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by

Robert M. Feinberg and
Kara M. Reynolds

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The Determinants of State-Level Antitrust Activity

Robert M. Feinberg^{*} and Kara M. Reynolds^{}**
American University

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ABSTRACT

While there has been a considerable literature exploring determinants of antitrust enforcement in the United States, studies have been based either on aggregate federal enforcement data over time (exploring cyclical influences) or cross-industry studies, usually for a single year or aggregated over several years. What has *never* been investigated is the pattern of state-level antitrust. This is somewhat surprising, as this has been a major activity of many state Attorneys General. In this paper, we explain state antitrust enforcement across states and time (for a 15-year period), examining a number of economic and political determinants which have been proposed in the literature.

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^{*} Department of Economics, American University, 4400 Massachusetts Avenue, NW, Washington, DC 20016. Telephone: (202) 885-3788. E-mail: feinber@american.edu.

^{**} Department of Economics, American University, 4400 Massachusetts Avenue, NW, Washington, DC 20016. Telephone: (202) 885-3768. E-mail: reynolds@american.edu.

I. Introduction

While there is a large literature exploring determinants of antitrust enforcement in the United States, these studies have either been based on aggregate federal enforcement data over time (exploring cyclical influences) or cross-industry studies, usually for a single year or aggregated over several years. What has *never* been investigated is the pattern of state-level antitrust. This is somewhat surprising, as this has been a major activity of many state Attorneys General. This also allows for a much larger dataset, especially if the time dimension is explored. In this paper, we explain state antitrust enforcement across states and time (for a 15-year period), examining a number of economic and political determinants which have been proposed in the literature.

Many explanations have been offered for antitrust enforcement, with a pure public interest perspective emphasizing the response to monopoly welfare losses, and more modern economic theories of regulation focusing on political variables and the extent to which cyclical patterns influence activity at the federal level through their impact on the interests of affected parties. In our empirical analysis, we hypothesize that state level antitrust enforcement is a result of both local political and economic influences.

In what follows we utilize data from the Antitrust Multistate Litigation Database developed by the National Association of Attorneys General to explain state antitrust enforcement activity. Our dataset includes antitrust enforcement for all 50 states for the period 1992-2006, giving us a pooled sample size of 750 observations. Using a random-effects Poisson regression model, we estimate to what degree various factors explain the number of antitrust cases filed by each state in a given year.

We find strong evidence that a number of political and economic factors are significant determinants of the level of state antitrust enforcement. For example, states with larger economies or larger government expenditures tend to file more antitrust enforcement cases than smaller states with more limited financial resources. Antitrust enforcement at the state level tends to be countercyclical, increasing during periods of high unemployment in the state. State attorneys general who are appointed to their position, or those serving under Republican governors, tend to file fewer antitrust actions than others.

In the next section we provide a brief review of the literature on the determinants of federal antitrust enforcement, followed by a discussion of recent trends in state level antitrust enforcement. Section IV discusses the data and empirical model used in this study, while Section V presents our results. Section VI concludes.

II. Previous Literature on Federal Enforcement

As discussed in Ghosal and Gallo (2001), there are two commonly cited justifications for antitrust enforcement. First, antitrust laws may be used to correct for deviations from competitive behavior; these corrections increase consumer welfare at the expense of producers. Second, interest groups may lobby for antitrust enforcement to redistribute wealth from one group (producers) to another (consumers or other – perhaps less efficient -- producers).

Previous theoretical and empirical literature has explored the determinants of antitrust enforcement at the federal level both over time and across industries. Besanko and Spulber (1989) and Harrington (2004) have provided theoretical models of optimal

enforcement, with the former focusing on enforcement costs and the need to “tolerate” some cartel activity given asymmetric information on production costs, and the latter noting that antitrust enforcement/detection will likely be a function of price changes (suggesting some perverse incentives enforcement provides to cartels).

For previous empirical studies of antitrust enforcement, sample sizes have tended to be quite small. Long et al. (1973) examined 20 2-digit SIC industries and found industry sales to be the most important economic factor explaining antitrust filings, with a lesser influence of measures proxying for actual or potential monopoly power (such as profit margins, seller concentration, and estimated deadweight losses). Siegfried (1975) disaggregated the analysis a bit to 65 IRS “minor industries” and concluded that economic variables generally seem to have little influence on Antitrust Division enforcement activity.

