Data Set for Geographic Distribution of New Deal Spending by Counties

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This is the dataset for the paper "Can the New Deal's Three R's Be Rehabilitated? A Program-by-Program, County-by-County Analysis," with Shawn Kantor and John Wallis. Explorations in Economic History (October 2003): 278-307. Extra material is located in National Bureau of Economic Research Working Paper 8903 of the same title by the same authors. We have included a copy of the working paper in this word file. Direct questions to Price Fishback at pfishback@bpa.arizona.edu.

Variable labels that could be cut and pasted into a SAS program are provided below.

Variable labels.

```
label stname='name of state'
name='name of county'
state = 'state code icpsr'
ndcode = 'new deal county code'
pop30 = 'population in 1930'

fera = 'Fed. Emergency Relief Admin. grants'
cwa = 'Civil Works Admin. grants'
wpa = 'Works Progress Admin. grants'
pubass = 'Public Assistance Grants--Soc Sec Act.'
pwaf = 'Public Works Admin. federal grants'
pwanf2= 'Public Works Admin. nonfederal grants'
pwanf1= 'Public Works Admin. nonfederal loans'
pra= 'public roads admin. grants'
pba= 'public buildings admin. grants'
aaa= 'Agric. Adjust. Admin. grants'
fca= 'Farm Credit Admin. loans'
fsarr2= 'Farm Security Admin. grants'
fsalo ='Farm Security Admin. loans'
rea = 'Rural Electrification Admin. loans'
rfc = 'Reconstruction Finance Corp. loans'
holc = 'Home Owners Loan Corporation loans'
ins = 'Farm Housing Administration loans insured'
ushalc = 'U.S. Housing Admin. loan contracts'
ushah = 'U.S. Housing Admin. grants'
ndexp = 'total Grants'
relief ='total Relief grants'
pubwor = 'public works grants'
loan  = 'total loans'
invpop = 'inverse of 1930 population times 100000'
areapop = 'square miles per 1930 population'
pcturb3 ='% of pop. in cities over 2500, 1930'
pctfrmln= '% of land devoted to farms, 1929'
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taxrtp29 'number of tax returns per capita, 1929'
rrtsap29 'retail sales per capita, 1929 in 1967$'
rtsapc29 'retail sales per capita, 1929'
pctblk30 '% black in population, 1930'
pctill30 '% illterate in population, 1930'
rldf3329 'Growth rt sales per cap(1967$),29-33'
pctunem 'unemp. as % of gainfully employed,1930'
pctfail '% of farm acres with failures, 1929'
avesz 'average farm size, 1929'
mean9628 'mean % voting democrat, 1896-1928'
roosmmn2 '% vote for Roosevelt minus mean9628'
std9632 'std. dev. of % democrat, 1896-1928'
pctvt32 'pres. votes 1932 per population 1930'
hten73b 'average tenure in house of repres, 1933'
AG311 'house agriculture committee, 1933'
APP311 'house appropriations committee, 1933'
BKCR311 'house banking and currency comm., 1933'
XXD311 'house exports committee, 1933'
FLCN311 'house flood control comm, 1933'
IRRC311 ' house irrigation comm, 1933'
LAB311 'house labor committee, 1933'
PBLD311 'house public building comm, 1933'
PBLN311 'house public lands comm, 1933'
RVHB311 'house rivers and harbors comm, 1933'
ROAD311 'house roads comm, 1933'
WYMN311 'house ways and means comm, 1933';

The ndcode is a county code for New Deal counties based on the ICPSR county code. For most counties the ndcode and the ICPSR county code are the same. In several cases, listed below, we had to combine counties because the New Deal information was reported only for the combined counties.

The data set consists of 3,068 counties and county/city combinations in the United States. In the paper in Explorations, the regressions and means and standard deviations for the regression sample included only 3,060 observations due to missing values for some observations. The New Deal program information was reported for some combined counties. For example, the New Deal information was reported for all of New York City. Thus, in New York state, Bronx (ICPSR 50), Kings (470), New York (610), Queens (810), and Richmond (850) counties were combined into New York City (1500). Similar situations developed in other states. In Missouri, St. Louis City (5100) and County (189) were combined to become 3000. In Virginia we combined the following districts that were reported separately in the Census, but together in the New Deal data: Albemarle county (30) and Charlottesville city (5400) became 2000; Allegheny county (50) and Clifton Forge city (5600) became 2100; Augusta county (150) and Staunton city (7900) became 2200; Campbell county (310) and Lynchburg city (6800) became 2300; Dinwiddie county (530) and Petersburg city (7300) became 2400; Elizabeth City county (550) and Hampton city (6500) became 2500; Frederick county (690) and Winchester city (8400) became 2600; Henrico county (870) and Richmond city (7600) became 2700; Henry county (890) and Martinsville city (6900) became 2800; James City county (950) and Williamsburg city (8300) became 2900; Montgomery county (1210) and Radford city (7500) became 3000; Nansemond county (1230) and Suffolk city (8000) became 3100; Norfolk county (1290) with Norfolk city (7100), South Norfolk city (7850); and Portsmouth city (7400) became 3200; Pittsylvania county (1430) and Danville city (5900) became 3300; Prince George county (1490) and Hopewell city (6700) became 3400; Roanoke county (1610) and Roanoke city (7700) became 3500; Rockbridge county (1630) and Buena Vista city (5300) became 3600;

Rockingham county (1650) and Harrisonburg city (6600) became 3700; Spotsylvania county (1770) and Fredericksburg city (6300) became 3800; Warwick county (1875) and Newport News city (7000) became 3900; Washington county (1910) and Bristol city (5200) became 4000; Arlington county (130) and Alexandria city (5100) became 2150. A small number of counties were dropped from the sample due to missing values for the variables above.

Aggregation of New Deal categories

total grants (ndexp)
ndexp= fera+cwa+wpa+pubass+pwaf+pwanf2+pra+pba+aaa+fsarr2+ushah;
total loans (loan)
loan= pwanf1+fca+rea+rfc+holc+ushalc;
total relief grants (relief)
relief = fera+cwa+wpa+pubass;

Public assistance grants are the sum of aid to dependent children, old-age assistance, and aid to the blind grants established under the Social Security Act of 1935.

Sources

New Deal spending information is from the U.S. Office of Government Reports (1940). Retail sales information from 1933 is from U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce (1936). The 1929 retail sales information is from Historical, Demographic, Economic, and Social Data: The United States, 1790-1970, ICPSR tape number 0003, as corrected by Michael Haines. The population figures used to create our per capita estimates for 1929 and 1933 retail spending were calculated using linear interpolations of the 1930 and 1940 populations. We calculated 1929 population as 1930 minus the average annual change in population between 1930 and 1940; we did not use trends from 1920 to 1930 due to changes in county boundaries between 1920 and 1930. The percent black, percent urban, percent of a county's land in farms, inverse of population, area in square miles, unemployed as a percent of the gainfully employed, average farm size, and percent of acres with crop failure are from the 1930 files in ICPSR tape 0003 as corrected by Michael Haines. For 1930 we used the illiteracy rate for people aged 10 and above. The tax return information comes from U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce (1932).

The mean Democratic share of the presidential vote from 1896-1928, the percent voting for Roosevelt in 1932 minus the mean Democratic share from 1896 to 1928, the standard deviation of the Democratic share of the presidential vote from 1896 to 1932, and the percent of adults voting in 1932 were all calculated using information from ICPSR's United States Historical Election Returns, 1824-1968 (ICPSR tape number 0001). The variables measuring House tenure and representation on House committees between 1933 and 1938 are from U.S. Congress, Official Congressional Directory, for the 73rd Congress 1st session. We then matched the congressional information with the counties. Note: In preparing this data set, we discovered an error in the paper related to the description of the congressional committees. In the published paper it says that the committee representation was the average for the period in which the program is in place. Earlier drafts had used that logic, but the final version of the paper used the Committee structure in place in the first session of 1933 to reduce the possibility that the fund distribution might influence committee assignments in later years.

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Can the New Deal's Three Rs Be Rehabilitated?
A Program-by-Program, County-by-County Analysis

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ABSTRACT

Can the New Deal's Three Rs Be Rehabilitated?
A Program-by-Program, County-by-County Analysis

We examine the importance of Roosevelt's "relief, recovery, and reform" motives to the distribution of New Deal funds across over 3,000 U.S. counties, program by program. The major relief programs most closely followed Roosevelt's three Rs. Other programs were tilted more in favor of areas with higher incomes. For all programs spending for political advantage in upcoming elections was a significant factor. Roosevelt's successful reelections were based on developing specific programs for a broad range of constituents, delivering on his stated goals, but also spending more at the margin for political purposes.

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> In the consistent development of our previous efforts toward the saving and safeguarding of our national life, I have continued to recognize three related steps . . . Relief was and continues to be our first consideration. It calls for large expenditures and will continue in modified form to do so for a long time to come. . . The second step was recovery, and it is sufficient for me to ask each and every one of you to compare the situation in agriculture and in industry today with what it was fifteen months ago. At the same time we have recognized the necessity of reform and reconstruction. . . .
>
> President Franklin D. Roosevelt (1934)

I. Introduction

During the New Deal the federal government distributed unprecedented amounts of grants and loans to state and local governments, leading to the federal government's share of GNP to rise from about 4 to 9 percent during the 1930s (Wallis and Oates, 1998, p. 157). Economic historians and public choice scholars have long acknowledged the wide variation in the federal government's per capita spending and lending across the United States and have devoted significant research to understanding the determinants of this relatively uneven distribution.[1] Over the past three decades a number of scholars have used econometric

analysis to test whether New Deal administrators followed Roosevelt's high-minded public goals of "relief, recovery, and reform" or whether they used federal spending and patronage to achieve their political goals of maintaining support for Roosevelt and building a lasting Democratic political coalition.

To date, research on New Deal spending provides only partial support for the notion that the New Deal was designed to promote relief, recovery, and reform. Regression coefficients on the relief and recovery variables – drop in income from 1929 to 1933, unemployment, and the number of relief cases – have the expected sign two-thirds of the time, but in half of those cases the null hypothesis of no effect cannot be rejected. Most tests find very little evidence of any reform aspect of the New Deal. We revisit the determinants of New Deal expenditures in this paper by examining the distribution of funds in a comprehensive and disaggregated fashion, focusing program-by-program across over 3,000 U.S. counties.[2]

To better understand what motivated New Deal administrators, it is important to focus on the individual programs because each was designed to address specific and varied problems. Politicians typically do not publicize their largesse by discussing government spending in general terms; instead, they boast of the programs that address specific problems and benefit specific constituencies. For example, when President Roosevelt was asked what his administration was doing for the unemployed, he pointed to the Federal Emergency Relief Administration (FERA), Civil Works Administration (CWA), and the Works Progress Administration (WPA), agencies that put the unemployed back to work and provided relief for the destitute. Roosevelt responded to the depression in farming with the Agricultural Adjustment Administration (AAA), the Farm Credit Administration (FCA), and the Farm Security Administration (FSA), and each had its own subsets of programs. Given this programmatic emphasis, it would be inappropriate to expect the major relief programs, for instance, to have been responsive to agricultural needs.[3] Focusing our attention on individual programs allows more precision in understanding how the New Deal dealt with distinctly different policy problems in relief, agriculture,

public works, and public loan programs. Table 1 shows the amount of spending or lending in each of the New Deal programs we consider in this paper.

Refocusing the analysis of New Deal spending from the state level to the county level is equally important. First, the New Deal programs involved multiple layers of political administration. The ultimate success of each program was determined as much by what happened within states as it was by what happened across states. Second, there is ample documentation in the New Deal qualitative literature that state politicians sometimes viewed the New Deal much differently from the federal government. Some actively sought New Deal funds in various programs, while governors in Oklahoma, Virginia, North Carolina, and others seemed to disdain the New Deal.[4] Only Wallis (1984, 1987, and 1998), Couch and Shughart (1998), Fleck (1999b, 1999c, 2001a), and Strömberg (2001) have tried to control for the impact of state and local government decision-making on federal spending explicitly.[5] We are able to control for the attitudes of state governments explicitly in our county-level analysis by including state dummy variables that account for state attitudes that were common to all counties within each state.

A third reason the county-level data can be superior to the state data lies in the adage "all politics is local." Whether the monetary benefits of the New Deal reached their local communities would have ultimately determined voters' assessments of the economic and political effectiveness of the New Deal. Had the Roosevelt administration simply sought to use the New Deal for re-election purposes, voters would have had to witness the spending locally, not simply at the federal or state levels.[6] County-level data, therefore, affords more precise testing of the determinants of New Deal spending.

II. Measures of the Three Rs in Prior Research

Historians hold a variety of opinions of the nature of the New Deal. Schlesinger (1958), Degler (1959), and Freidel (1973) argue that the New Deal moved as far as possible toward social reforms given the climate of the Great Depression. In the 1960s a revisionist view developed as Leuchtenburg (1963), Zinn (1966), Conkin (1967), and Bernstein (1968) argued that the New Deal was basically conservative.[7] There was certainly plenty of controversy during the 1930s: New Deal critics charged the Roosevelt administration with using the distribution of funds to enhance its own political power. These charges received substantial press in late 1938 as newspaper columnists ridiculed WPA administrator Harry Hopkins for allegedly declaring to friends that "we shall tax and tax and spend and spend and elect and elect" (McJimsey, 1987, p. 124). Yet the general impressions of the detailed, non-econometric studies of Key (1937), Brown (1940), Howard (1943), E. A. Williams (1968), J. K. Williams (1968), and Patterson (1969) were that political opportunism was not a primary motivating factor in the distribution of New Deal funds.

Economic historians began examining the distribution of funds with a statistical approach when Arrington (1969) noted the substantial disparities in New Deal funding across states. Reading (1973), attempting to empirically test the importance of the relief, recovery, and reform motives, treated relief and recovery as a combined category and his proxies for reform might better be described as measuring income redistribution. His econometric results suggested that aggregate New Deal grant funds were distributed to promote relief and recovery, but not reform (see Table 2). Wright (1974) developed a political-economic model of the Electoral College and then tested the importance of presidential politics in an econometric horse race by adding a series of factors to measure how the New Deal funds

might have been used to enhance Roosevelt's re-election prospects. He found that politics dominated New Deal spending decisions and the three Rs had a statistically negligible role

Table 2 shows how relief, recovery, and reform (or income redistribution) measures perform in the large number of econometric studies of the distribution of New Deal funds. The many blank cells in the table suggest that scholars have used a variety of specifications. Had the New Deal been reform-minded and redistributive, we would expect negative relationships between New Deal spending and income per capita, manufacturing wages, median education, and farm values. We would expect positive relationships between New Deal spending and the percentage of tenants among farmers and percent black. Had the New Deal focused on relief and recovery, we would expect a negative relationship between New Deal spending and the growth in income from 1929 to 1933 and positive relationships between unemployment rates and relief cases per capita.

Most of the studies summarized in the top part of the table have focused on a 48-state cross-section of aggregate New Deal spending on non-repayable grants from 1933 to 1939, although Wallis (1984, 1987, and 1998) and Couch and Shughart (1998) have used a panel of annual data. The bottom section of the table shows the results of a series of studies on specific programs, most using state-level data. Only Fleck (1999b, 2001a) and Stromberg (2001) have used a national county-level data set, although missing data for some of the control variables in each of those studies cause the loss of at least 400 (probably rural) counties. Fleck (1999c) also looked at the distribution of FERA spending in southern counties and Couch and Williams (1998) and Couch, Atkinson, and Wells (1998) have looked at the distribution of New Deal funds and agricultural funds across counties within Alabama.

Of all the potential tests for reform listed in the table, only three are unequivocally consistent with the hypothesis that the New Deal had a reform component. Fleck (2001b) found that aggregate New Deal spending might have been negatively related to income per capita and Fleck (1999b, 2001a) found that relatively more relief jobs in 1937 and 1940 were distributed in lower wage areas. Of 21 tests of the hypothesis that the New Deal was designed to offset the severe income drop from 1929 to 1933, 19 found coefficients consistent with this idea, but in only half of those cases was the hypothesis of no effect rejected. Of 31 tests of the hypothesis that the New Deal was used to offset unemployment problems, 24 have the appropriate sign, but only 18 reject the hypothesis of no effect and in two cases the coefficient of the lagged effect is the wrong sign. Our sense of these results, taken as a whole, is that the record of the New Deal with respect to relief and recovery is mixed and that it had very little to do with reform. Table 2 shows how the econometric literature on the determinants of New Deal spending has evolved, as most papers have contributed by adding new variables to the analysis. Yet a closer look at the table shows that nearly all of the papers suffer from the omission of at least one key variable category. Wright (1974) added presidential politics to Reading's (1973) analysis. Once Anderson and Tollison (1991) mentioned the importance of Congress, nearly all scholars writing later have included some measure of congressional activity. Only Wallis (1984, 1987, and 1998), Couch and Shughart (1998; but only for the WPA), Fleck (1999b, 1999c, and 2001a), and Stromberg (2001) have sought to control for the important role that state governments played in determining the distribution of New Deal funds. Our primary goals in this paper are to extend the econometric New Deal literature in two directions: to move the level of analysis

from the state level to the county level and to examine the major New Deal programs individually.

