

A Panel Study of Iowa Farm Financial Conditions: 2000-2007

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Introduction

This paper examines the financial performance of a panel – or group of farm businesses over several years. As with previous studies (Jolly and Smith, 2001, 2003), the issues we address are the farm businesses' level and change over time in:

- Farm and household income
- Wealth
- Financial liquidity
- Farm size
- Enterprise mix
- Financial structure
- Financial performance and efficiency
- Farm program payments

The data used in our analysis are obtained from the Iowa Farm Business Association (IFBA). The IFBA is an independent farm accounting association managed and controlled by its members.

Because the IFBA data come from actual accounting records, they are generally more accurate and consistent than data obtained from cross-sectional surveys (Hoppe et. al). However, because the data are not obtained using sample survey methods, they may not be fully representative of the Iowa farm population. In Tables 1 and 2 we compare the IFBA panel used in this study against the most recent agricultural census. We use two measures, farm size and operator age as benchmarks. The IFBA data consists of larger farms particularly those operating more than 500 acres. On average farmers in the IFBA are younger than the census and they tend to be mid-career – 45–54 years old. Keep in mind that a farm, using the census definition, is any place that sells more than \$1,000 of agricultural produce a year. As a consequence the bulk of the farms in the census are small, part-time operations. The IFBA data, in contrast, does not represent the entire farm population, as defined by the census, but does represent the commercial farm population in Iowa. According to the most recent census, farms larger than 180 acres – those more typified by the IFBA data – made up approximately 50 percent of all farms in Iowa and produced 83 percent of the total value of farm output.

A Little History

Figure 1 presents nominal aggregate net farm income and farm program payment information for Iowa since 1980. Note that farm payments are included in farm income and consequently the figure shows how much of net farm income came from government farm payments of all types. Our focus in Figure 1 is 2000-2006, the period covered by this study. From 2000-2003 farm

incomes were close to historical average levels. However during 2000 and 2001 most net farm income came directly from farm payments. Income declined slightly the next two years. The decline can be attributed in part to reduced government payments resulting from improving corn and soybean prices as well as declining pork prices. In 2004 income increased sharply and then fell over the next two years. In general, farm income at the end of the period significantly exceeded income at the beginning. Aggregate farm income improvement was driven, in part, by strong corn and soybean prices in 2004, significant farm program payments in 2000, 2001 and 2005, strong growth in corn yields and continuing profitability in livestock production. The impact of the current ethanol boom is not reflected in the aggregate income data however. The 2006 average prices received for corn and soybeans in Iowa were \$2.13 and \$5.55 respectively. The sharp ethanol-driven increase in prices began in October, 2006.

The story that emerges from the aggregate farm income data over the past seven years is one of above average earnings, considerable income volatility and reliance on farm program payments to provide some degree of stability during low price years. Examining farm income at the state level, however, provides little insight into the income situation for individual farm families. How income is distributed among farmers or groups of farmers is important in addressing the issues stated earlier in this paper.

Classification Model

In our analysis, we use a measure of farm household cash income to classify farms into five financial performance groups. The cash income measure, ACI, is defined as follows:

$$ACI = NFI + DEP + OFI - FL$$

Where:

ACI	=	adjusted cash income
NFI	=	before-tax accrual net farm income
DEP	=	depreciation
OFI	=	off-farm income from wages or investments
FL	=	family living expenses

Note that ACI measures the capacity of the farm household to generate free cash flows. In our view a liquidity measure gives a better indication of the financial strength and well being of the farm household than does net farm income alone.

Because ACI is estimated from accrual net farm income, changes in inventory are taken into account and consequently gives a better indicator of financial capacity

than would annual cash income. We do not include scheduled principal payments in the ACI calculation. A principal payment is a cash outflow — an obligation to repay debt to a creditor. However, when a borrower pays principal they simply convert cash income to equity. Principal is not an expense. By omitting principal on term debt from the ACI calculation, we are assuming that the rate of repayment is an option not a requirement. Finally the ACI calculation is before tax. Income tax payments are not available from the IFBA data and this is a shortcoming in our analysis. Since tax management for farmers is so flexible, we have not attempted to estimate individual tax obligations. Here are the basic relationships:

- If ACI is positive, cash can be used to pay taxes, reduce principal, purchase capital assets or be invested.
- If ACI is negative, the shortfall must be covered by additional borrowing or asset liquidation.

The performance group classification is based on a farm's average ACI from 2000-2006. Individual farm businesses are ranked based on average ACI and then divided into five equal groups or quintiles. Note that this ranking is based on the actual ACI earned, not a ratio or rate of return. Because this is panel data, each group contains the same farm businesses each year of the study. Therefore financial changes occurring in the group are the result of changes in the farms themselves not changes in the composition of the group.

Figures 2-8 summarize the changes in the financial condition of the farms included in the panel. Balance sheet, income statement, financial performance, and demographic information is presented in Tables 3-14. For each set of financial statements for the five groups we give a beginning (2000), ending (2006) and average (2000-2006) statement. We also include a beginning balance sheet for 2007. In the following sections we briefly highlight some of the key results from our analysis.

Descriptive Information

The top 20 percent of farms, based on their average ACI, are significantly larger than the total group average — both in terms of land, assets and sales. Clearly size matters in determining the ability of the farm to generate free cash flows. This group is also more involved in livestock production — both as a primary and a secondary enterprise.

The next two groups, those in the top 20-40 percent and the middle 20 percent are similar to each other in size

— average assets are close to \$1 million and operated acres are 677 and 638 acres respectively. The second group (20-40 percent) has more livestock income than the middle group particularly from hogs.

The lowest two groups are also similar in size to each other, but considerably smaller businesses than the top three groups. Average acres operated are 542 and 530 acres respectively. Average assets are in excess of \$600,000.

Income

Figure 2 summarizes ACI and government payments received by farms in each of the financial groups for each of the years in the study period. In addition, we report the average return on assets (ROA) for the farm business alone. The ROA is measured on the right axis. By construction, the ROA measures farm earnings per dollar of capital managed and is independent of the financial structure (or debt load) of the business. For this reason ROA provides a simple way to compare farm profitability across the five performance groups.

One of the most striking results is how different the top group is from the other four. Each year ACI levels were significantly higher than the other groups — certainly a reflection of the first group's greater size. However ROA levels were also higher than the remainder of the panel. Farms in the top 20 percent not only produced higher cash flows in absolute terms, but the underlying farm business also produced a higher return to its capital investment. The top group also received the highest average farm payments each year, again largely as a result of their greater size. However, this group was less dependent on farm payments. In other words, farm payments comprised a small proportion of ACI than the remaining groups. In fact, with the exception of 2001, ACI would have remained positive for farms in the top group even in the absence of farm payments.

The next three groups show very similar patterns of earnings. Interestingly the fourth group, farms in the lower 20-40 percent quintile, earned a higher ROA than farms in the middle group and did so with a significantly smaller investment. Average government payments declined from group 2 to group 4 but income dependence on farm payments increased.

