

RISK, the AG Risk-5, and Risk Management



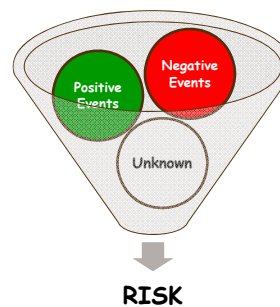
John P. Hewlett – University of Wyoming
Jay Parsons – Colorado State University
Tom Stanley – Virginia Tech

Virginia
Cooperative
Extension



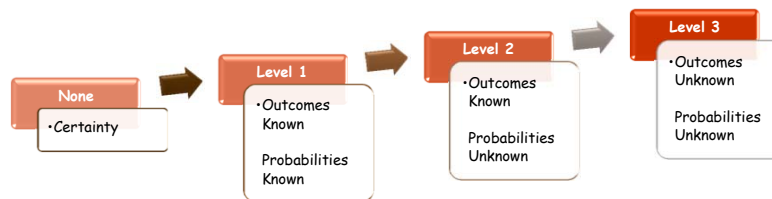
What is RISK?

- **Certainty**- lack of doubt
- **Uncertainty**- doubt about future events
- **RISK**- potential variation in the outcome of future events



What is RISK?

- **RISK**- potential variation in the outcome of future events



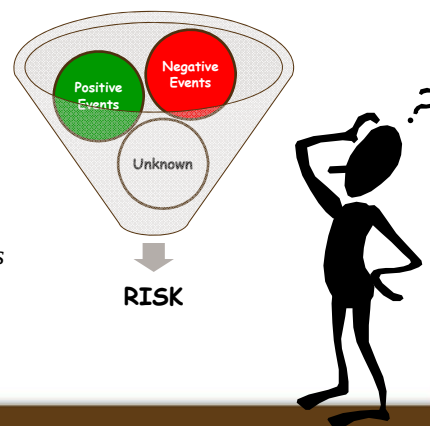
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Risk

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What is RISK?

- **Cost of Loss**
 - Income
 - Resources
 - Productive capacity, etc.
- **Cost of Uncertainty**
 - Worry, doubt, fear, misallocation of resources, etc.
 - With potential for gain or loss comes moral or ethical implications



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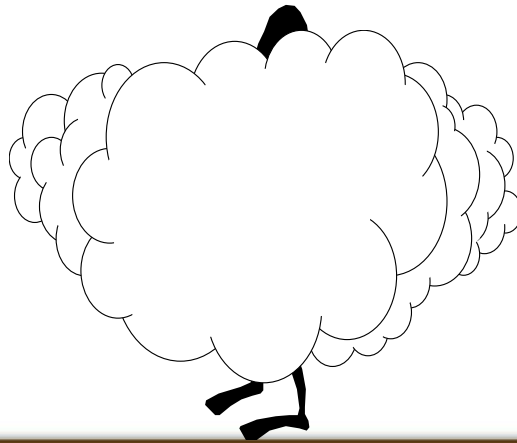
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The HUMAN Dimension of Risk

- Emotionally we **avoid risk (uncertainty)**

to avoid the shame of:

- *Failure,*
- *Being wrong,*
- *Being laughed at*
- *Being made fun of,*
- *Loosing the farm, etc.*

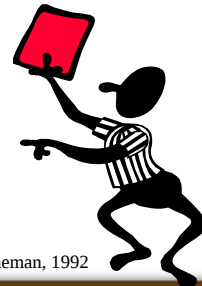


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The HUMAN Dimension of Risk

- Humans tend to be **loss averse** more than **risk adverse**
- Emotion can cloud** the ability to decide rationally
- The **way questions about risk are framed** will influence attitudes about risk
- Obtaining more information** about certain risks tends to promote a willingness to take those risks
- People tend to ignore that runs of luck tend to **regress to the mean** over time
- Humans do not possess **all information** necessary to decide in an economically rational manner
- Human choice is often based on **inadequate sampling**



Tversky and Kahneman, 1992

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Risk

Personal Perspectives on Risk

- Generational differences
- Gender differences
- Life stage/family differences
- Life experiences

*dynamic and
changing over time.*



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What is RISK?

- The probability of an event occurring that can negatively impact:
 - *Current profit level*
 - *Financial situation*
(equity position)
 - *Satisfaction and well-being*

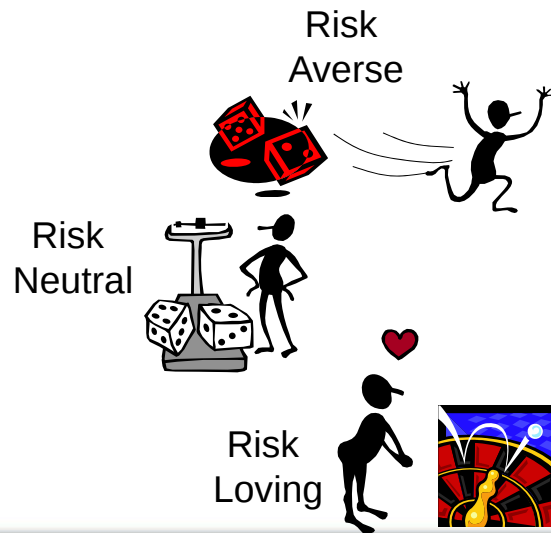


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Types of Risk Preference



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RightRisk

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Sources of Risk in Agriculture – Ag Risk 5

