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State-Level Antitrust Enforcement: Revisiting the Determinants

Robert M. Feinberg[1] · **Kara M. Reynolds**[1]

Abstract
State-level antitrust enforcement has historically been an important tool that promotes competition in the U.S. The total number of cases that were filed between 1990 and 2006 averaged 22 per year, and generally fluctuated in a fairly tight band. In an earlier article we found that political and macroeconomic variables tended to explain well these filing patterns. However, since then the number of state cases filed has dropped dramatically and averaged just 12 cases over the five years that preceded Covid. In this paper we consider again the political economy of antitrust enforcement at the state level: we find similar explanations to our 2010 article, with the size of the state economy, the macroeconomic conditions that face the state, and the political party in charge of enforcement continuing to drive antitrust filing activity.

Keywords Antitrust enforcement · State-level antitrust · Determinants of antitrust · Political economy of antitrust · US state attorneys general

1 Introduction

While U.S. antitrust enforcement has been well-studied by economists, legal scholars, and political scientists, the focus has been almost exclusively on federal enforcement, and has mostly ignored state-level enforcement. All 50 states plus the District of Columbia can bring cases to court under both federal and state statutes; yet this remains an understudied area. Earlier articles -- such as Feinberg and Reynolds (2010) -- explained state-level filing patterns through the mid-2000s and found that both political and macroeconomic forces play important roles. However, there have been significant changes in antitrust activity since that time.

✉ Robert M. Feinberg
feinber@american.edu

[1] American University, Washgington, DC 20016, USA

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While the total number of federal and state antitrust case numbers have declined since the mid-2000s (see Fig. 1), more states seem to be actively participating in the cases that are pursued. Specifically, state antitrust regulators filed a total of 328 cases between 1990 and 2004 (or an average of 22 per year). Between 2005 and 2019, this number fell to 208 cases, or an average of 14 per year. However, because each case can have multiple states actively participating as lead plaintiffs, state antitrust activity has increased during this time: State attorneys general (AGs) filed an average of 0.5 cases per year prior to 2005; but they filed 0.9 cases per year in the period between 2005 and 2019:[1] More states are actively participating in a fewer number of antitrust cases.

To explore these changes further, in this paper we revisit the issue of what determines state-level antitrust enforcement activity: We use data for all 50 states and the District of Columbia (DC) for the 1990–2019 period to study to what degree motivations for state-level enforcement have changed in recent years. We find that motivations for state-level antitrust filings have not changed significantly in recent

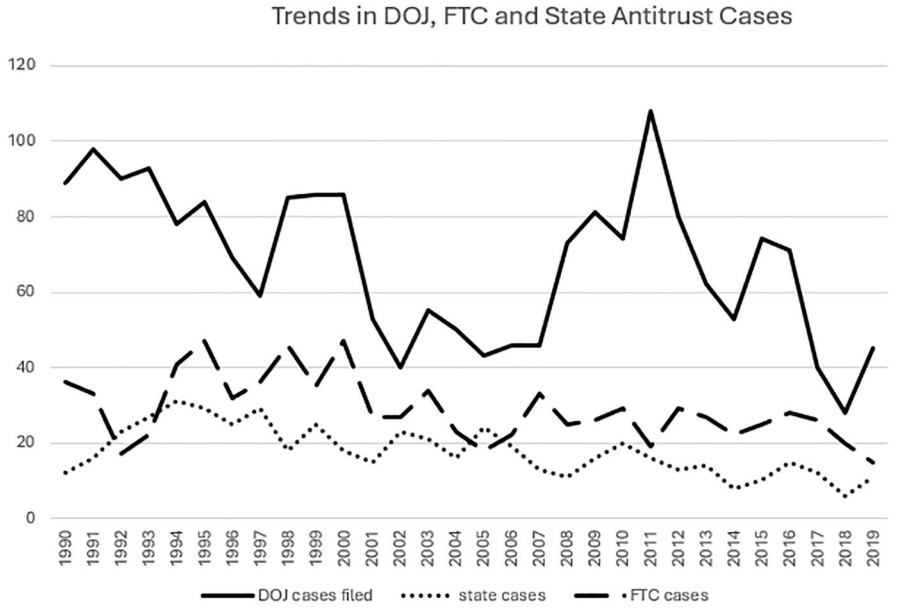

Fig. 1 *Notes* State cases are the annual count of the total antitrust cases filed by states from the Antitrust Multistate Litigation Database of the National Association of Attorneys General. DOJ cases are the total annual number of antitrust cases filed by the DOJ from the Antitrust Division's Workload Statistics. FTC cases are the total number of annual enforcement actions initiated by the FTC from the FTC Bureau of Competition annual reports

