



In Search of: The 1930s Multiplier

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Current vs. Great Depression

- “Great Recession” has generated more interest in the Great Depression
- We look at Multipliers for State Income related to Net Federal Spending during the New Deal
- Expect to See Largest Multiplier Due to Unemployed Capacity

Outline of Project

- Put together Data on federal spending from OGR, 1933-1939 and then rechecked it program by program from other sources to add in 1930-1932 and 1940
- Estimated multiplier in model with extreme weather correlates, state, and year fixed effects, state time trends and IV
- Try various measures of economic activity and definitions of government spending.

Multiplier

- One Dollar Rise in Per Capita Government Spending leads to ???? Dollar Rise in Per Capita Income
- If Multiplier is 1.5.
 - The Dollar of G raises income by original \$1 plus a spillover benefit of 50 cents.
- If Multiplier is 0.5
 - The dollar of G adds original \$1 but crowds out 50 cents of other activity.

Multiplier Results

- Government Spending (taxes not subtracted)
 - Dollar of Fed Govt spending leads to
 - \$1.39 rise in Personal Income (includes Transfers)
 - \$1.20 rise in State Income no Transfers
- Government Spending Minus Taxes
 - Dollar of G-T leads to
 - \$1.08 rise in Personal Income (Includes Transfers)
 - \$0.93 rise in State Income no Transfers

Very Important to Consider Type of G

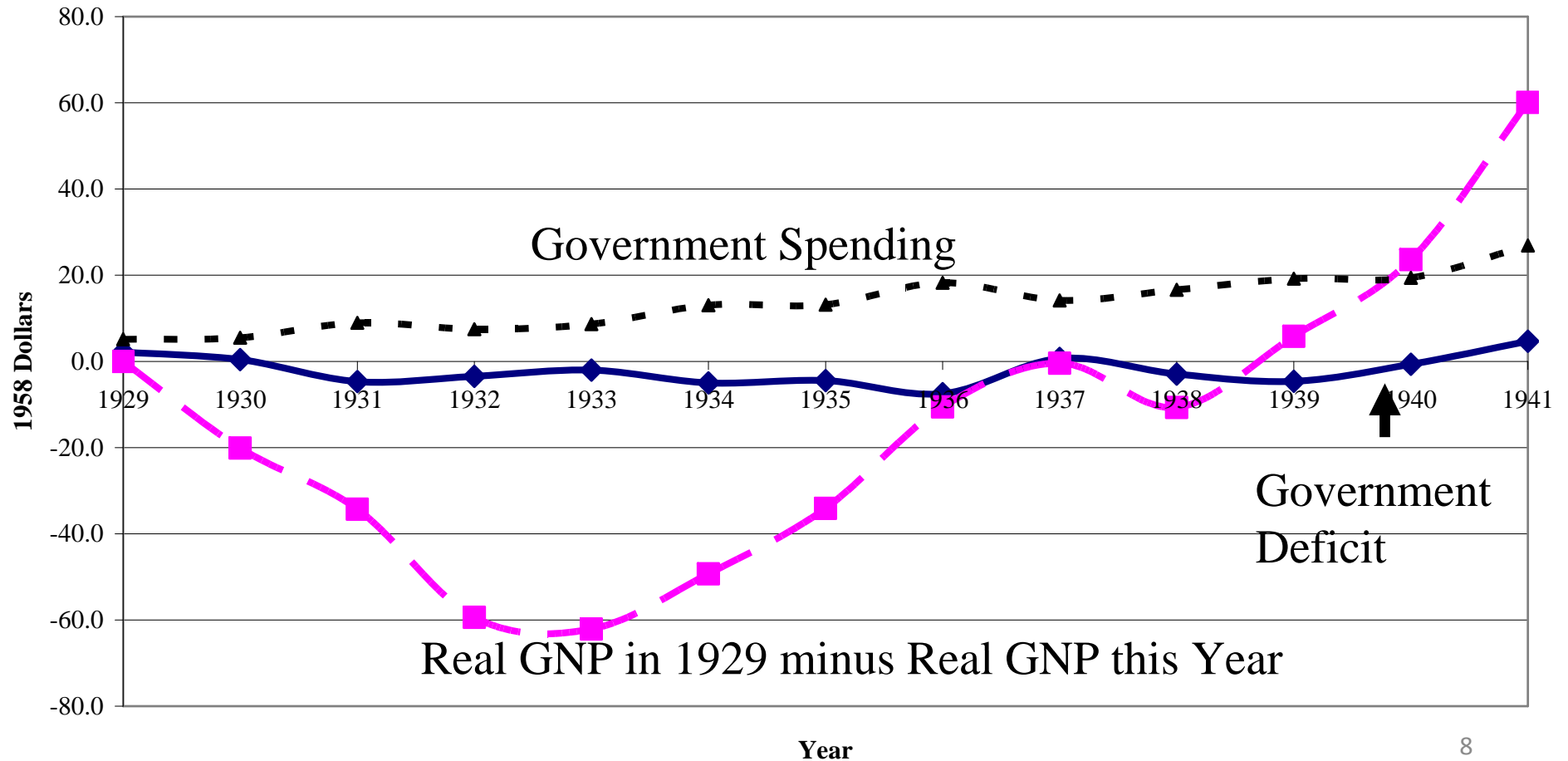
- Public Works and Relief Multiplier is
 - 1.67 for Personal Income plus Transfers
 - 1.51 for Personal Income w/o Transfers
- Farm Program pays Farmers to take land out of production, reduces labor demand, helps farmers, hurts farm laborers and croppers
 - -0.47 for Personal Income with Transfers
 - -0.30 for Personal Income w/o Transfers

