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Economic Reasons to Improve and Maintain Biosecurity

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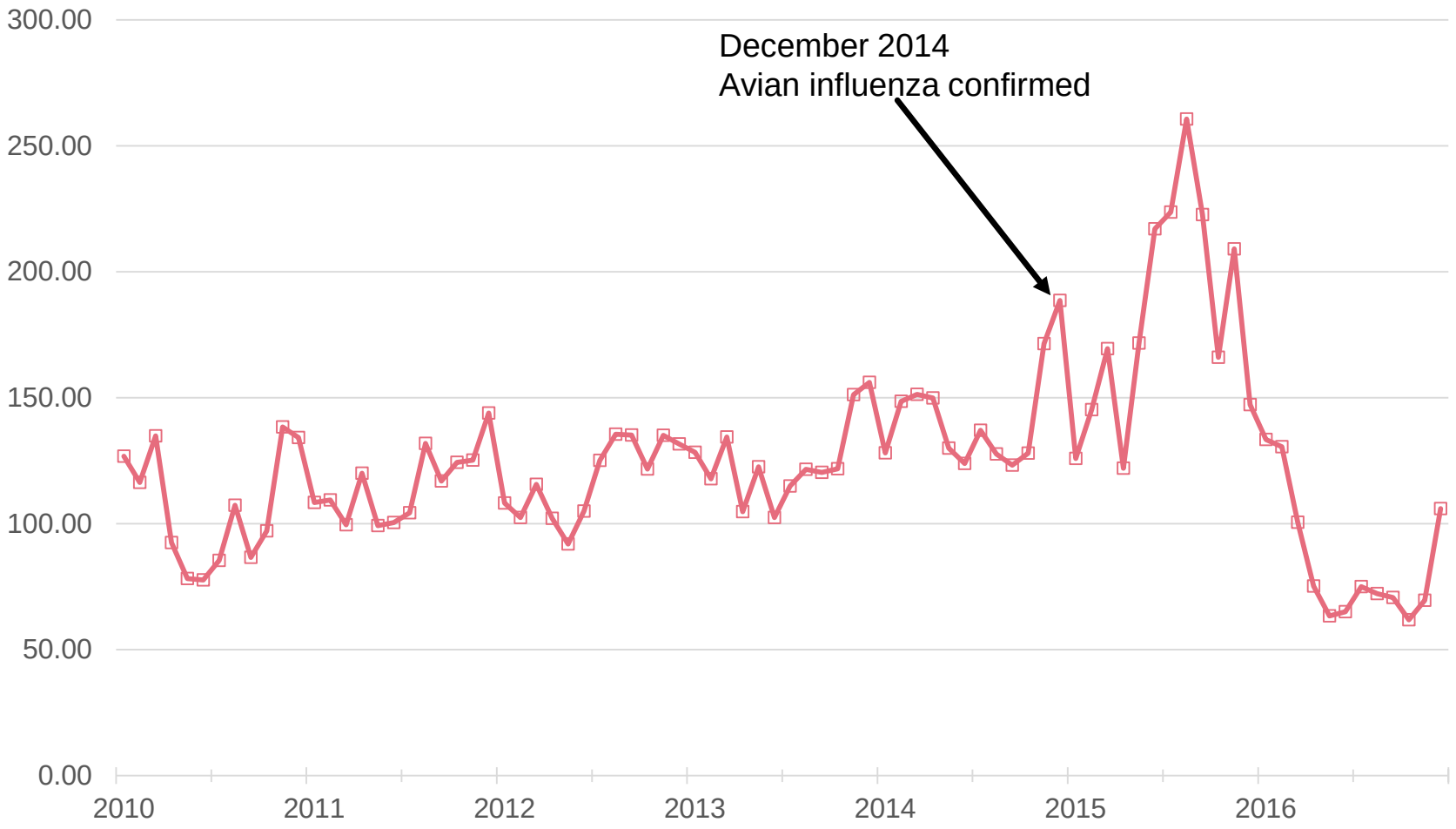
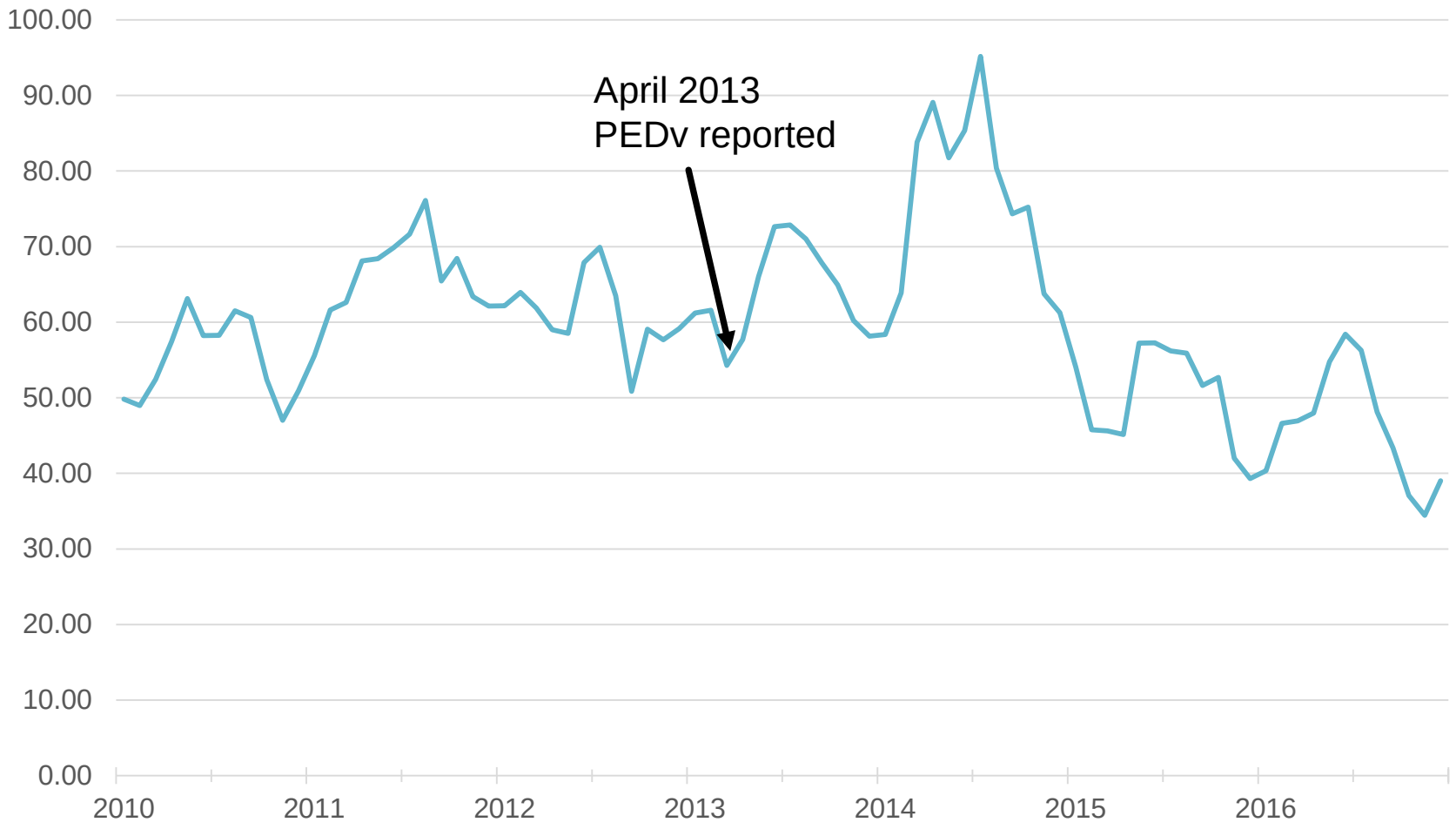
MU Extension
Commercial Agriculture Program