III. An Intuitive Model of New Deal Spending

Consider a simplified portrayal of the problem faced by the federal administrators of a generic New Deal program, like a relief program. Congress, in consultation with the president, established a budget to provide grants to state and local governments to help them provide relief. The law contained very loose guidelines about how the monies were to be distributed. Roosevelt maintained in speeches that the administration's goal was to provide relief where it was needed. Spending money where people were most needy enhanced the president's re-election chances because constituents reward political responsiveness. On the other hand, political power can be fleeting; at the margin, the administrator confronted pressure to shift spending to swing states or to reward voters who defected from the Republicans in 1932. The administrator also faced pressures from congressmen who wanted their own constituents to benefit from federal largesse. Congressional influence had to be considered because Congress provided the funding for the program, wrote the funding formulas, and had broad oversight power over the New Deal administrator's activities. Special attention had to be paid to the demands of the members of key committees that directly determined the fate of the program. Further complicating our hypothetical administrator's job, many New Deal programs involved significant interaction with state and local politicians who faced their own set of political objectives and constraints. State and local governments were directly involved in the New Deal allocation process as they sometimes had to provide matching funds for grants. Moreover, they proposed projects for

federal funding and ultimately selected those individuals who would receive the relief locally. Thus, an aggressive state and local government would have been able to extract more New Deal funding, all else equal.

The scenario above focuses on the administration of a single program. Developing a theoretical model that incorporates all of these various pressures across multiple programs with contradictory goals is daunting.[8] We simplify the problem by considering the president, as head of the executive branch, as the maximizing agent, making choices over the entire range of programs, subject to constraints imposed by Congress, state and local governments, voters, and interest groups. The president's multivariate maximization problem was, in fact, a series of choices over each individual program. The exogenous variables in the president's decision-making included all of the factors over which he and the executive branch had no direct control, including the state of the economy, the pressures exerted by various interest groups, the limits imposed by congressional rules and oversight, and the attitudes of state governments. Since the president and his staff paid attention to all of the factors in administering the different programs, all of the exogenous factors should be included in the analysis of each of the individual programs. At the margin, each program was a substitute for another since a dollar more for unemployment relief, for example, meant a dollar less for agriculture. As a result, every exogenous variable belongs in the reduced form specification of each program.[9]

IV. The Estimation Equations

Previous scholars have typically estimated reduced-form equations with per capita New Deal spending (aggregated across programs) regressed on variables designed to capture the relief, recovery, and reform motives, presidential reelection strategies, congressional clout, and other variables that describe the economic structure of the geographic areas. Following this literature we start with the following basic equation:

$$ND_{ij} = \alpha_0 + Pop_{ij}\left(\beta_0 + \sum_{k=1}^{n}\beta_k X_{ijk} + \sum_{j=1}^{48}\beta_j b_j + \varepsilon_{ij}\right) \quad (1),$$

where ND_{ij} is total New Deal spending in county i from 1933 through 1939 (to keep the notation simpler, we suppress an index for programs). Pop_{ij} is the population in 1930 in county i, state j, X_{ijk} represents k different exogenous explanatory variables X_k indexed by county i and state j, and b_j represent state dummy variables. The term ε_{ij} is a stochastic error with mean zero and variance σ^2.

Wallis (1998) suggested that the federal government structured total New Deal spending such that each geographic area received a base amount of spending, plus a base amount of spending per person, plus additional spending per person based on economic, political, reform, recovery, or relief motives.[10] He argued that political decision-makers would have found it politically unpalatable to spend nothing in a state or county, so he structured his model so that each geographic unit was assumed to have received some base amount (α_0 in equation (1) above). Our equation assumes that the remainder of New Deal spending was distributed on a per capita basis. Each county is assumed to have received a base amount, β_0, per person, in addition to per capita amounts, β_k, based on the exogenous characteristics of the county. We also allow for differences in spending per person across each state.

The equation we estimate is determined by dividing equation (1) by population, creating per capita New Deal spending equation similar to the ones previously estimated in the literature:

$$PCND_{ij} = \alpha_0\frac{1}{Pop_{ij}} + \beta_0 + \sum_{k=1}^{n}\beta_k X_{ijk} + \sum_{j=1}^{48}\beta_j b_j + \varepsilon_{ij} \quad (2),$$

where $PCND_{ij}$ is per capita New Deal spending in county i, state j. The α_0 coefficient shows the baseline total spending on the program in all counties in the United States. The β_0 coefficient is the baseline spending associated with each person across all counties. Finally, the β_j coefficients represent the amounts of per capita spending unique to state j, relative to Connecticut (the excluded state). Since the specification is in per capita terms, heteroskedasticity should not be an issue.

Table 3 lists the explanatory variables and their summary statistics. The variables follow those used in the existing literature, with some additional variables designed to capture issues that have not

been fully addressed. The variables are sorted according to the hypotheses being tested and we provide a sketch of how to interpret the signs of the coefficients.

One of the central features of many of the New Deal spending and loan programs was that state and local governments had a significant impact on the extent of federal New Deal spending locally. Some programs, such as the WPA, the non-federal portions of the PWA, FERA, and the Social Security Administration, had distinct matching features, although it is not clear how tightly federal administrators adhered to these requirements.[11] Even if matching was not an explicit feature of a program, many of the spending programs were determined by the types of projects proposed and the applications filed by state and local governments. Thus, their willingness to expend the time and resources necessary to make the application, as well as to make sure that the application was of high quality, was an important determinant of whether or not the federal government expended funds. There is ample documentation that different states had vastly different attitudes toward the New Deal (Patterson 1967, Braemen, Bremner and Brody 1975, Abrams 1992, Collins 1992). To capture the different states' attitudes toward the New Deal, which were common to all counties within the state, we include a series of state dummy variables. These state dummy variables also control for other factors, particularly the nature of Senate representation. Wallis (1987 and 1998) points out that omission of such controls for the difference in state attitudes can lead to omitted variables problems that can cause the coefficients to be biased.

The variables measuring the support for Democratic presidential candidates and voter turnout in presidential elections help to control for differences in attitudes toward the New Deal at the county level. Roosevelt supporters might have been more willing to press for New Deal involvement locally. Finally, general political savvy and political activity can be measured by the percentage of adults casting presidential votes in 1932. This variable captures voting by both parties, so it might better be treated as a measure of political activism and interest in the political process generally. This in turn could lead to greater pressure for New Deal funds.

There is one final econometric point worth noting. We have sought to avoid problems of simultaneity bias by using economic variables from 1929 and 1930, before the New Deal was established.

The one variable where there could be a small problem with endogeneity is our measure of the growth rate in real per capita retail sales between 1929 and 1933. The 1933 value might be affected to some degree by some of the New Deal spending that occurred in the second half of 1933. However, since the vast majority of the spending for nearly every program came after 1933, we do not see this as a serious problem.[12]

V. Regression Results

Based on the coefficients from the regression equations, we have calculated elasticities for each New Deal program with respect to each variable. Appendix Tables 1 through 5 report all of the regression coefficients and t-statistics. The elasticities represent the percentage change in per capita funds associated with a one-percent increase in the respective variable's sample mean, holding all others constant. Asterisks denote the elasticities where the coefficient in the original regression was found to be statistically significantly different from zero in a two-tailed t-test at the 10 percent level. The elasticities for the relief, recovery, and reform variables are reported in Table 5, for the presidential variables in Table 6, and for the structural economic variables in Table 7.

V.1 Relief and Recovery

Economists analyzing the distribution of New Deal funds originally sought to test whether the Roosevelt administration's actions followed the relief, recovery, and reform mantra.[13] In this sub-section we focus on the relief and recovery hypothesis. Had the New Deal sought to promote relief and recovery of the depressed economy, we would expect more spending where unemployment in 1930 was higher and where the percentage of farm acreage with crop failures in 1929 was greater. We expect a negative relationship between the change in economic activity from 1929 to 1933 (as measured here by retail sales per capita) and New Deal spending.

The centerpieces of the Roosevelt administration's efforts to promote relief and recovery were the Federal Emergency Relief Administration (FERA) from 1933 through 1935, the Civil Works Administration (CWA) in the winter of 1933-34, the Works Progress Administration (WPA) from 1935 through 1939, and the public assistance programs developed under the Social Security Act of 1935 (SSAPA).[14] These programs distributed 62.7 percent of the non-repayable New Deal grants (see Table 1). The regression results indicate that each of the relief programs responded to economic hardships. Each program shows a positive and statistically significant relationship between the allocation of funds and the unemployment rate in 1930. The elasticities are 0.252 for the WPA, 0.105 for the FERA, 0.078 for the SSAPA programs, and 0.047 for the CWA. Similarly, for each program there is a negative relationship with the difference in log retail sales per capita from 1929 to 1933. The FERA elasticity is largest in magnitude at -0.238, followed by -0.068 for the CWA, while the negative effects are much smaller in size and not statistically significant for the WPA and SSAPA programs. Our findings generally reconfirm those of other studies summarized in Table 2 that suggest that the relief and recovery motives were important determinants of the allocation of New Deal spending.

An alternative avenue for the federal government to provide work for the unemployed and to stimulate a depressed economy were the public works programs, including the Public Works Administration (PWA) established in 1933, the Public Roads Administration (PRA) which built on prior federal highway programs, and the Public Buildings Administration (PBA). The PWA was originally established as part of the program to provide relief for the unemployed, but its chief administrator Harold Ickes focused on large-scale public works projects designed to have a lasting impact on the economy. This emphasis led to relatively long delays in the start of construction and, thus, in the hiring of the unemployed. In contrast, Harry Hopkins, the administrator of the FERA, CWA, and WPA, focused his attention on putting the unemployed back to work as quickly as possible. In the famous "Battle for Relief," Hopkins won the lion's share of the funding for his projects and the PWA's focus shifted away from unemployment relief toward the building of lasting infrastructure (Schlesinger, 1958, pp. 283-96). It is not clear that Ickes sought to promote recovery in the regions where the economy declined most. He

saw the PWA as stimulating the overall economy and not specific regional economies. In congressional hearings Ickes was asked whether the PWA focused on variations in unemployment when distributing projects to various areas. Ickes replied: "In a general way, we have that in the back of our heads. But if the purpose of this program is to give employment, to relieve unemployment, and to stimulate heavy industries, it does not matter a great deal whether you are building in California or New York" (quoted in J. K. Williams, 1968, p. 116 n.22).[15]

Total PWA activity combined two programs. Federal PWA programs were sponsored by federal agencies with strong central control over those programs. Non-federal PWA grants and loans were made to state and local governments. The impetus for these programs came from state and local governments.

Despite the professed limited attention paid to the unemployed, the PWA federal program appears to have been highly responsive to the unemployment rate in 1930. The unemployment elasticity for the federal PWA was the highest of any program studied at 0.693. The effect for PWA spending as a whole, however, was muted because the non-federal PWA grants were negatively related to the unemployment ratio in 1930 with an elasticity of -0.122. The regression results are also consistent with Ickes's relative indifference to recovery efforts in the hardest hit areas. The elasticity for the federal PWA program with respect to changes in log retail sales of 0.99 suggests that the federal program spent more funds in the areas that experienced the least damaging declines from 1929 to 1933. In sum, the PWA agency was a study in contrasts with respect to promoting relief and recovery.

The agencies least interested in relief and recovery were the PRA and PBA. The PRA was statutorily locked into a formula based on population and land size and Fleck (2001b) found that on a per capita basis state-level PRA spending was very highly correlated with land area (0.994). Our county-level analysis suggests that the PRA and the PBA largely ignored recovery and relief and may have even exacerbated cross-county economic differences. Both programs had a negative and statistically significant relationship with the unemployment ratio and a positive relationship with the growth in retail sales. In other words, the better an economy fared during the Depression, the more money it received for federal roads and buildings.

Farm programs were designed to promote higher incomes for farmers. We have data on the Agricultural Adjustment Administration's (AAA) payments to farmers to take acreage out of production, the Farm Credit Administration's (FCA) loans to farmers through the Land Bank Commissioner for crop loans and for debt relief, the Farm Security Administration's (FSA) mixture of loans and grants to financially troubled farmers, and the Rural Electrification Administration's (REA) loans to bring electricity to farms. Many of the farm programs display a negative and statistically significant relationship to the unemployment rate, although measured unemployment may have been more of an urban phenomenon during the period. All farm programs except the REA distributed funds to areas where the downturns were steepest as measured by the growth rate of retail sales from 1929 to 1933. The strongest negative elasticities of -0.392 and -0.223 were found for the FSA's grant and loan programs, respectively. This is not surprising; the FSA was specifically charged with aiding farmers in financial distress. The basic FSA programs were started under the relief-oriented FERA and the focus on relief apparently continued after the FSA was established. The FSA programs also distributed more funds where there was a higher rate of farm failures in 1929, although the elasticities are relatively low. The AAA payments and the FCA payments were also negatively related to the downturn from 1929 to 1933, but had small negative correlations with the rate of farm failures in 1929.

The final group of programs provided loans or insured mortgage loans. The largest of these was the Reconstruction Finance Corporation (RFC), which started under the Hoover administration, and loaned money to banks, industry, local governments, and provided funding for a variety of New Deal programs. The Home Owners' Loan Corporation (HOLC) provided direct lending to homeowners who were already at risk of defaulting on their own mortgages. The HOLC loaned money at more favorable terms for these at-risk borrowers. Finally, the Federal Housing Administration (FHA) insured private lenders against the default risk associated with making home improvement and mortgage loans.

The only loan and insurance program that appears related to relief and recovery is the HOLC, which had an elasticity of -0.059 for the growth rate of retail sales. The coefficients in the RFC analysis might well be biased in a positive direction with respect to the retail sales variable because increased RFC

lending in 1932 might have softened the downturn in many areas. In general, the loan programs were ones where the borrowers sought funding from the federal government and the rules of the lending program required that the agencies pay attention to the ability of their borrowers to repay the loans. Roosevelt and other administrators viewed repayment pragmatically. They worried about a series of loan defaults in the early stages of the New Deal that would have led to a public outcry, thus inhibiting their future ability to continue the programs or add new programs. The results from the analysis suggest that the emphasis on likely repayment of the loans largely offset any desire to loan more in counties with higher unemployment or where the economic downturn was deeper. The HOLC was focused on providing assistance to troubled mortgagees, but even it was careful to lend in cases where the chances of repayment were relatively higher. Had there been no focus on repayment, the elasticity with respect to the growth rate in retail sales would have been even more negative.

V.2 Reform and Redistribution

The New Deal push for reform had a variety of meanings, including the introduction of federal social insurance, changes in the organization of labor markets, and many legislative mandates that were national in scope and likely unrelated to the geographic distribution of New Deal funds. Following previous scholars we have included several variables in the analysis to assess the extent to which the New Deal was redistributive. If reform and redistribution were important factors in the allocation of New Deal funds, we would expect a negative relationship between New Deal spending and measures of a county's income level, which we proxy using retail sales per capita in 1929. County-level personal income data do not exist, but retail sales per capita is a reasonable alternative because the state-level correlation between the two variables (income and retail sales) was 0.86 in 1929. We expect a positive relationship between New Deal spending and the black percentage of the population and the percent illiterate in 1930, as both

groups tend to be in the lower tier of the income distribution, holding constant the mean level of income. Had the farm programs been redistributive, we expect a negative relationship between average farm size and spending on the farm programs. Finally, we include a measure of the upper tail of the income distribution – the ratio of tax returns in 1929 to population in 1930 – within each county. Income tax rates were common to the entire U.S. and less than 7 percent of households earned enough income to pay income taxes.[16] If the New Deal were redistributive, the tax return ratio should be inversely related to New Deal spending.

The studies that focus on aggregate New Deal spending have found almost no evidence that the New Deal was redistributive. This result may be a phenomenon of the aggregation across programs or across counties within states. By contrast, our analysis of the individual relief programs shows strong signs of a redistributive bent. Three of the four major relief programs have a negative and statistically significant relationship with per capita retail sales, with elasticities ranging from -0.135 for the FERA to -0.205 for the WPA. The CWA has a small negative elasticity that is statistically insignificant. All four also display negative relationships with the tax return ratio, although the elasticities are statistically significant for only the WPA and the Social Security programs. If we expand the discussion of relief to include the Farm Security Administration's relief programs, we find the anticipated strong negative elasticities for both retail sales in 1929 and tax returns. After combining the results of the relief and recovery variables with the reform variables, it appears that the programs specifically designed to provide relief actually promoted Roosevelt's three-R objectives. Again, it is difficult to say whether these objectives were fully realized, but the effects we find in the county-level data are much stronger than those seen in analyses using aggregated state data.

This positive record of income redistribution under the relief programs only partially extended to the black population. Despite federal officials' statements that the programs were nondiscriminatory, many of the programmatic decisions were made by state and local officials and there are claims that many of the decisions were discriminatory (Lieberman, 1998; Sterner, et. al., 1943). The CWA and the public assistance programs were positively and statistically significantly related to the percent black variable, but

the elasticities were 0.021 and 0.060, respectively. Meanwhile, the WPA showed a negative and statistically significant relationship with a small elasticity of -0.055. Finally, none of the relief programs spent more in areas with higher illiteracy.

