Economic Voting in Gubernatorial Elections

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Abstract: There is a large literature on economic voting in the United States, which shows that the economy matters in presidential and congressional elections. Puzzlingly, however, the state politics literature has failed to find clear evidence for economic voting in gubernatorial elections. In this study, I use population-based datasets of state and county-level economic conditions from 1969-2016 to examine the effect of the state and local economies in gubernatorial elections. I find strong evidence that the state and local economies have an important effect on gubernatorial elections. In addition, I find some evidence that voters reward or punish gubernatorial candidates for the performance of the local economy based on whether they share the president's party. Overall, my findings show that there are strong electoral incentives for governors to pursue policies that grow the state economy.

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1 Introduction

There is a huge literature on economic voting in federal and state elections. A large body of work has shown that the incumbent party's vote share in presidential elections is correlated with national economic conditions (Kramer 1971; Tufte 1980; Markus 1988; Erikson 1989). The findings for economic voting in gubernatorial elections are more mixed. Some cross-sectional studies based on surveys find that strong evaluations of the state economy (Stein 1990; Atkeson and Partin 1995; Carsey and Wright 1998) or state-level personal income growth (Niemi, Stanley, and Vogel 1995) help the party of the incumbent governor. But these studies lack credible research designs to identify the causal effects of the economy. Most aggregate studies of state-level election results find null (Peltzman 1987) or contingent effects (Ebeid and Rodden 2006) of the economy on voting in gubernatorial elections.

A closely related question is whether voters hold gubernatorial candidates accountable for local economic conditions. Until recently, there was a consensus in the literature that local economic conditions had little effect on accountability in either presidential (Eisenberg and Ketcham 2004; Hill, Herron, and Lewis 2010) or gubernatorial elections (Wright 2012). However, much of this evidence relied on sample-based measures of economic performance at the county-level. Healy and Lenz (Forthcoming) show that the measurement error in these indicators attenuated their effect on election results. They find strong evidence of accountability in presidential elections using measures of local economic performance based on administrative records that are not sensitive to sampling error. This suggests that the null or contingent findings in studies of gubernatorial elections may also have been due to measurement error in sample-based measures of the state and local economy.

Even if voters are holding gubernatorial candidates accountable for the local economy, it is unclear *which* candidates they should blame for poor performance, and reward for good performance. A president-centric view holds that voters reward candidates from the president's party for strong performance, and blame them for weak economic growth. Alternatively, a state-centric view predicts that voters hold gubernatorial candidates from the

current governor's party accountable for economic performance.

In this paper, I examine economic voting in gubernatorial elections using state and county-level data from 1969-2016.[1] Most importantly, my analysis is built upon administrative data on the state and local economy that is not susceptible to sampling error. I combine these data with election results at the state and county-levels. With this rich dataset in hand, I utilize multiple identification strategies to estimate the causal effects of economic voting, including difference in differences and dynamic panel models (Angrist and Pischke 2009).

First, I examine economic accountability at the state-level in gubernatorial elections. In contrast to previous work, I find strong evidence of economic accountability in gubernatorial elections. Gubernatorial candidates are rewarded for strong employment and wage growth when their party holds the governorship, and punished for weak economic performance. One percentage point of wage and employment growth at the state-level leads to a 1.4 percentage point increase in the vote share of candidates from the governor's party.

Next, I examine accountability for the local economy in gubernatorial races using county-level data. Similarly to the state-level findings, I find that voters hold gubernatorial candidates from the current governors' party accountable for economic performance. Unlike at the state-level, however, they also hold candidates accountable from the president's party. However, the size of both effects is an order of magnitude smaller than the effect of the economy at the state-level. There are a number of potential explanations for this, including correlated economic patterns across counties, statewide media coverage of the economy, or strategic candidates deciding to run for governor based on the state of the economy.

Finally, I compare the magnitude of local economic voting in gubernatorial and presidential elections. I find that local economic voting is similar in gubernatorial and presidential elections. In both contexts, one percentage point of wage and employment growth at the county-level leads to a 0.1-0.2 percentage point increase in the vote share of candidates from

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1. These datasets extend back to 1969.

the incumbent party.