Finally, the fifth group, those farms in the lowest 20 percent of average ACI shows a significantly lower level of financial performance than the rest of the panel. ACI levels, even in 2007, are well under half of those produced by the fourth quintile — even though farms in the

two groups are roughly the same size. Farm profitability, ROA, is also significantly lower. Finally although farm payment levels were lower for the group, in four out of the six years, farm payments exceeded ACI.

For most farm families, off-farm income is an important determinant of their financial well being. Off-farm work can contribute a relatively stable base to household income along with fringe benefits, when available. In Figure 3 we show the percentage of farm businesses reporting off-farm income and the mean off-farm income for those farms reporting off-farm income. Off-farm income can come from both wages and investments. We see a slight increase in the proportion of farms reporting off-farm income going from group 1 to 3. For the lower two groups however, farms reporting off-farm income falls steadily. Note too that off-farm income rates have tended to decline over the period of the 2003-2006.

Average off-farm income shown in Figure 3 are significantly higher for the top group and lower for the bottom two. This may reflect differences in human capital or the difference between wage and investment income.

Assets and Liabilities

In Figure 4 we show the average beginning market value of assets and liabilities (debts) for each of the five groups from 2000-2007. The difference between the value of assets and liabilities is net worth. On the right axis we show the average debt-to-asset (D/A) ratio, a common measure of final leverage.

As with income, the top 20 percent group is distinct from the remainder of the panel. Since 2000, the market value of assets grew exponentially. Asset values increased from retained earnings, purchases as well as rising land and other asset prices.

Liability values increased slightly for this group. However, the average D/A ratio declined steadily. Nominal net worth more than doubled between January 1, 2000 and 2007. Net worth is important in supporting farm growth and risk management. Specifically net worth also serves as a credit reserve – unused borrowing capacity that can be tapped in case of economic turndowns or leveraged to permit expansion.

The remaining four groups also exhibited asset and net worth growth but at much lower rates compared to the top group. Nominal net worth for farms in the lowest quintile only increased by 22 percent between 2000 and 2007. Increasing asset values for this group were offset by increasing leverage – a reflection of low earnings.

Average debt loads can be somewhat misleading because some farm businesses do not carry any term debt. In Figure 5 we show the proportion for farms in each group reporting debt on their balance sheet and the average indebtedness for those reporting debt. Generally, the number of farms reporting debt increases as financial performance declines. Group 1 has the highest absolute debt loads but relatively more farms in the group have paid off debt during the period of the study. Finally, within this sample, nearly 27 percent of total debt is held by farmers in the top group. The debt is distributed among the remaining groups as follows 21 percent for group 2, 18 percent for group 3, 16 percent for group 4 and 18 percent for the lowest performance group. From a loan portfolio perspective, this distribution suggests most of the debt has been extended to farmers with stronger financial performance.

Farm Type Changes

Based on their sales composition we classify farms in the panel into six farm types. The farm types are defined as follows:

- Cash grain farms if crops are greater than 95 percent of gross farm income.
- Grain-livestock farms if crops are greater than 50 percent but less than 95 percent of gross farm income.
- Hog farms if pork is greater than 50 percent of gross farm income.
- Beef farms if beef is greater than 50 percent of gross farm income.
- Dairy farms if dairy is greater than 50 percent of gross farm income.
- Mixed farms are all other farms.

In Figure 6 we present information on the apparent change in the farm type distribution for each group between 2000 and 2006. Note that the sum of the farm type changes for each group is zero. The apparent change in farm type reflects physical changes in enterprise mix as well as relative changes in commodity prices.

In general from 2000 to 2006, we see an increase in the number of cash grain farms – particularly for farms in the lower three performance groups. The increase in cash grain comes at the expense of farms with smaller livestock enterprises. Increases in cash grain prices have certainly had an impact on the classification particularly for farms with livestock and grain enterprises that are similar in size. The effect of grain price increases would be offset somewhat by the increase in beef and pork prices.

Land and Labor

In Figure 7 we show the change in acres operated and labor months employed on farms in the five performance groups. Operator share of land includes acres owned or cash rented and the operator's share of acres under crop share leases. The top two groups show sizable increases in acres operated. Some of this growth may come from shifts in leasing terms – from share to cash rent. However most of the growth comes through actual expansion.

The next two groups show more modest growth in land operated – approximately 70 acres. The bottom quintile was essentially unchanged.

Labor employed, both family and hired, increased the most for the top performance group. The second group, the upper 20-40 percent, increased labor employment slightly. The remaining three groups show no changes to slight decreases in labor months employed in the farm business.

Intermediate Assets

In Figure 8 we show value changes in machinery and breeding herd inventories. Value changes would be influenced by physical changes in investing size, price changes and the extent to which the inventories were re-priced on the balance sheet. In general, we see sizeable increases in machinery inventories – particularly for the first two groups. Small changes in breeding herd value also occurred, a result generally consistent with the observed farm type shifts away from livestock enterprises.

Final Comments

In this paper we examine the financial performance of a panel of Iowa commercial farm businesses from 2000-2007. As in previous studies, we demonstrate the wide variability in financial performance across firms facing similar economic conditions.

The top 20 percent have improved their financial standing significantly over the period. The lowest 20 percent have made little financial progress. Between these extremes we see farm businesses, at varying degrees, meeting outside cash obligations and strengthening their equity position.

This study provides a snapshot of Iowa commercial farmers' financial strengths at the beginning of the ethanol-fueled price boom and a new Farm Bill. We expect, for a few years at least, that commodity prices will continue to be strong. The grain price increases may result in cutbacks in livestock profitability depending on the growth in meat demand. Ultimately strong farm profits will be bid into land, rents and other asset values, resulting in tighter more volatile margins.

If commodity prices do remain strong, one of the unresolved questions is how the farms represented by the panel will fare. Will a rising tide lift all boats or will the range in ACI become wider? The lower 20 percent group has higher debt-to-asset ratios and is more dependent upon government payments as a source of cash income. This group may be more vulnerable to changes in the cost structure of agricultural assets. And, it is unclear how the new farm bill will influence farm income and equity growth across this rather broad spectrum of farm structures. Farm size, enterprise mix, financial condition and human capital will all contribute to the ability of farmers to adapt to changing conditions.

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Table 1. Comparison of Farm Size Distribution between 2006 Farm Business Association Panel and 2002 Ag Census

Farm Size (Acres)	IFBA Panel		2002 Iowa Ag Census	
	<u>Number of Observations</u>	<u>Percent</u>	<u>Number of Observations</u>	<u>Percent</u>
1 to 9	1	0.2%	4,811	5.3%
10 to 49	2	0.5%	16,278	18.0%
50 to 179	15	3.7%	24,250	26.7%
180 to 499	114	28.1%	24,719	27.3%
500 to 999	169	41.7%	13,063	14.4%
1000 and up	104	25.7%	7,534	8.3%
Total Observations	405	100.0%	90,655	100.0%
Average Acres	777		350	

Table 2. Comparison of Farm Age Distributions between 2006 Farm Business Association Panel and 2002 Ag Census

Age Group	IFBA Panel		2002 Iowa Ag Census	
	<u>Number of Observations</u>	<u>Percent</u>	<u>Number of Observations</u>	<u>Percent</u>
Under 25	-	0.0%	869	1.0%
25 to 34	5	1.2%	5,282	5.8%
35 to 44	52	12.8%	17,331	19.1%
45 to 54	165	40.7%	24,555	27.1%
55 to 64	120	29.6%	20,227	22.3%
65 and up	63	15.6%	22,391	24.7%
Total Observations	405	100.0%	90,655	100.0%
Average Age	54.2		52.4	

The current 2000-2006 panel represents 405 total farms and each quintile represents 81 farms.