In the aggregate New Deal statistics, the redistributive aspects of the relief programs are overshadowed by other New Deal programs. For example, the AAA payments to restrict production and Farm Credit Administration loans favored large farmers and high-income areas.[17] Both sets of programs had positive and statistically significant relationships with the tax return and per capita retail sales variables, with elasticities in the range of .036 to .194. The strongest relationships, however, are with the average farm size variable with high elasticities of 1.20 and 0.659 for the AAA and the FCA, respectively.[18] These findings are consistent with research that has found that the farm programs favored larger farmers often at the expense of non-landowning tenants and wage workers.[19]

Similarly, the New Deal loan programs favored high-income counties. If repayment were a concern, then the Roosevelt administration would have tended to lend money where income or the likelihood of economic progress was relatively greater. As a result, we see strong positive relationships between each of the loan programs and the retail sales variable. The elasticities range from a low of 0.238 for the HOLC mortgage lending to a high of 1.69 in the non-federal PWA loans. The FHA insurance program also displayed a positive and statistically significant elasticity of 0.28. Not only did these loan programs distribute more resources to counties with relatively higher average incomes, but also to those counties where there was a larger group in the upper portion of the income distribution. The FHA and nearly all of the loan programs had strong positive relationships with the tax return ratio, with elasticities ranging from 0.172 for the RFC to 0.864 for the U.S. Housing Authority. Public housing grants under the PWA (later taken over by the USHA) had very strong positive relationships with the high income measures.

The PWA and other public works programs had a mixed record with regard to income redistribution. Both the federal and non-federal grants programs for the PWA have positive relationships with 1929 retail sales, suggesting that they were not redistributive with respect to average income. On the

other hand, they have negative relationships with the tax returns ratio, which suggests that they were distributing away from the highest end of the income distribution. There is also evidence that the federal PWA program tried to help areas with larger black populations, possibly to counteract the lack of non-federal PWA activity in black areas. The elasticity for percent black was 0.44 for the federal PWA grant program and -0.503 for the non-federal PWA lending program.

Disaggregating spending by program uncovers the relief, recovery, and reform efforts of the New Deal hidden from many previous scholars because of the aggregate nature of their spending data. Relief programs were aimed at lower income areas with higher unemployment and a relatively larger economic downturn in the early 1930s. The farm programs promoted recovery, but were centered on high-income counties with larger farms. Meanwhile, the loan programs, concerned about the likelihood of repayment, distributed more funds to high-income counties and those not hit as hard by the Depression.

V.3 Political and Structural Economic Variables

Although we have focused on the high-minded goals of the New Deal, there are several key findings concerning the structural economic variables that deserve attention.[20] The coefficients of the economic variables are largely consistent with the findings of other economists and the historical literature on New Deal spending. The relief programs focused on non-farm areas, while the farm programs unsurprisingly targeted agricultural areas. Fleck (2001b) notes that a state's land mass was an important determinant of its New Deal distribution. When we look program by program, the elasticities show that the large effects Fleck found are primarily associated with two programs: the Public Roads Administration grants, which by statute were to be distributed via a formula based on population and land mass, and the PWA grants for projects proposed by federal agencies.

Scholars have suggested a variety of ways to test whether New Deal expenditures were used for naked political purposes. Wright (1974) developed a "political productivity index" at the state level that took into account the long-term support for Democratic presidential candidates between 1896 and 1932, as well as the volatility of that support. Anderson and Tollison (1991) and Couch and Shughart (1998) used Roosevelt's share of the 1932 vote, which is a reasonable specification on the grounds that Roosevelt was likely to reward his supporters and that Roosevelt was seeking more than just a 51 percent victory so that he could establish a mandate. Fleck (2001a) developed a model of swing voting in several layers of government and found swing voters to be important determinants of the distribution of relief jobs. Rhode, Snyder and Strumpf (2001), in their study of military spending during World War II, argue that the focus should be on the swing vote in a median voter model, so they use the gap between the Democratic and Republican votes.

We take a neutral stance on whether the appropriate standard is the median-voter model or the "mandate model," so include a variety of political variables spanning both views. If Roosevelt sought to reward long-time Democratic supporters, we expect more spending in areas where the mean Democratic presidential vote share from 1896 through 1928 was relatively higher.[21] Had Roosevelt sought to influence swing voters, we expect more per capita spending in counties where the standard deviation of the Democratic vote share from 1896 to 1932 was higher. Roosevelt might have targeted spending in counties based on the difference between his vote share in 1932 and the long-term Democratic vote share from 1896 to 1928. This measure would have targeted areas where voters actually did switch to support Roosevelt in the 1932 election, a group likely to switch again.[22] Fleck (1999c) shows that a key determinant of FERA spending was voter turnout, which we measure as the number of presidential votes cast in 1932 divided by the population in 1930. This variable measures the extent to which the populace was politically active, which, in turn, would suggest their greater likelihood of successfully lobbying for New Deal support.

From the expansive set of New Deal regressions, two general statements describe the impact of presidential politics. First, in nearly every program at least one political variable affected the distribution

of funds in the expected direction. Second, no single presidential political variable exerts a strong influence in every program or, for that matter, in a majority of programs. There is certainly potential for multicollinearity in these measures, but closer examination shows that each variable is measuring a different aspect of presidential politics. Since we are sensitive to the potential for omitted variables bias, we chose to include them all, such that the regressions provide a simultaneous test of all the potential effects.

The programs most responsive to long-term Democratic support (as measured by mean voting from 1896 to 1928) were the AAA, the REA, and most of the public works programs. In the case of the public works programs, the PWA programs, and the PBA all have elasticities ranging from 0.22 to 1.28, but only the PBA coefficient is statistically significant.

Long-term Democratic supporters were less likely to determine elections than swing voters, however. The swing voters most likely to stay with Roosevelt in 1936 were the ones who swung to Roosevelt in the 1932 election (as measured by the vote for Roosevelt in 1932 minus the mean Democratic vote, 1896-1928). The programs that were most responsive to the Roosevelt swing were the FERA, the WPA, the PRA, the FSA grants, and the REA. The PRA's 0.188 elasticity with respect to the Roosevelt swing vote, as well as the 0.654 elasticity with respect to voter turnout, suggest that there was room within the road-allocation formula to accommodate presidential reelection goals.

Holding constant the Roosevelt swing vote, the standard deviation of votes from 1896 to 1932 measures deeper-seated volatility among a county's voters. The programs most responsive to this measure include the PWA federal and non-federal programs, the FCA loan programs, the FSA grant programs, and the U.S. Housing Administration programs. All have elasticities higher than 0.14 and the PWA federal program elasticity is extremely large at 2.53.

The political measure that seems to have an impact on the most programs is the measure of voter turnout. The variable not only reflects interest in presidential politics, but also interest in the political process more generally. Such localized political interest and savvy might have been associated with greater pressure by the state and local governments on the federal government to obtain more funding.

Given the way nearly all of the programs were structured – state and local governments applied for grants and loans – we would expect state and local governments to have played an important role in the overall allocation of New Deal funds. The programs with elasticities above 0.10 included the CWA, SSA public assistance programs, the public works programs at both the federal and non-federal levels, the PRA, the FCA loans, the RFC, the FSA loans, the REA loans, and the FHA. Most of the coefficients on which the elasticities are based are also statistically significant.

The public works programs deserve slightly more discussion on this political dimension. The PWA developed a reputation for focusing on the long-term value of projects, avoiding scandal, and making decisions without regard to politics. In Senate hearings before the Committee on Appropriations concerning the 1935 allocations for the PWA, Senators Townsend and Chairman Glass, an avowed opponent of federal subsidies, each declared that they thought Ickes was free of politics when distributing PWA funds (J. K. Williams, 1968, p. 128). Yet, biographers note that Ickes served Roosevelt faithfully in stump speeches leading up to the 1936 election (Clarke, 1996). The results of the analysis suggest that the federal PWA program, a program over which the Roosevelt administration exercised direct control, was highly sensitive to political interests. The elasticities on each of the political variables are among the highest that we calculated, although not all are precisely estimated. Part of the PWA's reputation for being above politics might have come from looking at the combined spending on the federal and state/local programs. Given that the state and local PWA project selections were driven more from the bottom up, their impact would have muted the effects of the federal programs. In fact, the elasticity for the Roosevelt swing vote was negative for the non-federal PWA programs and the other elasticities were much smaller.

VI. Conclusions

Did the New Deal indeed promote relief, recovery, and reform? The answer largely depends on the program. The major relief programs appear to have been responsive to the ideals of the three Rs.

Measures of unemployment, the depth of the depression, and proxies for income consistently affected allocations for relief. Relief programs were not used exclusively for high-minded objectives, political factors were important, but politics seems to have mattered more in the agricultural and public works programs than in the relief programs. Whether the magnitudes of the elasticities with respect to relief and recovery are "enough" to say that the programs were adhering to the three-R mantra is a normative question that will always depend on the eye of the beholder.

Many other New Deal programs display only limited relationships to the relief, recovery, and reform motives. Every loan and housing program distributed more funds in areas with higher levels of per capita retail sales and a higher percentage of households rich enough to pay income taxes. The farm programs typically distributed relatively more money in areas with larger farms and, aside from the FSA, distributed more money to areas with higher average incomes and with a higher share of wealthier citizens. The public works programs also tended to be more generous to areas with higher average retail sales per person. Most of these programs were designed from the start to require state, local, or even private investment before funding could be assured. Most of the loans were expected to be repaid, farmers had to have enough land to take some out of production before the AAA stepped in, and the non-federal public works programs required significant local sponsorship. To join these programs, communities had to have sufficient resources to meet the financial requirements of the program, hence, the strong relationships between program spending and income.

The New Deal was designed to provide something for everyone. The Roosevelt administration targeted specific programs to the needs of particular groups. The regression results show that relief programs clearly benefited the unemployed in urban areas and the AAA aided larger farmers. Geographic areas with larger middle and upper income classes, many of whom also experienced substantial problems during the Depression, received more loans from the RFC and the PWA. Many people with the resources to own homes benefited from HOLC loans and FHA insurance of mortgages. The county-level information highlights the targeted nature of the New Deal's efforts.

There is no doubt that politics was important. At least one of the presidential political variables had an economically and statistically significant impact on nearly every program. Even the Public Works Administration, which was famous for its alleged nonpartisanship, appears to have distributed funds for federally sponsored projects with the presidential elections in mind. Part of the PWA's reputation derived from the funding of non-federal projects, which were often the result of choices made by state and local jurisdictions.

In the final analysis a large fraction of the New Deal money that was spent followed Roosevelt's three-R mandate, but politics was important too. The New Deal's high-minded agenda was not only the result of a focus on public service but also a response to the demands of the populace in the heart of a Great Depression. Roosevelt, Hopkins, Ickes, and the other administrators of the New Deal were savvy politicians who understood the problems their constituents faced. Winning reelection required more than spending extra funds in certain key swing areas, rewarding Democratic supporters, or spending where people turned out more for Roosevelt. To please their nationwide constituency, they had to promote relief and recovery at the very least (redistribution is trickier because it often goes to people who are less likely to vote). They established a plethora of programs, each with a specific problem to solve. Thus, for those concerned with unemployment, Roosevelt and Hopkins could point to the FERA, CWA, and WPA. To those concerned with farm problems, they pointed to the AAA and the FCA. It is important to look at the range of programs that were offered for evidence of Roosevelt's political motivation because within any specific program his administrators had only limited political leeway. Had the largest relief grants gone to the areas with the lowest unemployment, for example, there might have been a scandal sufficient to stymie their reelection hopes. It was good politics to deliver on the high-minded goals, just as it was good politics to spend more money at the margin, everything else constant, in areas that were key to the reelection effort.

DATA APPENDIX

New Deal spending information is from the U.S. Office of Government Reports (1940). Table 1 shows the total amounts from March 1933 through June 1939 distributed by the various programs. Retail sales information from 1933 is from U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce (1936). The 1929 retail sales information is from Historical, Demographic, Economic, and Social Data: The United States, 1790-1970, ICPSR tape number 0003, as corrected by Michael Haines. The population figures used to create our per capita estimates for 1929 and 1933 retail spending were calculated using linear interpolations of the 1930 and 1940 populations. We calculated 1929 population as 1930 minus the average annual change in population between 1930 and 1940; we did not use trends from 1920 to 1930 due to changes in county boundaries between 1920 and 1930. The percent black, percent urban, percent of a county's land in farms, inverse of population, area in square miles, unemployed as a percent of the gainfully employed, average farm size, and percent of acres with crop failure are from the 1930 files in ICPSR tape 0003 as corrected by Michael Haines. For 1930 we used the illiteracy rate for people aged 10 and above. The tax return information comes from U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce (1932).

The mean Democratic share of the presidential vote from 1896-1928, the percent voting for Roosevelt in 1932 minus the mean Democratic share from 1896 to 1928, the standard deviation of the Democratic share of the presidential vote from 1896 to 1932, and the percent of adults voting in 1932 were all calculated using information from ICPSR's United States Historical Election Returns, 1824-1968 (ICPSR tape number 0001). The variables measuring House tenure and representation on House committees between 1933 and 1938 are from U.S. Congress, Official Congressional Directory, for the 73rd Congress 1st session.

The data set consists of 3,060 counties and county/city combinations in the United States. The New Deal program information was reported for some combined counties. For example, the New Deal information was reported for all of New York City. Thus, in New York state, Bronx, Kings, New York, Queens, and Richmond counties were combined into New York City. Similar situations developed in other states. In Missouri, St. Louis City and County were combined. In Virginia we combined the following districts that were reported separately in the Census, but together in the New Deal data: Albemarle county and Charlottesville city; Allegheny county and Clifton Forge city; Augusta county and Staunton city; Campbell county and Lynchburg city; Dinwiddie county and Petersburg city; Elizabeth City county and Hampton city; Frederick county and Winchester city; Henrico county and Richmond city; Henry county and Martinsville city; James City county and Williamsburg city; Montgomery county and Radford city; Nansemond county and Suffolk city; Norfolk county with Norfolk city, South Norfolk city; and Portsmouth city; Pittsylvania county and Danville city; Prince George county and Hopewell city; Roanoke county and Roanoke city; Rockbridge county and Buena Vista city; Rockingham county and Harrisonburg city; Spotsylvania county and Fredericksburg city; Warwick county and Newport News city; Washington county and Bristol city; Arlington county and Alexandria city. A small number of counties were dropped from the sample due to missing values for the variables above.

FOOTNOTES

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Table 1

Total Federal Grants, Loans, and Value of Mortgages Insured, March 1933 – June 1939, by Program

NON-REPAYABLE GRANTS:	Grant Dollars	% of Grants
Agricultural Adjustment Adm. (AAA)	$1,981,801,905	12.1
Farm Security Adm. (FSA) Grants	93,408,281	0.6
U.S. Housing Authority (USHA)	127,206,671	0.8
Public Building Adm. (PBA) Federal Buildings	174,228,825	1.1
Public Roads Adm. (PRA)	1,556,290,368	9.5
Public Works Adm. (PWA) Federal Projects	798,501,411	4.9
Public Works Adm. (PWA) Non-Federal Projects	1,367,347,520	8.4
Civil Works Adm. (CWA)	757,172,702	4.6
Federal Emergency Relief Adm. (FERA)	2,654,860,349	16.3
Social Security Adm. Public Assistance (SSAPA)	596,010,054	3.6
Works Progress Adm. (WPA)	6,222,385,662	38.1
Total Grants	16,329,213,748	100.0
LOANS:	**Loan Dollars**	**% of Loans**
Farm Credit Adm. (FCA) Loans	$1,257,491,136	12.0
Farm Security Adm. (FSA) Loans	427,932,675	4.1
Rural Electrification Adm. (REA) Loans	226,247,292	2.2
Home Owners Loan Corporation (HOLC)	3,077,258,287	29.5
U.S. Housing Authority (USHA) Loans	449,854,991	4.3
Disaster Loan Corp. (DLC)	$10,504,466	0.1
Reconstruction Finance Corp. (RFC)	4,425,940,596	42.4
Public Work Adm. (PWA) Non-Federal Program Loans	567,616,807	5.4
Total Loans	10,442,846,250	100.0
INSURANCE:		
Federal Housing Adm. (FHA) Insurance: Value of Loans Insured	$2,707,560,412	

Note: The RFC loans began in February 1932.

Source: U.S. Office of Government Reports (1940).

