

Impact of Indemnity Expectations on Producer Biosecurity Effort

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Situation Summary

- Better alignment of public & private livestock disease efforts is needed
 - Limited gov't budgets, diverse industry views & concerns on risk, mixed between private & public incentives
- Role of indemnity policies, cost-share programs, etc. is mainly conceptual in the literature
 - ❖ KNOWLEDGE GAP:
 - Empirical assessment of producer biosecurity decision-making
 - Examine how producer policy expectations impact effort

Situation Summary

- Wang and Hennessy (2015): “...it is generally better to subsidize prevention efforts than subsidize stamp-out efforts.”
- Gramig and Horan (2011): effectiveness of disease control policies is tied to the extent these policies are well targeted
 - USDA-APHIS (2016): specified conditions for indemnity payment for highly HPAI and made indemnity conditional on ex-ante effort

Main Contributions

1. Conceptual framework of how biosecurity decisions may be impacted by livestock price signals (private sector) and indemnity policy signals (public sector)
2. Empirically quantify factors impacting producer biosecurity investment
3. Outline implications to guide refined inner-industry & government approaches to incentivize desired biosecurity effort

Conceptual Model

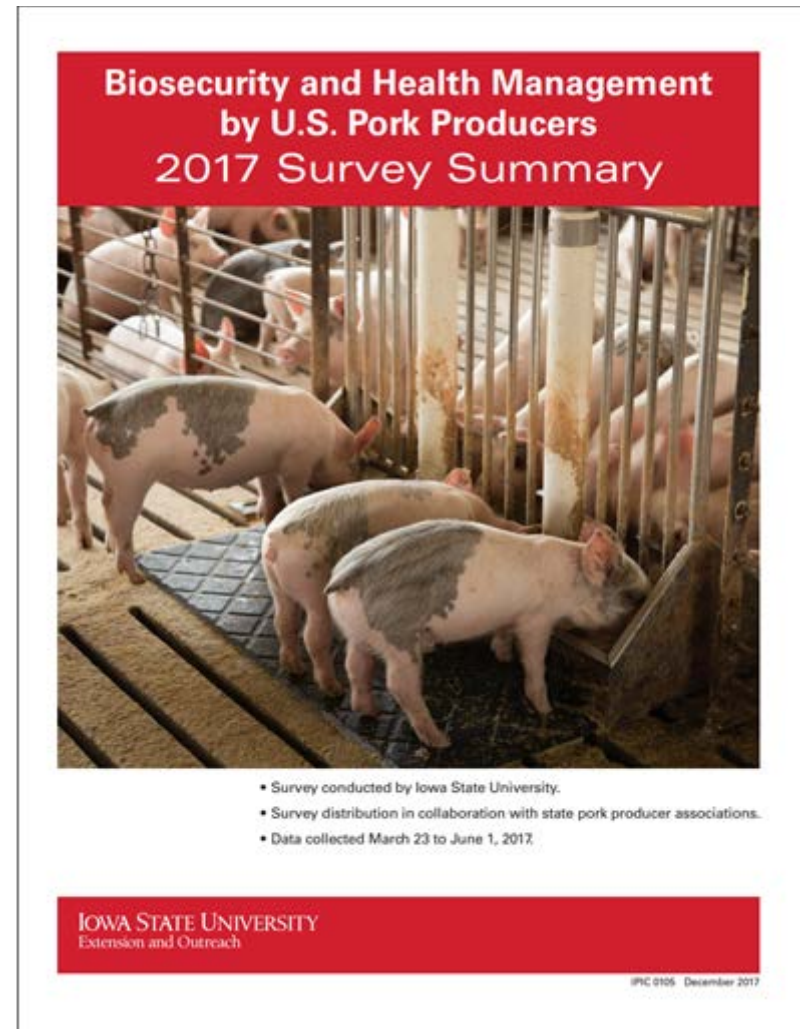
- ❑ Builds upon Gramig, Wolf, and Lupi (2010)
- ❑ Model suggests producer will invest more IF:
 - Implementation costs decline,
 - Disease risk reduction grows,
 - Output price benefit grows,
 - Indemnity payment is higher when adopting – given belief that indemnity funds will exist.

