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Anti-cartel enforcement and subsequent mergers: state-level evidence for physician groups

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Abstract

From the earliest days of antitrust, it has been clear that cartel pricing and monopoly pricing (given certain cost conditions) yield equivalent results. An implication of this is that government actions limiting either of cartels or mergers should provide incentive for more of the other. Despite the somewhat intuitive theoretical support for a relationship, there has been little empirical investigation into the role that antitrust enforcement of one type might have on firms in pursuing anti-competitive actions of the other. The emergence of significant state-level antitrust enforcement over the past several decades provides us with the opportunity to take advantage of the considerable variation in this enforcement and possibly identify resulting merger activity affecting small geographic markets. In this paper we use variation in state antitrust enforcement to proxy differing signals sent to health professionals and then study the impact on consolidation of physician groups at the state level. While trends in the consolidation by U.S. health practitioners over the past several decades have been driven by a variety of market and policy determinants, this paper provides suggestive evidence that one contributing factor may have been the introduction of the threat of state-level antitrust enforcement against horizontal agreements within local markets.

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1. Introduction

From the earliest days of antitrust, it has been clear that cartel pricing and monopoly pricing (given certain cost conditions) yield equivalent results. More generally, decisions of independent firms to coordinate their behavior vs. merging operations should be somewhat substitutable. An implication of this is that government actions limiting either of cartels or mergers should provide incentive for more of the other. Bittlingmayer (1985) found evidence suggesting that the start of serious antitrust actions against cartels in the late 1800s was a cause of the turn of the century "Great Merger Wave." More recently, Evenett et al. (2001) "argue that the aggressive prosecution of cartels must be complemented by vigilance in other areas of competition policy, such as merger enforcement …. Otherwise firms will respond to the enhanced deterrents to cartelization by combining with or acquiring rivals or by taking other measures that lessen competitive pressures (p. 1222)."

Despite the somewhat intuitive theoretical support for a relationship, there has been little empirical investigation into the role that antitrust enforcement of one type might have on firms in pursuing anticompetitive actions of the other. One explanation for the paucity of such research, for the US at least, is the difficulty of identifying major changes in anti-cartel policy which might induce noticeable merger responses. In looking at proxies for increased cartel enforcement at the federal level, there are few obvious candidates and impacts on mergers covering the national market are not likely to be noticeable. However, the emergence of significant state-level antitrust enforcement over the past several decades provides us with the opportunity to take advantage of the considerable variation in this enforcement and possibly identify resulting merger activity affecting small geographic markets.

The Goldfarb Supreme Court decision of 1975, essentially determining that the legal profession (but by extension all professions) was subject to antitrust enforcement, provided the guidance for anti-cartel actions targeting the professions, and subsequently some, but not all, U.S. state attorneys general began to bring such cases (either under state or federal laws) against professionals, especially health professionals. In this paper we use variation in state antitrust enforcement to proxy differing signals sent to health professionals and then study the impact on consolidation of physician groups at the state level.[1]

Kirchhoff (2013) reports a decline (between 1996 and 2005) in solo and small group (up to 5-doctor) practices and a corresponding increase in medium and large group practices (along with some increase in hospital-owned practices). Some of the factors mentioned behind this consolidation are the desire for less variability in salary and schedule, administrative expenses of managing practices, and financial leverage vis-à-vis insurers. Recent policy changes due to the Affordable Care Act have attempted to encourage more coordination among providers (which may lead to consolidation).[2] However, there has not been discussion of a possible role for antitrust enforcement in the health sector driving consolidation.

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[1] The focus here on doctor consolidation rather than hospital mergers reflects both the fact that more work (and attention generally) has been devoted to the topic of hospital consolidation to date and the reality that hospital mergers are likely motivated by more complex forces – including possible efficiencies.

[2] Dunn and Shapiro (2014) present evidence supporting increasing physician market power, reflected in higher prices, due to this consolidation. See also Ginsburg and Pawlson (2014).

