Program Payments and Agricultural Land Values

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Background

* Long-standing assumption that agricultural program payments heavily influence land values
  * Payments part of income stream—land value the discounted value of cash flows; therefore, ag program payments must be a part of land value... but how much
  * Implications on land values if program payments are reduced in the future
* Potential for other mitigating factors to affect land values
* Not likely that program payment impacts are constant across the country
Objectives

* Examine the impacts of farm program payments and other key variables on agricultural land values in the United States on a county-by-county basis
* Examine any spatial spillover of program payments on agricultural land values
Data

* County average agricultural land values from the *Census of Agriculture*, 1997, 2002, 2007
* Gross farm receipts broken out by crops and livestock
* County yield index
* Population interaction index (USDA)
* Population density
* Farm program payments (excluding conservation)
### Overall Results—All Counties

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>726.15</td>
<td>0.00</td>
</tr>
<tr>
<td>Gross Earnings</td>
<td>-0.03</td>
<td>0.29</td>
</tr>
<tr>
<td>Yield Index*Earnings</td>
<td>0.05</td>
<td>0.14</td>
</tr>
<tr>
<td>Govt. Pmt. Per Acre</td>
<td>-0.25</td>
<td>0.00</td>
</tr>
<tr>
<td>% Crop in total Rev.</td>
<td>0.19</td>
<td>0.01</td>
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<tr>
<td>Pop. Interaction Index (PII)</td>
<td>2.95</td>
<td>0.00</td>
</tr>
<tr>
<td>PII*Value of Building Permits</td>
<td>0.00</td>
<td>0.03</td>
</tr>
<tr>
<td>PII*Pop. Density</td>
<td>-0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Ag Payment Effects

Effect of Government Payments on Agricultural Land Values (Complete)
## Results—Predominantly Crop Counties

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>807.53</td>
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<tr>
<td>Gross Earnings</td>
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<td>Govt. Pmt. Per Acre</td>
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<td>% Crop in total Rev.</td>
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<tr>
<td>PII*Value of Building Permits</td>
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<td>0.00</td>
</tr>
<tr>
<td>PII*Pop. Density</td>
<td>-0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Ag Payment Effects

Effect of Government Payments on Agricultural Land Values
Conclusions

- Effects of agricultural program payments on land values is marginal, but not constant.
- Effects highest in Midwest and Delta regions (and extreme North Dakota).
Location
Production Regions-Bahia

- 283,000 Ha (699K acres)
- Average yield 1,147 pounds per acre
- “Dryland”—60 inches per year rainfall
- Average variable cash costs of $0.46/lb compared with $0.49/lb in the U.S. (USDA average data)
“Dry Season”
Ginning--Bahia

- Travel distance—80-160km (48-96 miles)
- Transport provided
- Custom ginning charges $43-$53/bale
- 32-43% turnout
- 80% have no drying capacity
- Trash decomposed and used as papaya fertilizer
Ginning—cont.
Ginning—cont.
Ginning—cont.

- Sampling and classification by private labs
- Warehousing and shipping much less efficient or sophisticated
Cotton Production--Northeast

- Primarily subsistence
  - Currently has 18k Ha (45k acres); was as high as 1.1m acres in 1990
  - 200 lbs/ac lint yield
- Govt really stressing “organic” production in this area
  - Average price of $1.62/lb (early 2010) for organic lint
Organic Production
Conclusions

* Very divergent production systems
* Some highly productive farms
* Significant problems
  * Labor
  * Transportation/infrastructure
* Lots of growth potential, but soybeans highly competitive for land