Agricultural and Rural Finance Markets in Transition

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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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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

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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

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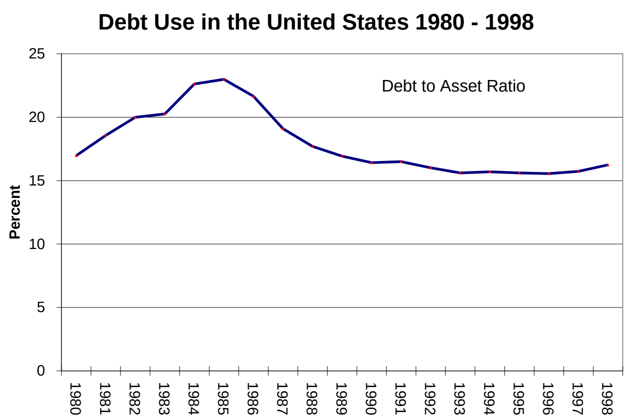
Result is Relatively Low Levels of Debt Use in Agriculture



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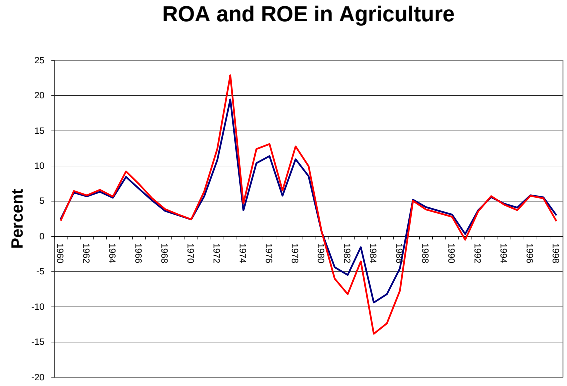
Impact is that ROE is Relatively Low in Agriculture



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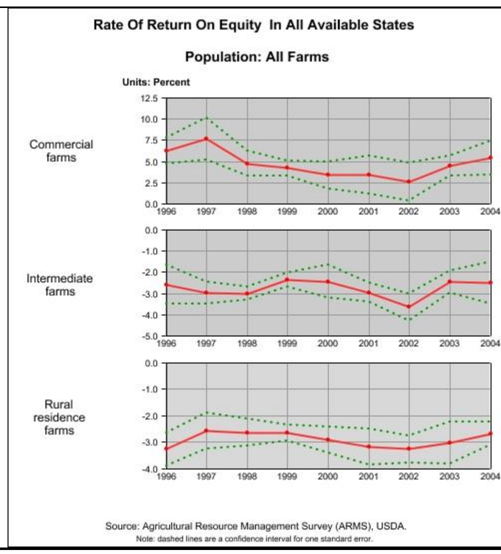

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Risk and Leverage in Agriculture

- 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

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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

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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?

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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

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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

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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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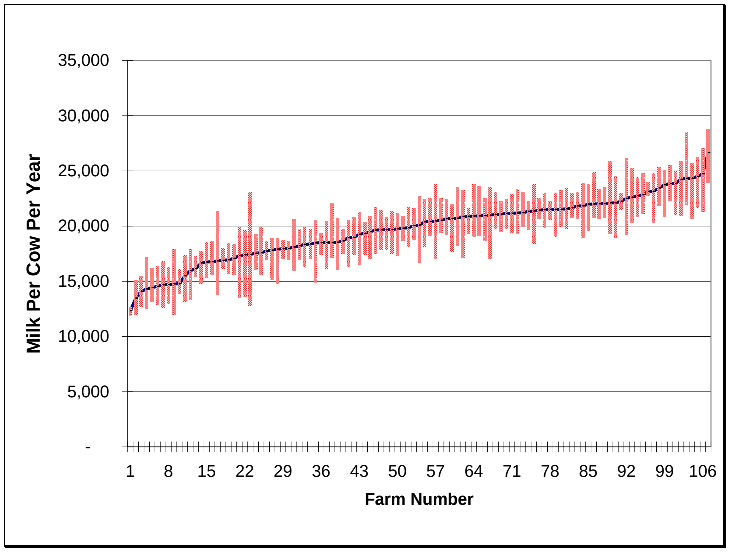
Milk Per Cow Per Year
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
1
8
15
22
29
36
43
50
57
64
71
78
85
92
99
106
Farm Number