Three factors have combined to suggest a possible role of U.S. antitrust policy in physician consolidation: (1) the rise of state-level antitrust enforcement generally, (2) the Goldfarb decision; and (3) the possibility of substituting horizontal coordination by independent firms with monopoly (or dominant firm) behavior through the merger of these firms. For the first, Feinberg and Reynolds (2010) discuss the increasing enforcement of antitrust by state attorneys general starting in the 1980s. This rise in state-level enforcement was partly a response to the perceived laxity of Reagan-area federal enforcement and partly a response to another Supreme Court decision from the 1970s, Illinois Brick (1977), which limited the ability of consumers to recover antitrust damages from manufacturers convicted of price-fixing in federal cases and spurred state-level actions on behalf of citizens of those states.[3] However, while all states have the ability to file cases under their own laws or federal antitrust statutes, they have varied quite a bit in their use of antitrust enforcement.

The Goldfarb case, while involving attorney title searches in Virginia, had broader significance for all professions – as it made clear that the exchange of services (professional or not) for money is sufficient for activity to be subject to the antitrust laws. Since then there have been numerous state antitrust cases against a variety of professional groups, but the largest share of these have involved the health professions. From 1975 through 2011, there were 46 cases involving horizontal collusion issues (excluding merger reviews) brought by 20 states against physicians, optometrists, dentists, veterinarians, psychologists, chiropractors, mental health services and hospitals;[4] of these, 21 were filed jointly with either the U.S. Department of Justice or Federal Trade Commission. Most (26) of these cases were filed against physician groups, nine against hospitals or health clinics, and the remaining 11 cases spread across the other categories noted above.

In terms of antitrust agency resources, there is clearly a tradeoff between bringing antimerger actions vs. anticartel prosecutions (Cosnita and Tropeano (2013) present a formal model of this choice) given they both can promote consumer welfare by limiting supra-competitive pricing. From the standpoint of firms, Kumar et al. (2015) model the relative payoffs of colluding vs. merging, with the implication that factors making one of these more costly would push firms towards the other. The increasing use of antitrust by states against the health professions more generally would seem to have been a signal to physician groups within a state that coordinated actions may now be subject to sanctions that had not been previously considered; if so, merger/consolidation might become a better option. In what follows, I explore this possibility, by examining the determinants of the number of physician's offices (for all states and the District of Columbia) over the 1977-2007 period.[5]

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[3] Plus, the Hart-Scott-Rodino Antitrust Improvements Act of 1976 authorized state AGs to institute federal parens patriae actions for treble damages on behalf of their states' consumers.

[4] In comparison over that period, just 12 states were involved in merger reviews; there were 23 hospital merger reviews (7 by Pennsylvania), 6 physician practice merger reviews (4 of the latter by Maine), and none focused on the other health professionals mentioned. Preliminary work did not detect any impact of this limited merger enforcement activity on physician consolidation.

[5] Data at the state level for 2012 has not yet been released; and the state-level antitrust case data is somewhat less reliable for recent years as states vary in how quickly they report to the NAAG database. Note that the Census is only performed every five years, limiting the number of observations available.

2. Data

Variables are defined as follows. OFFICES is the number of offices of physicians (including osteopaths) with payroll, by state, available from the Census of Service Industries at 5-year intervals from 1977 through 2007.[6] POP is the estimated state population obtained from the Census of Population. INCOME is state-level per-capita personal income, expressed in 1992 dollars, sourced from the Bureau of Economic Analysis. SENIOR is the elderly (65+) share of the state's population, also from Census data.