Table 3. 2000 Beginning Balance Sheet

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Average Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Farm Assets					
Feeding livestock	\$137,027	\$71,512	\$31,765	\$26,896	\$70,726
Corn	103,877	63,525	64,951	47,702	49,244
Soybeans	79,996	53,426	49,510	33,553	30,215
Other feed	9,093	7,055	5,308	3,964	6,329
Supplies, prepaid expenses	89,574	41,830	34,039	24,326	20,412
Total short-term assets	\$419,568	\$237,347	\$185,573	\$136,441	\$176,925
Breeding livestock	11,318	25,228	12,463	12,352	15,473
Machinery, equipment	207,331	144,327	146,895	108,365	103,316
Total intermediate assets	\$218,650	\$169,555	\$159,357	\$120,718	\$118,789
Land and improvements	724,265	390,768	439,164	267,847	296,204
Total assets	\$1,362,483	\$797,669	\$784,094	\$525,006	\$591,918
Farm Liabilities					
Operating notes, accounts payable	126,981	76,993	62,899	59,905	65,883
Intermediate and long-term due	2,809	3,680	4,552	1,530	1,833
CCC Loans	2,974	4,971	3,402	3,462	11,675
Total short term-debt	132,764	85,644	70,853	64,897	79,391
Intermediate-term debts	44,651	27,609	32,279	28,255	29,592
Long-term debts	178,371	126,637	91,639	93,450	71,318
Total liabilities	\$355,786	\$239,891	\$194,771	\$186,602	\$180,302
Working capital	\$286,804	\$151,703	\$114,720	\$71,544	\$97,534
Farm Net Worth					
Net worth change for 2000	\$94,075	\$63,508	\$28,594	\$12,921	(\$999)

Source: 2000 IFBA Data.

Table 4. 2007 Beginning Balance Sheet

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Average Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Farm Assets					
Feeding livestock	\$259,615	\$101,144	\$31,856	\$37,057	\$49,908
Corn	300,654	186,718	152,143	108,427	82,512
Soybeans	149,442	97,397	78,738	57,443	48,574
Other feed	18,234	8,751	6,301	4,637	8,801
Supplies, prepaid expenses	125,617	70,687	59,042	32,843	30,314
Total short-term assets	\$853,563	\$464,697	\$328,080	\$240,407	\$220,109
Breeding livestock	36,359	25,012	17,760	18,258	23,175
Machinery, equipment	360,607	234,496	212,639	150,861	129,256
Total intermediate assets	\$396,966	\$259,508	\$230,400	\$169,119	\$152,431
Land and improvements	1,234,748	614,234	637,519	405,858	453,630
Total assets	\$2,485,276	\$1,338,439	\$1,195,998	\$815,385	\$826,169
Farm Liabilities					
Operating notes, accounts payable	177,703	116,527	80,640	103,793	136,202
Intermediate and long-term due	1,890	3,653	9,404	2,704	1,531
CCC Loans	15,910	16,320	14,394	8,191	17,712
Total short term-debt	195,502	136,500	104,438	114,688	155,445
Intermediate-term debts	60,991	40,037	48,929	43,919	44,018
Long-term debts	179,437	164,261	151,502	119,724	126,300
Total liabilities	\$435,930	\$340,797	\$304,869	\$278,330	\$325,763
Working capital	\$658,060	\$328,198	\$223,642	\$125,720	\$64,663
Farm Net Worth					
Net worth change for 2006	\$234,191	\$80,013	\$79,464	\$75,868	\$14,677

Source: 2006 IFBA Data.

Table 5. 2000-2007 Average Beginning Balance Sheet

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Average Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Farm Assets					
Feeding livestock	\$213,007	\$91,090	\$29,626	\$28,289	\$62,399
Corn	137,039	93,657	84,345	59,086	54,507
Soybeans	97,933	63,304	53,898	38,590	33,710
Other feed	12,443	7,616	5,649	4,004	6,918
Supplies, prepaid expenses	96,972	49,009	45,280	26,473	23,288
Total short-term assets	\$557,395	\$304,677	\$218,798	\$156,443	\$180,822
Breeding livestock	22,742	25,584	14,588	13,519	14,869
Machinery, equipment	271,019	185,611	171,609	129,545	116,553
Total intermediate assets	\$293,761	\$211,195	\$186,197	\$143,064	\$131,422
Land and improvements	933,668	484,097	526,216	330,828	357,883
Total assets	\$1,784,824	\$999,969	\$931,211	\$630,335	\$670,127
Farm Liabilities					
Operating notes, accounts payable	150,837	89,638	76,624	73,704	87,973
Intermediate and long-term due	2,297	3,609	5,817	1,637	1,723
CCC Loans	7,904	7,025	6,657	8,227	13,689
Total short term-debt	161,038	100,272	89,097	83,567	103,385
Intermediate-term debts	54,318	35,180	34,531	36,021	37,985
Long-term debts	176,610	138,159	114,843	111,710	94,012
Total liabilities	\$391,966	\$273,611	\$238,471	\$231,298	\$235,382
Working capital	\$396,357	\$204,405	\$129,700	\$72,876	\$77,437
Farm Net Worth					
Avg. net worth change for 2000-06	\$150,356	\$62,114	\$45,725	\$33,355	\$8,691

Source: 2000-2006 IFBA Data.

Table 6. 2000 Average Income Statement ^{1/}

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Income Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Income					
Crops:					
Corn	\$104,100	\$78,412	\$80,866	\$63,805	\$48,763
Soybeans	94,255	66,839	64,852	50,128	46,968
Crop insurance	3,657	1,632	2,551	2,070	1,976
Government payments	82,885	57,993	57,655	42,533	40,123
Other crop income	17,901	12,145	11,522	7,343	3,836
Total Crop Income	\$302,798	\$217,022	\$217,446	\$165,879	\$141,666
Livestock:					
Swine	\$247,783	\$137,879	\$54,093	\$60,464	\$52,463
Beef	190,154	77,792	24,701	31,883	103,075
Dairy	-	10,382	8,437	7,253	6,809
Other livestock	3,219	297	1,492	2,241	780
Total Livestock Income	\$441,157	\$226,350	\$88,723	\$101,841	\$163,128
Total Farm Income	\$743,955	\$443,372	\$306,169	\$267,720	\$304,794
Expenses					
Operating expenses	\$156,284	\$112,383	\$101,705	\$76,598	\$82,506
Purchased feed	94,273	63,155	22,845	28,765	33,692
Purchased livestock	184,346	69,083	26,174	38,729	81,069
Other cash expenses	28,359	20,582	19,479	15,715	14,316
Rent	55,983	38,755	37,981	27,583	29,170
Interest	28,850	21,701	16,789	16,862	15,956
Depreciation	36,331	25,523	22,644	17,922	14,159
Total Expenses	\$584,426	\$351,182	\$247,617	\$222,173	\$270,867
Accrual Net Farm Income	\$159,529	\$92,190	\$58,552	\$45,547	\$33,927
+ Depreciation	\$36,331	\$25,523	\$22,644	\$17,922	\$14,159
+ Off Farm Income	19,773	14,931	16,553	8,847	11,517
- Family living expenses	50,124	38,664	36,297	33,949	41,146
Adjusted Cash Income	\$165,509	\$93,981	\$61,453	\$38,366	\$18,458

^{1/} Accrual statement, adjusted for inventory changes.