[1] State AGs choose how actively to participate in multi-state antitrust actions. The National Association of Attorneys General (NAAG), which administers the Antitrust Multistate Litigation Database, designates each state as either a lead plaintiff or simply a "participating" state, and there are often multiple lead plaintiffs in a case. The designation as lead plaintiff is a judgment made by NAAG's antitrust counsel; generally, lead states have devoted more resources to the case (both attorney time and finances) and have more involvement in decision-making.

years. On average, larger states with Democratic AGs are more likely to pursue antitrust actions -- particularly during periods of high unemployment. States are also more likely to pursue antitrust actions when there is more federal antitrust activity. The effect of macroeconomic and political variables on case-filing intensity suggests that state antitrust enforcement is often motivated by factors that go beyond a careful case-specific calculation of how best to punish and deter anticompetitive behavior.

2 Prior Literature and Motivation

Legal scholars have discussed the motivations for state antitrust enforcement, and particularly the relationship between state and federal antitrust enforcement. For example, Posner (2004) expresses concern that state AGs may file cases in part to protect own-state producers from competition from other firms – with an upwards bias towards cases that involve interstate and foreign commerce -- though this might be less of an issue if AGs are appointed (rather than facing electoral pressure). However, Greve (2005) finds a general mutual accommodation between state and federal antitrust enforcers. He notes, examining data in Posner (2004) and DeBow (2004), that there is more limited use of antitrust at the state level than might be expected. He particularly finds little appetite for challenging anticompetitive regulatory conduct by other states.

With respect to economic studies, Feinberg and Reynolds (2010) was the first to examine systematically the economic determinants of state-level antitrust enforcement using case data from the Antitrust Multistate Litigation Database (developed and hosted by the National Association of Attorneys General) for the 1992–2006 period.[2] Focusing solely on the choice to be a lead plaintiff in an antitrust action, they find that larger states (measured by economic activity) brought more cases, and adverse macroeconomic conditions (measured by the unemployment rate) induced more as well. While not statistically significant in all specifications, more affluent states also tended to bring more antitrust cases. Politics seemed to play a role in two senses: Republican AGs filed fewer cases, and AGs who were appointed (and hence did not need to campaign on the – generally – politically popular antitrust cases that they had pursued) filed fewer as well.

Feinberg and Husted (2013) specifically considered issues that are associated with joining state-level antitrust cases as a participant after the initial filing of a case – a form of free-riding. They find that smaller states (in terms of the size of their economies) were more likely to free-ride. States are also more likely to free-ride when the number of states that are involved in the case is larger and if a federal agency was involved in the litigation.

Since that time, most papers have distinguished between the determinants of choosing to be the lead plaintiff or just a participant in state actions. For example,

[2] DeBow (2004) does discuss trends in state antitrust litigation but does not examine cross-state differences or use statistical analysis to explain patterns. Others have, of course, examined the determinants of federal cases filed in the United States and other countries. See, for example, Posner (1970), Long et al. (1973), Siegfried (1975), Ghosal and Gallo (2001), Feinberg et al. (2012), Ghosal and Sokol (2014), Feinberg (2023).

Dove (2014) applies a similar analysis to that of Feinberg and Reynolds (2010); Dove uses a Poisson model and expands the sample to the 1990–2008 period. He focuses on whether case-filing responds to state election cycles: He finds a strong positive effect only for participation in multi-state cases, but not for sole-plaintiff (in-state) cases or cases in which the state was a lead plaintiff. His results suggest that the low cost of simply participating in a multistate case may make this decision appealing to an AG who faces an election.

Provost (2014) and Dove and Dove (2014) examined AG initiation and participation solely in ***multistate*** antitrust cases between 1989 and 2008. While this eliminates more than half of all cases filed (sole-plaintiff cases), both papers find similar patterns: More liberal and affluent states participate in more cases; but there are fewer case filings in states with higher unemployment.[3]

The previous empirical literature studied the determinants of state antitrust activity with the use of data that extended only through 2008 or prior years. But in recent years, there has been a steep decline in U.S. federal antitrust cases from the U.S. Department of Justice (DOJ) and the Federal Trade Commission (FTC). For example, the DOJ filed an average of 74 cases per year between 1990 and 2004 but filed only 62 cases per year (on average) between 2005 and 2019. Lancieri et al. (2022) analyze the federal decline in antitrust enforcement and conclude that this decline in enforcement is not due to a change in popular demand for antitrust from the electorate, but rather due to the preferences of selected (unelected) regulators and judges. They further speculate that the decline is due at least in part to the influence of large enterprises behind the scenes.