Table 2

Summary of Prior Research Analyzing the Impact of Relief, Recovery, and Reform Motives on Aggregate New Deal Spending

Research	Dependent Variable	Cross-section (CS) or Panel	Consistent with Relief and Recovery?				Consistent with Reform?						Controls for Politics		
			Income drop	Employ-ment[a]	Lag-ged emp.	Relief cases	Income per capita	% tenant	% black	farm value	Media n educ.	Mfg. Wage	Pres.	Cong.	State and local
AGGREGATE NEW DEAL SPENDING ACROSS STATES:															
Reading 1973	Grants per capita, 33-39	CS	Yes	yes			no	maybe	no				no	no	no
Reading 1973	Grants, loans, and insurance per capita, 33-39	CS	Yes	maybe			no	maybe	no				no	no	no
Wright 1974	Grants per capita, 33-39	CS	Maybe	no		maybe							yes	no	no
Wallis 1984	Annual grants per capita, 37-40	Panel	Maybe	no		yes							yes	no	yes
Wallis 1987	Annual grants per capita, 33-39	Panel	Maybe	yes			no						yes	no	yes
Anderson & Tollison 1991	Grants, loans, and insurance per capita, 33-	CS	Maybe	maybe[b]						no			yes	yes	no

	39											
Couch & Shughart 1998	Annual grants and loans per capita, 33-39	Panel	Yes	maybe	no				no		yes	yes	no
Couch & Shughart 1998	Annual loans per capita, 33-39	Panel	Yes	no	no				no		yes	yes	no
Couch & Shughart 1998	Annual grants per capita, 33-39	Panel	Yes	yes	no				no		yes	yes	no
Wallis 1998	Grants per capita, 33-39	CS	Maybe	yes		maybe			no		yes	yes	no
Wallis, 1998	Annual grants per capita, 33-39	Panel	Yes	maybe			maybe		no		yes	yes	yes
Fleck 1999a	Grants per capita, 33-39	CS	No	no							yes	yes	no
Fleck 2001b	Grants per capita, 33-39	CS	Yes				yes				yes	no	no
Wallis 2001	Grants per capita, 33-39	CS	Maybe				maybe				yes	no	no
AGGREGATE NEW DEAL SPENDING ACROSS ALABAMA COUNTIES:													
Couch & Williams 1999	Spending per capita, 33-39	CS	Maybe	yes			no	no			no	yes	yes
NEW DEAL SPENDING OR HIRING ON SPECIFIC PROGRAMS:													
Wallis 1984	Annual Relief Grants	State Panel	Maybe	Yes							yes	no	yes
Couch & Shughart 1998	CWA Grants per capita, 33-34	State CS	yes [d]	Maybe			maybe	no			no	yes	No

Couch & Shughart 1998	FERA Expenditures per capita, 33-39	State Panel	Yes	No		maybe	no			yes	yes	No
Fleck 1999c	FERA spending per capita, 33-35	Southern mfg. counties, CS		Yes			maybe	no	maybe	yes	no	yes
Fleck 2001a	FERA spending, 33-35	Mfg. Counties CS		yes			yes	yes	no	no	yes	no	yes
Stromberg, 2001	FERA spending per capita, 33-35	Counties CS	Maybe[e]	yes		yes[e]	maybe	yes	no	maybe	yes	no	yes
Couch & Shughart 1998	WPA expenditures per capita	State CS				maybe	no			no	yes	yes
Wright 1974	Work Relief Jobs per capita in 36	State CS		Yes	yes					yes	no	No
Fleck 1999b	Relief Jobs, 37	Mfg. Counties, CS		Yes [d]			no	maybe	yes	yes	no	yes
Fleck 1999b	Relief Jobs, 40	Mfg. Counties, CS		Yes? [d]			no	maybe	yes	yes	no	yes
Fleck 2001a	Relief Jobs, 37	Mfg. Counties, CS		Yes			no	yes	maybe	no	yes	no	yes
Fleck 2001a	Relief Jobs, 40	Mfg. Counties, Cs		Yes			no	yes	maybe	no	yes	no	yes

Mason 2002	Reconstruction Finance Corp. Bank Loans	State CS	no		yes[f]						yes	yes	no
Wallis 1984	Annual Highway grants, 37-40	State Panel	Maybe	Yes							yes	no	yes
Anderson & Tollison 1991	Highway spending per capita, 33-39	State CS	Maybe or no	Maybe [b]					No		yes	yes	no
Couch & Shughart 1998	Agricultural Spending per farm, 33-39	State Panel					mayb e	no	No		yes	yes	no
Couch, Atkinson, & Wells 1999	Agricultural Spending per farmer, 33-39	Alabam a counties, CS	No			no			No		yes	yes	yes

[a] In the cross-sectional analyses, scholars have typical used a measure of unemployment from either 1930, 1937, or 1940. In the panels, scholars have tended to use an index of employment for the states developed by Wallis (1989).

[b]Anderson and Tollison estimate several similar specifications. For New Deal spending the coefficients for the unemployment rate variables were positive in all cases, but statistically significant in only half of the specifications. For highway spending the coefficients of the unemployment rates were positive in all cases, but statistically significant in only one.

[c] The income drop variable here was the change in the number of business establishments.

[d] Fleck (1999b) estimated separate coefficients for 1930 male and female unemployment per capita and male and female layoffs per capita when he looked at the distribution of 1937 and 1940 relief jobs. The "yes" for the 1937 jobs in the table refers to positive and statistically significant coefficients for both male unemployment and male layoffs. The "yes?" in 1940 reflects positive coefficients for both male unemployment and male layoffs, although only the male unemployment coefficient was statistically significant. For both 1937 and 1940 relief jobs, the female 1930 unemployment coefficient is negative, while the female 1930 layoff coefficient is positive but not statistically significant.

[e] Stromberg (2001) used bank deposits as a proxy for income change and the income drop, so we included those results under the income columns. The results in the median education column refer to percent illiterate and the results in the manufacturing wage column refer to the retail wage.

[f] Mason (2002) had a variable for failed banks, which we treat in this table as the equivalent to relief cases.

Notes: In the various cells “yes” means that the estimated coefficient had a sign consistent with relief, recovery, or reform and was statistically significant at the 10 percent level in a two-tailed test. “Maybe” indicates that the coefficient had the correct sign, but was not statistically significant at the 10 percent level. Finally, “no” suggests that the coefficient had the wrong sign to be consistent with relief, recovery, or reform. Many of the papers contained multiple specifications. We chose the specifications that included all of the variables that were discussed as potentially important by the authors to avoid problems with omitted variable bias. A blank cell indicates that the variable was not included in the study.

The relief and recovery variables include measures of unemployment (or employment), the number of relief cases, and the fall in per capita income from 1929 to 1932 or 1933. There has been some confusion on the change in per capita income variables. Some scholars referred to an income drop and thus would take a negative growth rate and make it a positive number, such that a positive coefficient would be consistent with the recovery motive. Others used the change in income, such that a negative coefficient would imply the recovery motive. In some cases people used the terms interchangeably and we tried to use the reported mean of the variable to tell the difference. Where the mean was not reported, we based our decision on the discussion of the variable in the text.

The reform variables include the level of income per capita, percent of tenant farms, percent black, average value on farms, median education, and the manufacturing wage.

The estimation procedures used have been ordinary least squares except in the following cases: Wallis (1984 and 1987) used two-stage and three-stage least squares;

Fleck (1999b) used two-stage least squares; and Couch and Shughart used OLS estimates but included year dummies for their estimations of all New Deal spending, New Deal grants, New Deal loans, agricultural spending, and FERA spending.

Table 3

Summary Statistics and Interpretations of Independent Variables Included in the Regression Analysis of Each New Deal Program

Variables	Sign and meaning of Coefficients	Mean	Std. Dev.
Structural Economic:			
Inverse of population, 1930	Positive suggests program provided base level of spending	8.90	14.0
Area in square miles per capita, 1930	Positive suggests rewarding large areas with less population density	0.10	0.27
Percent of land in farms, 1929	Positive suggests focused on farm areas	64.5	27.3
Percent Urban, 1930	Positive suggests focused on urban areas	21.0	24.8
Reform Motive:			
Tax returns filed per capita, 1929	Negative suggests redistribution	1.41	1.32
Retail Sales per capita, 1929	Negative suggests redistribution	541.2	269.8
Percent black, 1930	Positive suggests redistribution	11.1	18.4
Percent illiterate, 1930	Positive suggests redistribution	5.41	5.83
Relief and Recovery Motives:			
Difference in log retail sales per capita, 1933-1929	Negative suggests promoted relief and recovery	-0.47	0.24
Unemployed as percent of gainfully employed, 1930	Positive suggests promoted relief and recovery	2.79	2.20
Percent of farm acres with crop failures, 1929	Positive suggests promoted relief and recovery	3.19	4.07
Average farm size, 1929	Positive suggests larger farms benefited disproportionately	82.3	88.6
Political Influence:			
Mean Democratic presidential vote percentage, 1896-1928	Positive suggests rewarded long-term Democratic voters	49.4	18.5
Percent voting for Roosevelt in 1932 minus above mean from 1896-1928	Positive suggests rewarded voters who swung to Roosevelt in 1932	18.8	10.3
Standard deviation of presidential voting percentage for Democrats, 1896-1932	Positive suggests focused on long-term volatility of swing voters	11.7	4.90
Votes cast in 1932 presidential election / 1930 population	Positive suggests rewarded voter activism	31.6	15.0
Average months of consecutive tenure in the House during period of program	Positive suggests House members with more seniority brought more dollars	51.9	64.6
House committee assignments during period of program	Positive suggests congressional clout increased funds		
Vector of State Dummies	Controls for unmeasured differences across states common to the counties within each state, including Senate representation		

Note: There are 3,060 observations.

Sources: See Data Appendix.

Table 4

Elasticities of Relief, Recovery, and Reform Variables

	Relief and Recovery					Redistribution and Reform				
Programs	**Change in log retail sales per capita 1929-1933**	**% unemp. 1930**	**% farm failures, 1929**	**Tax returns per capita 1929**	**Retail sales per capita 1929**	**% black, 1930**	**% illiterate 1930**	**Avg. farm size**		
RELIEF										
FERA Grants	-0.238 *	0.105 *	0.020 *	-0.009	-0.135 *	-0.014	-0.042 *	0.098 *		
CWA Grants	-0.068 *	0.047 *	-0.007	0.004	-0.034	0.021 *	-0.011	0.062 *		
WPA Grants	-0.021	0.252 *	0.011	-0.079 *	-0.205 *	-0.055 *	-0.042 *	-0.023		
SSA Public Assistance Grants	-0.029	0.078 *	0.009	-0.167 *	-0.146 *	0.060 *	-0.067 *	0.010		
PUBLIC WORKS										
Federal PWA Grants	0.990 *	0.693 *	-0.124	-0.641 *	0.856	0.444 *	-0.237	-0.376		
Nonfederal PWA Grants	0.110	-0.122	-0.011	-0.064	0.831 *	-0.075	0.096	-0.164 *		
Nonfederal PWA Loans	-0.380	-0.137	-0.132	-0.471	1.686 *	-0.503 *	0.545 *	-0.248		
PRA Grants	0.121 *	-0.025	-0.057 *	-0.026	0.251 *	0.058 *	0.032	-0.175 *		
PBA Grants	0.329 *	-0.143 *	0.030	0.018	1.056 *	-0.110 *	0.050	-0.046		
FARM PROGRAMS										
AAA Grants	-0.117 *	-0.131 *	-0.039 *	0.055	0.194 *	0.017	-0.025	1.204 *		
FCA Loans	-0.147 *	-0.108 *	-0.026 *	0.036	0.090	-0.014	-0.109 *	0.659 *		
FSA Grants	-0.392 *	-0.078	0.059 *	-0.239 *	-0.816 *	-0.004	-0.071	0.354 *		
FSA Loans	-0.223 *	-0.149 *	0.031 *	-0.293 *	-0.179 *	0.039 *	-0.117 *	0.309 *		
REA Loans	0.203 *	-0.007	-0.027	-0.015	0.044	-0.007	-0.025	-0.058		

RFC, HOUSING LOANS, AND INSURANCE																			
RFC Loans	0.009		-0.039		0.015		0.172	*	0.749	*	-0.034		0.097		0.056				
HOLC Loans	-0.059		0.046	*	-0.015		0.556	*	0.238	*	-0.021		-0.027		0.024				
FHA Loans Insured	0.189	*	-0.030		-0.019		0.546	*	0.280	*	0.026		-0.073		-0.191	*			
USHA Loan Contracts	0.354		0.099		0.095		0.864	*	1.040	*	0.010		-0.466	*	-0.089				
PWA/USHA Grants	0.342		-0.040		0.085		1.589	*	2.221	*	0.557	*	-0.645	*	-0.437				
AGGREGATES																			
Total Grants	0.001		0.058	*	-0.021	*	-0.060	*	0.120	*	0.020		-0.027		0.303	*			
Relief Grants	-0.083	*	0.179	*	0.012		-0.060	*	-0.165	*	-0.027	*	-0.041	*	0.019				
Public Works Grants	0.286	*	0.088		-0.059	*	-0.147	*	0.494	*	0.101	*	-0.005		-0.208	*			
Total Loans	-0.094	*	-0.067	*	-0.014		0.079	*	0.338	*	-0.042	*	-0.009		0.287	*			

* = coefficient upon which the elasticity is based is statistically significant at the 10 percent level, or better, in a two-tailed test.

Notes: The sample size is 3,060 counties. The elasticities are based on the sample means and coefficients from regressions with all of the variables listed in Table 3 included as independent variables. Each elasticity shows the percentage change in expenditures in each program associated with a one percent increase in the variable in each column, holding all other variables constant. The coefficients and t-statistics are reported in Appendix Tables 1 through 5. The US Housing Authority grants and Disaster Loan Corporation were small programs that were focused on a relatively small number of places, so we did not include them. The USHA had several relatively large elasticities that were driven by a very small mean value.

Sources: See Data Appendix.

Table 5

Elasticities for Presidential Political Variables and Tenure in the House

Programs	Mean Demo. % for Pres. 1896-1928		Roosevelt swing		Std. dev. Demo. % for Pres. 1896-1932		Presidential votes 1932 divided by population 1930		Average tenure in House, 1933	
RELIEF										
FERA Grants	0.012		0.209	*	-0.104	*	0.071		0.011	
CWA Grants	-0.026		0.064	*	-0.074	*	0.375	*	-0.002	
WPA Grants	0.005		0.165	*	-0.234	*	-0.050		-0.007	
SSA Pub. Asst. Grants	0.036		0.016		-0.062		0.719	*	0.011	
PUBLIC WORKS										
Federal PWA Grants	0.708		0.997		2.526	*	8.417	*	0.019	
Nonfederal PWA Grants	0.220		-0.292	*	0.276		0.430		-0.060	
Nonfederal PWA Loans	1.280		-0.302		0.146		0.792		-0.187	
PRA Grants	0.094		0.188	*	-0.170	*	0.654	*	0.003	
PBA Grants	0.772	*	-0.001		-0.102		0.105		-0.022	
FARM PROGRAMS										
AAA Grants	0.262	*	0.269	*	-0.085		0.096		0.047	*
FCA Loans	-0.009		0.046		0.227	*	0.191	*	0.017	
FSA Grants	0.007		0.361	*	0.283	*	-0.449	*	-0.001	
FSA Loans	0.100		0.013		0.090		0.139		-0.041	*
REA Loans	0.922	*	0.453	*	-0.149		0.908	*	0.035	
RFC, HOUSING LOANS, AND INSURANCE										
RFC Loans	-0.108		-0.107		0.206		0.216		0.004	
HOLC Loans	-0.180	*	-0.045		-0.071		-0.327	*	-0.011	
FHA Loans Insured	-0.209		-0.103		0.143		0.299		-0.056	*
USHA Loan Contracts	0.074		0.128		0.483		-1.408	*	0.009	
PWA/USHA Grants	-0.063		0.737		0.477		-0.738		0.071	
AGGREGATES										

Total Grants	0.140	*	0.226	*	0.016		0.580	*	0.009
Relief Grants	0.007		0.154	*	-0.170	*	0.088		0.000
Public Works Grants	0.248		0.242	*	0.420	*	2.045	*	-0.007
Total Loans	0.090		-0.001		0.139	*	0.183	*	-0.008

* = coefficient upon which the elasticity is based is statistically significant at the 10 percent level, or better, in a two-tailed test.

Notes: The sample size is 3,060 counties. The elasticities are based on the sample means and coefficients from regressions with all of the variables listed in Table 3 included as independent variables. Each elasticity shows the percentage change in expenditures in each program associated with a one percent increase in the variable in each column, holding all other variables constant. The coefficients and t-statistics are reported in Appendix Tables 1 through 5.

Sources: See Data Appendix.

