Commentary

Is Managed Care Leading to Consolidation in Health-care Markets?

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Dranove, Simon, and White (DSW) investigate the extent to which increased managed-care penetration is responsible for hospital and physician consolidation over the past 15 to 20 years. The implication of their question is clear: If managed care has led to provider consolidation, then what was the reason? Is it because managed care, by creating an environment in which plans can contract with those providers offering the best prices (adjusting for possible quality differences), has pressured providers to lower their costs, and consolidation is a means by which those cost efficiencies can be realized? Alternatively, is it because managed care has created an environment in which providers with market power can raise price, and the observed consolidation reflects providers' attempts to create such market power? Or, relatedly, is it because managed-care plans have themselves become so powerful that providers have felt the need to "circle the wagons" through consolidation as a means of protecting themselves from overly aggressive managed-care plans?

The answers to these questions are of significant policy importance. On one hand, if the primary motivation for consolidation is to realize efficiencies, then managed care would seem to be realizing the promises of its early promoters. Relatedly, it suggests that the Department of Justice's Antitrust Division (DOJ), the Federal Trade Commission (FTC), and state Attorney General offices (collectively, "the Agencies") should perhaps view provider consolidation with a somewhat less jaded eye than it may sometimes appear.

On the other hand, if provider consolidation reflects providers' efforts to create market power, and thus raise prices and protect themselves from the competition that managed care might otherwise engender, the Agencies should perhaps view provider consolidation in a very different light; in that case, the Agencies' vigilance with respect to hospital and physician consolidation is perhaps warranted.¹ Finally, if provider consolidation is a defensive reaction to the emergence of large, powerful managed-care plans, policy

makers with objectives extending beyond economic welfare maximization may view legislative proposals to provide antitrust immunity to providers (particularly physicians) in a different light.

There are many ways researchers could try to distinguish between these two motivations for provider consolidation. For example, one would expect that provider prices in the wake of provider consolidation should be falling if consolidation is motivated by attempts to realize efficiencies. In contrast, if driven by anticompetitive intentions, then provider consolidation should result in higher prices. And if providers are consolidating in response to the emergence of large, powerful managed-care plans, then provider consolidation should be associated not so much with high managed-care penetration rates, but rather with markets in which individual managed care plans are large.

Before pursuing a research agenda directed at determining why provider concentration is associated with higher managed-care penetration rates, though, one first needs to confirm that increased managed-care penetration has *in fact* led to greater provider consolidation. Of course, it should be no secret to the reader that DSW's evidence regarding the correlation between managed-care penetration and provider consolidation suggests that moving on to the next stage of research is warranted. But even without moving to that next stage, DSW's paper provides results that may be of interest to policymakers. In this commentary, I focus on three areas. First, what results from DSW are most likely to be of interest to policymakers, and what does DSW's work suggest about possible causes of provider consolidation? Second, what caveats regarding DSW's work must policymakers recognize before they rely on the authors' results? And finally, what are some possible research areas suggested by DSW's work that might provide policymakers with greater confidence in DSW's results and more insights into the issues they raise?

MANAGED-CARE PENETRATION AND PHYSICIAN PRACTICE SIZES

DSW's Results and Policy Implications

Dranove, Simon, and White ask whether managed-care penetration is associated with changes in the structure of physician markets. Because the data they use do

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not permit them to calculate traditional measures of physician concentration (e.g., the Herfindahl-Hirschman index [HHI] HHIs), they instead look at how the distribution of physician practice sizes changed from 1986 to 1995 and whether physicians are moving from smaller to larger practices. DSW identify several practice sizes: (1) solo physicians; (2) groups with 2–10 physicians; (3) groups with 26 or more physicians; (4) clinics and institutions; and (5) physicians employed by HMOs. The residual group, which DSW do not mention and for which they provide no quantitative information, is presumably composed predominantly of physician groups with 11–25 members.²

DSW find that managed-care penetration has a statistically significant effect on two of their five provider groups: solo physicians and physicians employed in HMOs. For solo physicians, DSW find a correlation between managed-care penetration and a reduction in the percentage of physicians in solo practice. Not surprisingly, they also find that higher managed-care penetration is correlated with more physicians being employed by HMOs. Nevertheless, DSW's results shed little light on where those solo practice physicians are going.