Overall, my findings show that the economy matters in gubernatorial elections. This suggests that there are strong electoral incentives for governors to pursue policies that grow the state economy. It also suggests that economic voting in gubernatorial elections is more similar to economic voting in presidential elections than scholars have previously thought.

The paper proceeds as follows. First, I briefly review the background literature on economic voting, and particularly on local economic voting. Second, I discuss my theoretical expectations. Next, I discuss my research design, and then my results. Finally, I briefly conclude and discuss next steps in this research agenda.

2   Economic Voting in Gubernatorial Elections

Theories of retrospective voting predict that voters should hold both incumbents and candidates from the incumbent party accountable for economic performance. Thus, even when the incumbent doesn't run for re-election, the incumbent's party is likely to be assigned responsibility for economic conditions during the incumbent's term. A large empirical literature has shown that the incumbent party's vote share in presidential elections is correlated with macro-level economic conditions (Kramer 1971; Erikson 1989; Markus 1988). These studies find that "citizen[s] vote for the government if the economy is doing all right; otherwise the vote is against" (Lewis-Beck and Stegmaier 2000).

Until recently, there was a debate about whether voters held presidential candidates accountable for local economic conditions (Gosnell and Colman 1940; Wright 2012; Eisenberg and Ketcham 2004; Hill, Herron, and Lewis 2010). But Healy and Lenz (Forthcoming) show that the mixed results in previous studies on the effect of the local economy were largely caused by a reliance on sample based-measures of economic performance. For instance, many studies rely on estimates of county-level unemployment from the Bureau of Labor Statistics (e.g., Wright 2012), which is largely based upon the Current Population Survey. Healy and

Lenz (Forthcoming) point out that sampling error in these unemployment estimates "can cause a county-level unemployment change to deviate from the truth by several percentage points." The large measurement error in these estimates of unemployment attenuate estimates of accountability. Healy and Lenz examine the effect of the mortgage crisis in 2008 in California, as well as the effect of changes in wages and employment at the county-level on presidential voting from 1990-2016 using population-based datasets that are not susceptible to sampling error. They find strong evidence that the voters hold the president's party accountable for local economic conditions.

Despite the consensus about the importance of economic voting in the literature on presidential elections at the national-level, and, more recently, at the local-level, there has been no clear consensus about whether voters hold governors accountable for economic conditions (see Table 1). Some cross-sectional studies based on surveys find that strong evaluations of the state economy (Stein 1990; Atkeson and Partin 1995; Carsey and Wright 1998) or state-level personal income growth (Niemi, Stanley, and Vogel 1995) help the party of the incumbent governor. Others find contingent effects. For instance, Brown (2010) finds that "voters divide responsibility for economic conditions in a partisan manner, preferring to blame officials from the opposing party when problems arise." But the findings in all of these studies could be confounded by the endogeneity between vote choice and economic evaluations, as well as omitted variable bias.

In contrast to the survey-based studies, most studies that use state-level electoral data find either no relationship between state-level economic performance and gubernatorial election results (e.g., Peltzman 1987) or very modest evidence of accountability (Chubb 1988). However, these studies also often lack credible identification strategies to separate the effects of the state and national economy, and thus their results could be confounded by any number of omitted variables. Even recent studies, with more credible identification strategies, generally find little evidence of accountability in gubernatorial election for economic performance at either the state (Ebeid and Rodden 2006) or local levels (Wright 2012, 695).

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Author	Time Period	Economic Indicator	State or Local Econ.	Research Design	Accountability for Gov's Party
Based on Surveys					
Stein (1990)	1982	Self-Eval's	State	XS	Mixed
Svoboda (1995)	1982, 86	Self-Eval's	State	XS	Yes
Partin (1995)	1990	Self-Eval's	State	XS	Yes
Atkeson and Partin (1995)	1986, 90	Self-Eval's	State	XS	Yes
Niemi, Stanley, and Vogel (1995)	1986	PCI	State	XS	Yes
Carsey and Wright (1998)	1986, 90	Self-Eval's	State	XS	Yes
Brown (2010)	2006	Self-Eval's	State	XS	Contingent
Based on Election Results					
Kenney (1983)	1946-80*	Unemployment	State	TS	No
Peltzman (1987)	1949-84	PCI Growth	State	Panel	No
Chubb (1988)	1940-82	PCI Growth	State	Panel	Yes, but small
Leyden and Borrelli (1995)	1972-91	Unemploy.	State	XS	Contingent
Ebeid and Rodden (2006)	1950-98	PCI/Unemploy.	State	Panel	Contingent
Wright (2012)	1996-08	Unemployment	Local	Panel	No

