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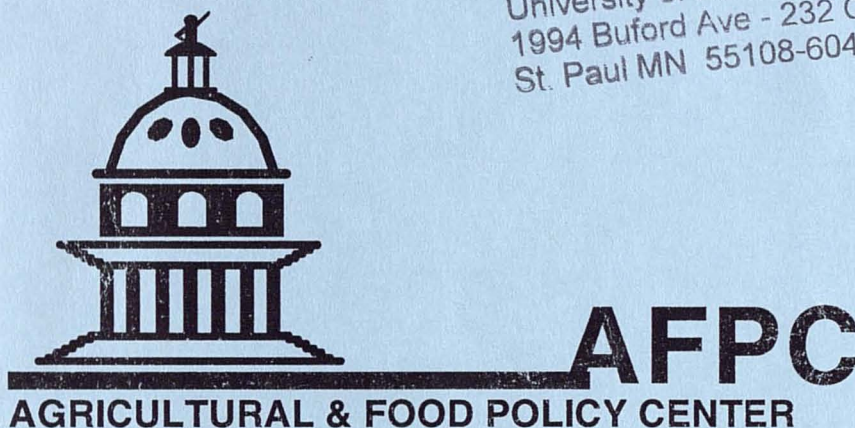
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**REPRESENTATIVE FARMS ECONOMIC
OUTLOOK FOR THE JANUARY
1999 FAPRI/AFPC BASELINE**

AFPC Working Paper 99-1

March 1999

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**REPRESENTATIVE FARMS ECONOMIC
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1999 FAPRI/AFPC BASELINE**

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Executive Summary

[The farm level economic impacts of the Federal Agriculture Improvement and Reform Act of 1996 (FAIR) on representative crop and livestock operations are projected in this report. The primary objective of the analysis is to determine the representative farms' economic viability by region and commodity throughout the life of the 1996 Farm Bill. The representative farm economic data is developed in cooperation with a panel of producers to describe and simulate representative crop, livestock, and dairy farms. Projected prices, policy variables, and input inflation rates from the Food and Agricultural Policy Research Institute (FAPRI) January 1999 Baseline.]

- All of the crop farm sectors show substantial cash flow pressure. The pressure stems from 2 major areas: low prices and adverse weather in 1996 and 1998. The crop farms are able to maintain firm wealth on average.
- Six of the 13 feed grain farms have a 25 percent chance of a negative net cash farm income in any one year. Ten of the feed grain farms had a greater than 60 percent probability of a cash flow deficit in 1998. All of the moderate size feed grain farms, except the Central Missouri farm, experience a cash flow deficit after 1998 of greater than 40 percent.
- Seven of the 10 representative wheat farms have a 40 percent probability of experiencing annual cash flow deficits. One-half of the wheat farms exhibit cautionary signs related to their economic health over the baseline period.
- All of the cotton farms are projected to have serious cash flow problems over the 1996-2002 study period.
- Two-thirds of the 9 rice farms experience cautionary levels of cash flow deficits over the study period. The three farms in Missouri and Louisiana exhibit a high probability of losing real net worth by 2002.
- The dairy sector appears strong but prices are highly volatile. Nine of the 26 dairy farms experience increasing cash flow pressure over the period. Low baseline feed prices and a high 1998 milk price present a favorable baseline for the dairy farms.
- Rising cattle prices over the baseline period present a positive outlook for the beef cattle ranches. The Wyoming and Missouri ranches reduce the odds of cash flow deficits and the Colorado and Montana ranches are able to build some cash reserves.
- Cash flow problems on all of the hog farms in 1998 are overcome by 2002 for 6 of the 8 farms. The hog price debacle of 1998 is extremely difficult for the moderate size Missouri and Indiana farms to overcome. The larger farms are better able to survive over the long haul.

REPRESENTATIVE FARMS ECONOMIC OUTLOOK FOR THE JANUARY 1999 FAPRI/AFPC BASELINE

The farm level economic impacts of the Federal Agriculture Improvement and Reform Act of 1996 (FAIR) on representative crop and livestock operations are projected in this report. For this report the FAIR Act will be referred to as the 1996 Farm Bill. The analysis was conducted over the 1996-2002 planning horizon using AFPC's whole farm simulation model. Data to simulate farming operations in the nation's major production regions came from two sources:

- Producer panel cooperation to develop economic information to describe and simulate representative crop, livestock, and dairy farms.
- Projected prices, policy variables, and input inflation rates from the Food and Agricultural Policy Research Institute (FAPRI) January 1999 Baseline.

The primary objective of the analysis is to determine the farms' economic viability by region and commodity throughout the life of the 1996 Farm Bill.

The AFPC farm level policy simulation model incorporates the historical risk faced by farmers for prices and production. Averages for the simulated values of key output variables are normally presented in AFPC policy analysis reports. This report breaks from that tradition by presenting the results of the January 1999 Baseline in a risk context using selected probabilities and simulated ranges for annual net cash farm income values. The probability of a farm experiencing annual cash flow deficits and the probability of having to refinance cash flow deficits are provided to show the financial risk faced by the representative farms. The probability of a farm losing real net worth is included as an indicator of the equity risk facing farms over the life of the 1996 Farm Bill.

This report is organized into ten sections. The first section summarizes the process used to develop the representative farms and the key assumptions for the farm level analysis. The second section summarizes the FAPRI January 1999 Baseline and the policy and price assumptions used for the representative farm analyses. The third through sixth sections present the results of the simulation analyses for feed grain, wheat, cotton, and rice farms. The seventh through ninth sections summarize simulation results for dairy, cattle and hog farms. Two appendices constitute the final section of the report. Appendix A provides tables to summarize the physical and financial characteristics for each of the representative farms. Appendix B provides the names of producers, land grant faculty, and industry leaders who cooperated in the panel interview process.

Panel Process

AFPC has developed and maintains data to simulate more than 80 representative crop and livestock farms chosen from major production areas across the United States (Figure 1). Characteristics for each of the farms in terms of location, size, crop mix, assets, and average

Figure 1. Representative Farms



receipts are summarized in Appendix A. The location of these farms is primarily the result of discussions with staffers for the House and Senate Agriculture Committees. Information necessary to simulate the economic activity on these representative farms is developed from panels of producers using a consensus building interview process. Normally two farms are developed in each region using separate panels of producers: one is representative of moderate size full-time farm operations, and the second panel usually represents farms two to three times larger.

The data collected from the panel farms are analyzed in a whole farm simulation model (FLIPSIM) developed by AFPC. The producer panels are provided pro-forma financial statements for their representative farm and are asked to verify the accuracy of simulated results for the past year and the reasonableness of a four to five year projection. Each panel must approve of the model's ability to reasonably reflect the economic activity on their representative farm prior to using the farm for policy analyses.

The farms used in the analysis have all been updated with the panels through 1996 and many have been updated in the first quarter of 1999. Representative farms in the whole farm data base that have not been updated in 1996 are not reported in this Working Paper. All of the crop farms are assumed to begin 1996 with 20 percent intermediate- and long-term debt, based on information provided by ERS-USDA and the panel members. Initial debt levels for dairy farms were set at 30 percent; initial debt levels for beef cattle ranches were 1 percent for land and 5 percent for cattle and machinery; and initial debt levels for hog farms were 45 percent.

Key Assumptions

- All farms classified as moderate scale are the size (acres or number of livestock) considered to be representative of a majority of full-time commercial farming operations in the study area. In many regions, a second farm, two to three times larger than the moderate scale farm is developed as an indicator of size economies.
- Dairy, hog, and cattle herd sizes are held constant for all farms over the 1996-2002 planning horizon.
- The farm was structured so government payment limits were not effective at reducing contract payments and loan deficiency payments.
- Minimum family living withdrawals were assumed at a base rate of 10 percent of gross receipts or \$25,000 annually, whichever is lower. Actual family living withdrawals are determined by historical consumption patterns. Therefore, as the farm's profitability increases so does the level of family living withdrawals.
- The farm is subject to owner/operator federal (income and self-employment) and state income taxes as a sole proprietor, based on the current tax provisions.
- No off-farm-related income including family employment was included in the analyses.

- Farm program parameters, average annual prices, crop and livestock yield trends, interest rates, and input cost inflation (deflation) are based on the January 1999 FAPRI Baseline which assumes implementation of the 1996 Farm Bill.
- Contract payments for participating cotton, wheat, feed grain, and rice producers are made based on 85 percent of their historical base acreage times farm program yield times a contract payment rate. The contract payment rate is included in the January 1999 FAPRI Baseline.
- The farms are assumed to be enrolled in the 7 year production flexibility program and take full advantage of the flexibility provisions in the 1996 Farm Bill (within the current crop mix). Crop mix changes after 1996 (1998 if updated) were estimated based on projected net returns for each of the enterprises currently produced on the farms. During the update process most of the crop farm panels indicated that they would flex out of their current crop mix, but only if expected net returns per acre from the change exceeded \$40, due to rotation and/or other cultural concerns.
- Marketing loan provisions for cotton, rice, wheat, feed grains, and soybeans were authorized in the 1996 Farm Bill and are assumed to be in place for the farm level analysis.
- The farm level simulation model incorporates price and yield risk faced by farmers. Historical yield variability for crops and production for livestock (sale weights and milk/cow) over the past ten years are assumed to prevail for the planning horizon. Market prices for crops and feedstuffs are assumed to be more variable than over the past ten years due to the 1996 Farm Bill provisions, based on recent research. The assumed increase in relative price variability is: 82 percent for feed grains, 40 percent for wheat, 26 percent for soybeans, 1 percent for cotton and rice, and 10 percent for livestock. Random prices are appropriately correlated based on historical correlations, among crop and livestock prices, both within year and across years.
- To simulate the historical portion of the planning horizon crop yields were held constant, based on county averages obtained from USDA/NASS for 1996 and 1997. Average yields for 1998 were simulated based on the USDA/NASS state averages or on average yields provided by facilitators. Prices were held constant at USDA/NASS state values for 1996 and 1997. The 1998 prices were stochastic to simulate the effect that the 1998 crops have not been all marketed.
- The 1996 Farm Bill eliminated the dairy assessments after 1996 and provides for a reduction in the milk support price starting in 1997. Each year the dairy support price falls 15 cents per hundred weight until the support price reaches \$9.90 per hundred weight in 1999, after which it is eliminated.
- Market loss assistance payments and disaster provisions passed in late 1998 have been incorporated.
- All farms are assumed to carry MPCl at the 50/100 level.

FAPRI January 1999 Baseline

Projected crop prices for FAPRI's January 1999 Baseline are summarized in Table 1. Projected corn prices decline from the high of \$2.71/bu. in 1996 to a low of \$2.00/bu. in 1999 then increase until they reach \$2.17/bu. in 2002. Wheat prices are projected to decline to \$2.66/bu. by 1998 and then increase through 2002 when wheat prices are projected at \$3.34/bu. Cotton prices will likely decline until 2000 reaching a low of \$0.5309/lb. and then increase slightly to \$0.5796/lb. in 2002. Rice prices are projected to decline from the \$9.96/cwt. level realized in 1996 to \$8.61/cwt. by 1999 and remain below \$8.90/cwt. throughout the remainder of the study period.

Assumed loan rates and projected annual contract (AMTA) payment rates, net of 1995 deficiency repayments in 1996 and 1997, are also summarized in Table 1. The farms growing contract commodities were assumed to have accepted the 1995 advance deficiency payments and had the repayments offset against 1996 contract payments for wheat, barley, oats, and upland cotton and the 1997 contract payments for corn and soybeans. The assumed contract or AMTA payment rates for 1998 reflect the increase for the 1998 market loss assistance payments authorized in 1998.

Projected livestock prices for FAPRI's January 1999 Baseline are summarized in Table 2. Beef cattle prices are projected to increase throughout most of the planning horizon after the drought induced decline in 1998. Actual feeder cattle prices were reported at \$61.31 and \$81.34/cwt. for 1996 and 1997, and then projected to decline to \$77.70/cwt. in 1998. Following this one year adjustment prices are projected to increase gradually to \$91.98/cwt. in 2002. Hog prices decline after 1996 reaching a low of \$31.74/cwt. in 1998 and then recovering to \$43.44/cwt. in 2002. Annual milk prices for the 12 states, where representative dairy farms are located, are summarized in Table 2. U.S. milk prices increased dramatically in 1998 to \$15.39/cwt. but are projected to decrease to the \$13.00 to \$13.20/cwt. range for the 2000 through 2002 period.

Projected annual rates of change for variable cash expenses are presented in Table 3. The rate of change in input prices and interest rates come from FAPRI's January 1999 Baseline which relies on WEFA's macroeconomic projections. Annual interest rates paid for long- and intermediate-term loans and earned for savings are also summarized in Table 3. Assumed annual rates of change in land values over the 1997-2002 period are provided by the FAPRI Baseline (Table 3).

Definitions of Variables in the Summary Tables

- **Annual Change in Real Net Worth, 1996-2002** -- annualized percentage change in the operator's net worth from January 1, 1996 through December 31, 2002, after adjusting for inflation. This value reflects the real annualized increase or decrease in net worth or equity for the farm over the planning horizon including changes in real estate values.
- **Net Income Adjustment (NIA), 1996-2002** -- NIA is the annual increase or decrease in net cash farm income necessary to cause the change in real net worth, including land inflation, to equal zero over the planning horizon. If the change in net worth is negative, the NIA is the annual increase in net income necessary to prevent a loss in total real net worth. NIAs are expressed both as total dollars per year and as a percent of average annual cash receipts.

Table 1. FAPRI January 1999 Baseline Projection of Crop Prices, Loan Rates, and AMTA Payment Rates, 1996-2002.

	1996	1997	1998	1999	2000	2001	2002
Crop Prices							
Corn (\$/bu.)	2.71	2.43	1.94	2.00	2.06	2.10	2.17
Wheat (\$/bu.)	4.30	3.38	2.66	2.98	3.15	3.25	3.34
Cotton (\$/lb.)	0.6930	0.6520	0.6249	0.5448	0.5309	0.5527	0.5796
Sorghum (\$/bu.)	2.34	2.21	1.70	1.86	1.92	1.98	2.05
Soybeans (\$/bu.)	7.35	6.47	5.33	5.08	5.18	5.30	5.39
Barley (\$/bu.)	2.74	2.38	1.96	1.99	2.03	2.06	2.13
Oats (\$/bu.)	1.96	1.60	1.07	1.12	1.22	1.27	1.31
Rice (\$/cwt.)	9.96	9.64	9.00	8.61	8.67	8.79	8.85
Soybean Meal (\$/ton)	259.50	175.10	134.70	132.10	138.10	144.40	150.50
All Hay (\$/ton)	95.80	102.50	86.20	83.90	83.90	84.00	84.30
Loan Rates							
Corn (\$/bu.)	1.89	1.89	1.89	1.89	1.89	1.75	1.66
Wheat (\$/bu.)	2.58	2.58	2.58	2.58	2.58	2.43	2.39
Cotton (\$/lb.)	0.5192	0.5192	0.5192	0.5192	0.5192	0.5162	0.5000
Sorghum (\$/bu.)	1.81	1.76	1.74	1.74	1.74	1.61	1.53
Soybeans (\$/bu.)	4.97	5.26	5.26	5.26	5.25	4.92	4.92
Barley (\$/bu.)	1.55	1.57	1.56	1.56	1.56	1.44	1.37
Oats (\$/bu.)	1.03	1.11	1.11	1.11	1.11	1.03	0.97
Rice (\$/cwt.)	6.50	6.50	6.50	6.50	6.50	6.50	6.50
AMTA Payment Rates							
Corn (\$/bu.)	0.2510	0.4860	0.5612	0.3630	0.3310	0.2665	0.2587
Wheat (\$/bu.)	0.8740	0.6310	0.9869	0.6370	0.5804	0.4678	0.4542
Cotton (\$/lb.)	0.0888	0.0763	0.1221	0.0788	0.0708	0.0571	0.0554
Sorghum (\$/bu.)	0.3230	0.5440	0.6728	0.4350	0.3973	0.3202	0.3109
Barley (\$/bu.)	0.3320	0.2770	0.4227	0.2710	0.2477	0.1998	0.1941
Oats (\$/bu.)	0.0330	0.0310	0.0461	0.0300	0.0257	0.0207	0.0201
Rice (\$/cwt.)	2.7660	2.7100	4.3465	2.8200	2.6027	2.1051	2.0444

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia and Iowa State University.

Table 2. FAPRI January 1999 Baseline Projection of Livestock and Milk Prices, 1996-2002.

	1996	1997	1998	1999	2000	2001	2002
Cattle Prices							
Feeder Cattle (\$/cwt)	61.31	81.34	77.70	82.59	85.45	88.60	91.98
Fat Cattle (\$/cwt)	65.05	66.32	61.48	65.71	69.30	72.78	75.52
Culled Cows (\$/cwt)	30.33	34.27	36.19	38.59	40.37	41.98	43.09
Hog Prices							
Barrows/Gilts (\$/cwt)	53.39	51.36	31.74	35.41	42.49	44.47	43.44
Culled Sows (\$/cwt)	44.61	44.51	24.28	28.02	33.05	34.14	33.89
Milk Prices -- National and State							
All Milk Price (\$/cwt)	14.79	13.34	15.39	13.47	13.11	13.08	13.14
California (\$/cwt)	13.66	12.62	14.99	13.04	12.82	12.82	12.89
Florida (\$/cwt)	18.00	16.50	18.18	16.23	15.99	16.00	16.07
Georgia (\$/cwt)	16.30	14.70	16.43	14.48	14.23	14.22	14.29
Idaho (\$/cwt)	13.90	12.30	14.52	12.54	11.96	11.86	11.92
Michigan (\$/cwt)	15.00	13.60	15.38	13.43	13.18	13.17	13.24
Missouri (\$/cwt)	15.10	13.70	15.45	13.50	13.21	13.20	13.27
New Mexico (\$/cwt)	13.80	12.90	14.60	12.63	12.14	12.07	12.13
New York (\$/cwt)	14.90	13.40	15.32	13.36	13.01	12.98	13.05
Texas (\$/cwt)	15.10	13.70	15.66	13.70	13.36	13.33	13.39
Vermont (\$/cwt)	15.30	14.30	16.07	15.03	13.89	13.87	13.94
Washington (\$/cwt)	14.50	13.20	15.45	13.47	12.90	12.80	12.86
Wisconsin (\$/cwt)	14.75	13.33	15.54	13.58	13.28	13.26	13.33

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia and Iowa State University.

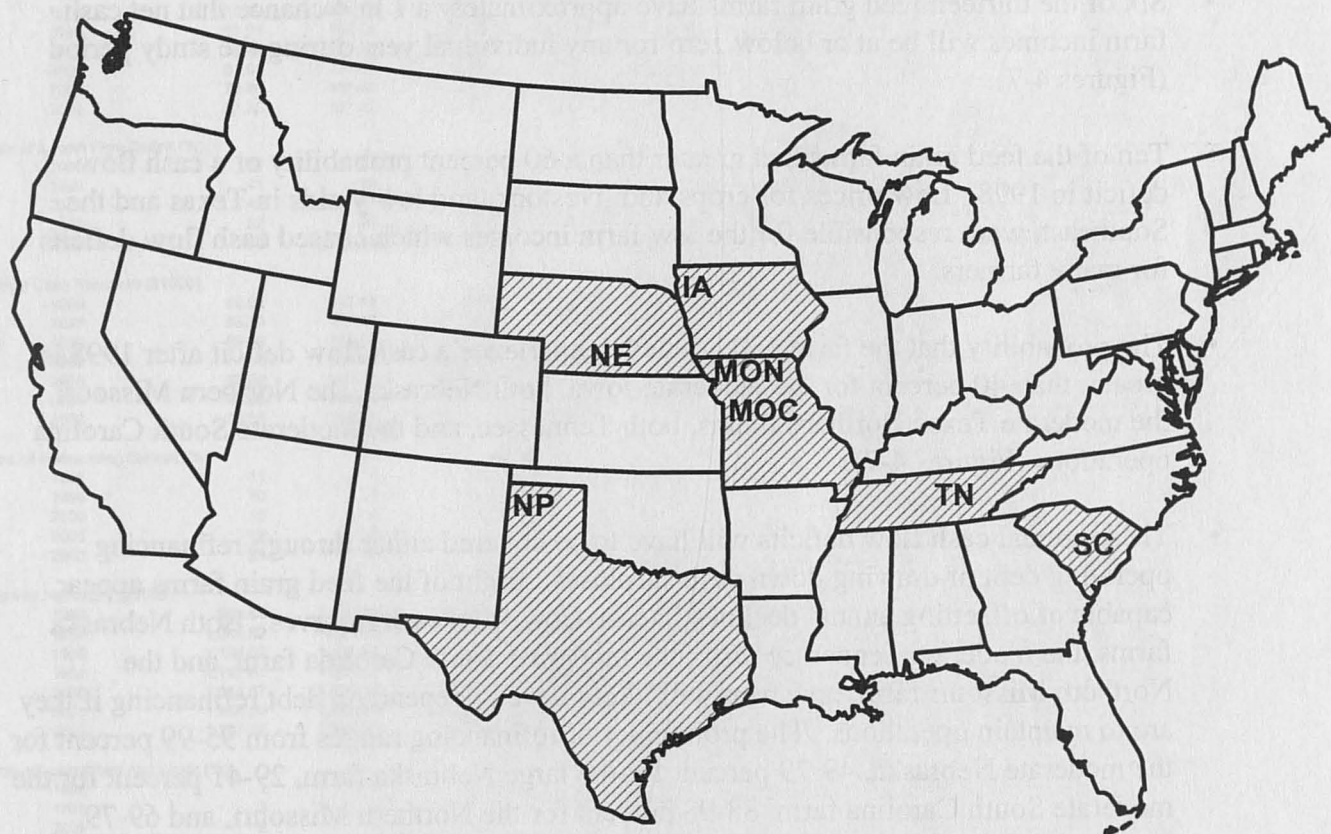
Table 3. FAPRI January 1999 Baseline Assumed Rates of Change in Input Prices, Annual Interest Rates, and Annual Changes in Land Values, 1997-2002.

	1997	1998	1999	2000	2001	2002
Annual Rate of Change for Input Prices Paid						
Seed Prices (%)	7.73	-0.64	0.02	1.78	1.77	1.54
Fertilizer Prices (%)	-1.74	-3.17	-1.31	1.49	2.24	1.23
Chemical Prices (%)	-2.01	0.83	-1.36	0.77	1.73	2.12
Machinery Prices (%)	2.50	-1.60	-2.50	1.08	0.50	0.24
Fuel and Lube Prices (%)	0.49	-10.09	-2.25	2.08	3.23	1.66
Labor (%)	8.30	2.46	4.25	4.59	5.56	4.74
Other Input Prices (%)	-0.06	-1.85	0.84	1.68	1.82	1.90
Non-Feed Dairy Costs (%)	4.04	-1.24	0.92	0.68	0.99	0.83
Non-Feed Beef Costs (%)	3.66	-1.17	0.32	1.81	2.08	-27.63
Non-Feed Hog Costs (%)	-0.89	-3.30	-0.37	2.52	2.89	2.34
Annual Change in Consumer Price Index (%)	1.66	2.26	2.38	2.37	2.39	2.40
Annual Interest Rates						
Long-Term (%)	7.69	7.17	7.42	7.62	7.61	7.66
Intermediate-Term (%)	8.44	8.50	8.62	8.58	8.49	8.50
Savings Account (%)	4.44	4.50	4.62	4.58	4.49	4.50
Annual Rate of Change for U.S. Land Prices (%)	6.18	5.82	3.19	2.43	2.35	1.22

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia and Iowa State University.

- **Cost to Receipts Ratio, 1996-2002** -- average ratio of total cash expenses to total receipts (from all sources). Cash expenses include interest costs, fixed cash costs, and variable costs but exclude principal payments, depreciation, income taxes, and family living expenses. Total receipts include crop and livestock receipts plus government payments and insurance indemnities.
- **Government Payments/Receipts, 1996-2002** -- sum of all farm program payments (AMTA and marketing loan deficiency payments) divided by total receipts received from the market plus contract payments, marketing loans, crop insurance indemnities, and other farm related income.
- **Total Cash Receipts** -- sum of cash receipts from all sources, including market sales, AMTA (or contract) payments, CCC loans, marketing loan deficiency payments, crop insurance indemnities, and other farm related income. The values in the tables are the average total receipts for each year in the planning horizon.
- **Net Cash Farm Income** -- equals total cash receipts minus all cash expenses. Net cash farm income is used to pay family living expenses, principal payments, income taxes, self employment taxes, and machinery replacement costs. The values in the tables are the averages for each year in the planning horizon.
- **Probability of a Cash Flow Deficit** -- is the number of times out of 100 that the farm's annual net cash farm income does not exceed cash requirements for family living, principal payments, taxes (income and self-employment), and actual machinery replacement expenses (not depreciation). This probability is reported for each year of the planning horizon to indicate whether the cash flow risk for a farm increases or decreases over the planning horizon.
- **Ending Cash Reserves** -- equals total cash on hand at the end of the year. Ending cash equals beginning cash reserves plus net cash farm income and interest earned on cash reserves less principal payments, federal taxes (income and self employment), state income taxes, family living withdrawals, and actual machinery replacement costs (not depreciation).
- **Probability of Refinancing Deficits** -- is the number of times out of 100 that cash flow deficits are greater than available cash reserves. This probability is reported for each year of the planning horizon to indicate whether the financial risk for a farm increases or decreases over the planning horizon.
- **Nominal Net Worth** -- equity at the end of each year equals total assets including land minus total debt from all sources. Net worth is not adjusted for inflation and averages are reported for each year in the planning horizon.
- **Probability of Losing Real Net Worth** -- is the number of times out of 100 that real net worth is less than the initial net worth for the farm. The probability is reported for each year of the planning horizon to indicate whether the equity risk is increasing or decreasing from year to year.

FIGURE 2. REPRESENTATIVE FARMS PRODUCING FEED GRAINS



Feed Grain Farm Impacts

- Eleven of the thirteen feed grain farms are projected to increase real net worth over the 1996-2002 study period. Annual average changes in net worth, after adjusting for inflation, range from -2 percent on the Nebraska farm (NEG800) to more than 7 percent for the large Texas Northern High Plains operation (Figure 3). Six of the thirteen feed grain farms had projected annualized increases in real net worth of more than four percent.
- In all regions where AFPC monitors both a moderate and large scale operation, the larger operations are more financially sound than their moderate scale counterparts (Tables 4-5 and Figures 3-7).
- While only the moderate Nebraska and Tennessee farms appear to be struggling based on their ability to maintain net worth over the study period, there are some warning flags from an operational perspective for at least six other farms.
 - Six of the thirteen feed grain farms have approximately a 1 in 4 chance that net cash farm incomes will be at or below zero for any individual year during the study period (Figures 4-7).
 - Ten of the feed grain farms had greater than a 60 percent probability of a cash flow deficit in 1998. Low prices for crops and livestock, and low yields in Texas and the Southeast, were responsible for the low farm incomes which caused cash flow deficits for many farmers.
 - The probability that the farm will annually experience a cash flow deficit after 1998 is greater than 40 percent for the moderate Iowa, both Nebraska, the Northern Missouri, the moderate Texas Northern Plains, both Tennessee, and the moderate South Carolina operations (Figures 4-7).
 - These annual cash flow deficits will have to be covered either through refinancing operating debt or drawing down cash surpluses. Eight of the feed grain farms appear capable of offsetting annual declines in cash flow from cash reserves. Both Nebraska farms, the moderate Tennessee farm, the moderate South Carolina farm, and the Northern Missouri farm, however, will likely have to depend on debt refinancing if they are to maintain operations. The probability of refinancing ranges from 95-99 percent for the moderate Nebraska, 49-79 percent for the large Nebraska farm, 29-41 percent for the moderate South Carolina farm, 88-93 percent for the Northern Missouri, and 69-79 percent for the moderate Tennessee. On all five farms the average cash expense to receipts ratio exceeded 85 percent. Past experience suggests that expense to receipt ratios exceeding 85 percent will likely lead to operational cash flow problems for most crop dependent farms.

Table 4. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Feed Grains.

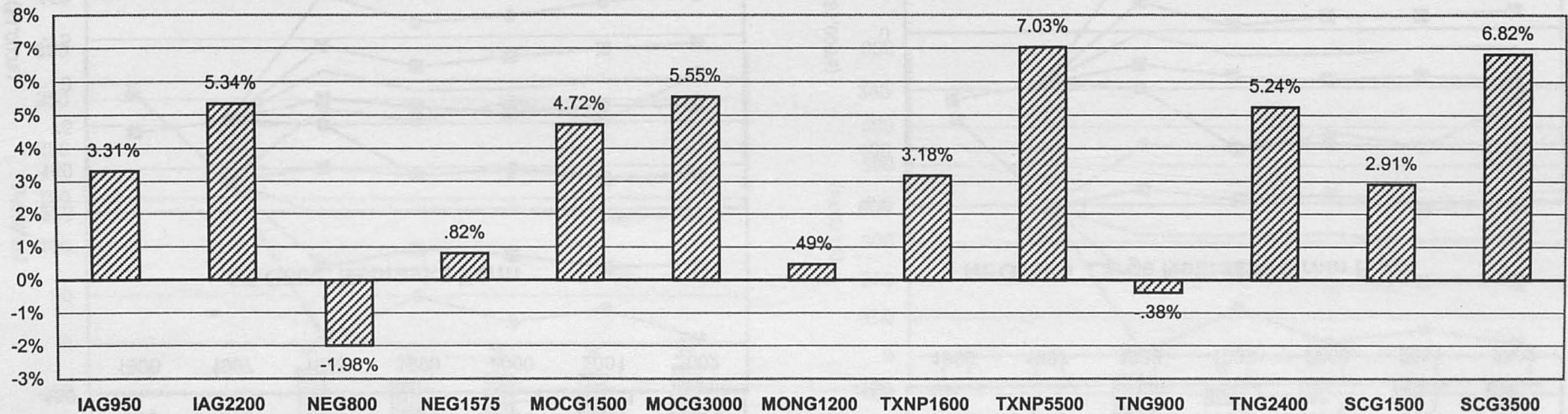
	IAG950	IAG2200	NEG800	NEG1575	MOCG1500	MOCG3000	MONG1200
Annual Change Real Net Worth (%)							
1996-2002 Average	3.31	5.34	-1.98	0.82	4.72	5.55	0.49
Net Income Adjustment (NIA)							
1996-2002 (\$1,000)	-42.43	-98.49	24.98	-20.97	-99.68	-262.76	-5.93
Net Income Adjustment (NIA)							
1996-2002 (% Receipts)	-15.00	-19.25	7.24	-3.10	-29.87	-34.13	-1.39
Cost to Receipts Ratio (%)							
1996-2002 Average	71.41	65.41	98.12	91.05	57.08	54.88	87.08
Govt Payments/Receipts (%)							
1996-2002 Average	10.44	12.26	12.28	13.20	8.46	8.39	4.16
Total Cash Receipts (\$1000)							
1996	347.03	621.18	389.37	817.35	454.02	1,038.13	465.26
1997	305.70	555.43	371.65	755.55	356.87	792.65	472.60
1998	252.93	464.70	289.20	579.21	314.62	705.68	348.64
1999	265.41	481.11	333.34	669.98	316.77	705.61	401.48
2000	270.49	489.20	341.22	681.65	321.50	715.92	426.66
2001	268.14	483.29	341.02	678.36	316.75	705.57	434.65
2002	270.52	487.25	347.82	690.31	325.84	726.31	435.03
Net Cash Farm Income (\$1000)							
1996	151.36	290.79	87.00	234.27	256.33	619.51	100.87
1997	113.32	234.70	66.14	175.22	166.96	390.85	110.13
1998	66.61	154.15	-18.76	5.37	133.29	317.01	1.94
1999	79.21	170.51	16.90	85.74	136.46	318.46	51.86
2000	81.01	175.31	15.25	86.99	139.52	321.76	65.88
2001	75.86	166.63	3.67	67.59	129.67	302.71	65.66
2002	77.30	167.42	1.81	66.18	133.42	318.65	55.46
Prob. of a Cash Flow Deficit (%)							
1998	61	43	96	90	34	27	95
1999	41	29	96	81	16	6	92
2000	42	27	97	81	26	22	89
2001	52	31	96	84	26	22	91
2002	60	34	99	84	38	22	94
Ending Cash Reserves (\$1000)							
1996	62.64	113.87	16.94	80.05	114.08	281.11	10.22
1997	83.39	177.60	2.06	101.06	159.49	397.97	26.48
1998	68.89	185.01	-84.05	-30.52	180.19	478.50	-56.12
1999	74.14	221.44	-141.42	-84.89	222.58	595.66	-74.80
2000	83.99	261.51	-196.61	-130.79	259.64	702.60	-97.45
2001	86.66	298.98	-270.18	-203.84	296.54	797.00	-128.32
2002	78.36	329.63	-338.43	-264.31	325.83	901.56	-169.58
Prob. of Refinancing Deficits (%)							
1998	11	1	96	49	1	1	88
1999	10	3	95	61	1	1	89
2000	15	2	96	66	1	1	88
2001	19	3	96	79	1	1	91
2002	21	4	99	79	1	1	93
Nominal Net Worth (\$1000)							
1996	954.89	1,180.23	1,050.92	2,222.85	1,438.31	2,799.21	1,267.35
1997	1,044.82	1,326.06	1,115.83	2,397.53	1,585.49	3,106.85	1,380.69
1998	1,104.02	1,417.45	1,098.15	2,438.68	1,715.60	3,388.90	1,349.98
1999	1,157.81	1,501.12	1,097.65	2,511.81	1,819.31	3,613.61	1,395.24
2000	1,214.57	1,603.86	1,088.15	2,562.02	1,916.36	3,821.23	1,437.36
2001	1,258.99	1,685.66	1,064.83	2,602.81	2,019.02	4,025.99	1,479.00
2002	1,287.67	1,754.68	1,040.32	2,616.28	2,096.95	4,214.81	1,486.35
Prob. of Losing Real Net Worth (%)							
1998	1	1	41	18	1	1	26
1999	3	2	53	21	1	1	26
2000	2	1	66	23	1	1	25
2001	4	1	78	28	1	1	31
2002	5	2	79	36	1	1	36
Real Net Worth (\$1000)							
1996	935.25	1,155.96	1,029.30	2,177.13	1,408.72	2,741.63	1,241.29
1997	1,008.61	1,280.09	1,077.15	2,314.42	1,530.53	2,999.16	1,332.83
1998	1,042.20	1,338.07	1,036.65	2,302.11	1,619.53	3,199.13	1,274.38
1999	1,067.59	1,384.15	1,012.12	2,316.09	1,677.54	3,332.03	1,286.52
2000	1,094.01	1,444.66	980.13	2,307.71	1,726.13	3,441.93	1,294.68
2001	1,107.50	1,482.83	936.70	2,289.63	1,776.08	3,541.56	1,301.04
2002	1,106.18	1,507.37	893.69	2,247.54	1,801.40	3,620.77	1,276.86

Table 5. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Feed Grains.

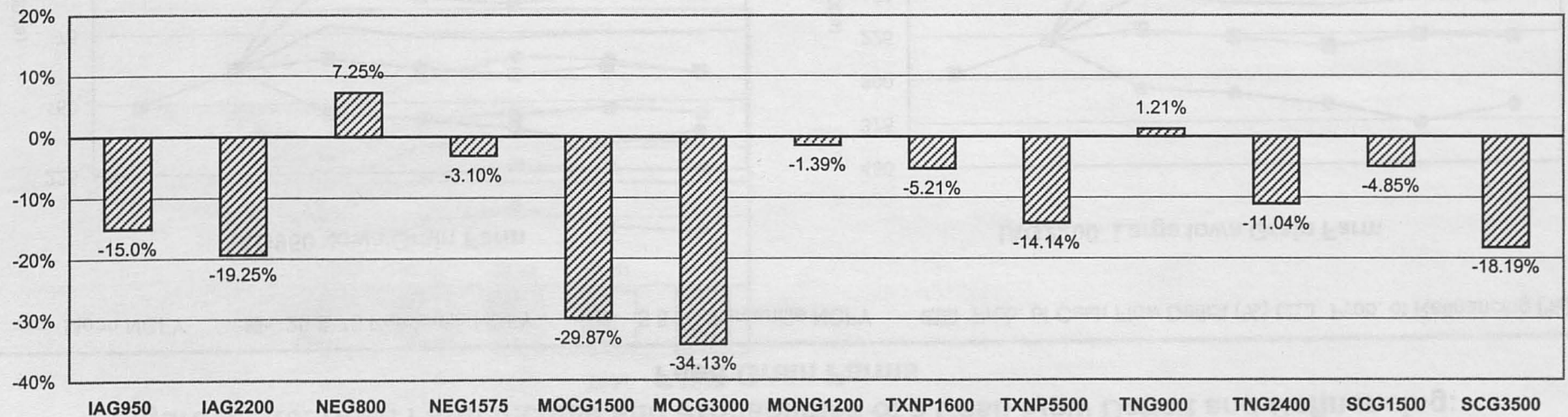
	TXNP1600	TXNP5500	TNG900	TNG2400	SCG1500	SCG3500
Annual Change Real Net Worth (%)						
1996-2002 Average	3.18	7.03	-0.38	5.24	2.91	6.82
Net Income Adjustment (NIA)						
1996-2002 (\$1,000)	-16.96	-169.58	3.25	-77.51	-24.90	-248.53
Net Income Adjustment (NIA)						
1996-2002 (% Receipts)	-5.21	-14.14	1.21	-11.04	-4.85	-18.19
Cost to Receipts Ratio (%)						
1996-2002 Average	79.95	74.23	91.90	80.84	86.30	73.10
Govt Payments/Receipts (%)						
1996-2002 Average	14.71	12.92	6.14	9.20	10.61	9.19
Total Cash Receipts (\$1000)						
1996	396.33	1,494.88	323.59	878.57	618.46	1,640.75
1997	347.16	1,299.15	301.13	757.86	591.19	1,562.32
1998	255.24	933.90	217.87	543.77	318.70	871.74
1999	314.74	1,175.17	266.71	674.89	529.23	1,388.05
2000	320.71	1,193.57	268.67	679.31	507.66	1,343.79
2001	316.64	1,184.94	272.64	676.07	509.76	1,360.81
2002	326.54	1,220.63	277.17	704.40	522.97	1,396.59
Net Cash Farm Income (\$1000)						
1996	137.64	601.34	87.34	343.75	208.09	688.70
1997	103.72	440.98	64.95	232.20	181.11	621.23
1998	6.51	68.26	-16.60	18.61	-67.58	-42.03
1999	73.87	341.74	27.72	146.08	113.77	448.71
2000	75.63	350.78	26.97	141.18	87.41	399.86
2001	66.90	335.17	25.70	129.37	80.11	407.87
2002	70.55	360.38	22.38	146.79	80.65	437.21
Prob. of a Cash Flow Deficit (%)						
1998	88	90	93	82	99	97
1999	39	20	78	25	40	16
2000	52	35	81	41	61	33
2001	68	28	88	60	65	29
2002	56	38	87	58	68	27
Ending Cash Reserves (\$1000)						
1996	72.92	274.28	33.17	197.92	94.29	329.49
1997	113.29	401.81	41.80	299.91	159.68	580.32
1998	61.08	201.80	-26.71	202.26	25.03	351.20
1999	80.48	331.38	-34.07	277.40	59.84	559.36
2000	89.83	430.55	-50.48	309.13	60.08	667.68
2001	81.07	534.38	-72.78	294.09	42.75	780.72
2002	77.95	624.99	-103.79	279.49	19.07	910.42
Prob. of Refinancing Deficits (%)						
1998	12	17	72	5	33	1
1999	10	7	69	5	29	1
2000	11	4	74	6	32	1
2001	15	2	77	12	35	1
2002	20	6	79	18	41	1
Nominal Net Worth (\$1000)						
1996	480.66	1,795.34	577.03	1,364.14	775.27	2,455.86
1997	532.69	2,027.89	626.64	1,531.08	886.68	2,853.27
1998	503.05	1,972.99	591.54	1,503.22	798.05	2,789.22
1999	537.06	2,174.34	598.13	1,607.30	874.66	3,135.64
2000	562.67	2,361.77	596.88	1,676.46	909.40	3,351.25
2001	578.29	2,552.04	590.99	1,725.84	929.67	3,596.59
2002	587.59	2,708.61	572.52	1,774.07	944.30	3,843.70
Prob. of Losing Real Net Worth (%)						
1998	44	26	51	24	61	1
1999	33	11	58	15	31	1
2000	25	5	63	16	31	1
2001	30	2	66	22	32	1
2002	30	4	75	25	35	1
Real Net Worth (\$1000)						
1996	470.78	1,758.41	565.16	1,336.08	759.32	2,405.35
1997	514.22	1,957.59	604.92	1,478.00	855.94	2,754.36
1998	474.88	1,862.51	558.41	1,419.05	753.36	2,633.02
1999	495.21	2,004.91	551.53	1,482.06	806.51	2,891.31
2000	506.82	2,127.33	537.63	1,510.05	819.13	3,018.60
2001	508.71	2,244.96	519.88	1,518.18	817.81	3,163.83
2002	504.77	2,326.85	491.83	1,524.03	811.21	3,301.96

Figure 3. Feed Grain Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



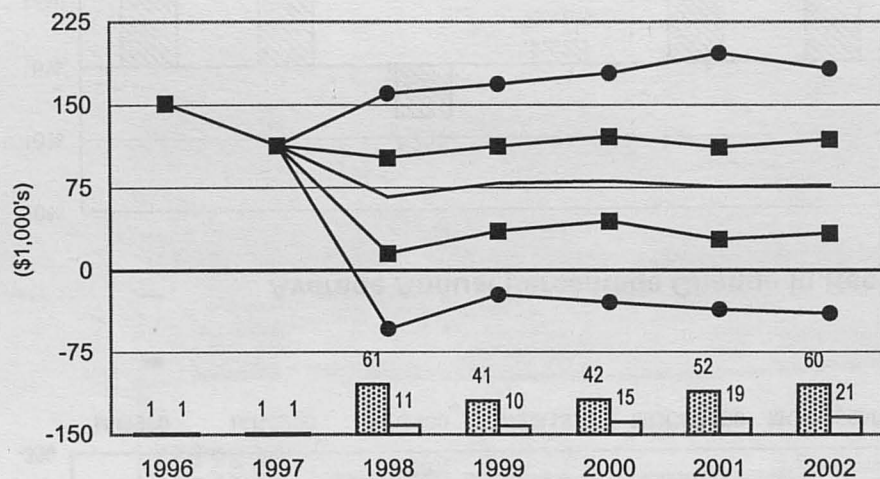
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



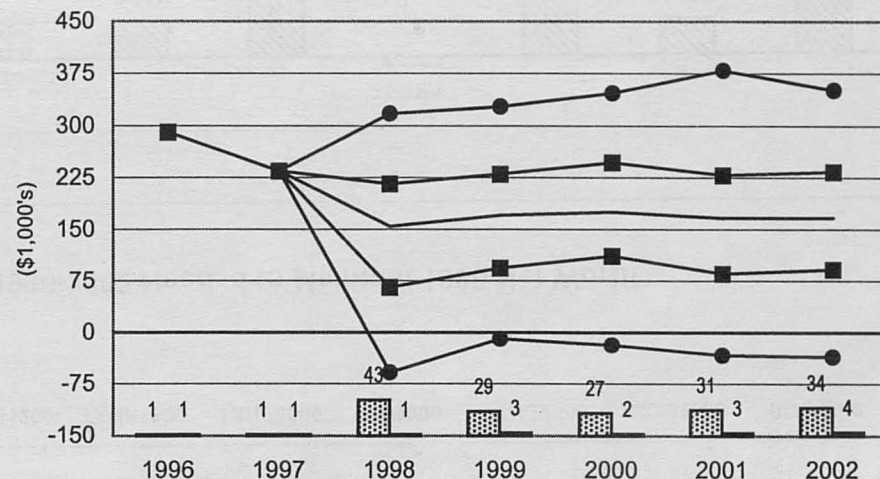
**Figure 4. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Feed Grain Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