Table 6

Elasticities for Structural Economic Variables

Programs	Inverse population		Square miles per capita		% urban 1930		% land in farms, 1929	
RELIEF								
FERA Grants	0.023	*	0.008		0.095	*	-0.564	*
CWA Grants	0.058	*	-0.005		0.072	*	-0.449	*
WPA Grants	-0.018		-0.020	*	0.109	*	-0.594	*
SSA Pub. Asst. Grants	0.022	*	0.002		0.019		-0.194	*
PUBLIC WORKS								
Federal PWA Grants	-0.971	*	0.822	*	0.071		-0.272	
Nonfederal PWA Grants	-0.005		-0.010		0.073		-0.010	
Nonfederal PWA Loans	-0.071		0.044		0.076		-0.501	
PRA Grants	0.335	*	0.252	*	-0.030		-0.067	
PBA Grants	-0.117	*	0.023		-0.006		-0.598	*
FARM PROGRAMS								
AAA Grants	0.056	*	-0.050	*	-0.193	*	-0.113	*
FCA Loans	0.054	*	0.027	*	-0.189	*	0.172	*
FSA Grants	0.021		0.000		0.095	*	-0.328	*
FSA Loans	0.006		0.003		-0.051	*	-0.073	
REA Loans	-0.026		-0.027		-0.274	*	0.431	*
RFC, HOUSING LOANS, AND INSURANCE								
RFC Loans	0.034		-0.049	*	0.203	*	-0.424	*
HOLC Loans	-0.006		-0.030	*	0.368	*	-0.168	*
FHA Loans Insured	0.049	*	-0.072	*	0.241	*	-0.164	
USHA Loan Contracts	0.082		0.034		1.323	*	-1.737	*
PWA/USHA Grants	0.165		0.082		0.793	*	-0.926	
AGGREGATES								
Total Grants	0.024	*	0.067	*	-0.004		-0.278	*
Relief Grants	0.003		-0.010		0.094	*	-0.538	*

Public Works Grants	0.016		0.302	*	0.009	-0.106
Total Loans	0.024	*	-0.004		0.020	-0.083

* = coefficient upon which the elasticity is based is statistically significant at the 10 percent level, or better, in a two-tailed test.

Notes: The sample size is 3,060 counties. The elasticities are based on the sample means and coefficients from regressions with all of the variables listed in Table 3 included as independent variables. Each elasticity shows the percentage change in expenditures in each program associated with a one percent increase in the variable in each column, holding all other variables constant. The coefficients and t-statistics are reported in Appendix Tables 1 through 5.

Sources: See Data Appendix.

Appendix Table 1

OLS Regression Results for Relief Programs

	FERA Grants		**CWA Grants**		**WPA Grants**		**SSAPA Grants**	
	Coeff.	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.
Intercept	**11.1134**	2.27	**2.5133**	2.08	**50.1770**	4.10	**3.8958**	2.82
Inverse Population	**0.0421**	1.94	**0.0392**	7.33	**-0.0704**	-1.30	**0.0132**	2.16
Square miles per capita	**1.2293**	0.96	**-0.2713**	-0.85	**-6.9397**	-2.15	**0.1125**	0.31
% Urban	**0.0743**	4.80	**0.0208**	5.45	**0.1815**	4.69	**0.0049**	1.13
% Land on Farms	**-0.1433**	-11.74	**-0.0420**	-13.92	**-0.3224**	-10.54	**-0.0163**	-4.71
Tax returns per capita	**-0.1019**	-0.30	**0.0180**	0.22	**-1.9694**	-2.34	**-0.6399**	-6.75
Retail Sales per capita, 1929	**-0.0041**	-2.28	**-0.0004**	-0.86	**-0.0133**	-2.95	**-0.0015**	-2.88
% Black	**-0.0208**	-0.90	**0.0116**	2.02	**-0.1723**	-2.96	**0.0293**	4.45
% Illiterate	**-0.1262**	-1.97	**-0.0119**	-0.75	**-0.2717**	-1.69	**-0.0671**	-3.70
Growth retail sales per cap., 1929-33	**-8.2329**	-7.40	**-0.8642**	-3.15	**-1.5523**	-0.56	**-0.3316**	-1.05
Unemployment rate	**0.6167**	4.44	**0.1012**	2.95	**3.1618**	9.09	**0.1507**	3.84
% Farm failures	**0.1031**	1.74	**-0.0140**	-0.96	**0.1233**	0.83	**0.0150**	0.89
Average farm Size	**0.0196**	4.84	**0.0046**	4.57	**-0.0100**	-0.99	**0.0006**	0.56
Mean Demo. % for Pres, 1896-1928	**0.0040**	0.15	**-0.0031**	-0.49	**0.0036**	0.05	**0.0039**	0.53
Roosevelt Swing	**0.1823**	4.51	**0.0205**	2.05	**0.3074**	3.04	**0.0046**	0.41
Std. Dev. Demo. % for Pres. 1896-1932	**-0.1451**	-1.67	**-0.0379**	-1.77	**-0.6980**	-3.21	**-0.0285**	-1.16
Pres. Votes 1932/population 1930	**0.0370**	0.76	**0.0717**	5.95	**-0.0557**	-0.46	**0.1230**	8.90
Avg. Tenure in House	**0.0035**	0.84	**-0.0002**	-0.21	**-0.0045**	-0.43	**0.0012**	1.00
Congressional Committees								
Agriculture	**-0.7091**	-0.78	**-0.5266**	-2.35	**0.0316**	0.01	**-0.3410**	-1.33
Appropriations	**-2.4323**	-2.59	**-0.8100**	-3.49	**0.7042**	0.30	**0.1373**	0.52
Banking and Currency	**-1.6283**	-1.42	**-0.1719**	-0.61	**-8.0389**	-2.79	**-0.1342**	-0.41

Exports	**-1.2407**	-0.99	**-0.3270**	-1.06	**-1.8414**	-0.59	**-0.2912**	-0.82
Flood Control	**-0.8263**	-0.71	**-0.0327**	-0.11	**-1.8954**	-0.65	**0.5766**	1.76
Irrigation Control	**-1.9970**	-1.86	**-1.0767**	-4.06	**-2.9604**	-1.10	**0.0346**	0.11
Labor	**3.4260**	2.75	**0.5478**	1.78	**3.1127**	1.00	**0.1506**	0.43
Public Buildings	**-2.5463**	-2.03	**-0.2250**	-0.73	**-1.2583**	-0.40	**0.1251**	0.35
Public Lands	**1.9164**	1.86	**0.3053**	1.20	**-1.1271**	-0.44	**0.2375**	0.81
Rivers and Harbors	**0.9491**	0.91	**-0.0919**	-0.36	**0.2533**	0.10	**-0.1089**	-0.37
Roads	**1.6519**	1.57	**-0.2937**	-1.13	**5.1519**	1.96	**0.8301**	2.80
Ways and Means	**0.3237**	0.28	**0.1803**	0.64	**1.3886**	0.48	**-0.0355**	-0.11
State Dummies								
ME	**0.4662**	0.09	**-0.5944**	-0.48	**1.8339**	0.15	**-1.4692**	-1.03
MA	**7.8608**	1.53	**0.4572**	0.36	**29.5264**	2.30	**5.6351**	3.88
NH	**-4.2652**	-0.78	**0.4869**	0.36	**-9.5239**	-0.69	**-2.9745**	-1.92
RI	**-7.5885**	-1.17	**-1.4472**	-0.90	**-4.7561**	-0.29	**-2.8955**	-1.57
VT	**-1.7300**	-0.34	**0.6952**	0.55	**-3.1342**	-0.24	**-1.8019**	-1.25
DE	**5.8826**	0.74	**-1.4975**	-0.76	**12.9152**	0.65	**-1.8049**	-0.80
NJ	**4.8594**	1.02	**0.9806**	0.83	**15.8763**	1.33	**-2.4588**	-1.82
NY	**0.8308**	0.18	**0.7113**	0.63	**-0.6754**	-0.06	**-1.7658**	-1.37
PA	**12.5036**	2.90	**0.6544**	0.61	**33.9527**	3.14	**-1.2539**	-1.03
IL	**1.7303**	0.38	**1.1909**	1.06	**21.1993**	1.87	**-1.2518**	-0.98
IN	**-0.3541**	-0.08	**2.0244**	1.89	**23.5719**	2.16	**-2.8241**	-2.30
MI	**11.3893**	2.64	**7.1026**	6.67	**21.4098**	1.98	**-0.3199**	-0.26
OH	**10.0859**	2.25	**3.4655**	3.13	**28.5320**	2.54	**3.1833**	2.51
WI	**8.8932**	2.02	**5.9446**	5.48	**18.1522**	1.65	**1.7176**	1.38
IA	**-1.5531**	-0.36	**1.3456**	1.26	**4.0715**	0.38	**-0.5531**	-0.45
KS	**8.2819**	1.90	**2.3421**	2.18	**21.6482**	1.99	**-3.6972**	-3.01
MN	**6.6973**	1.23	**2.3331**	1.74	**16.8066**	1.24	**3.3958**	2.21
MO	**-0.6065**	-0.12	**1.1842**	0.92	**15.6639**	1.20	**-2.1275**	-1.44
NE	**-1.0501**	-0.24	**0.0767**	0.07	**15.8358**	1.43	**1.2085**	0.97
NDK	**17.0072**	3.52	**3.8932**	3.27	**32.9788**	2.73	**-3.0946**	-2.27
SD	**31.1441**	6.89	**7.6785**	6.89	**47.7913**	4.22	**-1.6064**	-1.26
VA	**3.3491**	0.70	**4.7236**	4.02	**-3.8780**	-0.33	**-3.4625**	-2.57
AL	**3.4697**	0.76	**4.1329**	3.65	**-3.3894**	-0.30	**-3.0288**	-2.34
AR	**3.9310**	0.87	**3.9603**	3.56	**-0.2717**	-0.02	**-3.0216**	-2.37
FL	**17.4146**	3.88	**4.9829**	4.50	**-3.6165**	-0.32	**-0.1041**	-0.08
GA	**0.6073**	0.14	**2.3184**	2.11	**-5.2920**	-0.48	**-3.1631**	-2.52
LA	**4.6846**	1.02	**2.3609**	2.09	**-7.4363**	-0.65	**-1.7824**	-1.38
MS	**2.8654**	0.62	**2.2431**	1.96	**4.1759**	0.36	**-3.6074**	-2.76
NC	**0.9038**	0.21	**1.1237**	1.05	**-5.8848**	-0.54	**-4.8338**	-3.95
SC	**13.7815**	2.88	**4.7020**	3.99	**8.8730**	0.74	**-2.6041**	-1.93
TX	**2.8768**	0.63	**3.9456**	3.53	**6.3028**	0.56	**1.1693**	0.91
KY	**8.6120**	1.75	**1.9306**	1.59	**15.8042**	1.28	**-4.8428**	-3.49

MD	**3.8403**	0.81	**0.4651**	0.40	**6.2391**	0.53	**-1.1907**	-0.89
OK	**3.6756**	0.84	**4.3510**	4.01	**16.4334**	1.49	**2.6256**	2.11
TN	**2.0954**	0.48	**2.5809**	2.38	**-4.6257**	-0.42	**-2.6126**	-2.11
WV	**15.3645**	3.50	**3.7234**	3.43	**27.7103**	2.52	**-4.0161**	-3.23
AZ	**7.1935**	1.38	**6.5172**	5.08	**7.9045**	0.61	**0.9557**	0.65
CO	**12.9721**	2.90	**0.4248**	0.38	**26.2968**	2.34	**10.0091**	7.91
ID	**7.6465**	1.67	**6.7913**	6.01	**8.7717**	0.76	**4.0978**	3.16
MT	**8.6388**	1.90	**5.0165**	4.47	**43.6240**	3.83	**1.7503**	1.36
NV	**5.3659**	0.99	**7.1910**	5.40	**20.7122**	1.53	**0.7694**	0.50
NM	**14.9452**	3.12	**1.2481**	1.06	**30.5011**	2.54	**-3.9201**	-2.90
UT	**10.3338**	2.17	**2.0374**	1.74	**12.6562**	1.06	**4.3158**	3.21
WY	**3.7870**	0.77	**3.6870**	3.02	**31.2655**	2.52	**0.3741**	0.27
CA	**-3.0902**	-0.70	**0.4001**	0.37	**9.7518**	0.89	**10.5580**	8.49
OR	**-10.778**	-2.34	**0.0545**	0.05	**-5.6534**	-0.49	**-0.9539**	-0.73
WA	**-6.6712**	-1.47	**3.7617**	3.35	**10.1620**	0.89	**5.5591**	4.32
R-squared	**0.4132**		**0.4830**		**0.3137**		**0.6140**	
R-bar-squared	**0.3982**		**0.4699**		**0.2962**		**0.6041**	

Appendix Table 2

OLS Regression Results for Public Works Programs

	PWA Federal Grants		PWA Non-Federal Grants		PWA Non-Federal Loans		PRA Grants		PBA Grants	
	Coeff.	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-sta
Intercept	**-90.5670**	-2.72	**4.4346**	0.52	**-15.0645**	-1.03	**-10.6473**	-0.86	**-0.4296**	-0.
Inverse Population	**-0.9121**	-6.19	**-0.0046**	-0.12	**-0.0337**	-0.52	**1.0099**	18.35	**-0.0131**	-3.
Square miles per capita	**66.6841**	7.62	**-0.8623**	-0.38	**1.7895**	0.47	**65.4926**	20.05	**0.2259**	0.
% Urban	**0.0284**	0.27	**0.0303**	1.12	**0.0152**	0.33	**-0.0384**	-0.98	**-0.0003**	-0.
% Land on Farms	**-0.0353**	-0.42	**-0.0013**	-0.06	**-0.0326**	-0.89	**-0.0281**	-0.90	**-0.0093**	-3.
Tax returns per capita	**-3.8093**	-1.67	**-0.3926**	-0.67	**-1.4086**	-1.40	**-0.4993**	-0.59	**0.0125**	0.
Retail Sales per capita, 1929	**0.0132**	1.08	**0.0133**	4.24	**0.0131**	2.44	**0.0124**	2.73	**0.0020**	5.
% Black	**0.3347**	2.12	**-0.0584**	-1.44	**-0.1905**	-2.74	**0.1399**	2.37	**-0.0099**	-2.
% Illiterate	**-0.3654**	-0.84	**0.1543**	1.38	**0.4230**	2.21	**0.1598**	0.98	**0.0092**	0.
Growth retail sales per cap., 1929-33	**17.4998**	2.31	**2.0085**	1.03	**-3.3792**	-1.02	**6.8904**	2.44	**0.6946**	3.
Unemployment rate	**2.0795**	2.20	**-0.3795**	-1.56	**-0.2068**	-0.50	**-0.2390**	-0.68	**-0.0512**	-1.
% Farm failures	**-0.3252**	-0.81	**-0.0287**	-0.28	**-0.1737**	-0.98	**-0.4798**	-3.19	**0.0093**	0.
Average farm Size	**-0.0382**	-1.39	**-0.0173**	-2.45	**-0.0126**	-1.05	**-0.0572**	-5.57	**-0.0006**	-0.
Mean Demo. % for Pres, 1896-1928	**0.1199**	0.67	**0.0386**	0.84	**0.1089**	1.39	**0.0511**	0.77	**0.0156**	3.
Roosevelt Swing	**0.4439**	1.61	**-0.1349**	-1.91	**-0.0675**	-0.56	**0.2680**	2.61	**0.0000**	0.
Std. Dev. Demo. % for Pres. 1896-1932	**1.7989**	3.05	**0.2036**	1.34	**0.0524**	0.20	**-0.3891**	-1.77	**-0.0087**	-0.
Pres. Votes 1932/population 1930	**2.2289**	6.71	**0.1182**	1.38	**0.1054**	0.72	**0.5560**	4.48	**0.0033**	0.
Avg. Tenure in House	**0.0031**	0.11	**-0.0100**	-1.38	**-0.0152**	-1.23	**0.0016**	0.15	**-0.0004**	-0.
Congressional Committees										
Agriculture	**6.0724**	0.98	**-0.4337**	-0.27	**-1.8793**	-0.69	**1.1597**	0.50	**-0.1324**	-0.
Appropriations	**0.7482**	0.12	**2.5267**	1.54	**6.8569**	2.44	**-2.7494**	-1.15	**0.1065**	0.
Banking and Currency	**1.5660**	0.20	**3.7736**	1.88	**4.5172**	1.31	**-1.4044**	-0.48	**-0.1122**	-0.

Exports	**5.9626**	0.70	**-0.4468**	-0.20	**-0.4366**	-0.12	**-0.0128**	0.00	**-0.0715**	-0.
Flood Control	**-3.9228**	-0.50	**-0.3611**	-0.18	**1.4713**	0.42	**-1.3246**	-0.45	**-0.1509**	-0.
Irrigation Control	**3.0791**	0.42	**-2.7322**	-1.46	**0.0264**	0.01	**-8.4374**	-3.10	**-0.2351**	-1.
Labor	**2.8185**	0.33	**0.9910**	0.45	**0.6493**	0.17	**-1.8257**	-0.58	**-0.0399**	-0.
Public Buildings	**4.8151**	0.56	**-1.5997**	-0.73	**-0.8184**	-0.22	**3.4642**	1.09	**0.1167**	0.
Public Lands	**-3.4761**	-0.49	**-0.9636**	-0.53	**-3.2813**	-1.06	**7.4955**	2.86	**0.0229**	0.
Rivers and Harbors	**-0.0761**	-0.01	**0.0310**	0.02	**-1.2165**	-0.39	**-0.0035**	0.00	**-0.2096**	-1.
Roads	**1.6573**	0.23	**-0.4964**	-0.27	**0.8899**	0.28	**-3.5658**	-1.34	**-0.1328**	-0.
Ways and Means	**-2.3899**	-0.31	**-1.6625**	-0.83	**0.3717**	0.11	**0.2221**	0.08	**0.4806**	2.