*Note: * Kenney (1983) uses a panel of 14 states.*

Table 1: Previous Studies on Economic Accountability in Gubernatorial Elections

Ebeid and Rodden (2006) examines elections from 1950-98, and finds that voters only hold governors accountable in states with more industrialized and diversified economies. Wright (2012, 695) examines elections from 1996-2008, and finds that higher county-level unemployment improves Democratic vote share. But he finds no evidence that voters reward (or punish) candidates from the incumbent's party. It is important to note though that both of these studies largely rely upon sample-based measures of unemployment. Findings based on these measures could be attenuated due to measurement error (Healy and Lenz, Forthcoming).[2] In addition, Wright (2012) focuses on a very short time frame (1996-2008). So, overall, it remains unclear whether gubernatorial candidates are held accountable for economic performance at the state level or local levels.

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2. Another limitation of previous work is that the studies that use population-based measures generally rely on growth in personal income. But personal income includes transfers from the federal government, dividends, interest, and many other components that have little to do with the state economy.

3   Theoretical Expectations

There are two schools of thought on accountability in state elections. The "state-centric" view is that voters are likely to hold the current incumbent governor's party accountable for economic policies and outcomes. Moreover, voters will associate policies not merely with the current incumbent but with his or her party as well (Ebeid and Rodden 2006). Put simply, candidates from the governor's party will be rewarded for strong economic performance and punished for weak performance. As a result, economic accountability works whether or not the current governor runs for re-election.

Alternatively, the "president-centric" view predicts that voters will hold the president's party accountable in gubernatorial elections. In other words, candidates from the president's party may be rewarded for strong performance, and punished for weak performance. Recently, there has been important work showing that state elections are increasingly nationalized (Hopkins 2017). This line of work suggests that voters often reward and blame the party of national officials in state elections. For instance, national and state election results are increasingly correlated with each other. There is also abundant anecdotal evidence for this view. For instance, Democratic governors were much more likely to lose re-election during Obama's first midterm in 2010 than their Republican counterparts. Of course, it is difficult to separate the midterm slump from economic voting using anecdotal evidence. Indeed, the Democratic losses in 2010 could have been due to the nationwide Republican wave or due to state-specific economic performance.

4   Research Design

In order to evaluate local economic voting in presidential and gubernatorial elections, I built a panel dataset of election returns and economic conditions at the state and county-levels. The dependent variable is the Democratic candidate's share of the two-party vote in each geography. I assembled state and county-election results from 1970-2016 using a variety of

datasets. For elections between 1970-1990, I use the General Election Data for the United States, 1950-1990 hosted by the ICPSR (ICPSR 2013). For elections between 1990 and 2014, I use data from CQ's Voting and Elections Collection. Finally, I use data that Stephen Pettigrew assembled for the 2016 election (Pettigrew 2017).

The main independent variable is the change in economic conditions in a given geography (state or county) between $year_t$ and $year_{t-1}$. Following recent work by Healy and Lenz (Forthcoming) and Hopkins and Pettingill (2015), I measure changes in the local economy using a dataset with annual measures of county-level economic conditions based on the population of business establishments in the United States: the Bureau of Economic Advisors' (BEA) Local Area Personal Income and Employment data.[3] The BEA data includes both average wages and total employment in each state and county from 1969-2015. The 2016 BEA data hasn't been released yet, so I use data from Quarterly Census of Employment and Wages (QCEW) to measure economic conditions in 2016. Following Healy and Lenz (Forthcoming), I measure economic performance using the average of changes in wages and employment in each state and county. However, the results are robust to other coding decisions.

