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**Multi-State Efforts to Evaluate Alternative
Farm Savings Account Programs**

Brent Gloy

Agricultural Finance Markets in Transition

Proceedings of The Annual Meeting of NCT-194 Hosted by the Center for the Study
of Rural America,
Federal Reserve Bank of Kansas City
October 6 - 7, 2003

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Multi-State Efforts to Evaluate Alternative Farm Savings Account Programs

Presented by Brent Gloy*
Cornell University
Annual Meeting of NCT-194
10-6-03

*This work is the product of a number of individuals

Background: The People

- Collaborators:
 - Economic Research Service – Durst, Dismukes, Monke
 - Kansas State –Williams, Schurle, Langemeier
 - North Dakota State –Swenson
 - Illinois – Ellinger, Schnitkey
 - Cornell – LaDue, Gloy
 - Please forgive any omission of other collaborators at these institutions
- Funding and guidance -- RMA

The Task

- Objectives:
 - Estimate farm income variability and assess producers' abilities to accumulate and use savings for risk management
 - Provide a risk management tool that will assist farmers in making decisions about savings, including the use of subsidized savings accounts

Savings Accounts

- Idea has appeal – encourage farmers to save when times are good
- Assist farmers in managing revenue risk
- The amount and type of encouragement varies
 - Tax deferral
 - Government matching
 - Both
- Various implementation schemes
 - All based on tax measures of income

Savings Accounts

- Subsidy component of programs differs
- Policy aimed at market failure?
 - Is savings constrained? Do farmers systematically under-save?
 - I don't know
 - If these (and most other) programs are evaluated in this context they probably perform poorly
- Can/should we ask/insist that farmers to save the assistance that the government provides them in good times?
 - These programs provide incentives to do this

Savings Accounts

- Problem: We know relatively little about the extent/magnitude of variation annual farm income at the farm level
- Problem: We know relatively little about the extent to which savings accounts might impact this situation

Savings Accounts Precedent: Canada's NISA Program

- Deposits based on net value of production
 - Farmer deposits were not tax deductible
 - Matched deposits
- Withdrawn when net income falls below 5 year average or when income falls below a minimum level (\$20,000)
- Results:
 - Substantial balances
 - Farmers negotiated ad hoc assistance in bad times
 - NISA being revised/modified

Source: Presentation given by Greg Strain, Agriculture and Agri-Food Canada, at the Farm Savings Accounts and the Farm Safety Net Workshop, Washington, D.C. June 2, 2003

Savings Accounts Precedent: Australia's Farm Management Deposits

- Tax deferral incentive
 - Cannot make taxable farm income negative
 - Cannot build balance in excess of 300,000AUD
 - Cannot be used as collateral
 - Provided some "exceptional circumstance" withdrawals, i.e., put the money in and take off your taxes, take it out tax free
 - About 10% of farms utilize

Source: Presentation given by Trish Gleeson, Principal Economist Agricultural Commodities, abareconomics, at the Farm Savings Accounts and the Farm Safety Net Workshop, Washington, D.C. June 2, 2003

The Programs

1. Farm and Ranch Risk Management (FARRM) Accounts
 - Recent support for the idea
 - Tax deferral incentives
2. Counter-Cyclical Accounts
 - Recent support
 - Direct government support program
3. Individual Risk Management Accounts (IRMA)
 - Alternative savings account program
 - Blends aspects of CC and FARRM

Details: FARRM Accounts

- Eligibility: positive net income
- Deposits: 20% of net income
- Income tax on deposits is deferred, earnings on deposits are taxable
- Considered two types of withdrawal rules:
 - Not specified in proposed program – conducted some analyses on movement within tax brackets
 - This benefit appears to be modest in NY (Cornell)
- Basic analyses examined withdrawals
 - If gross income falls below 90% of 5 year average, $\text{withdrawal}_i = \min(\text{balance}_i, 90\% * 5\text{yrAve} - \text{income}_i)$
 - Used same rules for all three types of accounts

Details: CC Accounts

- Eligibility: 5 year average gross income over \$50,000
- Deposits: 2% of gross income, up to \$5,000 plus government match
- Only earnings on deposits are tax deferred
- Basic analyses examined withdrawals
 - If gross income falls below 90% of 5 year average,
$$\text{withdrawal}_i = \min(\text{balance}_i, 90\% * 5\text{yrAve} - \text{income}_i)$$

