Perspectives on Impacts of the 2002 U.S. Farm Act

Paul C. Westcott
Agricultural Economist
U.S. Department of Agriculture
Economic Research Service
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Presentation Overview

• Overview of 3-piece commodity program
• USDA & FAPRI impacts
• Potential additional marketing loans effects
• Counter-cyclical payments
• Direct payments
• Other effects
3-Piece Commodity Program
3-Piece Commodity Program

• 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
3-Piece Commodity Program

• Marketing loans coupled
  – Paid on current production
  – Depend on market prices

• Counter-cyclical payments mostly decoupled
  – Do not depend on current production (fixed base and payment yield)
  – But depend on market prices

• Direct payments fixed and decoupled
  – Do not depend on current production or market prices
### 2002 Farm Act Provisions for Income Support Illustrations

<table>
<thead>
<tr>
<th>Corn</th>
<th>2003 program provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$/bushel</td>
</tr>
<tr>
<td>Loan rate</td>
<td>1.98</td>
</tr>
<tr>
<td>Target price</td>
<td>2.60</td>
</tr>
<tr>
<td>Direct payment rate</td>
<td>0.28</td>
</tr>
<tr>
<td>Implicit “effective” target price</td>
<td>2.32</td>
</tr>
</tbody>
</table>

“Effective” target price (for counter-cyclical payments) equals the target price minus the direct payment rate; $2.60 - $0.28 = $2.32 for corn.
Counter-cyclical and direct payments for corn under the 2002 Farm Act

Decoupled payments

Assumes 100 acres of corn base, 103 bushels/acre direct payment yield, and 120 bushels/acre counter-cyclical payment yield.
Corn revenues under the 2002 Farm Act

Corn revenues

Assumes 100 acres of corn, 100 acres of corn base, 135 bushels/acre yield, 103 bushels/acre direct payment yield, and 120 bushels/acre counter-cyclical payment yield.
Counter-cyclical payments overlap marketing loans

- Marketing loans enable farmers to attain per-unit revenue that, on average, exceeds commodity loan rates (Marketing loan or LDP “bonus”)
  - Corn LDP bonus has been about $0.20
  - Implies corn marketing loan benefits up to $2.18
- Counter-cyclical payments extend down to loan rate
- Implicit “double” counter-cyclical benefits in price range from $1.98 (corn loan rate) to $2.18
- As price falls to loan rate, gain two counter-cyclical benefits
Corn revenues under the 2002 Farm Act, with above-loan-rate marketing loan benefit

Assumes 100 acres of corn, 100 acres of corn base, 135 bushels/acre yield, 103 bushels/acre direct payment yield, and 120 bushels/acre counter-cyclical payment yield. Assumes per-unit revenue facilitated by marketing loans exceeds loan rate by an average of 20 cents/bushel.
Market Impacts--Supply Response Effects
Market Impacts--Supply Response Analysis

• FAPRI & USDA analyses similar
  – Differences reflect baseline differences

• Focus on acreage effects
  – Main impacts through planting decisions
  – Other impacts reflect market adjustments to production changes

• Analysis conducted in 2002, at the time that the 2002 Act became law
  – Before 2002 production shortfall & price runup
Acreage Impact Analysis--3 Main Causes

• Marketing loan impacts
  – Particularly in near term years
  – 2002 acreage impacts reduced by 50 percent and no 2002 winter wheat impact, due to timing of enactment of law

• Conservation Reserve Program increase

• Marketing loans for dry peas and lentils
Marketing loans under the 2002 Farm Act

- Affect planting decisions
  - Paid on current production

- Loan rate changes
  - Wheat, corn, sorghum loan rates increased
  - Soybean loan rate decreased
  - Upland cotton loan rate increased slightly
  - Rice loan rate unchanged
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<tbody>
<tr>
<td>Wheat ($/bu)</td>
<td>2.58</td>
<td>2.80</td>
<td>2.75</td>
</tr>
<tr>
<td>Corn ($/bu)</td>
<td>1.89</td>
<td>1.98</td>
<td>1.95</td>
</tr>
<tr>
<td>Soybeans ($/bu)</td>
<td>5.26</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Sorghum ($/bu)</td>
<td>1.71</td>
<td>1.98</td>
<td>1.95</td>
</tr>
<tr>
<td>Upland cotton ($/lb)</td>
<td>0.5192</td>
<td>0.52</td>
<td>0.52</td>
</tr>
<tr>
<td>Rice ($/cwt)</td>
<td>6.50</td>
<td>6.50</td>
<td>6.50</td>
</tr>
</tbody>
</table>
Conservation Reserve Program