Source: 2000 IFBA Data.

Table 7. 2006 Average Income Statement ^{1/}

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Income Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Income					
Crops:					
Corn	\$325,760	\$218,580	\$196,986	\$136,231	\$106,975
Soybeans	167,841	118,890	99,488	76,523	62,756
Crop insurance	1,159	1,021	2,901	1,688	1,072
Government payments	45,701	33,899	31,485	23,636	20,221
Other crop income	28,425	22,547	23,338	29,280	19,937
Total Crop Income	\$568,885	\$394,937	\$354,198	\$267,358	\$210,962
Livestock:					
Swine	\$378,961	\$124,107	\$36,815	\$57,077	\$48,218
Beef	227,107	98,606	37,671	27,633	49,304
Dairy	39,753	10,556	12,074	5,242	11,972
Other livestock	3,724	619	2,464	1,553	2,265
Total Livestock Income	\$649,545	\$233,888	\$89,024	\$91,504	\$111,760
Total Farm Income	\$1,218,430	\$628,825	\$443,223	\$358,862	\$322,722
Expenses					
Operating expenses	\$281,702	\$179,863	\$148,669	\$110,112	\$116,212
Purchased feed	160,850	55,583	14,250	21,337	28,775
Purchased livestock	241,280	94,099	30,648	33,543	44,512
Other cash expenses	42,547	29,160	21,272	18,666	16,725
Rent	87,355	60,477	52,462	37,488	35,814
Interest	30,144	22,428	20,861	19,407	19,543
Depreciation	58,801	32,114	31,353	22,715	18,767
Total Expenses	\$902,679	\$473,724	\$319,514	\$263,267	\$280,347
Accrual Net Farm Income	\$315,751	\$155,101	\$123,708	\$95,596	\$42,375
+ Depreciation	\$58,801	\$32,114	\$31,353	\$22,715	\$18,767
+ Off Farm Income	26,666	20,788	19,881	13,921	10,060
- Family living expenses	75,290	46,240	38,659	36,809	38,473
Adjusted Cash Income	\$325,929	\$161,762	\$136,283	\$95,422	\$32,728

^{1/} Accrual statement, adjusted for inventory changes.

Source: 2006 IFBA Data.

Table 8. 2000-2006 Average Income Statement ^{1/}

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Income Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Income					
Crops:					
Corn	\$163,248	\$115,713	\$112,377	\$79,151	\$65,883
Soybeans	128,867	90,134	80,737	60,881	52,496
Crop insurance	3,512	3,000	4,107	2,762	2,152
Government payments	58,649	41,516	38,314	28,698	26,220
Other crop income	28,590	21,208	18,236	20,281	9,909
Total Crop Income	\$382,867	\$271,571	\$253,771	\$191,774	\$156,661
Livestock:					
Swine	\$308,550	\$128,640	\$42,803	\$60,879	\$48,333
Beef	245,069	89,719	30,226	25,471	83,275
Dairy	17,270	10,882	10,983	6,845	11,750
Other livestock	3,229	248	1,984	1,466	1,120
Total Livestock Income	\$574,119	\$229,489	\$85,996	\$94,660	\$144,478
Total Farm Income	\$956,986	\$501,060	\$339,767	\$286,434	\$301,139
Expenses					
Operating expenses	\$215,923	\$143,335	\$121,824	\$92,336	\$97,723
Purchased feed	133,302	59,722	18,610	26,354	31,440
Purchased livestock	233,552	77,952	26,945	31,303	62,488
Other cash expenses	36,387	25,969	20,119	16,236	15,247
Rent	73,524	49,835	45,540	32,927	30,371
Interest	26,288	21,262	17,018	16,621	16,125
Depreciation	45,950	27,945	25,485	19,941	15,987
Total Expenses	\$764,927	\$406,021	\$275,539	\$235,718	\$269,381
Accrual Net Farm Income	\$192,059	\$95,039	\$64,228	\$50,716	\$31,758
+ Depreciation	\$45,950	\$27,945	\$25,485	\$19,941	\$15,987
+ Off Farm Income	24,881	18,212	17,934	10,971	9,954
- Family living expenses	61,982	42,629	37,060	35,205	39,361
Adjusted Cash Income	\$200,908	\$98,567	\$70,586	\$46,423	\$18,339

^{1/} Accrual statement, adjusted for inventory changes.

Source: 2000-2006 IFBA Data.

Table 9. 2000 Descriptive Information

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Total Acres, Operator Share	940	680	681	505	534
Row Crop Acres	874	599	604	433	426
Hay/Pasture Acres	66	81	78	73	108
Labor Months	19.1	16.6	16.2	12.6	14.5
Average Corn Yield	152.8	155.6	150.0	149.0	141.8
Average Corn Price	\$1.84	\$1.86	\$1.85	\$1.84	\$1.82
Livestock Returns/\$100 Feed Fed	\$207.31	\$173.86	\$163.85	\$177.24	\$169.08
Sources of Farm Income:					
Crops	38%	41%	52%	50%	44%
Livestock	41%	36%	22%	25%	33%
Other	21%	23%	26%	25%	23%
Value of Farm Production Per Person	\$301,161	\$238,948	\$211,377	\$191,069	\$161,938
Value of Farm Production Per \$1 Exp.	\$1.56	\$1.46	\$1.33	\$1.37	\$1.26
Farm Types: ¹					
Cash Grain	33.3%	38.8%	47.5%	45.0%	36.9%
Grain-Livestock	16.0%	22.5%	30.0%	31.3%	29.8%
Hog	35.8%	25.0%	11.3%	13.8%	19.0%
Beef	13.6%	10.0%	6.3%	3.8%	9.5%
Dairy	0.0%	1.3%	2.5%	2.5%	2.4%
Mixed	1.2%	2.5%	2.5%	3.8%	2.4%
	100.0%	100.0%	100.0%	100.0%	100.0%
Operator Age	47.5	45.3	49.6	48.2	50.6

¹ Farm type definitions are as follows:

Cash grain farms if crops are greater than 95 percent of gross farm income.

Grain-livestock farms if crops are greater than 50 percent but less than 95 percent of gross farm income.

Hog farms if pork is greater than 50 percent of gross farm income.

Beef farms if beef is greater than 50 percent of gross farm income.

Dairy farms if dairy is greater than 50 percent of gross farm income.

Mixed farms are all other farms.

Source: 2000 IFBA Data.