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- Given conceptual linkages, obvious question becomes:
 - ❖ **How do actual producers make decisions & what role do expectations have?**

Empirical Methods

- U.S. survey of swine (hog) producers 13 U.S. states in March-April 2017
 - 317 partially completed surveys
 - 138 used in this analysis



<https://store.extension.iastate.edu/product/Biosecurity-and-Health-Management-by-US-Pork-Producers-2017-Survey-Summary>

Empirical Methods

- **Diverse expectations: gov't approach to indemnity**
 - *If a Tier 1 disease outbreak occurred on your operation, what best describes in your opinion the likely governmental approach to indemnity payments?*

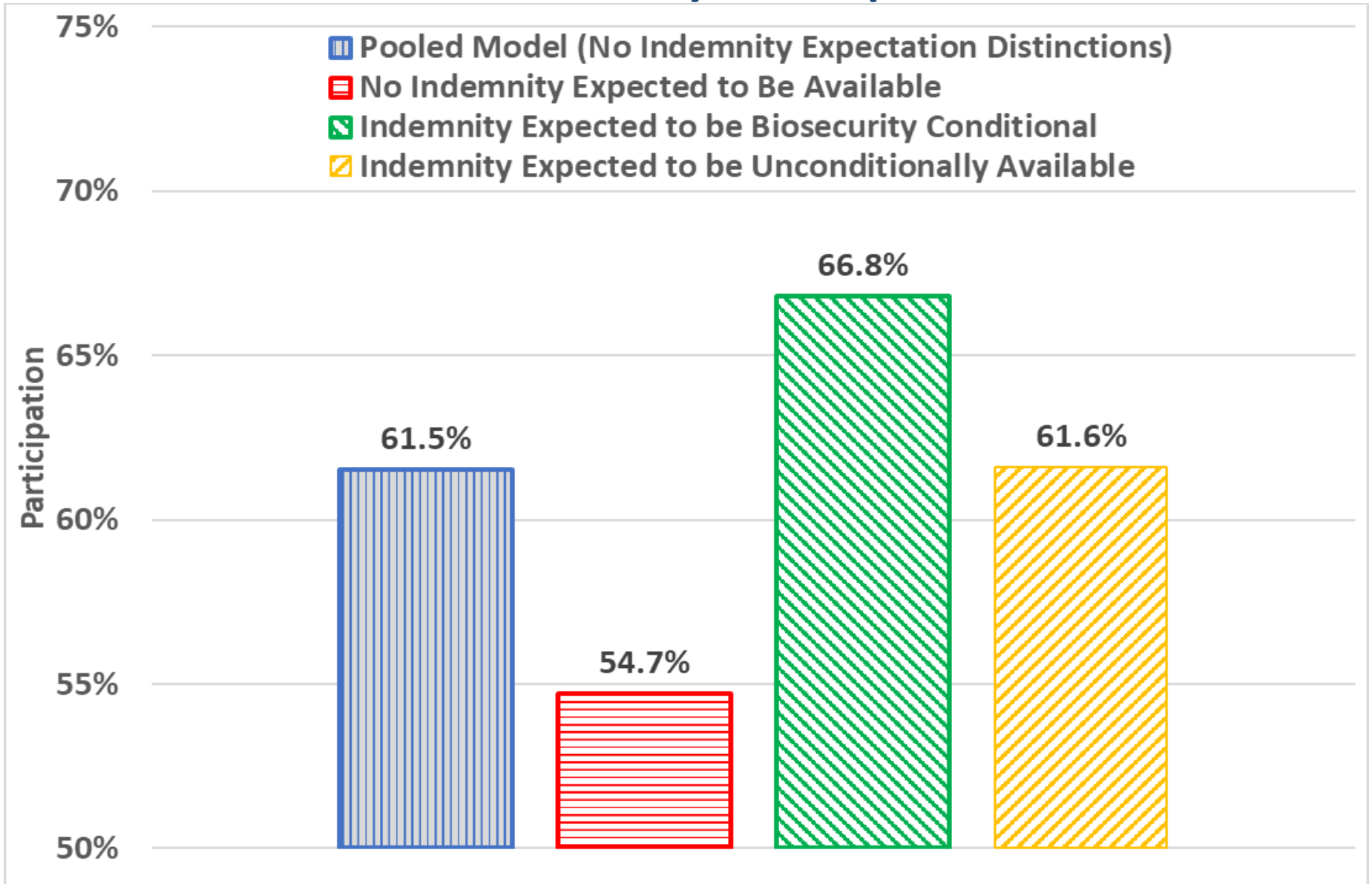
Not available to any hog producers	30%
Available only if they could document biosecurity efforts	32%
Available to all disease impacted hog producers regardless of biosecurity efforts and documentation	38%