In order to estimate the causal effect of changes in state and local economic conditions, I estimate a series of panel models. The optimal model might be one with both two-way fixed effects (FE) to control for time-invariant confounders in each geographic unit and year (e.g., Besley and Case 2003), as well as a lagged dependent variable (LDV) to control for time varying confounders (Beck and Katz 2011). However, it is well-known that the FE-LDV model is biased when the number of time periods is small relative to the number of geographic units (Nickell 1981). Beck and Katz (2011) caution that this bias can be severe if there are fewer than 20 time periods. In this application, I observe fewer than 20 elections within each state. As a result, I use two alternative identification strategies. First, I estimate a series of dynamic panel models with time fixed effects and an LDV, but no unit fixed effects. Next,

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3. This dataset is largely based upon the Quarterly Census of Employment and Wages (QCEW), which is produced by the Bureau of Labor Statistics using administrative data on employers' Unemployment Insurance filings. It also incorporates a number of other administrative datasets from state and federal sources.

I estimate models with both time and unit fixed effects, but no LDV. Angrist and Pischke (2009) argue that the FE and LDV approaches to modeling panel data roughly bracket the true causal effect.

For state-level elections, the first set of models includes year fixed effects and lagged dependent variables. This controls for year-specific confounders (e.g., a midterm penalty for the president's party), as well as past election results and other time-varying confounders. The next set of models uses a difference in differences identification strategy with year and state fixed effects to control for invariant confounders within each year and state, but omits the LDV.

For county-level elections, the first set of models includes year fixed effects and an LDV. I then estimate a model with state x year fixed effects as well as an LDV. This controls for confounders in each state-year as well as other time-varying confounders. Finally, I estimate a model with state x year fixed effects and county fixed effects. Both sets of models with state-year fixed effects show the effect of variation in the local economy within each state-year on gubernatorial elections.

In order to examine accountability in gubernatorial elections, I interact the measure of economic performance with the party of the incumbent governor. I hypothesize that Democratic candidates should be rewarded for growth when there is a Democratic governor, and Republican candidates should be rewarded when there is a Republican governor. I obtain data on the incumbent governor in each state/year from 1970-2014 from Klarner (2015), which I updated through 2016.

Finally, all models are weighted using the number of voters that voted in the gubernatorial or presidential election in each county.[4] This down-weights small counties, which often have volatile economic statistics. It also captures the political reality that politicians generally care more about counties with large populations than ones with small numbers of voters. However, all the results presented below are similar in a) models that don't include weights

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4. Healy and Lenz (Forthcoming) uses a similar approach.

and include all counties and b) models that don't include weights, but subset to counties with more than 10,000 people.[5]

5 Results

In this section, I discuss my main results. First, I examine economic voting at the state-level. Table 2 shows several different model specifications for economic voting, including models both with and without a lagged dependent variable. All of the models, however, have very similar results. They all indicate that Democratic candidates get about 1.4 percentage points of additional vote share for each 1 percentage point improvement in the state economy when the current governor is a Democrat (and likewise for Republican candidates with a Republican governor). This provides strong evidence that the state economy matters in gubernatorial elections over the past fifty years. In contrast, there is no evidence that the party of the president affects economic voting in gubernatorial elections at the state-level.

Why do these results differ from previous studies, which find null (Peltzman 1987) or contingent effects (Ebeid and Rodden 2006) of the economy on voting in gubernatorial elections? One possibility is that many of these studies relied on sample-based estimates of economic conditions, such as state unemployment rates (Ebeid and Rodden 2006). Another possibility is that these studies used the wrong measure of economic performance. Many past studies rely upon growth in personal income as their measure of economic performance (Peltzman 1987; Chubb 1988; Ebeid and Rodden 2006). But personal income includes transfers from the federal government, dividends, interest, and many other components that have little to do with the state economy. So it's not surprising that voters may fail to reward or sanction gubernatorial candidates for these factors. A third possibility is that the structure of economic voting in state elections has changed over time. For instance, it is possible that the decline of the one-party south has strengthened economic voting in this region.

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5. Future drafts will add an appendix with these results.