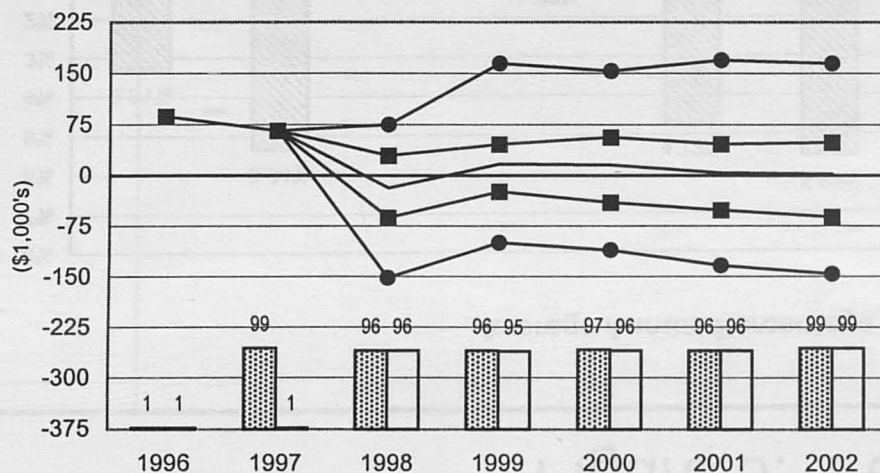
IAG950 Iowa Grain Farm



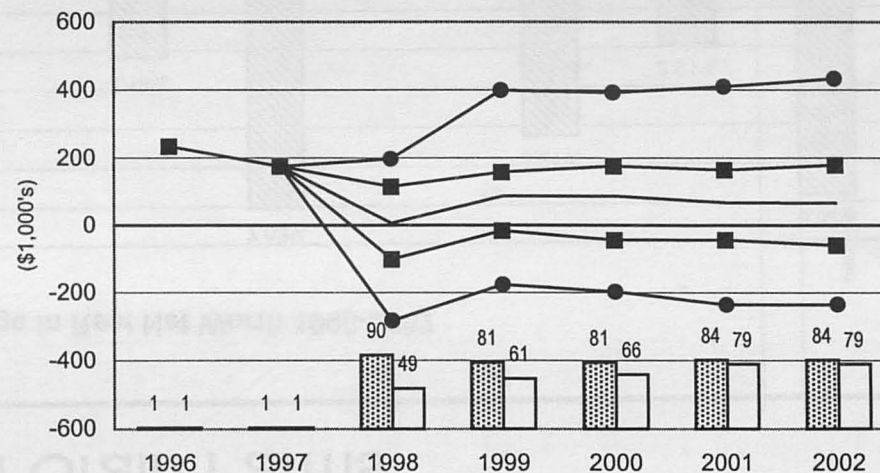
IAG2200 Large Iowa Grain Farm



NEG800 Nebraska Farm



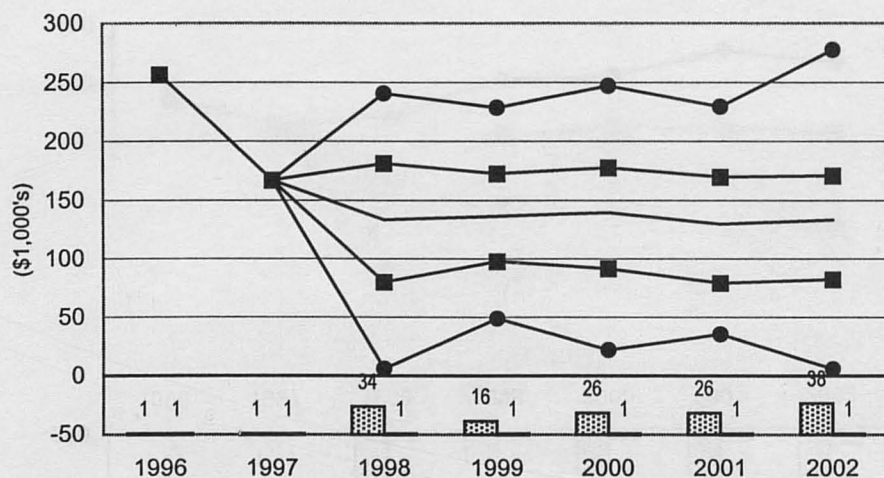
NEG1575 Large Nebraska Grain Farm



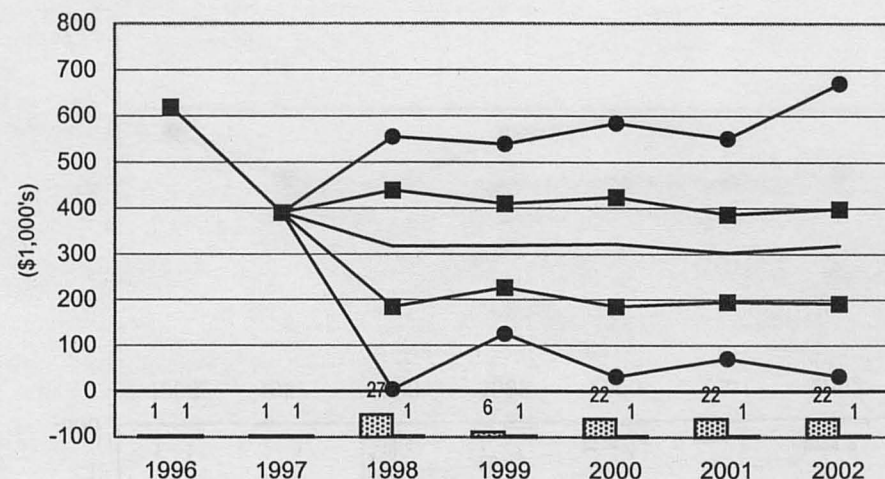
**Figure 5. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Feed Grain Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

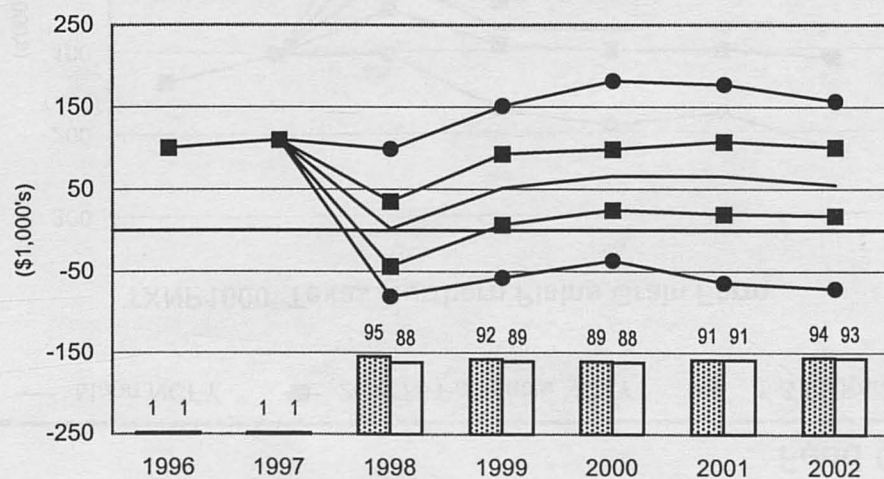
MOCG1500 Central Missouri Grain Farm



MOCG3000 Large Central Missouri Grain Farm



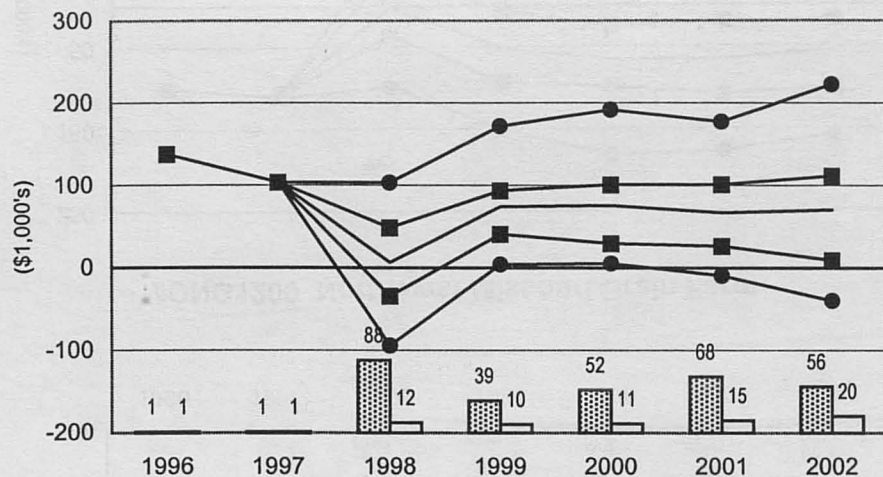
MONG1200 Northwest Missouri Grain Farm



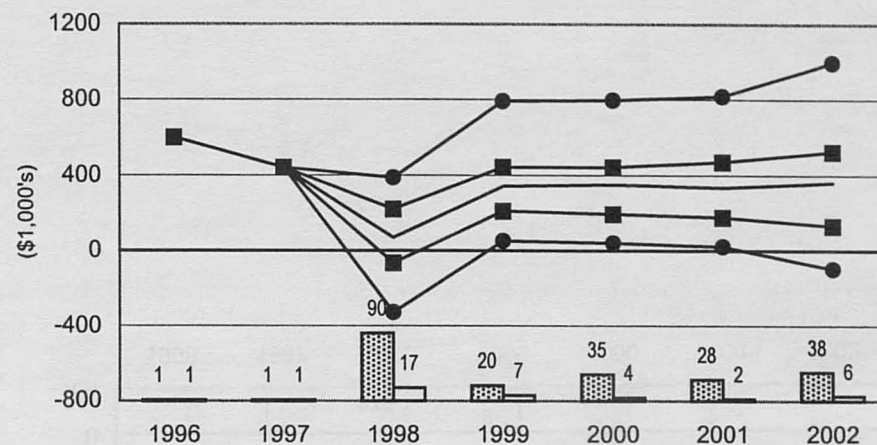
**Figure 6. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Feed Grain Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

TXNP1600 Texas Northern Plains Grain Farm



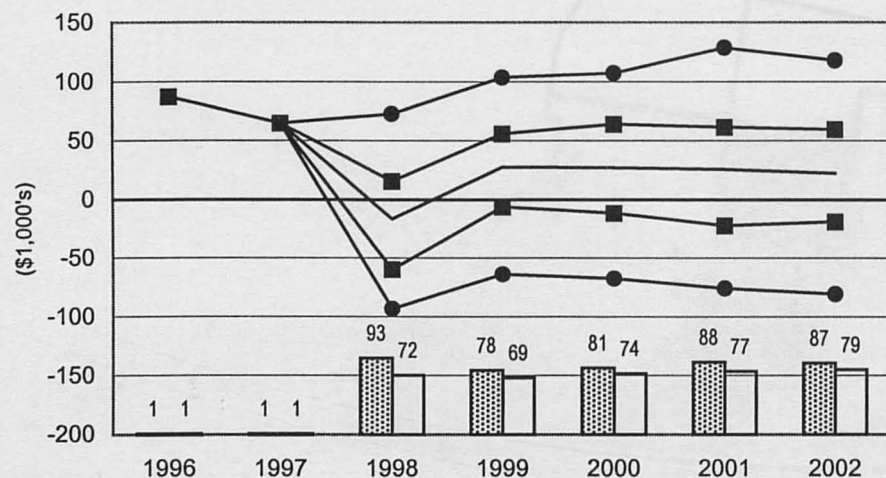
TXNP5500 Large Texas Northern Plains Grain Farm



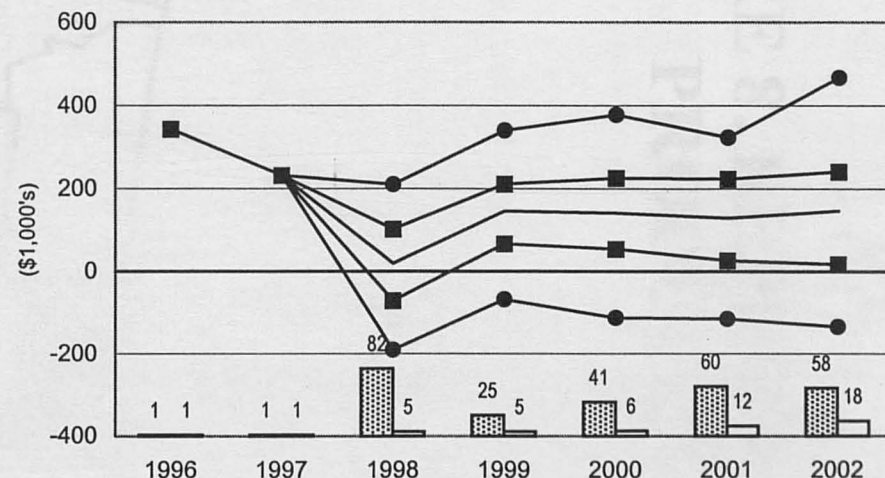
**Figure 7. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Feed Grain Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

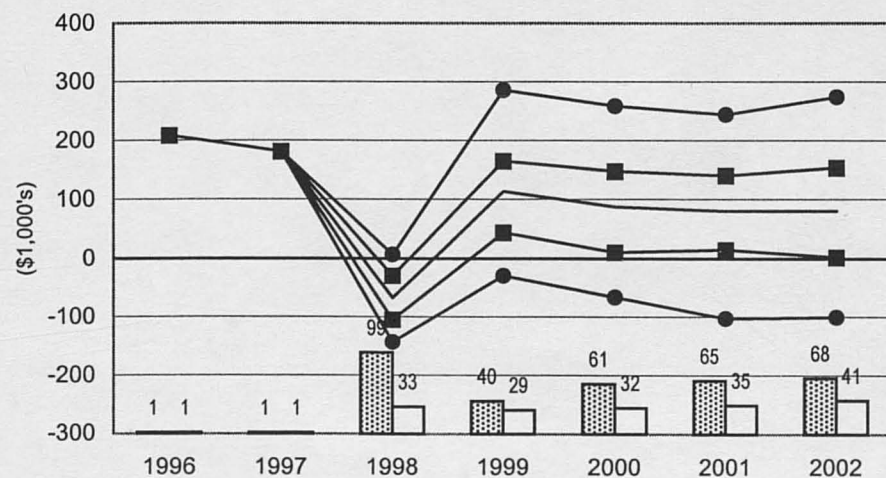
TNG900 Tennessee Grain Farm



TNG2400 Large Tennessee Grain Farm



SCG1500 South Carolina Grain Farm



SCG3500 Large South Carolina Grain Farm

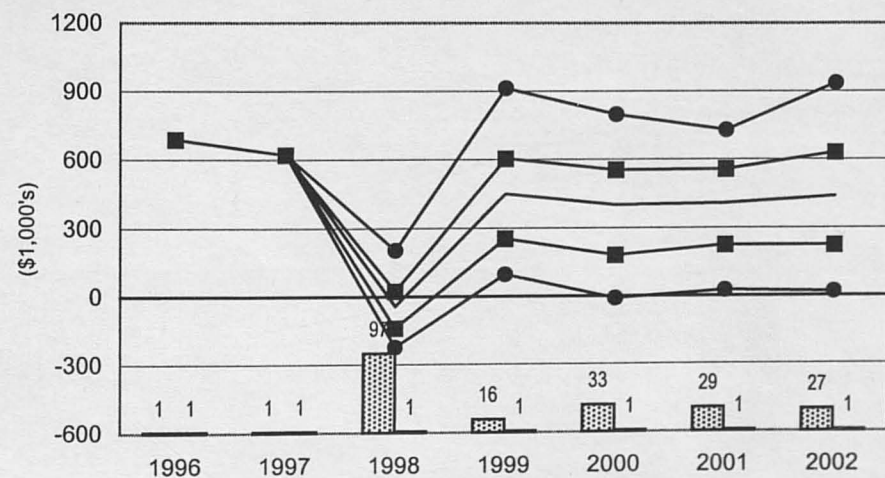
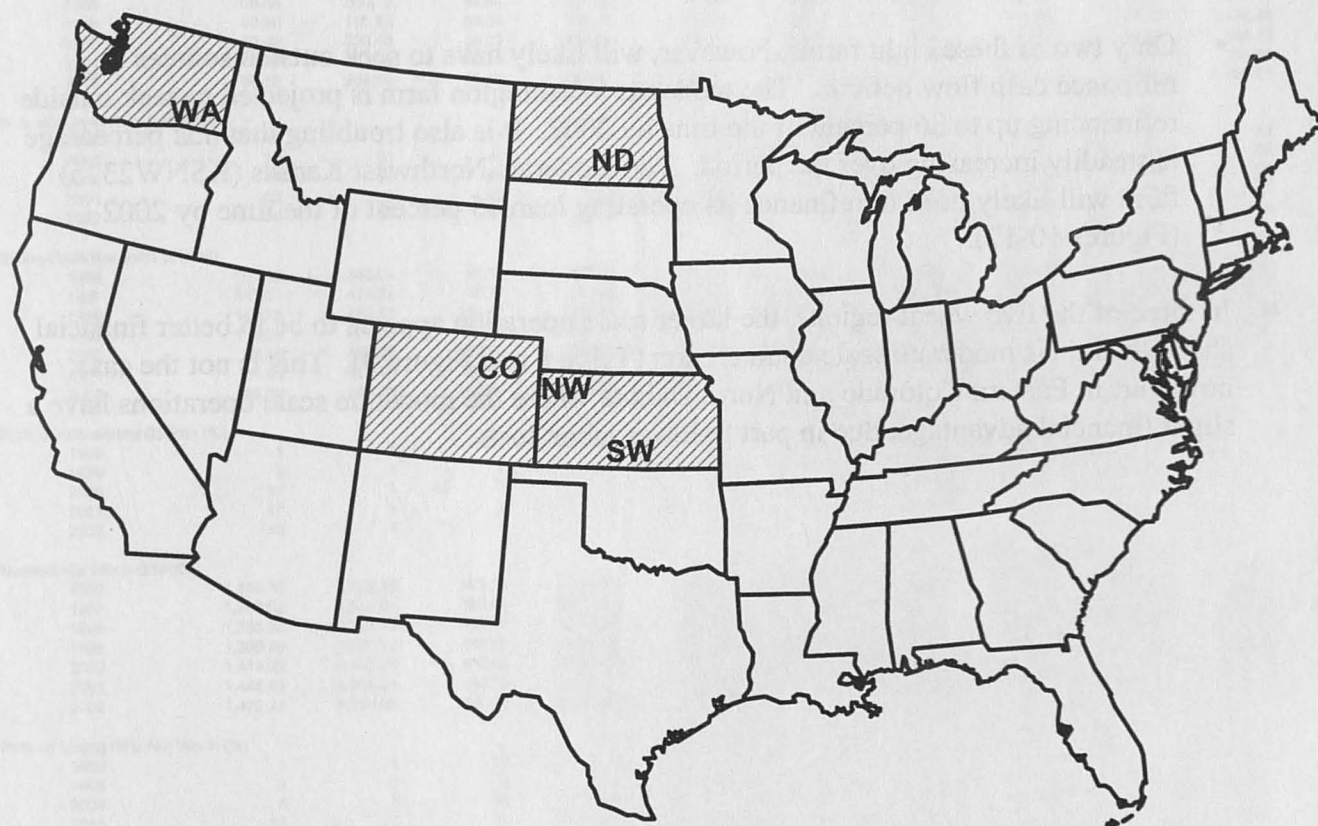


FIGURE 8. REPRESENTATIVE FARMS PRODUCING WHEAT



Wheat Farm Impacts

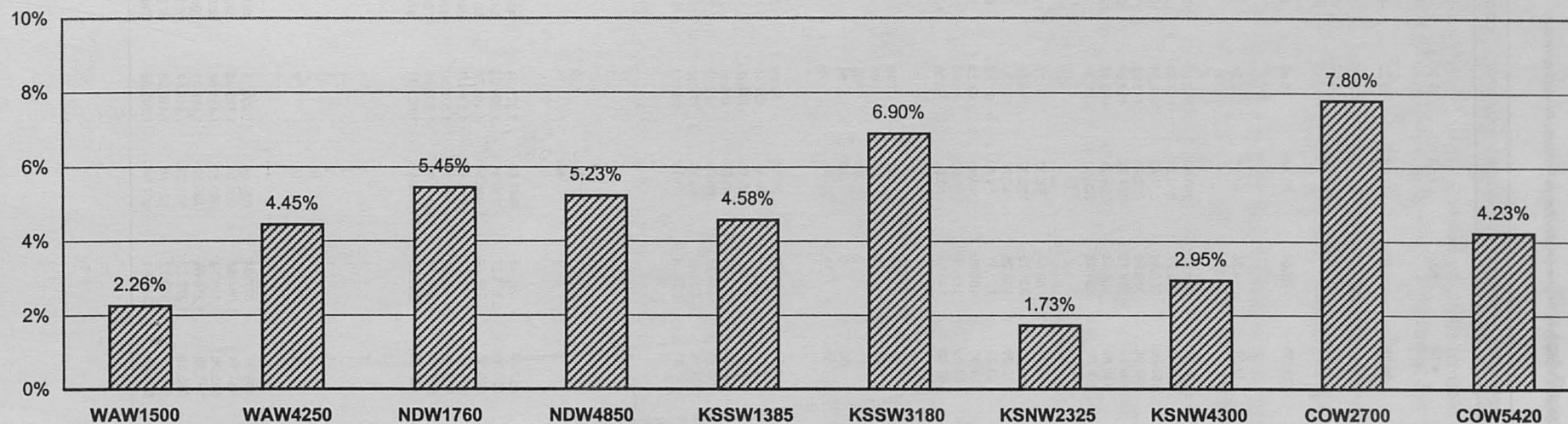
- All ten wheat farms experience annual growth in real net worth over the 1996-2002 study period (Figure 9). The annual growth in real net worth ranges from 1.7 percent for the Northwest Kansas farm to over 7 percent for the moderate Colorado farm.
- While the wheat farms appear sound based on their ability to maintain real net worth, there are warning signs from an operational perspective.
 - Six of the ten farms, both Washington, both North Dakota, and both Northwest Kansas farms have a greater than 5 percent chance of experiencing negative net cash farm incomes in any individual year for most of the study period (Figures 10-12).
 - Seven of the farms, WAW1500, WAW4250, NDW1760, NDW4850, KSSW1385, KSNW2325, and KSNW4300, have greater than a 40 percent probability of experiencing an annual cash flow deficit in any individual year (Table 6 and Figures 10-12).
 - Only two of these eight farms, however, will likely have to seek outside sources to refinance cash flow deficits. The moderate Washington farm is projected to seek outside refinancing up to 36 percent of the time by 2002. It is also troubling that this percentage is steadily increasing over the period. The moderate Northwest Kansas (KSNW2325) farm will likely need to refinance its operating loan 45 percent of the time by 2002 (Figures 10-12).
- In three of the five wheat regions, the larger scale operation appears to be in better financial shape than their moderate scale counterparts (Table 6 and Figure 9). This is not the case, however, in Eastern Colorado and North Dakota where the moderate scale operations have a slight financial advantage, due in part to lower labor costs.

Table 6. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Wheat.

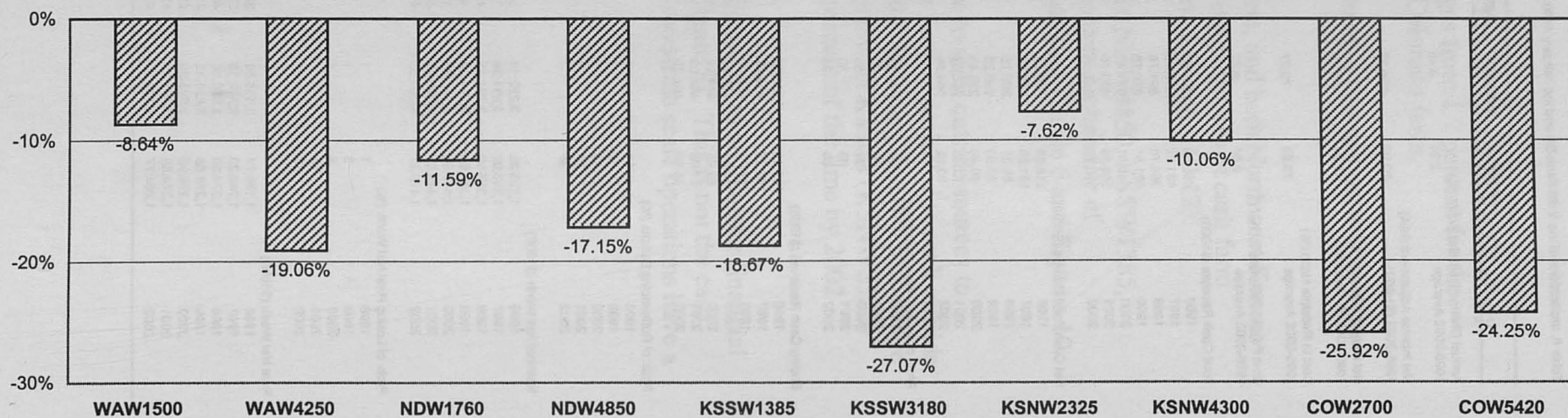
	WAW1500	WAW4250	NDW1760	NDW4850	KSSW1385	KSSW3180	KSNW2325	KSNW4300	COW2700	COW5420
Annual Change Real Net Worth (%)										
1996-2002 Average	2.26	4.45	5.45	5.23	4.58	6.90	1.73	2.95	7.80	4.23
Net Income Adjustment (NIA)										
1996-2002 (\$1,000)	-33.00	-195.13	-28.44	-132.71	-29.70	-106.97	-17.80	-51.22	-52.90	-99.27
Net Income Adjustment (NIA)										
1996-2002 (% Receipts)	-8.64	-19.06	-11.59	-17.15	-18.67	-27.07	-7.62	-10.06	-25.92	-24.25
Cost to Receipts Ratio (%)										
1996-2002 Average	75.88	70.27	70.13	69.60	56.36	55.54	73.44	78.68	58.31	63.23
Govt Payments/Receipts (%)										
1996-2002 Average	9.64	9.22	9.67	8.76	17.37	14.25	12.11	12.24	12.13	11.14
Total Cash Receipts (\$1000)										
1996	488.68	1,466.82	299.23	861.94	131.84	304.03	260.30	512.80	222.36	367.51
1997	431.02	1,056.65	213.40	792.09	244.64	538.27	276.21	567.55	172.59	339.30
1998	364.75	991.76	261.11	769.85	158.96	380.84	322.43	585.91	188.51	357.77
1999	331.61	868.58	233.22	748.67	144.06	380.05	227.43	473.25	217.51	441.29
2000	346.91	911.40	235.00	743.02	144.29	386.19	224.24	472.81	220.20	449.24
2001	350.89	923.70	235.40	754.85	143.86	385.54	221.91	475.48	221.97	450.84
2002	360.26	947.83	240.84	773.28	146.00	391.45	229.10	487.20	228.26	459.73
Net Cash Farm Income (\$1000)										
1996	216.08	800.74	139.56	338.48	48.73	89.64	88.33	150.77	117.50	164.42
1997	151.28	386.00	55.16	270.06	154.50	321.70	102.37	186.74	65.98	121.08
1998	89.85	300.75	94.44	247.38	75.38	180.26	147.74	192.70	75.19	115.11
1999	60.90	190.23	68.34	235.77	63.29	180.11	54.80	91.52	95.72	176.44
2000	70.40	233.43	69.33	231.96	61.30	184.85	49.48	83.23	94.91	182.16
2001	72.30	244.52	68.10	243.24	60.05	177.29	45.95	76.99	97.37	181.59
2002	80.52	264.96	72.96	257.74	62.03	180.37	50.04	82.58	104.45	189.91
Prob. of a Cash Flow Deficit (%)										
1998	59	33	21	46	29	18	13	28	41	41
1999	79	60	41	48	47	7	84	64	33	35
2000	74	53	42	43	57	2	65	62	46	28
2001	63	53	42	34	60	10	79	56	16	31
2002	69	51	33	35	52	11	78	59	21	28
Ending Cash Reserves (\$1000)										
1996	101.15	363.04	65.15	160.01	7.07	30.87	29.32	59.89	33.23	73.16
1997	147.22	414.87	70.77	241.69	77.13	222.50	56.47	132.43	40.86	98.74
1998	147.75	482.93	104.97	265.53	94.57	290.69	106.63	194.25	50.75	109.85
1999	119.21	467.24	118.53	282.78	103.21	370.26	78.60	186.56	70.85	153.09
2000	82.95	487.28	127.95	324.37	105.26	464.56	66.00	173.43	76.36	205.19
2001	61.03	484.35	132.59	383.79	104.39	539.45	44.34	173.43	112.29	246.68
2002	45.85	494.75	150.39	447.27	107.33	623.94	18.32	162.41	148.42	300.79
Prob. of Refinancing Deficits (%)										
1998	1	1	1	3	1	1	1	1	4	4
1999	3	1	2	4	1	1	6	2	5	3
2000	17	1	1	5	1	1	18	7	10	4
2001	27	3	3	8	1	1	26	9	4	2
2002	36	4	5	5	1	1	45	14	4	3
Nominal Net Worth (\$1000)										
1996	1,193.32	3,222.15	371.70	1,584.18	452.68	895.46	847.88	1,225.34	497.54	1,652.72
1997	1,293.02	3,511.04	383.82	1,745.99	553.32	1,123.27	939.31	1,369.95	542.28	1,775.88
1998	1,355.92	3,791.16	426.82	1,871.83	599.53	1,213.69	1,048.58	1,495.35	559.16	1,897.71
1999	1,386.59	3,934.74	448.48	1,990.12	630.45	1,321.84	1,014.15	1,535.97	648.80	2,027.29
2000	1,419.92	4,105.85	466.41	2,089.28	658.18	1,419.09	1,028.37	1,570.90	698.17	2,136.93
2001	1,448.91	4,265.21	483.15	2,220.11	682.15	1,501.38	1,047.86	1,602.96	755.19	2,245.86
2002	1,472.27	4,391.98	499.25	2,331.54	700.38	1,599.23	1,056.47	1,622.31	813.64	2,355.19
Prob. of Losing Real Net Worth (%)										
1998	1	1	12	8	1	1	1	1	1	1
1999	3	1	9	3	1	1	2	1	1	1
2000	8	1	16	3	1	1	2	1	1	1
2001	13	1	13	4	1	1	10	3	1	1
2002	18	1	14	3	1	1	16	7	1	1
Real Net Worth (\$1000)										
1996	1,168.77	3,155.88	364.06	1,551.60	443.37	877.04	830.44	1,200.13	487.31	1,618.72
1997	1,248.20	3,389.33	370.52	1,685.46	534.14	1,084.33	906.74	1,322.46	523.49	1,774.32
1998	1,279.99	3,578.86	402.92	1,767.01	565.96	1,145.72	989.87	1,411.64	558.52	1,897.44
1999	1,278.55	3,628.13	413.53	1,835.05	581.33	1,218.84	935.12	1,417.21	598.25	1,889.32
2000	1,278.98	3,698.29	420.11	1,881.89	592.85	1,278.22	926.29	1,414.97	628.67	1,924.81
2001	1,274.56	3,751.99	425.02	1,952.98	600.07	1,320.72	921.78	1,410.08	673.12	1,973.62
2002	1,264.77	3,772.96	428.89	2,002.93	601.67	1,373.84	907.57	1,393.86	698.96	2,023.24

Figure 9. Wheat Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



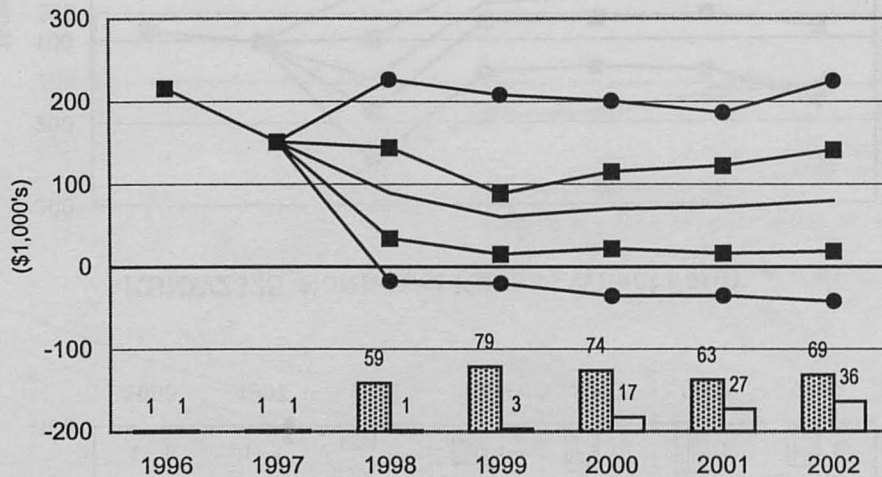
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



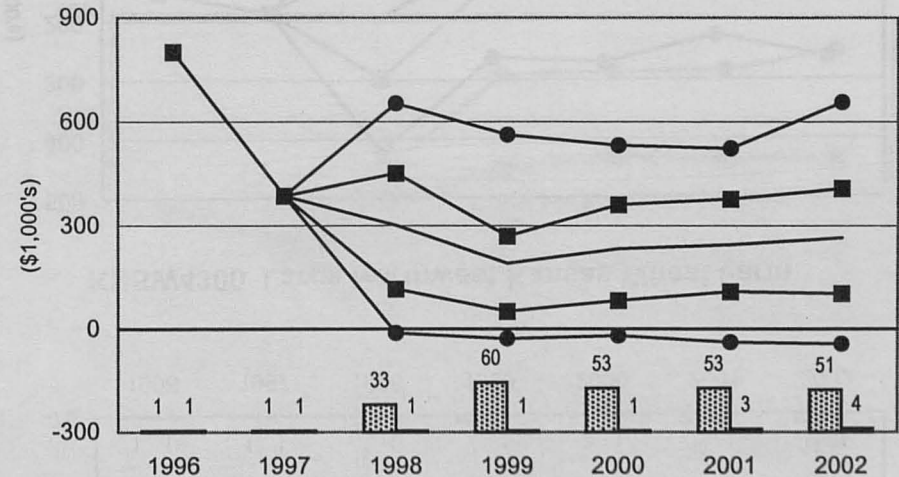
**Figure 10. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Wheat Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

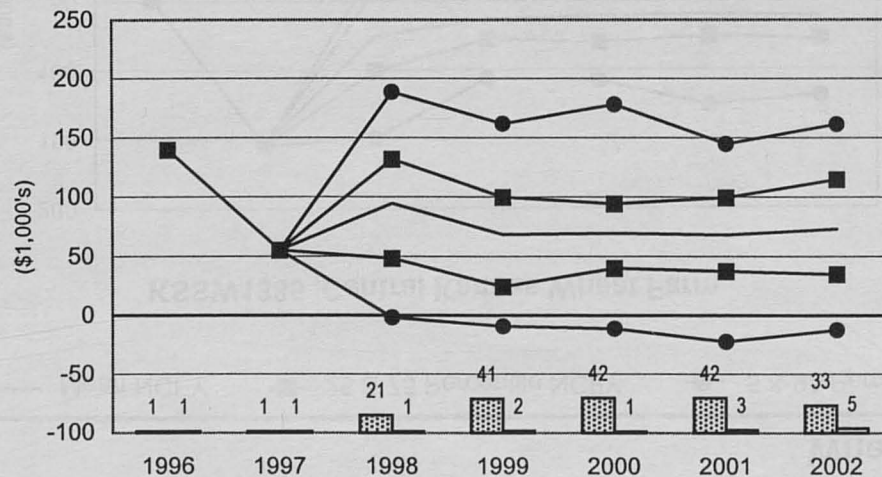
WAW1500 Washington Wheat Farm



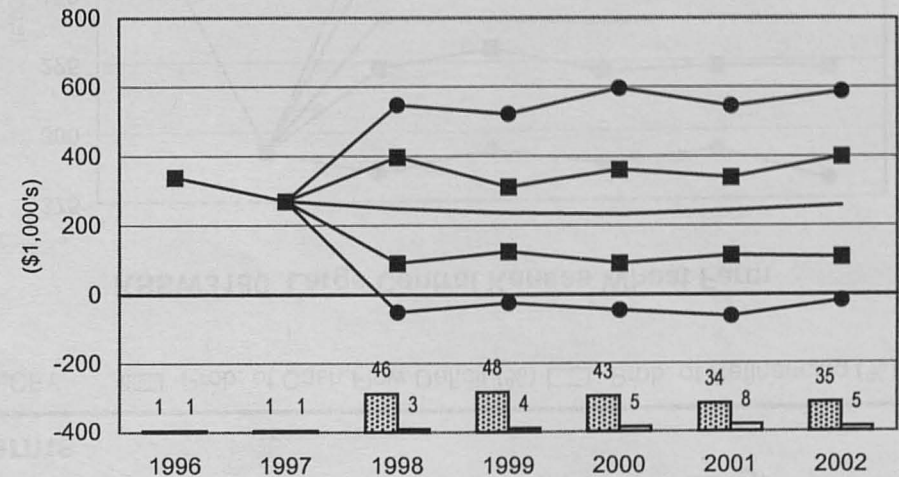
WAW4250 Large Washington Wheat Farm



NDW1760 North Dakota Wheat Farm



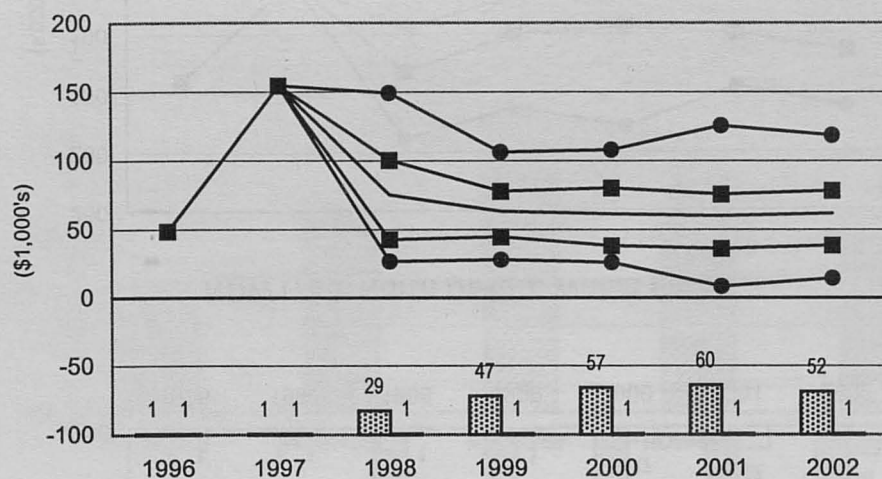
NDW4850 Large North Dakota Wheat Farm



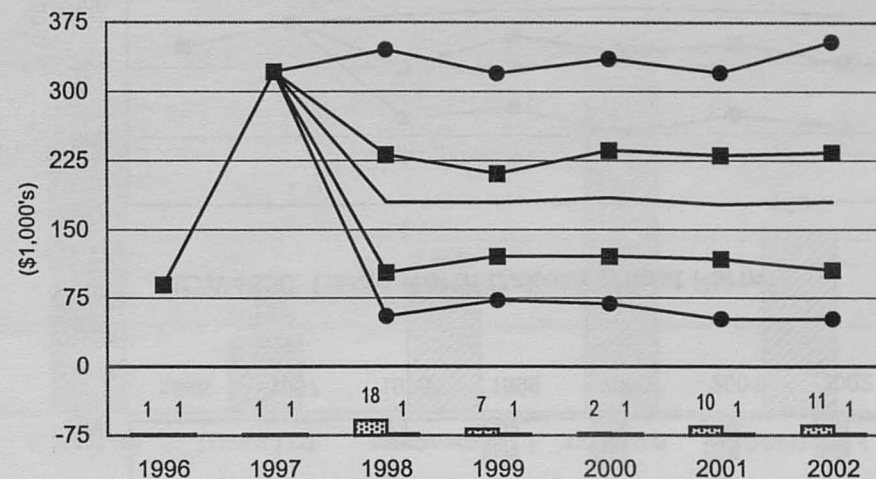
**Figure 11. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Wheat Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

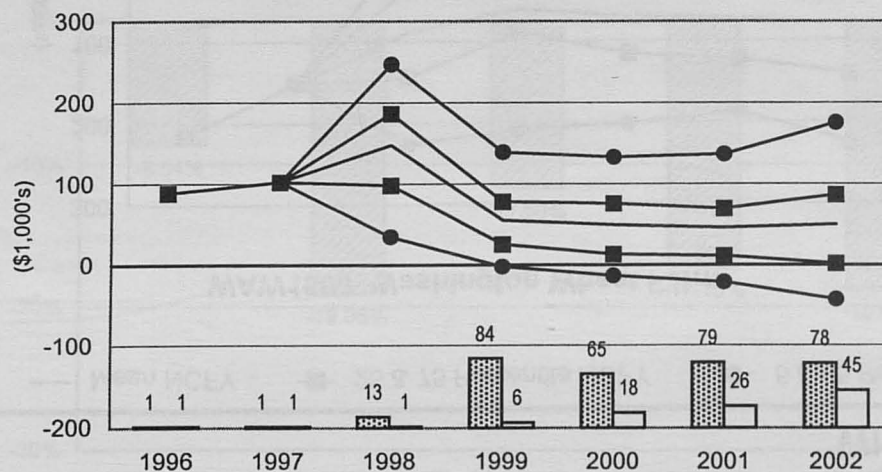
KSSW1385 Central Kansas Wheat Farm



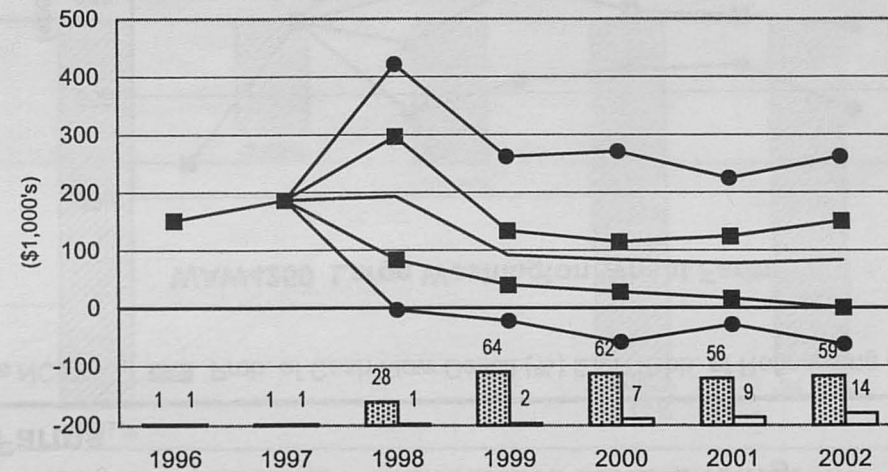
KSSW3180 Large Central Kansas Wheat Farm



KSNW2325 Northwest Kansas Wheat Farm



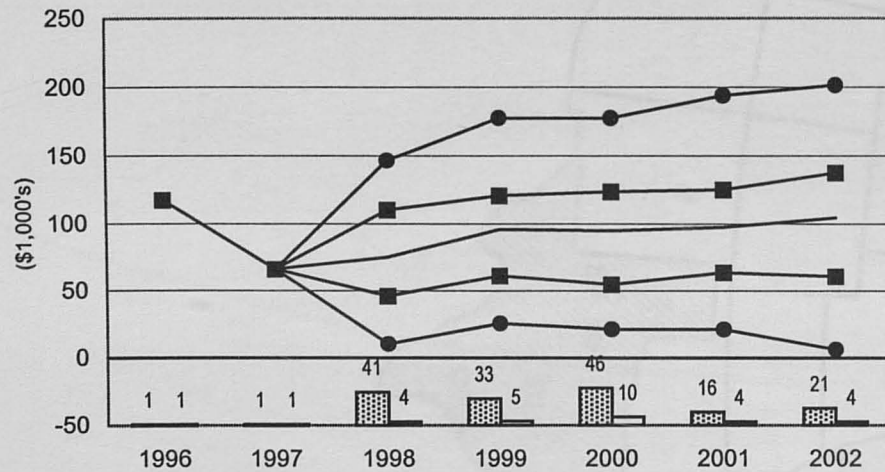
KNSW4300 Large Northwest Kansas Wheat Farm



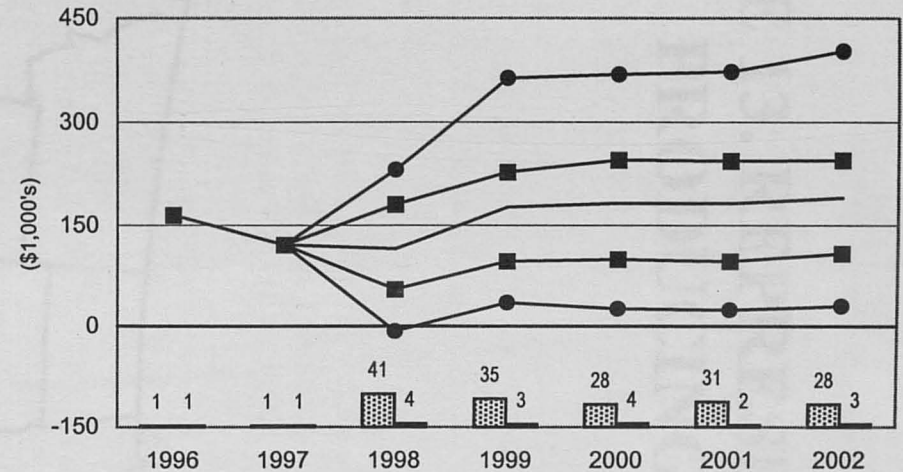
**Figure 12. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Wheat Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