Certainly, DSW's results provide some basis for believing that managed care has been affecting physician market structures, and thus for considering the follow-up question: What has been the *effect* of that change in physician market structure? Yet, even though their current paper is not directed at answering that next research question, their results provide certain hints at the possible answer. As discussed, these hints are more suggestive of efficiencies-motivated consolidation than of consolidation aimed at creating significant market power.³

Physician Market Changes: In Search of Efficiencies or Market Power?

A weak test of the efficiencies versus market power motivation for physician consolidation takes the following form. If consolidation is motivated by physicians' attempts to realize efficiencies, then the most efficiently sized practice should emerge.⁴ While it is not clear what physician practice size is most efficient, it may be that the bulk of any efficiencies available to a solo practice can be realized simply by getting out of solo practice. If so, then an efficiencies-motivated change in physician markets may not be associated with a particularly strong growth in any particular practice size—the only expectation is a move away from solo practice.

In contrast, if physicians are consolidating to gain market power, then large physician groups should be increasingly prevalent. Moreover, as long as increased concentration has little effect on market power unless market

concentration reaches some critical level, then it is not enough that physicians simply move from small practices to large practices: There must be enough restructuring that the large practices become *very* large, thus leaving the market *sufficiently* concentrated. While there is no universal agreement among economists or policymakers about just how much concentration is necessary before firms begin to enjoy significant market power, the *Horizontal Merger Guidelines* ("Guidelines") used by the DOJ and FTC suggest that significant market power is unlikely until the HHI is at least 1,000.

From this discussion emerges a weak testable hypothesis. If physicians are consolidating to gain market power, there should not only be a reduction in the percentage of solo practice physicians, but also a substantial migration of physicians to very large physician practices. Absent that substantial migration to large practices, the shift out of solo practices may lead to increased physician concentration, but it will be an increase that is largely without competitive effect.

Between these two explanations for physician consolidation, DSW's findings seem more consistent with providers seeking efficiencies rather than market power. As DSW note, they find no clear indication where solo physicians are moving. Thus, DSW find no evidence suggesting that physicians are moving to groups where market power is most likely to be realized. Moreover, there is no indication that the largest physician practices, where any market power would most likely be realized, are more prevalent in areas with greater managed care penetration; DSW find no statistically significant relationship between managed-care penetration and the 26+ physician group or the clinic/institutions group.

The results DSW report also suggest that their physician markets remain very unconcentrated in 1995. Although DSW find a sharp increase in physicians belonging to institutions or clinics (jumping from 7 percent to 22 percent of physicians), only 2–3 percent of their physicians are in the large 26+ physician groups. This casts further doubt on the notion that physician consolidation was aimed at creating competitively significant market power.

A very simple analysis of DSW's reported data in fact suggests that physician markets generally remained unconcentrated in 1995 according to the *Guidelines'* standards (i.e., an HHI below 1,000), thus implying that any physician consolidation between 1986 and 1995 did not generally lead to any competitively significant physician market power. This is illustrated in Table 1, which estimates HHIs using DSW's reported data, an assumption about the number of physicians in each practice size, and an assumption about the total number of physicians in a market.⁵

The conclusion that DSW's physician markets generally remained unconcentrated seems quite robust to alternative assumptions. While markets

other than the “mean” market might be concentrated, absent any statistically significant information on how any practice groups other than solo physicians and clinic/institutional physicians responded to increased managed-care penetration, it is impossible to assess how many, if any, of DSW’s markets would be considered “concentrated” under the *Guidelines*’ standards.