State Dummies										
ME	**4.6051**	0.13	**-15.766**	-1.80	**1.2129**	0.08	**6.0623**	0.48	**0.3689**	0.
MA	**0.3617**	0.01	**-12.348**	-1.37	**0.1245**	0.01	**-4.9920**	-0.38	**-0.4300**	-0.
NH	**-32.9910**	-0.88	**-8.6626**	-0.90	**2.6397**	0.16	**-1.9467**	-0.14	**0.7641**	0.
RI	**10.9573**	0.25	**8.3592**	0.73	**5.5676**	0.29	**9.4557**	0.57	**0.0382**	0.
VT	**-12.3589**	-0.36	**-3.8358**	-0.43	**5.9399**	0.39	**4.5303**	0.35	**1.0884**	1.
DE	**-34.5998**	-0.64	**-0.3723**	-0.03	**5.8397**	0.25	**7.3278**	0.36	**2.1389**	1.
NJ	**-19.2639**	-0.59	**-8.5585**	-1.03	**6.8873**	0.48	**-7.5083**	-0.62	**0.2341**	0.
NY	**-30.9292**	-1.00	**-6.2640**	-0.79	**3.9670**	0.29	**8.7147**	0.75	**1.1504**	1.
PA	**-0.1230**	0.00	**-5.1549**	-0.68	**5.4584**	0.42	**6.8054**	0.62	**0.6472**	0.
IL	**-35.3619**	-1.15	**-6.9255**	-0.87	**5.2303**	0.39	**2.1909**	0.19	**1.2782**	1.
IN	**-37.3404**	-1.26	**-6.5546**	-0.86	**3.1908**	0.25	**-7.9712**	-0.72	**0.9938**	1.
MI	**-30.0970**	-1.03	**-6.1794**	-0.82	**3.7356**	0.29	**5.9843**	0.55	**1.0527**	1.
OH	**-35.0495**	-1.15	**-5.2631**	-0.67	**5.5890**	0.42	**-5.1630**	-0.45	**0.9256**	1.
WI	**-28.8080**	-0.96	**-5.1633**	-0.67	**5.8367**	0.44	**-0.7821**	-0.07	**0.8407**	0.
IA	**-26.8661**	-0.91	**-6.9747**	-0.92	**4.5445**	0.35	**1.8505**	0.17	**0.9477**	1.
KS	**-21.8094**	-0.74	**-7.5591**	-0.99	**4.9534**	0.38	**9.1375**	0.83	**0.7651**	0.
MN	**-36.7470**	-1.00	**0.2640**	0.03	**6.2271**	0.38	**4.6987**	0.34	**0.7990**	0.
MO	**-16.8863**	-0.48	**-12.837**	-1.41	**-7.8290**	-0.50	**7.4919**	0.57	**0.6517**	0.
NE	**-26.8770**	-0.90	**-1.1679**	-0.15	**16.7475**	1.27	**1.9703**	0.18	**0.8767**	1.
NDK	**-22.8605**	-0.70	**-3.1896**	-0.38	**8.0879**	0.56	**16.2833**	1.33	**1.0419**	1.
SD	**-18.3767**	-0.60	**-6.3733**	-0.81	**10.4314**	0.77	**7.3907**	0.64	**1.1304**	1.
VA	**43.0782**	1.33	**-5.1571**	-0.62	**6.6429**	0.47	**6.2403**	0.52	**1.0548**	1.
AL	**31.2983**	1.00	**-3.7090**	-0.46	**10.0604**	0.73	**10.6479**	0.92	**0.9813**	1.
AR	**29.0853**	0.95	**-3.6287**	-0.46	**12.9986**	0.97	**7.3761**	0.65	**0.8602**	0.
FL	**6.5421**	0.21	**-1.7974**	-0.23	**17.2550**	1.29	**-4.0232**	-0.35	**0.5599**	0.
GA	**31.8355**	1.05	**-4.1178**	-0.53	**10.9230**	0.82	**3.0794**	0.27	**0.9357**	1.
LA	**31.7603**	1.02	**-1.8067**	-0.23	**5.5990**	0.41	**6.9149**	0.59	**0.6288**	0.
MS	**51.8874**	1.65	**-5.4315**	-0.67	**6.3544**	0.46	**10.4059**	0.89	**1.0775**	1.
NC	**9.6745**	0.33	**-4.8497**	-0.64	**9.0361**	0.70	**0.7594**	0.07	**1.1497**	1.
SC	**51.2485**	1.58	**0.3477**	0.04	**16.5805**	1.16	**7.4269**	0.61	**0.4837**	0.
TX	**12.1384**	0.39	**-1.5998**	-0.20	**17.6660**	1.30	**9.6155**	0.84	**0.8677**	0.
KY	**-9.8599**	-0.30	**-12.239**	-1.42	**-5.0251**	-0.34	**-2.8578**	-0.23	**0.5420**	0.

MD	**19.5112**	0.61	**-1.0753**	-0.13	**8.3023**	0.59	**-5.0129**	-0.42	**2.4482**	2.
OK	**-10.1685**	-0.34	**-0.2063**	-0.03	**15.8630**	1.21	**6.9812**	0.63	**0.8626**	1.
TN	**39.4553**	1.32	**-4.9806**	-0.65	**9.6551**	0.74	**3.1108**	0.28	**1.0807**	1.
WV	**-17.5854**	-0.59	**-9.4866**	-1.23	**5.3585**	0.41	**-9.6816**	-0.87	**0.8776**	1.
AZ	**275.4149**	7.79	**-7.1117**	-0.78	**5.0519**	0.33	**42.0813**	3.19	**0.1886**	0.
CO	**-42.6053**	-1.40	**-8.1495**	-1.04	**3.3421**	0.25	**16.9614**	1.49	**0.3867**	0.
ID	**-47.0487**	-1.51	**-6.6069**	-0.82	**6.7779**	0.49	**-0.3550**	-0.03	**1.1886**	1.
MT	**-25.9795**	-0.84	**7.5954**	0.96	**24.0003**	1.77	**26.1363**	2.26	**1.3238**	1.
NV	**46.4145**	1.27	**4.8942**	0.52	**4.3855**	0.27	**141.0288**	10.30	**1.3199**	1.
NM	**-5.1964**	-0.16	**-0.7534**	-0.09	**8.9626**	0.63	**33.5038**	2.76	**0.8024**	0.
UT	**-32.7021**	-1.01	**1.3658**	0.16	**10.2887**	0.72	**19.5715**	1.62	**0.3474**	0.
WY	**-59.0923**	-1.76	**-4.2214**	-0.49	**8.0795**	0.55	**41.6576**	3.32	**1.2519**	1.
CA	**-15.3471**	-0.51	**-4.9913**	-0.65	**5.4106**	0.41	**14.0747**	1.26	**0.2181**	0.
OR	**-18.4752**	-0.59	**-1.1970**	-0.15	**8.4506**	0.61	**2.2006**	0.19	**1.3085**	1.
WA	**-16.3501**	-0.53	**4.1316**	0.52	**5.4214**	0.40	**10.6247**	0.92	**0.9297**	1.
R-squared	**0.1316**		**0.5710**		**0.3050**		**0.6113**		**0.6790**	
R-bar-squared	**0.1095**		**0.3310**		**0.5800**		**0.6014**		**0.4410**	

Appendix Table 3

OLS Regression Results for Farm Programs

	AAA Grants		FCA Loans		FSA Grants		FSA Loans		REA Loans	
	Coeff.	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-
Intercept	**-13.7358**	-0.90	**-0.3825**	-0.04	**5.3538**	2.58	**9.2977**	3.03	**-5.3719**	-
Inverse Population	**0.2707**	3.99	**0.1653**	4.13	**0.0064**	0.70	**0.0046**	0.34	**-0.0121**	-
Square miles per capita	**-21.0818**	-5.24	**7.2006**	3.03	**-0.0039**	-0.01	**0.2034**	0.25	**-1.0891**	-
% Urban	**-0.3980**	-8.24	**-0.2452**	-8.60	**0.0123**	1.87	**-0.0181**	-1.87	**-0.0540**	-
% Land on Farms	**-0.0757**	-1.98	**0.0726**	3.22	**-0.0137**	-2.64	**-0.0084**	-1.10	**0.0276**	
Tax returns per capita	**1.7000**	1.62	**0.7055**	1.14	**-0.4570**	-3.21	**-1.5597**	-7.41	**-0.0435**	-
Retail Sales per capita, 1929	**0.0155**	2.76	**0.0045**	1.36	**-0.0041**	-5.33	**-0.0025**	-2.19	**0.0003**	
% Black	**0.0661**	0.91	**-0.0340**	-0.79	**-0.0010**	-0.10	**0.0264**	1.81	**-0.0024**	-
% Illiterate	**-0.2014**	-1.00	**-0.5493**	-4.64	**-0.0355**	-1.30	**-0.1614**	-4.01	**-0.0190**	-
Growth retail sales per cap., 1929-33	**-10.7206**	-3.08	**-8.4344**	-4.11	**-2.2345**	-4.73	**-3.5266**	-5.05	**1.7717**	
Unemployment rate	**-2.0329**	-4.68	**-1.0571**	-4.13	**-0.0756**	-1.28	**-0.3988**	-4.58	**-0.0099**	-
% Farm failures	**-0.5335**	-2.88	**-0.2206**	-2.02	**0.0500**	1.98	**0.0729**	1.96	**-0.0346**	-
Average farm Size	**0.6336**	50.13	**0.2176**	29.18	**0.0116**	6.76	**0.0281**	11.07	**-0.0029**	-
Mean Demo. % for Pres, 1896-1928	**0.2294**	2.81	**-0.0051**	-0.11	**0.0004**	0.03	**0.0152**	0.93	**0.0770**	
Roosevelt Swing	**0.6214**	4.92	**0.0661**	0.89	**0.0517**	3.01	**0.0050**	0.20	**0.0995**	
Std. Dev. Demo. % for Pres. 1896-1932	**-0.3139**	-1.16	**0.5254**	3.28	**0.0649**	1.76	**0.0575**	1.05	**-0.0525**	-
Pres. Votes 1932/population 1930	**0.1315**	0.86	**0.1645**	1.82	**-0.0383**	-1.85	**0.0329**	1.07	**0.1187**	
Avg. Tenure in House	**0.0392**	3.03	**0.0087**	1.14	**-0.0001**	-0.04	**-0.0060**	-2.29	**0.0028**	
Congressional Committees										
Agriculture	**20.3306**	7.17	**6.4896**	3.88	**-0.4200**	-1.09	**-0.0096**	-0.02	**1.2280**	
Appropriations	**-9.9392**	-3.38	**-1.6625**	-0.96	**-0.2599**	-0.65	**-0.5457**	-0.92	**-0.9172**	-
Banking and Currency	**-0.9138**	-0.25	**1.9820**	0.93	**-0.2197**	-0.45	**0.5993**	0.83	**0.6461**	
Exports	**-2.8680**	-0.73	**1.7876**	0.77	**-0.0735**	-0.14	**-0.0606**	-0.08	**0.3768**	
Flood Control	**2.7696**	0.76	**-0.3325**	-0.16	**-0.2985**	-0.61	**-1.6012**	-2.20	**0.0509**	
Irrigation Control	**-7.5366**	-2.24	**-1.3248**	-0.67	**0.8643**	1.90	**0.3980**	0.59	**-0.0131**	-

Labor	**31.0280**	7.96	**4.0449**	1.76	**-0.3128**	-0.59	**0.8296**	1.06	**-0.6424**
Public Buildings	**8.0341**	2.05	**1.4440**	0.62	**0.0870**	0.16	**0.9054**	1.15	**-0.6488**
Public Lands	**3.4877**	1.08	**-1.2547**	-0.66	**0.4855**	1.11	**-0.5333**	-0.82	**0.4966**
Rivers and Harbors	**-2.3336**	-0.72	**-2.6514**	-1.38	**-0.2782**	-0.63	**0.1111**	0.17	**0.1860**
Roads	**-0.1668**	-0.05	**3.1469**	1.63	**-0.2806**	-0.63	**-0.4089**	-0.62	**0.0291**
Ways and Means	**2.2013**	0.61	**-0.3755**	-0.18	**0.1345**	0.28	**0.7493**	1.04	**0.3755**
State Dummies									
ME	**-18.5647**	-1.18	**-13.5307**	-1.46	**-1.5598**	-0.73	**-1.7811**	-0.57	**-1.3641**
MA	**-6.3404**	-0.39	**-3.4611**	-0.37	**0.1032**	0.05	**1.2147**	0.38	**1.1334**
NH	**-22.5855**	-1.32	**-11.3027**	-1.12	**-0.2387**	-0.10	**-0.3387**	-0.10	**-1.9627**
RI	**7.5111**	0.37	**2.8550**	0.24	**-1.3278**	-0.48	**-0.4992**	-0.12	**0.7399**
VT	**-32.9341**	-2.06	**-19.6199**	-2.08	**-1.5692**	-0.72	**-2.4033**	-0.75	**-1.6319**
DE	**-33.4715**	-1.35	**-20.3997**	-1.39	**-0.1343**	-0.04	**-5.4579**	-1.09	**4.4841**
NJ	**-14.9785**	-1.00	**-4.4538**	-0.51	**-0.3247**	-0.16	**-1.1059**	-0.37	**0.1447**
NY	**-55.4797**	-3.90	**-18.2843**	-2.18	**0.4242**	0.22	**-3.2061**	-1.12	**-0.5912**
PA	**-19.0678**	-1.41	**-13.7481**	-1.73	**-2.4087**	-1.32	**-4.6436**	-1.72	**2.2206**
IL	**-58.0380**	-4.09	**-21.0055**	-2.51	**-2.1615**	-1.12	**-6.8141**	-2.39	**2.5374**
IN	**-14.5450**	-1.07	**-12.7449**	-1.59	**-2.1953**	-1.19	**-5.7271**	-2.10	**2.6264**
MI	**-23.2810**	-1.73	**-9.9551**	-1.25	**-2.8453**	-1.55	**-4.1023**	-1.51	**4.2735**
OH	**-19.0853**	-1.36	**-15.0477**	-1.82	**-1.5980**	-0.84	**-5.3484**	-1.90	**2.1804**
WI	**-36.5363**	-2.66	**-2.2721**	-0.28	**-1.2839**	-0.69	**-3.2345**	-1.17	**3.1679**
IA	**-1.5422**	-0.11	**-9.8338**	-1.23	**-3.2498**	-1.77	**-5.5893**	-2.06	**4.1456**
KS	**17.2793**	1.27	**-4.2028**	-0.52	**1.8475**	1.00	**-0.8471**	-0.31	**-0.4448**
MN	**-112.1009**	-6.60	**-15.1175**	-1.51	**-1.7206**	-0.75	**-3.2537**	-0.95	**2.3272**
MO	**-30.2350**	-1.86	**-17.8704**	-1.86	**0.6145**	0.28	**-2.9463**	-0.90	**0.5762**
NE	**-33.3224**	-2.42	**-10.7541**	-1.32	**1.8089**	0.97	**-0.3190**	-0.12	**3.5221**
NDK	**-73.1425**	-4.85	**39.2487**	4.41	**25.6946**	12.54	**-1.0714**	-0.35	**-1.7920**
SD	**-50.7771**	-3.59	**17.4094**	2.09	**28.1018**	14.65	**6.7433**	2.38	**-3.3049**
VA	**-24.6360**	-1.65	**-12.5404**	-1.43	**-3.4328**	-1.70	**-5.6179**	-1.88	**1.5122**
AL	**-8.4834**	-0.59	**-6.6644**	-0.79	**-5.2825**	-2.71	**-1.2245**	-0.43	**0.4691**
AR	**-12.6502**	-0.90	**-8.2145**	-0.99	**-5.4105**	-2.83	**-0.7798**	-0.28	**0.4737**
FL	**-18.4285**	-1.31	**-0.0596**	-0.01	**-4.5856**	-2.41	**-2.1489**	-0.76	**1.2435**
GA	**-17.6524**	-1.27	**-2.4901**	-0.30	**-5.6144**	-2.97	**-3.1661**	-1.13	**2.7257**
LA	**-2.7256**	-0.19	**0.3426**	0.04	**-4.8011**	-2.47	**0.1205**	0.04	**-0.1536**
MS	**-14.3888**	-0.99	**-3.6128**	-0.42	**-4.8653**	-2.48	**-2.0895**	-0.72	**1.5842**
NC	**-7.1400**	-0.53	**-2.1829**	-0.27	**-4.2322**	-2.30	**-6.0583**	-2.23	**-0.7778**
SC	**-5.9435**	-0.40	**15.1025**	1.71	**-3.4777**	-1.71	**-1.7728**	-0.59	**-0.5000**
TX	**2.8795**	0.20	**4.4105**	0.53	**-4.4069**	-2.29	**-2.0411**	-0.72	**1.0424**
KY	**-7.1825**	-0.47	**-15.4250**	-1.70	**-1.4875**	-0.71	**-7.5006**	-2.43	**-0.9176**
MD	**-27.3470**	-1.85	**-12.2973**	-1.41	**-2.2940**	-1.14	**-6.3290**	-2.14	**-2.2758**
OK	**-5.0639**	-0.37	**-17.8716**	-2.21	**-2.5609**	-1.37	**-1.1138**	-0.40	**-0.6865**
TN	**-11.6153**	-0.85	**-6.2708**	-0.77	**-4.6146**	-2.48	**-6.9970**	-2.54	**2.7918**

WV	**-22.0385**	-1.60	**-12.8288**	-1.58	**-2.2051**	-1.18	**-5.8947**	-2.14	**-3.2237**	-
AZ	**-11.9143**	-0.73	**-11.8308**	-1.23	**-3.3045**	-1.50	**-1.4585**	-0.45	**2.6213**	
CO	**-51.7813**	-3.70	**-20.3937**	-2.47	**-1.3273**	-0.70	**7.5321**	2.68	**2.7133**	
ID	**-17.4534**	-1.22	**-10.6750**	-1.26	**-4.0212**	-2.07	**4.7883**	1.67	**1.7035**	
MT	**-51.6625**	-3.63	**-13.2835**	-1.58	**4.8039**	2.49	**6.7864**	2.38	**1.2075**	
NV	**-66.9753**	-3.97	**-51.6280**	-5.19	**-3.6424**	-1.59	**0.7543**	0.22	**1.1975**	
NM	**-1.9666**	-0.13	**3.3400**	0.38	**-4.1946**	-2.06	**1.2661**	0.42	**-0.9891**	-
UT	**-11.5194**	-0.78	**-4.3202**	-0.49	**-3.0040**	-1.49	**11.7366**	3.94	**3.6254**	
WY	**-85.7267**	-5.54	**1.1017**	0.12	**2.1995**	1.05	**29.6679**	9.56	**3.9249**	
CA	**-43.6836**	-3.18	**-3.2094**	-0.40	**-1.5408**	-0.83	**0.4687**	0.17	**-0.8971**	-
OR	**-48.3945**	-3.36	**-24.3369**	-2.86	**-3.6471**	-1.86	**-2.4008**	-0.83	**0.4748**	
WA	**-42.7250**	-3.00	**-30.7315**	-3.66	**-3.8264**	-1.98	**-1.3582**	-0.48	**2.8439**	
R-squared	**0.7466**		**0.6934**		**0.6831**		**0.4747**		**0.1923**	
R-bar-squared	**0.7402**		**0.6856**		**0.6751**		**0.4613**		**0.1717**	

Appendix Table 4

OLS Regression Results for Loan and Housing Programs

	RFC Loans		HOLC Loans		FHA Loans Insured		USHA Loans		USHA Gra
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.