IRMA: The General Idea

- Place crop insurance premiums in a tax-deferred interest bearing account
- Instead of subsidizing crop insurance premiums, USDA matches the producer's contribution
- Generates a whole-farm revenue insurance plan rather than commodity by commodity insurance

Details: IRMA

- Eligibility: Positive net income
- Deposits: 2% of gross income, with a high income kicker
 - If income > 110% of 5 year average, contribute 25% of the gross income amount over 110%
- Government Match of 2% of gross farm revenue (likely high)
- Maximum cumulative balance is 150% of 3 year average gross revenue
- Income tax on deposits and earnings are deferred
- Basic analyses examined withdrawals
 - If gross income falls below 90% of 5 year average,
 $\text{withdrawal}_i = \min(\text{balance}_i, 90\% * 5\text{yrAve} - \text{income}_i)$

Background: Method and Data

- Partner institutions use farm record data to develop comparable panel data sets
 - Begin with records for 1997 to 2001
 - Each institution needed to standardize the records
 - Provide variability with respect to enterprise and geographic region
 - ERS to use IRS data

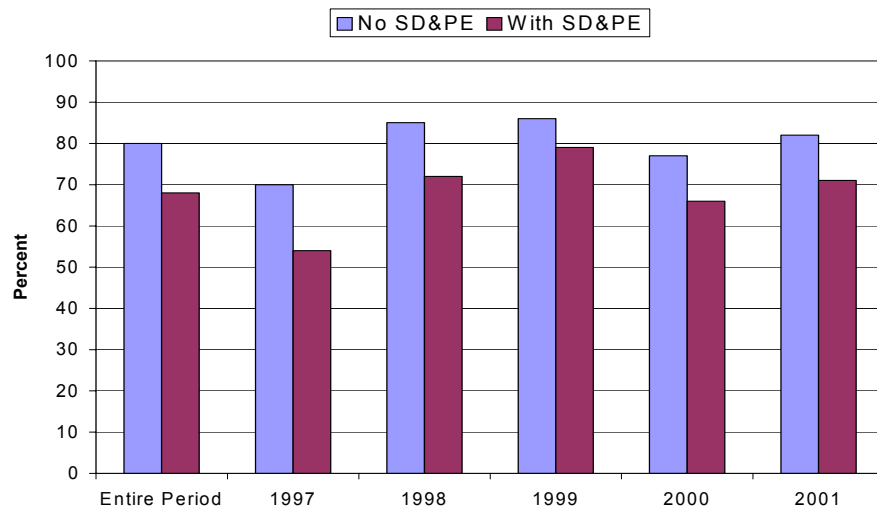
Background: Method and Data

- Proposed programs based primarily on tax records so each institution was required to develop measure that correspond to taxes
- Developed a standard approach for evaluating each program and measures of variability
- Each institution summarized the basic aspects of this data

Tasks

- Analysis begins with basic questions
 - Income variability
 - Eligibility
 - Basic withdrawal rules
- Expanded analysis will examine
 - “Behavioral” based rules
 - Cash flow and financial situation considerations

NY Farms with Positive Tax Liability



Preliminary Results

Illinois, Kansas, New York, North Dakota

Paul Ellinger, Brent Gloy,
Andrew Swenson, Jeffery R. Williams

Research Stages

- Phase I – ERS/RMA
 - Measure the variability of farms with farm records panel data
 - Estimate the impact of 3 alternative proposals
 - Identify issues
- Phase II – ERS/RMA
 - Risk management tool
- Phase III and beyond – research group
 - Customized – hybrid program
 - Evaluate savings tools in combination w/risk management tools (ex. Crop insurance)
 - Accounting issues related to farm variability
 - Consideration of financial condition
 - Behavioral cash rules

General Program Design

- Establish criteria for depositing funds and withdrawing funds.
 - Typically, current year income (net or gross) relative to historical average
- Benefits to producers are typically tax deferral and governmental match

Research Issues

- Previous research suggests benefits to size
- Measures of variability
 - net v gross
 - cash v accrual
- Moving average calculations
- Time frame
- Changes in farm size and structure
- Producer withdrawals
- Cash flow issues
- Data discrepancies