COW2700 Colorado Wheat Farm



COW5400 Large Colorado Wheat Farm



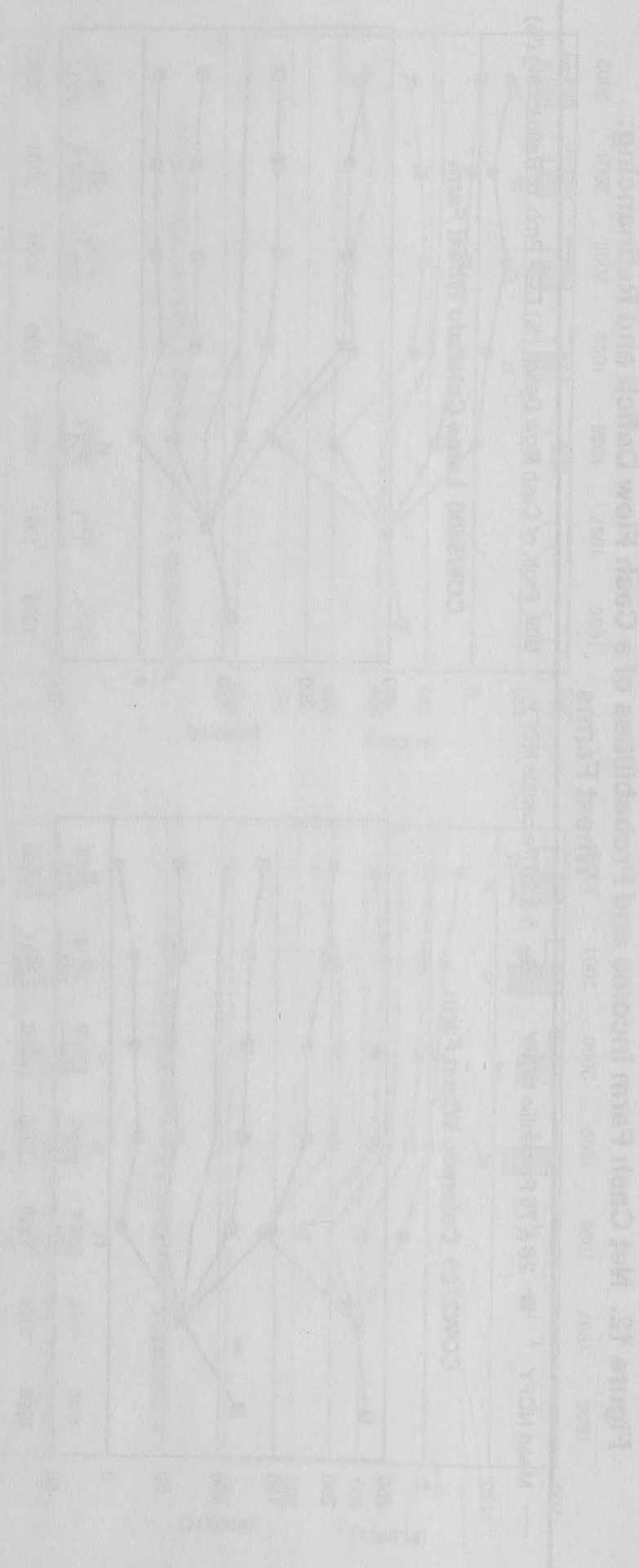
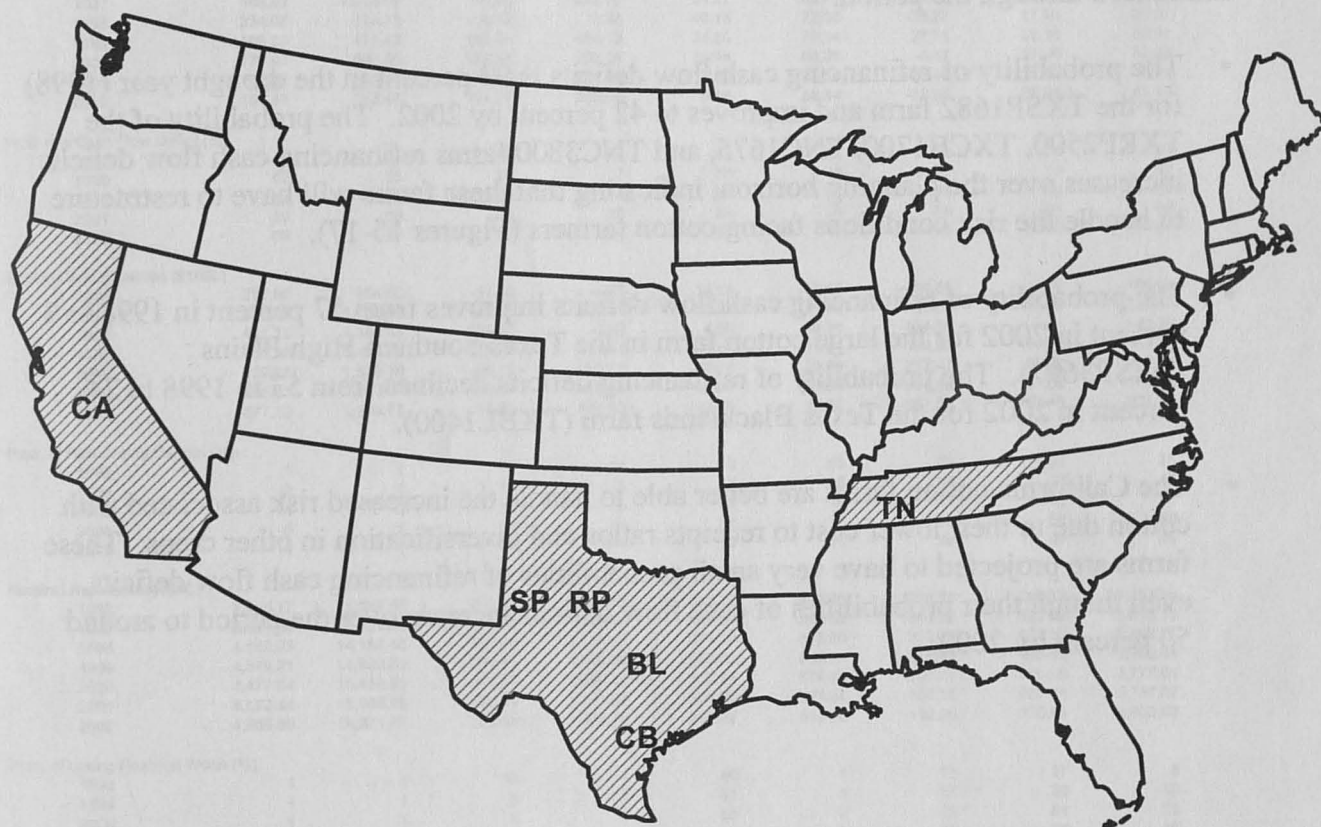


FIGURE 13. REPRESENTATIVE FARMS PRODUCING COTTON



Cotton Farm Impacts

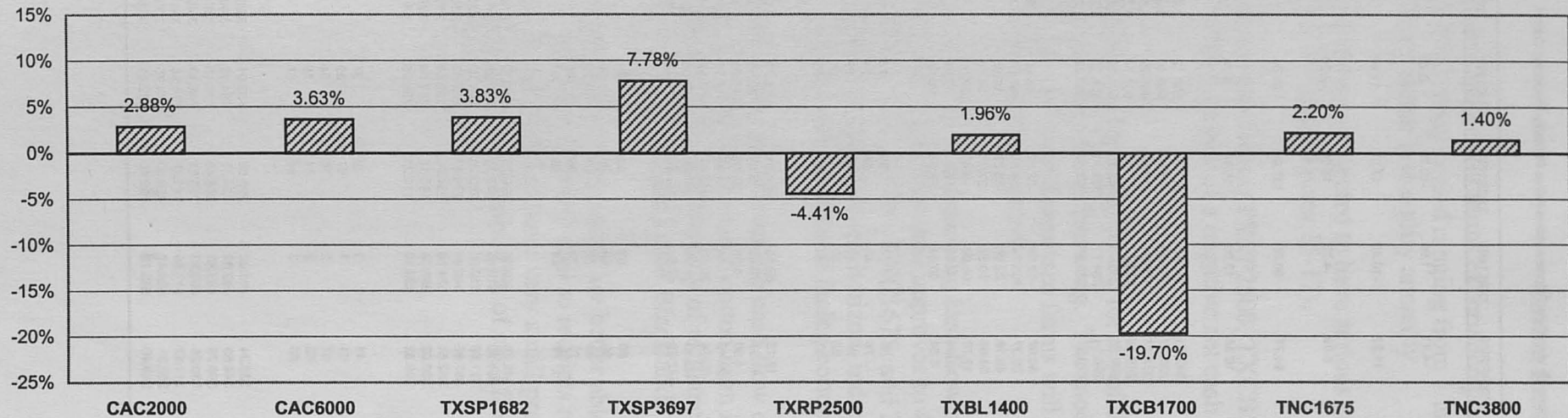
- Seven of the nine cotton farms experience positive annual increases in real net worth over the 1996-2002 study period ranging from 1 to 8 percent. The Texas Rolling Plains and Coastal Bend farms lose equity annually.
- All nine farms are projected to have serious cash flow problems over the 1996 to 2002 period (Table 7 and Figures 15-17).
- Four of the cotton farms (TXRP2500, TXCB1700, TNC1675, TNC3800) have a greater than 25 percent chance of a negative net cash farm income in any individual year from 1998 to 2002.
- The cash flow problems projected for six of the nine cotton farms will likely lead to an increase in the need for refinancing. The moderate Texas Southern Plains, Rolling Plains, Coastal Bend, and both Tennessee farms will likely have considerable problems getting refinanced through the period.
 - The probability of refinancing cash flow deficits is 99 percent in the drought year (1998) for the TXSP1682 farm and improves to 42 percent by 2002. The probability of the TXRP2500, TXCB1700, TNC1675, and TNC3800 farms refinancing cash flow deficits increases over the planning horizon, indicating that these farms will have to restructure to handle the risk conditions facing cotton farmers (Figures 15-17).
 - The probability of refinancing cash flow deficits improves from 57 percent in 1998 to 3 percent in 2002 for the large cotton farm in the Texas Southern High Plains (TXSP3697). The probability of refinancing deficits declines from 53 in 1998 to 24 percent in 2002 for the Texas Blacklands farm (TXBL1400).
 - The California cotton farms are better able to handle the increased risk associated with cotton due to their lower cost to receipts ratios and diversification in other crops. These farms are projected to have very small probabilities of refinancing cash flow deficits, even though their probabilities of cash flow deficits increase over the period to around 50 percent by 2002.

Table 7. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Cotton.

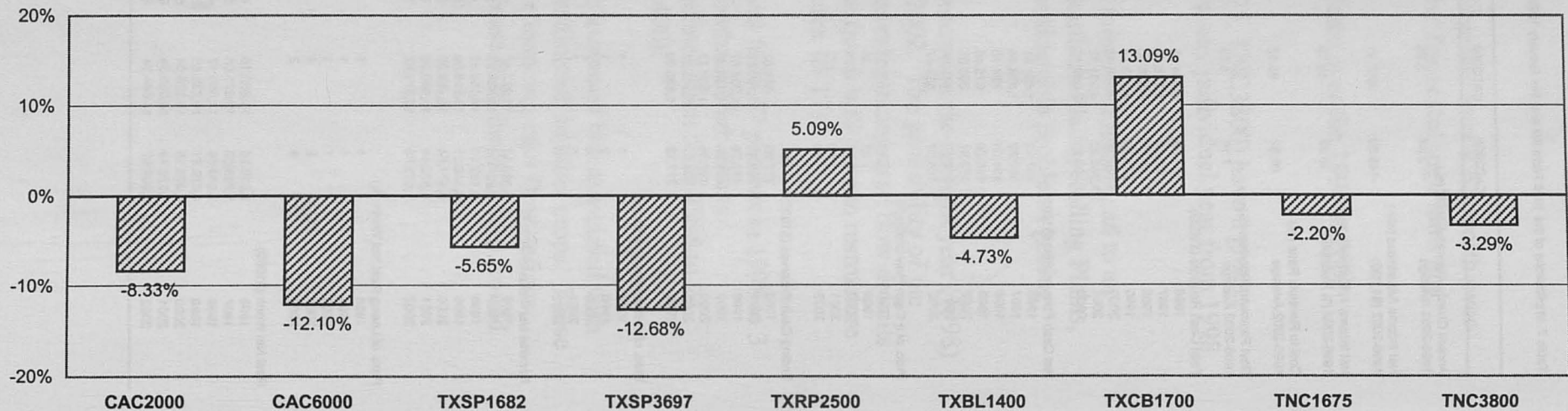
	CAC2000	CAC6000	TXSP1682	TXSP3697	TXRP2500	TXBL1400	TXCB1700	TNC1675	TNC3800
Annual Change Real Net Worth (%)									
1996-2002 Average	2.88	3.63	3.83	7.78	-4.41	1.96	-19.70	2.20	1.40
Net Income Adjustment (NIA)									
1996-2002 (\$1,000)	-148.30	-617.91	-21.79	-116.49	11.22	-10.42	43.57	-11.49	-41.80
Net Income Adjustment (NIA)									
1996-2002 (% Receipts)	-8.33	-12.10	-5.65	-12.68	5.09	-4.73	13.09	-2.20	-3.29
Cost to Receipts Ratio (%)									
1996-2002 Average	86.32	85.12	84.08	77.90	94.77	80.00	107.99	94.04	92.58
Govt Payments/Receipts (%)									
1996-2002 Average	7.18	5.53	8.65	9.29	16.34	12.00	15.44	8.74	9.15
Total Cash Receipts (\$1000)									
1996	2,121.58	6,004.25	195.07	728.18	242.21	145.61	227.72	537.12	1,437.43
1997	1,890.00	5,246.13	290.24	971.15	220.27	277.22	408.03	568.10	1,390.08
1998	1,716.53	4,886.65	173.99	631.62	233.77	188.00	253.69	485.99	1,195.40
1999	1,673.00	4,843.46	547.15	1,115.81	218.45	238.72	378.15	507.34	1,202.90
2000	1,670.16	4,850.46	512.00	986.16	208.21	233.46	352.22	511.30	1,212.81
2001	1,683.42	4,901.12	516.60	988.83	206.14	234.77	351.71	515.23	1,229.43
2002	1,709.16	5,002.15	525.20	1,010.11	213.57	239.60	358.85	532.28	1,270.55
Net Cash Farm Income (\$1000)									
1996	587.32	1,691.81	10.31	94.25	56.97	-18.99	-52.17	55.60	279.97
1997	380.82	1,018.44	68.55	272.72	35.27	108.74	64.89	98.61	255.84
1998	234.05	724.18	-19.12	4.32	49.16	22.96	-38.27	11.96	61.07
1999	196.36	675.48	163.94	405.16	34.56	70.54	27.71	35.10	56.91
2000	173.91	600.65	122.97	283.14	19.78	65.06	-4.47	27.00	52.66
2001	148.37	545.94	118.23	278.98	11.84	63.54	-18.40	17.69	44.99
2002	155.57	553.47	124.74	298.25	6.84	68.44	-23.03	20.93	60.13
Prob. of a Cash Flow Deficit (%)									
1998	40	31	99	97	64	77	99	76	76
1999	52	35	69	7	76	48	96	74	81
2000	43	35	70	34	84	47	98	89	87
2001	59	50	64	35	82	58	99	91	90
2002	58	50	57	24	87	39	99	93	91
Ending Cash Reserves (\$1000)									
1996	277.66	854.03	-51.48	-8.37	17.13	-53.50	-84.61	5.79	169.68
1997	388.00	1,196.05	-47.22	129.83	11.37	10.42	-53.53	39.95	258.02
1998	411.75	1,354.62	-126.12	-4.82	4.60	-8.35	-134.96	-1.60	147.16
1999	411.96	1,444.98	-28.34	234.42	-26.49	11.44	-154.89	-14.59	34.85
2000	429.35	1,526.78	-26.19	293.87	-53.74	20.56	-213.47	-53.82	-98.78
2001	395.57	1,543.07	-8.31	346.94	-92.09	26.08	-287.86	-127.08	-269.31
2002	377.12	1,535.09	13.89	444.45	-142.35	47.55	-357.86	-176.45	-361.45
Prob. of Refinancing Deficits (%)									
1998	1	1	99	57	50	53	99	54	21
1999	2	1	69	6	60	38	96	58	47
2000	4	2	59	5	69	32	97	72	67
2001	5	7	53	4	73	35	99	86	80
2002	10	6	42	3	78	24	99	91	84
Nominal Net Worth (\$1000)									
1996	3,593.17	11,927.42	495.41	1,028.13	342.28	419.86	299.75	749.32	3,353.59
1997	3,924.58	13,134.34	541.27	1,240.14	356.96	510.50	346.75	812.26	3,616.13
1998	4,182.93	14,184.48	499.43	1,194.17	371.59	512.50	282.29	801.02	3,708.28
1999	4,349.21	14,899.89	629.31	1,515.66	367.92	549.44	276.61	808.43	3,750.44
2000	4,477.64	15,459.60	670.67	1,634.39	352.51	574.59	234.78	796.00	3,778.04
2001	4,570.44	15,986.99	720.51	1,770.64	330.02	597.34	180.18	767.04	3,787.07
2002	4,655.88	16,371.82	773.66	1,945.79	290.32	620.10	119.26	736.05	3,800.62
Prob. of Losing Real Net Worth (%)									
1998	1	1	95	1	46	1	79	37	5
1999	1	1	3	1	51	1	67	39	18
2000	1	1	6	1	57	2	76	54	33
2001	2	1	5	1	63	2	81	75	49
2002	4	2	3	1	68	3	94	81	52
Real Net Worth (\$1000)									
1996	3,519.26	11,682.10	485.22	1,006.99	335.24	411.22	293.58	733.91	3,284.62
1997	3,788.53	12,679.05	522.50	1,197.15	344.59	492.80	334.73	784.10	3,490.78
1998	3,948.69	13,390.17	471.46	1,127.30	350.78	483.80	266.48	756.16	3,500.63
1999	4,010.31	13,738.86	580.27	1,397.55	339.25	506.63	255.05	745.43	3,458.20
2000	4,033.18	13,925.04	604.09	1,472.16	317.52	517.55	211.47	716.98	3,403.02
2001	4,020.49	14,063.34	633.81	1,557.58	290.31	525.47	158.50	674.75	3,331.39
2002	3,999.67	14,064.34	664.62	1,671.55	249.40	532.70	102.45	632.31	3,264.95

Figure 14. Cotton Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



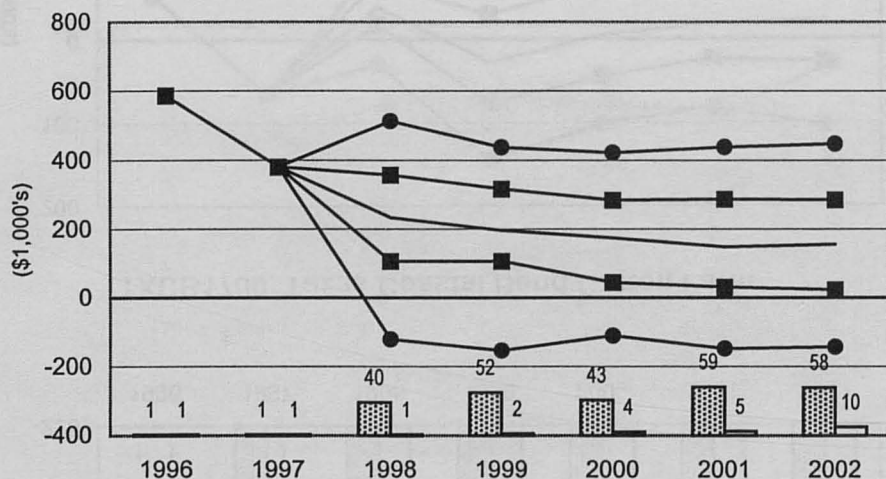
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



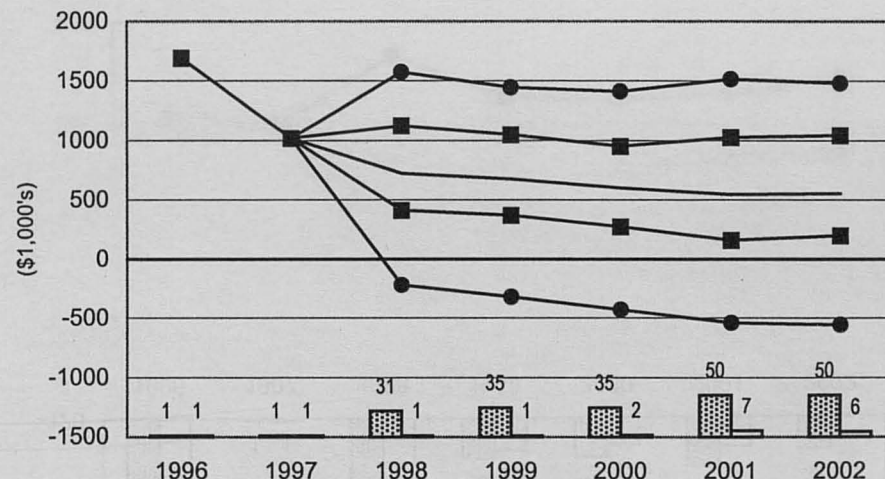
**Figure 15. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Cotton Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

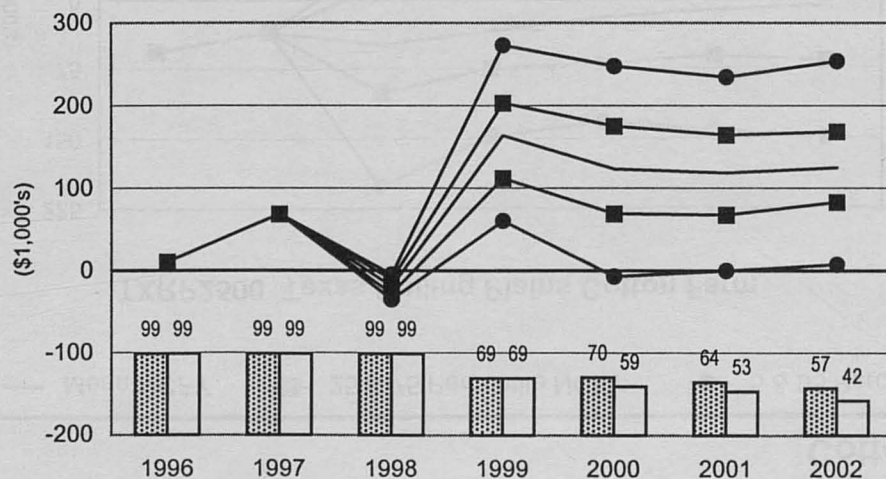
CAC2000 California Cotton Farm



CAC6000 Large California Cotton Farm



TXSP1682 Texas Southern Plains Cotton Farm



TXSP3697 Large Texas Southern Plains Cotton Farm

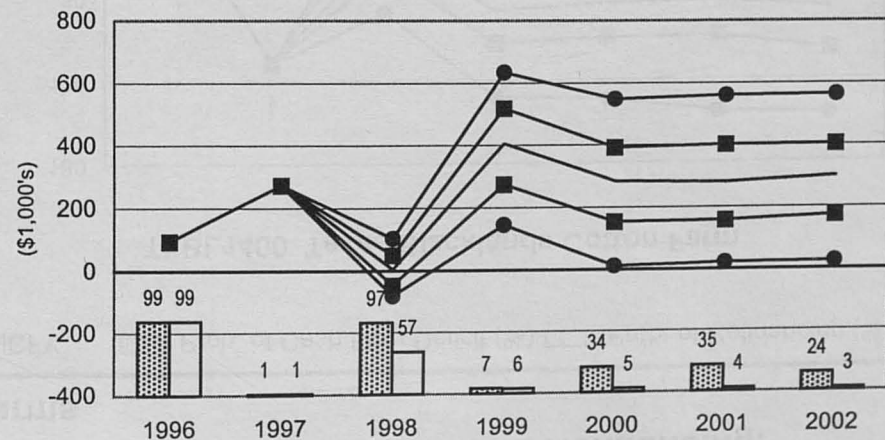
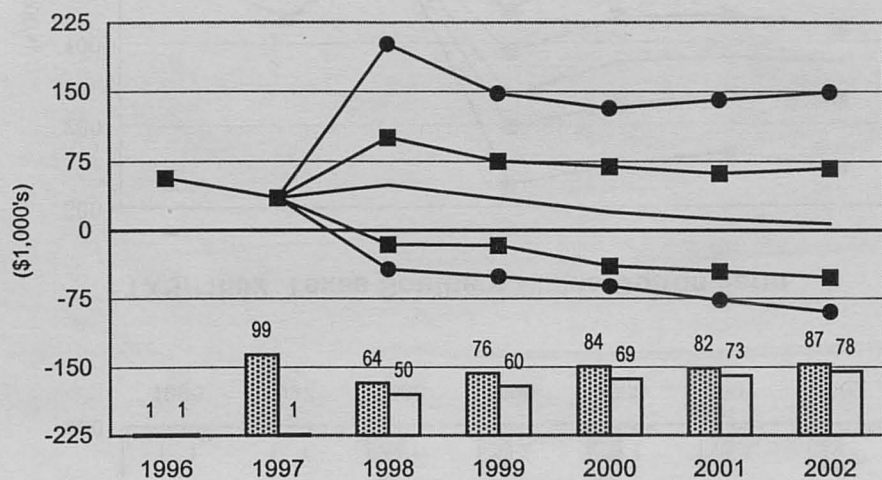


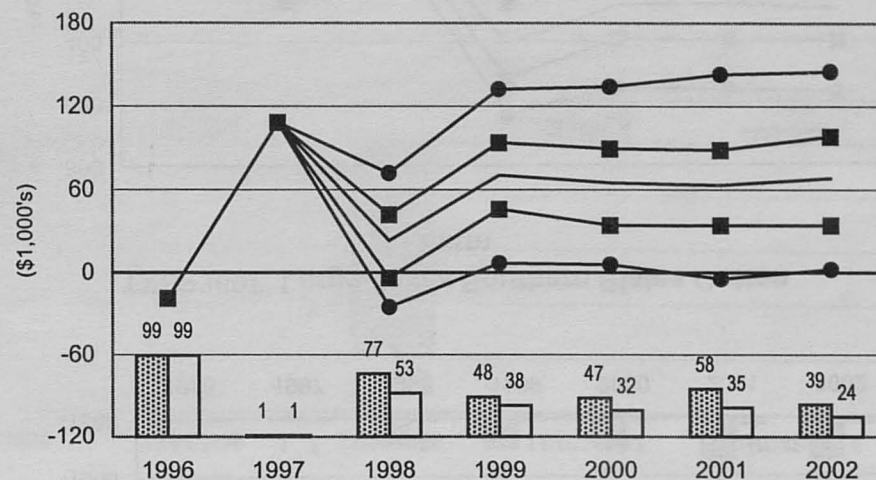
Figure 16. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing: Cotton Farms

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

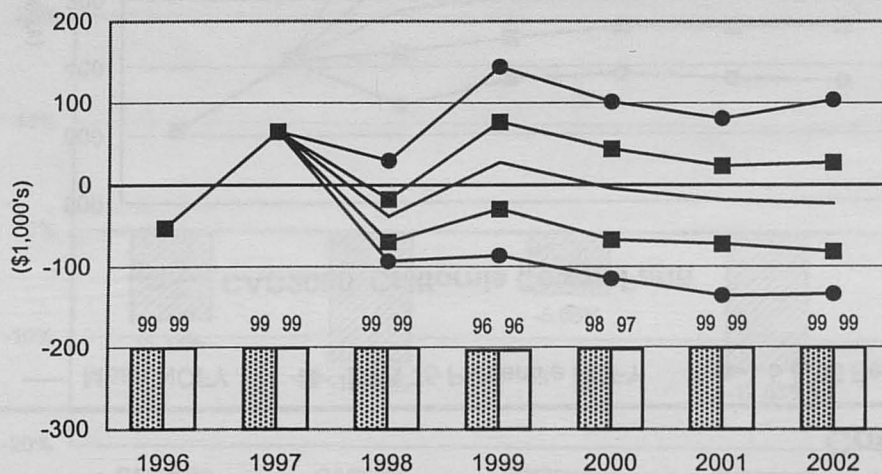
TXRP2500 Texas Rolling Plains Cotton Farm



TXBL1400 Texas Blacklands Cotton Farm



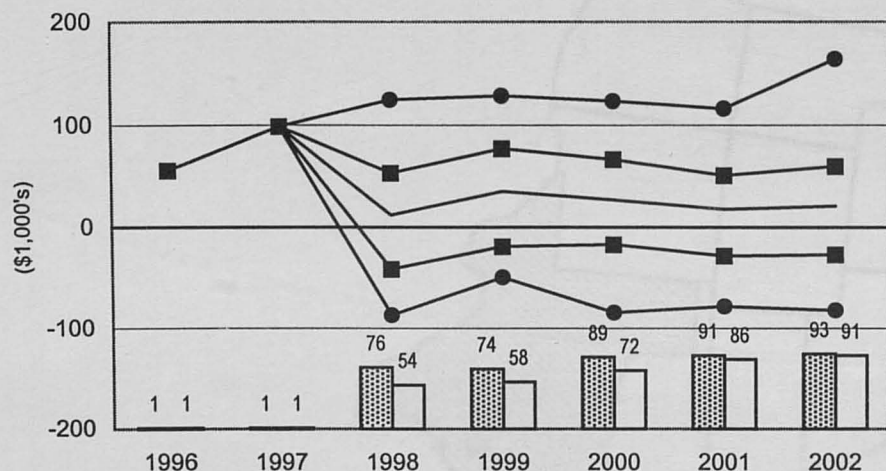
TXCB1700 Texas Coastal Bend Cotton Farm



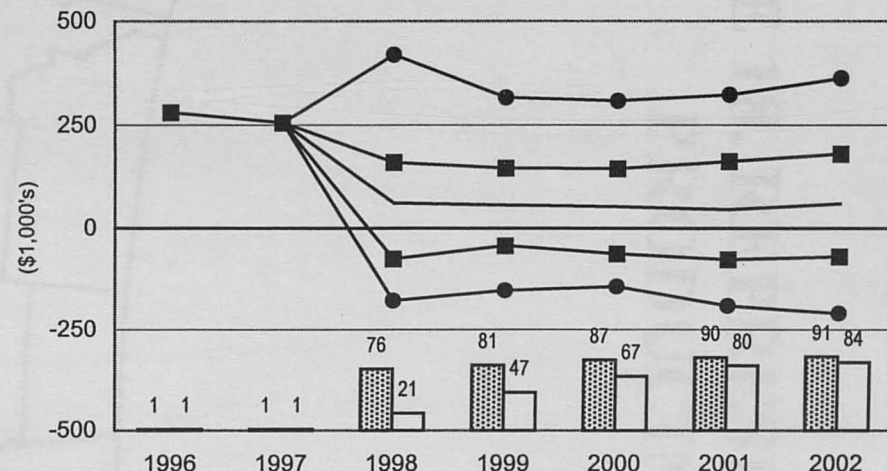
**Figure 17. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Cotton Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

TNC1675 Tennessee Cotton Farm



TNC3800 Large Tennessee Cotton Farm



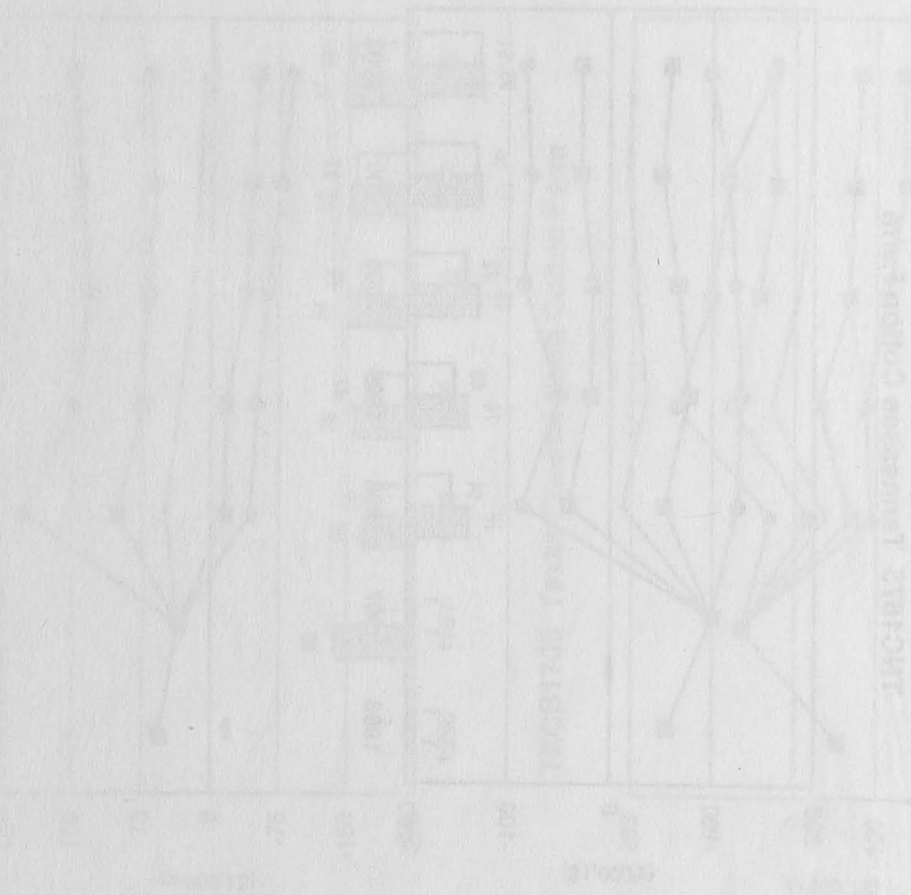
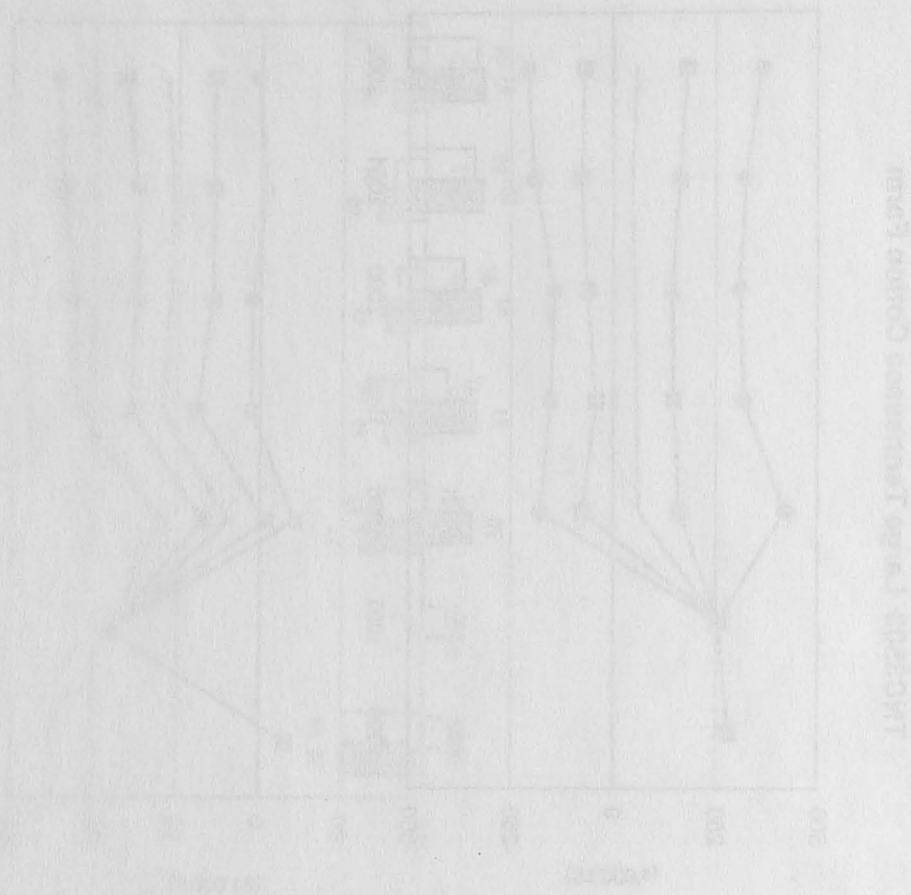
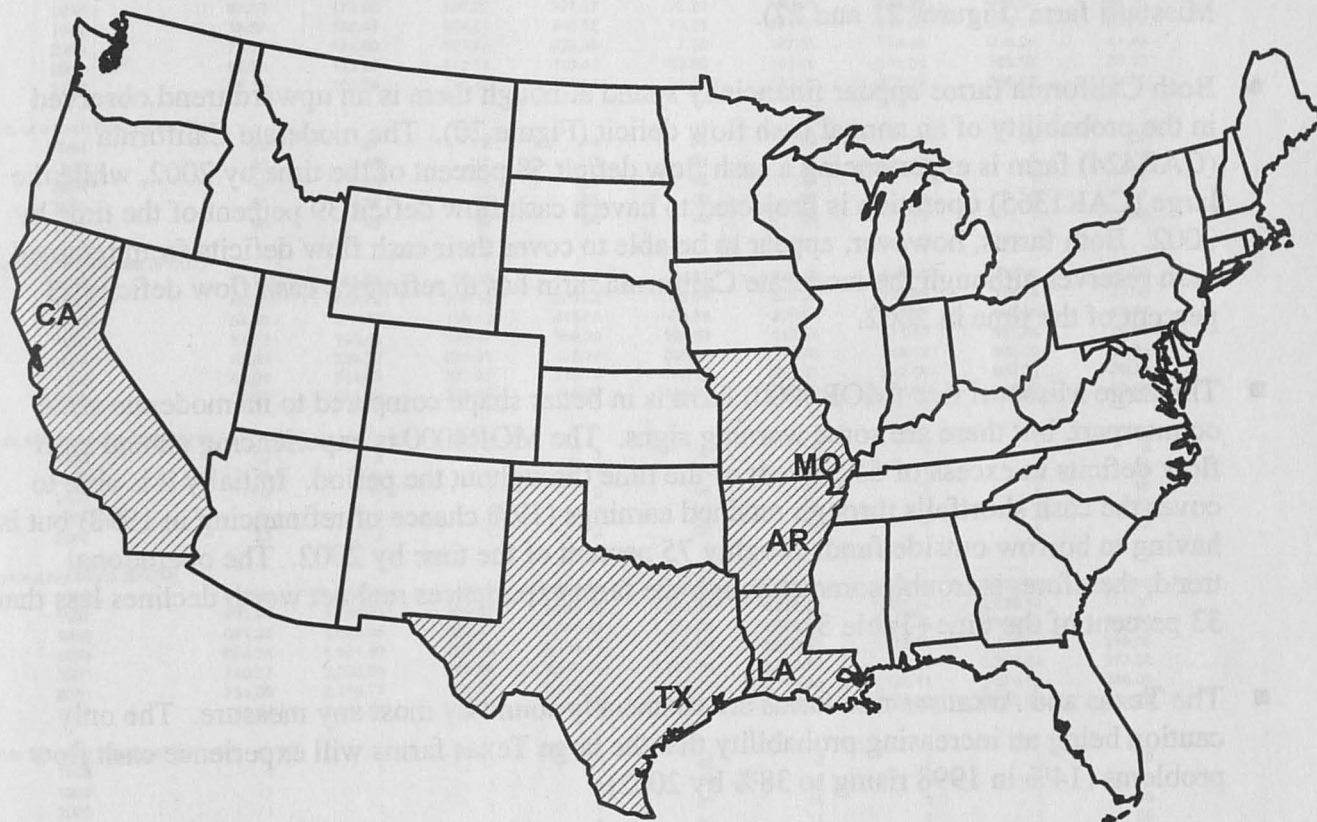


Figure 15. The effect of temperature on the growth of *L. tarentulae*. The graph shows the growth of *L. tarentulae* at different temperatures. The growth is measured in mm. The temperature is measured in °C. The growth is highest at 20°C and lowest at 10°C.

FIGURE 18. REPRESENTATIVE FARMS PRODUCING RICE



Rice Farm Impacts

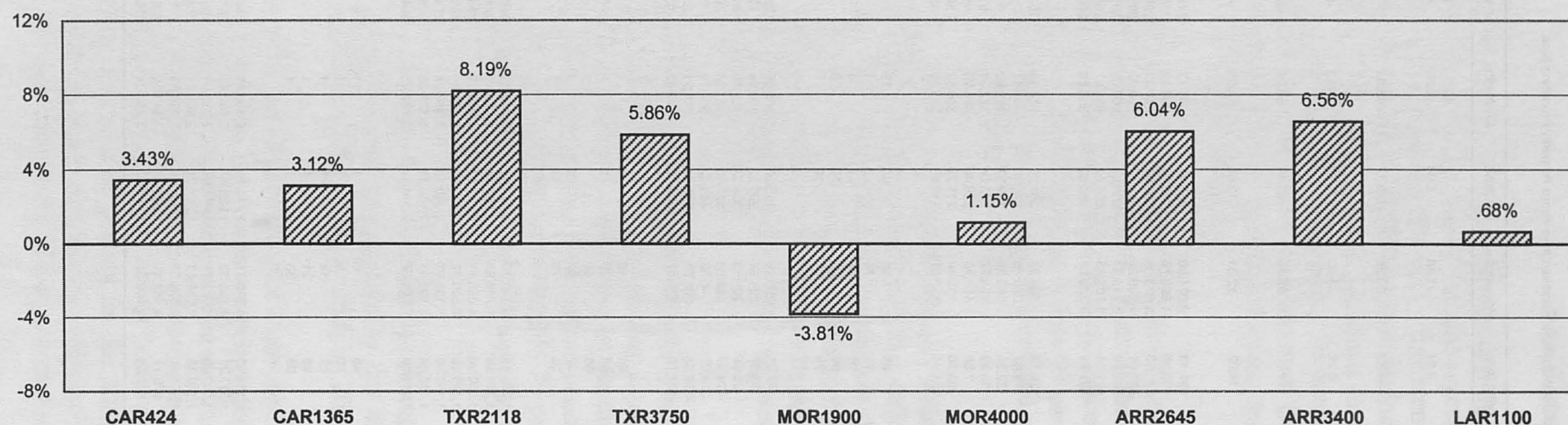
- With production flexibility payments and rice prices that are projected to stay in the \$8.60 to \$9.00/cwt range, all but one of the nine representative rice farms experience annual growth in real net worth, ranging from 0.7 - 8 percent over the study period (Figure 19). Only the moderate Missouri (MOR1900) operation loses real equity on average. Simulation under risk, however, reveals financial problems for the moderate Louisiana operation as well. By 2002, the MOR1900 is losing equity 96 percent of the time while the LAR1100 loses equity 69 percent of the time. The large Missouri (MOR4000) farm is beginning to show signs of financial stress as the probability of losing real net worth increases from 6 percent in 1998 to 33 percent in 2002 (Table 8).
- The problem with maintaining real equity is explained by examining the operational parameters on these three farms. Both of the Missouri farms and the Louisiana farm are experiencing cash flow deficits over 87 percent of the time by year 2002. Refinancing from outside sources is necessary more than 99 percent of the time for the moderate Missouri farm, 87 percent for the Louisiana farm and roughly 75 percent of the time for the large Missouri farm (Figures 21 and 22).
- Both California farms appear financially sound although there is an upward trend observed in the probability of an annual cash flow deficit (Figure 20). The moderate California (CAR424) farm is experiencing a cash flow deficit 58 percent of the time by 2002, while the large (CAR1365) operation is projected to have a cash flow deficit 39 percent of the time by 2002. Both farms, however, appear to be able to cover their cash flow deficits from retained cash reserves although the moderate California farm has to refinance cash flow deficits 23 percent of the time in 2002.
- The large Missouri rice (MOR4000) farm is in better shape compared to its moderate scale counterpart, but there are some warning signs. The MOR4000 is experiencing annual cash flow deficits in excess of 65 percent of the time throughout the period. Initially it is able to cover the cash shortfalls through retained earnings (19% chance of refinancing in 1998) but is having to borrow outside funds roughly 75 percent of the time by 2002. The operational trend, therefore, is troublesome although the farm experiences real net worth declines less than 33 percent of the time (Table 8).
- The Texas and Arkansas rice farms are financially sound by most any measure. The only caution being an increasing probability that the large Texas farms will experience cash flow problems (14% in 1998 rising to 38% by 2002).
 - During the update process, the Texas and Arkansas farms changed locations within the state. The Texas rice farms are geographically concentrated in what is believed to be the most efficient rice growing area in the Texas rice belt. We now have two Arkansas farms located in the Stuttgart area. Both are larger than our previous panel farm that was located further north. The two Arkansas farms are very efficient as seen by average cash expense to receipt ratios of 66 percent for the ARR2645 and 58 percent for the ARR3400. The Arkansas farms are also the most diversified of our rice panels receiving 50-60 percent of their revenue from rice, 32-38 percent from soybeans, and 8-13 percent from wheat.

