A Review of Empirical Studies on the Production Impacts of PFC and MLA Payments Under the U.S. FAIR Act

David Abler & David Blandford

Penn State University

Prepared for presentation at ERS Workshop on Modeling Decoupled Payments, Washington, DC, October 4, 2004

Background on Our Report

- Report commissioned by OECD as part of its program of work on decoupling
- Will be formally presented at OECD APM meeting on October 19-21, 2004
  - Working Party has not yet provided feedback
- This presentation is a preview of our report's findings

The FAIR Act of 1996

- Fundamental change in system of direct payments to U.S. farmers
- Target price/deficiency payment program replaced by Production Flexibility Contract (PFC) payments
- Marketing Loss Assistance (MLA) payments introduced in 1999 as an "emergency assistance" measure

Potential Production Impacts

- Payments not linked to current farm-level production, so why should they influence output?
- Five possible mechanisms through which payments may influence output:
  – Helping cover short-run production costs
  – Relaxing capital constraints facing farmers
  – Reducing risk or farmers’ aversion to risk
  – Expectations about rebasing
  – Slowing structural change in agriculture

Covering Production Costs

- Payments may help cover short-run production costs, subsidizing otherwise unprofitable production
- Why would a producer do this?
  - Preference for farming lifestyle
  - Operating on downward portion of average total cost curve
- If payments raise prices of fixed farm assets, then production costs go up over time

Relaxing Capital Constraints

- Payments may help finance investments in farm operation out of retained earnings
- This requires imperfect or incomplete capital markets that constrain ability to borrow
- Lenders may also be more willing to make loans if payments are seen as reducing the risk of default

Reducing Risk or Risk Aversion

- Increase in wealth created by payments may make producers less risk averse (*wealth effect*)
  - Requires decreasing absolute risk aversion (DARA)
- Payments may reduce risk by reducing farm income variability (*insurance effect*)
  - MLA and other countercyclical payments

Expectations about Rebasing

- Producers might anticipate a future updating of base acreages or program yields
- Produce more today to qualify for higher payments in the future
- Current production and payments are linked only if producers also believe current payments are a predictor of future payments

Slowing Structural Change

- Payments may prompt some producers to remain in agriculture rather than exit
- Does this increase or decrease production?
  - If exit would lead to agricultural land abandonment or conversion to urban uses, payments increase production
  - If exiting farmers’ land would be taken over by more efficient farmers, payments decrease production

Studies We Reviewed

- Qualitative research studies
  - Focus groups (3 studies)
- Studies using synthetic economic models (7 studies)
- Econometric studies
  - Land allocation (4 studies)
  - Time allocation (3 studies)
  - Land rents and land values (9 studies)

Focus Group Studies

- Focus groups of farm managers and operators conducted soon after FAIR Act was passed
- Main findings:
  - Land prices and rents went up quickly
  - Some shift in land rental contracts from share rental to cash leasing

Synthetic Studies

- Synthetic farm- and sector-level models based on economic theory
- Results highly sensitive to assumptions about how PFC and MLA payments influence producer decision-making
- Main findings:
  - For risk, insurance effects are more important than wealth effects
  - In the long run, payments serve primarily to increase land values rather than production

Land Allocation Studies

- Farm-, county-, and state-level econometric studies of cropland allocation
- PFC and MLA variables sometimes statistically significant, sometimes not
- When statistically significant, impacts on crop acreage are small in magnitude
  - Combined impact of PFC and MLA payments is usually less than 10%
  - Larger impacts usually confined to less important crops

Time Allocation Studies

- Farm-level econometric studies of time allocation between on-farm work, off-farm work, and leisure
- PFC and MLA variables usually statistically significant
- More on-farm work hours and fewer off-farm work hours, but impacts small
  - Combined impact of PFC and MLA payments on on-farm work hours is less than 5%

Studies of Land Rents & Values

- If direct payments are captured by landowners, their potential to influence production is diminished
- Farm- and county-level econometric studies of land rents and values
- Direct payment variables almost always statistically significant
- Magnitude of impacts varies significantly from one study to another
  - Increase in cash rents per dollar of direct payments ranges from \$0.34 to \$0.85

Related Studies

- Related studies reviewed in our report:
  - Capital constraints
  - Risk response and risk aversion
  - Producer entry/exit and structural change

Conclusions

- PFC and MLA payments under the FAIR Act had some impact on production
- The production impact was small
  - Less than 10% based on land and time allocation studies
- PFC and MLA payments had a significant effect on land values and rental rates

Future Research

- Collect and analyze panel data for nationally representative sample of farm households
- Would make it possible to control for farm-level fixed effects
  - Failing to control → impacts of direct payments overestimated
- Would permit a longer term assessment of impacts of direct payments on farm household decision-making