Information on state-level antitrust enforcement was obtained from the State Antitrust Litigation Database of the National Association of State Attorneys General (NAAG):[7] ATRHEALTH = 1 if the state has previously prosecuted an anti-cartel case in the health professions[8] (=0 otherwise); ATRHEALTH5=1 if such a case had been filed in the previous 5 years; ATRHEALTHover5=1 if such a case had been filed more than 5 years previously. More narrowly-defined, ATRDOCTOR, ATRDOCTOR5, ATRDOCTORover5 are dummy variables indicating anticartel cases specifically targeting ***doctors*** in the state (respectively, at any time in the past, in the past 5 years, and more than 5 years ago).[9]

In terms of health-related horizontal antitrust cases, more than half of all states prosecuted no cases over the period in question, while Maine and Arizona filed 7 and 8 of the 46 total cases, respectively – no other state pursued more than 3 (and about 1/3 of all state health-related cases were filed in the 1991-95 period).[10] More than half of all these cases were directly aimed at coordinated behavior by physicians while the rest were spread among several categories of other health professionals.

3. Econometric Specification and Results

The model proposed here is quite simple: The number of physician's offices (OFFICES) is expected to depend on population (POP), the elderly (65+) share of the state's population (SENIOR), per-capita income (INCOME), and a dummy variable for whether the state has previously prosecuted an anti-cartel case in the health professions (ATRHEALTH).
A panel regression model with robust standard errors was applied to 7 years of data (1977-2007, at 5-year intervals) and 51 states (including DC). Of course there are other reasons why variation in the number of offices may occur, including differences in health care regulation and insurance industry market power, and for these we include state and year fixed effects (random effects

[6] Unfortunately, data by physician specialty are not available.
[7] This data can be accessed at ***http://app3.naag.org/antitrust/search/***.
[8] This is defined, as indicated above, to include horizontal conspiracy cases against physicians, optometrists, dentists, veterinarians, psychologists, chiropractors, mental health services, and hospitals
[9] There is of course, the possibility of endogeneity in the relationship between antitrust actions targeting doctors and consolidation of doctors' offices; however, the use of fixed state and year effects and the lagging of the antitrust variables should minimize this. The ATRHEALTH variables (reflecting antitrust activity aimed at the broader health professionals sector) may be thought of as an instrumental variables approach.
[10] Virtually all of the Maine and Arizona cases were filed jointly with a federal agency – 14 of 15. This contrasts with only 7 of the other 31 state-filed cases having federal involvement.

specifications yielded similar results). The primary results are based on the continuous variables expressed in logs, but qualitatively similar findings are obtained in levels.[11]

Initially, all variables are included, breaking ATRHEALTH into two dummy variables, one taking the value one where a health professions antitrust case was filed in the past five years in the state in question (ATRHEALTH5) and another where the most recent case was filed more than five years before (ATRHEALTHover5). The results are presented in column (1) of Table I. The clear major factor determining the number of doctors' offices is population (after controlling for state and year-specific factors, which should take account of regulatory changes). The two state anti-cartel case variables have the expected negative estimated coefficients, but neither is statistically significant at conventional levels (though the p-values of 11% are suggestive of a possible relationship).

In column (2), the dummy variables are combined, with ATRHEALTH now indicating any health-related antitrust case having been filed in the past (since 1975). The estimated coefficient is almost significant at 10% (a p-value of 10.3%). Essentially, what is seen is a strong relationship between doctor's offices and state population, an elasticity of approximately 0.9, with the antitrust variable implying a one-time reduction in the trend line of doctors' offices of about 5 percent. [12]

Exploring these issues further, while a state's pursuit of cartel activity in any of the health professions should be a signal to doctors that the costs to them of horizontal coordination has risen, one would think that a case directly against a group of doctors in the state would be a more direct signal. Creating new variables ATRDOCTOR5, ATRDOCTORover5, and ATRDOCTOR, indicating such cases in the past five years, an earlier period, and any time since 1975, the previous specifications are re-run, with results presented in Table II. Not surprisingly, the effects on the number of doctors' offices of both recent and more distant state antitrust directly targeting doctors are now significant at 10% and 5%, respectively, and when (in column (2)) a single variable accounts for any previous case (ATRDOCTOR), the effect is now significant at 5% and larger than the more indirect effect identified in Table I.