Table 8. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Rice.

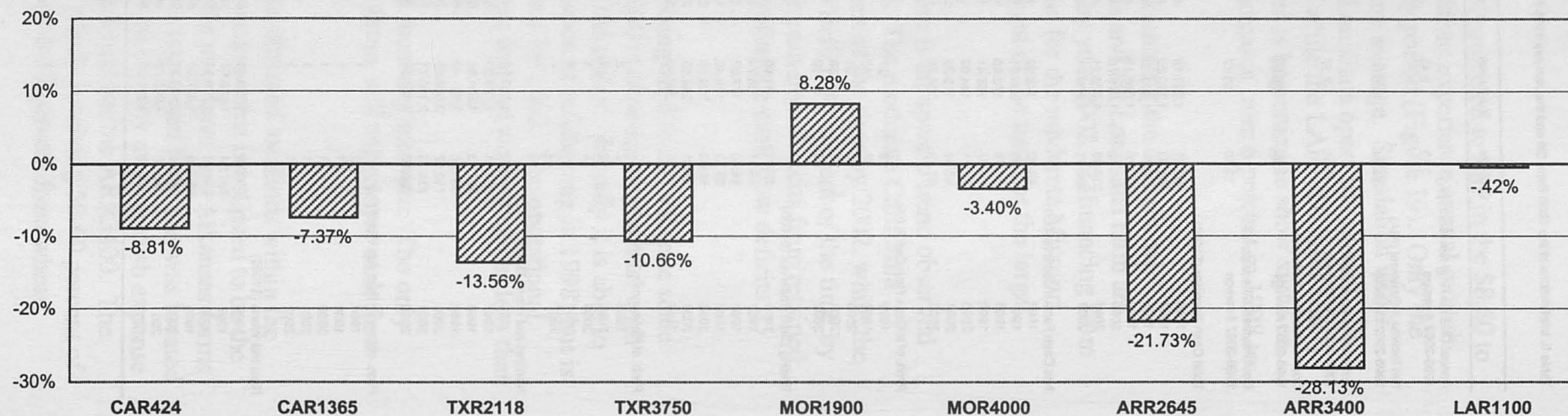
	CAR424	CAR1365	TXR2118	TXR3750	MOR1900	MOR4000	ARR2645	ARR3400	LAR1100
Annual Change Real Net Worth (%)									
1996-2002 Average	3.43	3.12	8.19	5.86	-3.81	1.15	6.04	6.56	0.68
Net Income Adjustment (NIA)									
1996-2002 (\$1,000)	-28.14	-75.93	-61.72	-139.51	49.87	-60.26	-148.17	-263.32	-1.28
Net Income Adjustment (NIA)									
1996-2002 (% Receipts)	-8.81	-7.37	-13.56	-10.65	8.28	-3.40	-21.73	-28.13	-0.42
Cost to Receipts Ratio (%)									
1996-2002 Average	77.89	86.68	72.31	82.18	96.77	88.76	66.44	58.04	82.94
Govt Payments/Receipts (%)									
1996-2002 Average	19.46	19.17	20.35	18.41	14.02	12.33	12.66	16.61	14.18
Total Cash Receipts (\$1000)									
1996	330.21	1,029.15	490.15	1,391.45	697.13	2,021.90	848.47	1,131.17	345.32
1997	356.53	1,110.22	477.69	1,371.94	633.08	1,858.76	724.31	990.17	318.71
1998	337.74	1,045.89	485.17	1,379.93	573.93	1,673.68	589.87	847.21	298.34
1999	337.70	1,048.13	453.72	1,306.91	576.91	1,698.28	655.17	899.03	298.05
2000	336.92	1,046.76	450.39	1,300.16	582.90	1,715.84	660.09	900.69	297.84
2001	330.80	1,029.21	438.61	1,273.96	571.31	1,705.53	656.62	885.97	295.22
2002	333.01	1,036.71	439.46	1,281.36	581.84	1,730.95	666.52	898.86	296.98
Net Cash Farm Income (\$1000)									
1996	79.23	145.09	147.07	295.26	139.19	508.34	387.77	574.99	101.40
1997	96.36	203.91	138.84	283.78	79.67	330.85	272.30	441.11	75.89
1998	87.22	173.96	156.27	307.47	22.20	160.26	149.37	312.02	54.10
1999	78.87	155.41	129.31	245.12	19.29	174.37	213.04	372.31	53.73
2000	73.11	144.09	125.32	229.49	7.88	167.90	216.46	378.28	41.48
2001	62.95	113.26	113.11	193.42	-23.36	131.49	211.24	356.52	36.43
2002	61.19	104.24	110.42	184.54	-31.81	130.07	218.93	366.09	33.25
Prob. of a Cash Flow Deficit (%)									
1998	28	27	9	14	89	65	49	15	60
1999	58	48	17	23	95	75	3	1	70
2000	50	33	11	26	96	77	7	1	84
2001	62	38	17	30	99	86	13	6	92
2002	58	39	15	38	99	87	10	1	98
Ending Cash Reserves (\$1000)									
1996	21.11	51.80	59.03	113.03	44.83	250.20	196.90	260.06	35.37
1997	45.11	138.74	106.16	225.52	38.67	321.54	290.92	398.14	47.96
1998	54.40	177.02	159.12	319.56	-36.65	208.63	305.31	462.89	41.34
1999	54.72	190.43	188.97	369.25	-124.38	112.84	371.50	561.74	29.01
2000	53.49	229.26	234.96	428.14	-205.97	-6.38	445.02	688.19	3.95
2001	43.01	244.63	271.81	470.73	-329.63	-202.61	512.69	808.21	-29.74
2002	34.25	258.99	313.66	495.87	-481.70	-370.87	584.56	949.62	-73.53
Prob. of Refinancing Deficits (%)									
1998	2	2	1	1	69	19	1	1	6
1999	2	2	1	1	94	38	1	1	23
2000	4	1	1	2	96	51	1	1	46
2001	14	4	1	1	99	65	1	1	70
2002	23	4	1	2	99	75	1	1	87
Nominal Net Worth (\$1000)									
1996	541.42	1,560.92	456.63	1,560.52	1,209.83	4,399.70	1,502.04	2,379.39	249.45
1997	601.91	1,744.33	523.67	1,787.45	1,260.98	4,716.83	1,681.14	2,675.16	271.30
1998	651.33	1,884.94	600.27	1,992.37	1,250.06	4,896.61	1,784.93	2,900.43	276.00
1999	684.25	1,981.40	651.76	2,138.68	1,226.50	5,030.37	1,916.66	3,139.44	285.50
2000	710.57	2,058.66	703.04	2,260.20	1,182.88	5,133.96	2,040.10	3,356.24	273.80
2001	734.00	2,116.71	748.22	2,378.05	1,110.34	5,193.86	2,155.11	3,578.69	268.03
2002	756.52	2,155.88	793.21	2,454.78	1,015.59	5,201.67	2,264.92	3,789.08	254.29
Prob. of Losing Real Net Worth (%)									
1998	1	1	1	1	48	6	1	1	29
1999	1	1	1	1	75	5	1	1	29
2000	1	1	1	1	87	14	1	1	48
2001	1	1	1	1	95	21	1	1	59
2002	1	1	1	1	96	33	1	1	69
Real Net Worth (\$1000)									
1996	530.28	1,528.81	447.24	1,528.42	1,184.95	4,309.21	1,471.15	2,330.45	244.31
1997	581.04	1,683.87	505.52	1,725.49	1,217.27	4,553.33	1,622.87	2,582.43	261.90
1998	614.86	1,779.39	566.66	1,880.80	1,180.06	4,622.41	1,684.98	2,738.01	260.55
1999	630.93	1,827.01	600.97	1,972.03	1,130.93	4,638.40	1,767.31	2,894.81	263.26
2000	640.04	1,854.31	633.25	2,035.84	1,065.47	4,624.35	1,837.59	3,023.09	246.62
2001	645.68	1,862.02	658.19	2,091.91	976.74	4,568.91	1,895.79	3,148.08	235.78
2002	649.89	1,852.03	681.42	2,108.80	872.45	4,468.54	1,945.70	3,255.04	218.45

Figure 19. Rice Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



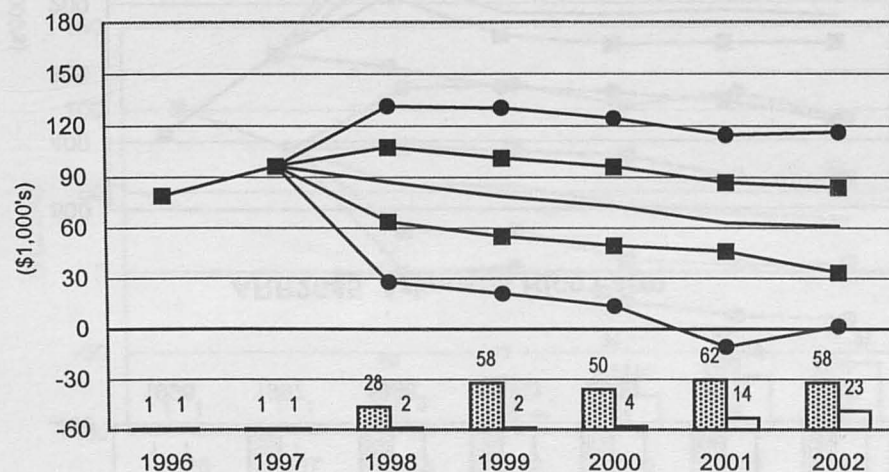
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



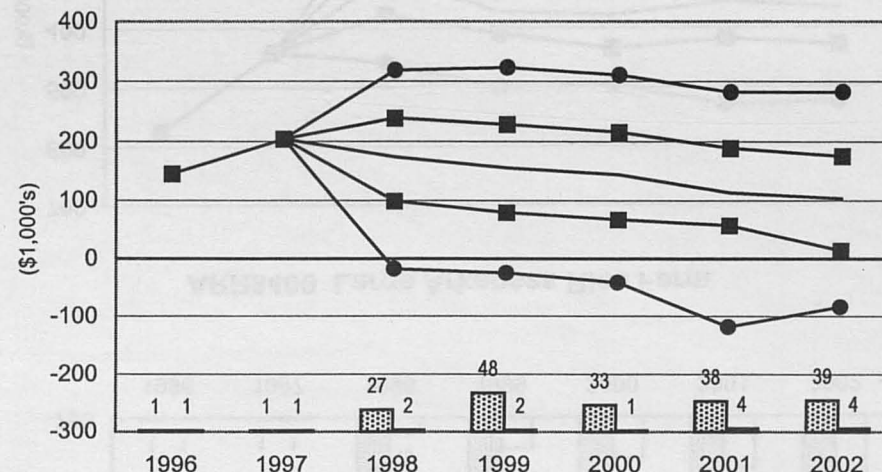
**Figure 20. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Rice Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

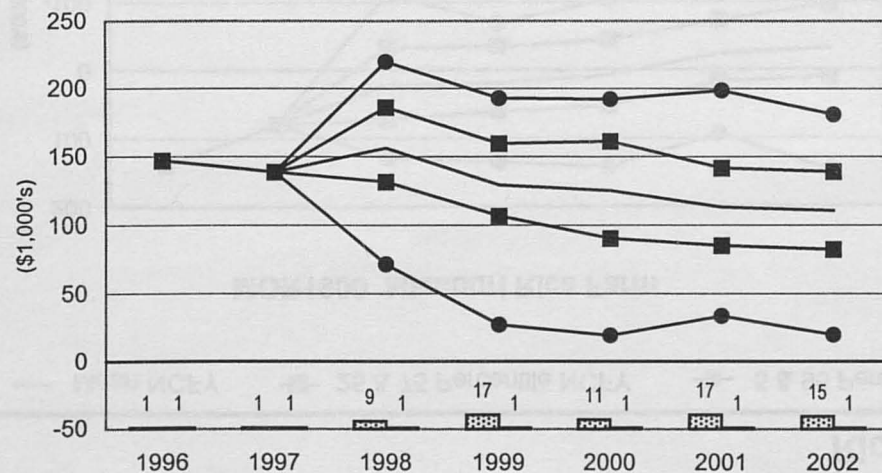
CAR424 California Rice Farm



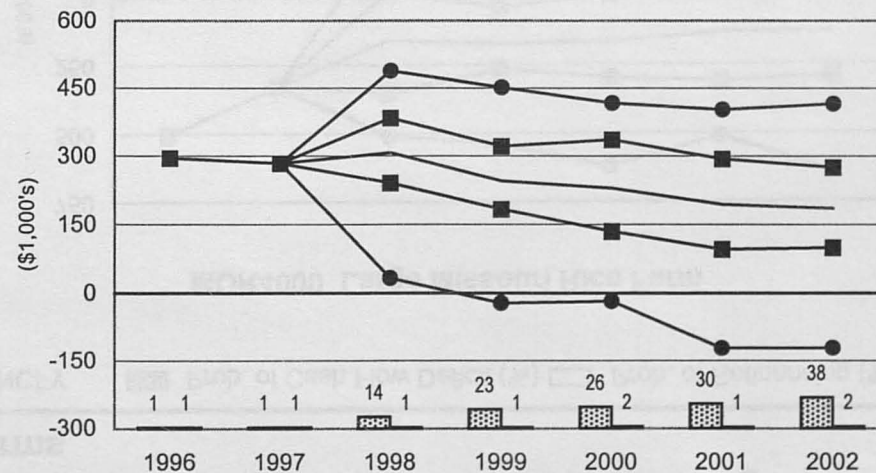
CAR1365 Large California Rice Farm



TXR2118 Texas Rice Farm



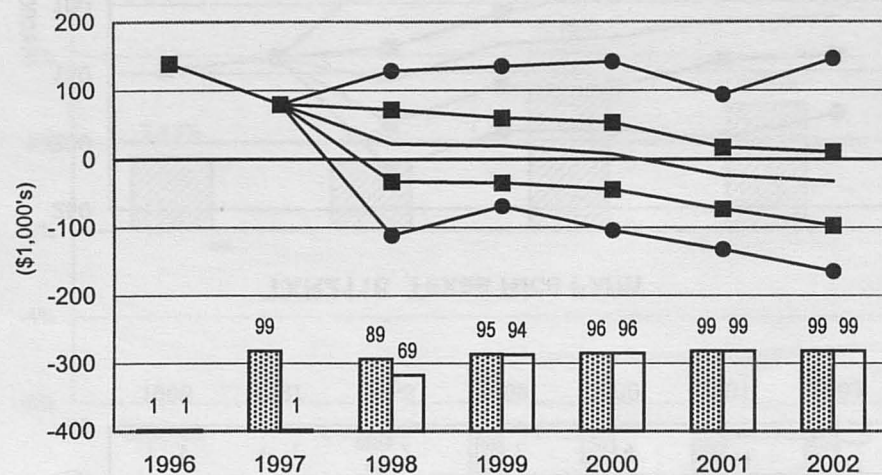
TXR3750 Large Texas Rice Farm



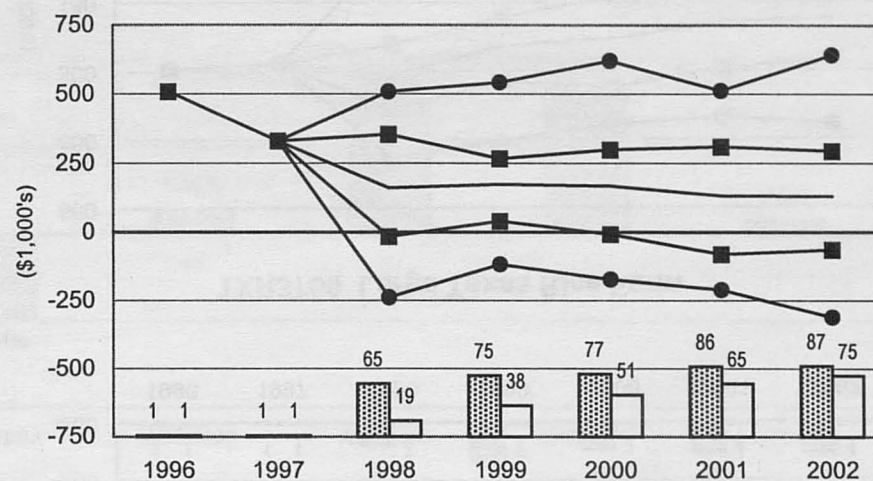
**Figure 21. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Rice Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

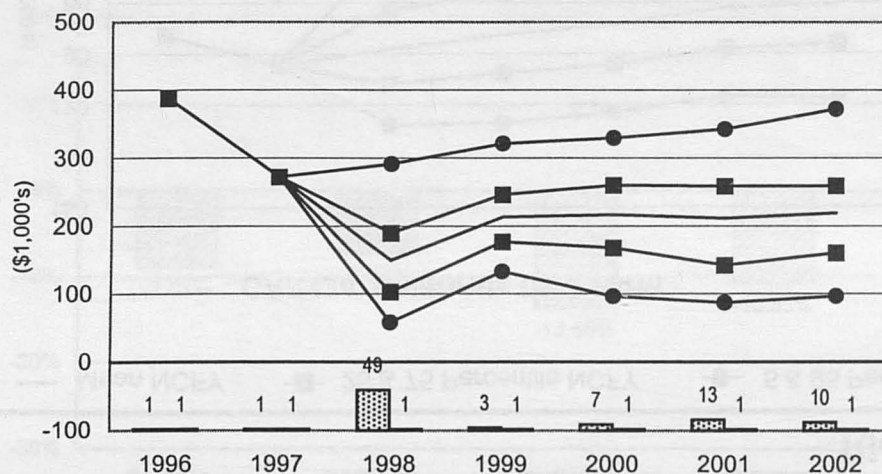
MOR1900 Missouri Rice Farm



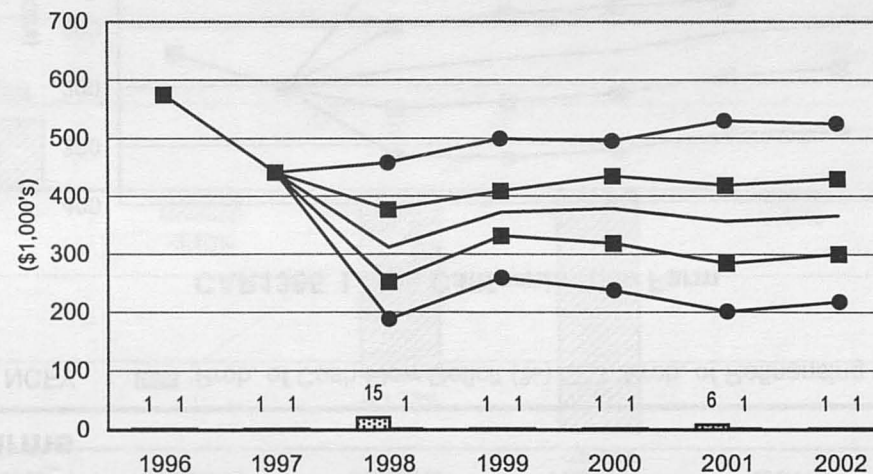
MOR4000 Large Missouri Rice Farm



ARR2645 Arkansas Rice Farm

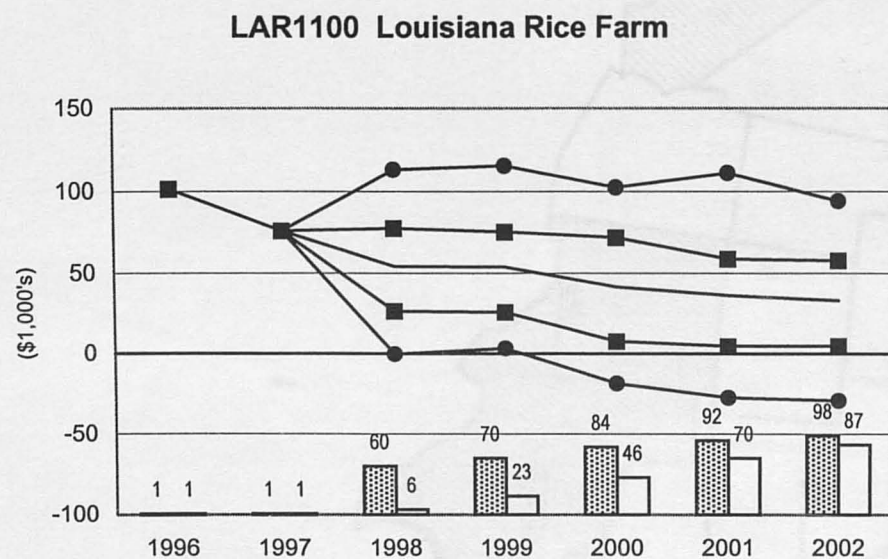


ARR3400 Large Arkansas Rice Farm



**Figure 22. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Rice Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)



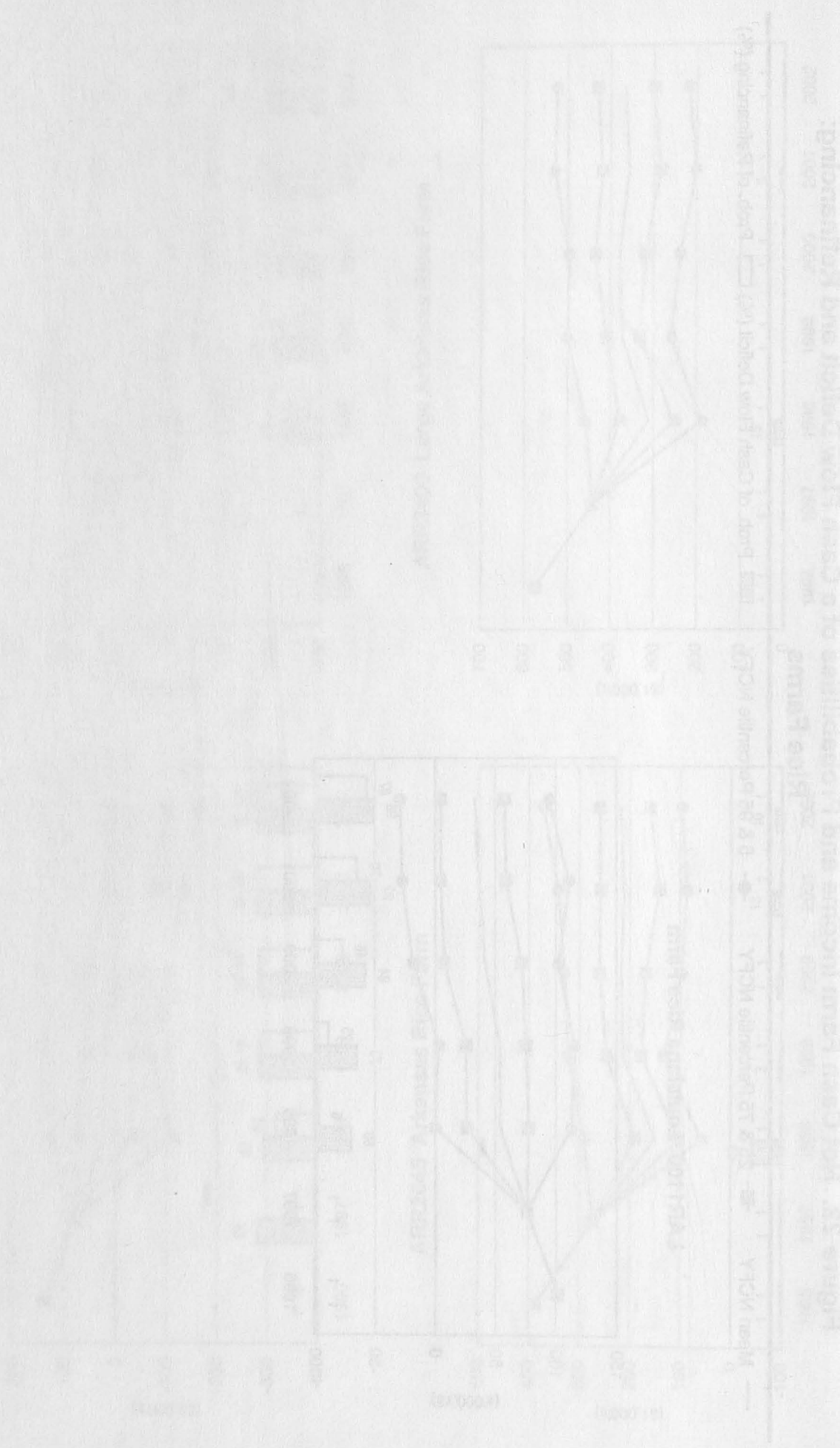
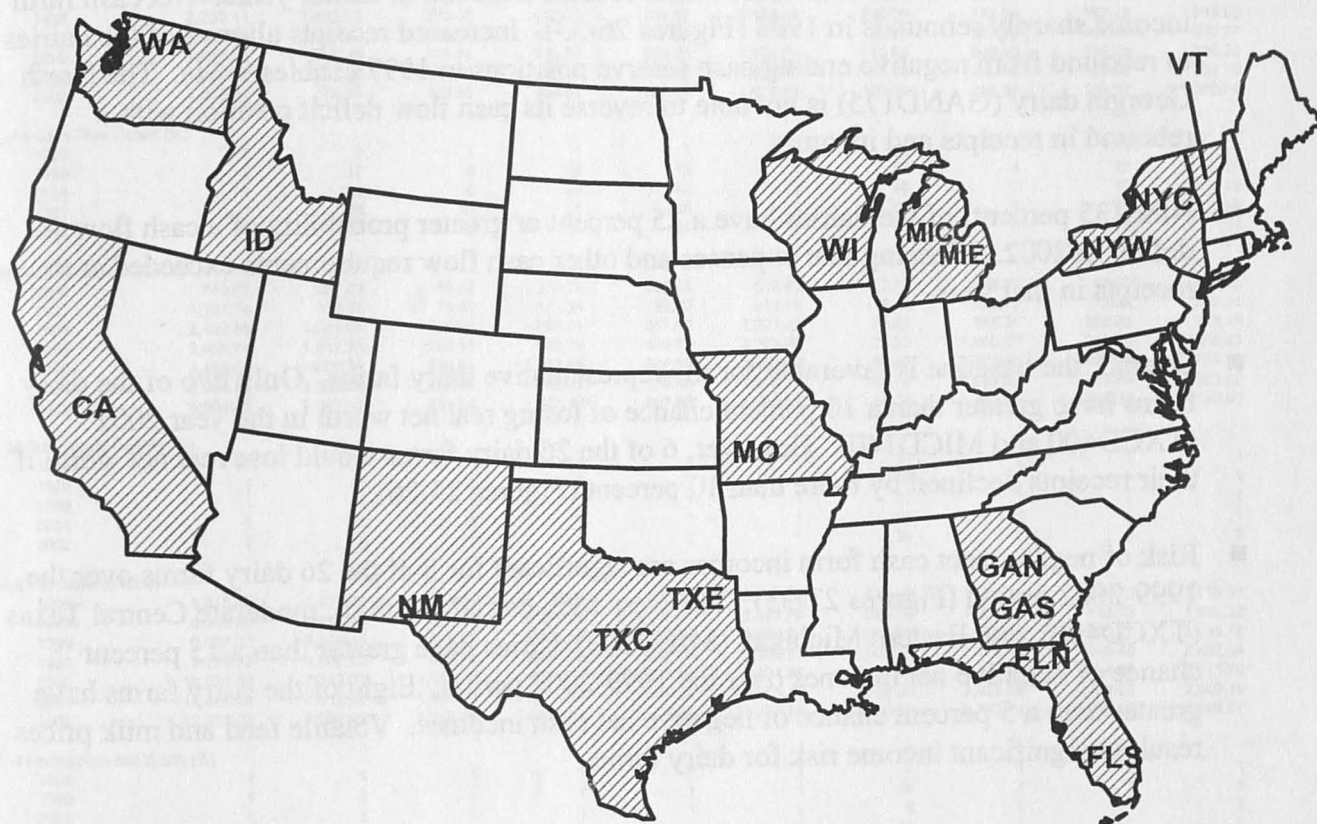


FIGURE 23. REPRESENTATIVE FARMS PRODUCING MILK



Dairy Impacts

- All of the 26 representative dairy farms increase real net worth over the 1996-2002 study period. The annual average increase in real net worth ranges from 0.05 percent on the Central Michigan dairy (MICD140) to over 12 percent on the 700 cow Western New York (NYWD700) and large Central New York dairy (NYCD300) (Figures 24-26). The strong increase in real net worth on the dairy farms is in large part based on the over 40 percent increase in cull cattle prices over the period.
- Only one of the 26 dairies (GAND175) experiences a high (greater than 30 percent) probability of losing real net worth in 1998. But, by 2002 the dairy is able to reduce that probability to 4 percent. On the other hand, the probability of losing real net worth increases from 11 percent in 1998 to 58 percent in 2002 for the Central Michigan dairy (MICD140) (Tables 9-11).
- The combination of low feed prices in the 1997-1999 crop years and high milk prices in 1998 allow the dairies to recover from the reverse situation in earlier years. Net cash farm income sharply rebounds in 1998 (Figures 26-33). Increased receipts allow 5 of the dairies to rebound from negative ending cash reserve positions in 1997 (Tables 9-11). The North Georgia dairy (GAND175) is not able to reverse its cash flow deficit position with a rebound in receipts and incomes.
- Nine (35 percent) of the dairies have a 25 percent or greater probability of a cash flow deficit in 2002. Meaning that expenses and other cash flow requirements exceeded cash receipts in that year.
- Overall, the baseline is favorable for the representative dairy farms. Only two of the dairy farms have greater than a 10 percent chance of losing real net worth in the year 2002 (TXCD400 and MICD140). However, 6 of the 26 dairy farms would lose real net worth if their receipts declined by more than 10 percent (Figures 24-26).
- Risk of negative net cash form incomes are significant for 8 of the 26 dairy farms over the 1999-2002 period (Figures 27-33). The New Mexico (NMD2000), moderate Central Texas (TXCD400), and Eastern Michigan (MIED200) dairies have greater than a 15 percent chance of negative net incomes over the 1999-2002 period. Eight of the dairy farms have greater than a 5 percent chance of negative net cash incomes. Volatile feed and milk prices result in significant income risk for dairy farms.

Table 9. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Milk.

	CAD1710	NMD2000	WAD185	WAD850	IDD500	IDD1800	TXCD400	TXCD825	TXED210	TXED650
Annual Change Real Net Worth (%)										
1996-2002 Average	11.97	6.77	9.54	7.52	7.58	10.88	2.71	11.57	8.29	8.46
Net Income Adjustment (NIA)										
1996-2002 (\$1,000)	-1,466.50	-556.67	-112.37	-369.91	-222.15	-1,229.86	-35.61	-386.52	-91.64	-256.53
Net Income Adjustment (NIA)										
1996-2002 (% Receipts)	-27.10	-8.76	-16.21	-12.56	-14.08	-22.72	-3.53	-15.63	-16.53	-14.61
Cost to Receipts Ratio (%)										
1996-2002 Average	66.58	88.12	75.74	83.29	80.14	72.39	89.33	79.08	76.02	80.53
Govt Payments/Receipts (%)										
1996-2002 Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Receipts (\$1000)										
1996	5,242.70	6,401.23	697.76	2,962.71	1,609.53	5,557.06	1,018.55	2,499.30	558.04	1,772.49
1997	4,991.39	6,164.09	652.74	2,774.98	1,484.21	5,088.78	955.19	2,340.21	525.85	1,663.26
1998	5,982.49	7,026.24	772.10	3,278.62	1,745.81	6,025.25	1,099.15	2,696.13	601.24	1,910.26
1999	5,341.41	6,251.96	688.58	2,925.88	1,564.52	5,361.84	988.99	2,423.38	544.34	1,721.74
2000	5,340.88	6,122.20	670.27	2,848.87	1,526.46	5,217.07	982.57	2,408.07	541.40	1,710.72
2001	5,433.65	6,197.79	678.19	2,882.49	1,540.05	5,260.68	998.76	2,446.51	550.39	1,739.60
2002	5,548.61	6,335.77	691.38	2,938.57	1,576.75	5,388.64	1,018.21	2,494.12	560.44	1,771.79
Net Cash Farm Income (\$1000)										
1996	1,503.92	627.86	138.42	389.81	291.78	1,374.48	106.78	438.48	120.30	301.08
1997	1,053.63	52.04	90.20	173.96	138.85	849.21	35.04	274.52	92.30	191.08
1998	2,359.11	1,493.03	265.66	912.20	499.52	2,136.43	210.80	772.99	187.48	518.02
1999	1,940.99	1,057.67	204.33	647.13	371.35	1,704.69	125.33	581.18	141.45	380.77
2000	1,953.51	842.46	179.85	533.78	329.28	1,564.67	110.04	545.90	136.69	365.20
2001	1,967.18	767.92	171.10	496.11	315.16	1,528.65	103.80	540.76	137.06	364.79
2002	2,008.86	775.90	168.89	484.04	327.48	1,576.64	100.20	550.57	140.97	369.09
Prob. of a Cash Flow Deficit (%)										
1998	1	3	1	1	1	1	10	1	1	1
1999	1	17	8	12	10	1	47	4	17	20
2000	1	24	9	20	12	1	48	5	12	18
2001	1	28	19	25	18	4	53	7	15	17
2002	1	23	26	29	11	2	52	5	8	14
Ending Cash Reserves (\$1000)										
1996	741.67	287.53	53.42	163.29	105.62	646.81	23.72	209.39	47.00	143.12
1997	1,197.74	154.86	70.61	171.24	92.12	911.19	-15.42	299.77	73.93	200.14
1998	2,490.55	1,051.09	208.90	681.51	317.95	2,021.43	76.04	745.30	165.23	473.49
1999	3,435.04	1,512.55	288.16	935.19	439.22	2,766.02	78.29	1,000.02	212.09	608.43
2000	4,459.89	1,889.37	359.54	1,153.44	566.09	3,501.80	92.43	1,273.56	267.39	779.12
2001	5,504.54	2,222.06	428.40	1,362.99	678.96	4,213.50	94.78	1,547.52	325.84	950.22
2002	6,584.05	2,577.62	486.54	1,561.49	807.60	4,950.62	97.22	1,827.81	386.09	1,128.93
Prob. of Refinancing Deficits (%)										
1998	1	1	1	1	1	1	10	1	1	1
1999	1	2	1	1	1	1	15	1	1	1
2000	1	1	1	1	1	1	21	1	1	1
2001	1	1	1	1	1	1	25	1	1	1
2002	1	2	1	1	1	1	20	1	1	1
Nominal Net Worth (\$1000)										
1996	5,816.45	4,914.21	608.81	2,770.06	1,626.29	5,766.74	873.41	1,739.41	630.70	1,716.66
1997	6,602.52	5,115.74	665.88	2,973.84	1,745.81	6,482.79	889.70	1,950.73	713.88	1,891.22
1998	8,097.82	6,154.12	826.82	3,601.68	2,056.84	7,886.77	1,015.08	2,450.03	830.17	2,249.12
1999	9,255.83	6,808.20	929.74	3,981.39	2,280.48	8,958.27	1,060.18	2,779.10	909.46	2,482.14
2000	10,431.08	7,333.81	1,019.41	4,300.46	2,471.24	9,934.88	1,099.48	3,105.33	984.85	2,711.70
2001	11,617.62	7,816.68	1,107.11	4,611.73	2,646.29	10,883.84	1,136.28	3,427.36	1,066.02	2,940.15
2002	12,816.03	8,294.99	1,193.96	4,901.99	2,839.31	11,837.75	1,165.33	3,753.24	1,143.42	3,169.07
Prob. of Losing Real Net Worth (%)										
1998	1	1	1	1	1	1	5	1	1	1
1999	1	2	1	1	1	1	10	1	1	1
2000	1	1	1	1	1	1	8	1	1	1
2001	1	1	1	1	1	1	12	1	1	1
2002	1	2	1	1	1	1	11	1	1	1
Real Net Worth (\$1000)										
1996	5,696.81	4,813.14	596.29	2,713.09	1,592.84	5,648.13	855.45	1,703.64	617.73	1,681.35
1997	6,373.65	4,938.41	642.79	2,870.76	1,685.30	6,258.07	858.86	1,883.11	689.13	1,825.66
1998	7,644.35	5,809.50	780.52	3,399.99	1,941.66	7,445.12	958.24	2,312.83	783.69	2,123.17
1999	8,534.60	6,277.69	857.29	3,671.15	2,102.78	8,260.22	977.57	2,562.55	838.59	2,288.73
2000	9,395.67	6,605.84	918.22	3,873.59	2,225.94	8,948.71	990.34	2,797.09	887.09	2,442.53
2001	10,219.72	6,876.13	973.90	4,056.82	2,327.87	9,574.23	999.55	3,014.96	937.75	2,586.38
2002	11,009.72	7,125.88	1,025.68	4,211.09	2,439.14	10,169.31	1,001.09	3,224.25	982.27	2,722.41

Table 10. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Milk.

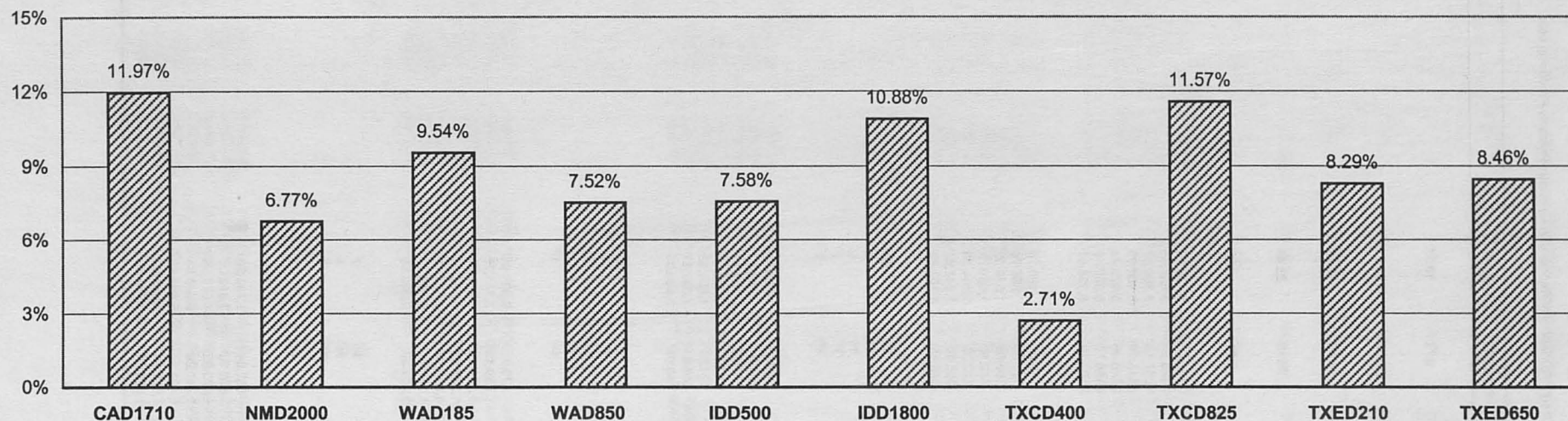
	WID70	WID600	MIED200	MICD140	NYWD700	NYWD1200	NYCD110	NYCD300	VTD85	VTD350
Annual Change Real Net Worth (%)										
1996-2002 Average	10.34	10.75	1.89	0.05	12.03	10.72	3.80	12.11	11.04	9.46
Net Income Adjustment (NIA)										
1996-2002 (\$1,000)	-62.27	-412.56	-32.99	0.00	-586.25	-817.07	-27.17	-303.04	-102.61	-275.92
Net Income Adjustment (NIA)										
1996-2002 (% Receipts)	-27.41	-22.15	-4.92	0.00	-23.98	-20.66	-7.34	-30.43	-32.00	-22.29
Cost to Receipts Ratio (%)										
1996-2002 Average	56.05	71.08	87.58	88.84	70.24	74.20	81.05	62.48	54.37	70.73
Govt Payments/Receipts (%)										
1996-2002 Average	0.00	0.00	0.16	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Receipts (\$1000)										
1996	226.46	1,858.22	682.32	447.66	2,495.55	4,036.47	377.08	1,012.87	316.76	1,220.77
1997	212.19	1,739.27	638.76	420.97	2,318.50	3,746.89	350.39	941.65	305.68	1,174.04
1998	247.91	2,034.49	727.58	480.63	2,662.03	4,310.48	403.08	1,085.33	344.99	1,331.84
1999	223.79	1,834.31	652.41	431.91	2,389.84	3,864.93	361.75	973.78	331.23	1,274.55
2000	222.30	1,821.80	651.11	431.47	2,375.67	3,842.07	359.97	969.83	313.58	1,201.75
2001	226.11	1,853.01	662.82	439.00	2,411.39	3,900.86	365.58	984.97	318.43	1,220.66
2002	231.20	1,894.72	676.19	447.92	2,457.05	3,975.93	372.49	1,002.67	324.20	1,243.37
Net Cash Farm Income (\$1000)										
1996	89.26	477.41	68.53	35.94	681.01	1,038.42	67.48	370.28	134.62	334.17
1997	84.50	366.82	36.72	16.87	533.24	763.05	45.89	304.09	124.79	285.76
1998	115.63	742.97	160.83	96.63	976.02	1,419.22	102.31	458.93	173.59	473.50
1999	104.96	589.95	99.28	59.64	768.06	1,049.12	76.64	380.30	164.71	430.08
2000	102.32	562.46	87.94	51.35	727.45	987.99	71.05	371.79	144.35	346.94
2001	103.70	556.10	84.57	48.86	727.74	982.32	68.95	373.20	145.12	344.81
2002	107.19	572.56	85.61	48.67	735.30	1,003.19	68.43	377.28	147.43	350.54
Prob. of a Cash Flow Deficit (%)										
1998	1	1	3	30	1	1	3	1	1	1
1999	1	2	43	66	1	1	55	1	1	1
2000	1	3	47	66	1	1	41	1	1	1
2001	1	5	50	70	1	1	54	1	1	1
2002	1	2	59	82	1	2	67	1	1	1
Ending Cash Reserves (\$1000)										
1996	36.05	225.15	21.48	-5.48	334.47	535.10	9.30	164.56	62.72	163.48
1997	65.75	370.71	10.76	-30.97	548.78	848.35	3.11	282.06	113.46	281.61
1998	112.76	771.43	85.15	12.91	1,066.02	1,575.74	34.68	494.81	195.27	508.15
1999	149.43	1,032.70	99.29	8.70	1,398.32	2,013.63	38.44	638.45	264.03	685.50
2000	187.55	1,306.87	114.95	6.30	1,742.32	2,465.60	46.17	797.71	329.80	832.20
2001	225.33	1,584.88	121.86	-3.15	2,098.56	2,924.64	49.68	964.67	396.46	975.27
2002	264.53	1,885.61	123.80	-17.16	2,470.55	3,404.47	49.23	1,131.78	465.31	1,127.76
Prob. of Refinancing Deficits (%)										
1998	1	1	1	30	1	1	1	1	1	1
1999	1	1	5	42	1	1	2	1	1	1
2000	1	1	6	47	1	1	2	1	1	1
2001	1	1	13	51	1	1	7	1	1	1
2002	1	1	14	60	1	1	9	1	1	1
Nominal Net Worth (\$1000)										
1996	349.37	1,890.97	1,248.76	1,032.63	2,419.20	4,008.55	451.65	1,187.81	509.78	1,425.10
1997	404.51	2,131.18	1,311.94	1,082.56	2,818.02	4,617.89	481.49	1,413.29	591.85	1,623.62
1998	473.63	2,578.42	1,438.20	1,123.48	3,449.51	5,527.13	535.03	1,681.51	699.74	1,905.77
1999	531.21	2,901.72	1,496.71	1,137.96	3,909.86	6,175.22	568.20	1,900.26	797.74	2,144.59
2000	587.53	3,220.81	1,546.39	1,151.87	4,353.19	6,797.80	595.46	2,113.46	882.04	2,329.83
2001	646.82	3,539.26	1,587.36	1,159.26	4,812.25	7,423.41	623.09	2,333.67	973.98	2,522.44
2002	703.46	3,874.12	1,618.53	1,160.71	5,269.21	8,055.82	646.30	2,550.89	1,061.50	2,712.20
Prob. of Losing Real Net Worth (%)										
1998	1	1	1	11	1	1	1	1	1	1
1999	1	1	1	18	1	1	1	1	1	1
2000	1	1	1	29	1	1	1	1	1	1
2001	1	1	2	46	1	1	1	1	1	1
2002	1	1	6	58	1	1	1	1	1	1
Real Net Worth (\$1000)										
1996	342.18	1,852.08	1,223.08	1,011.39	2,369.44	3,926.10	442.36	1,163.37	499.30	1,395.79
1997	390.49	2,057.31	1,266.47	1,045.04	2,720.33	4,457.82	464.80	1,364.30	571.34	1,667.34
1998	447.11	2,434.03	1,357.66	1,060.57	3,256.34	5,217.62	505.07	1,587.35	660.55	1,799.05
1999	489.81	2,675.61	1,380.08	1,049.29	3,605.19	5,894.03	523.93	1,752.19	735.58	1,977.48
2000	529.21	2,901.10	1,392.89	1,037.53	3,921.08	6,123.03	536.36	1,903.67	794.49	2,098.57
2001	568.99	3,113.40	1,396.36	1,019.77	4,233.21	6,530.18	548.12	2,052.87	856.78	2,218.92
2002	604.32	3,328.09	1,390.41	997.12	4,526.56	6,920.41	555.21	2,191.36	911.89	2,329.94

Table 11. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Milk.