Million acres


8 major field crops

Total CRP

1996 Act

2002 Act

1996 Act

2002 Act
Plantings of dry peas and lentils
Planted area: eight major crops
Planted area: wheat

Million acres

2001 2003 2005 2007 2009 2011

- 1996 Act
- 2002 Act
Planted area: corn

Million acres

2001 2003 2005 2007 2009 2011

2002 Act

1996 Act
Planted area: sorghum

Million acres

2002 Act

1996 Act

2001 2003 2005 2007 2009 2011
Planted area: soybeans

Million acres

2001 2003 2005 2007 2009 2011

1996 Act

2002 Act
Planted area: upland cotton

Million acres

2001 2003 2005 2007 2009 2011

2002 Act

1996 Act
Potential Additional Marketing Loan Impacts
Potential Additional Marketing Loan Impacts

- 1996 Farm Act had discretionary authority to lower loan rates, based on historical prices
- 2002 Farm Act did not continue this authority
- Potential for larger marketing loan impacts if return to lower commodity prices
## Alternative Loan Rates, Lower Price Setting

### Alternative loan rate assumptions, 2001 market conditions

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<tr>
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</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>2.58</td>
<td>2.80</td>
<td>2.43</td>
<td>2.43</td>
</tr>
<tr>
<td>Corn</td>
<td>1.89</td>
<td>1.98</td>
<td>1.76</td>
<td>1.76</td>
</tr>
<tr>
<td>Soybeans</td>
<td>5.26</td>
<td>5.00</td>
<td>4.92</td>
<td>4.62</td>
</tr>
</tbody>
</table>

* Soybean loan rate at 1996 farm act legislative floor.
** Assumes no floor for soybean loan rate.
## Acreage Impacts with Alternative Loan Rates, Lower Price Setting

Planted acreage estimates with alternative loan rates, 2001 market conditions

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<tr>
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<tbody>
<tr>
<td></td>
<td>2002 act loan rates for 2002 &amp; 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>62.0</td>
<td>63.1</td>
<td>61.4</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>(1.1)</td>
<td>(-0.6)</td>
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<tr>
<td>Corn</td>
<td>78.5</td>
<td>79.5</td>
<td>78.0</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>(1.0)</td>
<td>(-0.5)</td>
</tr>
<tr>
<td>Soybeans</td>
<td>75.0</td>
<td>73.5</td>
<td>74.7</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>(-1.5)</td>
<td>(-0.3)</td>
</tr>
<tr>
<td>8-crop total</td>
<td>253.5</td>
<td>254.7</td>
<td>251.9</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>(1.2)</td>
<td>(-1.6)</td>
</tr>
</tbody>
</table>

Million acres

Numbers in parentheses are differences from 1996 act capped loan rate scenario.
Alternative Loan Rate Scenarios--Implications

• If return to a low price setting, fixing loan rates when market-price-based, formula loan rates would be lower holds land in production

• Keeps long-run market price signals from being transmitted to producers

• Land resources shifted and economic efficiency reduced
Counter-cyclical Payment Effects
Counter-cyclical Payment Effects

• Paid on pre-determined quantity--decoupled from actual production
• Linked to market prices in range from loan rate to “effective target price”
• Affects revenue risk
• May encourage production of program crop for which producer has acreage base, if risk averse
Supply curve and price (per-unit revenue) risk under the 1996 farm act (without counter-cyclical payments)

Per-unit revenue distribution equals expected market price distribution around mean expected price, without counter-cyclical payments.

Note: Price distribution shown is hypothetical.
Supply curve and reduced per-unit revenue risk under the 2002 farm act (with counter-cyclical payments)

Counter-cyclical payments reduce per-unit revenue risk around mean expected price, if base acreage crop planted

Note: Price and per-unit revenue distributions shown are hypothetical. They are used here to illustrate concepts related to counter-cyclical payments in the price range where these payments vary.
Direct Payments
Direct Payment Effects

• Fixed, decoupled payments
  – Income transfers to participating farm households

• Wealth effect
  – Less risk averse with higher wealth

• Payments can raise agricultural investment
  – Greater loan availability
  – Lower cost of loans

• Wealth and investment effects may have small production impacts
Other Effects
Effects of Other 2002 Farm Act Provisions: Acreage Base and Payment Yield Updating

- Options to update lead to expectations of possible updates in the future
- Acreage base updating
  - Protect current acreage base and build planting history
  - Keeps and expands plantings in program crops
  - Undermines planting flexibility
- Payment yield updating
  - Increase use of yield-enhancing inputs
Conclusions

• Production impacts are mostly from marketing loan program changes, CRP, dry peas & lentils
• Potential additional marketing loan impacts in a lower price setting
• Additional indirect impacts could result from:
  – Counter-cyclical payments
  – Direct payments
  – Base acreage and payment yield updates
USDA Web Sites for 2002 Farm Act Information

• USDA Farm Act homepage
  – http://www.usda.gov/farmbill

• Side by side comparison of 1996 and 2002 Farm Acts, with selected analyses

• Frequently asked questions

• Economic analysis and impacts of the 2002 Farm Act