Overview of the 2002 Farm Act and U.S. Program Payments: Modeling Issues and Challenges

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Government payments, 1985-2001

Direct government payments

$ billion


- 0
- 5
- 10
- 15
- 20
- 25
Direct government payments, 1996-2001

Source: Economic Research Service, USDA.
Direct government payments, 1996-2003

Source: Economic Research Service, USDA.
Presentation Overview

• Background

• 2002 U.S. Farm Act commodity programs
  – Marketing loans
  – Counter-cyclical payments
  – Direct payments
  – Other provisions

• Income support illustrations

• Modeling issues and challenges
2002 U.S. Farm Act
Major commodity programs

• Marketing loan program
  – Most loan rates raised, except soybeans, rice
  – Loan rates fixed
  – Additional commodities added

• New counter-cyclical payments
  – Price dependent payments

• Direct payments
  – Replace Production Flexibility Contract payments
  – Soybeans, minor oilseeds, peanuts added
2002 U.S. Farm Act
Commodity program properties

• Marketing loans coupled
  – Paid on current production
  – Depend on market prices
• Counter-cyclical payments mostly decoupled
  – Do not depend on current production (fixed acreage base and payment yield)
  – But depend on market prices
• Direct payments fixed and decoupled
  – Do not depend on current production or market prices
Other 2002 Farm Act Provisions: Updating base acres & program payment yields

- **Base acreage designation options**
  - Keep PFC acreage as base acres
  - Options to add oilseeds to PFC acreage
  - Update to reflect 1998-2001 plantings

- **Payment yield designation options**
  - Only for counter-cyclical payments
  - Only if updated base acres
  - PFC payment yields or 2 options using 1998-2001 yields

- Payments made on 85 percent of base acres times program-specific payment yield
## Direct payments: Fixed rates

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Direct payment rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>0.52</td>
</tr>
<tr>
<td>Corn</td>
<td>0.28</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0.35</td>
</tr>
<tr>
<td>Barley</td>
<td>0.24</td>
</tr>
<tr>
<td>Oats</td>
<td>0.024</td>
</tr>
<tr>
<td>Soybeans</td>
<td>0.44</td>
</tr>
<tr>
<td>Other oilseeds</td>
<td>0.008</td>
</tr>
<tr>
<td>Upland cotton</td>
<td>0.0667</td>
</tr>
<tr>
<td>Rice</td>
<td>2.35</td>
</tr>
<tr>
<td>Peanuts</td>
<td>36</td>
</tr>
</tbody>
</table>

Rates are dollars per bushel except for other oilseeds & upland cotton (per lb), rice (per cwt), and peanuts (per ton).
Counter-cyclical payments: Legislative formulas, corn

- CCP payment rate\textsubscript{corn} =
  \[(\text{Target price})\textsubscript{corn} - (\text{Effective price})\textsubscript{corn}\]

- Effective price\textsubscript{corn} =
  \[(\text{Higher of commodity price or loan rate})\textsubscript{corn} + (\text{Direct payment rate})\textsubscript{corn}\]
Counter-cyclical payments: Formula for corn

- \( \text{CCP payment rate}_{\text{corn}} = \)
  - \( \left( \text{Target price} \right)_{\text{corn}} \)
  - \( \left( \text{Direct payment rate} \right)_{\text{corn}} \)
  - \( \left( \text{Higher of commodity price or loan rate} \right)_{\text{corn}} \)
### Counter-cyclical payment illustrations

<table>
<thead>
<tr>
<th>Corn</th>
<th>2004 program provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$/bushel</td>
</tr>
<tr>
<td>Target price</td>
<td>2.63</td>
</tr>
<tr>
<td>Direct payment rate</td>
<td>0.28</td>
</tr>
<tr>
<td>Implicit “effective target price”</td>
<td>2.35</td>
</tr>
<tr>
<td>Loan rate</td>
<td>1.95</td>
</tr>
</tbody>
</table>

“Effective target price” (for counter-cyclical payments) equals target price minus direct payment rate; $2.63 - $0.28 = $2.35 for corn.
Counter-cyclical payments for corn under the 2002 Farm Act, 2004 program provisions

Counter-cyclical payments

Season average price

Loan rate ($1.95)

Target price minus direct payment rate ($2.63 minus $0.28 = $2.35)

Assumes 100 acres corn base, 114.4 bushels/acre counter-cyclical payment yield.
Counter-cyclical and direct payments for corn under the 2002 Farm Act, 2004 program provisions

Assumes 100 acres corn base, 114.4 bushels/acre counter-cyclical payment yield, 102.4 bushels/acre direct payment yield.
Corn revenues under the 2002 Farm Act

Assumes 100 acres corn, 140 bushels/acre yield.
Corn revenues under the 2002 Farm Act

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Corn revenues under the 2002 Farm Act

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Corn revenues

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Modeling Issues:
Decoupled & Partly Decoupled Payments
Decoupled payment issues

- U.S. experience with Production Flexibility Contract payments (PFCs)
  - Decoupled payments do not affect net returns of production alternatives
  - Fixed income transfers to farm households
    - Wealth effects
  - Role of risk attitudes of farmers
  - Effects on investment
  - Farmland leases
    - Pass through of benefits to landlords
  - Short-run vs. longer term adjustments
Counter-cyclical payment issues

- Paid on a fixed, pre-determined quantity
  - Decoupled from actual production
- CCPs are price dependent
  - CCPs linked to market prices in range from loan rate to “effective target price”
- Not part of net returns, but . . .
- . . . Price dependence implies CCPs correlated with net returns in that price range
  - Negative correlation between expected net returns & counter-cyclical payments
Counter-cyclical payment questions

• CCPs affect price-related revenue risk
  – Role of risk attitudes and level of risk aversion
  – What if plant much different quantity than associated with base acres?
  – What if plant another crop?
  – What if plant no crop or one with little price correlation to the base acreage crop?

• Interaction with other programs