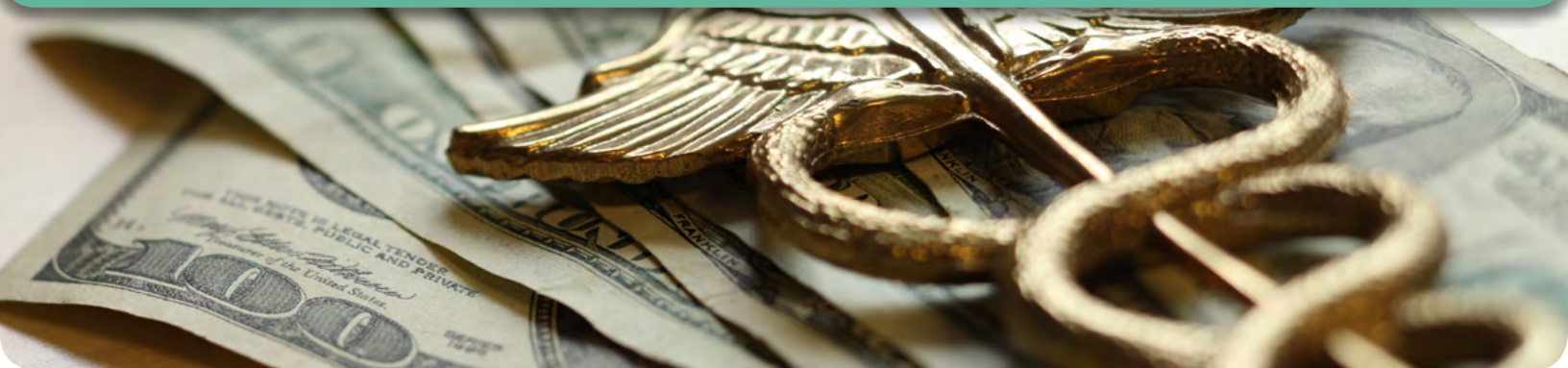


# MERGER-SPECIFICITY OF QUALITY AND COST EFFICIENCIES IN HOSPITAL MERGER CASES



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## I. INTRODUCTION

The most basic result in the economic analysis of horizontal mergers is as follows. A merger eliminates whatever competition had existed between the merging firms. If the eliminated competition is significant, the merger would tend to harm consumers through some combination of higher prices and lower quality. But mergers may also generate efficiencies, meaning that the merged firms might be able to do something better or cheaper together than they could do on their own. A cost efficiency reduces the cost of producing a unit of output which, insofar as it is passed through to consumers, tends to reduce price. A quality efficiency reduces the cost of producing a unit of quality (holding output constant), which tends to increase quality. The principal goal of an antitrust analysis of a horizontal merger is to determine its likely effect on price and quality.<sup>2</sup> The greater the lost competition, the larger the negative effects of the merger are likely to be, and therefore the larger the efficiencies must be in order to render the merger benign.<sup>3</sup>

The purpose of this article is to lay out one important point regarding the analysis of potential efficiencies, specifically those efficiencies that are only achievable via a merger.<sup>4</sup> The discussion will focus on efficiencies in hospital mergers (in which analysis of quality effects plays a particularly large role), but some of it may apply in other industries as well. The point, simply stated, is that whether or not a merger efficiency is rooted in geographic proximity between the merging hospitals will often be a key question in determining whether that efficiency is merger-specific.

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<sup>1</sup> Bureau of Economics, Federal Trade Commission. The views expressed in this paper are those of the author and do not necessarily reflect those of the Federal Trade Commission.

<sup>2</sup> The 2010 DOJ/FTC Horizontal Merger Guidelines use the following language: "To make the requisite determination, the Agencies consider whether cognizable efficiencies likely would be sufficient to reverse the merger's potential to harm customers in the relevant market, e.g. by preventing price increases in that market." (U.S. Department of Justice & the Federal Trade Commission. (2010). *Horizontal Merger Guidelines*. Retrieved July 12, 2017, from FTC Web site: <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.)

<sup>3</sup> Ideally, all of the merger's effects would be readily quantifiable and comparable. This is often not the case. Nevertheless, it is often possible to conclude with high confidence that a merger will be (or will not be) harmful on balance even absent complete quantification.

