AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

The Value of Economic Data

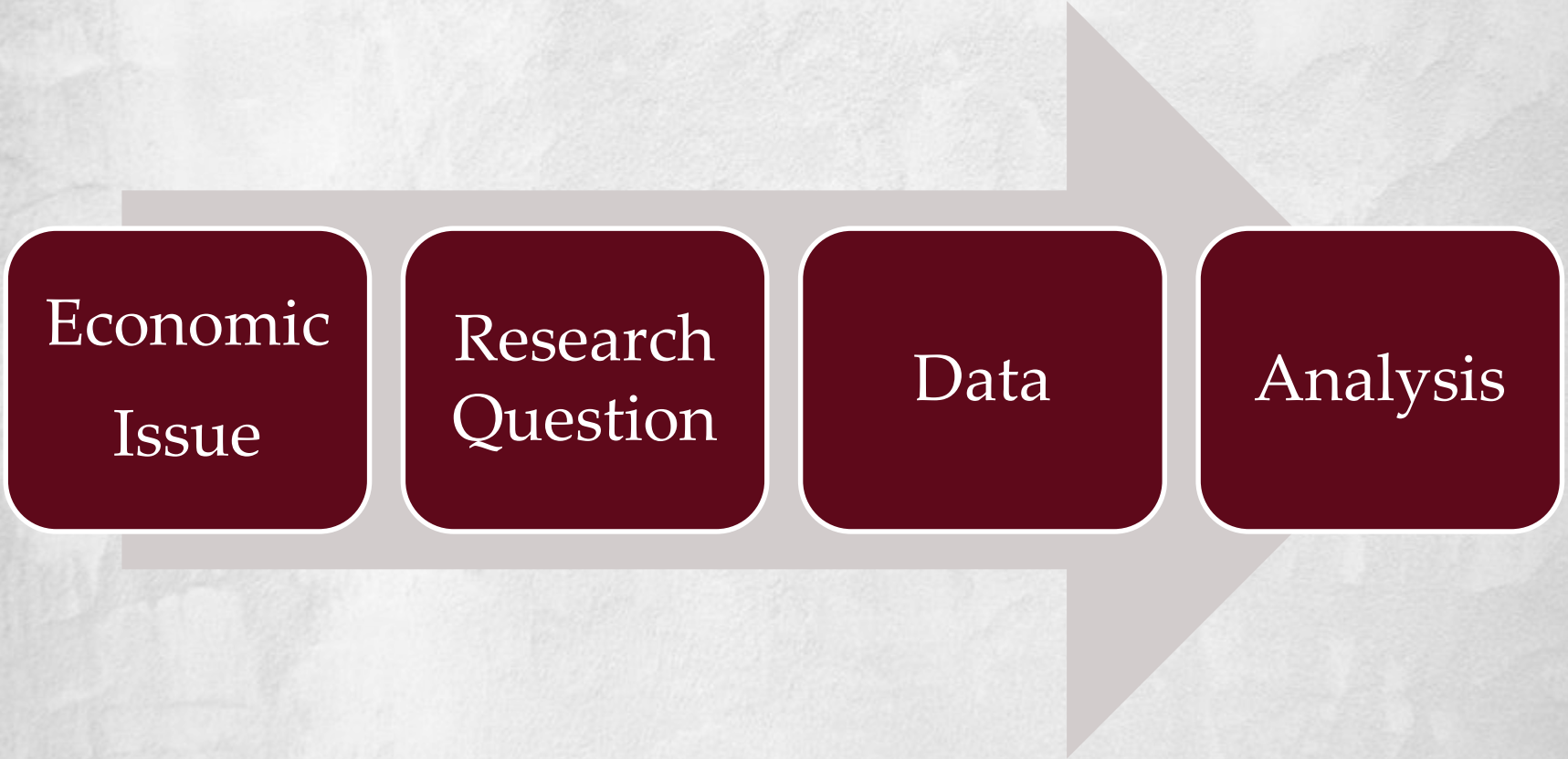
Keith Coble
@DrKeithHCoble
coble@agecon.msstate.edu