What remains to be analyzed, however, is whether state AGs have been similarly influenced to reduce antitrust enforcement, or whether states may increase enforcement so as to counteract less activity by federal regulators. As we noted in the Introduction, the total number of state antitrust cases has also fallen over this time, from an average of 22 per year between 1990 and 2004 to 14 per year between 2005 and 2019. However, this decline masks the fact that while the total number of state cases has fallen, active state participation in these cases (as lead or co-lead plaintiffs) has increased. Between 1990 and 2004, individual states filed on average 0.5 cases per year; this increased to 0.9 cases per year between 2005 and 2019.

Given the apparent change in state antitrust enforcement, we feel that an update to earlier analysis is called for. In what follows, we analyze 30 years of data -- 1990–2019 -- for the 50 states plus the District of Columbia. We examine both the total number of cases that have been brought per year by each state as a lead plaintiff, as well as the likelihood of bringing any cases as a lead or co-lead plaintiff. We further decompose our analysis by studying the determinants of the number of horizontal conspiracy and merger cases that are brought by each state, plus cases that involve a single state AG plaintiff (which are more likely to involve only within-state issues). We expect the political leanings of the state's decision-maker -- the AG -- should play a role. We also include characteristics of the state economy and of its electorate. To

[3] This is counter to the effect of unemployment that is found in Feinberg and Reynolds (2010) and in the results presented below; however, the measure of antitrust enforcement that was used in these articles is quite different.

account for national trends in antitrust case filing, we control for the number of DOJ and FTC cases that have been filed.[4]

2.1 Motivation and Data

In choosing which cases to pursue, state AGs must weigh the costs and benefits of the case -- both of which are significant. Building on the model in Feinberg and Reynolds (2010), we assume that each firm *i* in a state knows that if it engages in anticompetitive behavior, there is some probability (Φ_{Fine}) that the state AG will successfully pursue an antitrust case against the firm, which will result in the imposition of an exogenous *Fine*.[5] This probability can be further decomposed into two elements: the likelihood of the state AG's pursuing the case (Φ_{Case}); and the likelihood of the AG's being successful in the courts (Φ_{Legal}). The total number of anticompetitive actions in the state (*N*) is the sum of all the firms in the state that would realize positive expected benefits of engaging in anticompetitive behavior:

$$B_i^* = (1 - \Phi_{Fine})\,\Delta\pi_i\,(A) - \Phi_{Fine} * Fine > 0 \tag{1}$$

where Δπ is the increase in profits that accrue to the firm from the anticompetitive behavior, and A is a proxy for state-level characteristics. Note that to the degree that previous state antitrust cases increase the firm's a priori belief as to the likelihood that the state will pursue an antitrust action against the firm (Φ_{Case}) (or the level of the fine that will be collected if successful), cases can serve as a deterrent to future anticompetitive actions.

If the state AG perfectly observes all *N* of the anticompetitive actions, he or she must decide whether to participate actively in an antitrust case in the matter. The AG will allocate resources to the case *(Costs)*, which thus increases the probability that the case will successfully result in fines ($\Phi_{Legal}\,(Costs)$), if the expected benefits exceed the costs -- conditional on the constraint that the total costs of pursuing their portfolio of cases is less than the AG's budget: The state AG will maximize the returns to case filing by distributing his/her budget across cases in order to maximize:

$$\underset{Costs_j}{Max\Phi}\;{}_{Legal,j}\,(Costs_j)\,[\Delta CS_j(A) + \sum\nolimits_{k=1}^{N}\beta_k\,(X)\,\Delta\pi_{kj}\,(A)] - Costs_j \tag{2}$$

$$s.t.\sum\nolimits_{j=1}^{N} Costs_j \leq Budget\,(X)$$

[4] We define DOJ enforcement activity as cases that are filed in federal court, whether or not quickly resolved or settled. We define FTC cases as administrative actions, whether or not a preliminary injunction is sought in federal court; most of these are resolved by consent agreements.

[5] For this simple example, we assume that the fine is exogenous, known to the firm, and fully offsets any gain from the anticompetitive activity. One could also develop a more complicated model in which the fine was a function of actions by the state, or there was some uncertainty with regard to the level of the fine.

.In this equation, $\triangle CS$ is the change in consumer surplus that would result from successfully pursuing the antitrust case. Similar to the change in profits that accrue to each firm, this is directly related to the price effects of the anticompetitive activity, but these price effects are likely a function of a variety of state-level characteristics *(A)*, such as the economic size of the state.