	Dependent variable:			
	State-level Democratic Gubernatorial Vote			
	(1)	(2)	(3)	(4)
Econ. Growth x Dem. Governor	1.467**	1.436**	1.375**	1.363**
	(0.637)	(0.655)	(0.607)	(0.637)
Econ. Growth x Dem. President		−0.325		−0.137
		(1.609)		(1.375)
Econ. Growth	−0.565	−0.444	−0.225	−0.174
	(0.489)	(0.872)	(0.543)	(0.791)
Democratic Governor	9.070***	9.082***	8.481***	8.485***
	(1.491)	(1.493)	(1.163)	(1.169)
Lagged Gov. Voting	0.076	0.076		
	(0.076)	(0.076)		
FE for Year	X	X	X	X
FE for State			X	X
Lagged Outcome	X	X		
Observations	535	535	586	586
R^2	0.301	0.301	0.408	0.408
Adjusted R^2	0.239	0.238	0.300	0.298

Note: Standard errors are clustered at the county-level. *p<0.1; **p<0.05; ***p<0.01

Table 2: Economic Accountability in Gubernatorial Elections at the State-Level from 1970-2016

Next, I examine economic voting at the county-level in Table 3. Once again, the table shows several different model specifications to estimate the causal effect of economic voting, including models both with and without a lagged dependent variable. The first set of models in columns (1) and (2) includes year fixed effects and a lagged dependent variable. The results of these models are similar to those in Table 2. They indicate that a one percentage point increase in the local economy increases the governor's party's candidate's vote share by 1.1 percentage points. However, these models do not really isolate the effect of the local economy, especially if county conditions across counties are correlated within state-years.

The next set of models in columns (3) and (4) adds state-year fixed effects. These control for omitted variables within each state-year. They model the effect of variation in the local

economy within each state-year. In these models, the effect of economic voting shrinks by an order of magnitude. Here, a one percentage point of wage and employment growth at the county-level leads to a 0.15 percentage point increase in the vote share of candidates from the incumbent party.

There are a number of potential explanations for the smaller magnitude of economic voting at the local level compared to the state level. First, economic conditions could be correlated across counties. In this case, the portion of the local economy that is correlated with other counties in the state will be absorbed into the state-year fixed effect. Second, the media could focus on the condition of the state economy rather than variation in the local economy. Finally, it is possible that much of the effect of the economy on elections occurs indirectly via strategic candidate entry (and exit) in elections. For example, in a strong state economy, few high-quality candidates will run from the opposition party. In contrast, there is likely to be a flurry of high quality challengers in a weak economy.

The last set of models in columns (5) and (6) adds county fixed effects, but omits the lagged dependent variable in order to avoid Nickell Bias (Nickell 1981). The results are very similar to those in columns (3) and (4). One percentage point of wage and employment growth at the county-level leads to a 0.14-0.15 percentage point increase in the vote share of candidates from the incumbent party.

In addition to evaluating economic accountability for the governor's party, I also examine whether voters take into account whether the gubernatorial candidate shares the president's party. I find that voters reward (and punish) candidates from the president's party in a similar manner as they reward candidates from the governor's party. One percentage point of local wage and employment growth at the county-level leads to a 0.12-0.15 percentage point increase in the vote share of candidates from the president's party.

A natural next question is how local economic voting differs in presidential and gubernatorial elections. In order to examine this question, Table 4 compares economic voting in gubernatorial and presidential elections at the county-level. The first two columns show the

	Dependent variable:					
	County-level Democratic Gubernatorial Vote					
	(1)	(2)	(3)	(4)	(5)	(6)
Econ. Growth x Dem. Governor	1.056***	1.055***	0.153**	0.147**	0.148**	0.142**
	(0.177)	(0.177)	(0.068)	(0.066)	(0.072)	(0.069)
Econ. Growth x Dem. President		0.020		0.124*		0.146*
		(0.163)		(0.068)		(0.077)
Econ. Growth	−0.475***	−0.483***	−0.110**	−0.160***	−0.121**	−0.177***
	(0.132)	(0.147)	(0.052)	(0.053)	(0.051)	(0.052)
Democratic Governor	−1.193***	−1.192***				
	(0.410)	(0.410)				
Lagged Gov. Voting	0.578***	0.578***	0.906***	0.906***		
	(0.022)	(0.022)	(0.009)	(0.009)		
FE for Year	X	X				
FE for State	X	X				
FE for State x Year			X	X	X	X
FE for County					X	X
Lagged Outcome	X	X	X	X		
Observations	33,080	33,080	33,080	33,080	35,689	35,689
R^2	0.402	0.402	0.867	0.867	0.865	0.865
Adjusted R^2	0.400	0.400	0.865	0.865	0.850	0.850