	MOD85	MOD300	GAND175	GASD650	FLND380	FLSD2000
Annual Change Real Net Worth (%)						
1996-2002 Average	4.67	4.59	2.82	9.78	9.71	10.35
Net Income Adjustment (NIA)						
1996-2002 (\$1,000)	-22.18	-86.74	-3.52	-317.46	-176.32	-761.81
Net Income Adjustment (NIA)						
1996-2002 (% Receipts)	-10.21	-10.77	-0.68	-15.60	-15.00	-12.48
Cost to Receipts Ratio (%)						
1996-2002 Average	74.63	81.14	91.52	78.95	78.18	83.45
Govt Payments/Receipts (%)						
1996-2002 Average	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Receipts (\$1000)						
1996	218.92	819.60	532.15	2,088.34	1,194.98	6,175.59
1997	207.31	767.44	495.00	1,941.24	1,129.82	5,837.50
1998	234.36	872.54	559.52	2,193.43	1,257.16	6,500.47
1999	212.06	783.43	504.83	1,978.09	1,143.16	5,952.09
2000	212.08	783.22	505.38	1,979.53	1,146.36	5,975.43
2001	216.08	796.85	513.59	2,011.11	1,166.80	6,080.46
2002	220.16	813.71	525.04	2,055.59	1,190.10	6,198.61
Net Cash Farm Income (\$1000)						
1996	30.21	117.33	-47.14	387.16	18.07	-168.76
1997	29.33	120.27	-82.98	239.68	-17.83	-365.79
1998	72.16	209.74	90.86	614.87	366.86	1,525.60
1999	64.31	165.49	91.88	461.24	372.18	1,589.70
2000	65.35	161.29	93.83	451.68	372.33	1,604.36
2001	66.82	163.74	88.43	438.48	358.83	1,547.80
2002	67.18	166.28	84.68	449.21	348.62	1,507.73
Prob. of a Cash Flow Deficit (%)						
1998	51	15	99	1	1	30
1999	52	46	99	4	1	1
2000	52	32	98	1	1	1
2001	40	30	89	3	1	1
2002	39	34	79	2	1	1
Ending Cash Reserves (\$1000)						
1996	-5.89	26.25	-78.12	161.88	-45.00	-293.78
1997	-15.86	52.17	-195.02	221.18	-107.64	-763.53
1998	0.28	126.52	-140.16	521.03	94.16	197.42
1999	5.11	142.34	-106.30	677.03	257.32	1,013.50
2000	13.14	179.73	-81.03	868.65	424.37	1,864.92
2001	24.35	218.61	-61.73	1,057.05	586.61	2,692.37
2002	35.99	256.10	-42.38	1,255.02	745.90	3,509.93
Prob. of Refinancing Deficits (%)						
1998	51	1	99	1	1	30
1999	42	5	99	1	1	1
2000	33	1	98	1	1	1
2001	25	5	89	1	1	1
2002	19	3	79	1	1	1
Nominal Net Worth (\$1000)						
1996	358.17	1,090.44	321.07	1,553.98	870.75	3,821.99
1997	387.96	1,194.05	237.37	1,722.62	889.15	3,741.78
1998	427.55	1,319.72	311.36	2,088.74	1,134.45	4,955.04
1999	466.97	1,414.99	368.51	2,326.25	1,346.13	6,012.33
2000	503.17	1,502.11	411.25	2,567.98	1,555.76	7,051.42
2001	538.76	1,585.24	447.13	2,804.63	1,759.67	8,050.31
2002	568.68	1,662.61	482.45	3,040.19	1,954.33	9,003.55
Prob. of Losing Real Net Worth (%)						
1998	1	1	72	1	1	1
1999	1	1	28	1	1	1
2000	1	1	8	1	1	1
2001	1	1	5	1	1	1
2002	1	1	4	1	1	1
Real Net Worth (\$1000)						
1996	350.81	1,068.01	314.46	1,522.02	852.84	3,743.38
1997	374.51	1,152.66	229.14	1,662.91	858.32	3,612.08
1998	403.61	1,245.81	293.93	1,971.78	1,070.92	4,677.56
1999	430.58	1,304.73	339.79	2,144.99	1,241.24	5,543.84
2000	453.23	1,353.00	370.43	2,313.08	1,401.33	6,351.47
2001	473.93	1,394.49	393.33	2,467.16	1,547.94	7,081.65
2002	488.53	1,428.28	414.45	2,611.70	1,678.89	7,734.58

Figure 24. Dairy Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth

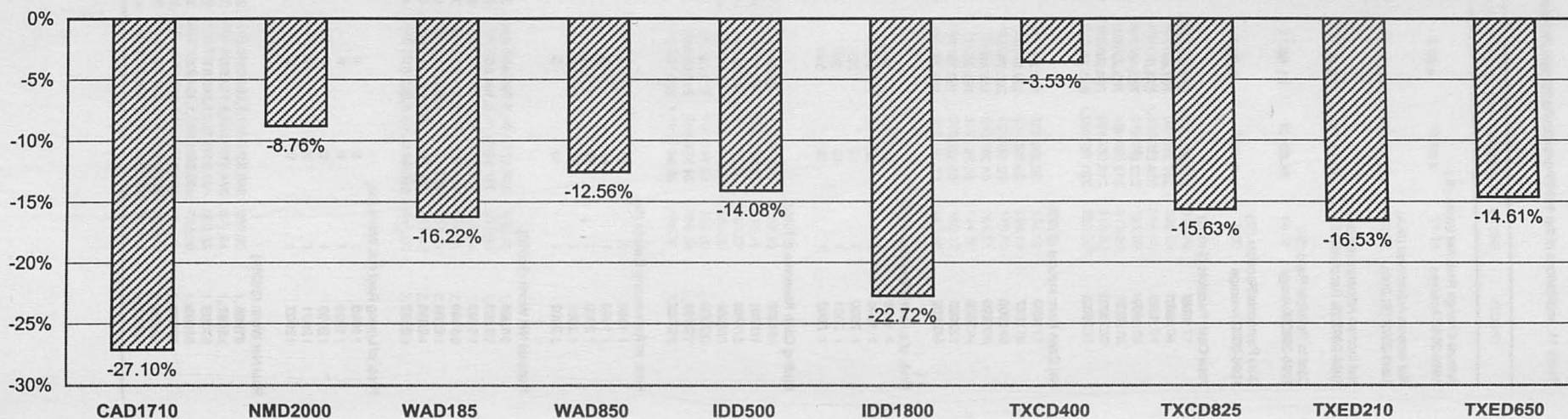
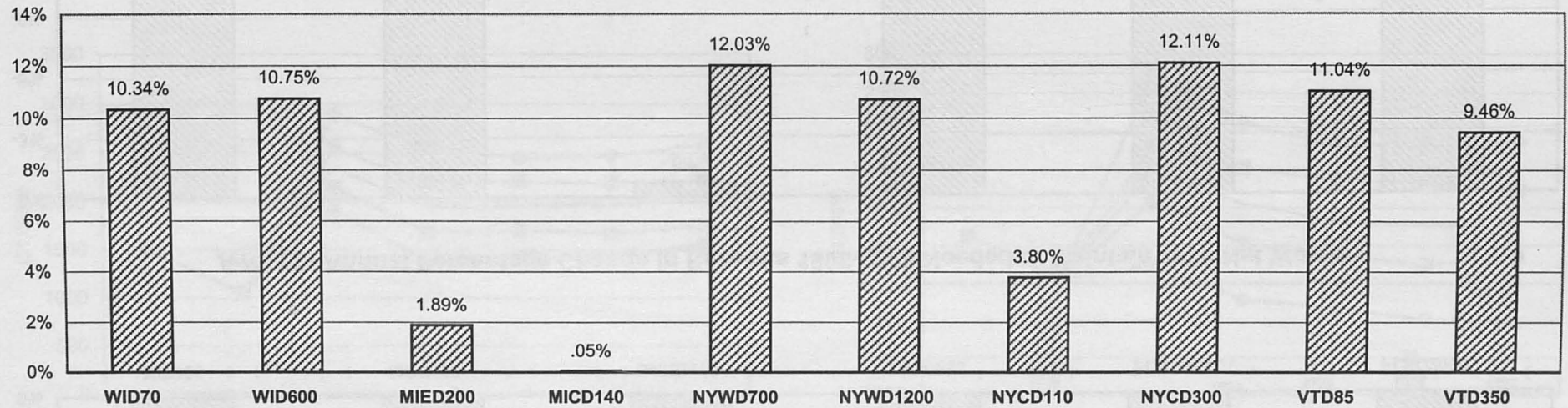


Figure 25. Dairy Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth

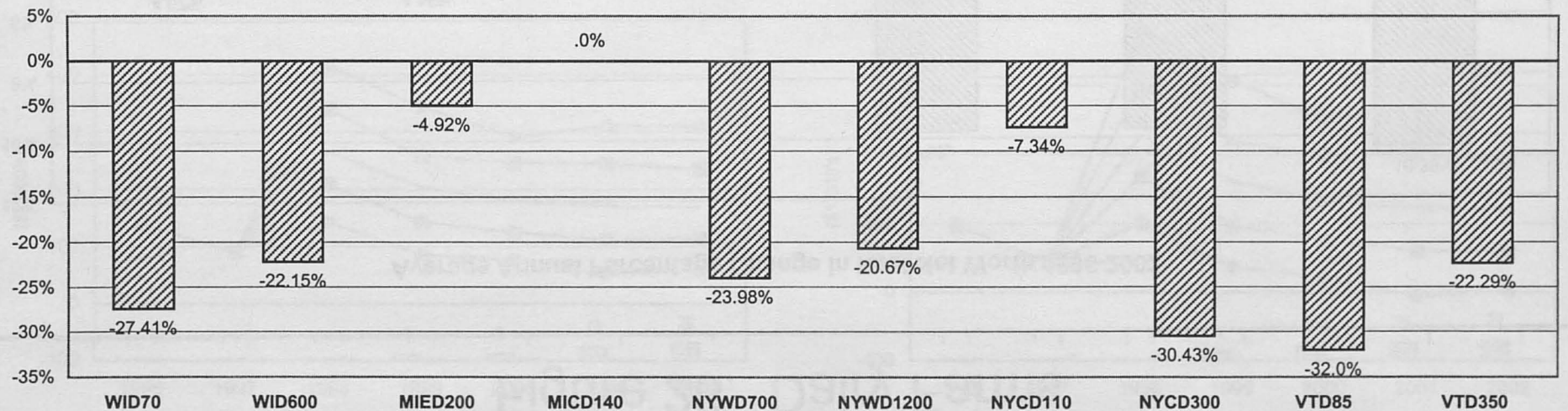
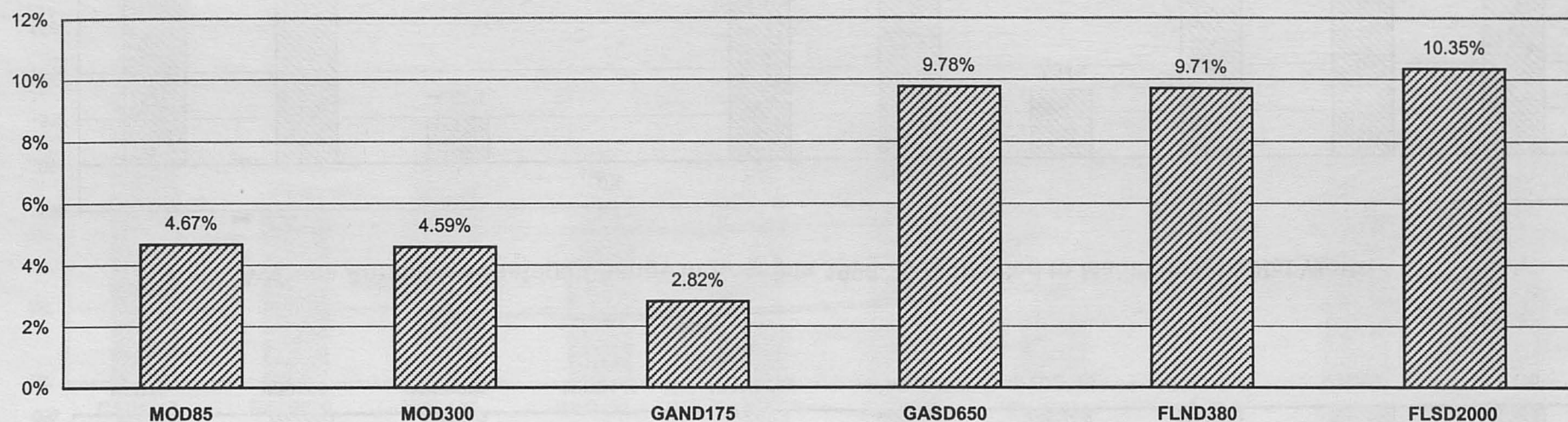
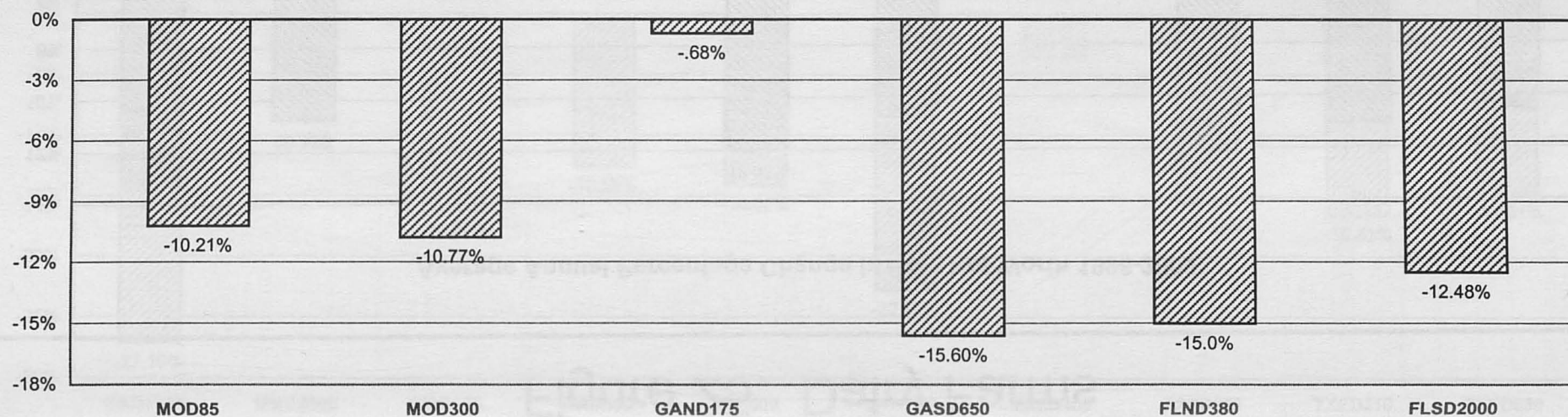


Figure 26. Dairy Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



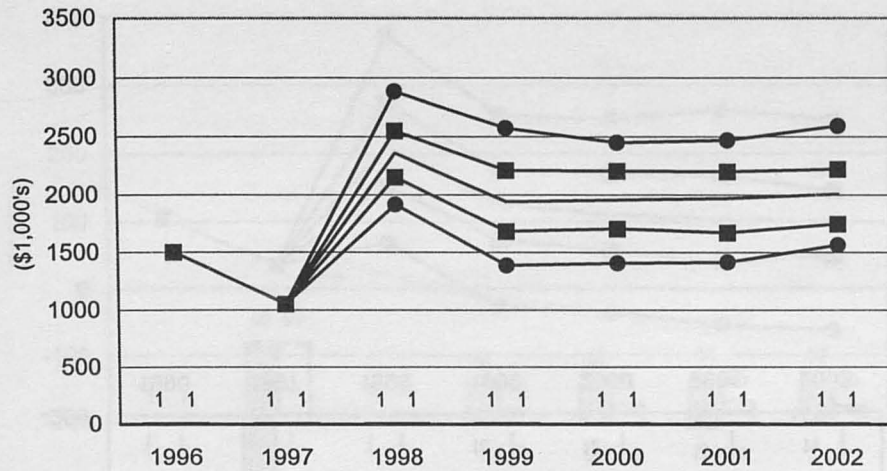
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



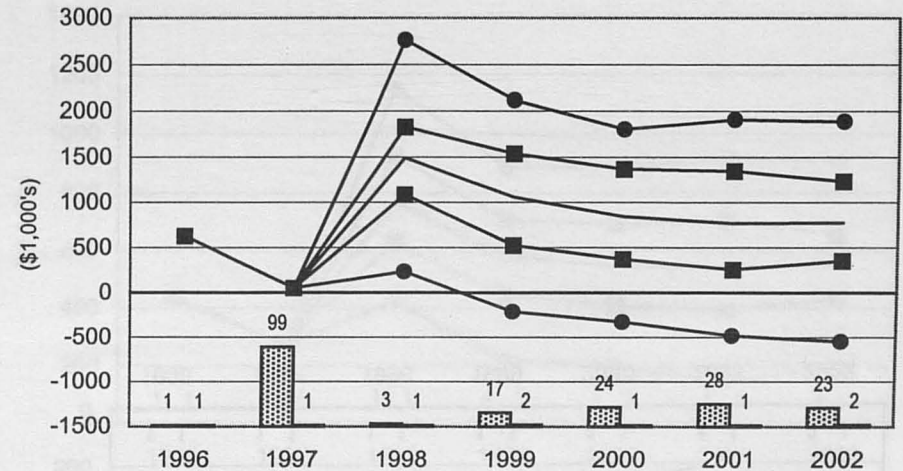
**Figure 27. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

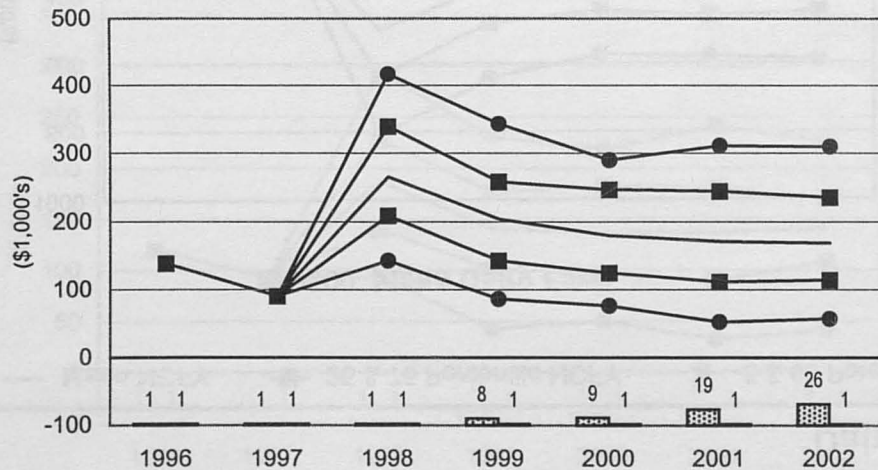
CAD1710 California Dairy Farm



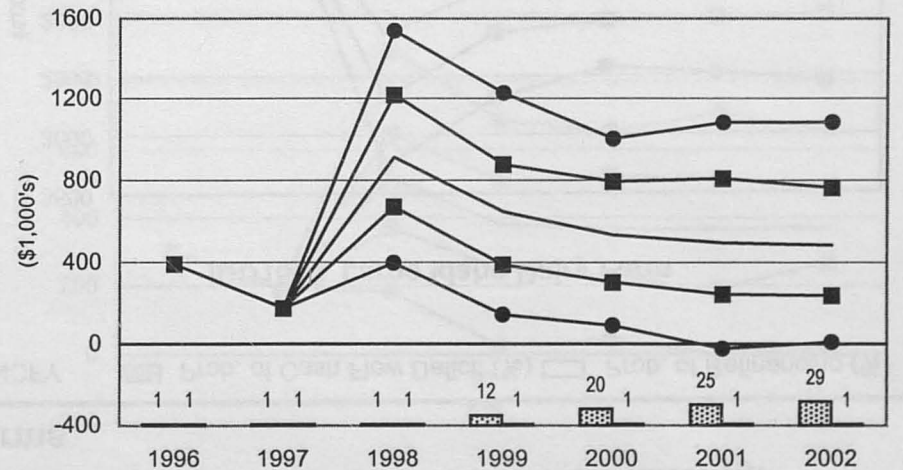
NMD2000 New Mexico Dairy Farm



WAD185 Washington Dairy Farm



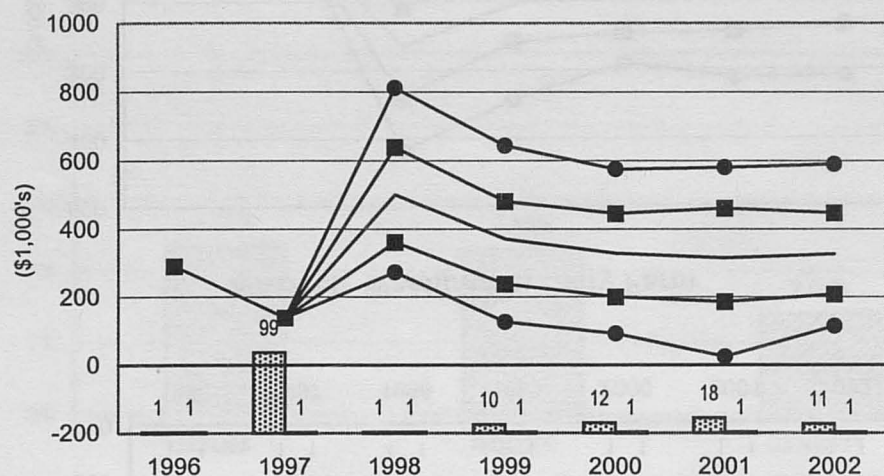
WAD850 Large Washington Dairy Farm



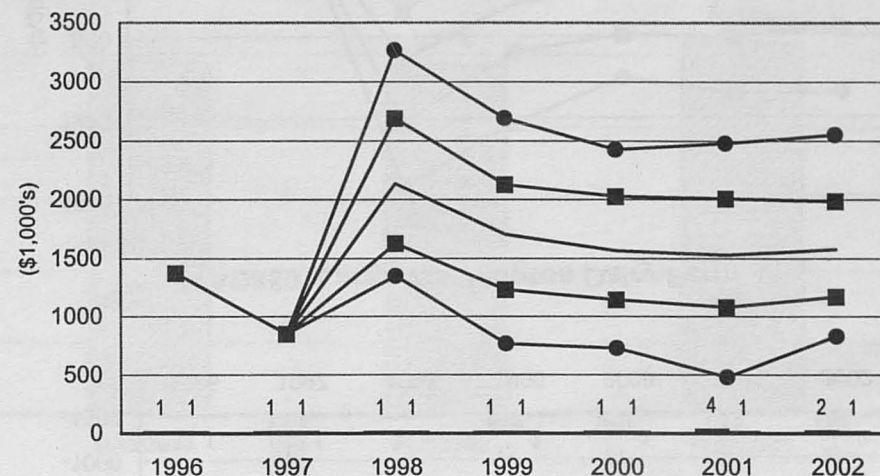
**Figure 28. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

IDD500 Idaho Dairy Farm



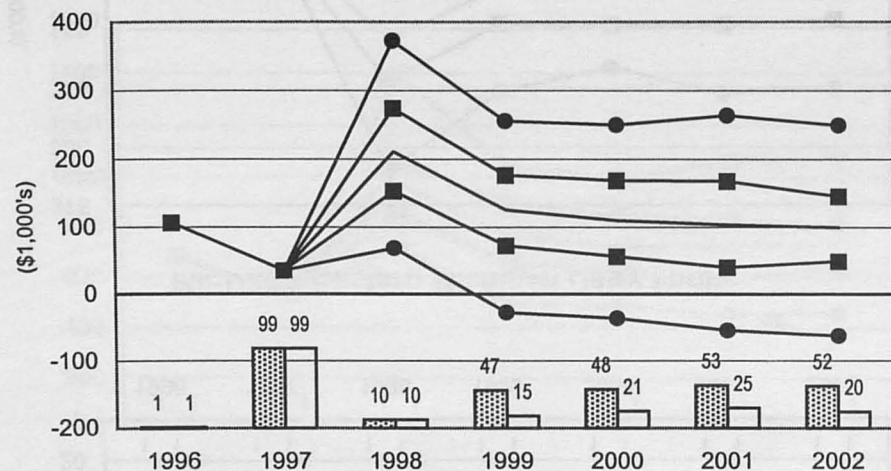
IDD1800 Large Idaho Dairy Farm



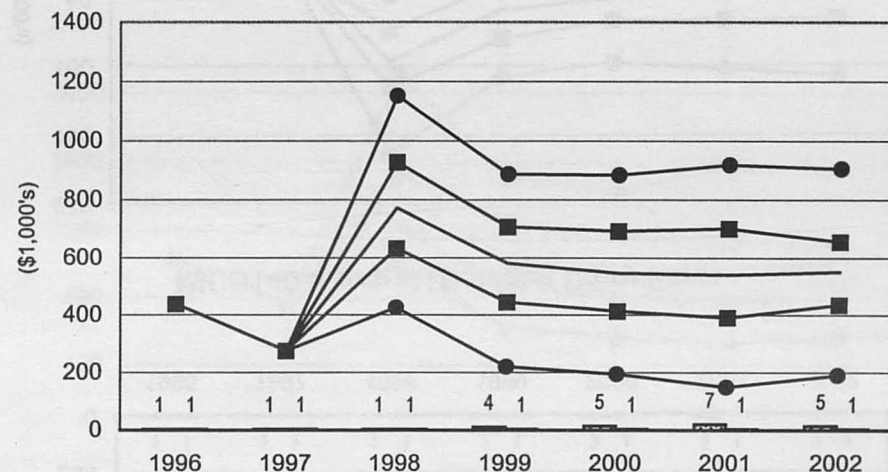
**Figure 29. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

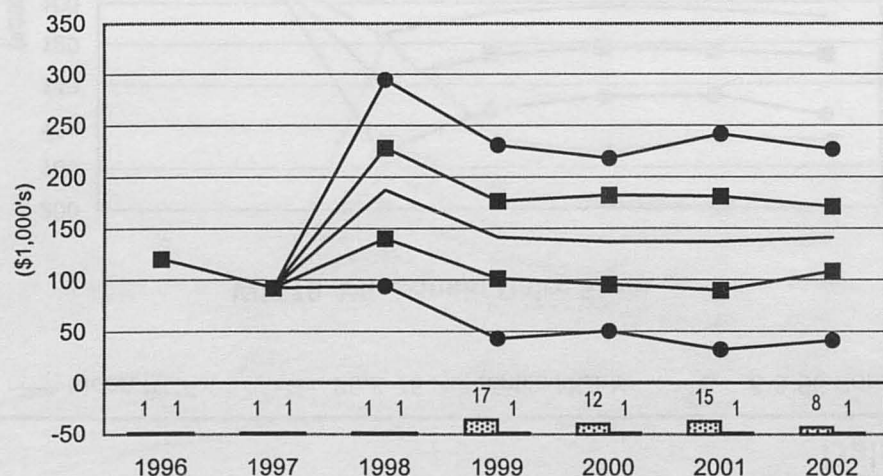
TXCD400 Central Texas Dairy Farm



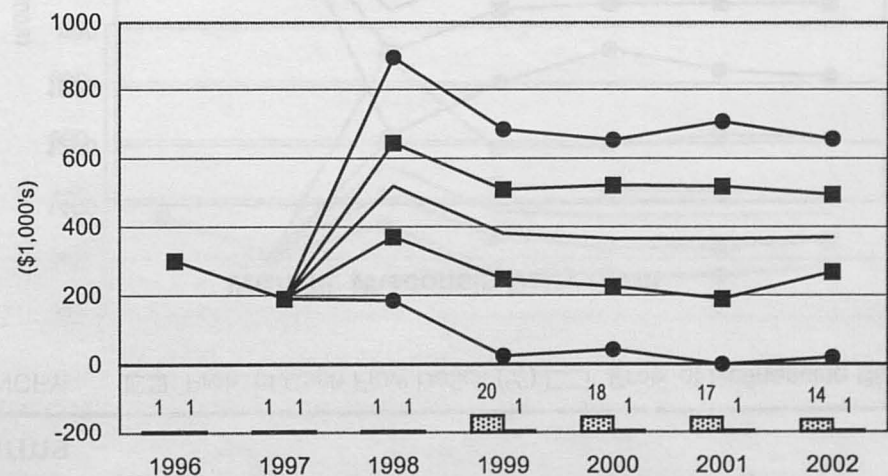
TXCD825 Large Central Texas Dairy Farm



TXED210 East Texas Dairy Farm



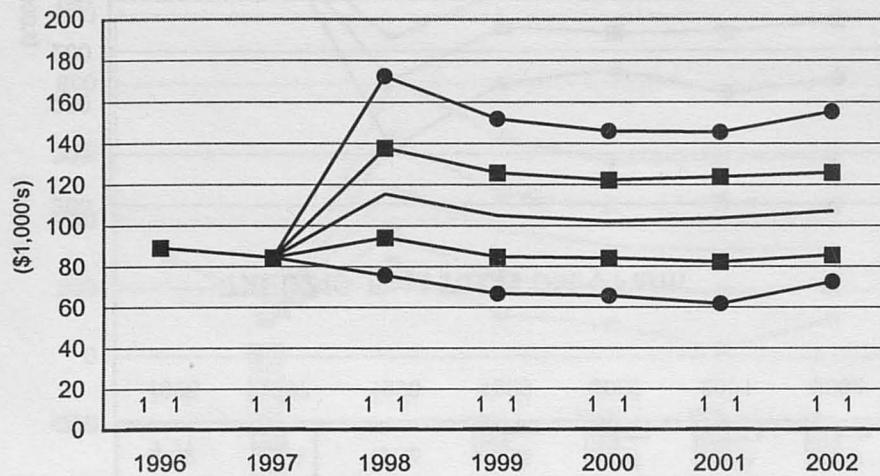
TXED650 Large East Texas Dairy Farm



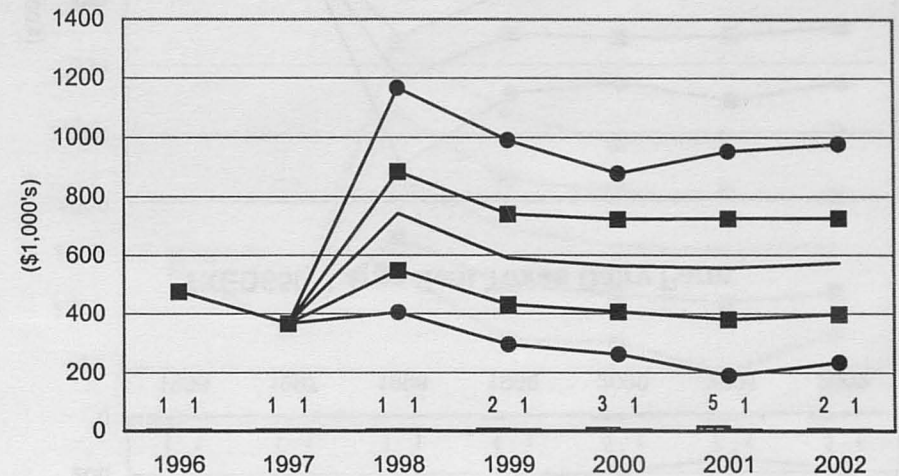
**Figure 30. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

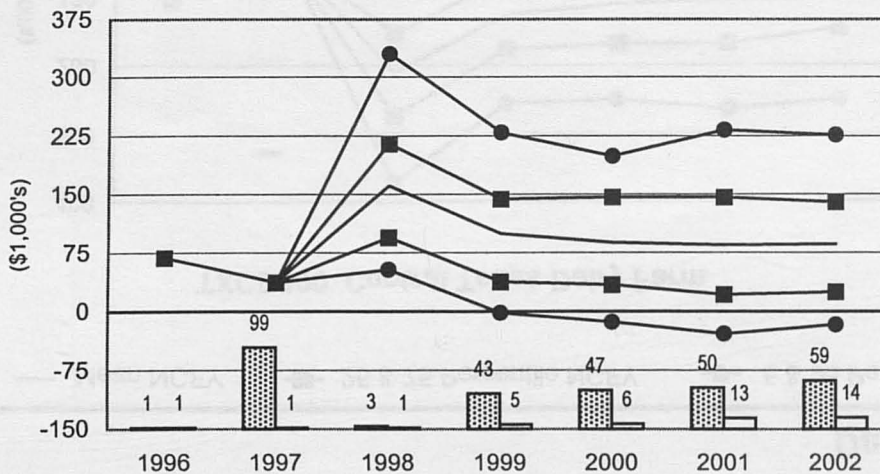
WID70 Wisconsin Dairy Farm



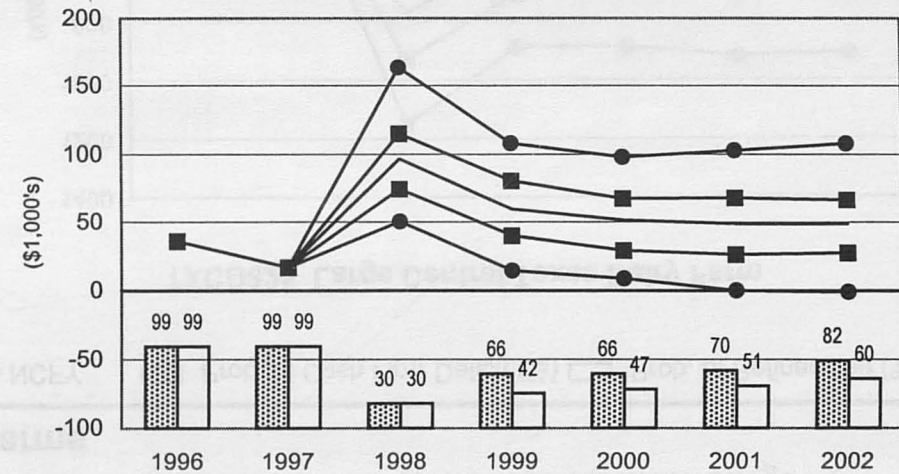
WID600 Wisconsin Dairy Farm



MIED200 Eastern Michigan Dairy Farm



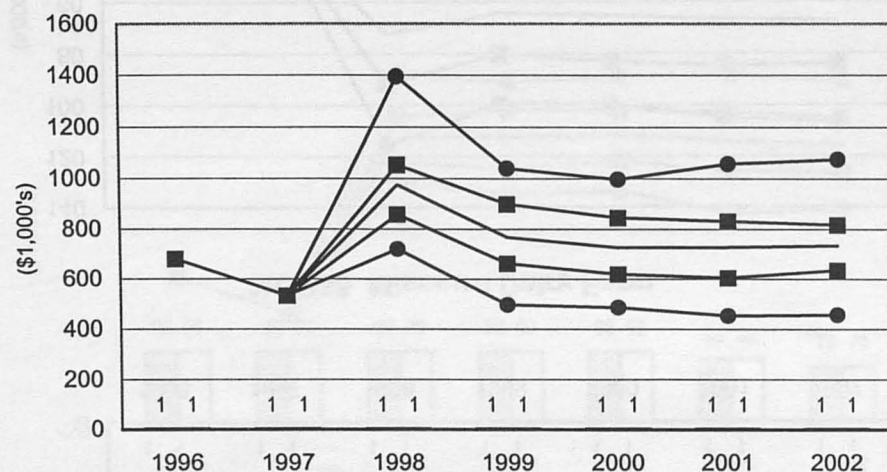
MICD140 Central Michigan Dairy Farm



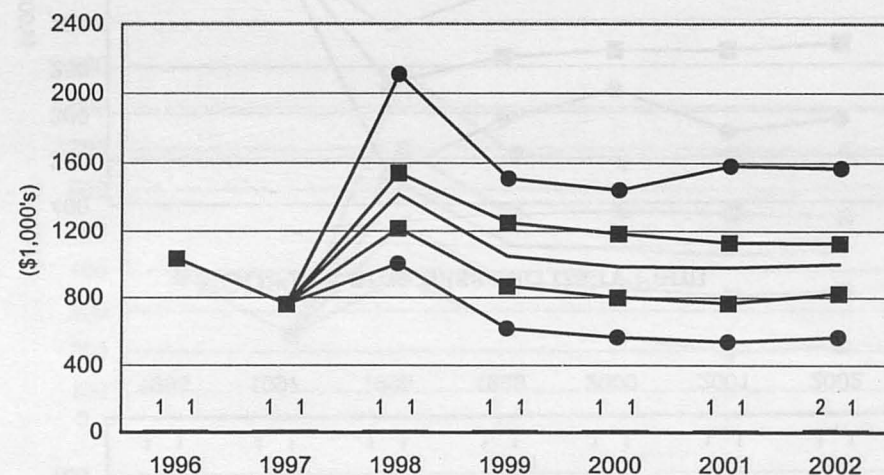
**Figure 31. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

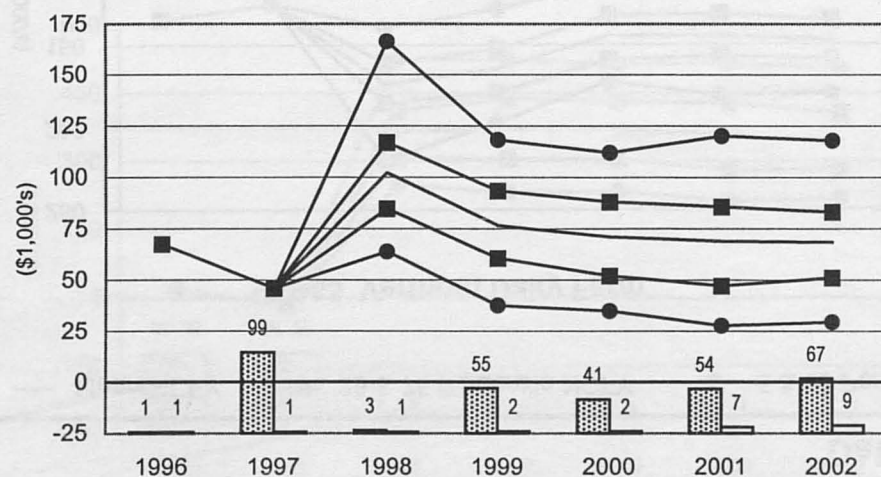
NYWD700 Western New York Dairy Farm



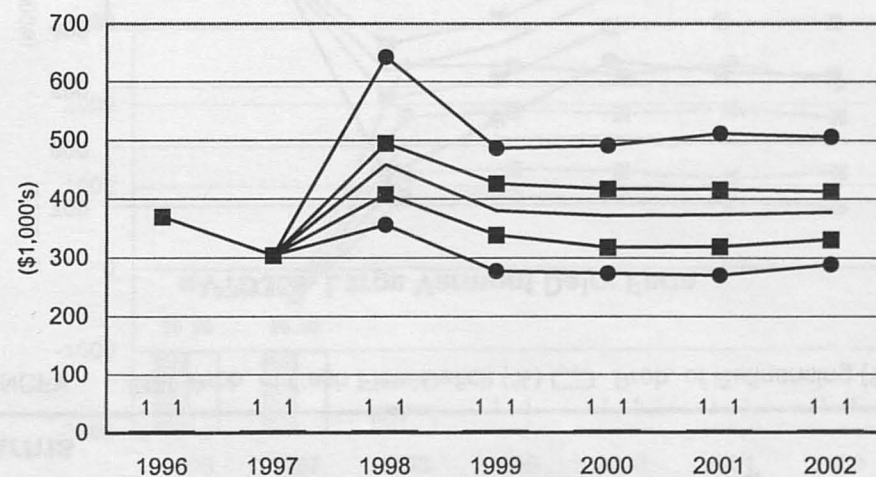
NYWD1200 Large Western New York Dairy Farm



NYCD110 Central New York Dairy Farm



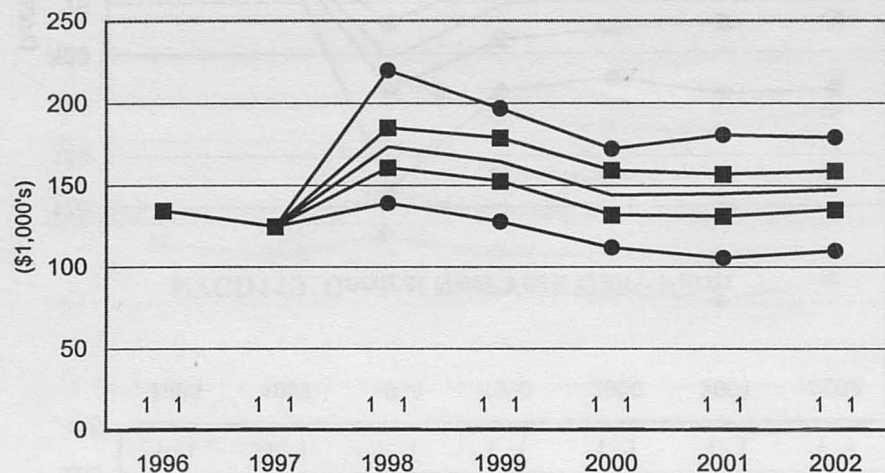
NYCD300 Large Central New York Dairy Farm



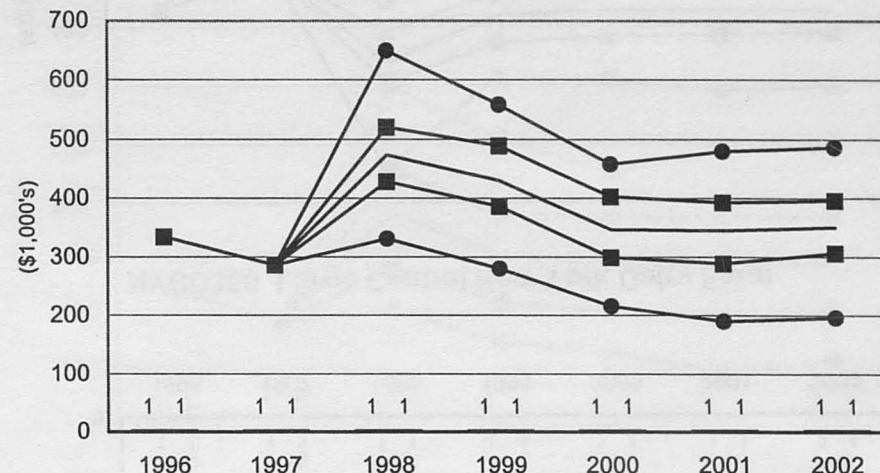
**Figure 32. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

