The Capitalization of Decoupled Government Subsidies Into Agricultural Land Values

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Do Government Payments Raise Land Values?

- **YES**
  - Featherstone and Baker (1988)
  - Beach, Boyd, and Uri (1997)
  - Barnard, et al. (1997)
  - Weersink, et al. (1999)
  - Lamb and Henderson (2000)
  - Barnard et al. (2001)
  - Goodwin et al. (2003a, 2003b, 2005)
  - Roe, Somwaru, and Diao (2003)
  - Shaik, Helmers, and Atwood (2005)
Do Decoupled Government Payments Raise Rental Rates for Agricultural Land?

- YES, but by how much for each dollar of subsidy?
  - Lence and Mishra (2003): $0.86
  - Goodwin et al. (2005): $0.66
  - Roberts et al. (2003): $0.34-$0.41
  - Kirwan (2005): $0.18

- No estimates of the difference in rent paid for base and nonbase acres exist.
Why Does It Matter?

- Domestic Policy Objectives
  - Do payments benefit farm households or nonfarming landlords?

- Trade Policy Objectives
  - If payments accrue indirectly to nonfarming landlords, how production distorting can they be?

- Unintended Consequences
  - Do elevated rental rates prohibit next generation farmers from entering the market?
The Model

- Total rent equals the per acre rent times the number of acres rented.

\[ R_i = r_i \cdot (A_i + B_i) \]

- If base (B) and nonbase (A) acres rent at different rates, the equation becomes:

\[ R_i = r_{ai}A_i + r_{bi}B_i \]
The Model

- Each farm’s rent can be equated to some group average rent plus their deviation from the average.

\[ r_{ai} = \bar{r}_a + \varepsilon_{ai} \]

\[ r_{bi} = \bar{r}_b + \varepsilon_{bi} \]
The Model

\[ R_i = \alpha + \bar{r}_a A_i + \bar{r}_b B_i + (\varepsilon_{ai} A_i + \varepsilon_{bi} B_i) \]

- Rarely is the error uncorrelated with the independent variables
  - I add controls for location, farm size, and production specialty.
The Data

- **2002 Agricultural Resource Management Survey (ARMS)**
  - Excluded farms that did not rent any land or had any land under a share lease.
  - Farms that rented land only under cash agreements were included.

- **Two Important Questions:**
  - How much base did you operate
  - How much base did you *own* and operate.

- The difference is the quantity of base acres rented.
Results at the National Level

Regression Results Without Fixed Effects
- Intercept not statistically different from zero.
- R-Square: 0.611
- Base acres: $77 per acre
- Nonbase acres: $63 per acre
- Premium: $14

Regression Results With Fixed Effects
- Intercept not statistically different from zero.
- R-Square: 0.915
- Base acres: $80 per acre
- Nonbase acres: $69 per acre
- Premium: $11
Results at the National Level

- The sample mean per acre direct payment is approximately $30.

- If direct payments were responsible for the entire premium, only 30% of payments are going to landlords in the form of higher rents.
What Drives the Base Acre Premium?

- **Direct Payments**
  - Payments generally known to both landlord and tenant prior to lease agreements

- **Countercyclical Payments**
  - Expected value of payments implicitly negotiated into rents

- **Land Quality**
  - Literature generally assumes base acres are of a higher quality than nonbase.
  - “Base” is assigned to farm operation, not to specific acres.
What Drives the Base Acre Premium?

- **Fruit and Vegetable Planting Restrictions**
  - Could diminish the base acre premium
  - Higher valued fruits and vegetables (higher rents) consistently planted on nonbase acres.
    - Young, et al (2007) say impact is not large

- **Market Power**
  - Increasing trend of more, smaller, retired landlords and fewer, larger, farming tenants.

- **Type of Lease Agreement**
  - How are rents captured under a share agreement? Higher shares when base acres rented?
    - Can and should be tested empirically.
Domestic Policy Implications

- **Nonfarming Landlords or Farming Tenants?**
  - Who is a farmer if land is not leased?
    - $1,000 or more of potential agricultural production
    - Ted Turner or, perhaps, a professional athlete
    - The lawyer that has a home on 1 of 10 base acres.
    - Retired farmers or heirs to agricultural land
    - Actual producers of agricultural commodities
  - Who is a nonfarming landlord?
    - All of the above except for those that continue to produce on their own land.
    - Most landlords of agricultural land are nonfarmers
Trade Policy Implications

- Theoretical ways in which decoupled payments might affect production:
  - Expectations of future payments
  - Greater access to capital
  - Alter risk preferences

- If passed through to landlord, only
  - Expectations of future payments
  - Alter risk preferences
Unintended Consequences

Do increased land rents due to government payments keep next generation farmers from entering the market?

- Not necessarily, especially if the rate of pass through is less than 100%.
  - In fact, this should encourage entrance
  - However, this incentive to enter the market caused by government payments does not encourage increased production since aggregate number of base acres is fixed.
Conclusions

- Base acres rent at a higher implicit rate than nonbase acres.
- The bulk of this base acre premium comes from government subsidies.
- The rate of pass-through is less than 100% at the national level.
- Future research should focus on:
  - Market power in rental markets
  - Regional differences in rates of pass through
  - Rates of pass through for different commodities
  - Rates of pass through under different types of leases