Multiplier Results

- Effect on Employment zero or negative
- Consistent with series of results by
 - Neumann, Fishback, Kantor (2010)
 - Positive 1933-1935, $-.8$ in 1936-1939
 - Benjamin and Matthews (1992)
 - -0.2 in 1933-35, -0.8 in 1936-1939
 - Fleck (1998)
 - Wallis and Benjamin (1981, 1987)

NOT KEYNESIAN STIMULUS

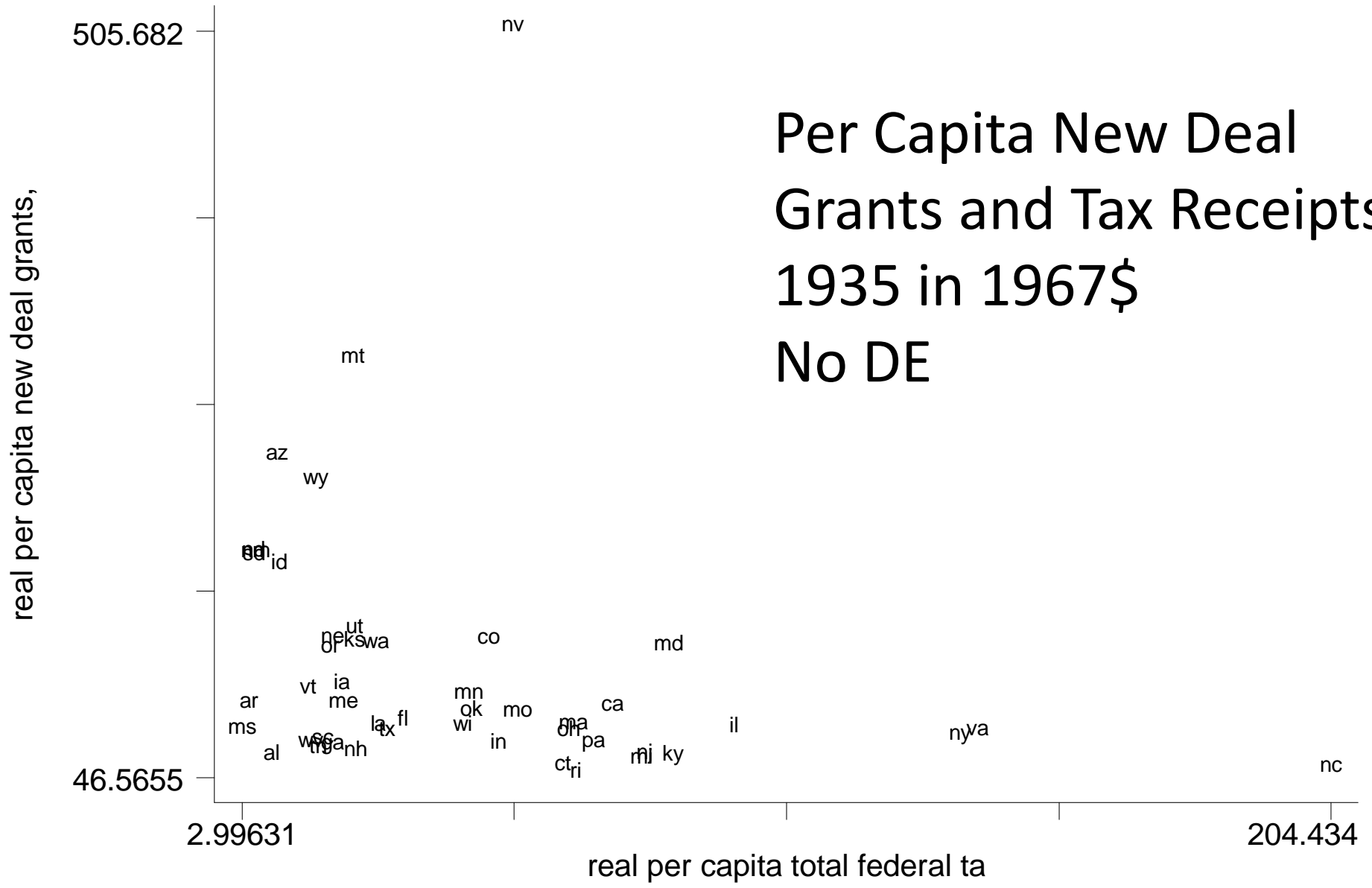
**Federal Budget Deficit, Government Expenditures,
and Difference between GNP and 1929 GNP, All in
1958 Dollars**



Nature of Exercise

- Outside Agents Passing out Grants and Pulling Out Taxes
- What is Effect
- Not a Macro Multiplier because not internal economy

Per Capita New Deal Grants and Tax Receipts 1935 in 1967\$ No DE



Delaware per capita federal tax receipts of \$321.16 and per capita federal grants of \$67.45

Macro Multipliers

- Control for Endogeneity by trying to find Deficits not responding to GDP decline
 - Military Buildups
 - Narratives about Tax cuts
 - Defense announces and deviations from Defense announcements

Range from about

0 by Minnesota RBC Macro

0.5 to 1 Barro, Ramey,&Shapiro, other macro

1.6 Zandi and Blinder (not academic)

The Government Spending Measure

- Types of Spending
 - Nonrepayable Grants
 - Public Works (20%)
 - Direct Relief (15%)
 - Work Relief (62%)
 - AAA (12%) Pay Farmers to Take Land Out of Production
 - Loans
 - Veterans' Bonus (Loans and Grants)

Dealing with Taxation

- National Tax Rates all same across country
 - Control for Rates with Year Fixed Effects
- May have differential Effects based on structure of economy
 - Also estimate net spending in form of grants minus taxes