Implications for Physician Antitrust Exemption Laws

DSW’s results may also be of interest to policymakers considering legislative proposals granting antitrust exemptions to physicians. Such bills (e.g., the recent Campbell bill proposal) often include provisions allowing physicians to

Table 1: Estimated Physician Market HHIs

<i>Practice Group</i>	<i>Assumed Number of Physicians in Group</i>	<i>Market Share: Individual Group</i>	<i>Share of Physicians in Group (1986)</i>	<i>Share of Physicians in Group (1995)</i>	<i>Number of Groups in Market (1986)</i>	<i>Number of Groups in Market (1995)</i>
Assumed Number of Physicians in Market: 300						
Solo	1	0.3%	38%	25%	115	75
2 to 10	6	2.0%	30%	33%	15	17
11 to 25	18	6.0%	21%	17%	4	3
26+	40	13.3%	3%	2%	0	0
Clinic	75	25.0%	7%	23%	0	1
HHI:					1986 418	1995 776
Assumed Number of Physicians in Market: 500						
Solo	1	0.2%	38%	25%	192	125
2 to 10	6	1.2%	30%	33%	25	28
11 to 25	18	3.6%	21%	17%	6	5
26+	40	8.0%	3%	2%	0	0
Clinic	75	15.0%	7%	23%	0	2
HHI:					1986 251	1995 465
Assumed Number of Physicians in Market: 1,000						
Solo	1	0.1%	38%	25%	384	250
2 to 10	6	0.6%	30%	33%	51	56
11 to 25	18	1.8%	21%	17%	12	9
26+	40	4.0%	3%	2%	1	1
Clinic	75	7.5%	7%	23%	1	3
HHI:					1986 125	1995 233

collectively bargain with managed-care plans as a means of “leveling the playing field” in the negotiations between physicians and managed-care plans.⁶

While DSW do not directly inquire into the likely consequences of giving physicians more market power, their results are nevertheless suggestive. In particular, DSW seem to find no competitively significant increase in physician concentration associated with managed-care penetration. This has two possible explanations, each with a different implication for the debate over the wisdom of allowing physician antitrust exemptions.

On one hand, DSW’s failure to find any correlation between managed care penetration and competitively significant increases in physician concentration may simply reflect that physicians feel no strong need to create offsetting bargaining power.⁷ That is, if there truly was a need for offsetting bargaining power, one might expect to see more of a market response—the actual formation of larger physician group practices. Absent that trend in DSW’s data, though, one might conclude that the principal motivation for granting antitrust exemptions to physicians simply may not exist.

On the other hand, DSW’s results might be viewed as further ammunition in support of physician antitrust exemptions. Under this interpretation, physicians’ failure to respond to managed-care penetration by forming larger physician practices may reflect that the costs of forming into larger groups are too high to physicians, or that even with the formation of larger groups, it would be difficult to achieve competitively significant levels of concentration. Thus, absent physicians’ ability to correct the problem on their own, explicit provisions allowing the creation of market power may be necessary.⁸

To further examine this issue, though, one needs to focus not just on managed-care penetration rates, but also on managed-care *concentration levels*. This analysis of managed-care concentration is something that DSW do not do (and in all likelihood could not do, given their data). At one extreme, if all managed-care plans are small, then managed-care penetration may be very high even though managed-care plans enjoy little market power. At the other extreme, even with a low managed-care penetration rate, large managed-care plans might come to enjoy significant market power (if they compete in a market distinct from other insurance) that could be used to raise prices to consumers and to dictate prices or the conduct of the physicians with which they contract.

Absent information on managed-care concentration levels, DSW’s results permit few conclusions about the nature of bilateral bargaining between physicians and managed-care plans. In particular, DSW’s results shed little light on the hypothesis that managed-care penetration may be inducing physicians

to consolidate as a means of providing themselves with offsetting bargaining leverage.

Some Caveats about DSW's Physician Results

Are DSW Accurately Measuring Physician Concentration? Several important caveats apply to DSW's method for assessing changes in physician concentration over time. The first of these caveats reflects a point discussed earlier: Increases in concentration are not necessarily the same as *competitively significant* increases in concentration. As noted, DSW's results do not suggest any competitively significant increase in concentration associated with managed-care penetration, and their failure to control more precisely for physician concentration levels (e.g., distinguishing between markets that are unconcentrated, weakly concentrated, and highly concentrated) makes it difficult to draw conclusions from their finding that physician concentration has increased more rapidly in areas with higher managed-care penetration rates, or to gain insights into the most likely cause of any increases in physician concentration.