The parameter β_k represents how much the AG values the profits of firm *k* relative to consumers and other firms in the state. The value of this parameter and the total size of the AG's budget for antitrust enforcement are functions of observed and unobserved state-specific political and economic conditions *(X)*. For example, if state AGs have been influenced by the same large enterprises as are federal regulators, as is proposed by Lancieri et al. (2022), one would expect the value of β_k to increase. Similarly, one might expect the value of β_k to fall for elected state AGs during election years if voters (consumers) value antitrust enforcement.

Although harder to quantify, AGs may also include in their calculations the deterrent effect of participating in antitrust cases; but such positive spillover effects are excluded from this simple model.

As one can see from this model, antitrust enforcement is a product of the amount of anticompetitive behavior in the state *and* the AG's inclination to pursue cases against this behavior. We cannot measure either of these directly, so our estimates are of a reduced-form relationship: observed case filings. We also observe only litigated cases, not all investigations or informal settlements. Priest and Klein (1984) discuss how cases that are actually litigated in court are not representative of all disputes that are potentially subject to litigation: Intuitively, cases in which both sides have similar perceptions as to the likelihood of outcome are more likely to be settled (so as to save on litigation costs); while those cases in which each side is unduly optimistic as to its prospects for prevailing are more likely to be litigated. We note, therefore, that motivations for the observed cases brought may differ from those for investigations and settlements prior to formal enforcement actions.

To study the determinants of state antitrust enforcement, we use state antitrust cases filings from the NAAG's Antitrust Multistate Litigation Database between the years 1990 and 2019 for all 50 states plus DC. This database is the most comprehensive source of information on all antitrust cases brought by state AGs, including both single-state and multi-state actions. Each case includes the court where the case was filed as well as the case citation, which allows researchers to find key documents from each case. As we noted in the Introduction, there is often more than one lead plaintiff in a case, with the number of co-lead plaintiffs frequently ranging between two and five, while a few cases have more than 40 co-lead plaintiffs; other states that participate in the case are referred to as "participating" plaintiffs.[6]

The main dependent variable, calculated by the authors, is the annual number of antitrust cases in which the state was a lead or co-lead plaintiff; multiple cases that involved the same product/issue by a state in a given year are treated as a single case. We count only new case filings; although our sample does not include any antitrust

[6] Given the evidence in Feinberg and Husted (2013) on free-riding on lead plaintiffs by participating states and the minimal cost of doing so, we have opted to focus on the determinants of the more active role of lead plaintiff.

activity in which the case is settled prior to filing in the court, the sample does include cases that are settled after this initial court filing. We also analyze the determinants of horizontal conspiracy cases and merger challenges in separate specifications, as well as cases in which there is a single plaintiff state.[7]

Our main dependent variable -- total cases that are filed by a state by year -- is a count measure that ranges from 0 to 10; all states file at least one antitrust case during our sample period, but more than 60% of our total state/year observations are equal to zero. Based on the distribution of the data, we choose to estimate our baseline empirical model with the use of a Poisson model with state-level fixed effects.[8] In other specifications, we estimate the determinants of a state's filing any antitrust actions each year using both a probit and linear probability model.

We expect that state antitrust activity -- where a state was a lead or co-lead plaintiff in a case -- is determined by several local political influences and characteristics of the state economy: For example, we expect that the larger is the state's economy, the more anticompetitive activity will take place in the state, as there will likely be more firms and commercial activity in general. Larger state economies will likely also have greater resources that are available to bring lawsuits.[9] On the other hand, it might be argued that larger state economies might allow for a more vibrant competitive environment, so the impact is an empirical question. To study this question, we include real gross state product (GSP), measured in millions of chained 2012 dollars, from the US Bureau of Economic Analysis.

It is possible that the larger are the firms in the state, the more likely it is that anticompetitive activity occurs, and this could bring more lawsuits -- though greater political clout by larger firms could point the other way; we account for this issue by using the percentage of the state's private sector workers who are employed in firms with more than 500 workers, lagged by one year so as to reduce endogeneity concerns. This variable is calculated from data from the Statistics of U.S. Business (which is produced by the U.S. Census Bureau in cooperation with the U.S. Small Business Administration).

Recalling that Ghosal and Gallo (2001) found federal antitrust activity to be countercyclical and speculating that antitrust violations increase during periods of economic hardship as firms try (through illegal means) to maintain profit levels,[10] we measure state-level business cycles by the one-year-lagged annual average state unemployment rate from the U.S. Bureau of Labor Statistics.

[7] Among other things, deterrence is likely to be more of a factor in motivating the horizontal conspiracy cases, and hence determinants may differ in explaining those. And sole plaintiff cases are more likely to involve local issues, possibly smaller companies.

[8] Wooldridge (1999) discusses the robustness of the fixed effects Poisson estimator, and Hausman tests confirm that fixed effects are more appropriate than using random effects for this sample. While not reported here, results from a fixed effects negative binomial model are qualitatively similar.