Time Frame of Spending

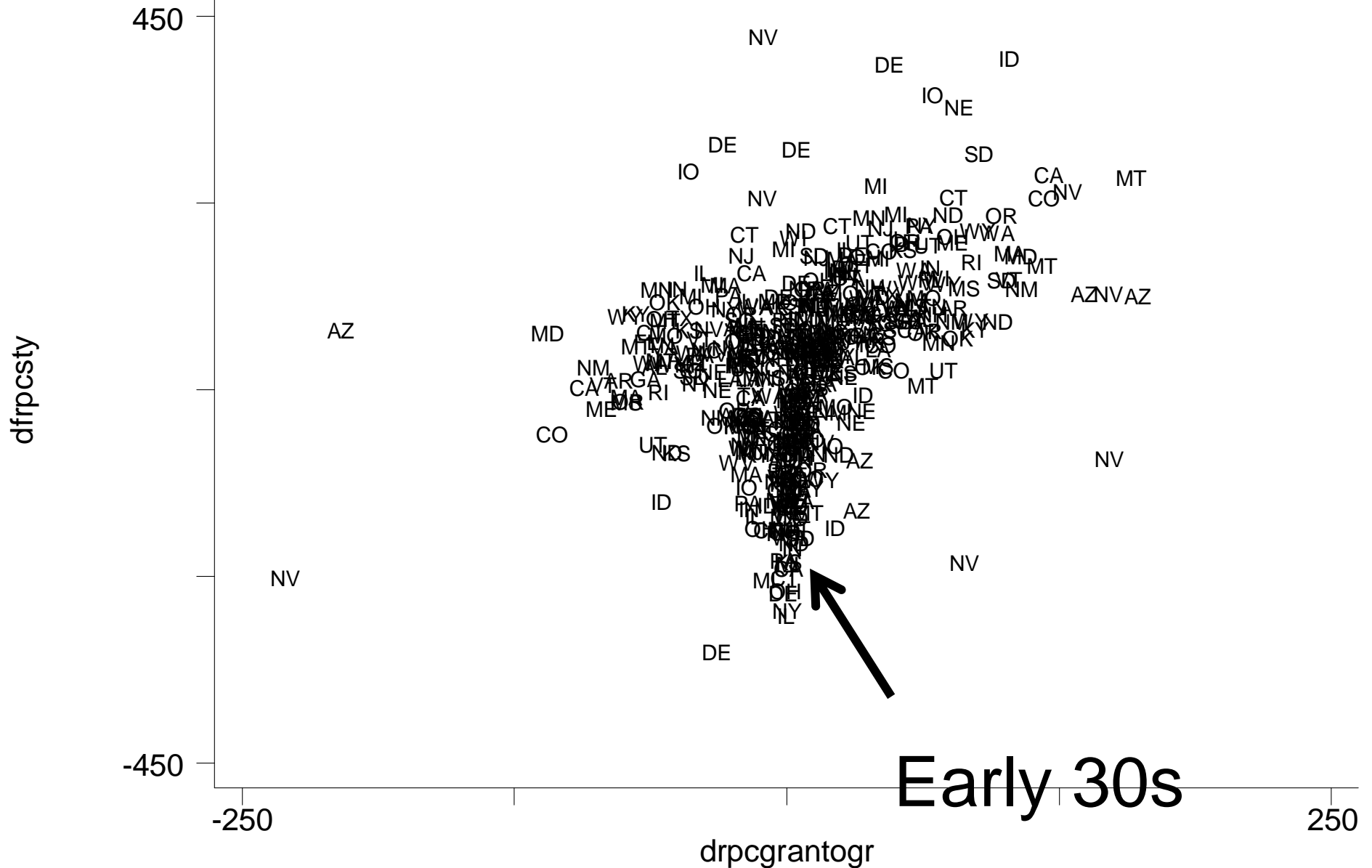
- Reported on Fiscal Year Basis, 1933-1939
 - July 1, t-1 to June 30, t
 - Use FY, assumes 6-month lag before effects felt.
 - Neumann, Fishback, Kantor forthcoming, see immediate effects but bigger effects often around 6 month mark or later
- Tried Calendar Year but Dropped Idea
 - Based on employment, could split CWA, FERA, WPA, SSA , CCC (62 percent) by half-year.
 - Trouble splitting AAA (12%) and PWA, BuRec, Riv.&Harbor (20%)
 - Problems using national conversion
 - Uses part of next fiscal year's fiscal measure
 - thus might be adding correlates to error on right hand side

