

How Much Do Landlords Benefit From Agricultural Subsidies Versus Tenants?

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Motivation

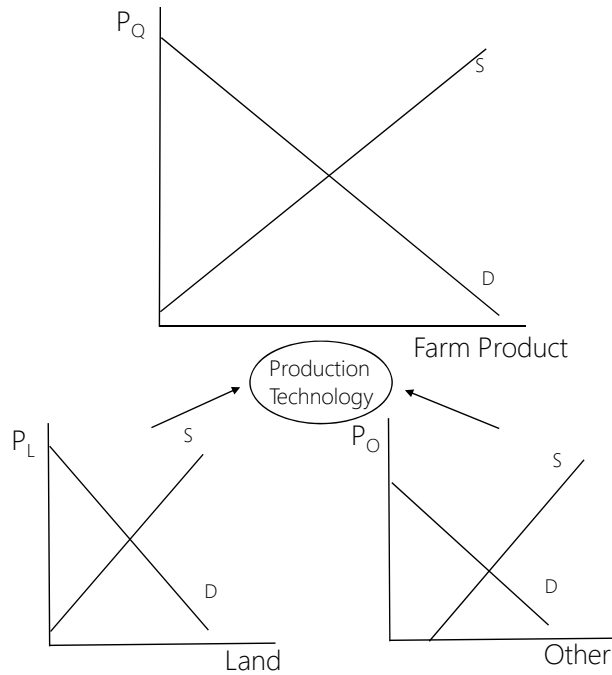
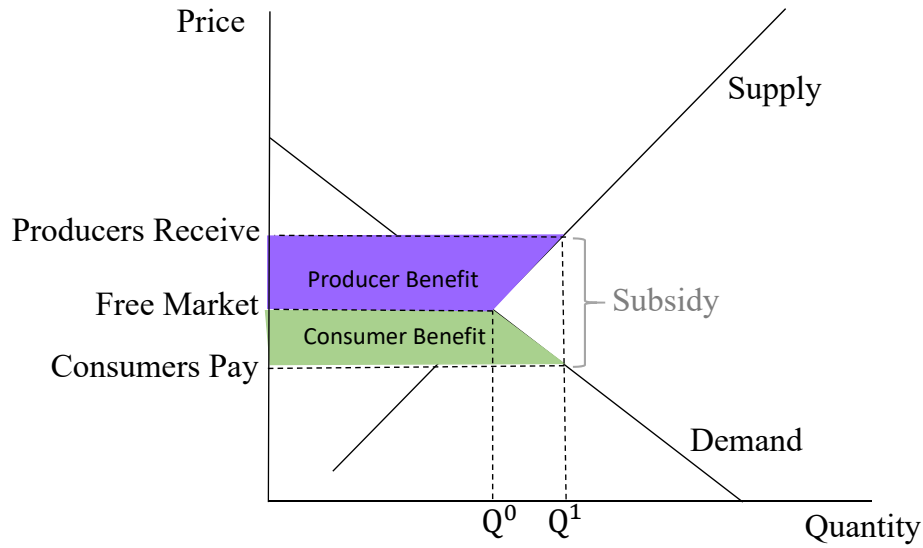
- 44% of cropland rented to non-operator landlords in Kansas
- Under cash rent agreement, tenant receives the subsidy check
- But who *really* benefits?

Economic Principles

Who Pays the Tax on Gas?



Theory for Production Subsidy



Theory for Direct Payments

- Farm Bill program 2002-2014
- Not determined by actual production
- Payments tied directly to land
- Theory says all of it should be captured in land rent

Paying on Base versus Actual Production

Base

- Less trade distorting
- Plant for the market
- More benefits accrue to landowners

Production

- More trade distorting
- Plant for the subsidy
- More benefits accrue to tenants

An Empirical Estimate

Overview

The Goal

Estimate how differences in subsidy payments affect cash rental rates.

The Challenge

Counties with larger subsidy payments also have greater productivity, so unclear if subsidies or land productivity is causing higher cash rental rates.

My Approach

- Exploit differences in direct payments due to political influence
- Southern crops (cotton, rice, and peanuts) have received political favoritism in the past

Compare cash rental rates in counties that have similar market returns, but different direct payments due to the favoritism shown to Southern crop base acres