A second important caveat stems from DSW's focus on the percentage distribution of physicians across different practice sizes. DSW suggest that the reduced percentage of physicians in solo practice groups implies more concentrated, thus less competitive, physician markets. Unfortunately, absent information about the *number* of physicians in a given market, this may not be the case: When the number of physicians in a market changes over time, DSW's distribution measure may not correlate either with changes in concentration or in competitiveness.

This lack of nexus between physician distributions and either concentration or market power is easily illustrated with an example. Consider a town with 100 physicians: 10 in solo practice and the other 90 evenly divided into 5 groups of 18 physicians. Assume that 50 new physicians enter the market and form a single group practice. With the percentage of solo practitioners falling from 10 percent to 7 percent, DSW would say the market had become more concentrated. Yet, with 50 percent more physicians chasing the same number of managed-care contracts, the market is likely to be *more* competitive, not *less*.⁹

With the number of physicians presumably increasing dramatically between 1986 and 1995, then even though DSW find a smaller percentage of solo practice physicians in areas with higher managed-care penetration, one cannot use that statistic to draw conclusions about changes in either physician

concentration or competition. Accordingly, DSW's measure of physician concentration (and especially any implications about how that concentration measure correlates with market competitiveness) and results based on that measure of concentration need to be regarded with caution.

A third significant caveat about DSW's measure of physician concentration arises because their data do not distinguish between single-specialty practices and multispecialty practices. If different physician specialties compete in separate product markets (as many believe), then one cannot estimate market shares or concentration based on the size of a multispecialty group unless one knows the number of physicians in each specialty within that group. As a result, without knowing and correcting for the composition of the group practices for which DSW have data, it is unclear how a change in practice distribution would affect concentration, thus the creation of market power. Instead, DSW's measure of physician consolidation is of most value if one focuses on whether increased consolidation helps physicians achieve efficiencies, and one assumes that any efficiencies from large group practices can be achieved equally well in single-specialty practices or multispecialty practices.

The Missing "Residual Physicians" Group. DSW do not report the effect of managed-care penetration on the residual group of physicians, presumably made up principally of physicians in practices with 11–25 members. Representing 21 percent of physicians in the early period, and 16 percent in the latter period, this missing category represents a significant share of all physicians.

The effect of managed-care penetration (if any) on this residual group could be suggestive as to why physician market structures presumably changed as a consequence of greater managed-care penetration. As noted, the percentage of physicians in this practice size actually *fell* from 1986 to 1995, even while managed-care penetration was increasing. This shift away from what is a relatively large practice size is not what might be expected if physicians were consolidating in search of market power. In fact, if physician consolidation were directed at creating market power, one might have expected a reversal of the national trend in areas with higher managed-care penetration: *more* physicians falling into that category, rather than the reduction seen in DSW's data.

Extent to Which Managed Care Explains Shifts in Practice Patterns. DSW's claim that "managed-care growth appears to explain essentially all the observed... shift away from solo physician practice" seems to oversell their results. In fact, their results seem to offer much less explanatory power than DSW

suggest. Perhaps due to the leanness of their econometric model, there remains a substantial amount of unexplained variation in their measures of physician concentration: With the exception of HMO-employed physicians, the adjusted- R^2 in DSW's physician regressions is less than 0.02 for their regressions for the 2–10, 26+, and clinic/institution group practices. And even in the solo physician practices, their adjusted- R^2 statistic of 0.09 suggests their model in fact explains very *little* of the observed shift away from solo physician practices.