1. Marketing/Price Risk
2. Production Risk
3. Institutional/Legal Risk
4. Human Risk
5. Financial Risk



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RightRisk

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Sources of Risk

- Business Risks: *Business risks are those risks that occur independently of the way a firm (or farm) is financed. Even with 100% equity (no debt obligations) these risks still exist.*
 - Market/Price risk
 - Production risk
 - Institutional/Legal risk
 - Social risk
 - Legal risk
 - Human risk
- Non-Business Risk: *arise from the obligations created when external financing is used to leverage business operations.*
 - Financial Risk



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Risk Tradeoffs

***Profits are
returns for
taking risks***



- **Upside**: Greater risk taking usually leads to greater wealth over time
- **Downside**: Losses from risk taking can potentially be devastating
- Managing risks are a matter of **evaluating tradeoffs**
- How much **risk** (uncertainty) are you willing to accept for **possible higher returns**?

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Strategies for Managing Risk

1. Avoid it
2. Reduce it
 - a) *Reduce the probability it will happen*
 - b) *Reduce the impact if it does happen*
3. Transfer it outside the business
 - a) *Insurance*
 - b) *Contracting*
4. Increase capacity to bear
 - a) *Increase reserves*
 - b) *Maintain flexibility*
5. Accept it



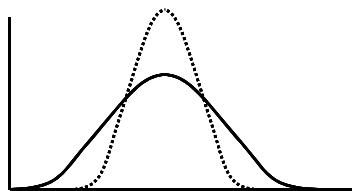
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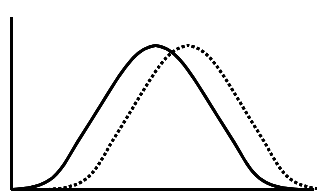
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Strategy Impacts

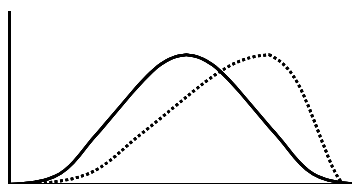
Panel 1: Same Mean, Less Dispersion



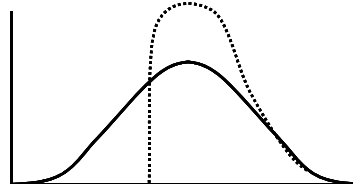
Panel 2: Same Dispersion, Higher Mean



Panel 3: Skewing the distribution



Panel 4: Truncating the Distribution



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Current Federal Insurance Options

Insurance Plans Available in Virginia			
Insurable Crops	Insured Acres	Total Acres	Percent Insured
Apples	6,130	11,800	52%
Barley - 2P	18,115	NA	20%
Barley - 3P/4P	448	90,000	0.5%
Barley - 1P	22,289	NA	25%
Corn	15	900	2%
Corn - 2P	272,323	NA	95%
Corn - 3P/4P	8,713	490,000	2%
Corn - 1P	59,545	NA	12%
Cotton	84,413	NA	72%
Cotton - 2P/3P	217	115,000	62%
Cotton - 1P	23,847	NA	63%
Fresh Market Beans	128	NA	NA
Fresh Market Sweet Corn - 2P	5	3,300	0%
Fresh Market Tomatoes	2,295	4,400	4%
Grain Sorghum - 2P	725	NA	0%
Grain Sorghum - 3P/4P	0	12,000	0%
Grain Sorghum - 1P	211	NA	2%
Orch	376	11,000	3%
Peanut	990	1,000	99%
Peanut - 2P	12,860	14,000	92%
Peanut - 1P	1,045	6,000	17%
Processing Beans	3,050	NA	NA
Processing Tomatoes	0	NA	NA
Processing Potatoes	416,154	724	57%
Processing - 2P	2,328	670,000	0.3%
Processing - 3P/4P	40,862	NA	11%
Processing - 1P	1,318	2,000	66%
Processing - 2P/3P	0	NA	NA
Processing - 4P/5P	333	330	61%
Processing - 6P/7P	18,023	18,000	100%
Processing - 8P/9P	140,862	NA	40%
Wheat - 2P/3P	6,257	290,000	2%
Wheat - 1P	27,426	NA	10%
Dollar Liability Program		Total Dollar Liability	0
Adjusted Gross Revenue		13,317,376	
Adjusted Gross Revenue - Life		11,887,852	
Cattle		0	
Livestock Gross Margin - Dairy		127,469	
Livestock Gross Margin - Swine		2,053,107	
Livestock Risk Protection - Fed Cattle		0	
Livestock Risk Protection - Fed Cattle		0	
Livestock Risk Protection - Lamb		30,328,718	
Livestock Risk Protection - Lamb		4,105,000	
Hemp		0	
Crop Pilot Programs			
Program		County	
Apples - 2P		All Counties	
Adjusted Gross Revenue (AGS)		25 counties and 14 independent cities in Eastern Virginia	
Cattle		Accomack, Northampton	
Processing - 2P/3P		All Counties	
Processing - 4P/5P		All Counties	
Processing - 6P/7P		All Counties	
Processing - 8P/9P		All Counties	
Processing - 10P/11P		All Counties	
Processing - 12P/13P		All Counties	
Processing - 14P/15P		All Counties	
Processing - 16P/17P		All Counties	
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