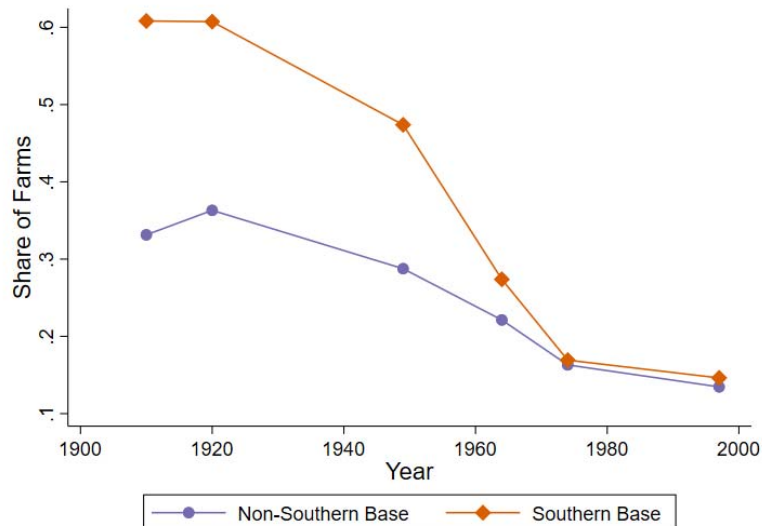
Southern Favoritism – A History

- Agricultural Adjustment Act of 1933
- One-party rule in South in early 1900s
- In 1933, the South held chair of House and Senate Ag
- 1931-1995: chairman of the House Ag was from Southern state for all but 10 years (Senate for all but 12 years)
- Southern planters had significant political influence

Sharecropping



Tenants with No Land Ownership



Summary of the Approach

Southern Planters → Political Influence → Early Subsidies → Current Subsidies → Current Cash Rent

Data

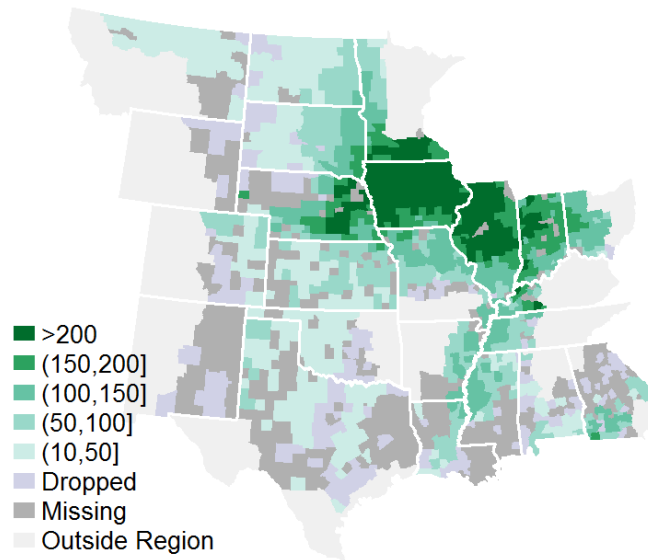
Data Description

- Average cash rental rate for cropland in 2012 (NASS): Weighted average of irrigated and nonirrigated
- Direct payments (2009) divided by cropland acres (2012)
- Base acres enrolled in ACRE divided by cropland acres
- Cotton, rice, and peanut base acres divided by cropland acres

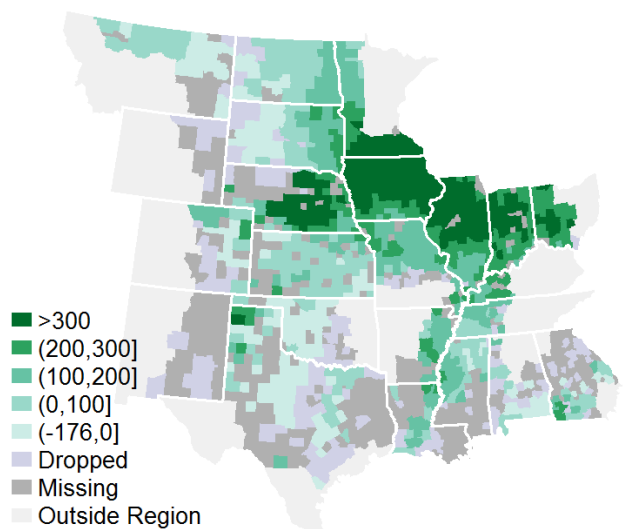
Market Returns

- Weighted average across all crops with data
- Average from 2008-2012
- Price is marketing year average price (2008-2011) or futures price (2012)
- Trend yield
- Cost is from ERS at the farm resource region level
- Assume fallow has 0 returns