Ghosal and Gallo (2001) performed a time series analysis on over 40 annual observations and found that antitrust enforcement by the U.S. Department of Justice is countercyclical. The authors speculate that this is because antitrust violations increase during periods of declining economic activity (as firms are more desperate to maintain profit levels).

All studies note that political motivations obviously may play a role in enforcement (this is emphasized by Wood and Anderson (1993)), suggesting that in looking across states the incentives to file cases may be different for Attorneys General who are elected rather than appointed, and we explore this in the analysis below.

Empirical studies of the national level of antitrust enforcement such as Areeda (1994) and

Ghosal and Gallo (2001) have investigated whether antitrust enforcement increases under Democratic administrations, with mixed results. We examine this hypothesis as well.

III. State Antitrust Enforcement

States increased their efforts to enforce federal and state antitrust laws in the mid-1980s, a period in which, according to Rose (1994), state attorneys general were unhappy with the antitrust enforcement of the Reagan administration.¹ The National Association of Attorneys General (NAAG) created the Multistate Antitrust Task Force in 1983; this task force has developed state guidelines for enforcement of both vertical pricing restraints (in 1985) and horizontal mergers (in 1987, revised in 1993).

As Rose (1994) states, the NAAG Guidelines “identify...antitrust’s central purpose [as] prevent[ing] income transfers from consumers to producers.” The guidelines suggest that mergers be challenged almost entirely on the expected impact on the degree of competition in the market. A recent report by the Antitrust Committee of the Section on Commercial and Federal Litigation of the New York State Bar (2003) suggests that many states consider the same factors in determining whether or not to become involved in an antitrust enforcement effort.² For example, states are most active in investigations in which local consumer interests are affected, including local price fixing, resale price maintenance, and mergers of firms that have direct contact with consumers (i.e. retailers). The report also finds that states are particularly interested in matters impacting state agencies and purchases, like health-care services. States also take

¹ The Hart-Scott-Rodino Antitrust Improvement Act of 1976 authorized state attorneys general to institute federal *parens patriae* actions for treble damages on behalf of their states’ consumers.

² The report was based on interviews with state antitrust officers in California, Connecticut, Florida, Maryland, New York, Texas and Wisconsin.

available resources into account; they are less likely to pursue matters that other government enforcers or private parties are prosecuting.

The number of antitrust cases filed per year by individual states ranged from 0 to 10 during the 1990 to 2006 period. However, the level of enforcement activity varied considerably, both over time and across states. As illustrated in Figure 1, the total number of state antitrust cases ranged from 9 cases in 2006 to 31 cases in 1994. Figure 2 illustrates the pattern of antitrust enforcement across states during the 1990 to 2006 period. Over half of state antitrust enforcement was undertaken by 6 states: New York, Florida, Texas, California, Washington, and Pennsylvania. In contrast, 14 states filed zero antitrust cases during this time period.

IV. Data and Empirical Methodology

Because most of the literature on the political economy of antitrust enforcement has concentrated on regulation at the national level, few researchers have considered what types of state level characteristics create cross-sectional variation in the level of enforcement. We hypothesize that state level antitrust enforcement is a result of local political and economic influences, as detailed below.

We expect that the larger the size of the state economy, as measured by the log of gross state product (GSP), the more antitrust enforcement undertaken by its attorney general. States with larger governments may also engage in more antitrust enforcement for a number of reasons. First, such states may have more financial resources available with which to pursue antitrust matters. States with larger government may tend to be more interventionist in general. Finally, states with large governments are likely large

purchasers within the state, thus may have more interest in pursuing antitrust matters. We include the state's annual expenditures divided by its gross state product to account for these possibilities; this variable was calculated using data from the U.S. Census Bureau's State Government Finances annual survey.

One might expect that the larger the firms in the state, the more likely that the state would intervene in mergers or undertake other forms of regulation. On the other hand, states may shy away from undertaking antitrust enforcement measures against large, politically powerful firms. We account for either possibility using the proportion the state's workers employed in "large" firms, which we define as those with more than 250 workers. This variable is calculated using data from the U.S. Census' 1990 County Business Patterns in order to avoid potential endogeneity bias associated with including a current measure of concentration in an equation measuring antitrust enforcement. To account for the possibility that antitrust enforcement is related to aggregate economic conditions (as noted by Ghosal and Gallo (2001)), we measure economic activity (or business cycles) in the state using the lagged annual average state unemployment rate from the Bureau of Labor Statistics.

