

The Market for Cattle Traceability: Comparing Willingness to Supply and Willingness to Pay

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Introduction

Where are we?

- ▶ Animal disease traceability (ADT) program
 - ▶ Final rule published January 2013
 - ▶ Requirements for interstate movement of livestock
 - ▶ “Be officially identified” (USDA APHIS 2019)
 - ▶ “Be accompanied by an Interstate Certificate of Veterinary Inspection (ICVI) or other movement document” (USDA APHIS 2019)

Introduction

Where are we?

- ▶ ADT goals
 - ▶ “Advance the electronic sharing of data among federal and state animal health officials, veterinarians, and industry;
 - ▶ Use electronic identification tags for animals requiring individual identification in order to make the transmission of data more efficient;
 - ▶ Enhance the ability to track animals from birth to slaughter through a system that allows tracking data points to be connected; and
 - ▶ Elevate the discussion with States and industry to work toward a system where animal health certificates are electronically transmitted from private veterinarians to state animal health officials.” (USDA APHIS 2019)

Introduction

Where do we want to be?

- ▶ A traceability program that is effective and incentivizes participation
- ▶ A balancing act
- ▶ Moving towards a program that includes feeder cattle
- ▶ Moving towards an electronic ID system (USDA APHIS 2019)

Objectives and Methods

What are the effects of program design and market incentives on traceability participation?

- ▶ Estimate feeder cattle seller (seller) and feeder cattle buyer (buyer) preferences for traceability attributes
- ▶ Fall 2018 mail survey of U.S. cattle producers from BEEF Magazine mailing list (Seller N=318 and Buyer N=195)
- ▶ Choice experiments
- ▶ Regression analysis

Stated Choice Experiments

Example of seller stated choice question

	<u>Visual Traceability</u>	<u>Electronic Traceability</u>	<u>No Traceability</u>
Information Shared with Cattle Buyers	Source of Origin	Health Certification and Vaccination Records	None
Implementation Cost (\$/head)	\$9.00	\$1.00	\$0.00
Managing Entity	Private-Industry	Government & Private-Industry Partnership	None
Sales Price Premium/Discount (\$/head)	\$0.00	\$15.00	-\$7.50
I choose ...			

Example of buyer stated choice question

	<u>Visual Traceability</u>	<u>Electronic Traceability</u>	<u>No Traceability</u>
Information Shared with Cattle Buyers	Source of Origin	Source of Origin	None
Feeder cattle Premium/Discount (\$/head)	\$0.00	\$7.50	-\$15.00
Managing Entity	Private-Industry	Government & Private-Industry Partnership	None
Fed cattle Premium/Discount (\$/head)	\$0.00	\$15.00	\$0.00
I choose ...			

Results

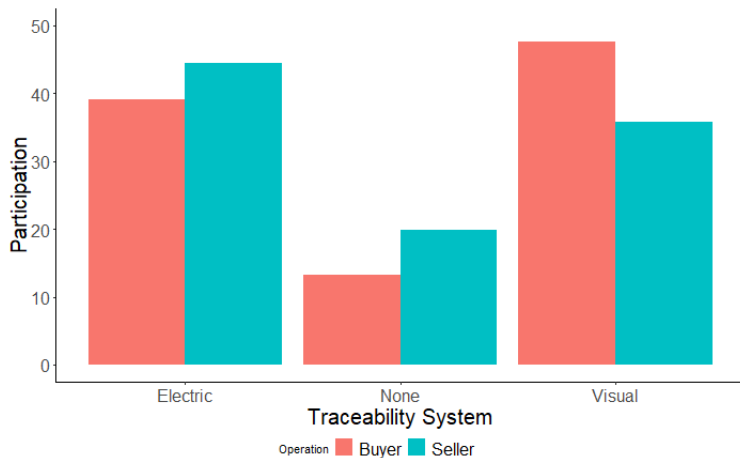


Figure: Mean participation rates.

Results

Table: Seller direct- and cross-elasticities

	Traceability System		
	Electronic	None	Visual
Electronic Traceability:			
Feeder Premium	0.130***	-0.061***	-0.127***
Cost	-0.250***	0.110***	0.249***
No Traceability:			
Feeder Discount	0.024***	-0.100***	0.025***
Visual Traceability:			
Cost	0.199***	0.081***	-0.292***

Results

Table: Buyer direct- and cross-elasticities

	Traceability System		
	Electronic	None	Visual
Electronic Traceability:			
Fed Premium	0.025***	-0.011***	-0.017***
Feeder Premium	-0.130***	0.057***	0.091***
No Traceability:			
Fed Discount	0.003***	-0.022***	0.003***
Feeder Discount	-0.022***	0.150***	-0.023***

