Analyzing Direct Payments to U.S. Farm Households: Addressing the Distribution Gap

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Decoupling Project

- Domestic and Trade Policy

- Production Distortions from Coupled Programs
  - Floyd and Gardner models
  - Returns distributed among factors of production

- Production Distortions from Decoupled Programs
  - No distortions due to price effects
  - Lump-sum payments may have non-price effects
Production Flexibility Contract Implementation

- PFC payments must go directly to producers
- However, landowners are the ultimate beneficiaries

**Capitalization** Sales price includes stream of future PFC payments
**Pass-through** Rental price includes current PFC payments

- PFC payments and non-price effects
  - **wealth effect** preferences change
  - **insurance effect** outcome truncation
The ‘Distribution Gap’ in Policy Evaluation

- Distributional Analysis may be more relevant for policy purposes than the *Veil of Ignorance*
  - Original position matters

- Distributions are endogenous to how recipients make decisions
  - “Farming the Program”

- Multiple representative agents can be useful compromise between distributional and aggregate approaches
## Payments and Average Levels of Well-being

<table>
<thead>
<tr>
<th>Farm Type</th>
<th>Commercial</th>
<th>Intermediate</th>
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<tr>
<td><strong>Panel A. Farm Household Measures of (per-capita) Well-being</strong></td>
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<td>Direct Payments per capita</td>
<td>9,335</td>
<td>2,299</td>
<td>676</td>
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<td>Total Household Income</td>
<td>41,140</td>
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Farm Household Heterogeneity
Cumulative Distribution of Per-capita Incomes, 1996

- Commercial Farms Average
- Intermediate Farms Average
- Rural Residences Average

Per-capita Household Income

1st quartile
2nd quartile
3rd quartile
4th quartile

−25000 0 25000 50000 75000 100000
Farm Household Heterogeneity
Cumulative Distribution of Per-capita Expenditures, 1996
Farm Household Heterogeneity
Cumulative Distribution of Per-capita Wealth, 1996

Per-capita Wealth ($)

1st quartile
2nd quartile
3rd quartile
4th quartile

- Commercial Farms Average
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Farm Business Heterogeneity
Cumulative Distribution of Return on Assets, 1996
Farm Business Heterogeneity
Cumulative Distribution of Production:Economic Costs Ratio, 1996

Total Production Divided by Economic Costs
1st quartile
2nd quartile
3rd quartile
4th quartile
- Commercial Farms Average
- Intermediate Farms Average
- Rural Residences Average

Cumulative Distribution of Production:Economic Costs Ratio, 1996
0 50 100 150 200

Total Production Divided by Economic Costs

Slide 9
Farm Business Heterogeneity
Cumulative Distribution Returns to Land per Acre, 1996

- Commercial Farms Average
- Intermediate Farms Average
- Rural Residences Average

Total Production Minus Economic Costs (per acre)
## Payments and Average Levels of Well-being

### Panel A. Farm Household Measures of Well-being (per-capita)

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### Panel B. Farm Business Measures of Well-being

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### Panel C. Transfers to Operators vs. Landlords

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<td>Direct Transfers to Operators</td>
<td>32,221</td>
<td>5,490</td>
<td>2,392</td>
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<td>Direct Transfers to Landlords</td>
<td>3,158</td>
<td>1,068</td>
<td>230</td>
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<tr>
<td>Pass-through</td>
<td>15,950</td>
<td>2,651</td>
<td>804</td>
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Payment Effect Decomposition

- Observation-level impacts

**Gross Effect** \( GE_i = Y_i^1 - Y_i^0 \), where 1 signifies with-payment and 0 signifies the without-payment level of well-being \( Y \) for observation \( i \)

**Pass Through Effect** \( PT_i = \alpha_i \cdot GE_i \), where \( \alpha_i \) is the share of base acres that are not owned for observation \( i \)

**Net Effect** \( NE_i = GE_i - PT_i \), the difference between the gross and pass-through effects for observation \( i \)

- Distribution-level impacts

**Gross Effect** \( GE_q = F_Y^1 - F_Y^0 \)

**Pass Through Effect** \( PT_q = \bar{F}^1 - F_{Y,\alpha}^1 \)

**Net Effect** \( NE_q = GE_q - PT_q \)
Household Effects

Panel A. Gross Effects

Panel B. Pass−through Effects

Panel C. Net Effects
Business Effects

Panel A. Gross Effects

Panel B. Pass-through Effects

Panel C. Net Effects
Summary

- Household-level net effects of payments are more uniform than gross effects suggest
  - payments are still correlated to well-being in the case of expenditures and wealth
  - Shallower “U” with income

- Business-level net effects are not correlated with firm performance
  - Net Payments are flat across profits and break-even distributions
  - Net payments negatively correlated to residual land returns
Implications for Decoupling

- Reliance on rented base acres results in most (63%) benefits passing through to landlords outside production sector.

- Commercial farms, with high use of rented acreage, pass through most (72%) benefits. These farms received 59% of payments.

- Net payments after pass through are more proportional for most measures of well-being, exceptions include:
  - Positive correlation of expenditures and net payments suggestive of effect on consumption.
  - Positive correlation with wealth leaves little scope for large wealth effect on risky behavior.