Because most state attorneys general are elected officials, state antitrust enforcement may be influenced by political party. We include a dummy variable that equals 1 if the governor of the state was a Republican during the majority of the year.³ Because the motivation for antitrust enforcement may be different for attorneys general who are elected rather than appointed, we also include a dummy variable for the five

³ We calculated this variable from information obtained from Congressional Quarterly's Voting and Elections Collection. We were unable to find data on the political party of all the state attorneys general during our sample period.

states that appoint their attorney general: Alaska, Hawaii, New Hampshire New Jersey and Wyoming.

We include two final variables to capture characteristics of the state electorate. One theory of antitrust enforcement speculates that enforcement may be a method of allowing government agencies to redistribute wealth from producers to consumers. If this is the case, we would expect antitrust enforcement to decrease with the state's median household income, which we gathered from the U.S. Bureau of the Census. Finally, although labor unions are exempt from antitrust laws, we include the percentage of state workers that are members of unions to account for the possibility that unions may enact pressure on officials to secure antitrust enforcement on particular firms. We measure unionization using the percentage of state workers that are members of unions as reported in the Hirsch and Macpherson (2003) Union Membership and Coverage Database.

Summary statistics of all variables are included in Table 1. In addition to the above variables, we include year dummy variables in all specifications in order to account for potential trends in state antitrust enforcement and macroeconomic conditions in the United States.

As noted above, our dependent variable in the baseline specification is the number of antitrust cases, for a given state and year, in which the state was a lead plaintiff, which was gathered from the Antitrust Multistate Litigation Database developed by the National Association of Attorneys General. This variable ranges from 0 to 10, thus we choose to estimate our empirical model using a random effects Poisson model. In this model, the number of cases filed by state i in year t , y_{it} , is modeled as a Poisson-distributed random

variable with mean λ_{it} . The mean number of cases is a function of state-level characteristics, X_{it} , and a state-specific, gamma-distributed random error, u_i , as described in the following equations:

$$\begin{aligned} y_{it} &\sim \text{Poisson}(\lambda_{it}) \\ \log \lambda_{it} &= X_{it}\beta + u_i, \quad \exp^{u_i} \sim \text{Gamma}(\delta) \end{aligned} \quad (1)$$

The state-specific error accounts for both overdispersion in the data and serial dependence in the dependent variable within a state. By assuming that the random error has a gamma distribution, the empirical model has a tractable density very similar to the negative binomial model that is typically used to estimate pooled count data that exhibits overdispersion. We estimate the model using quadrature with 12 points of integration.

Specification tests suggest that the random-effects Poisson model is the most appropriate model for our data. In particular, a regression-based version of the Hausman test of fixed versus random effects indicates that the random-effects model can be used to estimate our data. Moreover, a Poisson goodness of fit test conducted on the pooled sample suggests that the Poisson distribution is more appropriate than a negative binomial distribution, which would account for potential overdispersion over and above the state-specific heterogeneity included in the random-effects Poisson model.⁴

The number of cases filed by an individual state may decrease in a given year because of the economic and/or political conditions in the state (as partially captured in our explanatory variables), or because all states have chosen to participate in fewer antitrust actions due to changes in antitrust enforcement at the federal level or changes in the state antitrust guidelines set by NAAG, for example. Figure 1 certainly suggests that there has been a downward trend in state antitrust enforcement since 1994. In an

⁴ The p-value of this Hausman test was 0.1225. The p-value of the Poisson goodness of fit test was 0.2433.

alternative specification, we use as our dependent variable the share of total state antitrust cases in which each state participated in as a lead plaintiff in a given year; this variable ranges from 0 to 0.555. This dependent variable may better capture true cross-sectional determinants of state-level antitrust enforcement by taking into account the total number of state-level antitrust actions and the general trend in enforcement across states.

We estimate this model using a random-effects linear regression. A Hausman test of fixed versus random effects again indicates that this is the most efficient way of estimating our data.⁵ We also attempted to estimate the model using a random-effects Tobit model to account for the excess number of zeros in our data; the results were not qualitatively different from those presented here and thus are omitted from the discussion.