MISSISSIPPI STATE UNIVERSITY™
DEPARTMENT OF
AGRICULTURAL ECONOMICS

A Few Preliminary Thoughts

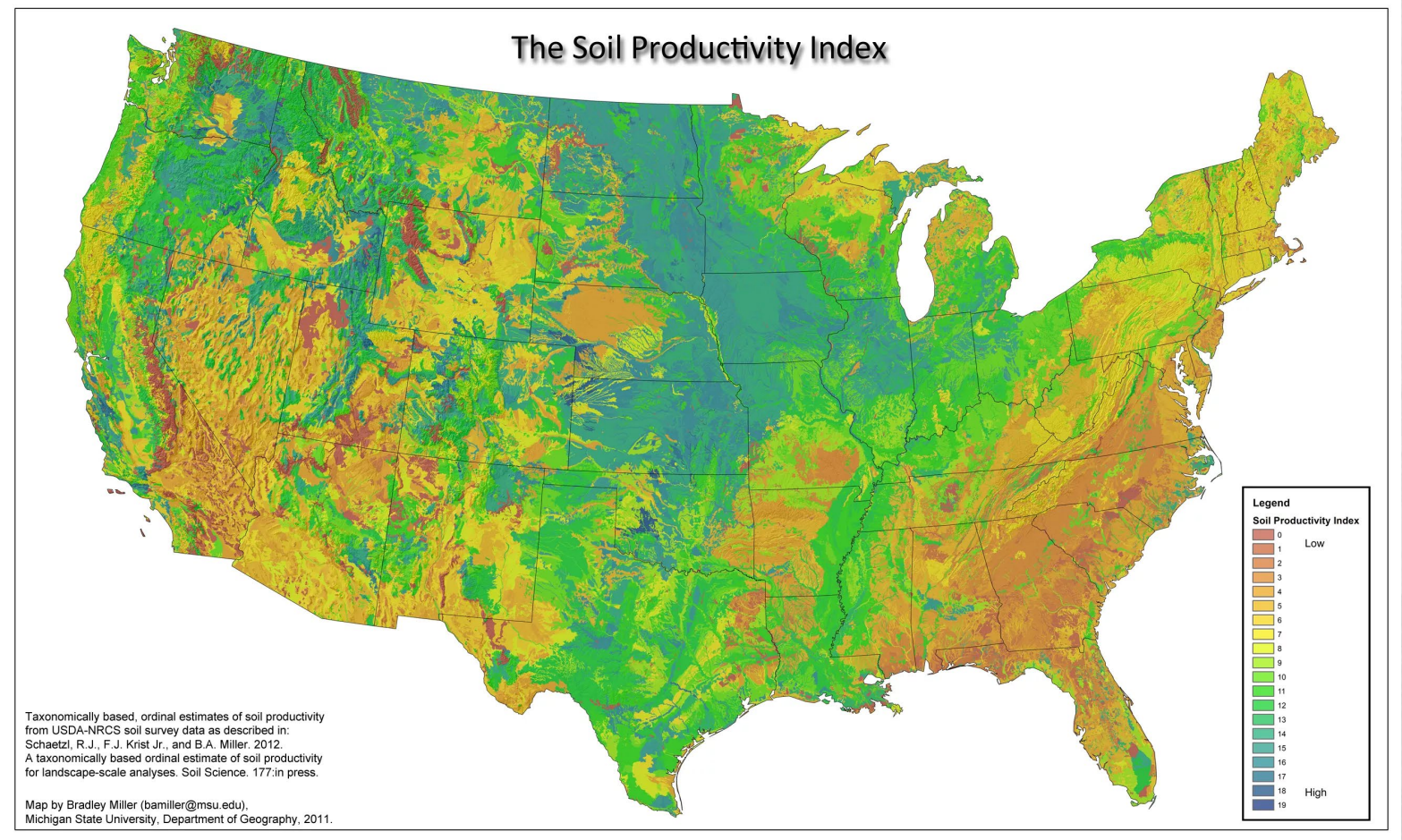
- Data is a public good as it they are not divisible or appropriable (Arrow 1962)
- Ag data collection has high fixed costs while dissemination is relatively inexpensive (Just AJAE, 1983)
- As an Editor of a scientific journal it is obvious that the research submitted is largely driven by the available data more than the relevance of the question. (Vercammen, 2016)