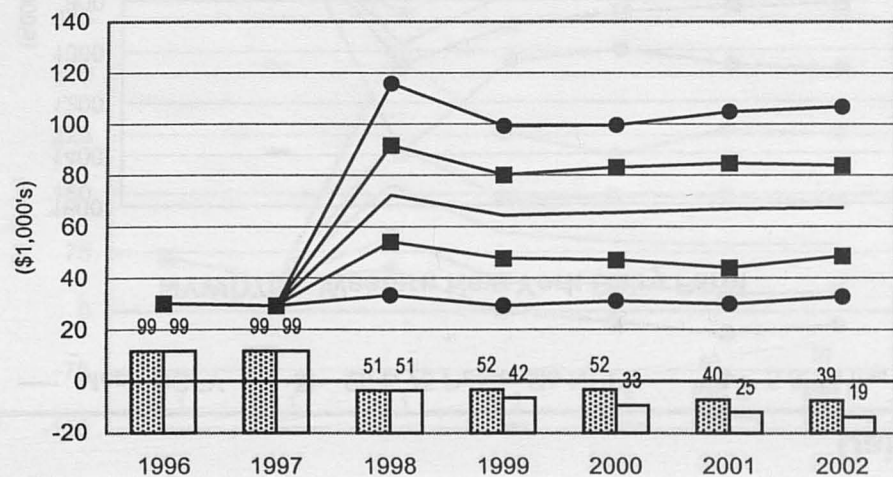
VTD85 Vermont Dairy Farm



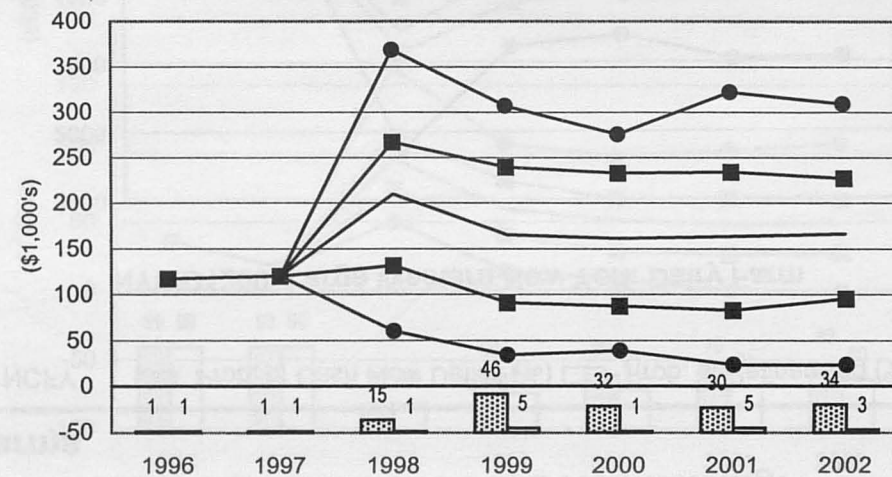
VTD350 Large Vermont Dairy Farm



MOD85 Missouri Dairy Farm



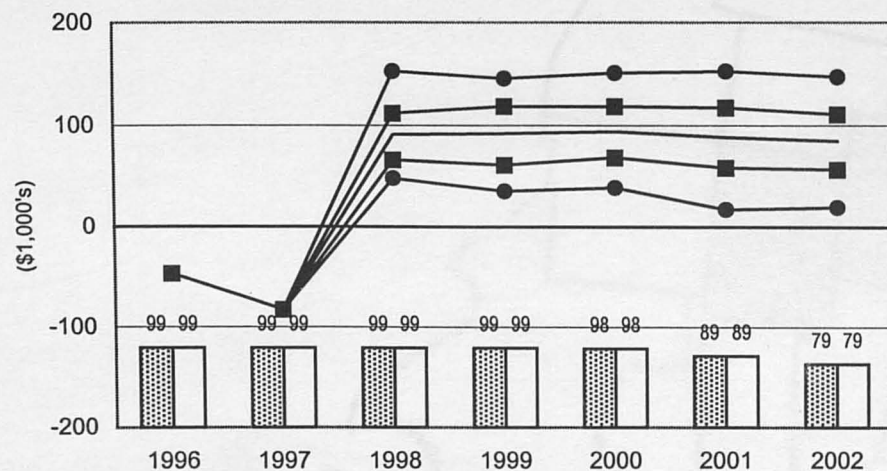
MOD300 Large Missouri Dairy Farm



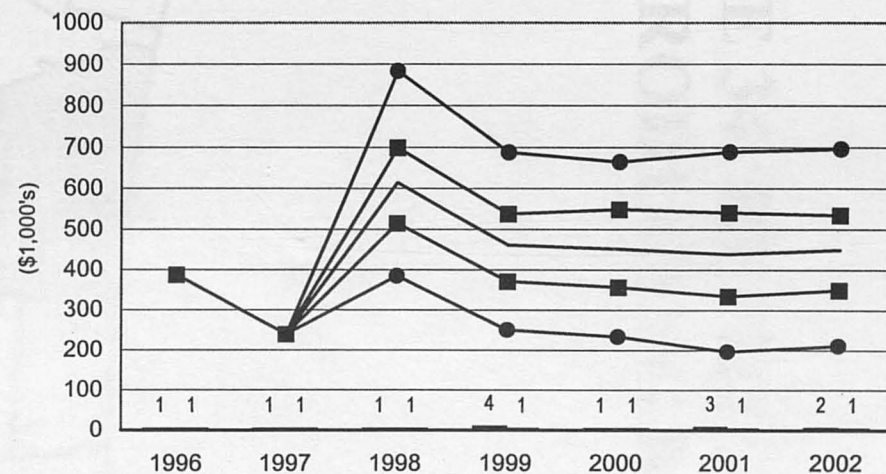
**Figure 33. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Dairy Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

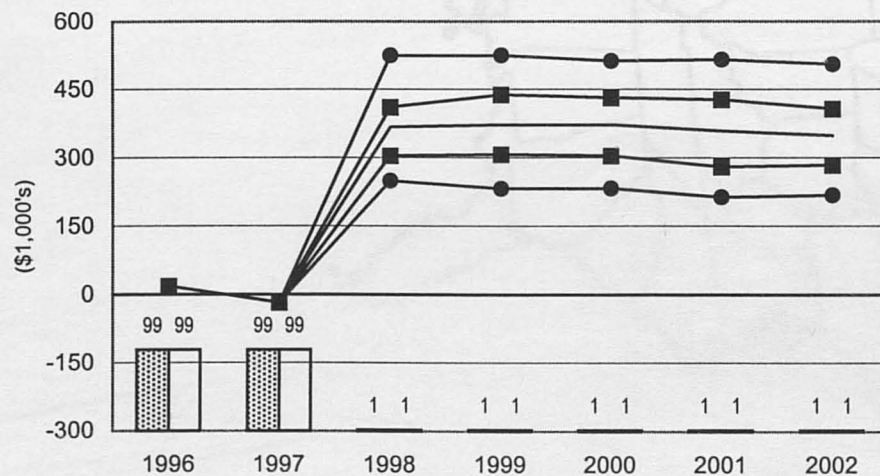
GAND175 Northern Georgia Dairy Farm



GASD650 Southern Georgia Dairy Farm



FLND380 Northern Florida Dairy Farm



FLSD2000 Southern Florida Dairy Farm

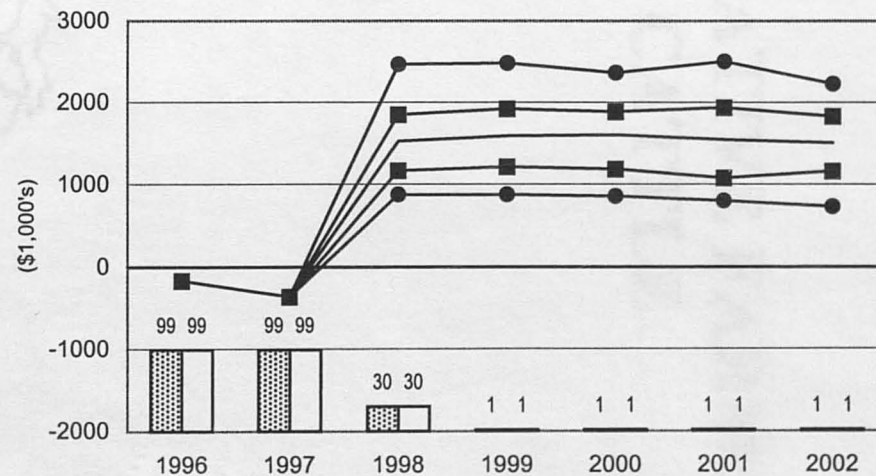




FIGURE 1. Number of lions in the Serengeti.

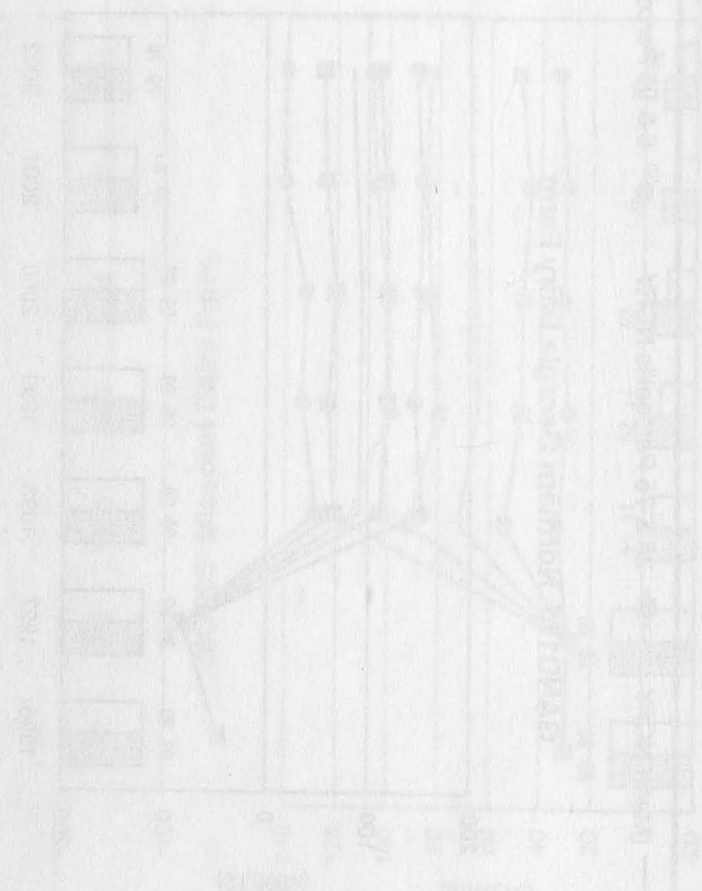


FIGURE 2. Number of lions in the Serengeti.

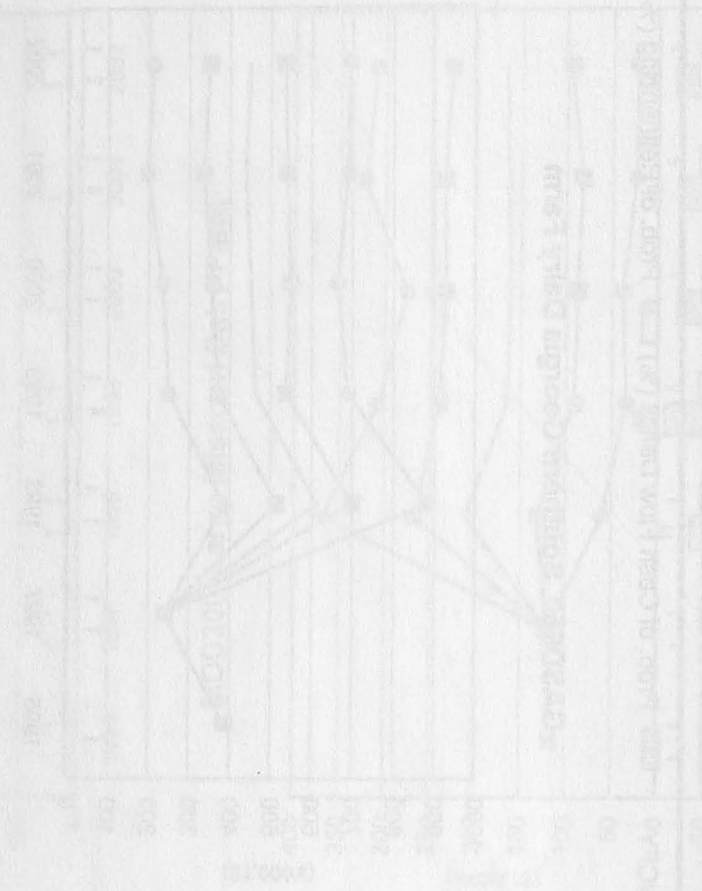
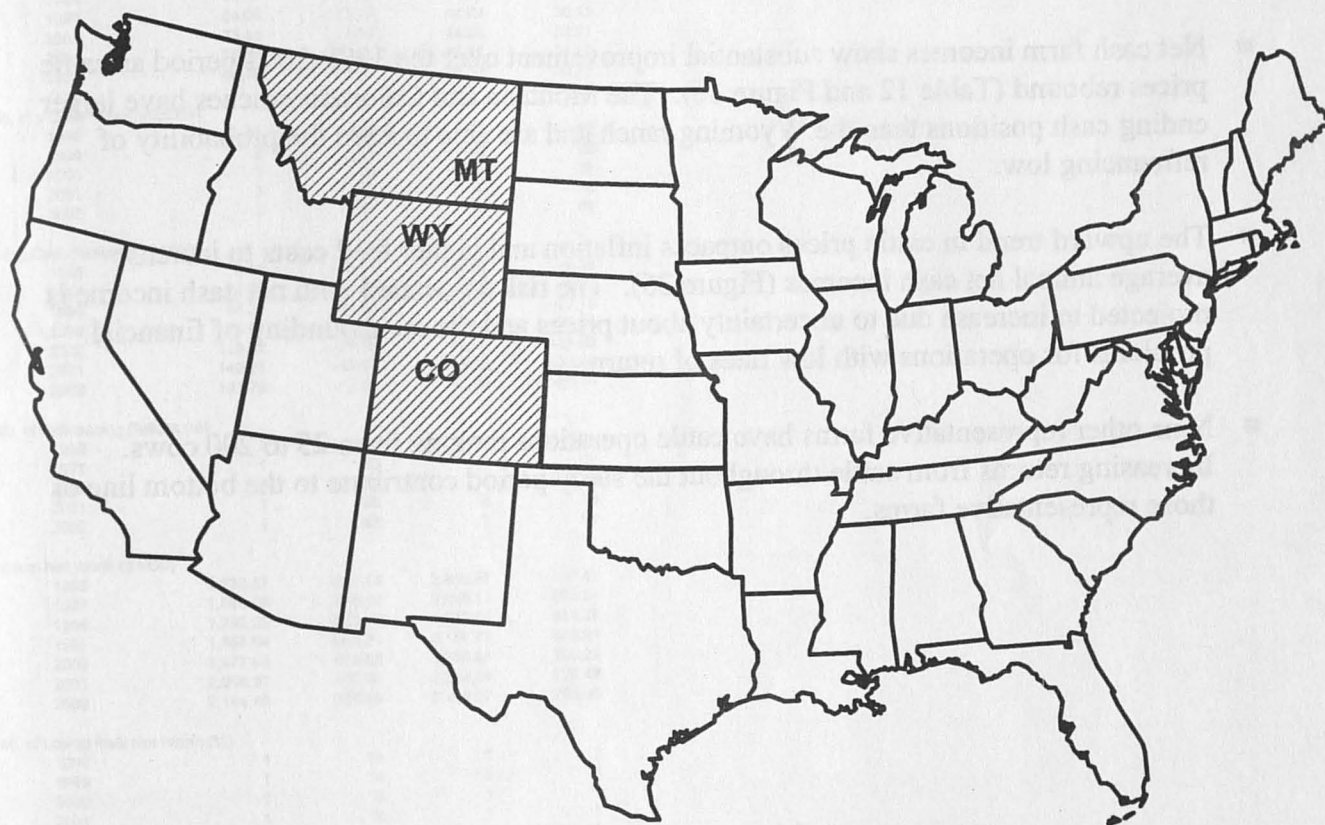


FIGURE 3. Number of lions in the Serengeti.

FIGURE 4. Number of lions in the Serengeti.

FIGURE 5. Number of lions in the Serengeti.

FIGURE 34. REPRESENTATIVE FARMS PRODUCING BEEF CATTLE



Beef Cattle Impacts

- The beef cattle outlook is positive due to the upturn in cattle prices projected over the study period. Feeder cattle prices are projected to rise from approximately \$61/cwt. in 1996 to \$91.98/cwt. in 2002.
- The increase in cattle prices and cheaper feed costs are responsible for projected average annual real increases in net worth of 1.3 to 2.6 percent over the 1996-2002 period for the representative ranches (Table 12 and Figure 35). Despite the positive growth in real net worth, the Wyoming ranch has a 12 percent chance of experiencing a decline in real net worth in year 2002.
- Ending cash reserves grow over the period for the Montana and Colorado ranches. The Wyoming ranch experiences negative ending cash balances throughout the period. On the average, the Missouri beef operation also experiences small cash flow deficits each year of the planning horizon. The probability of refinancing deficits declines for each of the ranches as cattle prices increase through 2002 (Figure 36).
- Net cash farm incomes show substantial improvement over the 1999-2002 period as cattle prices rebound (Table 12 and Figure 36). The Montana and Colorado ranches have larger ending cash positions than the Wyoming ranch and are able to keep the probability of refinancing low.
- The upward trend in cattle prices outpaces inflation and higher feed costs to increase average annual net cash incomes (Figure 36). The risk associated with net cash income is projected to increase due to uncertainty about prices and the compounding of financial problems for operations with low rates of return.
- Nine other representative farms have cattle operations ranging from 25 to 200 cows. Increasing returns from cattle throughout the study period contribute to the bottom line of those representative farms.

Table 12. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Beef Cattle.

	MTB400	WYB300	COB300	MOB150
Annual Change Real Net Worth (%)				
1996-2002 Average	2.57	1.35	1.42	1.76
Net Income Adjustment (NIA)				
1996-2002 (\$1,000)	-45.92	-6.18	-39.87	-8.99
Net Income Adjustment (NIA)				
1996-2002 (% Receipts)	-32.17	-5.29	-27.31	-7.93
Cost to Receipts Ratio (%)				
1996-2002 Average	61.11	85.44	74.51	75.23
Govt Payments/Receipts (%)				
1996-2002 Average	0.00	0.00	0.00	4.49
Total Cash Receipts (\$1000)				
1996	103.08	87.35	135.71	97.59
1997	139.54	114.94	151.57	117.44
1998	134.50	111.20	153.42	107.62
1999	145.56	118.24	157.23	113.81
2000	153.06	124.06	163.24	117.03
2001	158.85	128.69	169.40	118.30
2002	164.57	133.04	175.22	121.90
Net Cash Farm Income (\$1000)				
1996	17.24	-1.85	15.06	15.50
1997	53.00	25.16	33.91	35.02
1998	46.31	-1.87	40.21	16.22
1999	64.08	23.76	44.83	30.19
2000	73.41	27.60	44.08	33.31
2001	74.80	28.51	51.55	34.78
2002	82.19	35.69	63.30	39.72
Prob. of a Cash Flow Deficit (%)				
1998	11	99	11	99
1999	2	79	13	92
2000	1	75	23	89
2001	3	66	17	78
2002	1	61	8	69
Ending Cash Reserves (\$1000)				
1996	0.41	-15.16	-3.96	-9.65
1997	24.88	-6.88	6.24	-4.81
1998	44.29	-24.85	19.73	-27.19
1999	75.61	-19.32	36.16	-28.69
2000	115.42	-21.50	45.35	-27.68
2001	149.21	-19.91	61.12	-24.00
2002	191.79	-17.60	82.36	-18.14
Prob. of Refinancing Deficits (%)				
1998	1	99	4	99
1999	1	79	4	92
2000	1	72	4	88
2001	1	65	2	75
2002	1	56	1	65
Nominal Net Worth (\$1000)				
1996	1,533.57	556.59	2,663.87	577.42
1997	1,699.05	626.32	2,888.11	637.51
1998	1,792.22	623.06	3,048.80	651.20
1999	1,887.64	653.21	3,168.77	678.91
2000	1,977.63	679.92	3,260.87	705.25
2001	2,066.91	702.60	3,360.14	736.46
2002	2,144.48	726.59	3,436.07	763.95
Prob. of Losing Real Net Worth (%)				
1998	1	18	1	1
1999	1	14	1	1
2000	1	9	1	1
2001	1	10	1	1
2002	1	12	1	1
Real Net Worth (\$1000)				
1996	1,502.02	545.15	2,609.08	565.54
1997	1,640.16	604.61	2,788.00	615.41
1998	1,691.86	588.17	2,878.08	614.73
1999	1,740.55	602.31	2,921.85	626.01
2000	1,781.33	612.43	2,937.18	635.24
2001	1,818.20	618.06	2,955.83	647.84
2002	1,842.23	624.19	2,951.79	656.28

Figure 35. Cattle Ranches

Average Annual Percentage Change in Real Net Worth 1996-2002



Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth

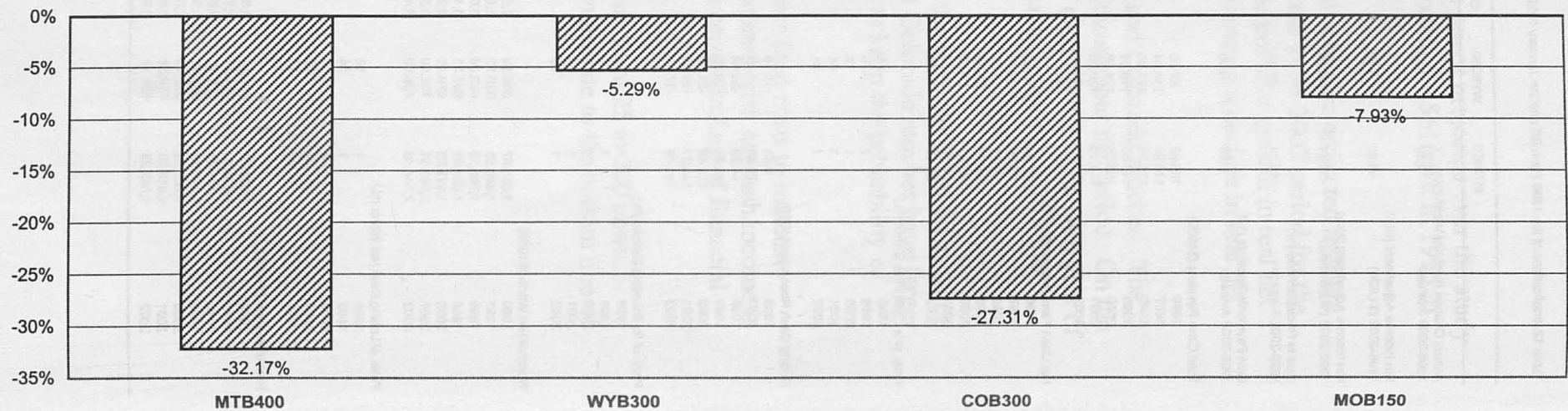
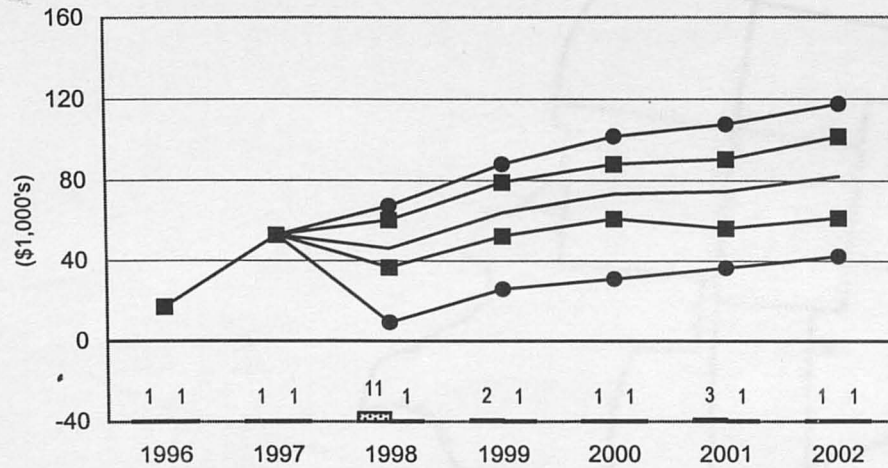


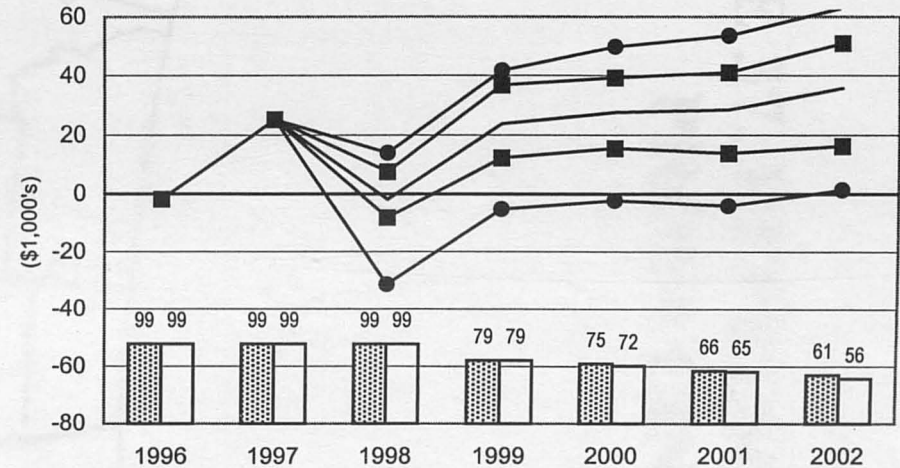
Figure 36. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing: Cattle Ranches

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

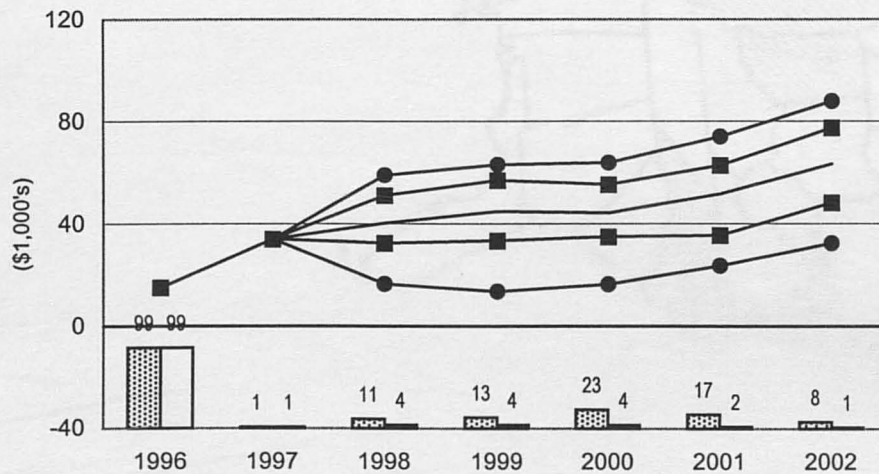
MTB400 Montana Cattle Ranch



WYB300 Wyoming Cattle Ranch



COB300 Colorado Cattle Ranch



MOB150 Southwest Missouri Cattle Ranch

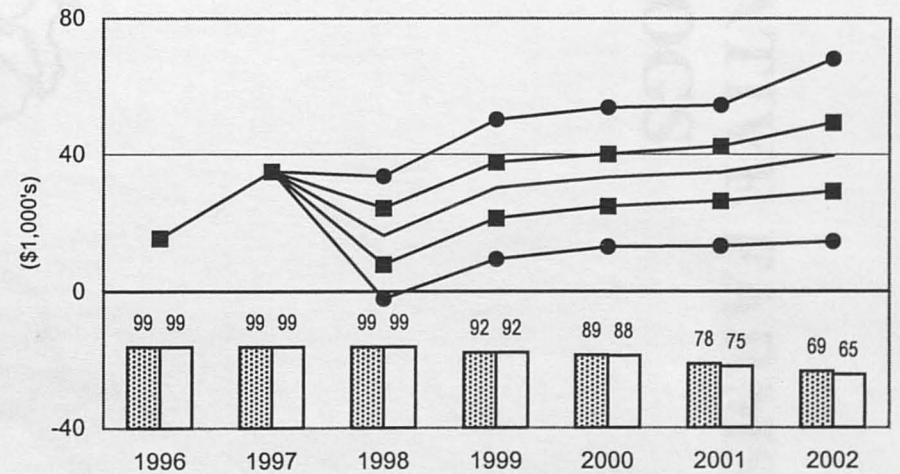


Figure 1. Cattle Ranching

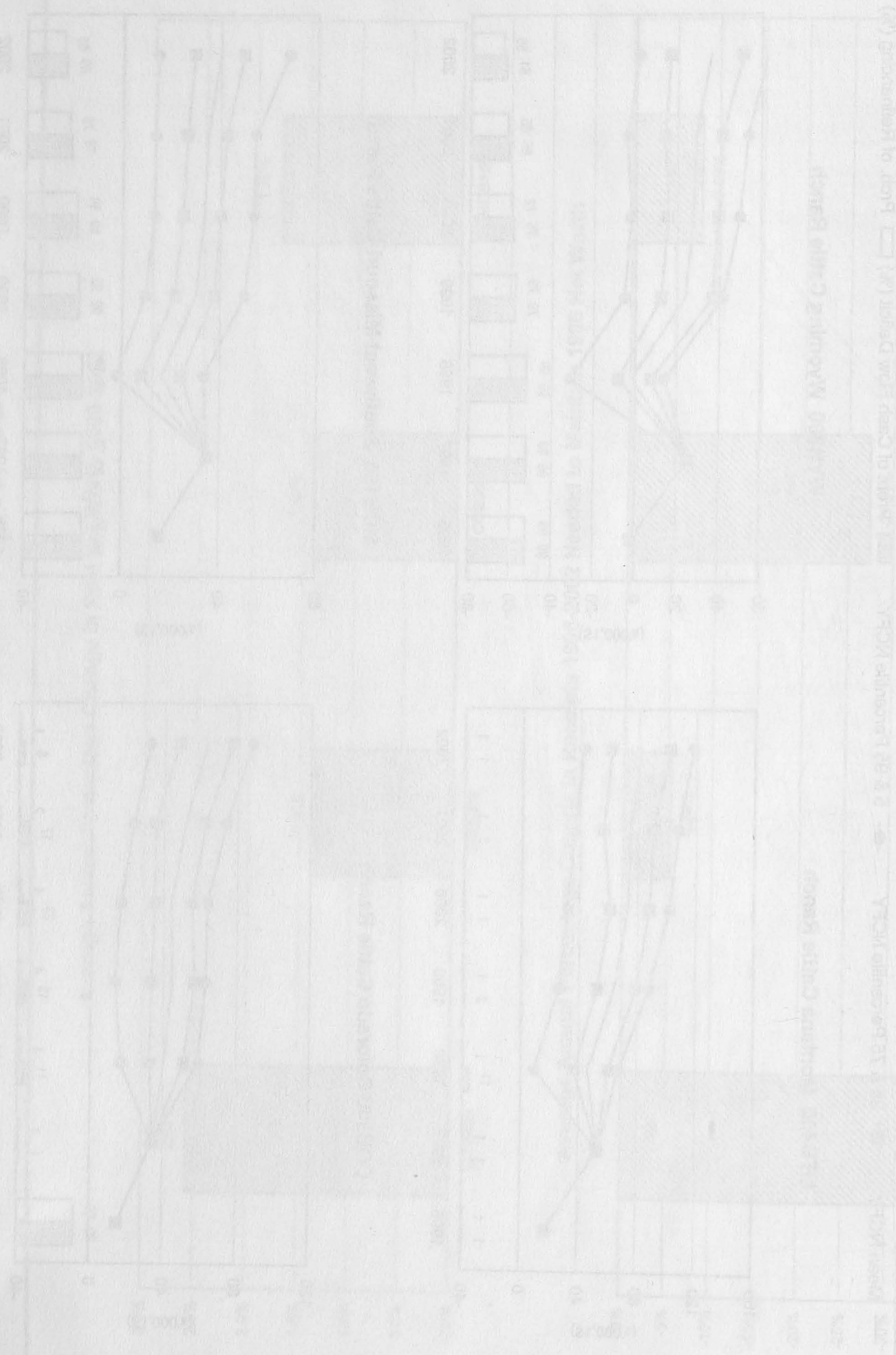
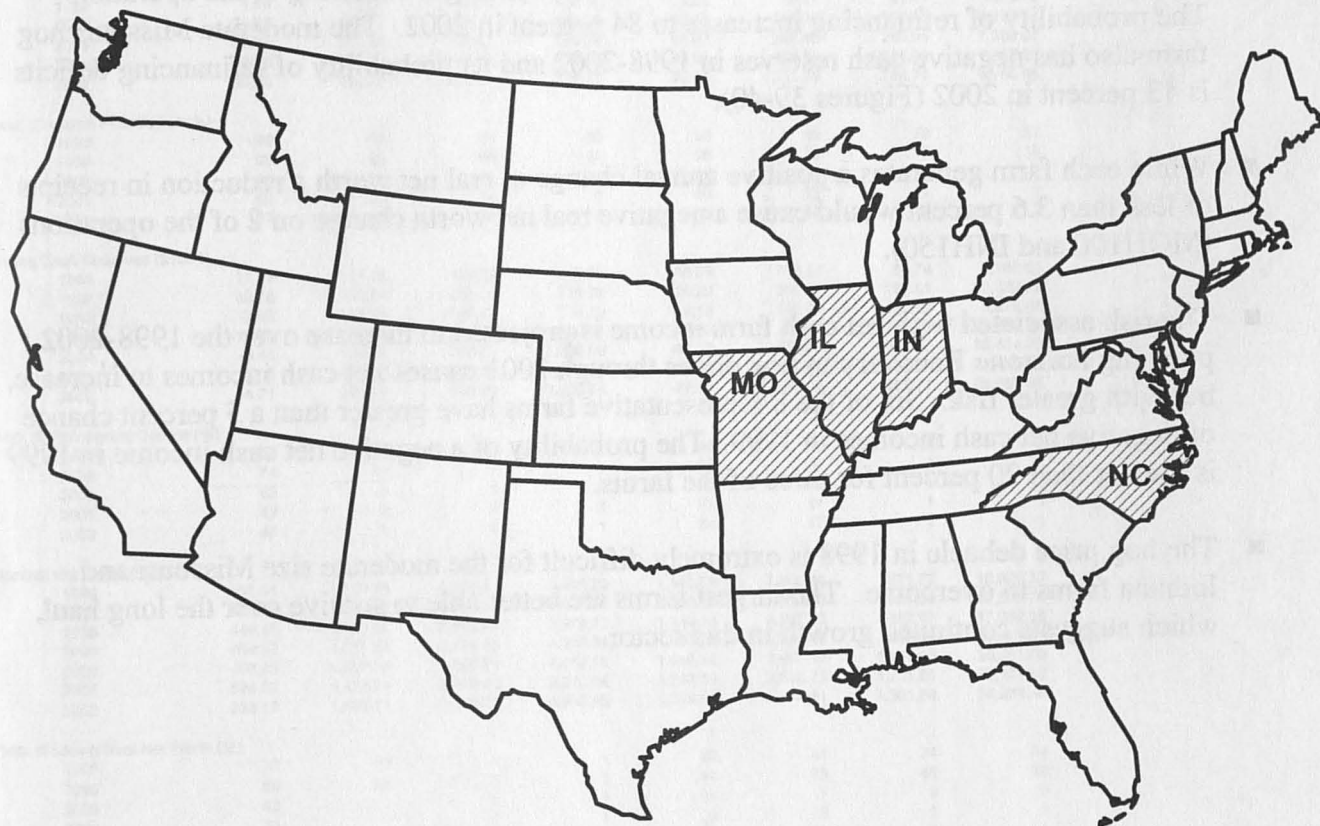


FIGURE 37. REPRESENTATIVE FARMS PRODUCING HOGS



Hog Farm Impacts

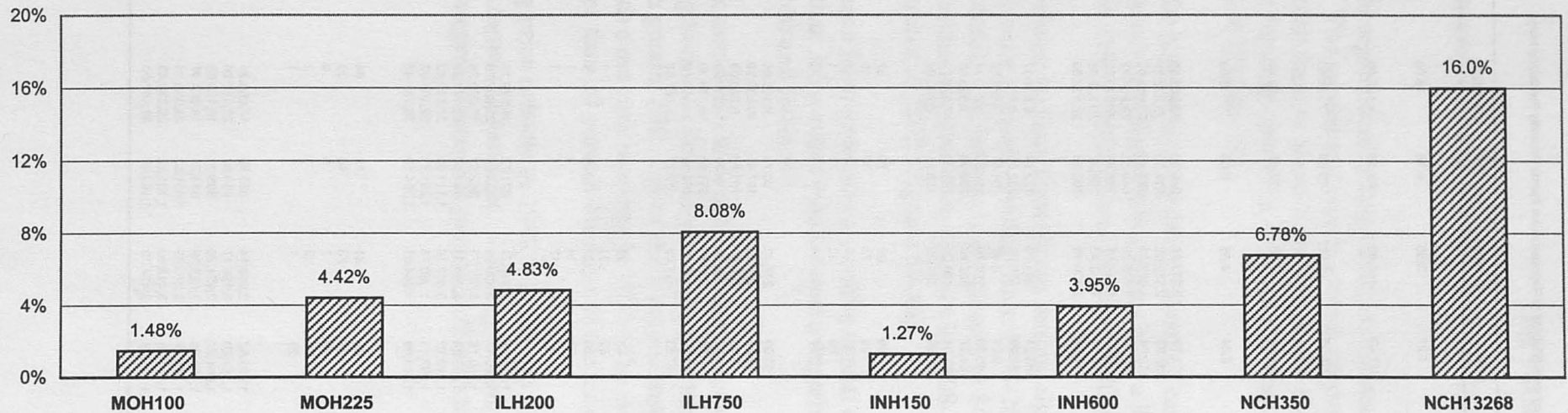
- Baseline projected hog prices range from \$31.74 per cwt. in 1998 to \$43.44 per cwt. in 2002.
- All eight representative hog farms experience an increase in real equity over the 1997-2002 period. The annual real equity growth ranges from 1 percent on the moderate Missouri (MOH100) farm to about 8 percent on the ILH750. Annual real equity growth on the large contract farming operation in North Carolina is substantially higher than the other farms at 16 percent (Figure 38).
- All of the hog farms show probabilities of cash flow deficits greater than 60 percent in 1998. The Missouri and Indiana hog farms have a 98 to 99 percent probability of a cash flow deficit in 1998 (Table 13 and Figures 39-40).
- The moderate Indiana farm shows serious signs of financial stress through 2002. Ending cash balances generally decline from 1998-2002, requiring refinancing of the operation. The probability of refinancing increases to 84 percent in 2002. The moderate Missouri hog farm also has negative cash reserves in 1998-2002 and its probability of refinancing deficits is 43 percent in 2002 (Figures 39-40).
- While each farm generates a positive annual change in real net worth a reduction in receipts of less than 3.6 percent would cause a negative real net worth change on 2 of the operations (MOH100 and INH150).
- The risk associated with net cash farm income is projected to increase over the 1998-2002 planning horizon. Recovery in hog prices through 2001 causes net cash incomes to increase, but with greater risk. Six of the 8 representative farms have greater than a 5 percent chance of negative net cash incomes in 1999. The probability of a negative net cash income in 1999 is greater than 20 percent for three of the farms.
- The hog price debacle in 1998 is extremely difficult for the moderate size Missouri and Indiana farms to overcome. The largest farms are better able to survive over the long haul, which suggests continued growth in this sector.

Table 13. Implications of the 1996 Farm Bill and the January 1999 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Hogs.