[9] In our earlier paper we included a measure of state expenditures relative to gross state product (GSP). That measure could not be obtained for the full sample that is included here. To the extent that it captures a larger role for government in the state, one would expect that the political party of state leadership would capture that; and to the extent that this has not changed much over time, fixed state effects would also capture this effect.

[10] Weak demand could also support collusion by making "cheating" less profitable; see, e.g., Rotemberg and Saloner (1986).

We also include two variables to capture characteristics of the state electorate. It is sometimes argued that government antitrust litigation is designed to redistribute wealth from producers to lower-income consumers. If so, we would expect antitrust activity to be greater in states with lower median household incomes (in 2018 dollars, from the U.S. Bureau of the Census' Current Population Survey).[11] In addition, we include the percentage of a state's workers who are members of unions (from data that are described in Hirsch and Macpherson (2003). The potential effect is ambiguous: Unions may pressure officials to secure antitrust litigation against particular firms, though they may also discourage cases against firms in which they are well-represented.

With respect to more clearly political forces, empirical studies of the national level of antitrust activity have investigated whether antitrust activity increases under Democratic administrations, though with mixed results. We examine this at the state level as well: We include a dummy variable that equals 1 if the AG of the state was a Republican during the majority of the year.

Finally, state antitrust litigation may be conducted either as a substitute for or as a complement to federal activity. To measure the relationship between federal and state antitrust enforcement, we include a variable that measures the total number of antitrust cases that were filed by the DOJ in each year as well as cases filed by the FTC; these data were obtained from the Antitrust Division's Workload Statistics, and the FTC Bureau of Competition annual reports. While the federal enforcement agencies often join state cases (and, recently, vice versa), cases in which the federal government and the state AGs collaborate are quite small in number relative to total federal cases filed, and it seems unlikely that reverse causality would be an issue in our regression analysis below.

Summary statistics for all variables are in Table 1, and correlations across the variables in our sample are included in Table 2.

Table 1 Summary statistics

	Mean	SD	Minimum	Maximum
Cases (number)	0.71	1.17	0.00	10.00
Cases (filed, 0/1)	0.39	0.49	0.00	1.00
Sole plaintiff	0.29	0.74	0.00	9.00
Horizontal	0.30	0.63	0.00	7.00
Mergers	0.24	0.57	0.00	4.00
Real GSP ($2012, B)	276.45	345.89	17.24	2,729.23
Median Household Inc. ($2018)	58,362.40	9,407.40	35,114.00	86,345.00
Percent of workers in large firms	18.01	4.37	2.16	33.54
Union membership (%)	11.87	5.73	1.63	29.26
Unemployment rate	5.54	1.83	2.30	13.70
DOJ cases	67.97	20.10	28.00	108.00
FTC cases	28.90	8.51	15.00	47.00
AG Republican	0.39	0.49	0.00	1.00
No. of Observations	1,530			

[11] On the other hand, more affluent voters may demand more aggressive antitrust activity, so the effect is ambiguous a priori.

Table 2 Correlation Matrix

	Real GSP	Median House-hold Inc.	% of Workers at Large Firms	Union Member-ship	Lagged Unemp-loyment	DOJ Cases	FTC Cases	Rep. AG
Real GSP ($2012 B)	1.00							
Median Household Inc. ($2018)	0.15	1.00						
Percent of Workers at Large Firms	0.32	0.19	1.00					
Union Mem-bership Rate	0.16	0.38	0.14	1.00				
Lagged Unem-ployment Rate	0.16	-0.25	0.12	0.12	1.00			
DOJ Cases	-0.09	-0.18	-0.03	0.15	0.32	1.00		
FTC Cases	-0.08	-0.09	-0.05	0.13	-0.12	0.34	1.00	
Republican AG	0.01	-0.01	-0.05	-0.20	-0.09	-0.07	-0.07	1.00

3 Results

The incident rate ratios (IRRs) from the fixed-effects Poisson model are presented in Table 3, with cluster-robust standard errors in parentheses as specified in Wooldridge (1999).[12] Column 1 includes the IRRs that explain the total number of antitrust cases that were filed by states each year between 1990 and 2019. We see that larger state economies tend to bring more cases; specifically, a one standard deviation increase in the real GSP roughly doubles the number of antitrust cases that are filed by the state each year. This could be due both to more anticompetitive activity and to more resources that are available to challenge that activity.