V. Results

Parameter estimates from the random effects Poisson model are included in column 2 of Table 2. A number of the variables that we hypothesized would impact the level of state antitrust enforcement proved to be significant and of the expected sign. For example, larger states, as measured by the size of their state economy, tend to participate in more antitrust enforcement actions. Parameter estimates suggest that a one percent increase in the gross state product increases the number of antitrust actions by almost one percent ($e^{.009}-1$). States with larger government expenditures also tend to participate in more antitrust actions; a one percentage point increase in the size of the state's total government expenditures relative to its gross state product increases the number of antitrust actions by the state by 14.8 percent. We are unable to tell based on our data

⁵ The p-value of this Hausman test was 0.1360.

whether this is due to the fact that these states have more resources to pursue these matters, or because states with larger governments have more of an interest in antitrust violations.

As noted above some researchers have hypothesized that antitrust enforcement is countercyclical, at least at the federal level, because firms may engage in more illegal activity during periods of declining economic activity. We find some evidence in support of this theory at the state level. A one percentage point increase in the state's lagged unemployment rate increases the number of antitrust actions filed by the state by 22.8 percent.

Similarly, antitrust researchers at the federal level have suggested that antitrust enforcement will increase under democratic administrations and we find evidence to support this theory at the state level. Attorneys general under Republican governors filed 23.3 percent fewer antitrust actions than those under Democratic governors during our sample period. Although we had no a priori belief regarding whether appointed attorneys general would pursue more antitrust violations than elected attorneys general, the parameter estimates suggest that appointed attorneys general participate in 90 percent fewer antitrust cases than their elected counterparts.

Finally, we hypothesized that states with poorer consumers may pursue more antitrust violations, thereby preventing additional income transfers from firms to consumers. Instead, our parameter estimates suggest the opposite. Specifically, we find that a one percent increase in a state's median household income increases the number of antitrust actions they pursue by 2.6 percent. Perhaps states with poorer households are more concerned with more direct ways of transferring resources back to these households

than antitrust actions. We find no evidence that state level antitrust enforcement is impacted by either the union coverage rate or the share of workers employed by large firms.

The parameter estimates from the linear random effects regression in which the dependent variable is the share of total antitrust actions in which each state participated in a given year are presented in column 3 of Table 2. The results are very similar to those of the count model regression. For example, the share of total state antitrust enforcement undertaken by states with appointed attorneys general is, on average, 2.9 percentage points less than the share undertaken by states that elect their attorneys general. Similarly, the share of enforcement undertaken by attorneys general that serve under Republican governors is 0.6 percentage points less than those serving under Democratic governors.

Not surprisingly, the linear regression also finds strong evidence that larger states participate in more antitrust actions than those with smaller economies. Our parameter estimates suggest that a one percent increase in the state's gross state product increases the share of total state antitrust enforcement undertaken by that state by 0.021 percentage points.

Although the sign of all the parameter estimates are identical to those in the Poisson regression, the statistical significance of some of the parameter estimates differs. For example, although the median household income, lagged unemployment rate and size of the state government were significant determinants of the number of cases filed by each state, they are insignificant determinants of the relative share of enforcement that each state chooses to participate in.

This statistical insignificance is perhaps not surprising. For example, all states may choose to file more antitrust actions during periods of slow economic growth, as measured by the lagged unemployment rate. However, as poor economic conditions tend to be highly correlated across states, this variable is unlikely to be significant when trying to account for pure cross-sectional variation in the relative strength of antitrust enforcement across states.

In contrast, the share of workers employed at large firms is statistically significant in this model. The parameter estimates suggest that states with larger firms file fewer antitrust actions compared to other states. Specifically, a one percentage point increase in the percentage of workers employed at firms with more than 250 workers reduces the share of state antitrust actions in which the state chooses to participate in by 0.1 percentage points. This seems to indicate that states tend to avoid taking antitrust actions against large, politically powerful firms.

VI. Conclusion

State attorneys general have become important partners with the Antitrust Division of the Department of Justice and Federal Trade Commission in enforcing both federal and state antitrust laws. However, this is the first empirical investigation of the determinants of their case-filing activity.

In this study we have found that many of the explanations found in the literature on federal antitrust enforcement determinants also apply to state level enforcement. For example, we find that antitrust enforcement at the state level tends to be countercyclical,

increasing during periods of high unemployment in the state. State attorneys general who serve under Republican governors tend to file fewer antitrust actions than others.

Other characteristics of state antitrust enforcement are specific to local area conditions. For example, state attorneys general who are appointed to their position tend to file fewer antitrust actions. States with larger economies and larger government expenditures file a greater number of antitrust actions than their smaller counterparts with fewer financial resources.