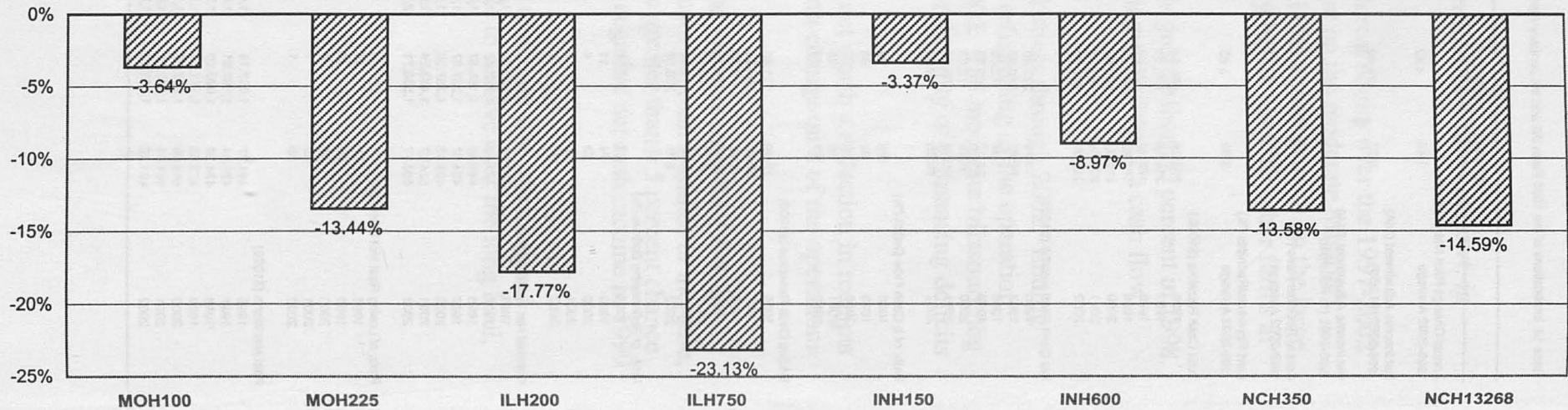
	MOH100	MOH225	ILH200	ILH750	INH150	INH600	NCH350	NCH13268
Annual Change Real Net Worth (%)								
1996-2002 Average	1.48	4.42	4.83	8.08	1.27	3.95	6.78	16.00
Net Income Adjustment (NIA)								
1996-2002 (\$1,000)	-8.02	-74.66	-111.89	-460.21	-17.43	-167.80	-105.76	-4,195.89
Net Income Adjustment (NIA)								
1996-2002 (% Receipts)	-3.64	-13.44	-17.77	-23.13	-3.37	-8.97	-13.58	-14.59
Cost to Receipts Ratio (%)								
1996-2002 Average	79.65	71.97	70.11	64.86	85.84	82.70	73.46	80.89
Govt Payments/Receipts (%)								
1996-2002 Average	3.89	3.63	4.93	2.93	6.24	4.58	0.00	0.00
Total Cash Receipts (\$1000)								
1996	261.28	680.94	748.44	2,386.79	622.77	2,262.34	949.80	35,093.50
1997	254.02	645.11	730.81	2,326.97	585.89	2,152.96	917.30	33,878.37
1998	173.25	433.84	509.26	1,525.06	419.74	1,467.84	587.16	21,651.90
1999	189.85	473.20	556.34	1,703.98	458.18	1,625.20	649.31	23,954.79
2000	218.82	546.56	619.05	1,974.22	507.31	1,844.81	768.81	28,393.25
2001	225.04	561.26	630.54	2,029.10	515.53	1,886.43	799.37	29,529.91
2002	220.07	548.78	629.66	1,982.74	511.74	1,859.16	780.66	28,832.80
Net Cash Farm Income (\$1000)								
1996	73.79	273.40	284.07	956.86	156.21	594.75	232.94	8,937.67
1997	70.42	210.23	270.46	933.72	125.98	526.77	292.08	8,818.29
1998	1.04	43.60	86.89	285.87	5.29	5.42	51.41	-476.05
1999	29.72	103.35	141.78	523.39	48.33	196.70	150.35	3,272.24
2000	56.14	172.67	199.61	789.72	84.07	392.46	260.95	7,309.07
2001	56.33	183.34	204.32	828.46	83.01	406.21	281.80	7,922.25
2002	50.25	169.32	200.14	769.17	72.89	361.29	255.71	6,750.95
Prob. of a Cash Flow Deficit (%)								
1998	99	98	84	63	99	99	79	67
1999	92	66	46	26	96	73	17	19
2000	56	20	14	1	87	26	2	1
2001	50	25	19	1	80	22	1	1
2002	67	18	23	1	93	34	2	2
Ending Cash Reserves (\$1000)								
1996	17.19	111.45	119.29	410.77	55.09	218.42	80.74	5,188.65
1997	32.76	165.04	228.21	768.28	70.22	350.88	197.81	10,332.29
1998	-2.62	95.74	196.44	744.10	-9.18	105.41	161.60	9,320.68
1999	-16.30	85.73	212.96	860.91	-56.82	44.19	216.31	11,536.22
2000	-6.49	136.82	275.71	1,235.56	-65.29	172.69	331.83	16,434.70
2001	3.38	179.30	330.19	1,609.91	-75.80	286.53	450.58	21,459.67
2002	4.71	223.57	383.13	1,960.64	-97.83	361.08	559.77	25,867.65
Prob. of Refinancing Deficits (%)								
1998	64	1	1	1	46	19	1	1
1999	74	11	1	1	82	31	1	1
2000	53	4	1	1	80	22	1	1
2001	42	2	1	1	77	14	1	1
2002	43	1	1	1	84	12	1	1
Nominal Net Worth (\$1000)								
1996	451.04	1,120.79	1,486.69	3,495.29	1,116.59	2,969.21	871.72	18,029.17
1997	487.13	1,230.46	1,677.46	4,073.10	1,206.11	3,309.90	994.04	22,802.70
1998	449.45	1,163.67	1,675.04	3,978.71	1,159.18	3,097.73	852.97	17,080.35
1999	464.87	1,237.67	1,788.43	4,386.34	1,193.24	3,284.31	947.00	20,177.22
2000	498.43	1,357.35	1,935.51	4,972.19	1,248.72	3,607.10	1,111.90	26,681.63
2001	524.07	1,453.24	2,059.44	5,510.04	1,297.13	3,880.75	1,251.85	32,101.02
2002	536.77	1,536.71	2,169.30	5,952.98	1,316.88	4,044.81	1,361.59	36,281.48
Prob. of Losing Real Net Worth (%)								
1998	77	48	1	1	43	41	71	64
1999	69	28	1	1	41	23	45	39
2000	43	4	1	1	35	7	9	9
2001	33	1	1	1	29	3	1	1
2002	30	1	1	1	28	1	1	1
Real Net Worth (\$1000)								
1996	441.77	1,097.74	1,456.11	3,423.40	1,093.62	2,908.14	853.80	17,658.34
1997	470.24	1,187.81	1,619.32	3,931.91	1,164.30	3,195.17	959.58	22,012.26
1998	424.28	1,098.50	1,581.24	3,755.91	1,094.27	2,924.26	805.21	16,123.88
1999	428.65	1,141.23	1,649.07	4,044.55	1,100.26	3,028.39	873.21	18,604.97
2000	448.96	1,222.62	1,743.38	4,478.63	1,124.77	3,249.05	1,001.53	24,033.14
2001	461.01	1,278.37	1,811.64	4,847.04	1,141.05	3,413.80	1,101.22	28,238.43
2002	461.12	1,320.12	1,863.55	5,113.95	1,131.28	3,474.73	1,169.68	31,167.90

Figure 38. Hog Farms

Average Annual Percentage Change in Real Net Worth 1996-2002



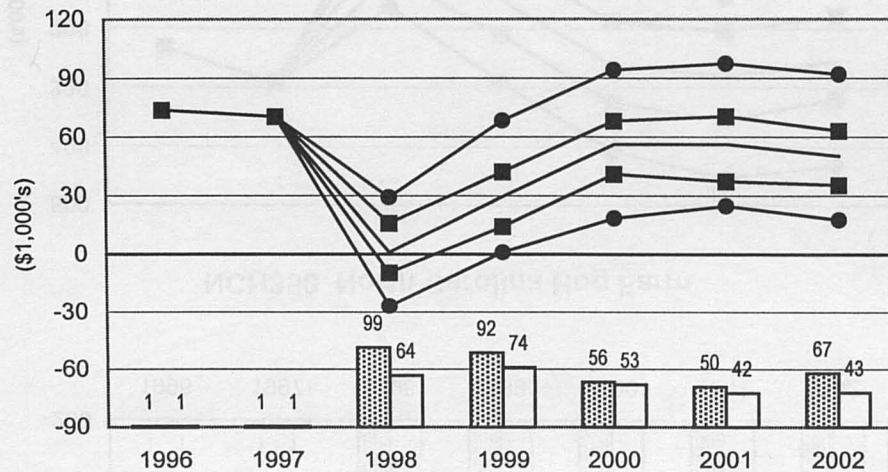
Average Annual Percentage Change in Receipts 1996-2002 Needed to Maintain 1996 Net Worth



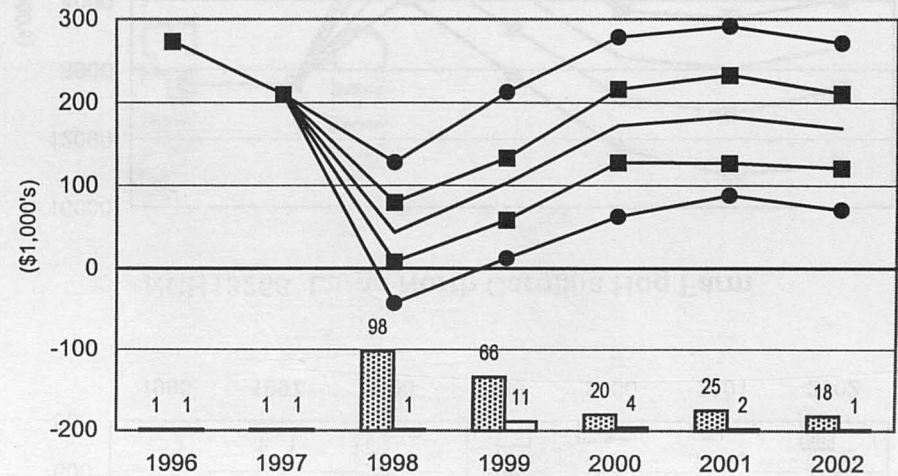
**Figure 39. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Hog Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

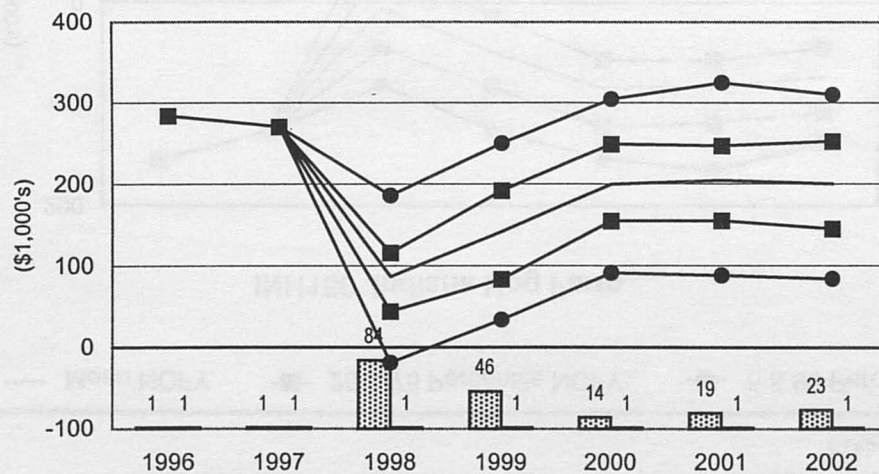
MOH100 Missouri Hog Farm



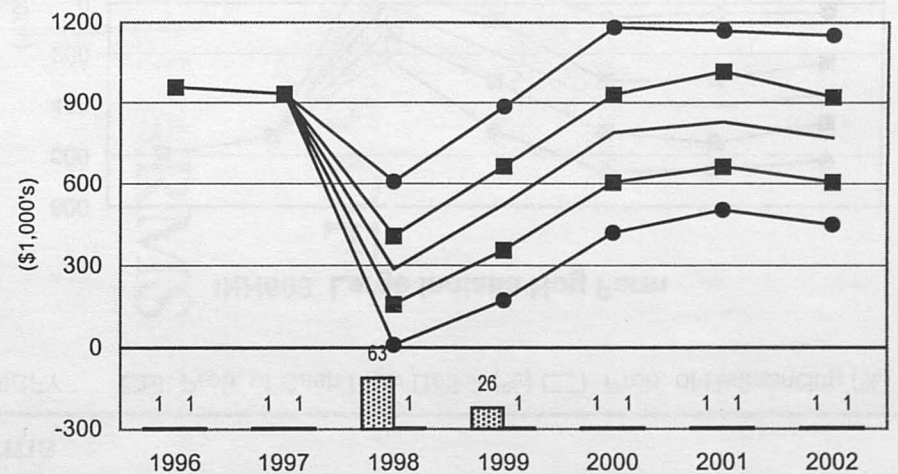
MOH225 Large Missouri Hog Farm



ILH200 Illinois Hog Farm



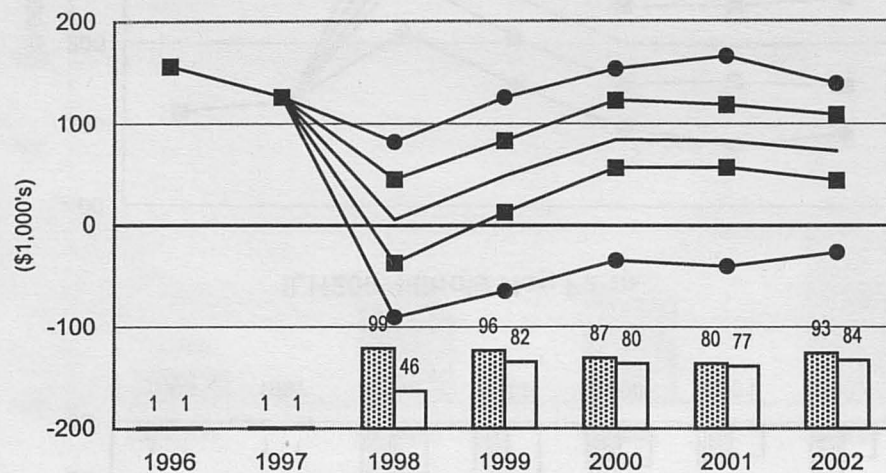
ILH750 Large Illinois Hog Farm



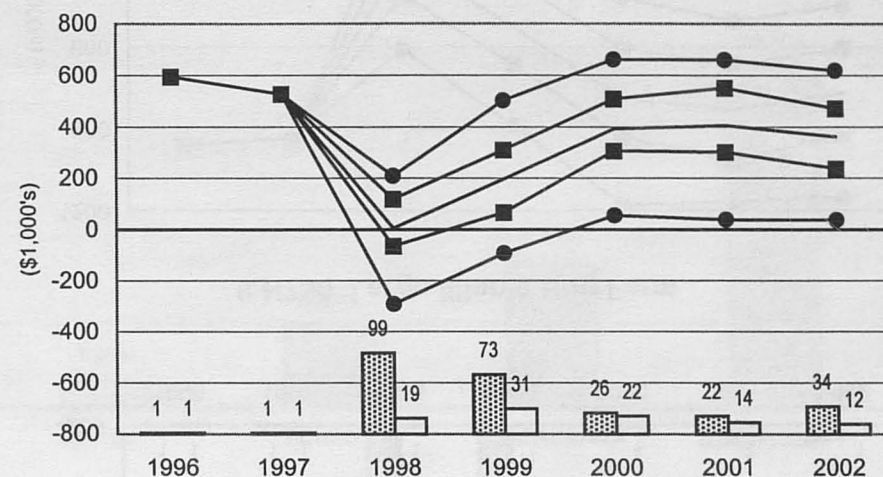
**Figure 40. Net Cash Farm Income and Probabilities of a Cash Flow Deficit and Refinancing:
Hog Farms**

— Mean NCFY ■ 25 & 75 Percentile NCFY ● 5 & 95 Percentile NCFY ▨ Prob. of Cash Flow Deficit (%) □ Prob. of Refinancing (%)

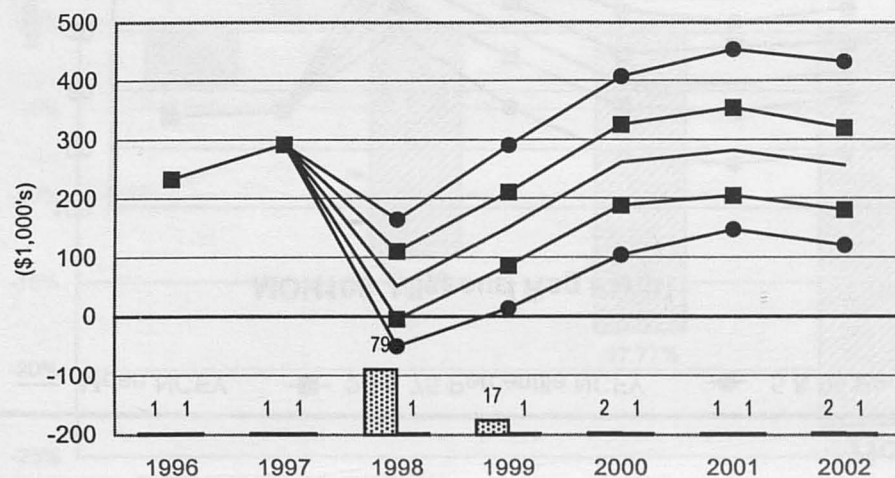
INH150 Indiana Hog Farm



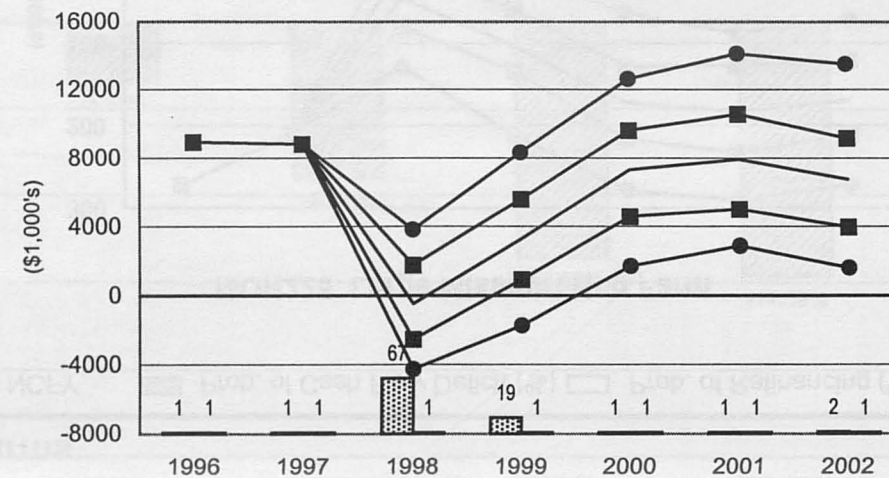
INH600 Large Indiana Hog Farm



NCH350 North Carolina Hog Farm



NCH13268 Large North Carolina Hog Farm



APPENDIX A:

CHARACTERISTICS OF REPRESENTATIVE FARMS

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING FEED GRAINS

- IAG950** A 950-acre Northwestern Iowa (Webster County) moderate size grain farm that plants 475 acres of corn, and 475 acres of soybeans. The farm receives 56 percent of its receipts from corn.
- IAG2200** A 2,200-acre Northwestern Iowa (Webster County) large grain farm that plants 1,100 acres of corn, and 1,100 acres of soybeans. The farm generates 58 percent of its receipts from corn.
- NEG800** A 800-acre South Central Nebraska (Phelps County) moderate size 100 percent irrigated grain farm that plants 770 acres of corn, and 30 acres of alfalfa. The farm also has 100 breeding cows. The farm generates 87 percent of its receipts from corn.
- NEG1575** A 1,575-acre South Central Nebraska (Phelps County) large 100 percent irrigated grain farm that plants 1,575 acres of corn. The farm generates about 97 percent of its receipts from corn.
- MOCG1500** A 1,500-acre Central Missouri (Carroll County) moderate size grain farm with 250 acres of wheat, 550 acres of corn, and 700 acres of soybeans. This farm is located in the Missouri river bottom and supplies feed to the livestock producers in the region at a premium to other areas of Missouri. Corn generates 45 percent of the farm's receipts.
- MOCG3000** A 3,000-acre Central Missouri (Carroll County) large grain farm with 300 acres of wheat, 1,350 acres of corn, and 1,350 acres of soybeans. This farm is located in the Missouri river bottom and supplies feed to the livestock producers in the region at a premium to other areas of Missouri. The farm generates about 56 percent of its total revenue from corn.
- MONG1200** A 1,200-acre Northern Missouri (Nodaway County) diversified grain farm with 525 acres of corn, 525 acres of soybeans, and 150 acres of hay. The farm also has 150 breeding cows and 80 breeding sows. The farm generates about 46 percent of its total revenue from corn and soybeans, 31 percent from hogs, and 22 percent from cattle.

Appendix Table A1. Characteristics of Panel Farms Producing Feed Grains.

	IAG950	IAG2200	NEG800	NEG1575	MOCG1500	MOCG3000	MONG1200
County	Webster	Webster	Phelps	Phelps	Carroll	Carroll	Nodaway
Total Cropland	950	2,200	800	1,575	1,500	3,000	1,200
Acres Owned	320	320	400	1,040	750	1,500	600
Acres Leased	630	1,880	400	535	750	1,500	600
Pastureland							
Acres Owned	0	0	250	0	0	0	300
Acres Leased	0	0	250	0	0	0	300
Assets (\$1000)							
Total	1,370	1,787	1,519	3,124	2,128	4,159	1,789
Real Estate	1,055	1,069	1,082	2,449	1,528	2,938	1,265
Machinery	237	480	372	675	382	632	339
Other & Livestock	77	217	65	0	218	588	165
Debt/Asset Ratios							
Total	0.15	0.15	0.27	0.19	0.15	0.13	0.21
Intermediate	0.18	0.15	0.58	0.32	0.15	0.10	0.37
Long Run	0.15	0.16	0.18	0.15	0.15	0.15	0.15
Number of Livestock							
Beef Cows	0	0	100	0	0	0	150
Sows	0	0	0	0	0	0	80
1999 Gross Receipts (\$1,000)*							
Total	249.5	453.3	306.6	614.6	299.0	665.6	381.9
Cattle	0.0 0.00%	0.0 0.00%	41.2 13.40%	0.0 0.00%	0.0 0.00%	0.0 0.00%	83.7 21.90%
Hogs	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	118.9 31.10%
Corn	140.1 56.20%	261.7 57.70%	265.4 86.60%	594.6 96.70%	134.6 45.00%	370.4 55.70%	76.2 20.00%
Wheat	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	33.6 11.20%	44.4 6.70%	0.0 0.00%
Soybeans	109.4 43.80%	191.6 42.30%	0.0 0.00%	0.0 0.00%	120.8 40.40%	250.7 37.70%	97.8 25.60%
Hay	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	5.2 1.40%
Other Receipts	0.0 0.00%	0.0 0.00%	0.0 0.00%	20.0 3.30%	10.0 3.30%	0.0 0.00%	0.0 0.00%
1999 Planted Acres**							
Total	950.0	2,200.0	800.0	1,575.0	1,500.0	3,000.0	1,200.0
Corn	475.0 50.00%	1,100.0 50.00%	770.0 96.30%	1,575.0 100.00%	550.0 36.70%	1,350.0 45.00%	525.0 43.80%
Wheat	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	250.0 16.70%	300.0 10.00%	0.0 0.00%
Soybeans	475.0 50.00%	1,100.0 50.00%	0.0 0.00%	0.0 0.00%	700.0 46.70%	1,350.0 45.00%	525.0 43.80%
Hay	0.0 0.00%	0.0 0.00%	30.0 3.80%	0.0 0.00%	0.0 0.00%	0.0 0.00%	150.0 12.50%

*Receipts for 1999 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING FEED GRAINS (CONTINUED)

- TXNP1600** A 1,600-acre Northern High Plains of Texas (Moore County) moderate size, 100 percent irrigated, grain farm with 642 acres of wheat, 280 acres of sorghum, 470 acres of corn, and 208 acres fallow. The farm generates 70 percent of its total receipts from feed grains.
- TXNP5500** A 5,500-acre Northern High Plains of Texas (Moore County) large, 85 percent irrigated, grain farm with 1,675 acres of irrigated wheat, 800 acres of dryland wheat in the corners of all pivot irrigated fields, 275 acres of irrigated sorghum, 2,200 acres of irrigated corn, and 550 acres fallow. The farm generates about 74 percent of its receipts from feed grains.
- TNG900** A 900-acre Western Tennessee (Henry County) grain and soybean farm with 400 acres of corn, 500 acres of soybeans, 200 acres of wheat, and 250 acres of hay. The farm generates about 77 percent of its receipts from corn and soybeans.
- TNG2400** A 2,400-acre Western Tennessee (Henry County) grain and soybean farm with 1,200 acres of corn, 1,200 acres of soybeans, and 600 acres of wheat. The farm generates about 87 percent of its receipts from corn and soybeans.
- SCG1500** A 1,500-acre South Carolina (Clarendon County) moderate size grain farm with 750 acres of double cropped wheat and soybeans, 600 acres of corn, and 150 acres of full season soybeans. The farm generates about 64 percent of its total receipts from corn and soybeans. This farm enjoys high returns on double cropped acreage but timing will not allow more than 750 acres.
- SCG3500** A 3,500-acre South Carolina (Clarendon County) large grain farm with 2,020 acres of double crop wheat and soybeans, 350 acres of cotton, and 1,130 acres of corn. This farm enjoys high returns on double cropped acreage but timing is a limiting factor. The farm generates 57 percent of its receipts from corn and soybeans.

Appendix Table A2. Characteristics of Panel Farms Producing Feed Grains.

	TXNP1600	TXNP5500	TNG900	TNG2400	SCG1500	SCG3500
County	Moore	Moore	Henry	Henry	Clarendon	Clarendon
Total Cropland	1,600	5,500	900	2,400	1,500	3,500
Acres Owned	320	1,100	207	482	500	1,400
Acres Leased	1,280	4,400	693	1,918	1,000	2,100
Pastureland						
Acres Owned	0	0	57	0	300	1,400
Acres Leased	0	0	190	0	0	0
Assets (\$1000)						
Total	635	2,521	723	1,760	1,093	3,780
Real Estate	212	740	436	940	646	2,233
Machinery	343	1,452	249	683	409	1,011
Other & Livestock	81	329	38	137	38	536
Debt/Asset Ratios						
Total	0.15	0.14	0.24	0.17	0.22	0.18
Intermediate	0.15	0.14	0.40	0.20	0.31	0.21
Long Run	0.15	0.13	0.13	0.14	0.16	0.15
Number of Livestock						
Beef Cows	0	0	50	0	0	0
1999 Gross Receipts (\$1,000)*						
Total	290.7	1,082.1	251.8	627.0	494.2	1,313.2
Cattle	0.0 0.00%	0.0 0.00%	20.4 8.10%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Corn	145.9 50.20%	742.5 68.60%	90.1 35.80%	302.8 48.30%	155.1 31.40%	334.5 25.50%
Sorghum	58.2 20.00%	56.5 5.20%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Wheat	86.6 29.80%	267.9 24.80%	23.1 9.20%	83.8 13.40%	147.2 29.80%	330.6 25.20%
Soybeans	0.0 0.00%	0.0 0.00%	102.8 40.80%	240.5 38.40%	162.6 32.90%	415.5 31.60%
Cotton	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	177.2 13.50%
Hay	0.0 0.00%	0.0 0.00%	8.5 3.40%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Other Receipts	0.0 0.00%	15.3 1.40%	7.0 2.80%	0.0 0.00%	29.2 5.90%	55.5 4.20%
1999 Planted Acres**						
Total	1,600.0	5,500.0	1,350.0	3,000.0	2,250.0	5,169.5
Corn	470.0 29.40%	2,200.0 40.00%	400.0 29.60%	1,200.0 40.00%	600.0 26.70%	1,130.5 21.90%
Sorghum	280.0 17.50%	275.0 5.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Wheat	642.0 40.10%	2,475.0 45.00%	200.0 14.80%	600.0 20.00%	750.0 33.30%	1,669.5 32.30%
Soybeans	0.0 0.00%	0.0 0.00%	500.0 37.00%	1,200.0 40.00%	900.0 40.00%	2,019.5 39.10%
Cotton	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	350.0 6.80%
Fallow	208.0 13.00%	550.0 10.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Hay	0.0 0.00%	0.0 0.00%	250.0 18.50%	0.0 0.00%	0.0 0.00%	0.0 0.00%

*Receipts for 1999 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING WHEAT

- WAW1500** A 1,500-acre Southeastern Washington (Whitman County) moderate size grain farm, updated December 1998, that plants 900 acres of wheat, 300 acres of barley, and 300 acres of peas. Disease problems require a rotation that includes a minimum amount of barley and peas to maintain wheat yields. The farm generates 71 percent of its receipts from wheat.
- WAW4250** A 4,250-acre Southeastern Washington (Whitman County) large size grain farm, updated December 1998, that is harvesting 2,763 acres of wheat, 200 acres of barley, and 1,287 acres of peas. Disease problems require a rotation that includes a minimum amount of barley and peas in order to maintain wheat yields. Winter and spring wheat account for 77 percent of receipts.
- NDW1760** A 1,760-acre South Central North Dakota (Barnes County) moderate size grain farm, updated February 1999, that has 704 acres of wheat, 176 acres of barley, 176 acres of corn, 352 acres of soybeans, and 352 acres of sunflowers. Rotation and disease problems will not allow more than 25 percent of the acres to be planted to sunflowers. The farm receives about 41 percent of receipts from wheat.
- NDW4850** A 4,850-acre South Central North Dakota (Barnes County) large grain farm, updated February 1999, that plants 2,585 acres of wheat, 470 acres of barley, 705 acres of soybeans, 940 acres of sunflowers, and 150 acres of CRP. Rotation and disease problems will not allow more than 25 percent of the acres to be planted to sunflowers. Wheat accounts for about 50 percent of the farms total gross receipts.
- KSSW1385** A 1,385-acre South Central Kansas (Sumner County) moderate size grain farm, updated February 1999, that plants 928 acres of wheat, 138 acres of soybeans, and 319 acres of grain sorghum. The farm generates about 63 percent of its receipts from wheat.
- KSSW3180** A 3,180-acre South Central Kansas (Sumner County) large grain farm, updated in February 1999, harvesting 2,258 acres of wheat, 652 acres of grain sorghum, 56 acres of corn, 87 acres of soybeans, and 127 acres of hay. The farm also has 67 breeding cows. The farm generates 67 percent of its receipts from wheat.
- KSNW2325** A 2,325-acre North Western Kansas (Thomas County) moderate size grain farm, updated January 1999, that plants 775 acres of wheat, 155 acres of grain sorghum, 620 acres of corn, and has 775 acres of fallow. The farm generates 38 percent of its receipts from wheat.
- KSNW4300** A 4,300-acre North Western Kansas (Thomas County) large grain farm, updated January 1999, harvesting 1,948 acres of wheat, 465 acres of sorghum, 549 acres of corn, 262 acres of sunflowers, 75 acres of hay, and 1,001 acres of fallow. The farm also has 100 breeding cows. The farm generates about 45 percent of its receipts from wheat.
- COW2700** A 2,700-acre Northeast Colorado (Washington County) moderate size grain farm, updated January 1999, that plants 1,127 acres of wheat, 608 acres of millet, and 446 acres of corn, and will leave 519 acres fallow. The farm generates 52 percent of its receipts from wheat.
- COW5420** A 5,420-acre Northeast Colorado (Washington County) large size grain farm, updated in January 1999, that plants 1,900 acres of wheat, 500 acres of corn, 1,300 acres of millet, 640 acres of CRP, and 1,100 acres in fallow. Wheat produces 59 percent of the farms gross revenue.

Appendix Table A3. Characteristics of Panel Farms Producing Wheat.

	WAW1500	WAW4250	NDW1760	NDW4850	KSSW1385	KSSW3180	KSNW2325	KSNW4300	COW2700	COW5420
County	Whitman	Whitman	Barnes	Barnes	Sumner	Sumner	Thomas	Thomas	Washington	Washington
Total Cropland	1,500	4,250	1,760	4,850	1,385	3,180	2,325	4,300	2,700	5,440
Acres Owned	750	2,125	176	1,701	485	330	930	1,147	837	3,020
Acres Leased	750	2,125	1,584	3,149	900	2,850	1,395	3,153	1,863	2,420
Pastureland										
Acres Owned	0	0	0	0	0	25	500	500	0	0
Acres Leased	0	0	0	0	0	775	500	500	0	0
Assets (\$1000)										
Total	1,667	4,588	468	2,498	729	1,470	1,221	1,690	760	2,313
Real Estate	1,060	3,068	140	988	441	444	755	933	471	1,590
Machinery	522	1,193	252	1,106	222	579	409	533	217	632
Other & Livestock	85	327	76	404	67	447	56	223	73	91
Debt/Asset Ratios										
Total	0.19	0.17	0.13	0.15	0.19	0.08	0.19	0.11	0.14	0.15
Intermediate	0.25	0.24	0.12	0.15	0.24	0.05	0.27	0.07	0.16	0.17
Long Run	0.15	0.14	0.15	0.16	0.15	0.17	0.15	0.15	0.14	0.14
Number of Livestock										
Beef Cows	0	0	0	0	0	67	0	100	0	0
1999 Gross Receipts (\$1,000)*										
Total	320.2	841.4	213.5	683.7	135.7	359.9	208.8	435.7	207.1	425.9
Cattle	0.0	0.0	0.0	0.0	0.0	29.1	5.1	38.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	8.10%	2.40%	8.70%	0.00%	0.00%
Wheat	228.4	650.4	86.5	339.4	86.3	241.9	79.3	194.8	107.6	251.1
	71.30%	77.30%	40.50%	49.60%	63.60%	67.20%	38.00%	44.70%	52.00%	59.00%
Sorghum	0.0	0.0	0.0	0.0	33.9	62.5	20.3	51.5	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	25.00%	17.40%	9.70%	11.80%	0.00%	0.00%
Barley	48.4	34.9	18.5	69.7	0.0	0.0	0.0	0.0	0.0	0.0
	15.10%	4.20%	8.70%	10.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Corn	0.0	0.0	21.0	0.0	0.0	5.8	86.2	122.7	52.2	59.2
	0.00%	0.00%	9.80%	0.00%	0.00%	1.60%	41.30%	28.20%	25.20%	13.90%
Soybeans	0.0	0.0	45.7	113.2	14.6	9.5	0.0	0.0	0.0	0.0
	0.00%	0.00%	21.40%	16.60%	10.70%	2.60%	0.00%	0.00%	0.00%	0.00%
Dry Peas	43.4	156.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	13.60%	18.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sunflowers	0.0	0.0	41.8	152.1	0.0	0.0	0.0	27.2	0.0	0.0
	0.00%	0.00%	19.60%	22.20%	0.00%	0.00%	0.00%	6.20%	0.00%	0.00%
Millet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.0	92.2
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.80%	21.70%
Hay	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	2.60%	0.00%	0.00%	0.00%	0.00%
Other Receipts	0.0	0.0	0.0	9.3	0.9	1.9	18.0	1.5	4.3	23.4
	0.00%	0.00%	0.00%	1.40%	0.70%	0.50%	8.60%	0.30%	2.10%	5.50%
1999 Planted Acres**										
Total	1,500.0	4,250.0	1,760.0	4,850.0	1,385.0	3,180.0	2,325.0	4,300.0	2,700.0	5,440.0
Wheat	900.0	2,782.5	704.0	2,585.0	928.0	2,258.0	775.0	1,948.0	1,127.0	1,900.0
	60.00%	65.00%	40.00%	53.30%	67.00%	71.00%	33.30%	45.30%	41.70%	34.90%
Sorghum	0.0	0.0	0.0	0.0	319.0	652.0	155.0	465.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	23.00%	20.50%	6.70%	10.80%	0.00%	0.00%
Barley	300.0	200.0	176.0	470.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.00%	4.70%	10.00%	9.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Corn	0.0	0.0	176.0	0.0	0.0	56.0	620.0	549.0	446.0	500.0
	0.00%	0.00%	10.00%	0.00%	0.00%	1.80%	26.70%	12.80%	16.50%	9.20%
Soybeans	0.0	0.0	352.0	705.0	138.0	87.0	0.0	0.0	0.0	0.0
	0.00%	0.00%	20.00%	14.50%	10.00%	2.70%	0.00%	0.00%	0.00%	0.00%
Dry Peas	300.0	1,287.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.00%	30.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sunflowers	0.0	0.0	352.0	940.0	0.0	0.0	0.0	262.0	0.0	0.0
	0.00%	0.00%	20.00%	19.40%	0.00%	0.00%	0.00%	6.10%	0.00%	0.00%
Millet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	608.0	1,300.0
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.50%	23.90%
Hay	0.0	0.0	0.0	0.0	0.0	127.0	0.0	75.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	1.70%	0.00%	0.00%
Fallow	0.0	0.0	0.0	0.0	0.0	0.0	775.0	1,001.0	519.0	1,100.0
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.30%	23.30%	19.20%	20.20%
CRP	0.0	0.0	0.0	150.0	0.0	0.0	0.0	0.0	0.0	640.0
	0.00%	0.00%	0.00%	3.10%	0.00%	0.00%	0.00%	0.00%	0.00%	11.80%

*Receipts for 1999 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING COTTON

- CAC2000** A 2,000-acre Central San Joaquin Valley California (Kings County) moderate size cotton farm that plants 1,100 acres of cotton, 300 acres of wheat, 300 acres of corn, and 300 acres of hay. The farm generates 64 percent of its gross income from cotton.
- CAC6000** A 6,000-acre Central San Joaquin Valley California (Kings County) large cotton farm harvesting 3,000 acres of cotton, 1,500 acres of vegetables, 720 acres of wheat, 240 acres of corn, and 300 acres of hay. Vegetables on this farm vary from year to year depending on the price of the particular vegetable, however, the returns to this 1,500 acres remain relatively stable over time. Cotton generates about 69 percent of this farm's receipts.
- TXSP1682** A 1,682-acre Texas Southern High Plains (Dawson County) moderate size cotton farm, updated December 1998. The farm plants 1,185 acres of cotton (886 dryland and 319 irrigated), 196 acres of peanuts, and has 183 acres in CRP. This farm is just now starting to adopt the irrigation practices of its larger counterpart. The farm generates 62 percent of its receipts from cotton.
- TXSP3697** A 3,697-acre Texas Southern High Plains (Dawson County) large cotton farm, updated December 1998. The farm plants 2,665 acres of cotton (2,095 dryland and 570 irrigated), 285 acres of peanuts, and has 214 acres in CRP. Cotton generates 74 percent of this farms receipts.
- TXRP2500** A 2,500-acre Texas Rolling Plains (Jones County) cotton farm that plants 1,240 acres of cotton, and 825 acres of wheat. The farm also has 25 breeding cows and uses the wheat acreage to graze the cattle in the winter. About 74 percent of this farms receipts are derived from cotton. This farm represents the consolidation of two previous representative farms.
- TXBL1400** A 1,400-acre Texas Blacklands (Williamson County) moderate size cotton and grain farm, updated February 1999, the farm has 350 acres of cotton, 400 acres of sorghum, 550 acres of corn, and 100 acres of wheat. This farm also has 50 breeding cows which are pastured on rented land that cannot be cropped. Cotton generates 38 percent of the farms receipts.
- TXCB1700** A 1,700-acre Texas Coastal Bend (San Patricio County) cotton farm, updated January 1999. The farm has 765 acres of cotton, and 935 acres of grain sorghum. Severe disease problems force this farm to plant at a minimum 50 percent of the land to grain sorghum. About 67 percent of this farm's receipts are cotton receipts.
- TNC1675** A 1,675-acre Southwest Tennessee (Fayette County) cotton farm, developed in 1998, with 838 acres of cotton, 670 acres of soybeans, and 168 acres of corn. The farm generates about 68 percent of its cash receipts from cotton.
- TNC3800** A 3,800-acre Southwest Tennessee (Haywood County) cotton farm, developed in 1998, with 2,508 acres of cotton, 760 acres of soybeans, 300 acres of wheat, and 532 acres of corn. The farm generates about 77 percent of its cash receipts from cotton.

Appendix Table A4. Characteristics of Panel Farms Producing Cotton.

	CAC2000	CAC8000	TXSP1682	TXSP3697	TXRP2500	TXBL1400	TXCB1700	TNC1675	TNC3800
County	Kings	Kings	Dawson	Dawson	Jones	Williamson	San Patricio	Fayette	Haywood
Total Cropland	2,000	6,000	1,682	3,697	2,500	1,400	1,700	1,675	3,800
Acres Owned	1,000	5,400	606	1,627	400	150	300	225	1,520
Acres Leased	1,000	600	1,076	2,070	2,100	1,250	1,400	1,450	2,280
Pastureland									
Acres Owned	0	0	0	0	0	30	0	0	0
Acres Leased	0	0	0	0	500	210	0	0	0
Assets (\$1000)									
Total	5,054	17,338	770	1,840	481	613	571	915	4,520
Real Estate	3,761	13,915	378	809	215	340	305	605	2,961
Machinery	841	1,909	393	815	252	243	268	311	1,539
Other & Livestock	452	1,513	0	216	14	30	0	0	0
Debt/Asset Ratios									
Total	0.13	0.14	0.19	0.19	0.24	0.13	0.55	0.18	0.18
Intermediate	0.08	0.09	0.24	0.22	0.30	0.10	1.00	0.34	0.25
Long Run	0.15	0.15	0.14	0.14	0.15	0.15	0.15	0.10	0.14
Number of Livestock									
Beef Cows	0	0	0	0	25	50	0	0	0
1999 Gross Receipts (\$1,000)*									
Total	1,652.0	4,756.5	546.8	1,092.9	195.6	224.5	358.4	473.8	1,164.1
Cattle	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	9.3 4.80%	17.3 7.70%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Cotton	1,062.8 64.30%	3,272.1 68.80%	338.3 61.90%	811.5 74.30%	144.1 73.70%	85.9 38.30%	241.2 67.30%	320.6 67.70%	901.4 77.40%
Sorghum	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	39.2 17.40%	103.2 28.80%	0.0 0.00%	0.0 0.00%
Wheat	97.6 5.90%	287.4 6.00%	0.0 0.00%	0.0 0.00%	42.2 21.60%	7.8 3.50%	0.0 0.00%	0.0 0.00%	49.1 4.20%
Soybeans	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	112.8 23.80%	99.0 8.50%
Corn	172.7 10.50%	115.5 2.40%	0.0 0.00%	0.0 0.00%	0.0 0.00%	69.7 31.00%	0.0 0.00%	40.3 8.50%	107.6 9.20%
Hay	318.9 19.30%	307.5 6.50%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Quota Peanuts	0.0 0.00%	0.0 0.00%	76.5 14.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Additional Peanuts	0.0 0.00%	0.0 0.00%	82.8 15.10%	178.1 16.30%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Other Receipts	0.0 0.00%	774.0 16.30%	49.2 9.00%	103.3 9.50%	0.0 0.00%	4.6 2.10%	14.0 3.90%	0.0 0.00%	7.0 0.60%
1999 Planted Acres**									
Total	2,000.0	5,760.0	1,564.0	3,164.0	2,065.0	1,400.0	1,700.0	1,675.0	4,100.0
Cotton	1,100.0 55.00%	3,000.0 52.10%	1,185.0 75.80%	2,665.0 84.20%	1,240.0 60.00%	350.0 25.00%	765.0 45.00%	837.5 50.00%	2,508.0 61.20%
Sorghum	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	400.0 28.60%	935.0 55.00%	0.0 0.00%	0.0 0.00%
Wheat	300.0 15.00%	720.0 12.50%	0.0 0.00%	0.0 0.00%	825.0 40.00%	100.0 7.10%	0.0 0.00%	0.0 0.00%	300.0 7.30%
Soybeans	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	670.0 40.00%	760.0 18.50%
Corn	300.0 15.00%	240.0 4.20%	0.0 0.00%	0.0 0.00%	0.0 0.00%	550.0 39.30%	0.0 0.00%	167.5 10.00%	532.0 13.00%
Hay	300.0 15.00%	300.0 5.20%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Quota Peanuts	0.0 0.00%	0.0 0.00%	85.0 4.20%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Additional Peanuts	0.0 0.00%	0.0 0.00%	131.0 8.40%	285.0 9.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Vegetables	0.0 0.00%	1,500.0 26.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
CRP	0.0 0.00%	0.0 0.00%	183.0 11.70%	214.0 6.80%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%

*Receipts for 1999 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acres for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING RICE

- CAR424** A 424-acre Sacramento Valley California (Sutter and Yuba Counties) moderate size rice farm that plants 400 acres of rice. The farm generates 94 percent of its gross income from rice.
- CAR1365** A 1,365-acre Sacramento Valley California (Sutter and Yuba Counties) large rice farm that plants 1,265 acres of rice. The farm generates about 98 percent of its gross income from rice.
- TXR2118** A 2,118-acre West of Houston, Texas (Wharton County) moderate size rice farm that harvests 600 acres of first crop rice, and 510 acres of ratoon rice. The farm receives 98 percent of its gross receipts from rice.
- TXR3750** A 3,750-acre West of Houston, Texas (Wharton County) large rice farm that harvests 1,500 acres of first-crop rice, 1,275 acres of ratoon rice, and 200 acres of hay. The farm also has 200 breeding cows. About 95 percent of the farm's gross receipts are from rice.
- MOR1900** A 1,900-acre Southeastern Missouri (Butler County) moderate size rice farm with 616 acres of rice, 650 acres of soybeans, and 633 acres of corn. Rice accounts for 52 percent of this farms receipts.
- MOR4000** A 4,000-acre Southeastern Missouri (Butler County) large rice farm with 1,710 acres of rice, 800 acre soybeans, 1,250 acres of corn, and 240 acres of cotton. About 59 percent of this farm's receipts are generated from rice.
- ARR2645** A 2,645-acre Arkansas (Arkansas County) moderate size rice farm with 175 acres of medium grain rice, 512 acres of long grain rice, 958 acres of soybeans, 230 acres of corn, and 450 acres of wheat. About 54 percent of the farms receipts come from rice.
- ARR3400** A 3,400-acre Arkansas (Arkansas County) moderate size rice farm with 325 acres of medium grain rice, 975 acres of long grain rice, 1,700 acres of soybeans, and 500 acres of wheat. About 65 percent of the farms receipts come from rice.
- LAR1100** A 1,100-acre Louisiana (Jefferson Davis, Acadia, and Vermilion Parishes) moderate size rice farm harvesting 189 acres of medium grain rice, 351 acres of long grain rice, 362 acres of soybeans, and 198 acres of fallow. About 85 percent of this farm's receipts are generated by rice.

Appendix Table A5. Characteristics of Panel Farms Producing Rice.

	CAR424	CAR1365	TXR2118	TXR3750	MOR1900	MOR4000	ARR2645	ARR3400	LAR1100
County	Sutter	Sutter	Wharton	Wharton	Butler	Butler	Arkansas	Arkansas	Acadia
Total Cropland	424	1,365	2,118	3,750	1,900	4,000	2,645	3,400	1,100
Acres Owned	212	515	318	1,888	380	2,000	815	1,020	50
Acres Leased	212	850	1,800	2,062	1,520	2,000	1,830	2,380	1,050
Pastureland									
Acres Owned	0	0	0	200	0	0	0	0	0
Assets (\$1000)									
Total	855	2,298	714	2,498	1,662	6,594	2,198	3,682	394
Real Estate	512	1,529	225	1,303	937	4,452	1,209	2,009	86
Machinery	286	568	296	699	724	1,970	623	1,111	272
Other & Livestock	57	201	193	496	0	171	366	561	36
Debt/Asset Ratios									
Total	0.20	0.13	0.08	0.14	0.26	0.23	0.13	0.15	0.26
Intermediate	0.25	0.08	0.05	0.12	0.39	0.39	0.11	0.14	0.29
Long Run	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Number of Livestock									
Beef Cows	0	0	0	200	0	0	0	0	0
1999 Gross Receipts (\$1,000)*									
Total	327.9	1,016.2	440.9	1,289.0	549.7	1,628.1	627.6	865.6	287.1
Cattle	0.0	0.0	0.0	49.2	0.0	0.0	0.0	0.0	0.0
	0.00%	0.00%	0.00%	3.90%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium Grain Rice	309.6	996.6	0.0	0.0	0.0	0.0	99.2	142.0	85.6
	94.40%	98.10%	0.00%	0.00%	0.00%	0.00%	15.80%	16.40%	29.80%
Long Grain Rice	0.0	0.0	433.9	1,199.7	284.2	962.0	237.7	422.8	158.9
	0.00%	0.00%	98.40%	94.50%	51.70%	59.20%	37.90%	48.80%	55.40%
Soybeans	0.0	0.0	0.0	0.0	96.0	147.3	157.9	239.0	39.5
	0.00%	0.00%	0.00%	0.00%	17.50%	9.10%	25.20%	27.60%	13.80%
Corn	0.0	0.0	0.0	0.0	169.5	403.0	56.5	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	30.80%	24.80%	9.00%	0.00%	0.00%
Wheat	0.0	0.0	0.0	0.0	0.0	0.0	72.3	61.9	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.50%	7.10%	0.00%
Cotton	0.0	0.0	0.0	0.0	0.0	113.9	0.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	0.00%	0.00%
Other Receipts	18.3	19.6	7.0	20.0	0.0	0.0	4.0	0.0	3.0
	5.60%	1.90%	1.60%	1.60%	0.00%	0.00%	0.60%	0.00%	1.00%
1999 Planted Acres**									
Total	400.0	1,265.0	1,110.2	2,975.0	1,899.0	4,000.0	2,325.0	3,500.0	1,100.0
Medium Grain Rice	400.0	1,265.0	0.0	0.0	0.0	0.0	175.0	325.0	189.1
	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	7.50%	9.30%	17.20%
Long Grain Rice	0.0	0.0	1,110.2	2,775.0	616.0	1,710.0	512.0	975.0	350.9
	0.00%	0.00%	100.00%	93.30%	32.40%	42.80%	22.00%	27.90%	31.90%
Soybeans	0.0	0.0	0.0	0.0	650.0	800.0	958.0	1,700.0	361.9
	0.00%	0.00%	0.00%	0.00%	34.20%	20.00%	41.20%	48.60%	32.90%
Corn	0.0	0.0	0.0	0.0	633.0	1,250.0	230.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	33.30%	31.30%	9.90%	0.00%	0.00%
Wheat	0.0	0.0	0.0	0.0	0.0	0.0	450.0	500.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.40%	14.30%	0.00%
Cotton	0.0	0.0	0.0	0.0	0.0	240.0	0.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	6.00%	0.00%	0.00%	0.00%
Hay	0.0	0.0	0.0	200.0	0.0	0.0	0.0	0.0	0.0
	0.00%	0.00%	0.00%	6.70%	0.00%	0.00%	0.00%	0.00%	0.00%
Fallow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	198.1
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%

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**Acres for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING MILK

CAD1710	A 1,710-cow Central California (Tulare County) large dairy farm that produces 21,800 pounds of milk per cow. The farm plants 200 acres of hay, and 325 acres of silage for which it employs custom harvesting. Milk receipts generate 93 percent of all receipts.
NMD2000	A 2,000-cow Southern New Mexico (Dona Anna and Chaves County) large dairy farm that averages 22,400 pounds per cow. Rather than plant any crops, this farm purchased all commodities necessary for blending its own total mixed ration. Milk sales account for 93 percent of cash receipts.
WAD185	A 185-cow Northern Washington (Whatcom County) moderate size dairy farm that produces 25,500 pounds of milk per cow. The farm plants 115 acres of silage and generates 97 percent of its receipts from milk.
WAD850	A 850-cow Northern Washington (Whatcom County) large dairy farm that produces 23,500 pounds of milk per cow. The farm plants 505 acres of silage and generates 96 percent of its receipts from milk.
IDD500	A 500-cow Idaho (Twin Falls County) moderate size dairy farm that produces 21,000 pounds of milk per cow. The farm plants 120 acres of hay and 183 acres of silage. Milk is 88 percent of the farms gross income.
IDD1800	A 1,800-cow Idaho (Twin Falls County) large dairy farm that produces 21,000 pounds of milk per cow. The farm plants 156 acres of hay and 398 acres of silage. Milk is 93 percent of the farms gross income.
TXCD400	A 400-cow Central Texas (Erath County) moderate size dairy farm that produces 16,100 pounds of milk per cow. The farm plants 120 acres of hay and 183 acres of silage. Milk is 93 percent of the farms gross income.
TXCD825	A 825-cow Central Texas (Erath County) large dairy farm that produces 19,200 pounds of milk per cow. The farm plants 430 acres for silage, 20 acres of haylage, and milk accounts for 94 percent of receipts.
TXED210	A 210-cow East Texas (Hopkins County) moderate size dairy farm that produces 16,000 pounds of milk per cow. The farm plants 195 acres of hay and generates 88 percent of its receipts from milk.
TXED650	A 650-cow East Texas (Lamar County) large dairy farm that produces 17,000 pounds of milk per cow. The farm plants 140 acres of hay and 360 acres of silage. The farm generates 91 percent of its receipts from milk.