Results

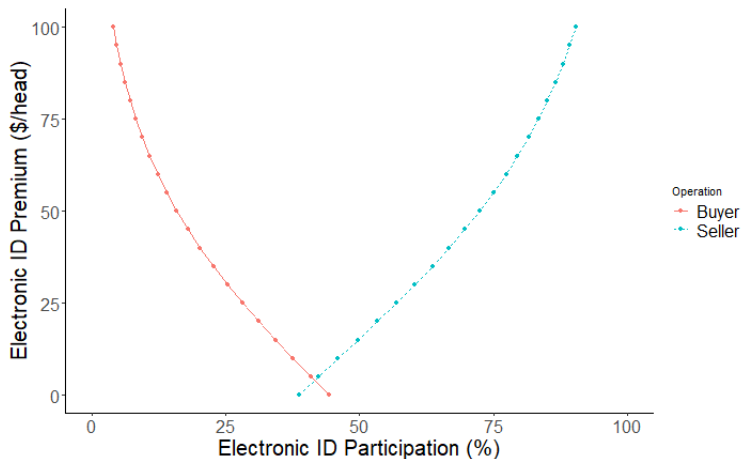


Figure: Participation rates for feeder cattle sellers and buyers in response to changes in the \$/head premium for electronic ID.

Results

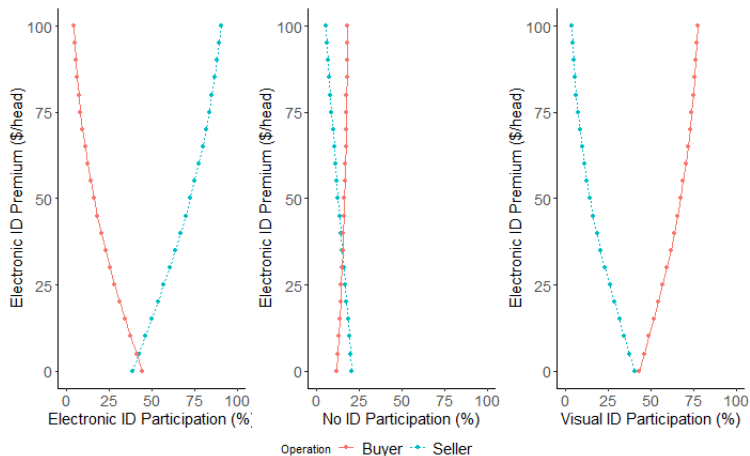


Figure: Participation rates for feeder cattle sellers and buyers in response to changes in the \$/head premium for electronic ID.

Results

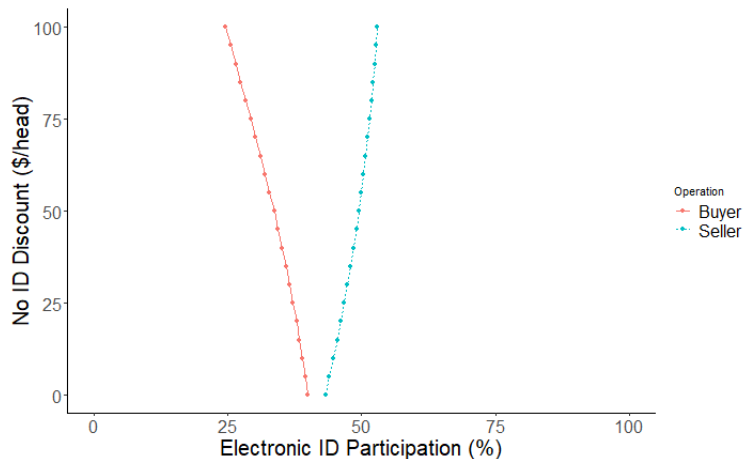


Figure: Participation rates for feeder cattle sellers and buyers in response to changes in the \$/head discount for no ID.

Results

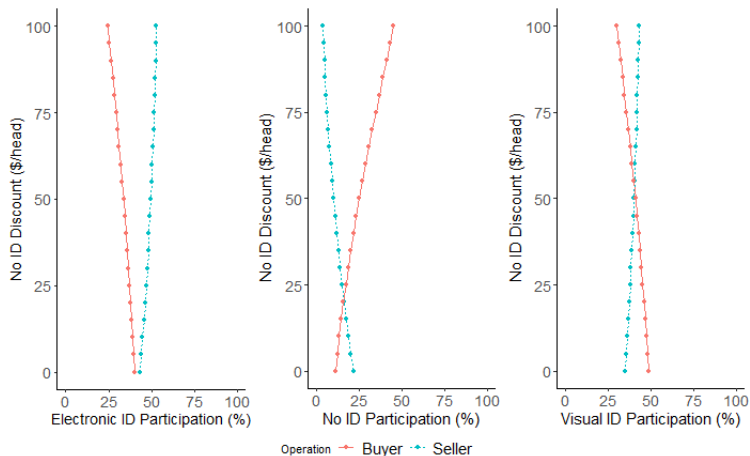


Figure: Participation rates for feeder cattle sellers and buyers in response to changes in the \$/head discount for no ID.