Empirical Methods

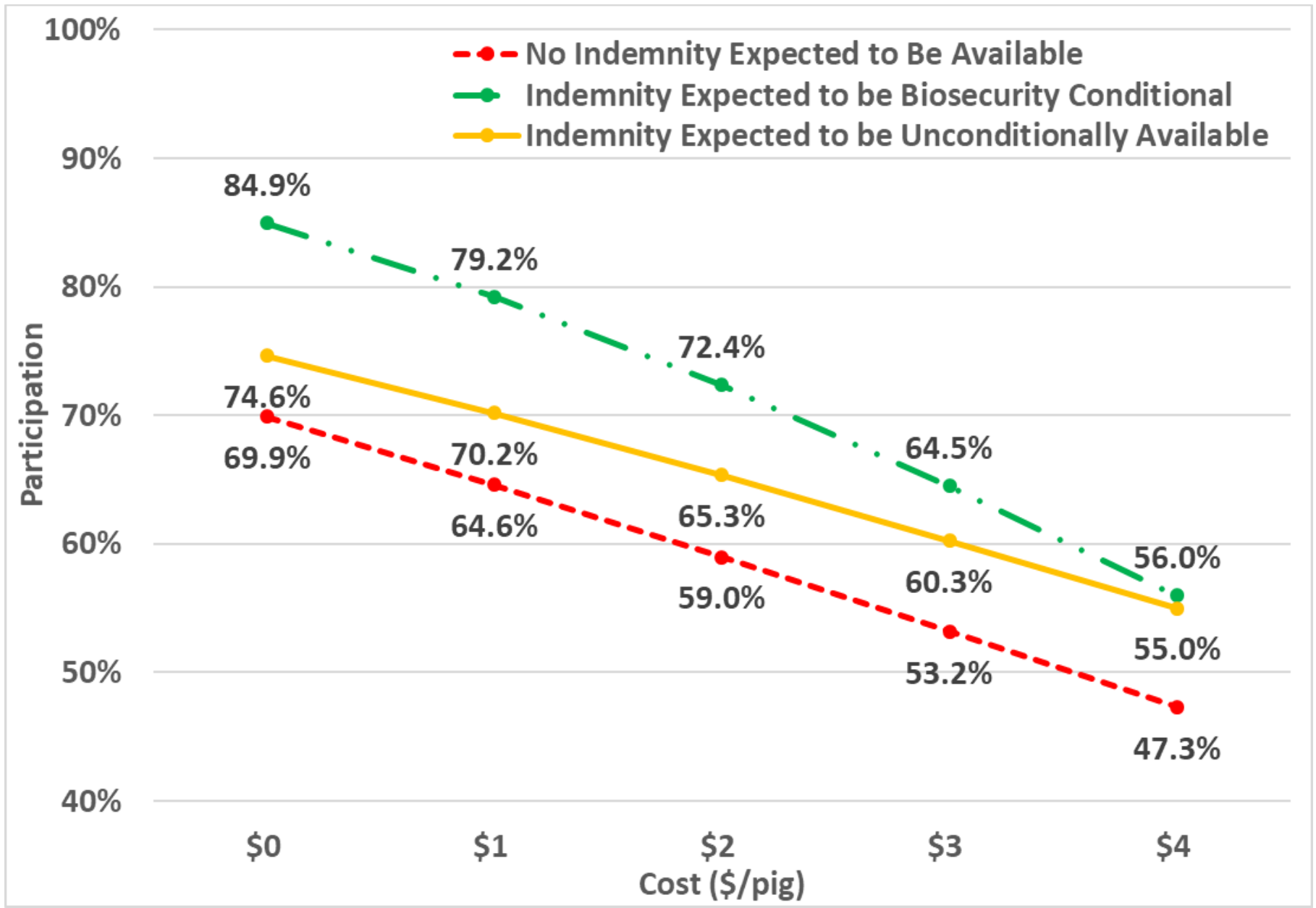
- Choice Experiment, Example Scenario:

	<u>Biosecurity Option A</u>	<u>Biosecurity Option B</u>	<u>Option C</u>
Annualized Cost (\$ per pig sold)	\$5	\$2	I would choose not to implement Biosecurity Options A or B
Own-Farm Outbreak Risk (%)	Less than 1% chance	Less than 3% chance	
Enhanced Market Access	Yes	Yes	
Enhanced Indemnity Status	No	Yes	
I would choose:			