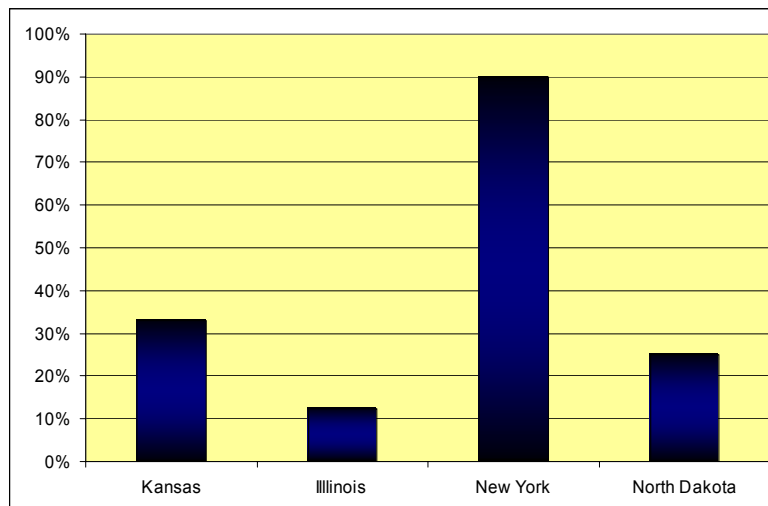
Output Tables

- Descriptive statistics
- CDFs of variability relative to min and max
- Deposit and withdrawal patterns by size of farm
 - FAARM accounts
 - Counter-cyclical
 - IRMA
- Sensitivity analysis to withdrawal rules

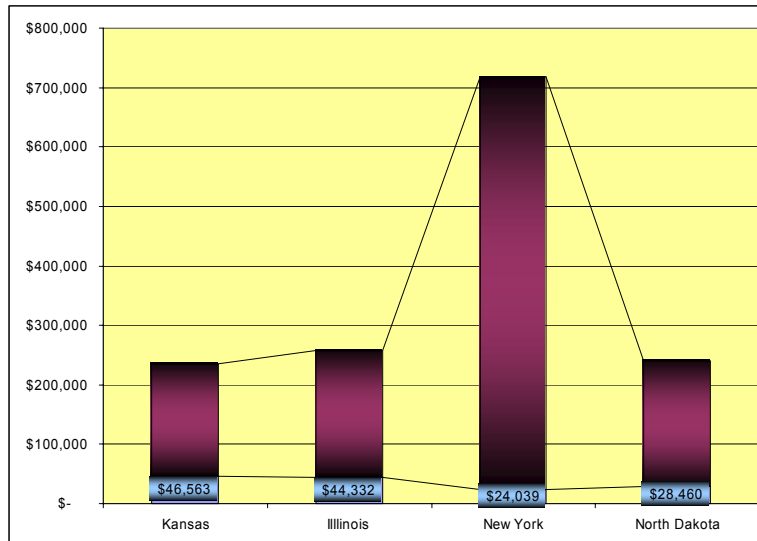
Descriptive Data

	Kansas	Illinois	New York	North Dakota
Number of farms	699	1,716	142	258
Average Gross Income (1997)	\$ 235,725	\$ 256,811	\$ 718,675	\$ 239,764
Average Gross Income (2001)	227,434	262,482	1,081,018	315,127
% Gross Income from Livestock (1997)	34.30%	15.80%	over 90%	24.00%
% Gross Income from Livestock (2001)	32.90%	12.30%	over 90%	25.00%
Average Net Income (1997)	\$ 46,563	\$ 44,332	\$ 24,039	\$ 28,460
Average Net Income (2001)	32,632	36,668	64,353	42,725
Distribution of Farms (2001)				
Gross Income				
Less than \$100,000	29%	25%	29%	9%
\$100,000 - 250,000	40%	45%	40%	39%
Greater than \$250,000	31%	30%	31%	52%
Proportion of Gross Income From Livestock				
Less than 25%	52%	83%	52%	65%
25% to 50%	18%	6%	18%	10%
50% to 75%	14%	7%	14%	9%
Greater than 75%	17%	5%	17%	16%
Net Income				
less than \$0	21%	17%	21%	12%
1 to \$50,000	53%	61%	53%	57%
Greater than \$50,000	26%	22%	26%	31%