<sup>4</sup> Some efficiencies might be achieved independently by the would-be merging firms, or through non-merger partnerships of some kind. The discussion in this article assumes that this is not possible, and that the efficiencies under consideration would only be achieved via a merger.

## II. BACKGROUND

The analysis of merger efficiencies is discussed in detail in the 2010 DOJ/FTC Horizontal Merger Guidelines. In order for an efficiency to be “cognizable” (i.e. to count against the harm caused by lost competition), it must be verifiable. That is, there must be good reason to believe that the efficiency will actually happen. This is common sense; if the efficiency will not occur, then it should not be weighed against the merger harm. And since efficiencies are much easier to claim than they are to achieve, vague or aspirational claims should be regarded with skepticism. Throughout this article, I abstract from this and assume that the efficiencies under consideration are verifiable.

More importantly for the purposes of this article, a cognizable efficiency must also be merger-specific, meaning that it must be an efficiency that would be achieved by the merger but would not be achieved absent the merger. Again, this is common sense. If an efficiency would be achieved absent a competition-reducing merger, then there is no reason to permit the merger and suffer the resulting competitive harm in order to realize it.

Among the verifiable efficiencies, the portion that is merger-specific, and is therefore cognizable, is only the *increment* by which the merger efficiencies exceed those that would occur but-for the merger. As noted above, these but-for alternatives may include actions that the merging firms would take on their own, or things that they would do through non-merger affiliations. But the focus of this article is on efficiencies that will only be achieved through a merger, so the relevant comparison is between those that would be achieved through the merger under review and those that would be achieved through an alternative merger.

The alternative merger (which we assume does not generate competitive concerns of its own) will be with the hospital's *most preferred choice* among willing partners. This will not necessarily be the single most efficiency-generating merger, as there may be other factors besides efficiencies that influence the choice of a merger partner. But unless efficiencies and those other factors are negatively correlated, the most preferred merger is likely to be among the more efficiency-generating ones. For this reason, the increment between the efficiencies from the merger under review and those from the most preferred alternative could be small, or even negative.

This focus on merger-specificity has the beneficial effect of directing attention to what is relevant. Merging firms frequently claim that the transaction will improve quality, reduce costs or both. Firms also often claim that the merger will advance other important goals, such as providing clinically integrated care, or improving healthcare in distressed communities. But unless they are shown to be merger-specific efficiencies, they do not count under the Horizontal Merger Guidelines.<sup>5</sup>

## III. GEOGRAPHICALLY PROXIMATE VS. NON-PROXIMATE EFFICIENCIES

In many merger cases, particularly cases involving hospitals and other healthcare facilities, the competitive harm from the merger is rooted in the geographic proximity between the merging firms' facilities. All else equal, hospitals that are proximate to each other are much more likely to be close substitutes in the eyes of patients, and antitrust economics predicts that mergers between firms that are close substitutes in the eyes of their customers are more likely to lead to competitive harm, especially when non-merging firms are distant substitutes. Certain factors that are particular to healthcare mergers, notably the role played by insurance intermediaries, complicate the analysis somewhat, but the same basic principles apply. For this reason, FTC challenges of hospital and other healthcare provider mergers almost always involve geographically proximate facilities.<sup>6,7</sup>

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<sup>5</sup> Healthcare is constantly changing, and hospitals routinely have plans to implement beneficial new practices. For these plans to qualify as merger-specific efficiencies, it must be that they will be implemented with the specific merger under review and would not be implemented otherwise. It is not valid to point out an improvement that is occurring around the same time as the merger and ascribe its benefits to the merger.

<sup>6</sup> There is some recent economic research suggesting that mergers between non-proximate facilities can cause higher prices. Discussion of this research is beyond the scope of this article, except to note that to date no FTC merger cases have been brought based on this research.

<sup>7</sup> Geographic proximity is not strictly required for a merger to cause a competitive problem. One could imagine, for example, two hospitals that perform extremely

In hospital mergers, geographic proximity also plays a role in the efficiencies analysis. To see why, consider a merger between two proximate hospitals that significantly reduces competition.<sup>8</sup> Suppose that this merger has a number of verifiable efficiencies, and that these efficiencies can be cleanly divided between those that are rooted in geographic proximity and those that are not (in the real world there may be intermediate cases). I consider each in turn.