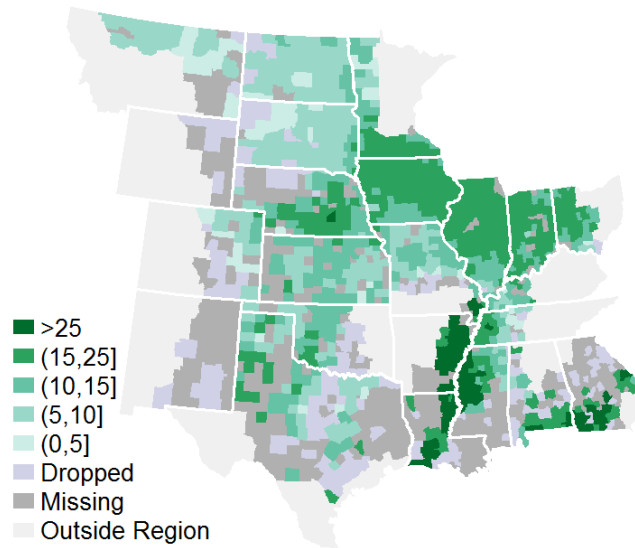
Cash Rent



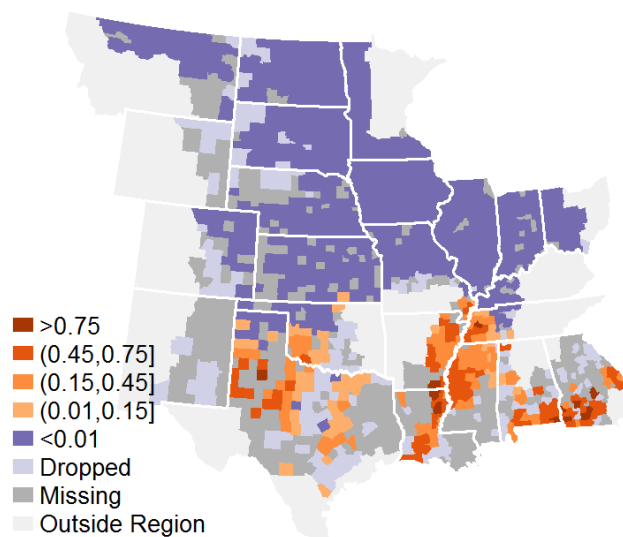
Market Returns



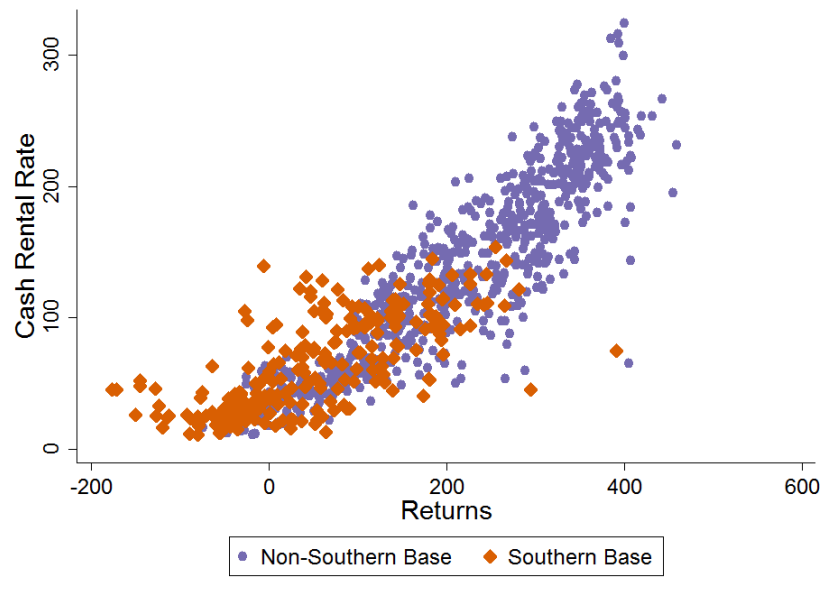
Direct Payments



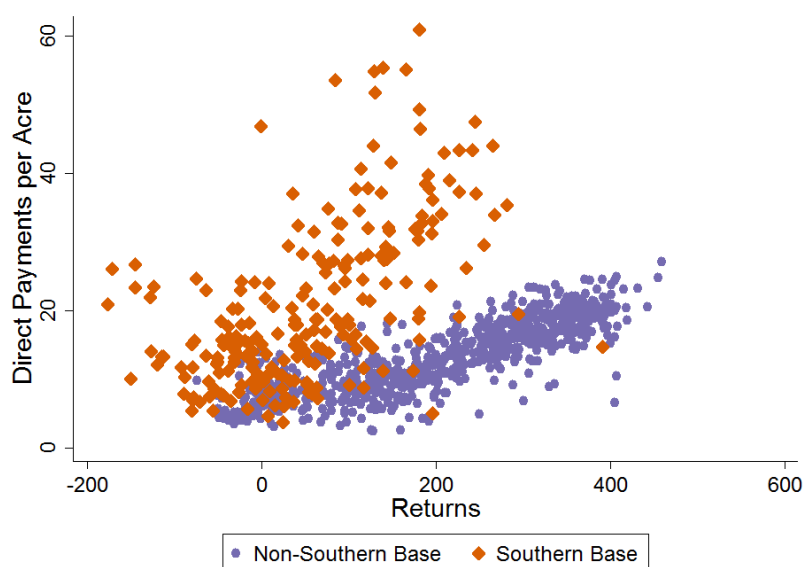
Proportion Southern Crop Base Acres



Rents and Market Returns



Direct Payments and Market Returns



Results

A Simple Estimate

	(1)	(2)	(3)
	Diff. Rent	Diff. Direct Pmts	Wald Estimate
-50 ≤ Returns < -25	10.577** (4.574)	8.044** (1.009)	1.315** (0.479)
-25 ≤ Returns < 0	13.961** (7.004)	8.238** (2.138)	1.695** (0.761)
0 ≤ Returns < 25	7.569 (5.796)	3.852** (1.354)	1.965* (1.068)
25 ≤ Returns < 50	25.359** (7.677)	9.235** (1.982)	2.746** (0.614)
50 ≤ Returns < 75	16.695** (7.544)	7.131** (1.624)	2.341** (0.781)
75 ≤ Returns < 100	10.403 (7.401)	17.036** (2.226)	0.611 (0.439)
100 ≤ Returns < 125	12.362* (6.633)	13.242** (2.441)	0.934** (0.472)
125 ≤ Returns < 150	-9.577 (6.712)	23.186** (3.024)	-0.413 (0.263)
150 ≤ Returns < 175	-26.846* (14.209)	20.256** (8.199)	-1.325 (1.098)
175 ≤ Returns < 200	-21.158** (7.102)	21.357** (2.905)	-0.991** (0.396)
Average			0.888** (0.219)

The Effect of Southern Base on Direct Payments

Proportion Southern Base	34.632** (1.327)
Market Returns	0.035** (0.001)
Proportion ACRE	3.273** (1.068)
Intercept	5.732** (0.220)
F-Statistic ($H_0 : \alpha_{SB} = 0$)	681.23
Observations	971
R^2	0.745

The Effect of Direct Payments on Cash Rental Rates

Direct Payments	0.804 (0.183)** [0.233]**