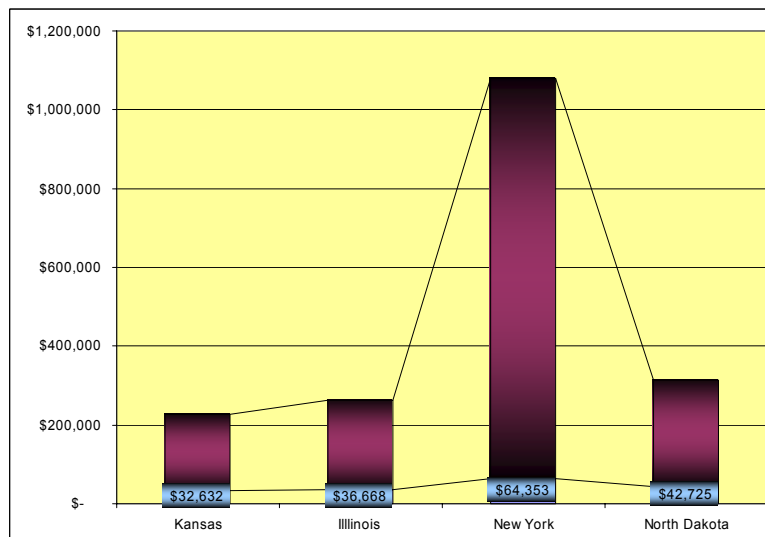
Revenue From Livestock



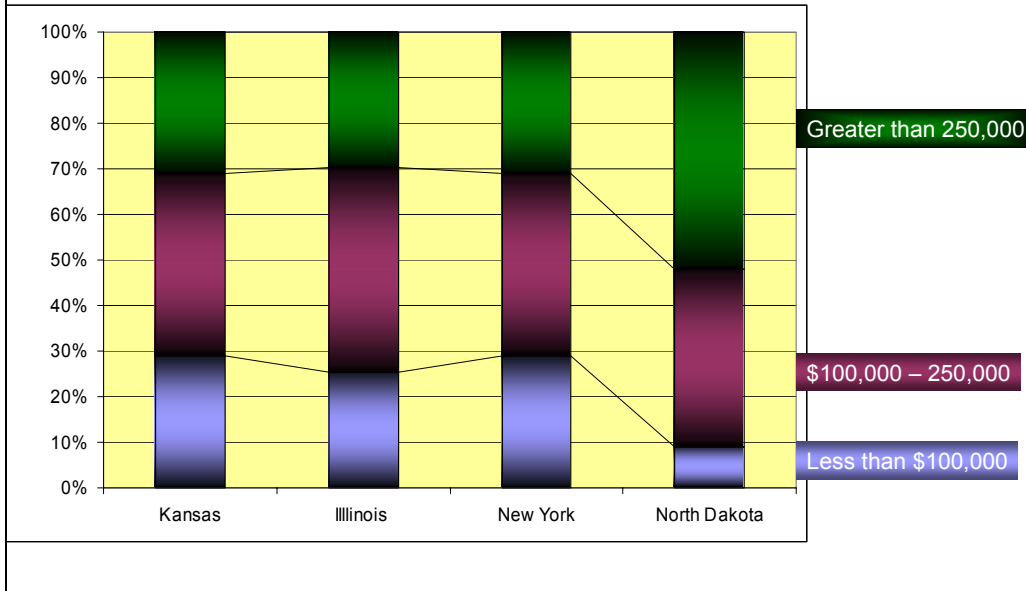
Gross Revenue and Net Farm Income, 1997



Gross Revenue and Net Farm Income, 2001

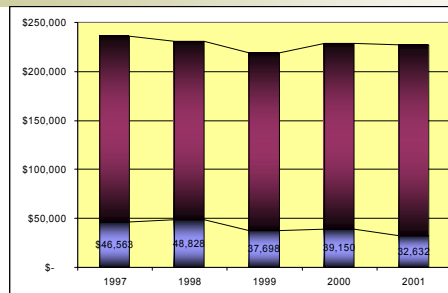


Farm Size Distribution

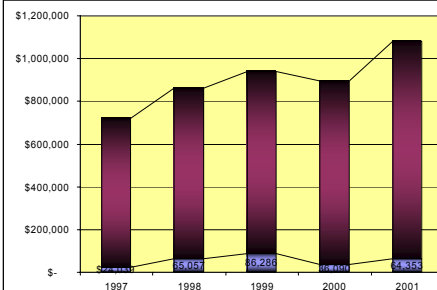


Average Revenue and Net Income

Kansas



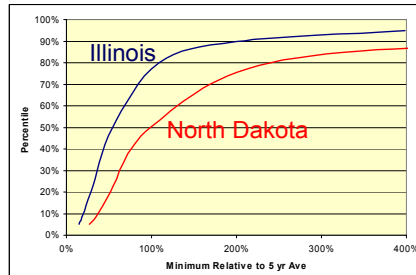
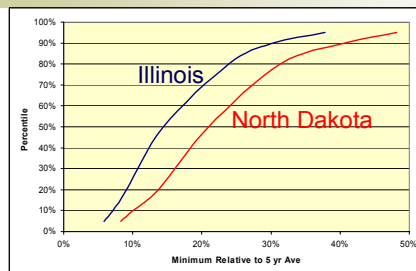
New York

