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# ***DISAGREEMENT IN FARMLAND VALUE EXPECTATIONS***

Pete Drost, Chad Fiechter, and Dr. Todd Kuethe

# *Personal Introduction*

## **Pete Drost**

- **2<sup>nd</sup> year MS student at Purdue University**
  - Topic of Interest: Land Economics
  - Advisor: Dr. Todd Kuethe
  - Set to graduate in December 2022
  
- **US Agriculture – Farmland Investment Company**
  - Part-time research
  - Post-graduation employment

## Research Question

- **What, if any, is the relationship between farm managers, lenders, and appraisers in terms of land value expectations?**
  - Implications for friction in farmland lending
  - Implications for land value expectation surveys

## Purdue Land Value and Cash Rent Survey

- **Annual survey sent out in June to Hoosier farmland market experts.**
  - Appraisers, Farm Realtors, Ag Lenders, etc.
- **Three main time horizons for land values:**
  - Previous December (-6 Months), June (now), and December (+6 months)
- **Job type, Region, and Land Quality Grades**
- **Years used 2007-2022**
- **Same people asked each year, but not everyone responds each time.**

# Method

Holden and Peel (1990) → Davies and Lahiri (1995)

$$y_t - f_{ti} = \phi_i + \gamma_t + \epsilon_{ti}$$

$$\hat{f}_{tqi} = 2 \left( \left( \frac{\hat{P}_{tqi}^{12}}{P_{tqi}^6} \right) - 1 \right)$$

$$y_{tqr} = 2 \left( \left( \frac{\bar{P}_{tqr}^{12}}{P_{tqr}^6} \right) - 1 \right)$$

# Results: Pooled OLS

	Dependent variable: A - F		
	Top	Average	Poor
	(1)	(2)	(3)
<b>Lenders</b>	0.010 (0.026)	<b>0.036***</b> (0.013)	0.002 (0.032)
<b>Farm Managers</b>	<b>0.023*</b> (0.014)	0.011 (0.018)	0.034 (0.022)
<b>Other</b>	0.011 (0.017)	0.005 (0.017)	-0.012 (0.026)
<b>NE</b>	-0.069 (0.051)	<b>0.052***</b> (0.016)	<b>-0.080***</b> (0.024)
<b>WC</b>	0.010 (0.010)	<b>0.018*</b> (0.009)	-0.084 (0.052)
<b>C</b>	0.003 (0.011)	-0.008 (0.010)	<b>-0.051**</b> (0.023)
<b>SW</b>	-0.014 (0.015)	<b>-0.023*</b> (0.013)	<b>-0.089***</b> (0.028)
<b>SE</b>	0.008 (0.019)	-0.012 (0.024)	<b>-0.127***</b> (0.032)
<b>2008</b>	<b>-0.108***</b> (0.010)	<b>-0.136***</b> (0.008)	<b>-0.138***</b> (0.012)
<b>2009</b>	0.014 (0.010)	<b>-0.031*</b> (0.017)	<b>-0.025**</b> (0.012)
<b>2010</b>	<b>0.328***</b> (0.029)	<b>0.427***</b> (0.015)	<b>0.439***</b> (0.036)
<b>2011</b>	<b>0.099***</b>	<b>0.046***</b>	<b>0.028**</b>

<b>2012</b>	<b>0.227***</b> (0.012)	<b>0.143***</b> (0.011)	<b>0.124***</b> (0.021)
<b>2013</b>	<b>0.063***</b> (0.011)	<b>0.084***</b> (0.010)	<b>0.057***</b> (0.015)
<b>2014</b>	<b>-0.066***</b> (0.014)	<b>-0.049***</b> (0.013)	<b>0.031**</b> (0.015)
<b>2015</b>	0.006 (0.020)	<b>-0.031*</b> (0.017)	-0.013 (0.023)
<b>2016</b>	<b>-0.046***</b> (0.015)	<b>-0.065***</b> (0.015)	<b>-0.051***</b> (0.017)
<b>2017</b>	<b>0.075***</b> (0.017)	<b>0.039*</b> (0.020)	<b>0.112***</b> (0.022)
<b>2018</b>	<b>-0.247***</b> (0.017)	<b>-0.186***</b> (0.021)	<b>-0.166***</b> (0.022)
<b>2019</b>	-0.270 (0.304)	-0.012 (0.036)	-0.232 (0.290)
<b>2020</b>	<b>0.052*</b> (0.027)	-0.015 (0.027)	0.023 (0.029)
<b>2021</b>	<b>0.318***</b> (0.036)	<b>0.533***</b> (0.083)	<b>0.549***</b> (0.085)
<b>Constant</b>	<b>0.079***</b> (0.030)	<b>0.073***</b> (0.014)	<b>0.161***</b> (0.039)

Observations	2,106	2,106	2,106
R <sup>2</sup>	0.087	0.286	0.098
Adjusted R <sup>2</sup>	0.078	0.279	0.088
Residual Std. Error (df = 2083)	0.438	0.223	0.451
F Statistic (df = 22; 2083)	9.073***	37.943***	10.232***

Note:

\* \*\* \*\*\* p < 0.01

# Results: Two-way Fixed Effects

	Dependent variable: A - F		
	Top (1)	Average (2)	Poor (3)
<b>Lenders</b>	0.009 (0.060)	<b>0.075**</b> (0.036)	-0.045 (0.062)
<b>Farm Managers</b>	-0.005 (0.043)	0.044 (0.033)	-0.039 (0.048)
<b>Other</b>	0.037 (0.056)	0.044 (0.034)	-0.011 (0.050)
<b>NE</b>	-0.060 (0.053)	0.057 (0.079)	-0.177 (0.108)
<b>WC</b>	-0.033 (0.034)	0.019 (0.041)	-0.153 (0.106)
<b>C</b>	-0.017 (0.043)	0.029 (0.049)	-0.144 (0.102)
<b>SW</b>	<b>-0.161***</b> (0.047)	-0.084 (0.054)	<b>-0.292***</b> (0.089)
<b>SE</b>	0.049 (0.086)	0.008 (0.092)	<b>-0.246**</b> (0.121)
Observations	2,106	2,106	2,106
R <sup>2</sup>	0.001	0.004	0.003
Adjusted R <sup>2</sup>	-0.404	-0.400	-0.402
F Statistic (df = 8; 1497)	0.264	0.758	0.489

Note:

\* \*\* \*\*\* p < 0.01



# Conclusion

## Main Takeaways:

- **Lenders and appraisers are shown to be significantly different in their price expectations.**
  - Potential evidence of friction in the lending process.
  - Significance shows up more in the “average” category of land quality.
  - Implications for land value expectation surveys

# ***THANK YOU***

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