Appendix Table A6. Characteristics of Panel Farms Producing Milk.

	CAD1710	NMD2000	WAD185	WAD850	IDD500	IDD1800	TXCD400	TXCD825	TXED210	TXED650
County	Tulare	Dona Ana	Whatcom	Whatcom	Twin Falls	Twin Falls	Erath	Erath	Hopkins	Lamar
Total Cropland	528	300	120	505	80	820	300	250	250	500
Acres Owned	528	300	80	250	80	620	150	250	200	500
Acres Leased	0	0	80	255	0	0	150	0	50	0
Pastureland										
Acres Owned	0	0	0	0	0	0	0	250	25	300
Acres Leased	0	0	0	0	0	0	150	0	0	0
Assets (\$1000)										
Total	10,178	7,717	1,060	4,589	2,421	9,438	1,225	3,005	1,016	2,790
Real Estate	4,879	3,511	498	2,580	1,040	3,823	528	932	407	1,027
Machinery	468	520	101	386	313	473	247	295	122	406
Other & Livestock	5,028	3,685	462	1,623	1,068	5,141	450	1,777	486	1,357
Debt/Asset Ratios										
Total	0.12	0.14	0.15	0.16	0.10	0.08	0.16	0.10	0.12	0.13
Intermediate	0.02	0.04	0.06	0.06	0.04	0.02	0.08	0.04	0.05	0.07
Long Run	0.24	0.25	0.25	0.24	0.17	0.17	0.26	0.25	0.23	0.24
1999 Gross Receipts (\$1,000)*										
Total	5,335.9	6,259.8	689.0	2,927.6	1,565.0	5,383.5	989.8	2,424.6	544.8	1,723.2
Milk	4,975.4	5,825.3	665.9	2,814.3	1,383.5	4,975.9	924.0	2,281.7	478.8	1,568.1
	93.20%	93.10%	96.60%	96.10%	88.40%	92.80%	93.40%	94.10%	87.50%	91.00%
Dairy Cattle	360.5	434.5	23.1	113.3	181.5	387.6	65.7	142.9	67.9	155.0
	6.80%	6.90%	3.40%	3.90%	11.60%	7.20%	6.60%	5.90%	12.50%	9.00%
1999 Planted Acres**										
Total	525.0	0.0	115.0	505.0	0.0	554.0	303.0	450.0	195.0	500.0
Hay	200.0	0.0	0.0	0.0	0.0	156.0	120.0	0.0	195.0	140.0
	38.10%	0.00%	0.00%	0.00%	0.00%	28.20%	39.60%	0.00%	100.00%	28.00%
Silage	325.0	0.0	115.0	505.0	0.0	398.0	183.0	430.0	0.0	360.0
	61.90%	0.00%	100.00%	100.00%	0.00%	71.80%	60.40%	95.60%	0.00%	72.00%
Haylage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.40%	0.00%	0.00%

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**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARM PRODUCING MILK (CONTINUED)

WID70	A 70-cow Eastern Wisconsin (Winnebago County) moderate size dairy farm that produces 20,500 pounds of milk per cow. The farm plants 37 acres of hay, 45 acres of corn, 24 acres of silage, and 89 acres of haylage. Milk makes up 90 percent of this farm's receipts.
WID600	A 600-cow Eastern Wisconsin (Winnebago County) large dairy farm that produces 19,800 pounds of milk per cow. The farm plants 350 acres of corn, 200 acres of silage, and 450 acres of haylage. Milk accounts for 91 percent of the farm's receipts.
MIED200	A 200-cow Michigan (Sanilac County) moderate size dairy farm that produces 22,000 pounds of milk per cow. The farm plants 220 acres of corn, 50 acres of wheat, and 170 acres of silage. Milk accounts for 93 percent of the farm's receipts.
MICD140	A 140-cow Michigan (Isabella County) moderate size dairy farm that produces 20,300 pounds of milk per cow. The farm plants 175 acres of corn, 70 acres of hay, 65 acres of silage, and 110 acres of haylage. Milk accounts for 88 percent of the farm's receipts.
NYWD700	A 700-cow Western New York (Wyoming County) moderate size dairy farm that produces 22,700 pounds of milk per cow. The farm plants 535 acres of silage and 450 acres of haylage. About 93 percent of the farm's receipts come from milk.
NYWD1200	A 1,200-cow Western New York (Wyoming County) large dairy farm that produces 21,700 pounds of milk per cow. The farm plants 825 acres of silage and 700 acres of haylage. Milk accounts for 94 percent of the farm's receipts.
NYCD110	A 110-cow Central New York (Cayuga County) moderate size dairy farm that produces 22,000 pounds of milk per cow. The farm plants 49 acres of hay, 75 acres of corn, 78 acres of silage, and 84 acres of haylage. Milk accounts for 93 percent of the farms receipts.
NYCD300	A 300-cow Central New York (Cayuga County) large dairy farm that produces 21,500 pounds of milk per cow. The farm plants 170 acres of hay, 142 acres of corn, 190 acres of silage, and 298 acres of haylage. The farm generates 93 percent of its receipts from milk.
VTD85	A 85-cow Vermont (Washington County) moderate size dairy farm that averages 22,400 pounds of milk per cow. The farm plants 60 acres of hay, 58 acres of silage, and 70 acres of haylage. Milk accounts for 90 percent of the receipts.
VTD350	A 350-cow Vermont (Washington County) large dairy farm that averages 22,000 pounds of milk per cow. The farm plants 205 acres of hay, 200 acres of silage, and 177 acres of haylage. Milk accounts for 95 percent of the farm's receipts.

Appendix Table A7. Characteristics of Panel Farms Producing Milk.

	WID70	WID600	MIED200	MICD140	NYWD700	NYWD1200	NYCD110	NYCD300	VTD85	VTD350
County	Winnebago	Winnebago	Sanilac	Isabella	Wyoming	Wyoming	Cayuga	Cayuga	Washington	Washington
Total Cropland	182	1,000	590	510	935	1,800	296	800	200	700
Acres Owned	152	400	363	300	800	1,200	250	700	140	525
Acres Leased	30	600	227	210	135	600	46	100	60	175
Pastureland										
Acres Owned	0	0	50	25	200	300	50	400	50	50
Acres Leased	0	0	0	0	0	0	0	0	0	50
Assets (\$1000)										
Total	635	3,224	1,731	1,332	4,397	7,037	695	2,154	922	2,444
Real Estate	259	1,222	954	754	1,723	2,747	395	854	376	1,075
Machinery	138	245	322	279	442	906	129	293	168	309
Other & Livestock	239	1,757	455	299	2,232	3,383	170	1,007	378	1,060
Debt/Asset Ratios										
Total	0.17	0.12	0.14	0.15	0.13	0.14	0.19	0.13	0.15	0.14
Intermediate	0.13	0.03	0.04	0.04	0.06	0.08	0.13	0.06	0.08	0.05
Long Run	0.24	0.25	0.23	0.24	0.23	0.24	0.24	0.23	0.24	0.24
1999 Gross Receipts (\$1,000)*										
Total	223.7	1,833.5	652.4	431.5	2,392.7	3,869.6	382.1	972.8	331.0	1,273.8
Milk	201.6 90.10%	1,667.2 90.90%	604.8 92.70%	381.2 88.30%	2,216.3 92.60%	3,632.6 93.90%	338.1 88.40%	901.0 92.60%	298.7 90.20%	1,210.5 95.00%
Dairy Cattle	22.1 9.90%	166.3 9.10%	41.8 6.40%	50.3 11.70%	176.4 7.40%	237.0 6.10%	24.0 6.60%	71.8 7.40%	30.9 9.30%	63.3 5.00%
Wheat	0.0 0.00%	0.0 0.00%	5.9 0.90%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Other Receipts	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	1.5 0.50%	0.0 0.00%
1999 Planted Acres**										
Total	195.0	1,000.0	440.0	490.0	985.0	1,525.0	286.0	800.0	188.0	582.0
Hay	37.0 19.00%	0.0 0.00%	0.0 0.00%	70.0 14.30%	0.0 0.00%	0.0 0.00%	49.0 17.10%	170.0 21.30%	60.0 31.90%	205.0 35.20%
Silage	24.0 12.30%	200.0 20.00%	170.0 38.60%	65.0 13.30%	535.0 54.30%	825.0 54.10%	78.0 27.30%	190.0 23.80%	58.0 30.90%	200.0 34.40%
Haylage	89.0 45.60%	450.0 45.00%	0.0 0.00%	110.0 22.40%	450.0 45.70%	700.0 45.90%	84.0 29.40%	298.0 37.30%	70.0 37.20%	177.0 30.40%
Corn	45.0 23.10%	350.0 35.00%	220.0 50.00%	175.0 35.70%	0.0 0.00%	0.0 0.00%	75.0 26.20%	142.0 17.80%	0.0 0.00%	0.0 0.00%
Wheat	0.0 0.00%	0.0 0.00%	50.0 11.40%	70.0 14.30%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%

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**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARM PRODUCING MILK (CONTINUED)

- MOD85** A 85-cow Southwestern Missouri (Christian County) moderate size dairy farm that averages 15,600 pounds of milk per cow. The farm plants 220 acres of hay. About 88 percent of the farm's receipts come from milk.
- MOD300** A 300-cow Southwestern Missouri (Christian County) large dairy farm that averages 17,300 pounds of milk per cow. The farm plants 578 acres of hay and 107 acres of silage. Milk accounts for 94 percent of this farm's receipts.
- GAND175** A 175-cow Central Georgia (Putnam County) moderate size dairy farm that produces 18,000 pounds of milk per cow. Rather than plant any crops, this farm opts to purchase all of its feed requirements in the form of a premixed ration. Milk accounts for 94 percent of the farm's gross income.
- GASD650** A 650-cow Southern Georgia (Houston County) large dairy farm that produces 19,000 pounds of milk per cow. The farm plants 150 acres of hay and 400 acres of silage. Milk makes up 94 percent of the farm's receipts.
- FLND380** A 380-cow North Florida (Lafayette County) moderate size dairy farm that averages 17,000 pounds of milk per cow. The farm grows 200 acres of hay. All feed requirements, in addition to hay, are met through a purchased pre-mixed ration. Milk sales account for 93 percent of the farm's receipts. Excess hay sales provide one percent of cash receipts and are expected to provide supplemental sales from year to year.
- FLSD2000** A 2,000-cow South Central Florida (Okeechobee County) large dairy farm that produces 16,500 pounds of milk per cow. The farm grows 1,210 acres of hay. In addition to grass hay, grass silage, and pasture, cows receive a purchased premixed ration. Milk sales generate 92 percent of its receipts.

Appendix Table A8. Characteristics of Panel Farms Producing Milk.

	MOD85	MOD300	GAND175	GASD650	FLND380	FLSD2000
County	Christian	Christian	Putnam	Houston	Lafayette	Okeechobee
Total Cropland	220	685	0	350	590	2,250
Acres Owned	140	450	0	300	440	2,250
Acres Leased	80	235	0	50	150	0
Pastureland						
Acres Owned	55	20	200	150	60	0
Acres Leased	55	100	0	0	0	0
Assets (\$1000)						
Total	587	1,700	569	2,555	1,512	6,494
Real Estate	320	922	298	938	788	3,079
Machinery	149	298	61	315	95	256
Other & Livestock	118	481	209	1,304	649	3,159
Debt/Asset Ratios						
Total	0.22	0.18	0.44	0.11	0.14	0.12
Intermediate	0.20	0.11	0.67	0.03	0.04	0.02
Long Run	0.23	0.24	0.24	0.24	0.23	0.22
1999 Gross Receipts (\$1,000)*						
Total	212.2	784.0	505.6	1,980.9	1,146.8	5,961.8
Milk	187.2	733.9	477.0	1,870.4	1,069.8	5,464.0
	88.20%	93.60%	94.40%	94.40%	93.30%	91.70%
Dairy Cattle	25.1	50.1	28.5	110.6	66.4	497.8
	11.80%	6.40%	5.60%	5.60%	5.80%	8.30%
Hay	0.0	0.0	0.0	0.0	10.8	0.0
	0.00%	0.00%	0.00%	0.00%	0.90%	0.00%
1999 Planted Acres**						
Total	220.0	685.0	0.0	550.0	200.0	1,210.0
Hay	220.0	578.0	0.0	150.0	200.0	1,210.0
	100.00%	84.40%	0.00%	27.30%	100.00%	100.00%
Silage	0.0	107.0	0.0	400.0	0.0	0.0
	0.00%	15.60%	0.00%	72.70%	0.00%	0.00%

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**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING BEEF CATTLE

- MTB400** A 400-cow ranch located in the eastern plains of Montana (Custer County). The ranch runs cows on a combination of owned, federal, state, and private lease land. One quarter of its total animal unit month grazing needs come from federal land and the ranch owns 14,000 acres of pasture. Of the total land owned, 440 acres are planted for hay. Cattle generates 100 percent of the total receipts on the ranch.
- WYB300** A 300-cow ranch located in North Central Wyoming (Washakie County). The ranch harvests hay from 200 acres of owned cropland, and it owns another 1000 acres of pastureland. Rangeland leased from the Forest Service provides 42 percent of the ranch's grazing needs. Cattle generates 100 percent of the total receipts on the ranch.
- COB300** A 300-cow ranch located in Northwest Colorado (Routt County). Federal land provides 7 percent of the ranch's AUM needs. Hay is produced on 400 acres of the pasture-hay land, of which the ranch owns 300. The ranch owns 1800 acres of pastureland, and the cattle graze the federal land during the summer months. Cattle generates 90 percent of the total receipts on the ranch. This ranch participates in a retained ownership program through the feedlot with 75% of the steers raised.
- MOB150** A 150-cow farm in Southwest Missouri (Dade County). The farm generates 57 percent of its receipts from beef cattle and the remainder from crops. The farm has 80 acres of sorghum, 160 acres of soybeans, 80 acres of wheat, and 400 acres of hay. Surplus hay sales make up only 6 percent of cash receipts.
- OTHER** Nine other representative farms have beef cattle operations in conjunction with their crop production (NEG800, MONG1200, TNG1300, KSSW3180, KSNW4300, TXRP2065, TXBL1200, TXR3750, and MOH100). These farming operations have from 25 to 200 mother cows in their cow/calf herds and cattle provide from 4 to 22 percent of the receipts on these farms.

Appendix Table A9. Characteristics of Panel Farms Producing Beef Cattle.

	MTB400	WYB300	COB300	MOB150
County	Custer	Washakie	Routt	Dade
Total Cropland	0	200	400	440
Acres Owned	0	200	300	320
Acres Leased	0	0	100	120
Pastureland				
Acres Owned	14,000	1,000	1,800	320
Acres Leased	0	0	0	0
Federal AUMs Leased	1,350	1,500	250	0
State/Private AUMs	450	160	630	0
Assets (\$1000)				
Total	1,912	704	3,212	784
Real Estate	1,461	389	2,783	467
Machinery	105	99	120	213
Other & Livestock	346	216	310	104
Debt/Asset Ratios				
Total	0.01	0.07	0.01	0.14
Intermediate	0.03	0.15	0.05	0.28
Long Run	0.01	0.01	0.01	0.04
Number of Livestock				
Beef Cows	400	300	300	150
1999 Gross Receipts (\$1,000)*				
Total	144.1	118.5	157.4	111.0
Cattle	144.1 100.00%	118.5 100.00%	142.2 90.30%	83.0 58.70%
Sorghum	0.0 0.00%	0.0 0.00%	0.0 0.00%	11.1 10.00%
Soybeans	0.0 0.00%	0.0 0.00%	0.0 0.00%	19.2 17.30%
Wheat	0.0 0.00%	0.0 0.00%	0.0 0.00%	11.4 10.20%
Hay	0.0 0.00%	0.0 0.00%	3.3 2.10%	8.3 5.70%
Other Receipts	0.0 0.00%	0.0 0.00%	12.0 7.60%	0.0 0.00%
1999 Planted Acres**				
Total	440.0	200.0	400.0	720.0
Sorghum	0.0 0.00%	0.0 0.00%	0.0 0.00%	80.0 11.10%
Soybeans	0.0 0.00%	0.0 0.00%	0.0 0.00%	160.0 22.20%
Wheat	0.0 0.00%	0.0 0.00%	0.0 0.00%	80.0 11.10%
Hay	440.0 100.00%	200.0 100.00%	400.0 100.00%	400.0 55.60%

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**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

1999 CHARACTERISTICS OF PANEL FARMS PRODUCING HOGS

- MOH100** A 100-sow hog farm located in North Central Missouri (Carroll County). The farm plants 160 acres of corn, 80 acres of soybeans, 80 acres of wheat, and 40 acres of hay. The farm weans 16 pigs per sow in a year and has a feeding efficiency measure of 3.4 pounds of feed per pound of pork sold. Hogs generate 77 percent of the farm's total receipts while crops produce another 17 percent of receipts.
- MOH225** A 225-sow hog farm located in North Central Missouri (Carroll County). The farm plants 400 acres of corn, 400 acres of soybeans, and 200 acres of wheat. This farm feeds 3.7 pounds of feed for every pound of pork sold and averages 19 pigs weaned per sow per year. The hog enterprise generates about 78 percent of the total receipts for the farm. The remainder of total receipts is generated in crop sales.
- ILH200** A 200-sow hog farm located in Western Illinois (Knox County). The farm plants 750 acres of corn, 610 acres of soybeans, and 20 acres of wheat. This farm weans 17 pigs/sow/year and operates on 3.5 pounds of feed per pound of pork sold. The hog operation produces about 57 percent of the farm's total receipts while the sale of crops accounts for about 40 percent.
- ILH750** A 750-sow hog farm located in Western Illinois (Knox County). The farm plants 1080 acres of corn and 720 acres of soybeans. This farm will wean an average of 22 pigs per sow in a year, and feeds about 3.1 pounds of feed per pound of pork sold in a year. The hog enterprise generates 86 percent of the total receipts on the farm. Corn and soybean sales account for the remaining 14 percent.
- INH150** A 150-sow hog farm located in North Central Indiana (Carroll County). The farm plants 750 acres of corn, 225 acres of soybeans, and 25 acres of wheat. The farm feeds 3.3 pounds of feed per pound of pork sold and weans 17 pigs/sow/year. About 54 percent of the farm's receipts comes from hogs, and the remainder of receipts is generated through crop sales.
- INH600** A 600-sow hog farm located in North Central Indiana (Carroll County). The farm plants 1,500 acres of corn, 700 acres of soybeans, and 50 acres of wheat. The farm is able to wean 20 pigs per sow per year and feed 3.3 pounds of feed per pound of pork sold. The hog operation accounts for approximately 71 percent of the farm's total receipts. The other quarter of receipts comes from crop sales.
- NCH350** A 350-sow hog farm located in Eastern North Carolina (Wayne County). The farm plants 100 acres of hay to dispose of waste from the farrow-to-finish hog operation, but does not plant any crops for feed. All feed for the operation is purchased. The farm will wean 19.5 pigs per sow per year and will feed 3.0 pounds of feed per pound of pork sold. The sale of hogs produces 100 percent of the farm's receipts.
- NCH13268** A 13,268-sow hog farm located in Eastern North Carolina (Wayne County). The operation contracts with individual farmers who provide on-site management, labor, and facilities. The operation provides hogs, purchased feed and specialized labor for its group of contract farrowing, nursery and finishing farms. On average the farm will wean 20 pigs per sow per year. A measure of feed efficiency for this operation is 2.9 pounds of feed per pound of pork sold. 100 percent of the farm's receipts are produced from the sale of hogs.

Appendix Table A10. Characteristics of Panel Farms Producing Hogs.

	MOH100	MOH225	ILH200	ILH750	INH150	INH600	NCH350	NCH13268
County	Carroll	Carroll	Knox	Knox	Carroll	Carroll	Wayne	Wayne
Total Cropland	330	1,020	1,400	1,800	1,020	2,250	100	0
Acres Owned	220	520	400	950	300	800	100	0
Acres Leased	110	500	1,000	850	720	1,450	0	0
Pastureland								
Acres Owned	100	0	0	0	0	0	0	0
Assets (\$1000)								
Total	660	1,727	2,362	5,900	1,702	4,501	1,287	20,329
Real Estate	524	1,155	1,581	3,835	1,280	3,128	733	1
Machinery	67	362	435	892	338	961	106	22
Other & Livestock	69	210	346	1,373	84	411	448	20,306
Debt/Asset Ratios								
Total	0.30	0.29	0.24	0.28	0.30	0.27	0.26	0.00
Intermediate	0.17	0.18	0.16	0.09	0.36	0.19	0.06	0.00
Long Run	0.33	0.34	0.29	0.35	0.28	0.31	0.42	0.34
Number of Livestock								
Beef Cows	25	0	0	0	0	0	0	0
Sows	100	225	200	750	150	600	350	13,268
1999 Gross Receipts (\$1,000)*								
Total	184.3	461.2	540.3	1,669.4	438.9	1,571.2	648.9	23,938.7
Cattle	9.9 5.30%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
Hogs	142.8 77.40%	361.0 78.30%	309.9 57.40%	1,435.3 86.00%	235.8 53.70%	1,108.3 70.50%	648.9 100.00%	23,938.7 100.00%
Corn	4.3 2.30%	9.3 2.00%	109.3 20.20%	36.7 2.20%	150.5 34.30%	257.9 16.40%	0.0 0.00%	0.0 0.00%
Soybeans	16.1 8.70%	63.9 13.90%	114.8 21.30%	197.3 11.80%	48.0 10.90%	193.0 12.30%	0.0 0.00%	0.0 0.00%
Wheat	11.3 6.10%	27.0 5.80%	3.7 0.70%	0.0 0.00%	4.5 1.00%	12.0 0.80%	0.0 0.00%	0.0 0.00%
Other Receipts	0.0 0.00%	0.0 0.00%	2.5 0.50%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%
1999 Planted Acres**								
Total	360.0	1,000.0	1,380.0	1,800.0	1,000.0	2,250.0	100.0	0.0
Corn	160.0 44.40%	400.0 40.00%	750.0 54.30%	1,080.0 60.00%	750.0 75.00%	1,500.0 66.70%	0.0 0.00%	0.0 0.00%
Soybeans	80.0 22.20%	400.0 40.00%	610.0 44.20%	720.0 40.00%	225.0 22.50%	700.0 31.10%	0.0 0.00%	0.0 0.00%
Wheat	80.0 22.20%	200.0 20.00%	20.0 1.40%	0.0 0.00%	25.0 2.50%	50.0 2.20%	0.0 0.00%	0.0 0.00%
Hay	40.0 11.10%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	0.0 0.00%	100.0 100.00%	0.0 0.00%

*Receipts for 1999 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

**Acreages for 1999 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

APPENDIX B:

LIST OF PANEL FARM

COOPERATORS

FEED GRAIN FARMS

Iowa

Facilitators

Mr. Jim Patton - Webster County Extension Agent
 Dr. William Edwards - Professor and Extension Economist, Iowa State University

Panel Participants

Mr. Phil Naeve	Mr. Dennis Ammen
Mr. Larry Lynch	Mr. John Ricke
Mr. Don Sandell	Mr. Britt Shelton
Mr. Bob Anderson	Mr. Virgil Gordon
Mr. Larry Lane	Mr. Merv Berg
Mr. Perry Black	Mr. and Mrs. Jim Carver
Mr. Loren Wuebker	

Nebraska

Facilitators

Mr. Gary Hall - Phelps County Agricultural Extension Agent
 Dr. Roger Selley - Extension Farm Management Specialist, University of Nebraska
 Mr. Joe Trujillo - University of Missouri-Columbia

Panel Participants

Mr. Frank Hadley	Mr. Tom Schwarz
Mr. Gary Robison	Mr. Tony Davis
Mr. Kerry Blythe	Mr. Johnny Nelson
Mr. Brian Johnson	Mr. Phil High

Missouri

Facilitator

Mr. Parman Green - Farm Management Specialist, University of Missouri - Columbia

Panel Participants

Mr. Larry Davies	Mr. Clifford Lyons
Mr. Ron Gibson	Mr. Ron Linneman
Mr. Ron Venable	Mr. Glenn Kaiser
Mr. Gerald Kitchen	Mr. Jack Harriman
Mr. John Vogelsmeier	Mr. Jim Wheeler

Texas - Northern High Plains

Facilitators

Mr. Robert Harris - Moore County Agricultural Extension Agent
 Dr. Steve Amosson - Extension Economist - Management, Texas A&M University

Panel Participants

Mr. Kyle Williams	Mr. Wesley Spurlock
Mr. Ellis Moore	Mr. Marion Garland
Mr. Ronnie Williams	Mr. Tom Moore
Mr. Kerri Cartwright	

FEED GRAIN FARMS CONTINUED

Northern Missouri

Facilitator

Mr. Mike Killingsworth - Farm Management Consultant, Maryville, Missouri
 Mr. Joe Trujillo - University of Missouri-Columbia

Panel Participants

Mr. Jack Baldwin	Mr. Don Mobley
Mr. Roger Vest	Mr. Gary Ecker
Mr. Kevin Rosenbohm	

South Carolina

Facilitator

Mr. Toby Boring - Extension Agricultural Economist, Clemson University

Panel Participants

Mr. Harry DuRant	Mr. Steve Lowder
Mr. John Ducworth	Mr. Billy Davis
Mr. Tom Jackson	Mr. John Spann
Mrs. Vikki Brogdon	Mr. Chris Cogdill
Mr. Leslie McIntosh	

Tennessee

Facilitator

Dr. Daryll Ray, Professor, University of Tennessee

Panel Participants

Edwin Alles	Jack Ogg
Donald Parker	Doug Schoolfield
Greg Story	Daniel Wengerd
Paul Wengard	James Yarbro

WHEAT FARMS

Washington

Facilitators

Mr. John Burns - Whitman County Agricultural Extension Agent
 Dr. Herb Hinman - Extension Economist, Washington State University

Panel Participants

Mr. Brian Largent	Mr. Gary Largent
Mr. Bruce Nelson	Mr. John Whitman
Mr. Asa Clark	Mr. Henry Suess
Mr. David Harlow	Mr. Randy Suess
	Mr. Todd Scholz

North Dakota

Facilitators

Mr. Shawn Vachal - Barnes County Extension Agent
 Mr. Dwight Aakre - Extension Associate - Farm Management, North Dakota State University

Panel Participants

Mr. Mike Clemens	Mr. Ray Haugen
Mr. Arvid Winkler	Mr. Anthony Thilmony
Mr. Wade Bruns	Mr. Leland Guscette
Mr. Jack Formo	Mr. Greg Shanenko
Mr. Jim Broten	Mr. Charles Triebold

South Central Kansas

Facilitators

Mr. Gerald Le Valley - Sumner County Agricultural Extension Agent
 Mr. Brad Goehring - Sedgwick County Extension Agent
 Mr. Steve Westfahl - Sedgwick County Extension Agent
 Mr. Fred Delano - Administrator of Farm Management Association Program, Kansas State University

Panel Participants

Mr. Robert White	Mr. Joe Allen
Mr. Nick Steffen	Mr. Tim Turek
Mr. Donald Applegate	Mr. David Messenger
Mr. Robert Headley	Mr. Rae Reusser
Mr. Dennis Pettigrew	Mr. Jim Stuhlsatz

Colorado

Facilitators

Mr. Dennis Kaan - Regional Extension Specialist, Colorado State University
 Mr. Don Nitchie - Director, Farm Mgmt/Marketing, Colorado State University Cooperative Extension
 Dr. Paul H. Gutierrez - Associate Professor, Colorado State University

Panel Participants

Mr. Terry Kuntz	Mr. John Hickert
Mr. Calvin Schaffert	Mr. Marlin E. Snyder
Mr. John Wright	Mr. Bill Rodwell
Mr. Cliff Fletcher	Mr. Gerry Ohr
Mr. David Foy	Mr. Rick Lewton
Mr. Leland Willeke	Mr. Ken Remington

WHEAT FARMS CONTINUED

Northwestern Kansas

Facilitators

Mr. Scott Docken - Extension Agricultural Economist, Farm Management Association, KSU
 Mr. Mark Wood - Extension Agricultural Economist, Farm Management Association, KSU
 Mr. Dan Obrien - Extension Agricultural Economist, Farm Management Association, KSU
 Mr. Fred Delano - Administrator of Farm Management Association Program, Kansas State University

Panel Participants

Mr. Harold Mizell	Mr. Gerald Huessman
Mr. Brian Laufer	Mr. Steve Schertz
Mr. Lee Jueneman	Mr. Dennis Franklin
Mr. Lance Leebrick	Mr. Rich Calliham
Mr. Lyman Goetsch	Mr. Vernon Akers

COTTON FARMS

California

Facilitator

Mr. Bruce A. Roberts - Kings County Director and Farm Advisor, University of California Cooperative Extension

Panel Participants

Mr. Mark Hansen
Mr. Steve Boyett
Mr. Ernie Taylor
Mr. John Diener
Mr. Jeff Hildebrand

Mr. Wayne Wisecarver
Mr. Craig Pedersen
Mr. Dave Smith
Mr. Bill Tos
Mr. David Costa

Texas - Southern High Plains

Facilitators

Mr. John Farris - Dawson County Agricultural Extension Agent
Dr. Jackie Smith - Extension Economist - Management, Texas A&M University

Panel Participants

Mr. Milton Schneider
Mr. Dave Nix
Mr. Glen Phipps
Mr. Donald Vogler
Mr. Kent Nix
Mr. Mark Furlow

Mr. Mark Boardman
Mr. Lonny Ferguson
Mr. Todd Gregory
Mr. Thomas Holder
Mr. Brad Boyd
Mr. Jerry Chapman

Texas - Rolling Plains

Facilitators

Mr. Todd Vineyard - Ellis County Agricultural Extension Agent
Mr. Stan Bevers - Extension Economist - Management, Texas A&M University

Panel Participants

Mr. Steve Blankenship
Mr. James Seidenberger
Mr. Ronnie Richmond
Mr. Mike Gray
Mr. Glen Gilbreath

Mr. Mark Lundgren
Mr. B.C. Spraberry
Mr. and Mrs. Darrell Richards
Mr. David Cook
Mr. Ronnie Riddle

Texas - Blacklands

Facilitator

Mr. Ronald Leps - Williamson County Agricultural Extension Agent

Panel Participants

Mr. Donald Stolte
Mr. Herbert Raesz
Mr. Doug Schernik

Mr. Bob Bartosh
Mr. Lonny Rinderknecht

Texas - Coastal Bend

Facilitators

Dr. Jeffrey Stapper - San Patricio-Aransas County Extension Agent
Dr. Larry Falconer - Extension Economist - Management, Texas A&M University

Panel Participants

Mr. Brad Bickham
Mr. Clarence Chopelas

Mr. Darby Salge

Tennessee

Facilitator

Dr. Daryll Ray, Professor, University of Tennessee

Panel Participants

Harris Armour, III
Eugene McFerren
Lee Ann Rhea
Travis London

Tom Karcher
Mark McNabb
Dewayne Hendrix
Ronald Woods

RICE FARMS

Arkansas

Facilitator

Mr. Bill Free, Riceland Foods, Inc.

Panel Participants

Mr. David Feilkie

Mr. Derek Bohanan

Mr. David Jessup

Texas

Facilitator

Dr. Ed Rister - Professor, Texas A&M University

Panel Participants

Mr. W. A. "Billy" Hefner, III

Mr. Andy Anderson

Mr. Ronald Gertson

Mr. Madison H. Smith

Mr. Jim Wiese

Mr. John Waligur

Mr. Glen Rod

Mr. Layton Raun

Mr. Kenneth "Peter" Stelzel

Mr. Jason Hlavinka

Mr. Steve Balas

California

Facilitator

Mr. Jack Williams - Farm Advisor, Sutter and Yuba Counties, University of California
Cooperative Extension

Panel Participants

Mr. Bill Baggett

Mr. Frank Rosa

Mr. Jack DeWitt

Mr. Wayne Vineyard

Mr. Don Staas

Mr. Paul Lower

Mr. Ned Lemenager

Mr. Scott Tucker

Missouri

Facilitators

Mr. Bruce Beck - Farmer's Agronomy Specialist, University of Missouri - Columbia

Mr. David Reinbott - Farm Management Specialist, University of Missouri - Columbia

Mr. Joe Trujillo - University of Missouri - Columbia

Panel Participants

Mr. Sonny Martin

Mr. Fred Tanner

Mr. Bruce Yarbro

Mr. J. D. Sifford

Mr. C. P. Johnson

Mr. Mike Mick

Mr. Davis Minton

Mr. Rick Spargo

Mr. Floyd Page

Mr. Cloyce Sowell

Mr. Dale Conner

Louisiana

Facilitators

Mr. Eddie Eskew - County Agent, Louisiana Cooperative Extension Service

Mr. Howard J. Cormier - County Agent, Louisiana Cooperative Extension Service

Mr. Ronnie Levy - County Agent/Parrish Chairman, Louisiana Cooperative Extension Service

Mr. D. L. Eugene (Gene) Johnson - Specialist in Marketing, Louisiana Cooperative Extension Service,
Natural Resources and Economic Development

Panel Participants

Mr. Alden Horten

Mr. Brian Wild

Mr. Tommy Faulk

Mr. Allan McLain

Mr. Jackie Loewes

DAIRY FARMS

California*Facilitator*

Mr. Jack Prince - President, Dairyman's Cooperative Creamery Assoc.

Panel Participants

Mr. Dave Rebeiro

Mr. Bill Van Beek

Mr. Phillip Rebeiro

Mr. Bob Wilbur

New Mexico*Facilitator*

Dr. Robert Schwart - Professor and Extension Economist, Texas A&M University

Panel Participants

Mr. Brad Bouma

Mr. Joe Gonzalez

Mr. Tony Bos

Mr. Mark Reischman

Mr. Mike McClosky

Mr. Von Hilburn

Mr. Dean Harton

Washington*Facilitator*

Mr. David C. Grusenmeyer - Professor and Extension Dairy Specialist, Washington State University

Panel Participants

Mrs. Star Hovander

Mr. Keith Boon

Mr. Rod DeJong

Mr. Dick Bengen

Mr. Ed Pomeroy

Mr. Ron Bronsema

Mr. Jim Heeringa

Mr. & Mrs. Pete DeJager

Mr. Greg McKay

Mr. Dave Buys

Idaho*Facilitator*

Mr. Dean Falk - Extension Dairy Specialist, University of Idaho

Dr. Wilson Grey - Farm Management Specialist - University of Idaho

Panel Participants

Mr. & Mrs. Martin Lee

Mr. Michael Quesnell

Mr. Bill Stouder

Mr. John Beukers

Mr. Adrian Boer

Mr. Alan Gerratt

Mr. Randy Tolman

Mr. Harry Hogland

Mr. Greg Ledbetter

Mr. Rick Thompson

Mr. Jack Van Beek

Mr. Reagon Hatch

Mr. Hank Hafliger

Texas - Central*Facilitator*

Mr. Joe Pope - Erath County Agricultural Extension Agent

Panel Participants

Mr. Lane Jones

Mr. Leonard Moncrief

Mr. Jack Parks

Mr. Owen Sieperda

Mr. Robert Ervin

Mr. Bob Strona

Mr. Jake Van Vlie

Mr. Brian Parish

DAIRY FARMS CONTINUED

Texas - Eastern*Facilitator*

Mr. Dale Haygood - Zone Manager, Associated Milk Producers, Inc.

Panel Participants

Mr. George Tenberg

Mr. Greg Inman

Mr. Tim Spiva

Mr. Harold Bryant

Mr. Timothy Norris

Mr. Michael Mund

Mr. Hershel Kelsoe

Mr. Larry Ellison

Mr. W.D. Wafford

Missouri*Facilitator*

Mr. Ron Young - Christian County Extension Dairy Specialist, Retired

Panel Participants

Mr. John Mallonee

Mr. & Mrs. Doug Owen

Mr. & Mrs. Freddie Martin

Mr. Wayne Whitehead

Mr. Larry Winfree

Mr. Allen Sulgrove

Mr. Dan Clemens

Mr. John Atkinson

Mr. Joe Peebles

Michigan*Facilitator*

Mr. Mike McFadden - Extension Dairy Agent - Michigan State University

Dr. Craig Thomas - Extension Dairy Agent - Michigan State University Extension

Mr. Wes Lane - Director- Communications Division - Dairy Farmers of Ontario

Dr. Sherrill Nott - Farm Management Specialist - Michigan State University

Panel Participants

Mr. Tom Fox

Mr. Keith Moegenberg

Mr. Bob Pasch

Mr. Jim Wilson

Mr. & Mrs. Don Hopper

Mr. Jason Shinn

Mr. Ron McDonald

Mr. Bryan Neyer

Mr. Jerry Varner

Mr. Mike Fagan

Mr. Jim Reid

Mr. Duane Stuever

Florida*Facilitators*

Mr. Chris Vann - Lafayette County Agricultural Extension Agent

Mr. Art Darling - Dairy Farms, Inc.

Panel Participants

Mr. Keith Rucks

Mr. Louis Shiver

Mr. Bill Shaw

Mr. Edward Thomas

Mr. Glynn Rutledge

Mr. Rodney Land

Mr. Brad Hester

Mr. Kevin Jackson

Mr. Boyd Rucks

Mr. Everett Kerby

Mr. Tommy Rucks

Georgia*Facilitator*

Mr. Bill Thomas - Professor and Extension Economist, University of Georgia

Panel Participants

Mr. Carlton McMichael

Mr. Mike Rainey

Mr. Ronny Parham

Mr. Bill Boyce

Mr. Bernard Sims

Mr. Terry Embry

Mr. Lamar Anthony

Mr. Earnest Turk

Mr. Raymond Hunter

Mr. Tom Thompson

Mr. Henry Cabaniss

Mr. Tim Camp

DAIRY FARMS CONTINUED

Wisconsin*Facilitator*

Mr. Jeff Key - Winnebago County Agricultural Extension Agent

Panel Participants

Mr. David Allen
Mr. Larry Engel
Mr. Ronald Miller
Mr. Pete Knigge
Mr. Edwin Davis
Mr. Dean Hughes
Mr. Jeff Bradley
Mr. Pat Brennand
Mr. Jeff Meulmans

Mr. Joe Bonlender
Mr. Glenn Armstrong
Mr. Doug Hodorff
Mr. Fred Kasten
Mr. Jerome Schmidt
Mr. Carl Theonis
Mr. Mike Bradley
Mr. Ben Hughes
Mr. Bob Staudinger

New York - Western*Facilitator*

Mr. Jason Karszes - Cornell Cooperative Extension Service

Panel Participants

Mr. Gary Van Slyke
Mr. Willard DeGolyer
Mr. George Mueller
Mr. Peter Dueppengisser
Mr. John Mueller

Mr. Dick Popp
Mr. Bill Fitch
Mr. John Emerling
Mr. Kent Miller

New York - Central*Facilitator*

Dr. Wayne Knoblauch - Professor, Cornell University

Panel Participants

Mr. Gary Mutchler
Mr. Bill Head
Mr. David Shurtleff
Mr. & Mrs. Tom Brown

Mr. Ron Space, Jr.
Mr. Mike Learn
Mr. Dale Van Erden

Vermont*Facilitator*

Dr. Rick Wackernagel - Professor, University of Vermont

Panel Participants

Mr. Steve Hurd
Mr. Hank Nop
Mr. Steve Ovellette
Mr. Ted Foster
Mr. Reg Chaput
Mr. Onan Whitcomb
Mr. Mark Rodgers

Mr. Kim Harvey
Mr. Everett Maynard
Mr. Stanley Scribner
Mr. Roger Rainville
Mr. Paul Gingue
Ms. Sally Goodrich

BEEF PRODUCERS**Montana***Facilitators*

Mr. Olaf Sherwood - Custer County Agricultural Extension Agent
Dr. Alan Baquet - Farm Management Specialist, Montana State University

Panel Participants

Mr. Dee Murray	Mr. Donald Ochsner
Mr. Jean Robinson	Mr. Art Drange

Colorado*Facilitator*

Mr. C.J. Mucklow - Routt County Agricultural Extension Agent

Panel Participants

Mr. Doug Carlson	Mr. Dean Rossi
Mr. Charlie Cammer	Mr. Wayne Shoemaker
Mr. Jay Fetcher	Mr. Larry Monger
Mr. Pud Stetson	Mr. Jim Rossi

Wyoming*Facilitators*

Mr. Jim Gill, County Extension Agent, Washakie County
Dr. Larry Van Tassell - University of Wyoming

Panel Participants

Mr. Bill Greer	Mr. Gary Rice
Mr. Ray Rice	Mr. Jim Foreman

HOG FARMS

Illinois*Facilitator*

Mr. Don Teel - Retired Knox County Agricultural Extension Agent

Panel Participants

Mr. David Hawkinson

Mr. Kevin Maine

Mr. Dale Carlson

Mr. David Bowman

Mr. Mike Hennenfent

Mr. John Gustafson

Mr. Sterling Saline

Mr. Steve Maine

Mr. Don Erickson

Mr. Lance Humphreys

Mr. Bob Hennenfent

Dr. Donald G. Reeder

Indiana*Facilitator*

Mr. Steve Nichols - Carroll County Agricultural Extension Agent

Dr. Chril Hurt - Extension Farm Management Specialist - Purdue University

Panel Participants

Mr. Rick Brown

Mr. Larry Trapp

Mr. Sam Zook

Mr. Bill Pickart

Mr. Levi Huffman

Mr. Brad Burton

Mr. Trent Odell

Mr. Mark Martin

Missouri*Facilitator*

Mr. Parman Green - Farm Management Specialist, University of Missouri - Columbia

Panel Participants

Mr. Larry Charles

Mr. Dale Miles

Mr. Vernon Thoeni

Mr. John Vogelsmeier

Mr. Herbert Kiehl

Mr. Paul Benedict

Mr. R. David Hemme

Mr. Gary L. Sanders

Mr. Robert S. Mayden

Mr. Matt Reichert

Mr. Richard Clemens

North Carolina*Facilitators*

Mr. Mike Regans - Wayne County Agricultural Extension Agent

Dr. Kelly Zering - Associate Professor and Extension Specialist, North Carolina State University

Mr. Jeff Chandler - Wayne County Agricultural Extension Agent

Panel Participants

Mr. Ben Outlaw

Mr. David Harrell Overman

Mr. Charlie McClenny

Mr. Ronald Parks

Mr. David Sanderson

Mr. Frankie Warren

Mr. Jeff Hansen

Mr. John Dawson

Mr. R.H. Mohesky

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