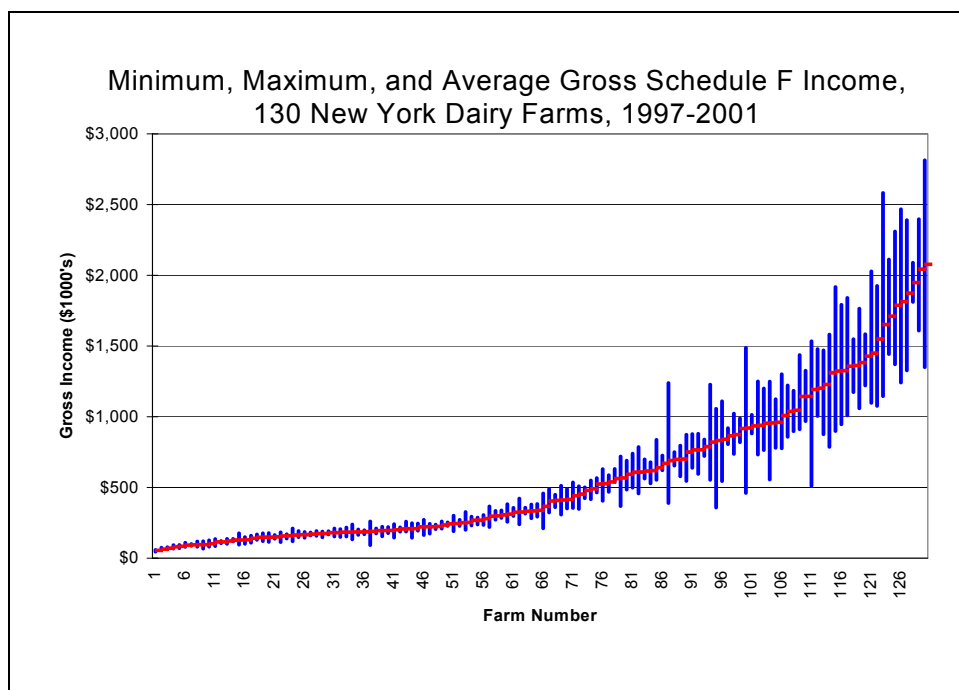
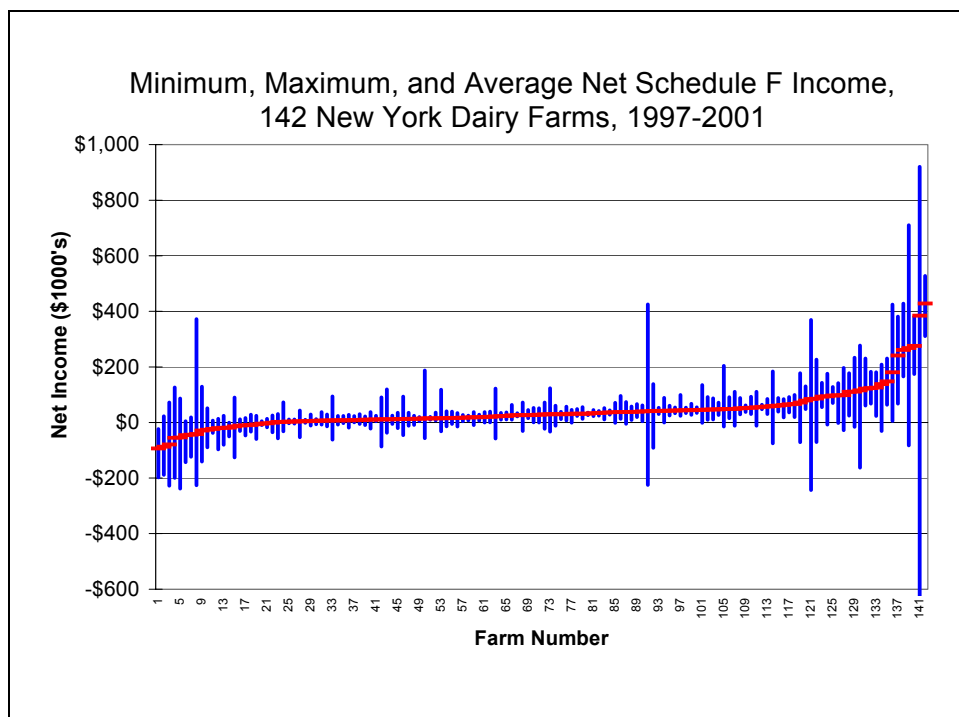


