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# **Agricultural and Rural Finance Markets in Transition**

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*Dr. Michael A. Gunderson, Editor*  
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# **Eliminating Price Risk to Expand Capacity for Value-Added Activities**

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## Reducing Risk to Expand Capacity for Value-Added Risk in Agriculture

NC-1014 – St. Louis  
By  
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Slide 2

## Risk In Agriculture

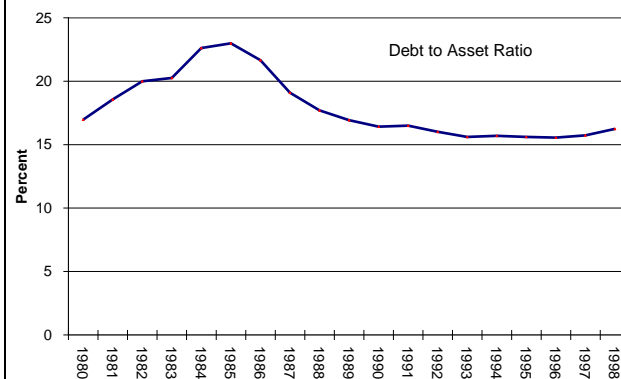
- Risk is widespread in agriculture
  - Output prices, yields, input prices, weather, interest rates, human resources, liability.....
- Traditionally farmers have self-insured most of these risks

## Risk Bearing Capacity and Risk Balancing

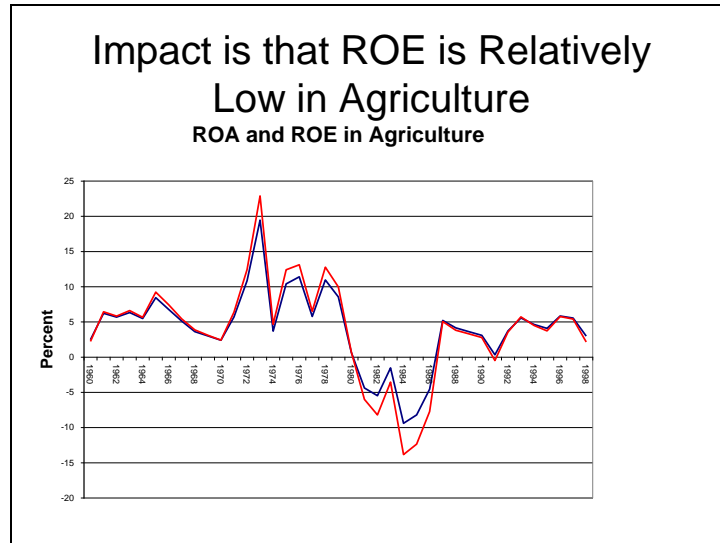
- Dominant paradigm when thinking about business level risks is the risk balancing hypothesis
  - Tradeoff between business risk and financial risk
  - Result is that as business risk increases the firm's ability to handle financial risk declines

## Result is Relatively Low Levels of Debt Use in Agriculture

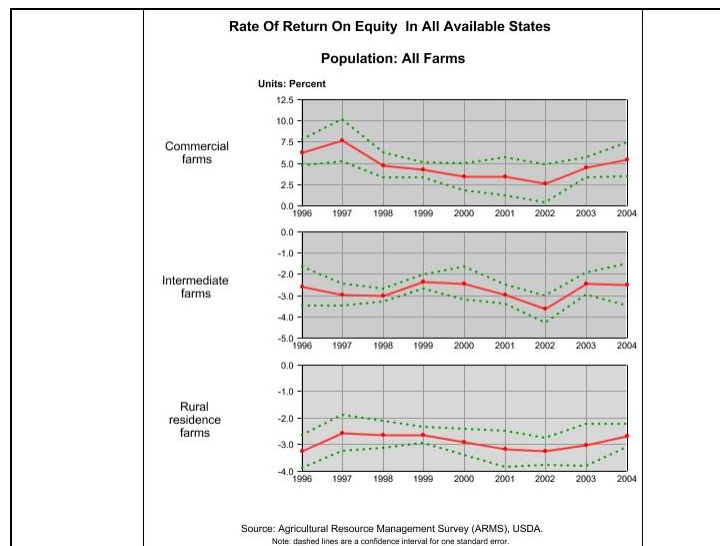
Debt Use in the United States 1980 - 1998



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## Risk and Leverage in Agriculture

- The relatively high level of business risk limits debt use
- Limited debt use limits ability to generate rates of return on equity that would attract outside capital
- If one could manage the risk and maintain average rate of return on assets with sound management it may be possible to greatly improve ROE without tremendously increasing total risk

## Perspectives on Risk and Leverage

- Merton views equity as the ultimate insurance policy
  - The more risk you have the more equity you must hold against that risk
  - The important question then becomes what types of risks is the firm using equity to insure against
  - Complementary to risk balancing but a fundamentally different approach/view

## Thinking About Risks

- Merton defines:
  - Value adding risks – those that the firm reasonably has some advantage in managing
  - Passive risks – risks inherent in the business for which others would likely have an advantage managing
- Owners job is to decide which risks are likely value adding and which are passive
- Why hold precious equity to insure passive risks?

## Value Adding and Passive Risks in Agriculture

- Passive risks – price risks, liability, non-systematic yield risks (weather?)
- Value adding – systematic yield risks, human resource risks
- Plenty of tools available to manage the risks and new approaches constantly under development



## The Study

- Examine the extent to which firms could use greater amounts of leverage by outsourcing risks
- Set in the dairy industry
  - Identify risks and market for these risks
  - Simulate returns and ability to handle leverage

## Where We're at

- Financial model built and data collected
- Key risks
  - Prices – milk – contracting and futures, beef – contracting and futures
  - Inputs – feed cost ratio – corn, bean, alfalfa, heifers

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