The significance of managed-care growth as the driving factor behind the shift away from solo practice is further diminished by the fact that any explanatory power coming from DSW's regressions is not coming solely from their managed-care penetration variable. Instead, two other statistically significant variables are also responsible for a substantial portion of their regression's (limited) explanatory power. Moreover, the other variables in DSW's regressions, even though not statistically significant, also presumably account for a portion of their regression's explanatory power.¹⁰

MANAGED-CARE PENETRATION AND HOSPITAL CONCENTRATION

DSW compare hospital concentration levels in 1981 with levels in 1994 and test for a relationship between those changes and increased managed-care penetration levels. They find that higher managed-care penetration rates are correlated with more concentrated hospital markets. Moreover, they find that the magnitude by which concentration changed was significant: On average, increased managed-care penetration caused the HHI to increase from 960 to 1,900. In terms of the *Guidelines*, that increase would likely be presumed anticompetitive.¹¹

The relationship DSW find between managed-care penetration and hospital concentration again raises the question of why hospital concentration increased. Was consolidation driven by hospitals' attempts to realize the efficiencies necessary to compete for managed-care contracts, or was it instead driven by efforts to create (possibly offsetting) market power against managed care plans?

Geographic Markets

Any measure of hospital concentration will be critically dependent on how the hospital market is defined. In general, the larger the geographic market,

the less concentrated those markets are likely to be. Similarly, estimated changes in market definition over time will also depend on how markets are defined.¹²

Given the importance of market definition to DSW's study, the weight one attaches to their results must then depend on whether one agrees with their assumptions on geographic market definition.¹³ As Dranove and White (1994) point out, there is no consensus about how markets should be defined or the approximate size of correctly defined markets. At one extreme, the U.S. Department of Justice has claimed that hospital geographic markets can sometimes be as small as five miles in radius (see, for example, their Clearwater, FL, or Long Island, NY, merger challenges).¹⁴ At the other extreme, the courts have often defined very large multicounty markets (see, for example, court opinions in the FTC's merger challenge in Poplar Bluff, IA, and DOJ's merger challenge in Dubuque, IA).¹⁵ And while the academic research seems to be increasingly supportive of small geographic markets, there is still no agreement about proper market definition methodologies or the likely size of hospital markets.¹⁶

DSW clearly face a difficult problem in this regard. First, any nontrivial algorithm for defining hospital geographic markets could be difficult to implement or require data that are simply unavailable to the authors. Second, even if the data and necessary computational power were available, there remains no consensus on how they should be used to define markets. And third, there is not even consensus as to what constitutes a "reasonable" size for most markets so that a general rule of thumb can be used for market definition. Under these circumstances, any single methodology DSW could have chosen for market definition would be criticized by some, thus calling their results into question.

Balancing the tradeoffs associated with any choice of market definition, DSW choose to define hospital markets as the Primary Metropolitan Statistical Area (PMSA), an area that usually seems to encompass from one to three counties. For the purposes of their paper, this choice is difficult to criticize. Yet, given the lack of consensus about hospital geographic market definition, their failure to consider the robustness of their results to alternative measures of market definition should leave policymakers cautious about relying too heavily on their findings. In particular, there is no indication how their results would change (if at all) under alternative market definitions. Absent that sensitivity test, anyone but the most ardent advocates of PMSA-based hospital markets needs to be careful about relying too heavily on DSW's results.

Hospital Consolidation: In Search of Efficiencies or Market Power?

Consider the possibility that geographic markets for hospitals are smaller than PMSAs.¹⁷ If so, then why do DSW find a correlation between managed-care penetration and concentration? If markets are smaller than PMSAs, then DSW's concentration measure may be a poor proxy for hospital market power, and no inferences can be drawn about whether increased managed care prompted hospitals to consolidate as a means of creating market power. Yet, even if PMSAs overstate the size of true geographic markets, DSW's results remain consistent with hospital consolidation as a means of generating efficiencies—if efficiencies can be realized by combining hospitals that lie in separate geographic markets.

