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A DOUBLE-QUESTION SURVEY MEASURE OF FARMLAND PRICE BUBBLE

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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



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The Model

$$\pi_Q = \alpha + \beta x + \gamma z + u \tag{1}$$

$$\pi_0 = \alpha + \beta x + \sigma t + \gamma z + u \tag{2}$$

$$\pi = \alpha + \beta x + \sigma t + \phi q + \gamma z + u \tag{3}$$

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

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

$$z = Profession^{1}$$

$$t = Time horizon^{1}$$

 $\begin{array}{l} Q=Land\ quality\\ q=Land\ quality^1 \end{array}$

¹Dummy 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
TI8 – 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 ² /R ² 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

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