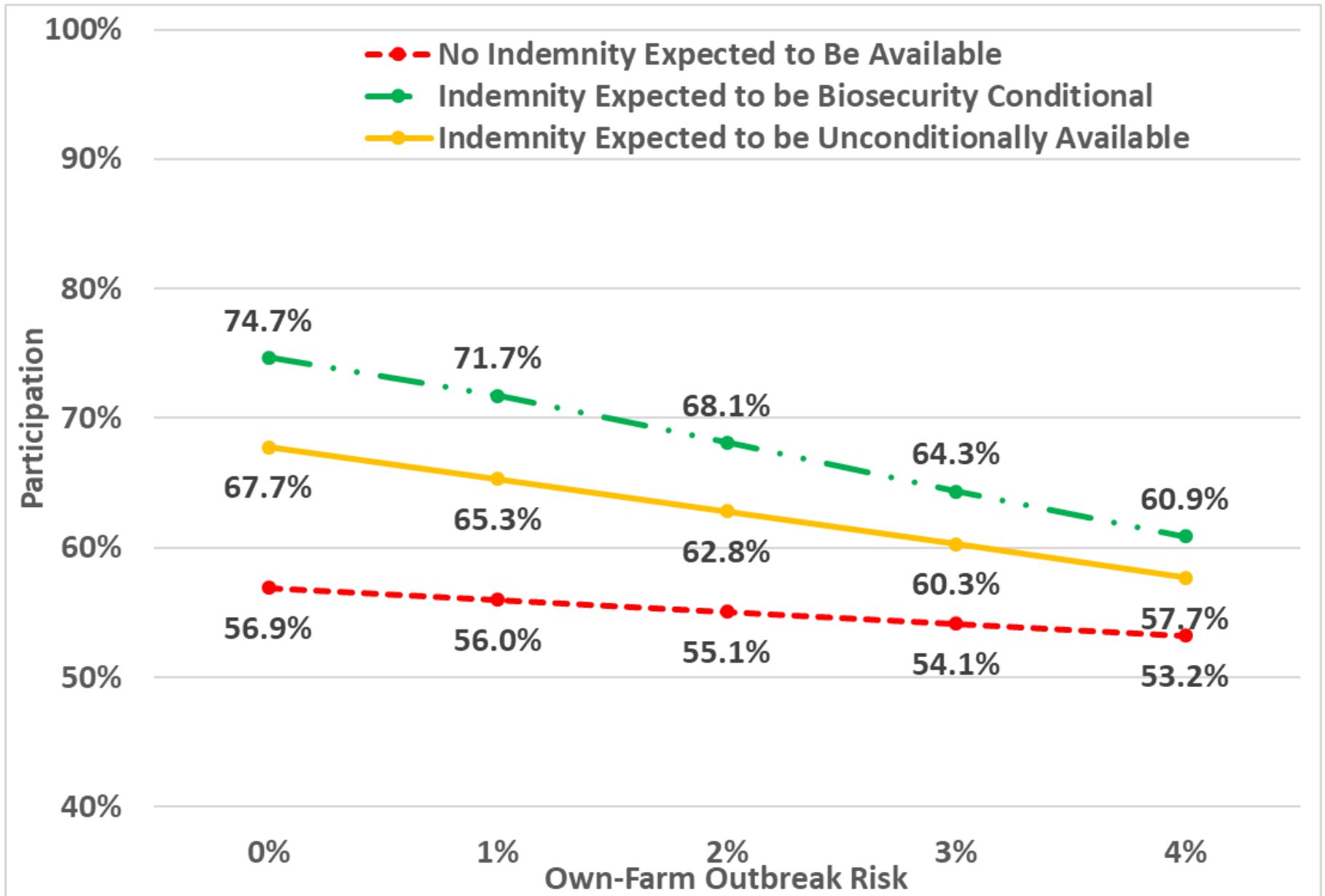
Empirical Findings: Mean Biosecurity Adoption Rates



Empirical Findings: Cost Sensitivity



Empirical Findings: Risk Sensitivity



Empirical Findings: Combo Effects on Producer Biosecurity Participation Rates

	All	No Ind.	Cond. Ind.	Ind. Uncon
Risk Reduction of 1% at a \$1/pig Cost	-3.98%	-4.88%	-4.81%	-2.55%
Producer Paid \$1 More to Invest and Risk Reduction Improves by 1%	8.81%	6.64%	10.88%	7.35%
Buyer Implements \$1/pig Discount if No Biosecurity Investment is Made	6.21%	5.67%	7.32%	4.95%

Notes: Values are changes from mean values in projected share of producers who would elect to make a biosecurity investment.

Key Findings Summary

- Producers have heterogeneous views on indemnity policy: none, unconditional, conditional payments
- Producers expecting conditional indemnity payments exert more pro-active, biosecurity effort.
 - Clear, biosecurity-conditional indemnity policies hold social value in aligning disease effort!

More information available at:



This presentation will be available in PDF format at:

<http://www.agmanager.info/about/contributors/individual/tonsor.asp>

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