Income Descriptive Statistics

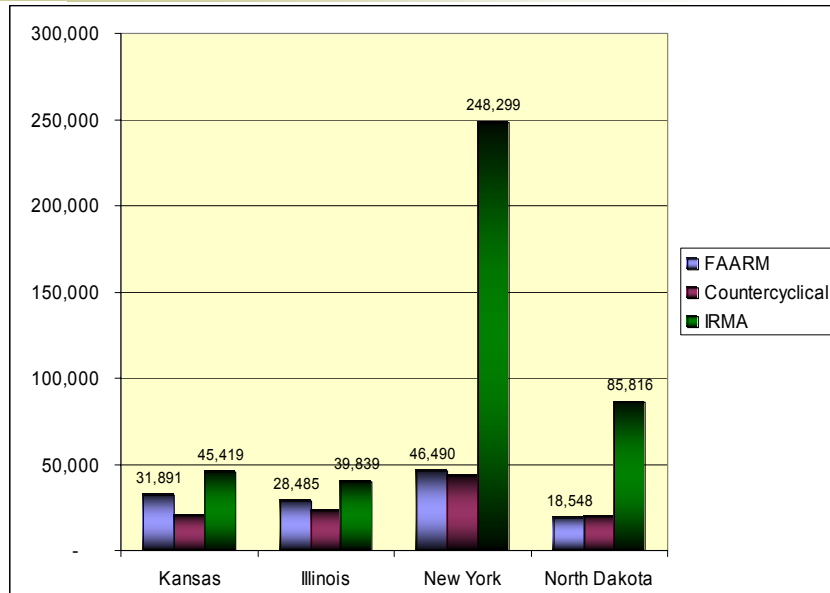
		Gross Income		Net profit/loss		Gross Income		Net profit/loss	
		Illinois				New York			
Average	1997	\$	256,811	\$	44,332	\$	718,675	\$	24,039
	1998		237,558		35,526		862,279		65,057
	1999		245,035		38,528		940,063		86,286
	2000		256,006		38,638		894,245		36,090
	2001		262,482		36,668		1,081,018		64,353
Proportion With Low Year In	1997		16%		15%		87%		49%
	1998		28%		24%		1%		9%
	1999		22%		18%		1%		6%
	2000		15%		17%		8%		19%
	2001		18%		25%		2%		16%
Proportion With High Year In	1997		34%		31%		1%		3%
	1998		9%		15%		7%		23%
	1999		12%		18%		20%		42%
	2000		17%		18%		1%		8%
	2001		28%		18%		70%		23%