Similar to Feinberg and Reynolds (2010), we find no evidence that the number of antitrust cases that are filed by the state increases with the average size of the firms in the state, as proxied using the percent of workers that are employed at large firms: those with more than 500 workers; in fact our results indicate a negative effect, with a 1% point increase in the percent of workers employed at large firms resulting in a 6% decrease (1-0.940) in the number of antitrust cases file by the state. Although we expected that states with larger firms may have more anticompetitive activity, these results suggest instead that larger firms may be more effective at avoiding state antitrust enforcement.[13]

[12] The IRR shows the estimated ratio of cases that are filed in connection with a one-unit increase in an explanatory variable: An IRR that is greater than one reflects a positive effect; an IRR that is less than one reflects a negative effect.

[13] In order to test whether the negative impact of the size of firms could be driven by the high correlation between this variable and the size of the state as measured by Gross State Product, we also ran specifications that omitted either the GSP or the percent of workers employed at firms with more than 500 workers. The results were qualitatively and quantitatively like those reported in Tables 3 and 4.

Table 3 Determinants of annual state-level antitrust filings, 1990–2019

	All Cases	Mergers	Horizontal Conspiracy	Sole Plaintiff
Ln(GSP)	2.500*	2.738*	0.772	0.418**
	(1.320)	(1.640)	(0.394)	(0.180)
Percent of Workers at	0.941*	0.975	0.948*	0.919**
Large Firms	(0.035)	(0.592)	(0.026)	(0.037)
Lagged	1.009	1.115**	1.109**	1.129**
Unemployment Rate	(0.031)	(0.053)	(0.054)	(0.056)
Ln(Median Household	1.627	2.968	3.739	0.527
Income)	(1.229)	(3.364)	(3.381)	(0.582)
Union Membership	0.940**	0.914**	0.974	1.084**
Rate	(0.029)	(0.039)	(0.037)	(0.044)
Republican AG	0.799*	0.845	0.768*	0.753**
	(0.102)	(0.147)	(0.117)	(0.089)
DOJ Cases	1.007***	1.005	0.994*	0.992*
	(0.002)	(0.003)	(0.003)	(0.004)
FTC Cases	1.000	1.018**	0.991	1.011
	(0.004)	(0.008)	(0.006)	(0.007)
Observations	1,530	1,530	1,530	1,530
Number of States (plus DC)	51	51	51	51

Notes Incident Rate Ratios from a fixed effects Poisson regression. Cluster robust standard errors are in parentheses. ***, **, * indicate parameter estimates significant at the 1, 5, and 10% levels, respectively. Estimates of the constant term are not reported

More significant is the degree of union membership: Our estimates suggest that a 1% point increase in the unionization rate in the state reduces state antitrust filings by 6%. While union membership played no statistically significant role in the 1992 to 2006 period (Feinberg & Reynolds (2010), the negative and statistically significant effect in the larger sample may suggest that states with a strong union presence also have a commonality of interests between labor and business, which leads to fewer antitrust cases.

Two other variables prove statistically significant in determining the number of cases filed by states each year. As in the earlier sample, we find that Republican AGs file 20% fewer cases.[14] And there is some evidence that state antitrust activity increases with the number of cases that are filed by the DOJ, which suggests some complementarity in these actions. However, while statistically significant the magnitude of this impact is extremely small; the incident rate ratio suggests that for every additional case filed by the DOJ, state AGs file an additional 0.1 cases.

Columns 2–4 examine particular types of case filings: We examine separately merger reviews, horizontal conspiracy cases, and cases that are filed where the state

[14] Feinberg and Reynolds (2010), who use a random-effects Poisson regression model, find that ***appointed*** AGs also file fewer antitrust cases. While we also find in specifications not reported here that appointed AGs file fewer antitrust cases, because this coefficient was entirely identified in the fixed-effects model that uses the change in the District of Columbia from an appointed to an elected AG in 2015, we omit this variable from our reported results.

Table 4 Determinants of Filing *Any* Antitrust Cases, 1990–2019

	Any Cases Filed		Any Mergers	Any Horizontal	Any Sole Plaintiff
Ln(GSP)	0.592***	0.450***	0.430***	0.395***	0.394***
	(0.093)	(0.099)	(0.101)	(0.070)	(0.134)
Percent of Workers at	-0.016	-0.013	0.001	-0.003	-0.006
Large Firms	(0.017)	(0.009)	(0.013)	(0.014)	(0.022)
Lagged	0.013	-0.010	0.081***	0.058**	0.066**
Unemployment Rate	(0.024)	(0.008)	(0.025)	(0.028)	(0.030)
Ln(Median Household	1.195***	-0.0450	1.559***	0.494	-0.814
Income)	(0.431)	(0.189)	(0.482)	(0.432)	(0.616)
Union Membership Rate	-0.022	-0.014	-0.024**	0.010	0.063***
	(0.015)	(0.009)	(0.012)	(0.014)	(0.018)
Republican AG	-0.081	-0.025	-0.081	-0.174*	-0.145
	(0.093)	(0.030)	(0.111)	(0.093)	(0.098)
DOJ Cases	0.005***	0.003***	0.003*	-0.004*	-0.002
	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)
FTC Cases	-0.007*	-0.001	0.004	-0.005	0.016***
	(0.004)	(0.001)	(0.004)	(0.005)	(0.004)
Observations	1,530	1,530	1,530	1,530	1,530
Number of States (plus DC)	51	51	51	51	51