### A. Proximity-Based Efficiencies

Proximity-based efficiencies, by definition, can only be achieved through mergers with proximate partners. These efficiencies can only be achieved either through the merger under review or through a merger with another proximate firm. But there may be few or no other proximate firms, and any such firms may not be interested in a merger, or they may be unsuitable partners for some reason. Moreover, the fact that these firms are also proximate may mean that merging with them would be competitively harmful as well. The relative paucity of willing, suitable, non-competitively-problematic alternative partners through which to achieve proximity-based efficiencies provides a reason why those efficiencies are likely to be largely merger-specific.

A full discussion of which particular hospital merger efficiencies are rooted in geographic proximity is beyond the scope of this article, as is a discussion of the magnitudes of the ones that are deemed to be so. That said, a list of frequently offered candidates, accompanied by very incomplete discussion, is as follows:

- **Consolidation of services with a demonstrated volume/outcome relationship**

For some procedures and treatments (usually complex ones) there is evidence that hospitals that perform a higher volume of procedures achieve better outcomes. (Importantly, the evidence does not support a general volume/outcome relationship.) Following a merger between proximate hospitals, one or more of these services could be consolidated at one facility. If the pre-merger volumes were low enough that the increase in volume is likely to lead to better outcomes (which would not be the case if pre-merger volumes are sufficiently high at both hospitals), then this would count as a merger-specific quality efficiency. Note, however, that even with proximate hospitals, the consolidation will increase travel times for some patients, which could lead to worse outcomes for those with time-sensitive conditions. Also note that the consolidation would eliminate the most preferred option for some patients.<sup>9</sup>

- **Merging Electronic Health Records (“EHR”) systems**

When a patient is being treated in a hospital, there is value in having all medical records immediately available. For example, suppose that a patient is admitted to Hospital *A*. Also suppose that the patient had recently had an imaging scan performed at a center affiliated with Hospital *B*. Before the merger, the results of the scan might not be immediately available to the physicians at *A*, and the scan might even be unnecessarily repeated. If as a result of the merger the two EHR systems were merged, the scan would be immediately available, which has value. This efficiency is proximity-based; if the two hospitals were far apart, there would be few patients who were first treated in one and later treated in the other. The magnitude of this efficiency will depend on the clinical importance of the information, and also on how easily it could be obtained through other means, either directly from *B* or through other avenues such as Health Information Exchanges.

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complex procedures that are performed at only a handful of high-end academic medical centers in different parts of the country. If most of the patients who receive those procedures must travel long distances regardless, then mergers between hospitals that are located very far apart from each other may be problematic. That said, all of the recent FTC hospital merger cases, listed in Balan (2017), involved mergers of geographically proximate facilities. (Balan, “Competitive Effects of Hospital Mergers,” under review at *Netherlands Economic Review*, 2017.)

<sup>8</sup> If the merger did not significantly reduce competition, then the question of efficiencies would never be reached.

<sup>9</sup> There is often reason to question the verifiability of clinical consolidation claims. The reason involves what is sometimes called “leakage.” If one of the merging hospitals stops doing a procedure, not all of its patients will go to the merger partner instead. Some will “leak” to non-merging rivals. If the leakage is large enough, it provides a strong financial reason not to follow through with the consolidation.

- **Movement of Personnel between facilities**

As discussed in Romano & Balan (2011),<sup>10</sup> one way that a hospital merger could generate clinical quality efficiencies is if one of the hospitals enjoys “clinical superiority” over the other. If one hospital is simply better run, and if there is a way for that hospital’s superior management practices to be transferred to the weaker hospital, that could constitute an efficiency.<sup>11</sup> Whether or not the efficiency is proximity-based depends on the mechanism by which those superior practices will be transferred. If it is simply a matter of leadership or resources, then the benefits potentially would be achieved with a non-proximate partner, and so would not be proximity-based. But if the transfer of practices will arise because of an in-person physical connection between personnel, say with staff cycling from one hospital to the next to observe and implement best practices, then the efficiencies would be proximity-based. Proximity might also matter for a different reason, namely that a proximate hospital that is already involved in the community might be the only one that is willing to take on the project of improving the weaker hospital. These efficiencies would be proximity-based as well. In cases involving a clinical superiority argument, these questions are of central importance.