The Better Approach to Research

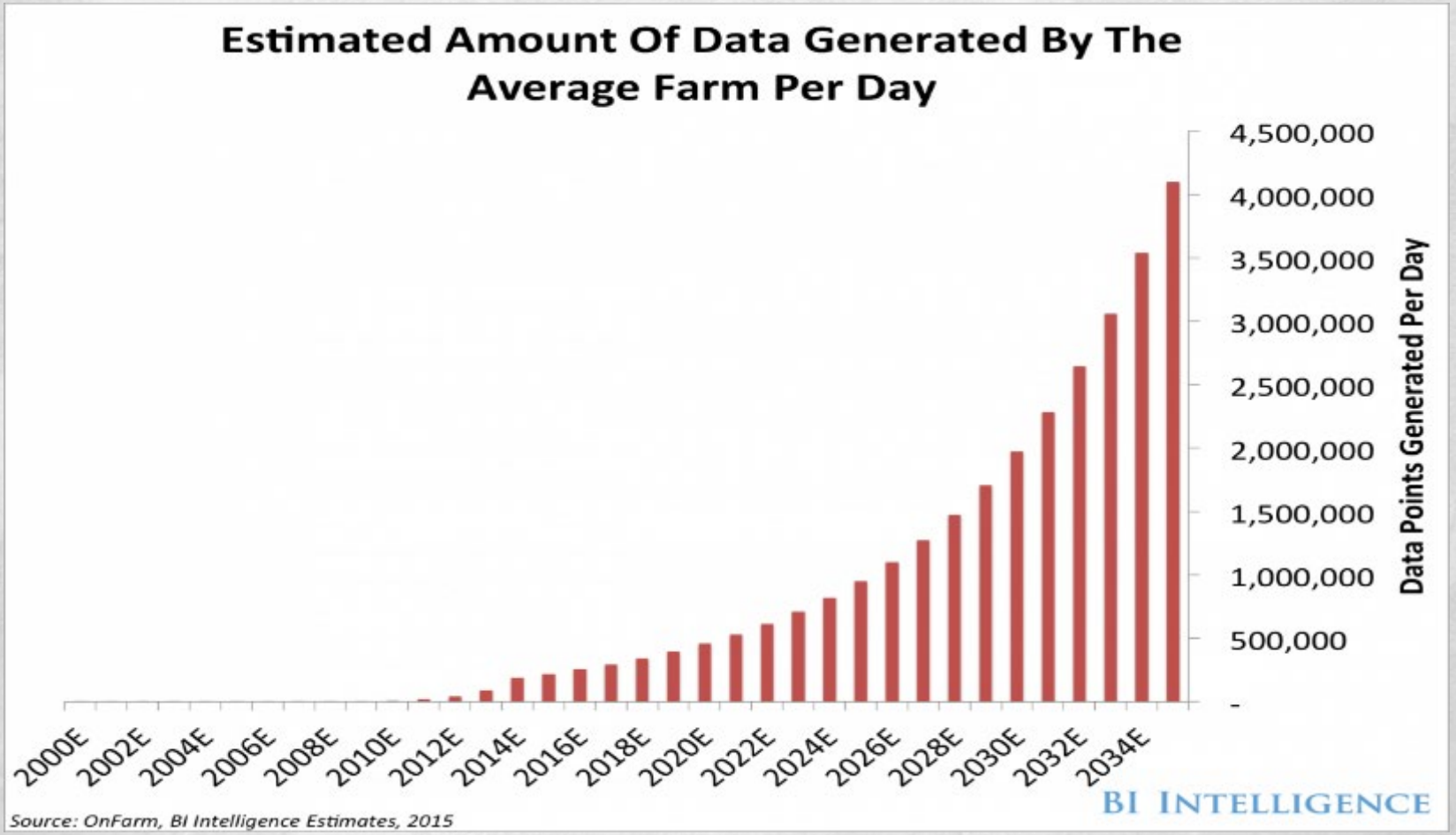


The Common Approach to Research

Entrepreneurship stimulated by Government Data



The Future of On Farm Data



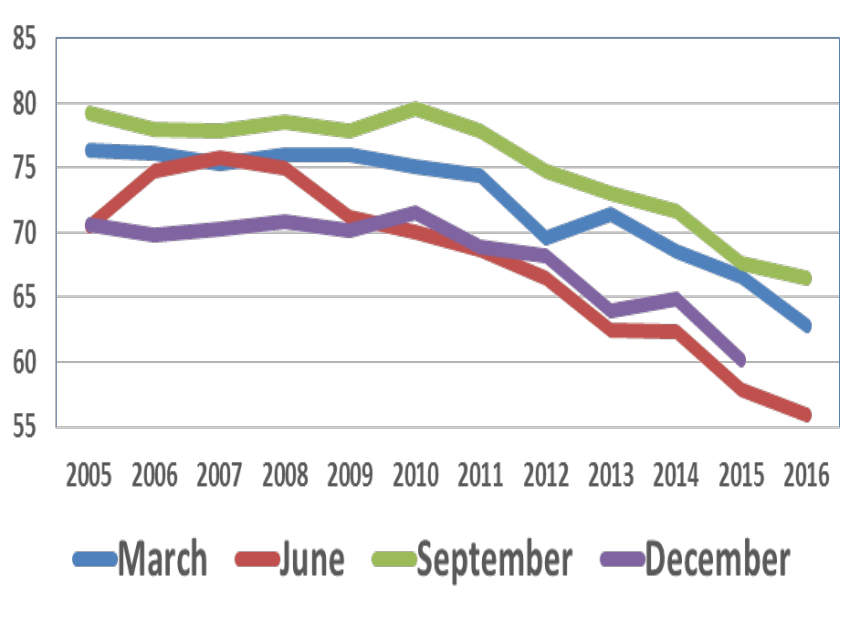
Some Broad Categories of Agricultural Economic Data

- Animal & Crop Prices
- Farm Economy
- **Farm Practices & Management**
- Food & Nutrition Assistance
- Food Choices & Health
- Food Markets & Prices
- Food Safety
- International Markets & U.S. Trade
- **Natural Resources & Environment**
- Rural Economy & Population

Let's Not Forget Disaggregates

- How many random surveys needed to achieve 95% confidence of +/- 2 bu of true national corn yield?
  - Answer: 0.68% of all farms
- How many random surveys needed to achieve 95% confidence of +/- 2 bu of true county corn yield in all counties?
  - Answer: 81% of all farms