Policy Implications

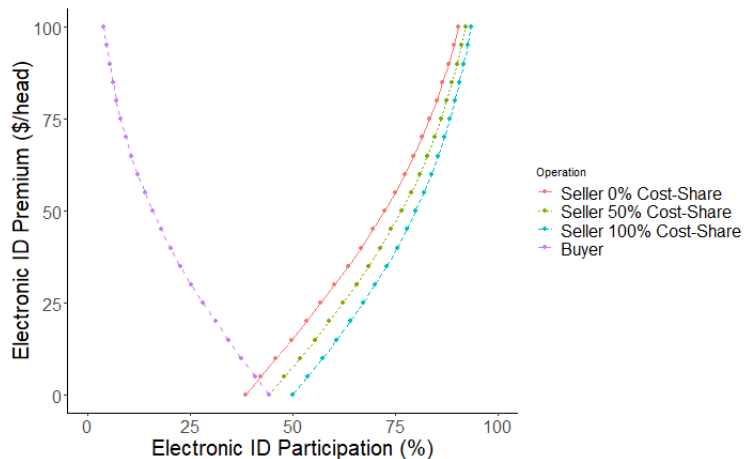


Figure: Participation rate changes in response to premiums and cost reduction policies.

Policy Implications

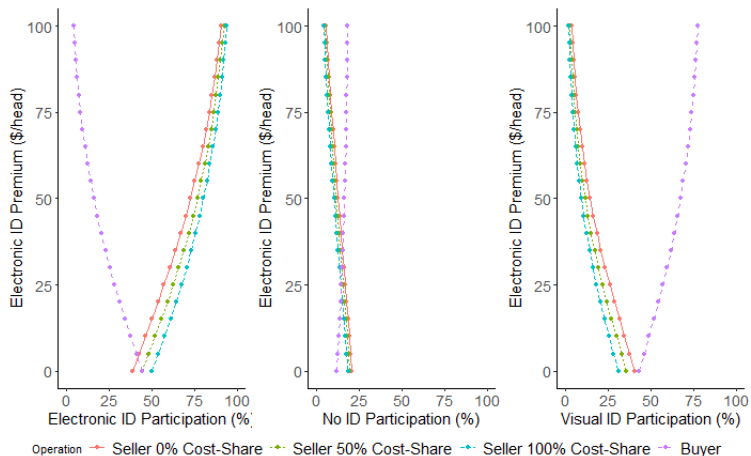


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Policy Implications

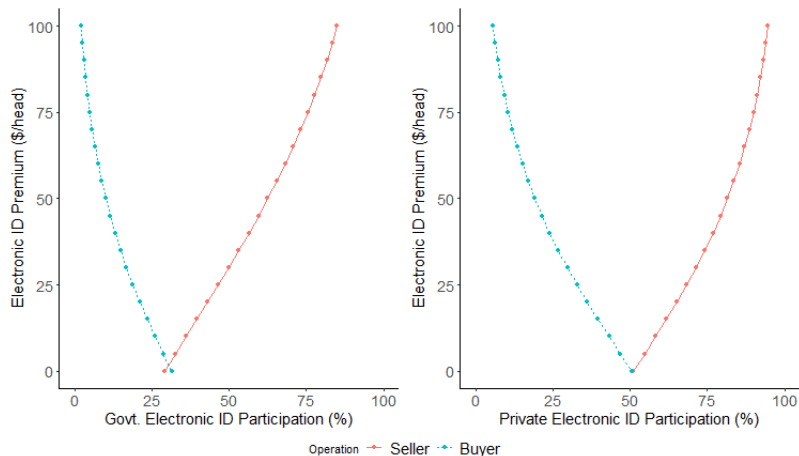


Figure: Participation rates in response to premiums and managing entity.

Take-Home Message

- ▶ Sellers are more sensitive to cost reductions relative output prices
- ▶ Buyers are more sensitive to feeder cattle prices (costs) relative to output prices
- ▶ Programs need to be attractive to producers and the market needs to value traceability
- ▶ Individually, program design and prices are less effective than collective effort
- ▶ The "economic carrot" is more effective than the "economic stick"