Intercept	**-24.9665**	-1.81	**-4.4768**	-1.31	**-8.5017**	-1.38	**0.2743**	0.20	**-0.6112**
Inverse Population	**0.0635**	1.04	**-0.0061**	-0.40	**0.0526**	1.93	**0.0053**	0.87	**0.0018**
Square miles per capita	**-7.7720**	-2.14	**-2.8769**	-3.20	**-6.6808**	-4.13	**0.1850**	0.52	**0.0776**
% Urban	**0.1590**	3.65	**0.1722**	15.94	**0.1101**	5.67	**0.0358**	8.31	**0.0037**
% Land on Farms	**-0.1081**	-3.14	**-0.0256**	-2.99	**-0.0243**	-1.58	**-0.0153**	-4.48	**-0.0014**
Tax returns per capita	**2.0112**	2.13	**3.8808**	16.55	**3.7223**	8.83	**0.3485**	3.73	**0.1102**
Retail Sales per capita, 1929	**0.0228**	4.50	**0.0043**	3.43	**0.0050**	2.20	**0.0011**	2.18	**0.0004**
% Black	**-0.0502**	-0.77	**-0.0190**	-1.17	**0.0228**	0.78	**0.0005**	0.08	**0.0049**
% Illiterate	**0.2932**	1.62	**-0.0494**	-1.10	**-0.1287**	-1.60	**-0.0488**	-2.73	**-0.0116**
Growth retail sales per cap., 1929-33	**0.2973**	0.09	**-1.2170**	-1.57	**3.8190**	2.73	**0.4247**	1.37	**0.0705**
Unemployment rate	**-0.2326**	-0.59	**0.1618**	1.67	**-0.1035**	-0.59	**0.0202**	0.52	**-0.0014**
% Farm failures	**0.0761**	0.45	**-0.0472**	-1.14	**-0.0583**	-0.78	**0.0169**	1.02	**0.0026**
Average farm Size	**0.0111**	0.97	**0.0029**	1.02	**-0.0223**	-4.38	**-0.0006**	-0.55	**-0.0005**
Mean Demo. % for Pres, 1896-1928	**-0.0358**	-0.49	**-0.0358**	-1.96	**-0.0405**	-1.23	**0.0008**	0.12	**-0.0001**
Roosevelt Swing	**-0.0934**	-0.82	**-0.0235**	-0.83	**-0.0526**	-1.03	**0.0039**	0.34	**0.0038**
Std. Dev. Demo. % for Pres. 1896-1932	**0.2884**	1.18	**-0.0596**	-0.98	**0.1168**	1.07	**0.0233**	0.96	**0.0040**
Pres. Votes 1932/population 1930	**0.1123**	0.82	**-0.1017**	-2.98	**0.0908**	1.48	**-0.0253**	-1.86	**-0.0023**
Avg. Tenure in House	**0.0013**	0.11	**-0.0020**	-0.71	**-0.0104**	-1.99	**0.0001**	0.08	**0.0001**
Congressional Committees									
Agriculture	**-0.3161**	-0.12	**1.1259**	1.78	**0.8019**	0.70	**0.0036**	0.01	**0.0277**
Appropriations	**5.0264**	1.90	**0.5653**	0.86	**-0.3006**	-0.25	**-0.1014**	-0.39	**0.0799**
Banking and Currency	**2.6330**	0.81	**-1.5972**	-1.99	**-1.7824**	-1.23	**0.1074**	0.33	**0.1318**
Exports	**-2.6420**	-0.75	**-0.7310**	-0.83	**-3.1821**	-2.02	**-0.5043**	-1.44	**-0.1148**
Flood Control	**-5.4848**	-1.68	**1.8072**	2.23	**3.7556**	2.58	**0.0803**	0.25	**0.1991**

Irrigation Control	**-4.4054**	-1.46	**-0.4445**	-0.59	**-0.5737**	-0.43	**0.1061**	0.35	**0.0463**
Labor	**4.7455**	1.35	**-0.6395**	-0.73	**-1.2436**	-0.79	**1.1119**	3.20	**0.3448**
Public Buildings	**-1.1071**	-0.31	**-2.0852**	-2.38	**-0.7025**	-0.45	**0.4002**	1.14	**0.0878**
Public Lands	**-6.0680**	-2.08	**1.4134**	1.96	**-2.4608**	-1.90	**0.1235**	0.43	**0.0234**
Rivers and Harbors	**0.6666**	0.23	**0.3557**	0.49	**-0.4864**	-0.37	**0.0608**	0.21	**0.2346**
Roads	**11.3827**	3.85	**1.4259**	1.94	**1.1633**	0.88	**-0.2710**	-0.93	**-0.0002**
Ways and Means	**0.1363**	0.04	**-1.2339**	-1.54	**-0.3369**	-0.23	**0.0809**	0.25	**0.2377**
State Dummies									
ME	**46.6492**	3.29	**3.4153**	0.97	**1.9139**	0.30	**-1.5669**	-1.12	**0.0699**
MA	**-9.5206**	-0.66	**-3.6886**	-1.03	**-6.8312**	-1.06	**-0.7678**	-0.54	**0.0178**
NH	**5.3194**	0.34	**-5.5638**	-1.45	**-0.2733**	-0.04	**-2.3670**	-1.55	**-0.1861**
RI	**-7.2312**	-0.39	**8.3303**	1.83	**6.2033**	0.76	**-3.4667**	-1.91	**-0.2150**
VT	**65.4724**	4.54	**5.4113**	1.52	**7.8467**	1.22	**-0.1891**	-0.13	**0.1098**
DE	**9.7187**	0.43	**10.0632**	1.81	**13.8298**	1.38	**-0.7569**	-0.34	**0.0696**
NJ	**29.2933**	2.18	**14.0724**	4.22	**23.0547**	3.84	**0.3336**	0.25	**0.7593**
NY	**16.2290**	1.27	**5.1669**	1.63	**7.7636**	1.36	**-2.3577**	-1.86	**-0.1303**
PA	**24.1905**	1.99	**1.8803**	0.62	**5.6039**	1.03	**-0.7890**	-0.66	**0.0840**
IL	**18.3023**	1.43	**9.1740**	2.89	**10.2261**	1.79	**-1.0900**	-0.86	**0.0687**
IN	**24.5439**	2.00	**16.7399**	5.51	**12.4240**	2.27	**0.5113**	0.42	**0.4291**
MI	**27.0302**	2.22	**10.2926**	3.41	**9.1638**	1.69	**-1.0425**	-0.87	**0.1037**
OH	**25.6486**	2.03	**17.1197**	5.46	**11.6092**	2.06	**0.2756**	0.22	**0.3561**
WI	**23.3371**	1.88	**13.3686**	4.35	**4.5127**	0.82	**-1.1757**	-0.96	**-0.0061**
IA	**28.6972**	2.35	**9.3547**	3.09	**6.5368**	1.20	**-0.1010**	-0.08	**0.2066**
KS	**8.3547**	0.68	**11.0874**	3.65	**11.3420**	2.07	**-0.5136**	-0.42	**0.1094**
MN	**25.1133**	1.64	**6.8248**	1.80	**2.6328**	0.39	**-1.6330**	-1.08	**-0.7018**
MO	**3.9852**	0.27	**10.5744**	2.90	**10.2982**	1.57	**-0.4430**	-0.30	**-0.7523**
NE	**17.8534**	1.44	**14.1383**	4.59	**8.8778**	1.60	**0.4764**	0.39	**0.3855**
NDK	**24.1773**	1.78	**11.3928**	3.38	**18.1090**	2.99	**0.3770**	0.28	**0.2801**
SD	**32.0263**	2.51	**14.0203**	4.44	**13.6620**	2.41	**0.2147**	0.17	**0.3353**
VA	**24.4286**	1.82	**10.7943**	3.24	**21.8782**	3.65	**0.8464**	0.64	**0.3777**
AL	**22.5867**	1.75	**12.3661**	3.86	**17.3538**	3.01	**1.0626**	0.83	**0.5484**
AR	**33.9766**	2.68	**10.2084**	3.24	**14.8071**	2.61	**-0.2654**	-0.21	**0.2358**
FL	**20.8133**	1.65	**11.2823**	3.60	**20.8316**	3.70	**0.7498**	0.60	**0.1855**
GA	**27.6051**	2.20	**11.7613**	3.78	**15.6881**	2.81	**1.4859**	1.20	**0.3790**
LA	**42.1708**	3.26	**10.8618**	3.39	**15.7408**	2.73	**0.7380**	0.58	**0.2522**
MS	**33.4586**	2.57	**10.6937**	3.31	**18.9203**	3.25	**1.3231**	1.03	**0.2227**
NC	**23.2627**	1.90	**12.5916**	4.16	**13.6294**	2.50	**1.2388**	1.03	**0.3824**
SC	**27.8538**	2.07	**11.1794**	3.35	**17.9332**	2.99	**1.6342**	1.23	**0.8346**
TX	**24.2703**	1.90	**8.3144**	2.63	**18.1602**	3.19	**0.3334**	0.26	**0.2800**
KY	**8.9130**	0.64	**10.6759**	3.11	**11.3826**	1.84	**2.1669**	1.58	**0.3570**
MD	**38.4909**	2.89	**14.4764**	4.38	**23.0059**	3.87	**1.5322**	1.16	**0.1220**
OK	**14.4946**	1.17	**14.8974**	4.85	**13.7389**	2.49	**-0.1559**	-0.13	**0.4913**

TN	**35.1262**	2.84	**9.7461**	3.18	**15.2025**	2.76	**1.3435**	1.10	**0.8682**	
WV	**26.2991**	2.12	**12.2785**	4.00	**8.1009**	1.47	**1.4508**	1.18	**0.3628**	
AZ	**4.7638**	0.32	**12.4180**	3.42	**24.8876**	3.81	**-1.9103**	-1.32	**-0.0099**	-
CO	**18.2915**	1.45	**9.5128**	3.04	**9.0020**	1.60	**-0.6653**	-0.53	**0.1378**	
ID	**24.9472**	1.93	**12.1080**	3.78	**15.9237**	2.77	**-1.3156**	-1.03	**0.0856**	
MT	**29.7904**	2.32	**6.7979**	2.14	**14.3526**	2.51	**-0.2668**	-0.21	**0.1194**	
NV	**71.0754**	4.67	**7.3473**	1.95	**30.3546**	4.48	**-3.2084**	-2.13	**-0.5071**	-
NM	**34.3300**	2.54	**9.2016**	2.75	**21.0328**	3.49	**-0.3273**	-0.25	**0.2992**	
UT	**18.6770**	1.39	**20.4736**	6.16	**15.9506**	2.67	**-1.1767**	-0.89	**0.2057**	
WY	**9.4666**	0.68	**13.5953**	3.93	**29.9867**	4.82	**-2.5657**	-1.86	**-0.3815**	-
CA	**51.1405**	4.12	**-2.5918**	-0.84	**47.7099**	8.63	**-2.0575**	-1.68	**-0.3463**	-
OR	**28.9480**	2.23	**2.4506**	0.76	**16.9384**	2.92	**-1.4424**	-1.12	**0.0239**	
WA	**17.9019**	1.40	**1.2841**	0.40	**16.7896**	2.93	**-1.9774**	-1.56	**-0.2072**	-
R-squared	**0.1713**		**0.5874**		**0.3771**		**0.1910**		**0.8830**	
R-bar-squared	**0.1502**		**0.5769**		**0.3612**		**0.1704**		**0.6500**	

Appendix Table 5

OLS Regression Results for Aggregate Programs

	Total Grants		**Total Relief Grants**		**Total Public Works Grants**		**Total Loans**	
	Coeff.	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.	**Coeff.**	t-stat.