RMA vs. NASS Data



- RMA Market Penetration Report
  - Corn 84% insured
  - Soybeans 84% insured

Falling Response Rates to USDA Crop Surveys: Why it Matters

By Robert Johansson, Anne Effland, and Keith Coble

https://www.rma.usda.gov/pubs/2013/portfolio/

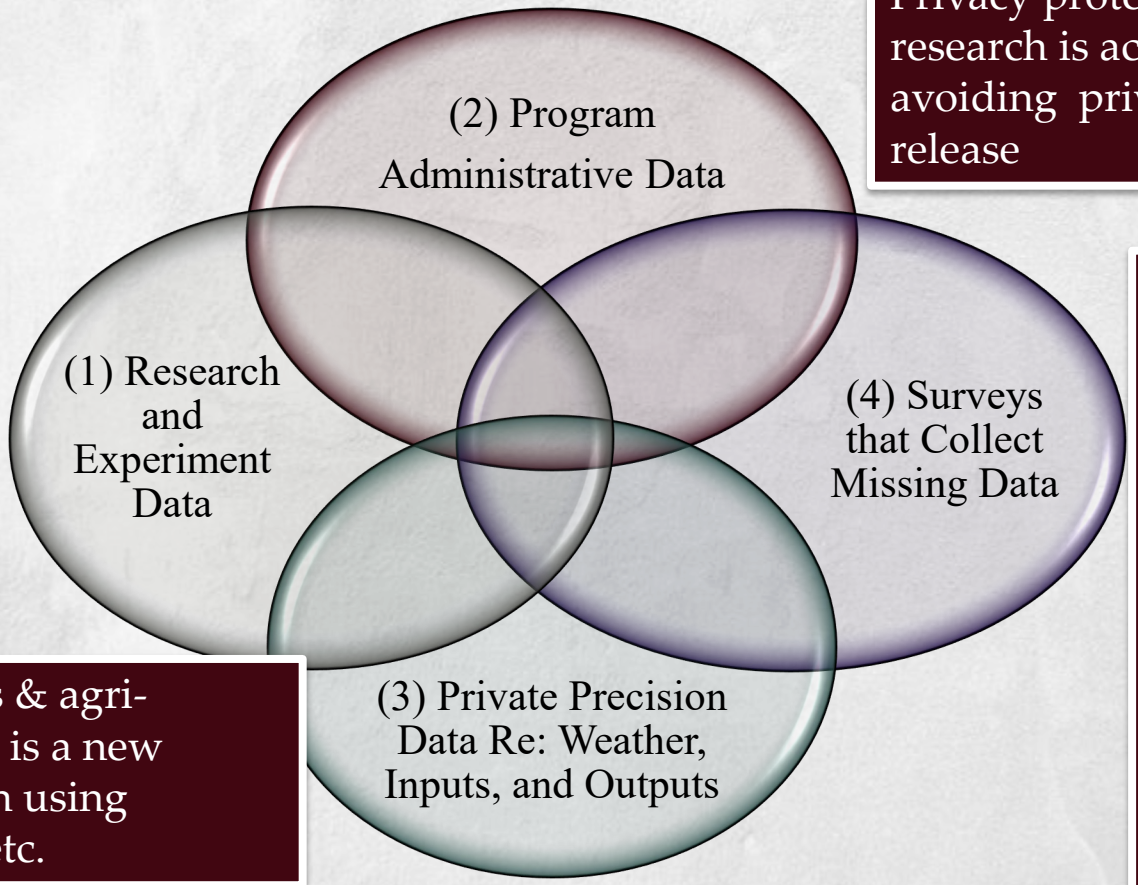
The Potential Implications of "Big Ag Data" for USDA Forecasts

- There is value in randomized sampling to avoid non-representative sample
  - Ex RMA data
  - Biases not significantly reduced by large samples
  - Bias appears to be stable across years
  - Inaccurate data
- USDA gold standard as a benchmark

Tack, J., Coble, K. H., Johansson, R., Harri, A., & Barnett, B. J. The Potential Implications of "Big Ag Data" for USDA Forecasts. *Applied Economic Perspectives and Policy*.

A Vision of Agricultural Research in the Future

Privacy protected such that research is achieved while avoiding private data release



Shared and organized in a useable fashion

Government statistical agencies maintaining important benchmark surveys & captures important information like farm financials and prices.

Data held by farms & agri-business firms that is a new avenue for research using machine learning etc.

Policy Analysis Going Forward

- Much of the big data advancement has been in predictive models – non-causal models
- Policy analysis needs causal models
  - Some new big data analytics will be adapted to causal models
- The role of government statistical data collection
  - Equalizing asymmetric information