Minimum relative to 5-year average

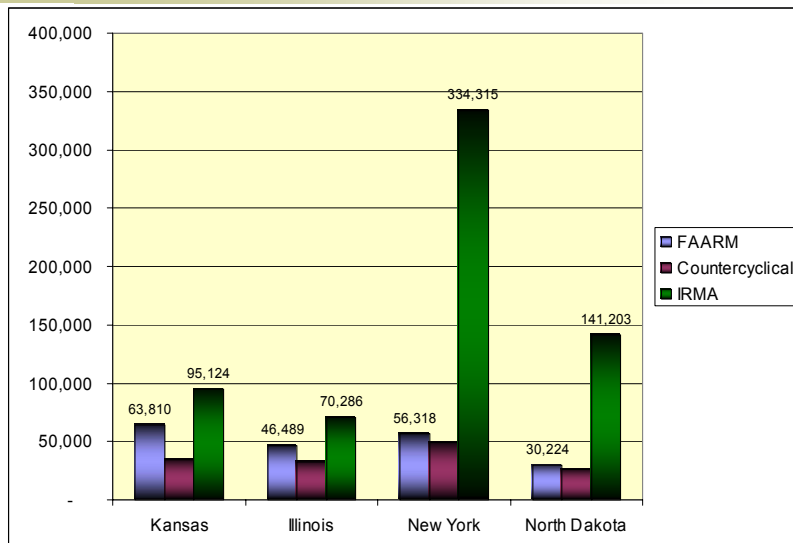




Average Ending Account Balances All Farms

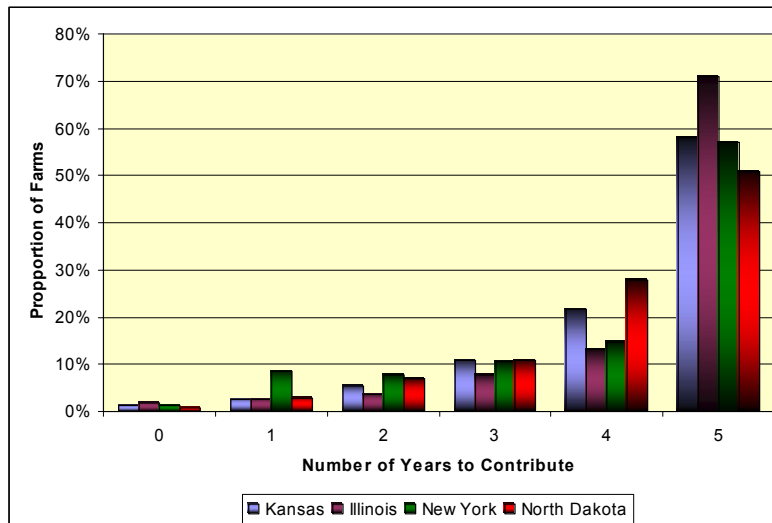


Average Ending Account Balances Large Farms (> 250,000)