Intercept	**-26.0720**	-0.59	**67.6995**	4.44	**-97.2093**	-2.54	**-40.0274**	-1.71
Inverse Population	**0.3982**	2.02	**0.0242**	0.36	**0.0801**	0.47	**0.1877**	1.81
Square miles per capita	**97.8550**	8.35	**-5.8692**	-1.46	**131.5403**	13.05	**-2.3770**	-0.39
% Urban	**-0.0293**	-0.21	**0.2814**	5.85	**0.0200**	0.17	**0.0651**	0.88
% Land on Farms	**-0.6467**	-5.81	**-0.5240**	-13.77	**-0.0738**	-0.77	**-0.0897**	-1.53
Tax returns per capita	**-6.4079**	-2.10	**-2.6932**	-2.58	**-4.6887**	-1.78	**3.9072**	2.43
Retail Sales per capita, 1929	**0.0332**	2.03	**-0.0192**	-3.44	**0.0409**	2.91	**0.0436**	5.07
% Black	**0.2651**	1.25	**-0.1523**	-2.10	**0.4063**	2.23	**-0.2653**	-2.38
% Illiterate	**-0.7407**	-1.27	**-0.4768**	-2.39	**-0.0422**	-0.08	**-0.1132**	-0.37
Growth retail sales per cap., 1929-33	**0.4590**	0.05	**-10.981**	-3.17	**27.0932**	3.11	**-13.9475**	-2.62
Unemployment rate	**3.1342**	2.48	**4.0304**	9.32	**1.4099**	1.30	**-1.6877**	-2.54
% Farm failures	**-0.9820**	-1.82	**0.2274**	1.23	**-0.8245**	-1.77	**-0.3005**	-1.06
Average farm Size	**0.5520**	14.99	**0.0148**	1.17	**-0.1133**	-3.58	**0.2433**	12.57
Mean Demo. % for Pres, 1896-1928	**0.4266**	1.79	**0.0083**	0.10	**0.2251**	1.10	**0.1278**	1.02
Roosevelt Swing	**1.8031**	4.90	**0.5148**	4.09	**0.5771**	1.82	**-0.0053**	-0.03
Std. Dev. Demo. % for Pres. 1896-1932	**0.2069**	0.26	**-0.9095**	-3.36	**1.6046**	2.36	**0.8276**	1.99
Pres. Votes 1932/population 1930	**2.7561**	6.19	**0.1760**	1.16	**2.9064**	7.60	**0.4055**	1.73
Avg. Tenure in House	**0.0274**	0.73	**0.0000**	0.00	**-0.0058**	-0.18	**-0.0105**	-0.53
Congressional Committees								
Agriculture	**23.7676**	2.88	**-1.5451**	-0.55	**6.6660**	0.94	**6.6952**	1.54
Appropriations	**-11.7471**	-1.37	**-2.4007**	-0.82	**0.6320**	0.09	**9.1898**	2.04
Banking and Currency	**-7.2145**	-0.69	**-9.9732**	-2.78	**3.8230**	0.42	**8.8585**	1.61
Exports	**-0.3763**	-0.03	**-3.7002**	-0.95	**5.4315**	0.55	**-2.2083**	-0.37

Flood Control	**-5.2001**	-0.49	**-2.1777**	-0.60	**-5.7594**	-0.63	**-4.1650**	-0.75
Irrigation Control	**-20.8424**	-2.13	**-5.9996**	-1.79	**-8.3256**	-0.99	**-5.5611**	-1.08
Labor	**39.3860**	3.47	**7.2371**	1.86	**1.9439**	0.20	**10.0680**	1.69
Public Buildings	**10.0966**	0.88	**-3.9044**	-1.00	**6.7963**	0.69	**-1.6642**	-0.28
Public Lands	**7.2117**	0.77	**1.3322**	0.41	**3.0787**	0.38	**-9.1307**	-1.85
Rivers and Harbors	**-1.1888**	-0.13	**1.0016**	0.31	**-0.2581**	-0.03	**-2.2874**	-0.46
Roads	**2.8006**	0.29	**7.3402**	2.24	**-2.5377**	-0.31	**16.1604**	3.21
Ways and Means	**0.4273**	0.04	**1.8571**	0.52	**-3.3497**	-0.37	**0.4093**	0.07
State Dummies								
ME	**-20.5707**	-0.45	**0.2363**	0.02	**-4.7296**	-0.12	**32.3304**	1.34
MA	**22.2427**	0.48	**43.4795**	2.72	**-17.4087**	-0.43	**-15.4975**	-0.63
NH	**-77.8722**	-1.56	**-16.277**	-0.95	**-42.8362**	-1.00	**-13.9653**	-0.53
RI	**16.7490**	0.28	**-16.687**	-0.82	**28.8104**	0.57	**7.3421**	0.24
VT	**-50.6839**	-1.09	**-5.9710**	-0.38	**-10.5760**	-0.26	**52.3619**	2.14
DE	**-41.2803**	-0.57	**15.4953**	0.62	**-25.5054**	-0.41	**2.5051**	0.07
NJ	**-25.3494**	-0.58	**19.2575**	1.29	**-35.0967**	-0.94	**44.3516**	1.94
NY	**-81.7167**	-1.97	**-0.8992**	-0.06	**-27.3280**	-0.77	**0.2156**	0.01
PA	**25.5150**	0.65	**45.8569**	3.41	**2.1748**	0.06	**13.8015**	0.67
IL	**-72.6048**	-1.76	**22.8686**	1.62	**-38.8183**	-1.09	**6.0047**	0.28
IN	**-40.7139**	-1.03	**22.4182**	1.65	**-50.8725**	-1.49	**28.7883**	1.38
MI	**-13.2196**	-0.34	**39.5818**	2.94	**-29.2394**	-0.87	**29.3689**	1.42
OH	**-15.7292**	-0.39	**45.2667**	3.24	**-44.5500**	-1.27	**29.5721**	1.38
WI	**-35.6180**	-0.89	**34.7075**	2.54	**-33.9127**	-0.99	**38.1824**	1.81
IA	**-31.5192**	-0.80	**3.3110**	0.25	**-31.0426**	-0.92	**30.5056**	1.47
KS	**28.5344**	0.72	**28.5750**	2.11	**-19.4660**	-0.57	**17.7285**	0.85
MN	**-111.9644**	-2.26	**29.2329**	1.73	**-30.9852**	-0.73	**19.7579**	0.76
MO	**-34.3703**	-0.72	**14.1140**	0.87	**-21.5792**	-0.53	**-14.9334**	-0.60
NE	**-41.4022**	-1.03	**16.0709**	1.17	**-25.1979**	-0.73	**40.9651**	1.94
NDK	**-6.4276**	-0.15	**50.7846**	3.38	**-8.7249**	-0.23	**79.7698**	3.45
SD	**45.7383**	1.11	**85.0076**	6.04	**-16.2289**	-0.46	**76.8703**	3.55
VA	**12.3426**	0.28	**0.7322**	0.05	**45.2162**	1.21	**25.1659**	1.10
AL	**19.7406**	0.47	**1.1845**	0.08	**39.2185**	1.09	**37.7223**	1.72
AR	**12.8852**	0.31	**4.5980**	0.33	**33.6929**	0.95	**47.6301**	2.21
FL	**-4.6601**	-0.11	**18.6769**	1.34	**1.2815**	0.04	**48.0349**	2.24
GA	**-5.8773**	-0.15	**-5.5293**	-0.40	**31.7328**	0.91	**47.8728**	2.25
LA	**20.0420**	0.48	**-2.1732**	-0.15	**37.4972**	1.04	**58.7408**	2.68
MS	**35.2301**	0.84	**5.6770**	0.39	**57.9392**	1.60	**46.7574**	2.11
NC	**-15.3661**	-0.39	**-8.6911**	-0.64	**6.7339**	0.20	**36.1903**	1.74
SC	**68.0705**	1.56	**24.7524**	1.66	**59.5069**	1.59	**69.0236**	3.01
TX	**26.0486**	0.63	**14.2945**	1.01	**21.0218**	0.59	**53.0715**	2.44
KY	**-7.1586**	-0.16	**21.5040**	1.40	**-24.4144**	-0.63	**-7.7321**	-0.33
MD	**-6.0444**	-0.14	**9.3538**	0.64	**15.8712**	0.43	**41.0349**	1.81

OK	**15.2355**	0.38	**27.0856**	1.98	**-2.5310**	-0.07	**24.5374**	1.17
TN	**13.8849**	0.35	**-2.5621**	-0.19	**38.6663**	1.13	**44.6854**	2.13
WV	**-13.2476**	-0.33	**42.7821**	3.13	**-35.8759**	-1.04	**22.7711**	1.08
AZ	**312.5128**	6.60	**22.5708**	1.39	**310.5732**	7.63	**8.8344**	0.35
CO	**-40.7821**	-1.00	**49.7027**	3.56	**-33.4068**	-0.95	**19.5822**	0.91
ID	**-39.8185**	-0.95	**27.3073**	1.91	**-52.8220**	-1.47	**37.7895**	1.72
MT	**18.3187**	0.44	**59.0296**	4.17	**9.0760**	0.25	**54.3343**	2.49
NV	**162.4684**	3.31	**34.0386**	2.03	**193.6574**	4.58	**29.0344**	1.12
NM	**64.5628**	1.48	**42.7743**	2.87	**28.3563**	0.76	**54.9862**	2.40
UT	**1.9793**	0.05	**29.3431**	1.98	**-11.4175**	-0.31	**58.6017**	2.57
WY	**-64.3489**	-1.43	**39.1136**	2.54	**-20.4042**	-0.53	**62.5916**	2.64
CA	**-32.4316**	-0.81	**17.6197**	1.29	**-6.0456**	-0.18	**47.7188**	2.26
OR	**-82.4779**	-1.96	**-17.331**	-1.21	**-16.1631**	-0.45	**11.3864**	0.52
WA	**-31.0679**	-0.75	**12.8116**	0.90	**-0.6642**	-0.02	**-7.3958**	-0.34
R-squared	**0.4405**		**0.4258**		**0.3010**		**0.3476**	
R-bar-squared	**0.4262**		**0.4112**		**0.2832**		**0.3310**	

Appendix Table 6

Comparisons of Adjusted R-squareds from Regressions with Political Variables Only and Structural, Relief, Recovery, and Reform Variables Only for Each Program

	Political variables only	Structural, relief, recovery, and reform variables only	All variables and state dummy variables included
RELIEF:			
FERA Grants	0.117	0.200	0.398
CWA Grants	0.146	0.232	0.470
WPA Grants	0.106	0.201	0.296
SSA Pub. Asst. Grants	0.327	0.258	0.604
PUBLIC WORKS:			
Federal PWA Grants	0.007	0.055	0.110
Nonfed. PWA Grants	0.008	0.028	0.331
Nonfed PWA Loans	0.003	0.005	0.580
PRA Grants	0.151	0.555	0.601
PBA Grants	0.007	0.040	0.441
FARM PROGRAMS:			
AAA Grants	0.175	0.665	0.740
FCA Loans	0.284	0.613	0.686
FSA Grants	0.272	0.282	0.675
FSA Loans	0.145	0.301	0.461
REA Loans	0.065	0.090	0.172
LOANS AND HOUSING:			
RFC Loans	0.019	0.105	0.150
HOLC Loans	0.080	0.505	0.577
FHA Loans Insured	0.034	0.259	0.361
USHA Loan Contracts	0.019	0.137	0.170
USHA Grants	0.004	0.047	0.650
AGGREGATES:			
Total Grants	0.206	0.367	0.426
Relief Grants	0.151	0.268	0.411
Public Works Grants	0.065	0.229	0.283

Total Loans	0.175	0.290	0.331

[1] See Arrington (1969) and the studies summarized in Table 2.

[2] As in the prior literature, we focus on the distribution of funds without examining the tax collection side of the analysis. Federal tax rates were uniform nationwide, so variations in federal tax revenue from the counties would have been driven by the number of families with incomes large enough to pay income taxes (less than 7 percent nationwide), the extent of corporate activity, and differences in the consumption of goods subject to excise taxes. We are also not trying to capture the indirect effects of payments that might arise from changes in markets in response to the grants and loans.

[3] Another issue to consider is that not all federal dollars were alike. A dollar from the WPA was likely to have a bigger economic effect than an AAA dollar. The AAA dollar was essentially a payment to a farmer to take land out of production, thus the net benefit of the AAA dollar to the farmer was less than a dollar. Similarly, in this analysis we take a look at specific loan programs for the first time. Since the majority of loans that were made were to be repaid, it is clear that loan dollars had quite a different meaning than grant dollars.

[4] For an appreciation of the variety of strategies followed by state and local governments in response to the New Deal, see Patterson (1967), and the case studies on North Carolina by Abrams (1992), on Arizona by Collins (1999), on the South by Biles (1994), and the series of studies of Massachusetts, Ohio, Virginia, Pennsylvania, Louisiana, Oklahoma, Wyoming, Montana, Colorado, New Mexico, Oregon, and Missouri edited by Braeman, Bremner, and Brody (1975).

[5] Wallis (1984) used a simultaneous equations model that explicitly examined matching; Wallis (1987 and 1998) used lagged grants to try to capture the pressures from state governments; and Fleck (1999b and 1999c) used state dummies in his county-level analysis to control for state government activities. Couch and Shughart (1998) looked at the sponsor's role in the WPA, but in another analysis they had panel data but did not use state effects or lagged grants to control for state interests in the New Deal.

[6] For analyses of the factors influencing work relief, unemployment, and private employment at the individual level for WPA workers in 1940, see Margo (1991), Finegan and Margo (1994), and Sundstrom (1995).

[7] See Graham (1973) and Sitkoff (1985) for debates about the New Deal.

[8] For innovative approaches to theoretical modeling of the political process in this context, see the work of Wright (1974), Fleck (1999a, 1999b, 2001a) and Rhode, Snyder, and Strumpf (2001).

[9] Estimating separate structural equations for each program, but directly taking into account the fact that all programs were substitutes, would involve finding instrumental variables for each individual program. That would be a most difficult task.

[10] For a discussion of the political nature of this variable, see Fleck (2001b) and Wallis (2001).

[11] The Social Security Administration's public assistance programs required explicit matching from the states. The FERA was originally designed such that half of the initial monies were to be distributed with a strong matching grant component and the other half was to be distributed on a discretionary basis. However, after spending $200 million on a matching basis by November 1933, FERA administrator Harry Hopkins convinced Congress to allow the FERA to distribute the monies on a discretionary basis, which is how the vast majority of FERA funds were spent. See U.S. Senate (1935, pp. xi-xiv), E. A. Williams (1968, pp. 181-90, 203-17), and Couch and Shughart (1998). The WPA also asked state and local governments to contribute funding to its projects, although there was never an explicit matching formula and the federal share of the funding of projects varied substantially across states (Howard, 1943, pp. 146-50).

[12] Because we are estimating separate equations for multiple programs, we might have needed to pay attention to potential cross-equation error correlations by using a seemingly unrelated regression (SUR) analysis. However, since all of the equations we estimate have the same set of independent variables, the SUR estimator is the same as the OLS estimator.

[13] Wright (1974), Wallis (2001), and Fleck (2001b) have followed the procedure of comparing the R-squareds from regressions with just the political variables to regressions with just the economics and structural variables to see which sets of variables explain more of the variation in the sample. We have performed similar comparisons (see Appendix Table 6) in which we compared the adjusted R-squareds from regressions with only the presidential and congressional variables listed in Table 3 (percent voting democrat for president 1896-1928 through the Congressional committee assignments) to regressions with only the structural and reform, relief, and recovery variables (inverse population through average farm size). The adjusted R-squared from the structural and three-R specifications are larger than those from the political specifications in all but the SSA public assistance regression. We did not include the state dummy variables in either regression because they control simultaneously for both political and non-political factors. In the county studies, F-tests reject the hypothesis that all of the state effects are simultaneously zero in nearly all cases.

[14] The WPA lasted through 1942, but our data set only records spending through June 1939 for any program. The Social Security programs include Aid to Dependent Children, Aid to the Blind, and Old-Age Assistance.

[15] Harold Ickes administered the PWA, with advice from a Special Board. Generally, the projects were vetted by each of three sections of the central office and then sent on to the Special Board. Roosevelt had the final say and E. A. Williams (1968, 106 and 114-16) claimed that Roosevelt did not just "rubber stamp" Ickes's decisions. In discussing how the PWA funds were distributed, Williams argued that the Special Board did not focus on the variables that the National Planning Board deemed important to consider, such as population, unemployment, relief spending, tax contributions, or land area, but that the Special Board did take note occasionally of its comparative generosity to some states and restricted or postponed allotments accordingly.

[16] The tax information has been used by a number of scholars (Smiley 2000, Schmitz and Fishback 1983) as proxies for the share of income in the highest tail of the income distribution.

[17] Unlike most New Deal agencies, the AAA was administered by an existing department – the Department of Agriculture – which established state and local committees or associations of producers to help administer the act. The AAA Rental and Benefit payments were distributed to farmers who agreed to participate in a program of controlled production. Farmers voluntarily signed production agreements in which they would curtail the acreage they planted. The benefit payments were financed from special processing taxes on the commodity being curtailed. The goal of the program was to increase the incomes of farmers both through benefit payments and by raising market prices to pre-World War I levels (1920s levels for tobacco). There was a general belief that most of the burden of the processing taxes would be passed on to consumers of farm products. For detailed discussions of the AAA administration, see Nourse, et. al. (1937, pp. 39-40, 92-114, 120-46, 287-323).

[18] The measure of farm size is problematic in southern plantation areas where there were large numbers of sharecroppers who were treated by the census as farm operators, when in fact they were more like farm laborers. See Alston and Kaufmann (1997).

[19] See Saloutos (1974 and 1982), Alston (1981), Whatley (1983), and Biles (1994).

[20] A key theme of Anderson and Tollison's (1991) work was that it was important to include Congressional pressures. We include them in several ways. For the House of Representatives we include measures of the tenure of congressmen representing the district in which the county was located. House members with longer tenures had more seniority on committees at this time. Weingast and Marshall's (1988) discussion of the organization of Congress suggests that

committee members wield significant power over the passage of bills and over the administration of administrative programs. Members of committees have more clout than the typical representative in determining how monies will be distributed, either through writing the rules for distributing funds in advance of the bill or through pressures to spend the money after the program is in place. To capture this effect, we include representation on a series of key committees in the House of Representatives at the opening of the 73rd Congress in 1933. The same issues obviously exist for the Senate. The impact of the Senate influences is among several factors that are captured by the state dummy variables.

The impact of House tenure was relatively small on the distribution process. The elasticity was higher than 0.05 for only the U.S. Housing Authority loans. The coefficients of the congressional committee variables suggest that for most programs there was one and sometimes more committees that appeared to increase spending in the area in a statistically significant way. Membership on the Agriculture Committee was associated with an extra $20 per capita in AAA spending, $6.5 in FCA loans, and $1.23 in REA loans. Appropriations Committee membership was associated with an extra $6.86 in non-federal PWA loans. The Irrigation and Control Committee raised FSA grants by $0.86. The Labor Committee appeared to influence the most programs, raising FERA, CWA, and AAA grants and USHA loans. The Public Lands Committee raised FERA spending, PRA spending and AAA spending. The Roads Committee increased WPA, RFC, and HOLC funds. Finally, Ways and Means primarily influenced the public buildings and public housing grants.

We have experimented with using the Poole and Rosenthal (1997) measures of ideological location in political space, but the elasticities were all low and the coefficients were typically statistically insignificant. We also experimented with a dummy variable accounting for southern Democratic congressmen, but the variable had little impact.

[21] This is similar to a key component of Wright's presidential political productivity index. Other key components included the number of electoral votes in each state and the standard deviation of the democratic voting.

[22] Wright's political productivity index for analysis at the state level was weighted by the votes in the Electoral College. We have experimented with using an electoral votes measure for each county that multiplied the state's electoral votes by the county's share of the population. Given the way electoral votes were determined, this essentially becomes a measure of population share nationwide. Inclusion of the variable leads to results that yield largely the same inferences as reported here.