Multiplier Expectations

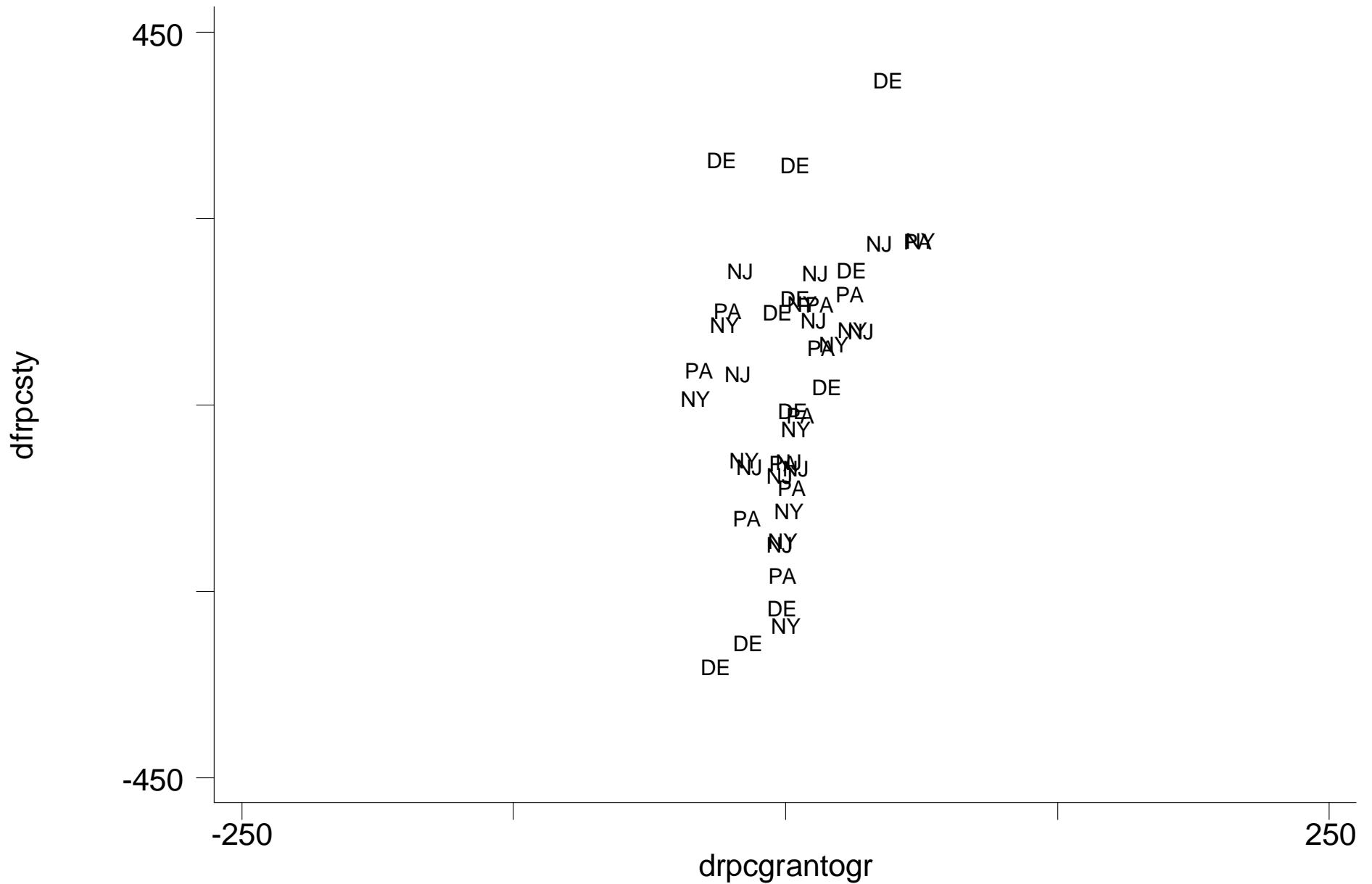
- Larger
 - If more unemployed resources to soak up
 - Complementary to existing production
 - Fewer Leakages
 - Original Spending more on Labor and local inputs
 - Spending out of income is more local
 - Makes private sector local governments more productive