Note: Standard errors are clustered at the county-level.   *p<0.1; **p<0.05; ***p<0.01

Table 3: Economic Accountability in Gubernatorial Elections at the County-Level from 1970-2016

results discussed earlier on economic voting in gubernatorial elections. They indicate that a one percentage point increase in local wages and employment at the county-level leads to a 0.14-0.15 percentage point increase in candidates from the incumbent governor's party's vote share in gubernatorial elections. The next columns (3 and 4) show the effect of economic voting in presidential elections at the county-level. They indicate that a one percentage point increase in local wages and employment at the county-level leads to a 0.19-0.20 percentage point increase in the vote share of candidates from the incumbent president's party in presidential elections.

	Dependent variable:			
	Democratic Gubernatorial Vote		Democratic Presidential Vote	
	(1)	(2)	(3)	(4)
Econ. Growth x Dem. Governor	0.147**	0.142**		
	(0.066)	(0.069)		
Econ. Growth x Dem. President	0.124*	0.146*	0.201***	0.185**
	(0.068)	(0.077)	(0.048)	(0.078)
Econ. Growth	−0.160***	−0.177***	−0.114***	−0.276***
	(0.053)	(0.052)	(0.028)	(0.044)
Lagged Gov. Voting	0.906***			
	(0.009)			
Lagged Pres. Voting			101.890***	
			(0.445)	
FE for State x Year	X	X	X	X
FE for County		X		X
Lagged Outcome	X		X	
Observations	33,080	35,689	35,060	35,132
R^2	0.867	0.865	0.946	0.899
Adjusted R^2	0.865	0.850	0.945	0.888

Note: Standard errors are clustered at the county-level. $^*p<0.1; ^{**}p<0.05; ^{***}p<0.01$

Table 4: Economic Accountability in Gubernatorial and Presidential Elections at the County-Level from 1970-2016

6 Conclusion

There are strong theoretical and empirical reasons to believe that economic voting exists in gubernatorial elections. However, previous work has failed to find robust evidence for the existence of economic voting in these elections at either the state (Peltzman 1987; Ebeid and Rodden 2006) or local (Wright 2012) levels. In this paper, I provide the first robust evidence that economic voting is important in gubernatorial elections. I find that voters hold gubernatorial candidates accountable for economic conditions at both the state and local levels.

I also find that the magnitude of local economic voting is similar in gubernatorial and presidential elections. In both contexts, one percentage point of wage and employment

growth at the county-level leads to a 0.1-0.2 percentage point increase in the vote share of candidates from the incumbent party.

Overall, my findings show that the economy matters in state elections. This suggests that there are strong electoral incentives for governors to pursue policies that grow the state economy. My findings also suggest that economic voting in gubernatorial elections is more similar to economic voting in presidential elections than scholars have previously thought.

One useful avenue for future research would be to examine whether the media influences economic voting in gubernatorial elections. There are a variety of theoretical reasons to believe that media coverage of the local economy facilitates accountability. Past research has shown that media coverage has important effects on people's knowledge about politics (Snyder and Strömberg 2010; Hayes and Lawless 2015). This work suggests that counties that constitute a larger portion of their media market are likely to have more media coverage of the local economy (Hopkins and Pettingill 2015). Yet the link between the media and local economic voting in presidential and gubernatorial elections has never been explored.

Future work should also examine heterogeneity in accountability over time. As elections have become more nationalized and the media has fragmented, there are reasons to believe that voters are less willing and able to hold state candidates accountable (Rogers 2013). Future research should also examine the effect of the local economy on congressional and state legislative elections. If the local economy matters for these elections, it creates strong incentives for governors and other elected officials to pursue policies that help the economy in those areas (Kriner and Reeves 2012). Future research should also examine how institutions condition economic accountability. For instance, are voters more likely to hold governors accountable in states where the governors hold more institutional power?

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