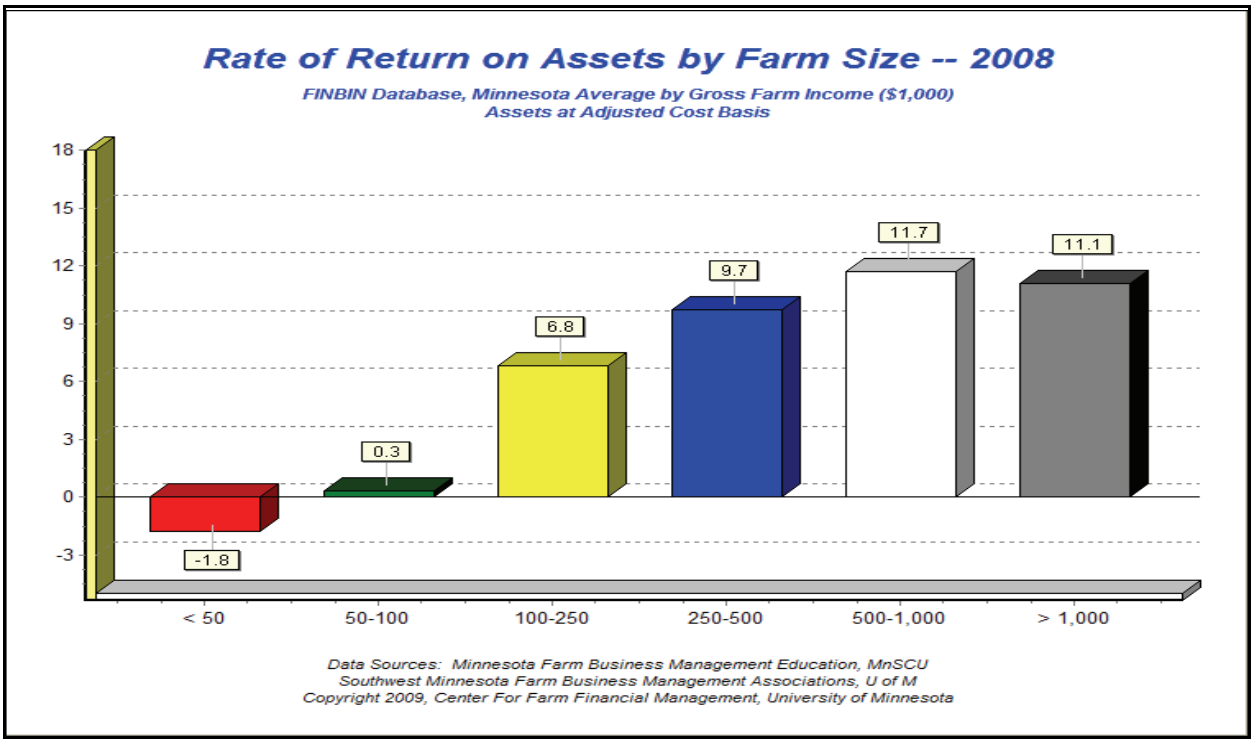

Figure 11: Rate of Return on Assets by Farm Size

Family Expenses

About one-third of the families included in the FINBIN database keep detailed family living records in addition to their farm financial records. The average of these farms in 2008 spent over $51,000 on family living expenses (Figure 12), over $3,000 more than in 2007. Medical care and health insurance, when added together, were the highest single expenditure at $7,723 for the average family, followed by food and meal expenses at $7,071.