Table 10. 2006 Descriptive Information

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Total Acres, Operator Share	1,171	859	755	574	530
Row Crop Acres	1,074	747	656	466	442
Hay/Pasture Acres	97	112	100	108	87
Labor Months	26.2	17.9	16.2	12.6	14.3
Average Corn Yield	175.5	171.9	168.9	167.4	154.8
Average Corn Price	\$3.22	\$3.18	\$3.18	\$3.18	\$3.16
Livestock Returns/\$100 Feed Fed	\$179.00	\$161.24	\$176.99	\$171.92	\$148.20
Sources of Farm Income:					
Crops	51%	57%	68%	63%	65%
Livestock	37%	31%	18%	20%	22%
Other	12%	13%	15%	17%	13%
Value of Farm Production Per Person	\$479,725	\$373,957	\$326,531	\$297,533	\$242,967
Value of Farm Production Per \$1 Exp.	\$1.74	\$1.56	\$1.53	\$1.55	\$1.35
Farm Types: ¹					
Cash Grain	40.7%	45.0%	63.8%	56.3%	52.4%
Grain-Livestock	23.5%	32.5%	20.0%	25.0%	27.4%
Hog	24.7%	13.8%	6.3%	8.8%	9.5%
Beef	7.4%	5.0%	6.3%	3.8%	7.1%
Dairy	0.0%	1.3%	2.5%	2.5%	2.4%
Mixed	3.7%	2.5%	1.3%	3.8%	1.2%
	100.0%	100.0%	100.0%	100.0%	100.0%
Operator Age	53.5	51.2	55.3	54.1	56.7

¹ Farm type definitions are as follows:

Cash grain farms if crops are greater than 95 percent of gross farm income.

Grain-livestock farms if crops are greater than 50 percent but less than 95 percent of gross farm income.

Hog farms if pork is greater than 50 percent of gross farm income.

Beef farms if beef is greater than 50 percent of gross farm income.

Dairy farms if dairy is greater than 50 percent of gross farm income.

Mixed farms are all other farms.

Source: 2006 IFBA Data.

Table 11. 2000-2006 Average Descriptive Information

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintiles				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Total Acres, Operator Share	1,057	775	724	542	530
Row Crop Acres	976	677	638	449	439
Hay/Pasture Acres	80	99	87	93	91
Labor Months	22.4	17.0	15.7	12.5	14.1
Average Corn Yield	171.5	168.3	164.3	163.7	154.0
Average Corn Price	\$2.07	\$2.05	\$2.08	\$2.06	\$2.05
Livestock Returns/\$100 Feed Fed	\$182.93	\$180.01	\$170.04	\$174.23	\$162.68
Sources of Farm Income:					
Crops	46%	50%	62%	58%	57%
Livestock	39%	33%	20%	23%	27%
Other	14%	16%	19%	19%	17%
Value of Farm Production Per Person	\$358,939	\$285,014	\$242,100	\$223,594	\$188,142
Value of Farm Production Per \$1 Exp.	\$1.52	\$1.39	\$1.32	\$1.35	\$1.23
Farm Types: ¹					
Cash Grain	36.9%	42.9%	55.9%	49.6%	45.2%
Grain-Livestock	19.4%	22.7%	25.0%	28.4%	28.4%
Hog	29.1%	20.7%	8.8%	12.5%	12.2%
Beef	10.8%	8.4%	6.8%	5.0%	9.2%
Dairy	0.0%	1.3%	2.5%	2.5%	2.4%
Mixed	3.9%	4.1%	1.1%	2.0%	2.6%
	100.0%	100.0%	100.0%	100.0%	100.0%
Operator Age	50.3	48.2	52.4	51.2	53.6

¹ Farm type definitions are as follows:

Cash grain farms if crops are greater than 95 percent of gross farm income.

Grain-livestock farms if crops are greater than 50 percent but less than 95 percent of gross farm in-

Hog farms if pork is greater than 50 percent of gross farm income.

Beef farms if beef is greater than 50 percent of gross farm income.

Dairy farms if dairy is greater than 50 percent of gross farm income.

Mixed farms are all other farms.

Source: 2000-2006 IFBA Data.

Table 12. 2000 Financial Ratios

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintile				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Ratios: ¹					
ROA	13.7%	12.7%	8.4%	8.4%	5.1%
PM	24.9%	22.3%	17.0%	17.0%	11.2%
TO	63.9%	67.7%	56.7%	56.7%	57.1%
OER	0.64	0.65	0.67	0.67	0.70
DER	0.06	0.06	0.07	0.07	0.07
IER	0.04	0.05	0.06	0.06	0.06
NFIR	0.26	0.24	0.20	0.20	0.16
ROE	15.0%	14.5%	8.6%	8.6%	4.6%
COD	6.9%	7.3%	7.6%	7.6%	7.5%
D/A	0.30	0.27	0.28	0.28	0.33
Current Ratio	2.80	3.20	2.50	2.50	2.22
Current/Total Debt Ratio	0.37	0.36	0.36	0.35	0.44

Source: 2000 IFBA Data.

Table 13. 2006 Financial Ratios

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintile				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Ratios: ¹					
ROA	17.7%	16.2%	14.5%	16.2%	9.0%
PM	32.9%	28.0%	29.2%	28.5%	18.6%
TO	60.7%	62.2%	50.7%	62.1%	57.5%
OER	0.58	0.62	0.58	0.58	0.66
DER	0.06	0.06	0.07	0.07	0.06
IER	0.03	0.03	0.05	0.05	0.05
NFIR	0.33	0.29	0.30	0.31	0.22
ROE	20.7%	18.9%	17.6%	26.6%	8.6%
COD	6.8%	6.0%	6.6%	6.2%	7.2%
D/A	0.20	0.21	0.25	0.38	0.35
Current Ratio	4.08	3.80	2.67	1.92	1.66
Current/Total Debt Ratio	0.45	0.40	0.34	0.41	0.48

Source: 2006 IFBA Data.

Table 14. 2000-2006 Average Financial Ratios

(Based on Average 2000-2006 Adjusted Cash Income Ranking)

Adjusted Cash Income Class	Cash Flow Quintile				
	Top 20%	Upper 20 to 40%	Middle 20%	Lower 20 to 40%	Lowest 20%
Ratios: ¹					
ROA	12.8%	11.4%	7.9%	9.2%	4.4%
PM	22.9%	20.1%	17.0%	16.7%	9.0%
TO	62.7%	60.9%	48.1%	57.7%	56.5%
OER	0.67	0.68	0.68	0.67	0.72
DER	0.06	0.06	0.08	0.08	0.07
IER	0.03	0.04	0.05	0.05	0.06
NFIR	0.24	0.22	0.20	0.20	0.14
ROE	15.1%	12.7%	8.1%	11.5%	2.9%
COD	6.1%	6.1%	6.4%	6.6%	7.0%
D/A	0.25	0.26	0.27	0.36	0.36
Current Ratio	3.45	3.44	2.50	1.87	1.62
Current/Total Debt Ratio	0.41	0.37	0.37	0.36	0.44

Source: 2000-2006 IFBA Data.