Weakened by Crowding Out

Chg. Per Capita Income v. Chg. New Deal Grants, 1930-40



Chg. PCY vs. Chg PCG, 1931-1940, Mid-Atlantic



Empirical Approach

- $I_{it} = \beta_0 + \beta_1 (G_{it} - T_{it}) + S + Y + S t + \varepsilon_{it}$.

(G – T) Net Federal Spending

– S vector of state fixed effects

– Y vector of year effects.

– S t, vector of state-specific time trends

– Added weather information since sending the paper

IV Strategy

- Hybrid Instrument: Combination of
 - Swing Voting Measure
 - Std. Dev. Of % voting Dem for President, 1896 to most recent election prior to year
 - 1932 value is through 1928, 1933 through 1932
 - Mostly cross-sectional with change 1933 and 1937
 - Trend in National Spending as measured by Spending Outside Region (9) where State Located
 - Designed to avoid correlation with error
 - Created moat outside, each moat likely self-sufficient
 - Mostly time variation with variations across regions.

IV uncorrelated with error?

- Swing vote measure from prior period, mostly determined years before, not as sensitive as vote share to income levels (remember controlling for state, year and state trend)
- The trend measure look at national total outside location.
 - No hard budget constraint
 - Each state small share.
 - Created moat outside, each moat likely self-sufficient

Logic

- Increases in National Government spending leads to higher increases in areas with more swing voting.

Results w/o Instrumenting Table 2

	All Grants	All Grants and loans	All Grants and 10 % of loans	Grants minus Taxes	Grants except AAA	AAA
LEAST SQUARES						
	ADD WEATHER RAISES MULT					
No Correlates	1.04	0.56	0.99	-0.87	1.97	-7.34
	<i>2.70</i>	<i>1.48</i>	<i>2.76</i>	<i>-1.44</i>	<i>6.38</i>	<i>-4.40</i>
Weather Correlates	1.68	0.99	1.58	-0.39	1.91	-0.60
	<i>9.43</i>	<i>5.66</i>	<i>9.45</i>	<i>-0.74</i>	<i>9.48</i>	<i>-0.61</i>
Weather Correlates and State and Year Fixed Effects	0.45	0.38	0.51	-0.19	0.44	0.47
	<i>2.29</i>	<i>4.29</i>	<i>3.22</i>	<i>-0.73</i>	<i>2.20</i>	<i>1.22</i>
Weather Correlates and State and Year Fixed Effects and State-Specific Time Trends	0.16	0.14	0.20	-0.14	0.13	0.85
	<i>0.69</i>	<i>0.87</i>	<i>0.82</i>	<i>-1.19</i>	<i>0.58</i>	<i>1.90</i>

t-statistics in italics below \$ for \$

Dollar-for Dollar Multiplier

- 1.39 just Grants
- 1.08 Grants minus taxes
- Add in Loans brings Mult. Down to 0.86
- (G+L-T) would be smaller still
- 1.67 for nonAAA grants.
- -.47 but st. insignificant for AAA
 - Higher income for farm owners, lower for farm workers (hope to test later with laborer wages)

Conclusions

1930s Likely largest Multiplier

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 - 14 to 25 % unemployment rate in decade
 - Many factories producing at well below capacity
- If there was any time that government spending should have stimulated private spending and put people back to work this was it.

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Other Measures

- Wage and Salary Income 0.4 Multiplier relative to 0.62 share of Income
- Retail Sales 0.75 Multiplier relative to 0.5 share of income
- Wage Bill in Broad amount zero
- Value of Automobile registrations 0.22 rise