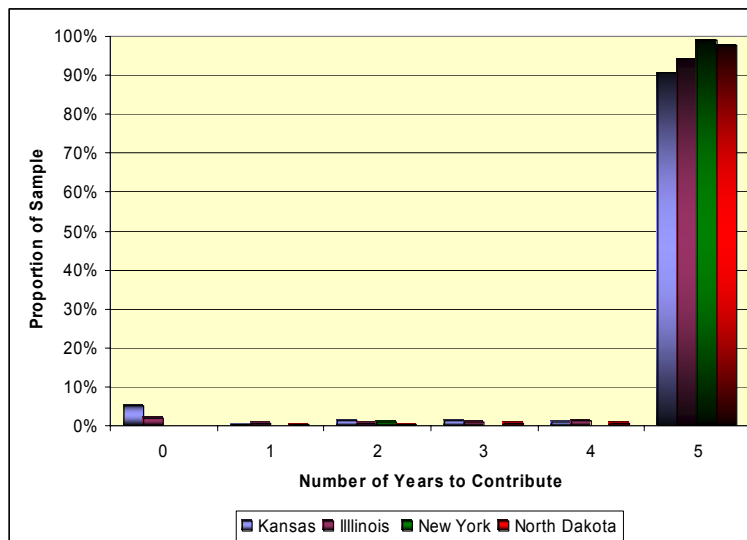
Farms Eligible to Contribute FAARM

Positive income



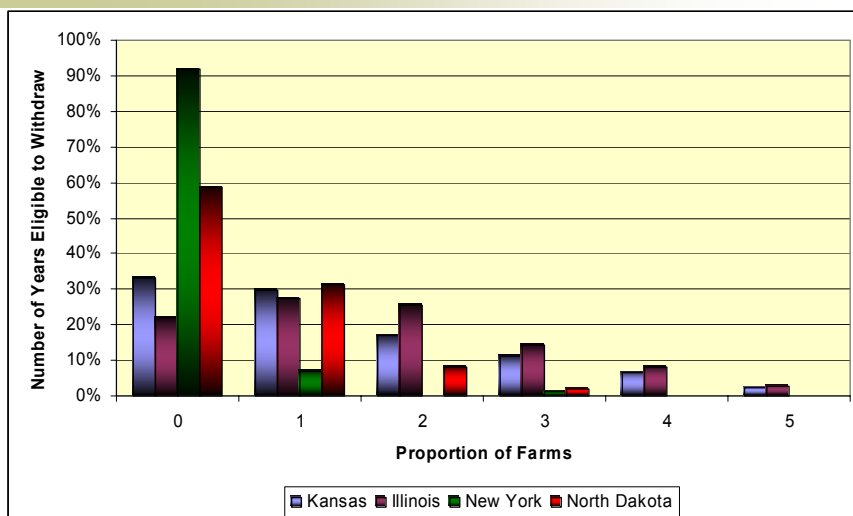
Farms Eligible to Contribute FAARM

Gross Revenue > 50,000



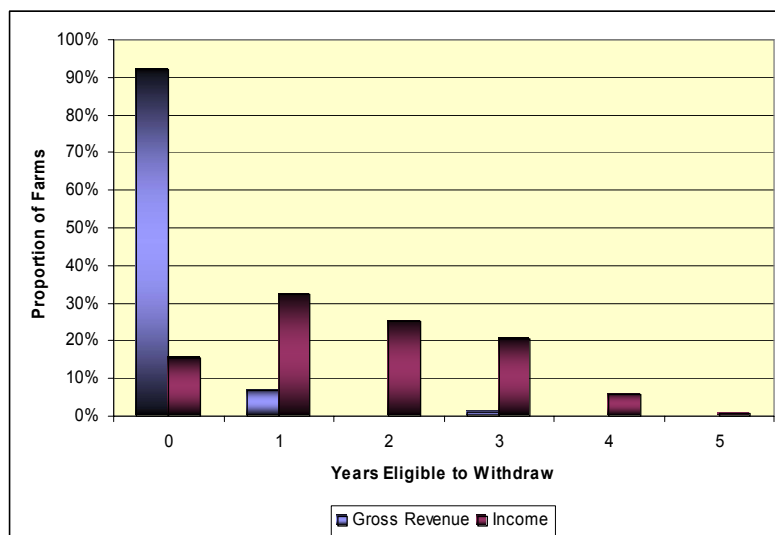
Farms Eligible to Withdraw

90% Gross Revenue



Withdrawal Rules: Gross v Net

New York

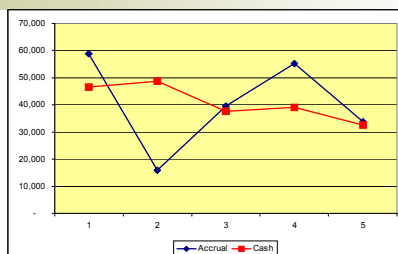


Cash v Accrual

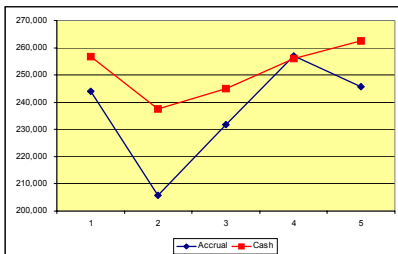
	Net Farm Income		Gross Income	
	Accrual	Cash	Accrual	Cash
1997	58,837	46,563	243,918	256,811
1998	15,934	48,828	205,889	237,558
1999	39,537	37,698	231,704	245,035
2000	55,225	39,150	257,050	256,006
2001	33,721	32,632	245,672	262,482
Average	40,651	40,974	236,847	251,578
Std Dev	17,345	6,644	19,499	10,066
CV	0.43	0.16	0.08	0.04

Cash v Accrual

Net Income



Gross Revenue



5 Year Variability below average by growth Illinois Grain Farms Only

Income Threshold 80%

	At least 1 year	1 in 5 years	2 in 5 years
Negative Growth	49.6%	35.5%	10.1%
Low Growth	25.8%	21.6%	3.4%
Positive Growth	38.6%	29.9%	7.6%

5 Year Variability above average by growth Illinois Grain Farms Only

Income Threshold 120%

	At least 1 year	1 in 5 years	2 in 5 years
Negative Growth	42.0%	35.9%	5.4%
Low Growth	29.9%	25.9%	3.5%
Positive Growth	55.9%	38.6%	14.6%

IRS Data: 2000

- Landlords
- Farm partnerships
- Subchapter S corps
- Sole proprietors (1.8 million returns)

Crop Insurance	Salaries	Self Employment Taxes
Government payments	Dividend Income	Education Credits
Depreciation	Capital Gains/Losses	Medical Credits
Mortgage Interest	IRA Contributions	Tax brackets
Gross & Net Income	Keough Contributions	
	Adjusted Gross Income	

Summary

- Report of baseline analysis: Phase I
- Sensitivity to deposit / withdrawal rules
- Issues
 - What are the incentives?
 - Accounting for changes in size and structure
 - Deposits: adequate cash flow
 - Gross revenue or net