¹ Ratio Definitions are as follows:

$$\text{ROA (Return on Assets)} = \frac{(\text{Accrual Net Farm Income} + \text{Interest Expense} - \text{Unpaid Family Labor})}{\text{Total Assets}}$$

$$\text{PM (Profit Margin)} = \frac{(\text{Accrual Net Farm Income} + \text{Interest Expense} - \text{Unpaid Family Labor})}{\text{Gross Farm Revenue}}$$

$$\text{TO (Turnover Ratio)} = \frac{\text{Gross Farm Revenue}}{\text{Total Assets}}$$

$$\text{OER (Operating Expense Ratio)} = \frac{(\text{Total Operating Expense} + \text{Fixed Expense} - \text{Interest Expense} - \text{Depreciation Expense})}{\text{Gross Farm Revenue}}$$

$$\text{DER (Depreciation Expense Ratio)} = \frac{\text{Depreciation Expense}}{\text{Gross Farm Revenue}}$$

$$\text{IER (Interest Expense Ratio)} = \frac{\text{Interest Expense}}{\text{Gross Farm Revenue}}$$

$$\text{NFIR (Net Farm Income Ratio)} = \frac{\text{Accrual Net Farm Income}}{\text{Gross Farm Revenue}}$$

$$\text{ROE (Return on Equity)} = \frac{(\text{Accrual Net Farm Income} - \text{Unpaid Family Labor})}{\text{Net Worth}}$$

$$\text{COD (Cost of Debt)} = \frac{\text{Interest Expense}}{\text{Total Liabilities}}$$

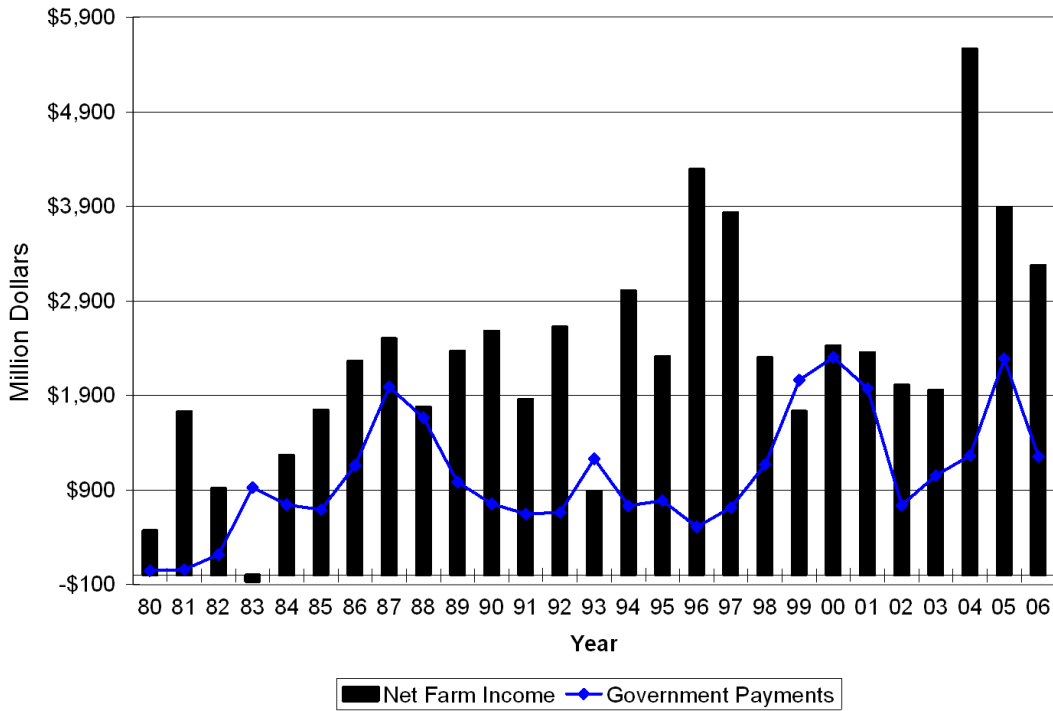
$$\text{D/A (Debt/Asset Ratio)} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current/Total Debt Ratio} = \frac{\text{Current Liabilities}}{\text{Total Liabilities}}$$

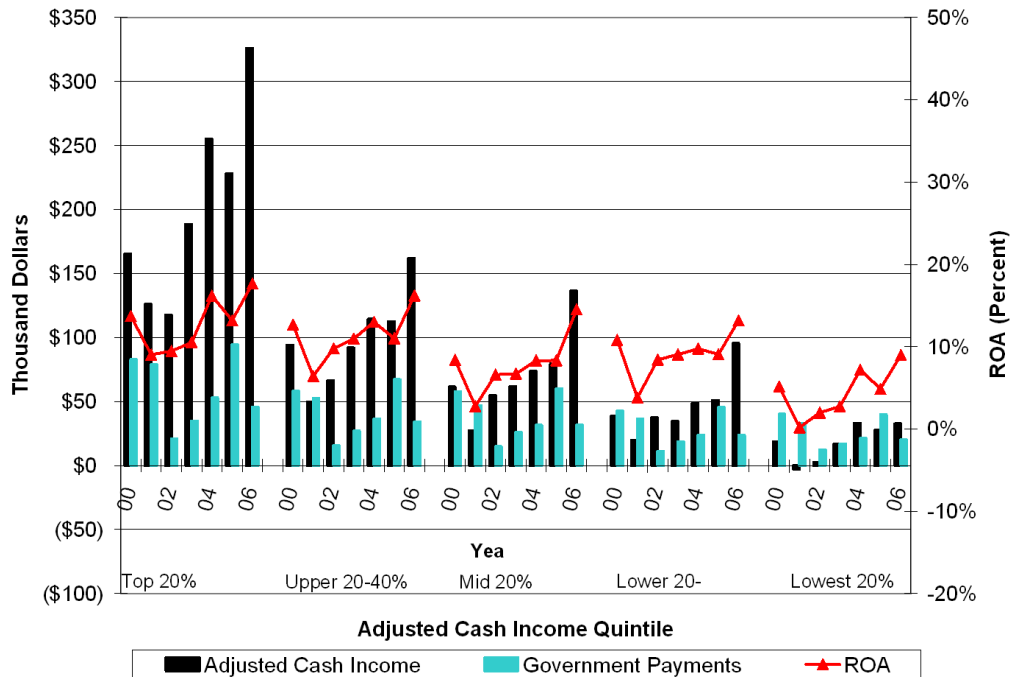
Source: 2000-2006 IFBA Data.