Market Returns	0.438 (0.010)** [0.011]**
...	...
P-value for test of endogeneity (H_0 =exogeneity)	0.017
Observations	971

Discussion and Implications

Interpretation

- \$0.80 of every dollar of direct payments was captured by rental rates
- Of the annual \$4.7 billion of direct payments in the 2008 Farm Bill, about \$1.73 billion was captured by non-operator landlords
- \$0.44 of every dollar of expected market returns was captured by rental rates

Direct Payments versus ARC and PLC

1. Both pay on base acres rather than actual production
2. Direct payments were known with certainty and ARC and PLC differ each year

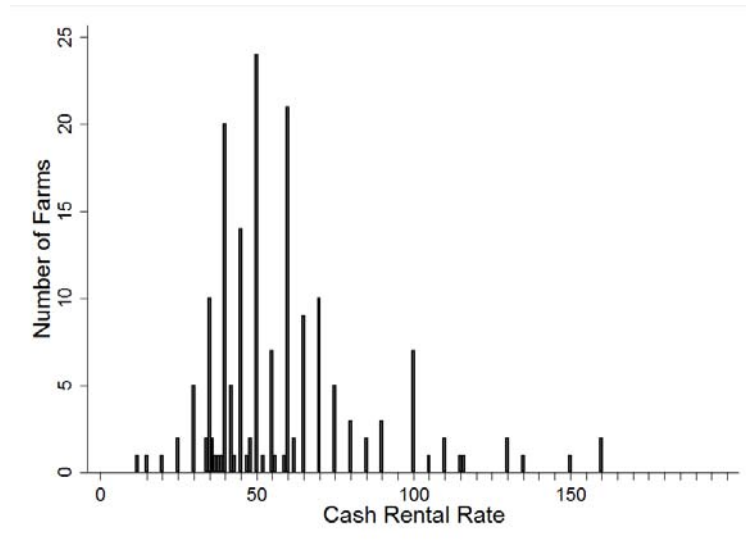
(1) implies ARC and PLC will have similar effect on rent

(2) implies ARC and PLC may have smaller effect on rent

Comparison to Previous Work

- Most previous estimates indicates less than \$0.50 per \$1.00 captured in rent
- Most studies exploit changes over time or within regions
- Small changes in subsidies may have relatively smaller impact on rent
 1. Customary local rate (e.g., rent in my county is typically \$x/acre)
 2. Rents tend towards round numbers

Rents Tend Toward Round Numbers



Main Implications

- Removing subsidies would mostly result in decrease in rents in the long run
- Small changes in subsidies captured mostly by tenants
- Young farmers buying land do not benefit from direct payments

Questions?

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