None of this suggests that this case filing activity is optimal; however clearly enforcement at this level does respond to economic (and to some extent political) pressures.

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Figure 1
Total State-Level Antitrust Litigation, 1990-2006

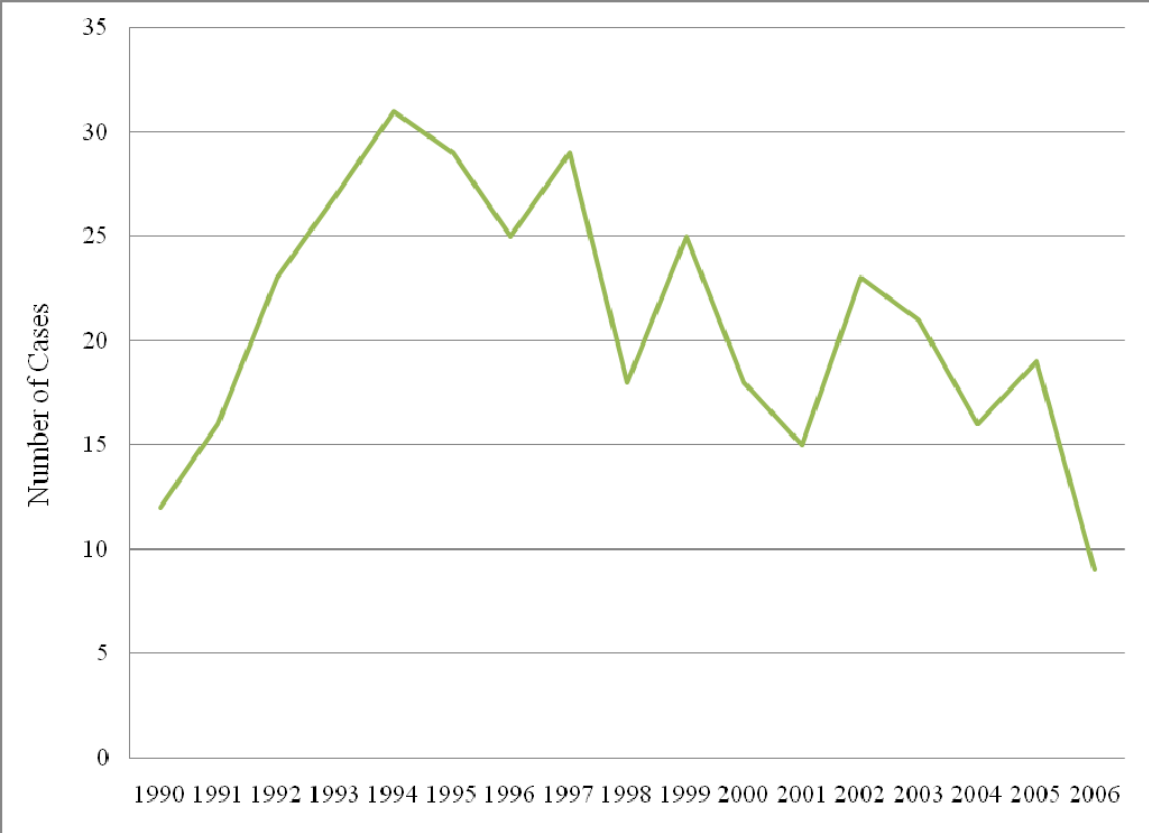


Figure 2
Antitrust Litigation by State, 1990-2006

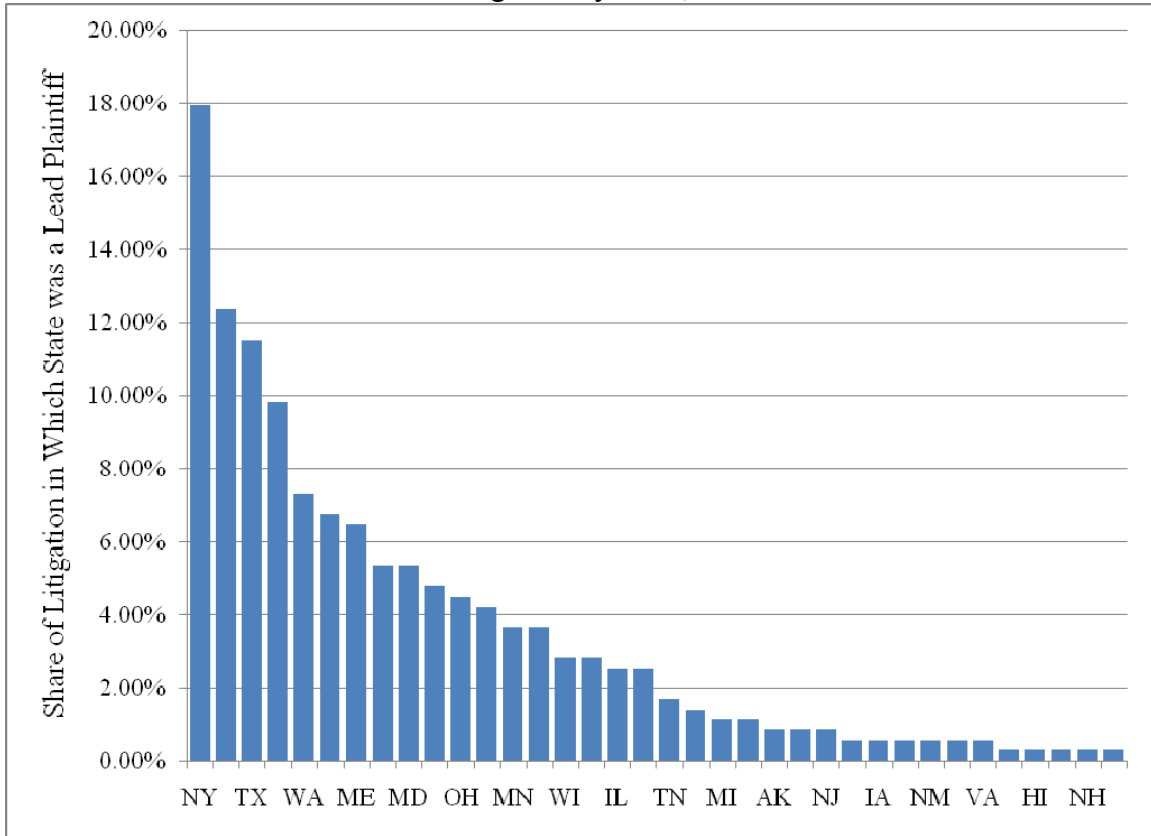


Table 1
Summary Statistics

	Mean	Std. Error	Minimum	Maximum
Cases	0.549	1.140	0.000	10.000
Ln(Gross State Product)	11.571	1.055	9.547	14.229
Government Expenditures/GSP	0.127	0.034	0.069	0.296
Share of Workers Employed at “Large” Firms	0.583	0.167	0.178	0.825
Unemployment Rate	0.050	0.014	0.023	0.113
Republican	0.545	0.498	0.000	1.000
Appointed	0.100	0.300	0.000	1.000
Ln(Median Household Income)	10.800	0.159	10.325	11.194
Union Coverage Rate	0.148	0.059	0.033	0.319

Table 2
Determinants of (Annual) State-Level Antitrust Enforcement¹

	(1)	(2)
	Random Effects Poisson	Random Effects Linear Regression
Ln(Gross State Product)	0.911** (0.214)	0.027** (0.006)
Government Expenditures/GSP	13.820* (6.432)	0.155 (0.138)
Share of Workers Employed at “Large” Firms	-1.639 (1.437)	-0.077** (0.033)
Lagged Unemployment Rate	20.609** (8.397)	0.248 (0.218)
Republican	-0.266** (0.128)	-0.007* (0.004)
Appointed	-2.304** (0.831)	-0.026 (0.017)
Ln(Median Household Income)	2.539** (1.066)	0.022 (0.026)
Union Coverage Rate	3.426 (3.269)	0.122 (0.079)
δ	0.174 (0.278)	
σ_i		0.029
σ_{it}		0.040
Year Fixed Effects	Yes	Yes
Number of Observations	750	750

¹ The dependent variable in the random effects Poisson model is the number of antitrust cases in which the state participated as a lead plaintiff in year t. The dependent variable in the random effects linear regression is the share of total state antitrust enforcement in year t in which the state participated as a lead plaintiff. Standard errors are in parentheses. *, ** indicate those parameters significant at the 10 and 5 percent levels, respectively. Parameter estimates from the constant not reported.