Figure 1. Iowa Net Farm Income and Government Payments: 1980-2006



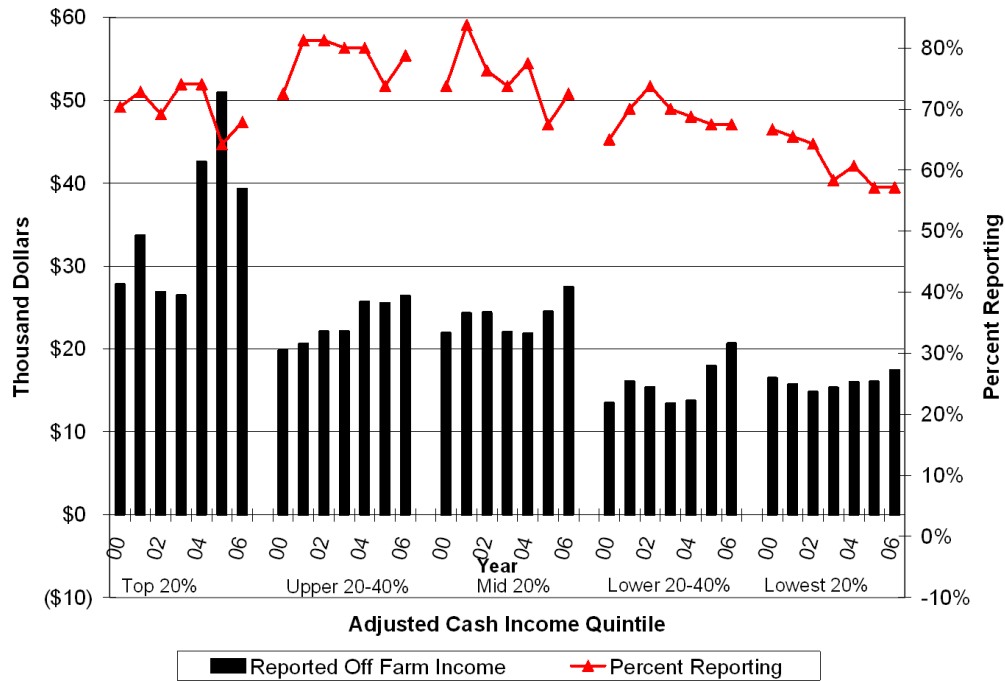
Source: USDA

Figure 2. Adjusted Cash Income, Government Payments and ROA: 2000-2006 by ACI Quintile



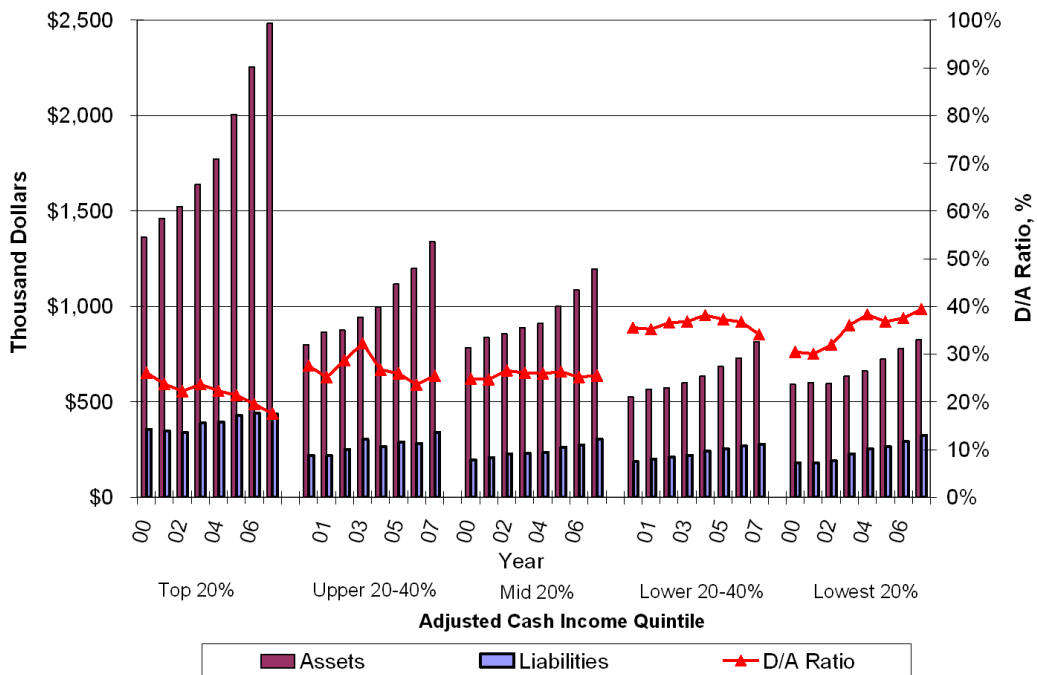
Source: IFBA Data

Figure 3. Mean Reported Off Farm Income and Percent Reporting: 2000-2006 by ACI Quintile



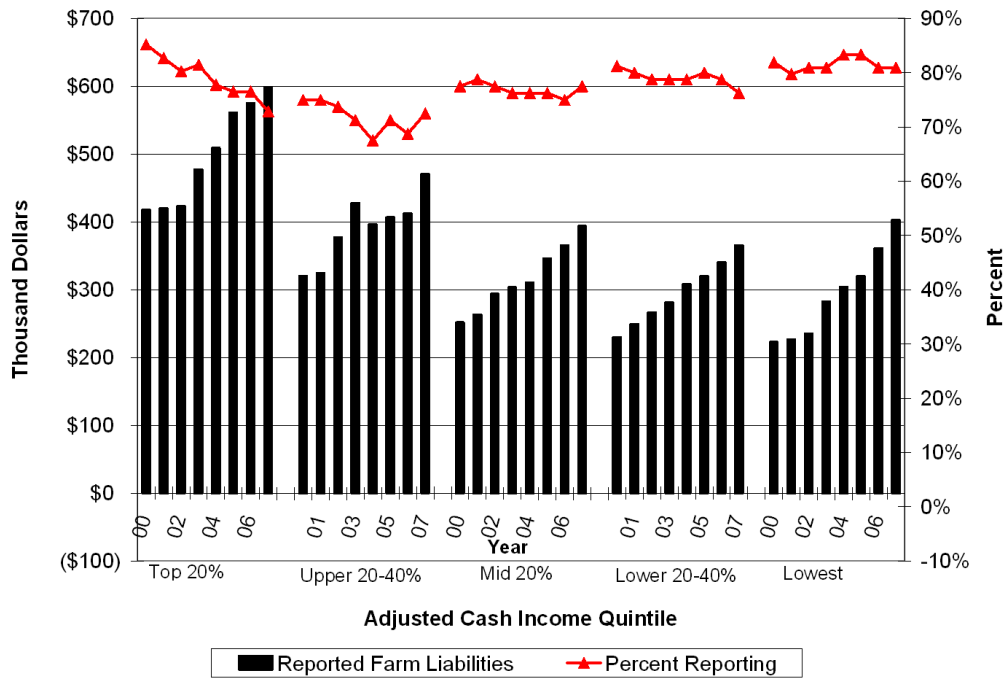
Source: IFBA Data

Figure 4. Average Assets, Liabilities and Debt-to-Asset Ratios: 2000-2007 by ACI Quintile