This suggests a further reason for conducting sensitivity analysis of DSW's results with respect to market definition: It could help distinguish between a market-power motivation for consolidation and an efficiency-driven motivation. In particular, if geographic markets are smaller than PMSAs, then if efficiencies motivated consolidation, any concentration/penetration rate effect should be stronger when markets are defined at the PMSA level than defined at a more narrow level, for example, the county level. But if a quest for market power motivated hospital consolidation, the estimated relationship would be stronger with county-based markets than PMSA-based markets.

Exploring the Possibility of Nonlinear Relationships

As discussed, increased concentration is unlikely to be competitively significant or to create significant market power unless markets are concentrated. This suggests that, as long as hospital consolidation may be driven by attempts to gain market power, DSW should allow for a nonlinear relationship between concentration and managed-care penetration. In contrast, if a hospital merger generates efficiencies regardless of the level of market concentration, then if hospital consolidation is driven by attempts to realize efficiencies, there is no obvious need to allow for a nonlinear relationship.

This suggests another weak test to determine the motivation for hospital consolidation. If consolidation is driven by hospitals' attempts to gain market power, one should find a nonlinear relationship; managed-care penetration has no impact on concentration unless the market is already concentrated, or else the hospital consolidation creates a concentrated market. Alternatively, if there is no empirical basis to reject the alternative

hypothesis of a linear relationship, then efficiencies may have been the driving force behind any such consolidation.

The Extent to Which Managed-Care Growth Explains Increases in Hospital Consolidation

As with DSW's results regarding physicians, their claim that "managed-care growth appears to explain essentially all the observed increase in hospital consolidation" seems to overreach. In particular, while hardly a perfect measure of fit, the adjusted- R^2 statistics in DSW's regressions are quite low (0.17 or less), suggesting that a substantial amount of variation in hospital concentration over time is *not* explained by changes in managed-care penetration. Further, any explanatory power their regressions do provide cannot be attributed solely to their managed-care penetration variable; some of that limited explanatory power must be attributed to the other variables in their regressions.

CONCLUSIONS

DSW's work suggests that further research into the effect of provider consolidation is warranted. At one level, additional work on whether there has truly been any consolidation in physician markets seems warranted. Similarly, it would be very useful to conduct at least some robustness tests based on alternative geographic market definitions to see whether hospital markets have become more concentrated as a result of increased managed-care penetration.

At a second level, DSW's results clearly justify further work to understand the motivation behind any correlation between provider consolidation and managed-care penetration. Is that correlation an artifact of providers' attempts to achieve efficiencies through consolidation? Or is it an attempt to create market power? Or, perhaps relevant to legislative proposals to grant provider waivers, is there any correlation between managed-care penetration and managed-care market power and, if so, has that created any impetus for provider consolidation? And whatever the motivation for the consolidation, further research is called for to ascertain the effects of that consolidation.

DSW's work provides several useful hints as to what that research might show, but until those research questions are more specifically targeted and carefully examined, those hints should not serve as a foundation for policy decisions.

