



**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](mailto: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.*

# ***A DOUBLE-QUESTION SURVEY MEASURE OF FARMLAND PRICE BUBBLE***

**Mohammad Haseeb Daudzai**

**Pete Drost**

**Dr. Todd Kuethe**

# Background

## Pesaran & Johnson (2020)

- Normal Condition: High/ Low Valuation = Price Adjustment
- Economic Bubble: High Valuation = Higher expected price in the future
- Crash: Low valuation = Lower expected price in the future
- Why do expectations matter? Self-fulfilling prophecy

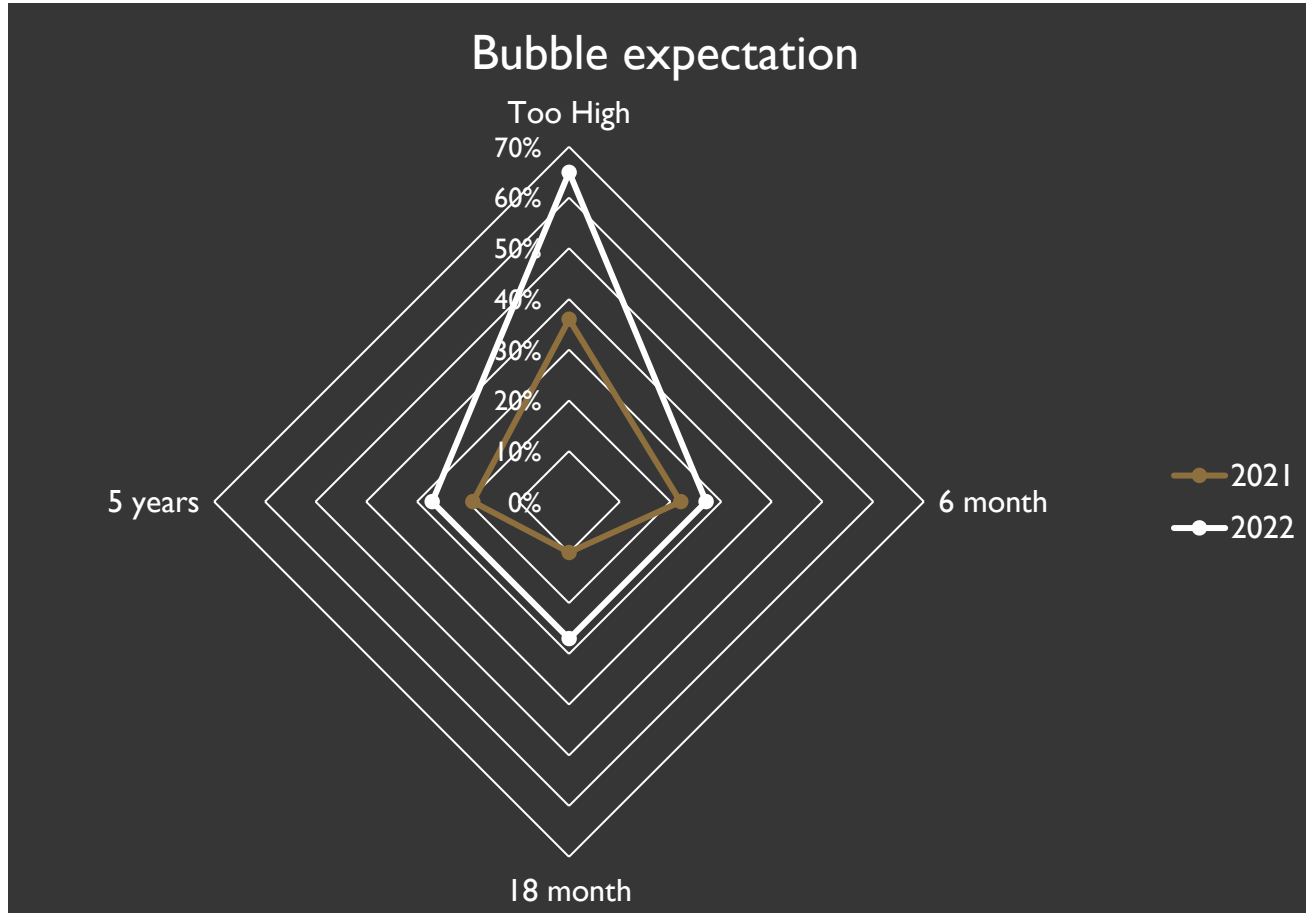
# *Rising expectations for a bubble*

## Top Quality Land results

- In 2021
  - 36% respondents said land prices were overvalued
  - 22% thought the prices will further increase in the six-month horizon, less than 20% thought the prices will increase in 18- and 60-month horizons
- In 2022
  - 65% respondents said land prices were overvalued
  - 27% thought land prices will increase in 6 months, 18 months and 60 months horizons.

Purdue Farmland and Cash Rent survey

# Rising expectations for a bubble



# The Model

$$\pi_Q = \alpha + \beta x + \gamma z + u \quad (1)$$

$$\pi_Q = \alpha + \beta x + \sigma t + \gamma z + u \quad (2)$$

$$\pi = \alpha + \beta x + \sigma t + \phi q + \gamma z + u \quad (3)$$

$\pi$  = Percentage change in expected price of the land  $\left( \frac{FV - PV}{PV} \times 100 \right)$

$x$  = Valuation of the land (-1, undervalued, 0 just right, +1 over valued)

$z$  = Profession<sup>1</sup>

$t$  = Time horizon<sup>1</sup>

$Q$  = Land quality

$q$  = Land quality<sup>1</sup>

<sup>1</sup>Dummy variables

# Results

## Model 1

- Top Quality: All coefficients are negative. **Valuation** is significant in 18- and 60-month horizon. Lender is significant in 6- and 60-month horizon.
- Average Quality: All coefficients are negative. **Valuation** and Lender is significant in 60 months.
- Poor Quality: All coefficients are negative. **Valuation** is significant in 60 – month horizon. Lender is weakly significant (0.068) in 60 – months

# Results

## Model 2

- Top Quality: All coefficients are negative. Land **Valuation**, Lender and 18-month horizon are significant
- Average Quality: All coefficients are negative. **Valuation**, and Lender are significant
- Poor Quality: Mixed results. **Valuation**, Appraisers and Farm Managers had positive but **insignificant** coefficient. Lenders had negative coefficient but **insignificant**



# Results

## Model 3

- Valuations for all land types have negative coefficient and is significant
- 18 – month horizon and all occupations have negative and significant coefficient

Model 3		
Predictors	Estimates	P value
(Intercept)	1.82	<0.001***
Valuation (all)	-0.99	<0.001***
Top Quality	0.31	0.183
Avg Quality	0.19	0.427
T6-Months	-0.33	0.164
T18 – Months	-0.58	0.014*
RE/ Appraisers	-0.56	0.039*
Lenders	-1.00	<0.001***
Farm Managers	-0.80	0.028*
Observations: 890		
R <sup>2</sup> /R <sup>2</sup> Adjusted : 0.062/0.054		

# Conclusion

- Farmland bubble expectations are higher in 2022 than 2021
- Our model shows in general market participant are cautious
  - Mostly negative coefficients
- More significant results in longer time horizons
  - i.e., respondents are cautious and consistent in their expectations for longer time horizons

# *THANK YOU*

Email: [mdaudzai@purdue.edu](mailto:mdaudzai@purdue.edu)

Purdue Agricultural Economics Report:

<https://ag.purdue.edu/commercialag/home/purdue-agricultural-economics-report/>