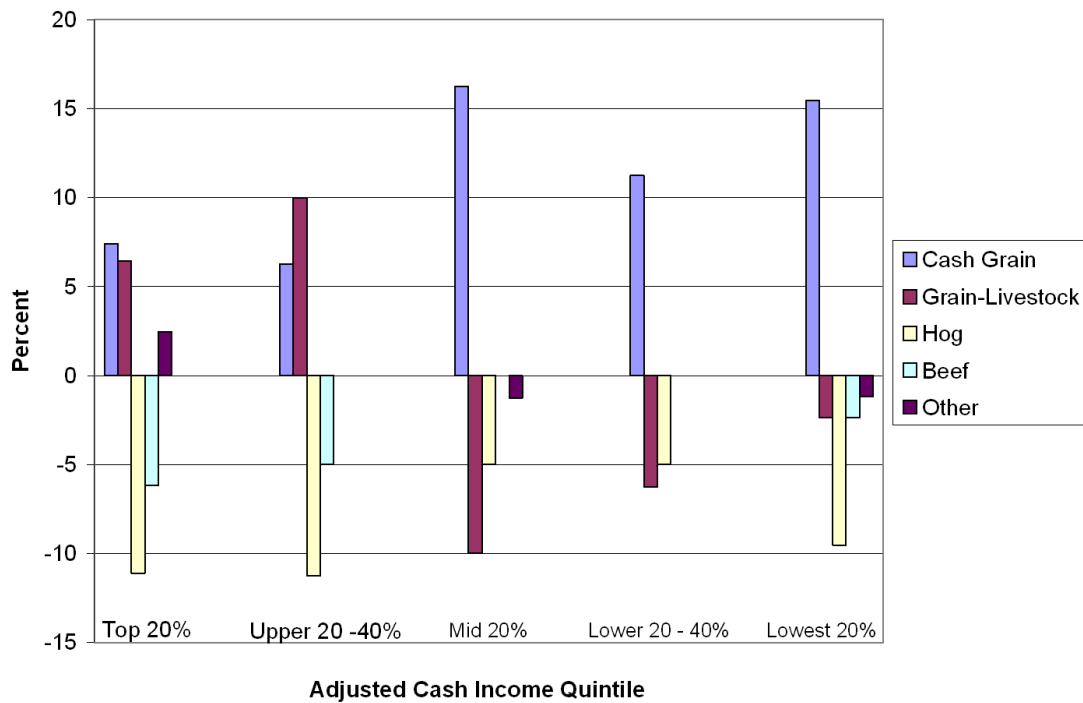
Source: IFBA Data

Figure 5. Mean Reported Farm Liabilities and Percent Reporting: 2000-2007 by ACI Quintile



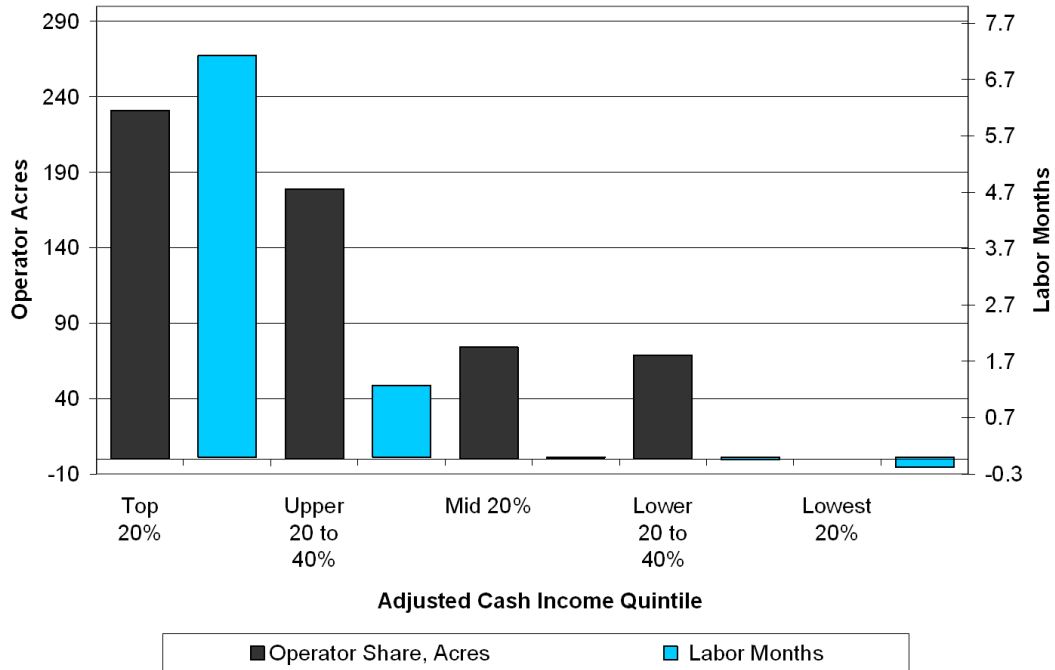
Source: IFBA Data

Figure 6. Change in Farm Type Distribution by ACI Quintile: 2000 - 2006



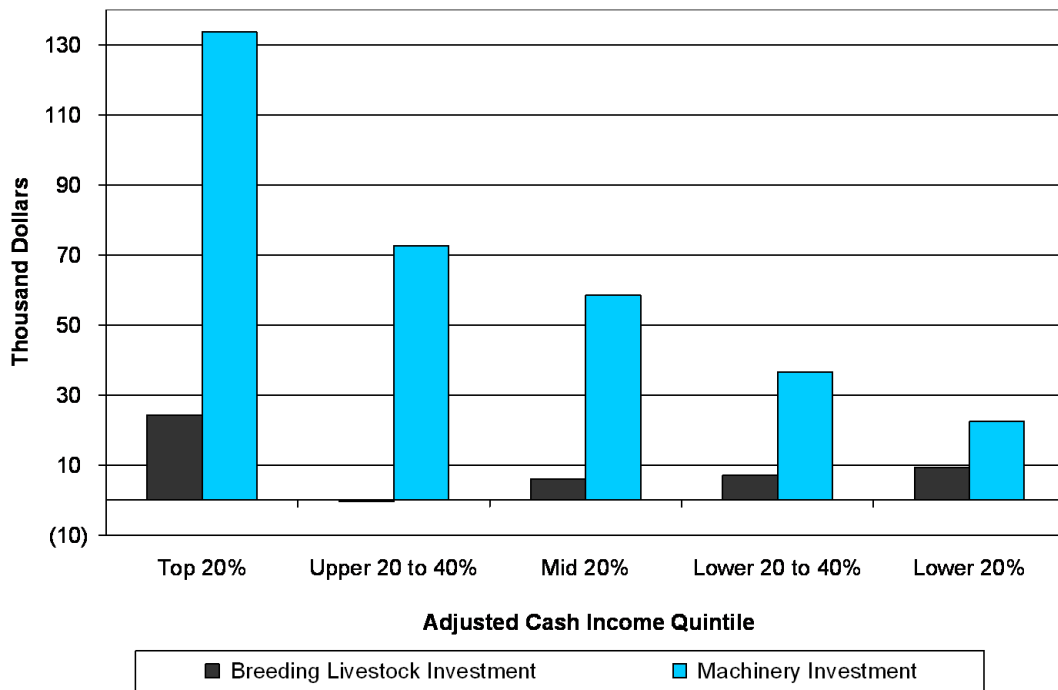
Source: IFBA Data

Figure 7. Average Land & Labor Change: 2000 to 2006 by ACI Quintile



Source: IFBA Data

Figure 8. Change in Breeding Livestock and Machinery Investment by ACI Quintile: 2000 - 2006



Source: IFBA Data