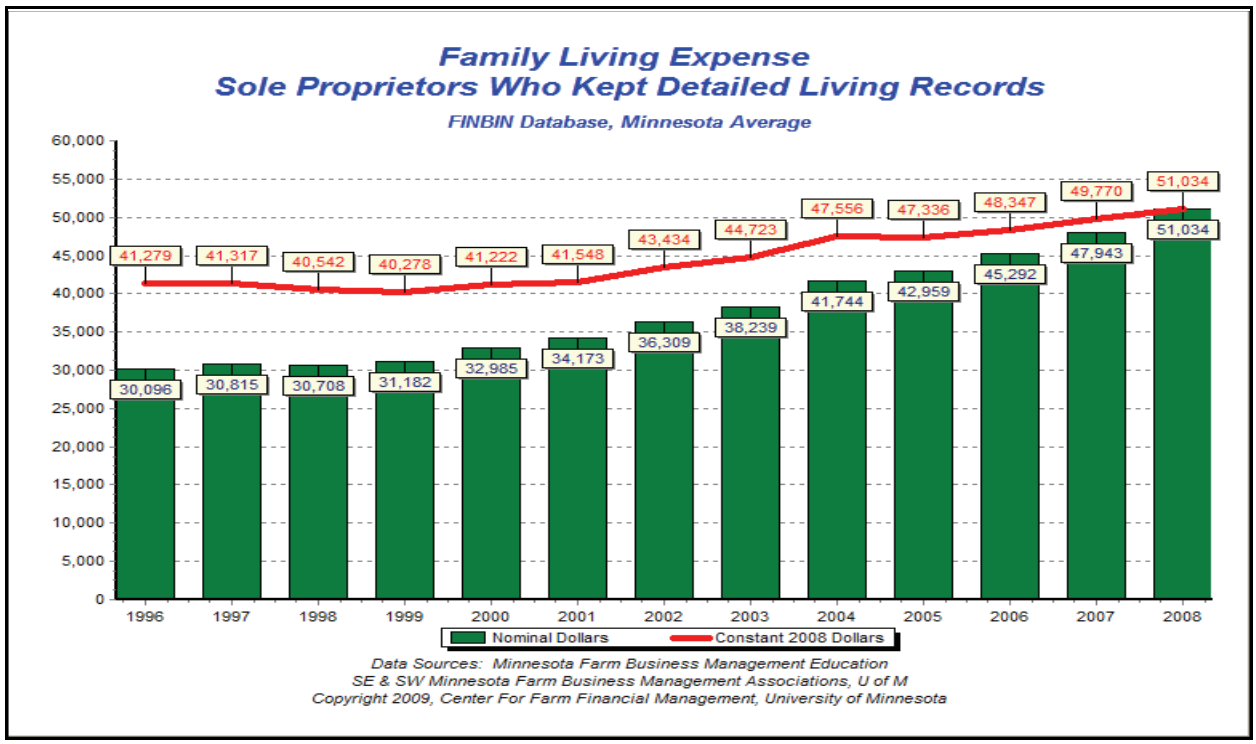

Figure 12: Family Living Expense

In addition, the average family paid income and social security taxes of $9,860, and another $6,772 on household furnishing, non-farm vehicles, and other non-farm non-real estate capital purchases. Assuming that these capital purchases are mostly normal replacement of vehicles, furnishings, and appliances, the average family had to earn $67,600 from farm and non-farm sources to maintain their net worth. In 2008, the average farm family accomplished this goal with ease, resulting in large increases in earned net worth growth.

Data Sources

The Minnesota data included in FINBIN is provided by producers who are participants in farm business management education programs throughout the state. The majority of the farms included (2,359 farms) are participants in the Minnesota State Colleges and Universities (MnSCU) Farm Business Management programs The remaining farms (98 farms) are members of the Southwest Minnesota Farm Business Management Association. More information is available on these programs at http://www.mgt.org/ and http://swroc.cfans.umn.edu/SWFM/farm_mgmt.html respectively.

Sales Class	Number of Farms in FINBIN	Percent of Farms in FINBIN	Total Minnesota Farms	Percent of Minnesota Farms
< $100,000	205	8%	58,440	72%
$100,001 - 250,000	465	19%	9,500	12%
$250,001 - 500,000	708	29%	6,399	8%
$500,000 - 1,000,000	660	27%	4,434	5%
> $1,000,000	419	17%	2,228	3%

Table 11: Size of Farms included in FINBIN vs. Minnesota Farm Population

Table 11 compares the farms included in FINBIN to all Minnesota farms based on ERS ARMS data for 2007. Based on these figures, FINBIN includes 14% of Minnesota farms that grossed over $250,000 and 19% of all Minnesota farms that grossed over $1,000,000. Thus, the FINBIN database includes a substantial share of Minnesota commercial producers. Because these farms choose to be involved in these educational programs, they are not a random sample of Minnesota farms. There may be characteristics of farms that participate in these educational programs that make them different from other farms in the state.

The farm financial data is processed through several levels of screening for accuracy and completeness. While it is impossible to verify accuracy of every data point, every effort is made to verify the integrity of each set of farm financial data included in the database.

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