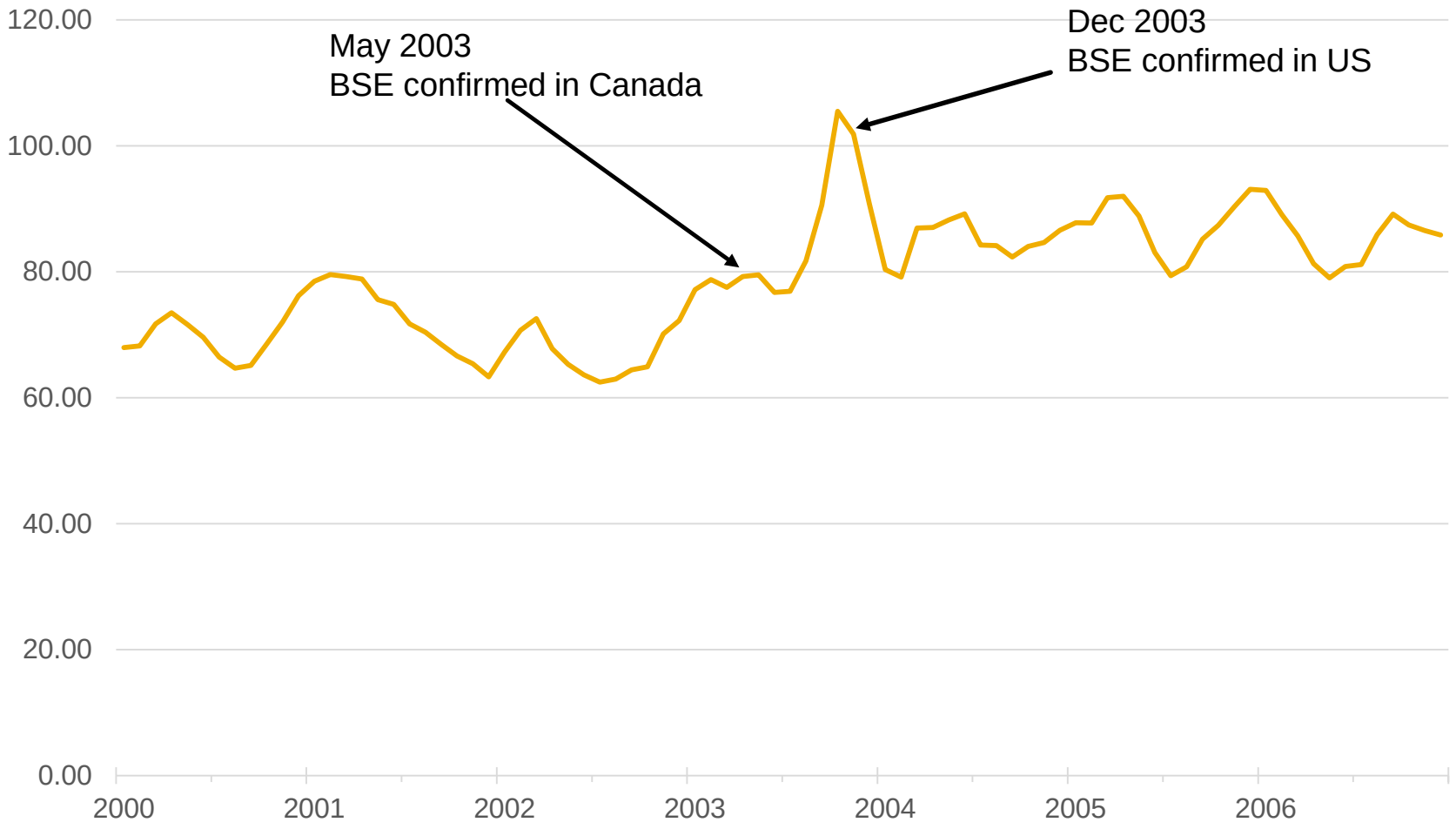
Grade A Large Egg Prices



Barrows and Gilts Prices



Nebraska Steer Prices



Biosecurity and Markets

- There may be an opportunity to benefit from market price changes due to outbreak of disease in the country.
- You have the opportunity to benefit IF you are one that does not get the disease.