NOTES

1. As examples of the Agencies' recent challenges of hospital mergers, see DOJ's challenges in Dubuque, IA, Clearwater, FL, and Long Island, NY; the FTC's challenge in Poplar Bluff, IA; and the California Attorney General's challenge in Oakland, CA. Similarly, examples of the Agencies' involvement in physician markets include DOJ's consent decrees in St. Joseph, MO, and Danbury, CT; and the FTC's recent consent decree regarding physicians in the Fairbanks, AK, area.
2. This residual group includes a significant percentage of physicians (approximately 16 percent in 1995, down from 21 percent in 1986). In 1986, this residual group was larger than 26+ physician group, the clinic/institution group, and the HMO-employed group combined. In 1995, this group included slightly fewer physicians than did the solo practice and clinic/institution groups, but was still much larger than the 26+ physician group and HMO-employed group.
3. This discussion, as well as DSW's results, necessarily focus at a macro level. Whatever the general effects, though, results in any particular geographic area may be quite different.
4. See Frech and Mobley (2000) for a similar type of analysis regarding hospitals.
5. In making these HHI calculations, I assumed that HMO-employed physicians did not compete for managed care contracts, and so excluded them from the HHI calculations. Note that, if the number of physicians in a market is small enough, any large group practice or clinic will enjoy a high market share, and the HHI may then rise above 1,000. As discussed further below, though, if those large group practices or clinics are multi-specialty groups, their actual market share may be much lower, in which case the HHI is likely overestimated.
6. See Hammer (2000) for a discussion of these legislative proposals.
7. This view would be at odds, though, with the fact that so many physician organizations are vocal advocates of antitrust exemptions.
8. Of course, the wisdom of allowing physician market power under these circumstances remains hotly debated.
9. In this example, the HHI increases from 1,630 to 1,836, illustrating that changes in the HHI can be misleading when markets are changing size. It is easy to create other examples, though, in which the percentage of solo physicians in town falls following entry, but in which the HHI *decreases* (e.g., assume the 50 new physicians formed 25 different 2-physician practices).
10. DSW's claim that managed-care penetration explains essentially all of the observed shift away from solo practice seems to rest on the fact that their coefficient estimate on their managed care penetration variable, when evaluated at its mean value, suggests a 14 percent reduction in solo practice physicians—the same reduction they observe in the data. That reasoning, though, implies that increases in the Medicare population (d_OLD) were responsible for 50 percent of the observed shift out of solo practice, while increases in the median household income (d_INCOME) were responsible for a 21 percent increase in the percentage of

physicians in solo practice. Unless one is confident in these latter two implications, one should be cautious about concluding that increased managed-care penetration fully explains the observed shift out of solo practice.

11. The *Guidelines* indicate that a merger that increases the HHI by more than 100 points in a market with a postmerger HHI exceeding 1,800 is likely to “raise significant competitive concerns” and is likely to “create or enhance market power or facilitate its exercise.” Interestingly, though, a review of recent hospital mergers suggests that the Agencies may not be overly concerned in hospital markets except at substantially higher concentration levels. For example, in the 11 hospital mergers summarized in Vistnes (1995), the average postmerger HHI in the Agencies’ alleged market exceeded 5,100.
12. As discussed in the context of DSW’s physician analysis, the interpretation of a change in the HHI is unclear when markets are changing size; in that case, increased concentration does not necessarily imply less competition.
13. Product market definition is also important. Unfortunately, DSW provide little information about the set of hospitals they study, thus whether they treat all hospitals as competing in the same market, or whether they instead limit their data to particular types of hospitals in recognition of the general consensus that different types of hospitals (e.g., psychiatric hospitals, children’s hospitals, rehabilitation hospitals, substance abuse hospitals, and acute-care hospitals) may compete in different product markets.
14. *U.S. v. Morton Plant Health Sys., Inc.*, 1994-2 Trade Cas. (CCH), 70,759 (M.D. Fla. 1994); and *U.S. v. Long Island Jewish Med. Ctr.*, 983 F. Supp. 121 (E.D.N.Y. 1997).
15. *FTC v. Tenet Healthcare Corp.*, 17 F. Supp. 2d 937 (E.D. Mo. 1998) and related appeal; and *U.S. v. Mercy Health Servs.*, 902 F. Supp. 968 (N.D. Iowa 1995) (vacated as moot, 107 F.3d 632 [8th Cir 1997]).
16. See, for example Dranove and White (1994), Town and Vistnes (2001), and Vistnes (2001).
17. Empirical work by Town and Vistnes (2001) looking at hospitals in the Los Angeles area suggests that geographic markets may be much smaller than PMSAs. That conclusion also seems supported by the empirical results of Capps, Dranove, Greenstein and Satterthwaite (2001) in which they predict significant (i.e., greater than 5 percent) price increases following several simulated hospital mergers in the San Diego and Chicago areas. Since overall concentration and the market shares of the merging hospitals in a PMSA-based market would be very low, those results suggest that geographic markets (at least in the San Diego and Chicago area) are much smaller than the PMSA. Similarly, Dranove and White (1997) and Dranove (1998) suggest that the shift to payer-driven competition and the possibility of “option demand” may result in very localized geographic markets.

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