Notes Columns 1, 3, 4, and 5 are the marginal effects from a population average probit model in which the dependent variable equals 1 when the state filed any antitrust, merger, horizontal conspiracy, or sole plaintiff cases in a given year, respectively. Column 2 includes the coefficient estimates from a fixed-effects linear probability model in which the dependent variable equals 1 when the state filed any antitrust cases in a given year. Robust standard errors are in parentheses. ***, **, * indicate parameter estimates significant at the 1, 5, and 10% levels, respectively

is a "sole plaintiff."[15] There are some notable differences: For example, while we find that the number of total antitrust cases increases with the economic size of the state, the number of sole petitioner cases falls with the size of the state. Intuitively, while larger states appear primarily to target large, national firms that attract multiple co-plaintiffs, smaller states are more likely to target local firms that aren't active in other states.

While we did not find a statistically significant effect of higher unemployment on all cases that are filed one year later, we did find that each of the specific types of cases does increase as the unemployment rate increases. For example, a 1% point increase in the unemployment rate increases the number of merger cases by 11.5%. This is consistent with AGs' responding to weaker economies with more filings that

[15] These are cases where not only is there just a single "lead plaintiff" but there are no additional "participating" plaintiffs. A Chow test comparing the coefficients from the baseline model ("All Cases") and those in which states filed as a "sole plaintiff" rejects the null hypothesis that the coefficients are equal across the two groups with a p-value of 0.00. A similar test rejects the null hypothesis that the coefficients in the merger model (Column 2) and horizontal conspiracy model (Column 3) are equal with a p-value of 0.026.

are aimed at reducing prices for consumers who may be struggling financially and is consist with the findings from earlier papers that cover earlier periods.

While the total number of cases and number of merger cases fall with the union membership rate, the number of sole-plaintiff cases increases with the unionization rate: For every 1% point increase in the unionization rate, the number of sole-plaintiff cases increases by 8.4%. Recall that sole-plaintiff cases are more likely to be filed against local firms; it may be that states with higher unionization rates have more constituent pressure to pursue antitrust cases against these types of firms.

While there was some evidence that the total number of antitrust cases filed by states slightly increased with the number of DOJ cases, the number of state merger cases more strongly trends with Federal Trade Commission actions; this may reflect the FTC's antitrust relative focus on merger challenges (as compared with the DOJ, which also brings numerous criminal price-fixing cases). Other results across the three categories of cases are qualitatively similar to those that we discussed above for all cases.

Table 4 includes the marginal effects that are associated with the likelihood of filing any antitrust cases during a given year.[16] While Columns 1, 3, 4, and 5 present the marginal effects from a population-averaged probit model for all cases -- mergers, horizontal conspiracy, and sole-plaintiff cases, respectively -- Column 2 includes the estimates from a fixed effects linear probability model for comparison.[17]

Many of these results have similar implications as the predicted determinants of the annual number of cases that were filed by the states. For example, a one standard deviation increase in the economic size of the state increases the likelihood that the state will file at least one antitrust case in a year by 48% points. The likelihood of filing also increases as the number of DOJ cases increases, and the likelihood of filing merger, horizontal conspiracy, and sole petitioner cases increases with the lagged unemployment rate.

Although the median household income was not a statistically significant determinant of the number of cases that were filed annually, this is a significant determinant of the likelihood of filing any antitrust cases: A one standard deviation increase in the median household income increases the likelihood of filing any antitrust cases by 18%; this effect is particularly significant with respect to the likelihood of pursuing merger cases over other types of cases. It is also worth noting that, other than for horizontal conspiracy cases, there is weaker evidence that the political party of the

[16] Approximately 60% of the observations in our sample are zeros. In results that are not reported here we estimated a random-effects Tobit model and a zero-inflated Poisson regression with state-level fixed effects. The results of these models are qualitatively similar to those that are presented here. For example, the random effects Tobit model suggests that the number of cases increases with the economic size of the state, the presence of a Republican AG, and the number of cases that are filed by the DOJ, but falls with the percent of employees that are in large firms and that are in unions. While statistical tests suggest that a fixed effects Poisson model is more appropriate given the distribution of our data, these additional results are available from the authors upon request.