Cost of 2014-2015 Avian Influenza outbreak

- Economist Thomas Elam,
  - The cost of those lost birds was $1.57 billion
  - the further costs to businesses that support farms, to egg and poultry wholesalers, and to food service firms, pushed the loss to $3.3 billion.
- One of the perverse impacts of disaster is there are winners not always considered in economic analyses.
  - Those who clean up and rebuild
  - Those who have higher prices from supply shortages

Cost of 2013-14 PEDV Outbreak

- Farrowing sows: decreased .25%
- Pigs Saved per litter: decreased 3.0%
- Number of pigs slaughtered: decreased 4.6%
- Carcass Weights: increased 3.3%
- Price of pork: increased 10.3%
- Overall economic situation for US hog producers: benefit
- Economic situation for producers breaking with PEDv: massive losses.

(Schulz and Tonsor. 2015. J. Anim. Sci.)

Cost of 2014-2015 Avian Influenza outbreak

- Brad Moline, a third-generation turkey farmer from Manson, Iowa,
  - were forced to destroy their entire flock, 56,000 turkeys housed in 12 barns
  - Lost at least two-thirds of their income for the year.
  - Incurred the costs of composting dead birds and disinfecting the barns
  - Faced the uncertainty of not being able to restock with baby birds

Economics of Biosecurity

1. Hazard Assessment: Prioritize different hazards
2. Management strategies and methods
3. Cost estimates of disease outbreaks

Hazard Assessment

Risk = probability x impact

- Probability
  - of entry
  - of spread
- Impact or likely consequences

Management Strategies

- Prevention
- Eradication
- Containment
- Control

- Problem: private producers are not necessarily interested in diseases that cause large trade disruptions but where production losses may be modest (Heikkila, 2008)

General Economic Perspective

- Preventative actions are the best strategy given the uncertainties involved and the difficulties of controlling disease reactively.
- Preventive actions
  - focus on reducing the probability of a disease outbreak
  - Cost money with uncertain payback

Cost of preventing another Avian Influenza outbreak

- Rob Knecht, president of the Michigan Allied Poultry Industries,
  - Require farms to book the episodic crews they use for short but labor-intensive tasks such as moving large flocks from barn to barn, and not sharing them with other farms.
  - Create worker “locker rooms” at local hotels, with clothing and boots provided, and driving them back and forth in disinfected vans.
  - Construct new shower facilities on farms, for every worker to use, or procuring mobile shower units that are delivered to farms by truck.
  - Build disinfecting troughs and tire sprayers at every farm entrance and assigning workers to monitor the gates so that every vehicle goes through disinfection.

Management: Trace back capability

- *A case study of foot-and-mouth in the Texas High Plains*
  - Control costs of the outbreak significantly increase if tracing does not occur until day 10 as compared to the baseline of day 2.
  - Control costs significantly increase if trace back were to drop to 30% from the baseline of 90%.
- Trace back is enhanced by premise ID

Cost of disease prevention

- Most preventive actions incur costs
  - Buildings and equipment
  - Management time
  - Employee training
- Look for costs that can be linked to benefits
  - Modified buildings may yield energy savings
  - Training employees may yield productivity improvements

Hazard Estimation:
cost of disease outbreak

- Immediate cost of disease to the producer
  - reduced production
  - death
- Intermediate cost of disease – failure to meet contract specs leading to loss of contract

Financial Preparation

IF your farm experiences disease outbreak, how do you manage the farm finances?

- Develop a plan. Costs time and money.
  - If disease occurs, will give guidance when busy with other activities.
  - If disease never occurs, probably helped in managing the business in other ways.
- Financial plan needs to consider the worst case scenario
  - manage a period without farm income and additional expenses
  - Specifically address:
    - Mortgage obligations
    - Communication with suppliers and buyers or contractor
    - Estimate cash needs and degree of cash shortage
    - Plan various options to fill that cash shortage