Despite these interesting results, it must be acknowledged that a decline in numbers of offices at the state level (especially for a large state) might not be plausibly linked to potential gains in market power at the local level (which is the level at which such power should be evaluated for health professionals); as a robustness exercise, we examine small geographic markets and see if declines in offices in those markets are similarly affected by state-level antitrust enforcement in the health professions. Unfortunately, obtaining consistent data for small metropolitan areas over several decades proved somewhat challenging. In results not reported here (but available on request from the author), for a sample of 25 small metropolitan statistical areas (MSAs), the

[11] If data on numbers of doctors' offices were available both before and after the 1975 Goldfarb decision a standard difference-in-difference model could have been estimated, with states filing health-antitrust cases being the "treated" group; unfortunately, the first business Census year to collect such data was 1977.

[12] Expressing the number of offices as a percent of the state's population (and of course removing POP from the right-hand side of the equation) yields very similar results to those reported here.

column (2) specifications from Tables I and II were estimated,[13] finding similar effects of state-level health-professions and physicians cases (though only significant for the former).

4. Conclusion

Clearly, trends in the consolidation by health practitioners over the past several decades have been driven by a variety of market and policy determinants. The analysis presented here is essentially a static one in that it does not seek to explain these other, dynamic, factors leading to the entry and exit of physicians' offices. However, this paper has provided suggestive evidence that one contributing factor, at least for the U.S., may have been the introduction of the threat of state-level antitrust enforcement against horizontal agreements within local markets.
Where states have prosecuted cartels in the health professions generally, the number of doctors' offices at the state level fell by approximately 5 percent; such cases directly against doctors have led to a somewhat larger impact, close to 7 percent. While, most likely, these enforcement actions have not been the primary drivers of practice consolidation, the threat of antitrust may have been just one more reason for physicians' practices to consider merging.

[13] A limitation of this analysis is that while the state-level study is comprehensive, covering all states, these 25 markets come from just 17 states – more than half of them from just five states: Alabama, Illinois, Indiana, Pennsylvania, and Texas. Furthermore, only 5 of these states had any health-related antitrust cases over the period of analysis, only 4 directly targeting doctors.

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Table I. Panel Regression Model – Effects of Health-Related State Antitrust

Estimated Coefficients (n=357 – 51 states by 7 years)
Dependent Variable = lnOFFICES

Explanatory Variables	(1)	(2)
lnPOP	0.878***	0.877***
	(0.075)	(0.075)
lnINCOME	-0.145	-0.144
	(0.143)	(0.144)
lnSENIOR	0.149	0.150
	(0.126)	(0.125)
ATRHEALTHover5	-0.056	--
	(0.035)	
ATRHEALTH5	-0.044	--
	(0.028)	
ATRHEALTH	--	-0.051
		(0.030)
R^2 (within-state)	0.84	0.83

Fixed state and year effects not reported. Robust standard errors in parentheses below estimated coefficient. ***= significance at 1%, **=significance at 5%, *=significance at 10% (all 2-tailed)

Table II. Panel Regression Model – Effects of Physician State Antitrust

Estimated Coefficients (n=357 – 51 states by 7 years)
Dependent Variable = lnOFFICES

Explanatory Variables	(1)	(2)
lnPOP	0.872***	0.870***
	(0.076)	(0.076)
lnINCOME	-0.144	-0.144
	(0.140)	(0.140)
lnSENIOR	0.166	0.165
	(0.121)	(0.121)
ATRDOCTORover5	-0.073**	--
	(0.034)	
ATRDOCTOR5	-0.056*	--
	(0.030)	
ATRDOCTOR	--	-0.067**
		(0.031)
R^2 (within-state)	0.84	0.84

Fixed state and year effects not reported. Robust standard errors in parentheses below estimated coefficient. ***= significance at 1%, **=significance at 5%, *=significance at 10% (all 2-tailed)