[17] Although a Chow test comparing the coefficients from the baseline model ("All Cases") and those in which states filed as a "sole plaintiff" rejects the null hypothesis that the coefficients are equal across the two groups with a p-value of 0.00, we cannot reject the null hypothesis that the coefficients in the merger model (Column 3) and horizontal conspiracy model (Column 4) are equal as the p-value from a similar Chow test is 0.287.

AG plays a role in the likelihood that the state pursues any antitrust actions in a given year, as opposed to the intensity of these pursuits (measured by the annual number of cases).

4 Conclusion

As we noted at the outset, it is surprising – given the long history of state-level antitrust activity in the U.S. – that so little investigation has been made of the political economy of this activity. In this paper, we greatly expand the dataset that was analyzed in Feinberg and Reynolds (2010) -- the data now extend from 1990 to 2019 and include the District of Columbia -- but largely confirm the earlier findings.

As has been found for federal case filings, state-level antitrust activity seems to be largely counter-cyclical; as in earlier work such activity is more important in larger states, and less often pursued by Republican AGs. Furthermore, there is a suggestion that more identification of workers with larger employers in the state (measured either by concentration of employment in larger firms, or greater union membership) may lessen pressure on state AGs to file antitrust cases. While not the topic of this paper, further work should examine the effect of state antitrust activity, including the extent to which this adds to any deterrent effect of federal antitrust enforcement.

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References

DeBow, M. (2004). State antitrust enforcement: Empirical evidence and a modest reform proposal. In R. A. Epstein, & M. S. Greve (Eds.), *Competition laws in conflict: Antitrust jurisdiction in the global economy* (pp. 267–287). American Enterprise Institute.

Dove, J. (2014). Antitrust enforcement by state attorneys general: Institutional, legal and political considerations. *Business and Politics*, *16*(2), 291–312.

Dove, J., & Dove, L. (2014). An examination of multistate antitrust enforcement by U.S. state attorneys general. *Journal of Applied Economics & Policy*, *32*(1), 45–74.

Feinberg, R. (2023). Patterns and determinants of Canadian anti-cartel and antidumping policy: 1990–2019. *Journal of Industry Competition and Trade*, *23*, 309–327.

Feinberg, R., & Husted, T. (2013). Do states free-ride in antitrust enforcement? *Economic Inquiry*, *51*(1), 997–1001.

Feinberg, R., & Reynolds, K. (2010). The determinants of state-level antitrust activity. *Review of Industrial Organization*, *37*(3), 179–196.

Feinberg, R., Meurs, M., & Reynolds, K. (2012). Maintaining new markets: Determinants of antitrust enforcement in Central and Eastern Europe. *Journal of Industry Competition and Trade*, *12*(2), 203–219.

Ghosal, V., & Gallo, J. (2001). The cyclical behavior of the Department of Justice's antitrust enforcement activity. *International Journal of Industrial Organization*, *19*(1–2), 27–54.

Ghosal, V., & Sokol, D. (2014). The evolution of U.S. cartel enforcement. *The Journal of Law and Economics*, *57*(S3), S51–S65.

Greve, M. (2005). Cartel federalism – antitrust enforcement by state Attorneys General. *University of Chicago Law Review*, 2005, 72, 99–122.

Hirsch, B., & Macpherson, D. (2003). Union membership and coverage database from the current population survey: Note. *Industrial and Labor Relations Review*, *56*(2), 349–354.

Lancieri, F., Posner, E., & Zingales, L. (2022). The political economy of the decline of antitrust enforcement in the United States. National Bureau of Economic Research Working Paper 30326.

Long, W., Schramm, R., & Tollison, R. (1973). The economic determinants of antitrust activity. *The Journal of Law & Economics*, *16*(2), 351–364.

Posner, R. (1970). A statistical study of antitrust enforcement. *The Journal of Law & Economics*, *13*(2), 365–419.

Priest, G., & Klein, B. (1984). The selection of disputes for litigation. *Journal of Legal Studies*, *13*(1), 1–55.

Provost, C. (2014). Antitrust law and distributive politics in the American states. *Law & Policy*, *36*(4), 408–431.

Rotemberg, J., & Saloner, G. (1986). A supergame-theoretic model of price wars during booms. *The American Economic Review*, *76*(3), 390–407.

Siegfried, J. (1975). The determinants of antitrust activity. *The Journal of Law & Economics*, *18*(2), 559–574.

Wooldridge, J. (1999). Distribution-free estimation of some nonlinear panel data models. *Journal of Econometrics*, *90*(1), 77–97.