- **Capital Cost Avoidance**

In some cases, merging firms argue that the merger will allow them to avoid a large capital expenditure that they otherwise would make. For example, Hospital *A* might claim that it is capacity constrained, necessitating the construction of a new bed tower at a cost of \$100M. But Hospital *B* has unused capacity. If the merger occurs, *A* will shift some of its patients to *B*, alleviating the congestion at *A* and eliminating the need for the new tower.<sup>12</sup> (There may be reasons unrelated to merger-specificity why such a claim would not be cognizable. The capital cost avoidance in question may result from an anticompetitive reduction in output, or it may fail to lead to a reduction in the marginal cost of capital.<sup>13</sup> There may also be uncertainty about whether the decisions regarding the capital cost plans were made completely independently of the merger. But for the purposes of this discussion we assume that these reasons do not apply.) Assuming there is no way the hospital would gain access to the necessary additional space by alternative means that are less competitively harmful, efficiencies of this nature are rooted in geographic proximity, because Hospital *A* could not alleviate congestion by shifting patients to a non-proximate partner.<sup>14</sup>

## ***B. Non-Proximity-Based Efficiencies***

Now consider efficiencies that are not rooted in geographic proximity. There may be many more possible merger partners for realizing these efficiencies than there are for realizing proximity-based ones. This creates doubt about whether non-proximity-based efficiencies are likely to be merger-specific. The greater the number of potential alternative partners, the more likely it is that one of them (specifically the most preferred of them) would also generate large non-proximity-based efficiencies.

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10 Romano & Balan, “A Retrospective Analysis of the Clinical Quality Effects of the Acquisition of Highland Park Hospital by Evanston Northwestern Healthcare,” *International Journal of the Economics of Business*, 18(1), 2011: 45-64.

11 See Feinstein (2014) for a discussion of how clinical superiority claims are evaluated. (Feinstein, “Antitrust Enforcement in Health Care: Proscription, not Prescription,” *speech at the Fifth National Accountable Care Organization Summit – Washington, DC*, June 19, 2014.)

12 Similar claims are often made involving expensive new equipment like imaging scanners, where the merging hospitals say that they would have bought an additional scanner, but that the merger will eliminate the need to do so. The analysis of these claims is similar to that of the bed tower.

13 Capital cost avoidance claims are usually fixed-cost efficiencies, not variable cost efficiencies, and so are less likely to be passed through to consumers. Whether or to what extent fixed-cost efficiencies should be credited depends on one’s opinion about how to weigh consumer surplus vs. producer surplus. This question is beyond the scope of this article.

14 However, the \$100M figure in this example likely overstates the efficiency, as it ignores several factors that should be taken into account, including: (1) any direct costs associated with adapting *B* for the additional patients who would otherwise have gone to *A*; (2) the extent to which using the spare capacity at *B* is less good for consumers than the (brand new) bed tower would have been; (3) the fact that the patients who are moved from *A* to *B* will now be using their second choice hospital instead of their first. (This harm is mitigated, but not eliminated, by the fact that *A* and *B* are (by assumption) close substitutes, which implies that a substantial number of consumers are readily willing to switch between them); and (4) any negative effects of the influx of new patients at *B*. (Unless there was a lot of slack capacity at *B* prior to the merger, those new patients from *A* will increase congestion at *B*, for example by increasing the demands on facilities and equipment such as operating rooms and imaging scanners. This would affect the patients who would have used *B* even absent the merger.) These costs may or may not be large, and they may be difficult to measure, but if they are material they should be taken into account in evaluating this type of efficiency.

Ideally, it would be desirable to identify all of the willing alternative merger partners, and to evaluate the efficiencies that would be realized with each of them. Sometimes it is possible to obtain documents or testimony regarding alternative mergers that the merging parties also considered.<sup>15</sup> But often there is little or none of this documentation. For a variety of reasons, the merging hospitals may not have actively considered alternative partners.

Absent clear, case-specific evidence regarding the set of alternative partners and the efficiencies that would be achieved with them, what can be done? One possibility in those circumstances would be to credit *all* non-proximity-based efficiencies as merger-specific. But this would wrongly credit many efficiencies that are not in fact merger-specific.

A better approach is to attempt to establish some broad principles that can inform how large the set of willing alternative partners is likely to be, and what portion of the non-proximity-based efficiencies from the merger are likely to be realized with the most preferred partner in this set. These principles, combined with case-specific evidence, can help to establish how much weight should be given to different kinds of non-proximity-based efficiency claims. Below is an outline of what those principles might be.

But before laying out these principles, it is important to emphasize that they do not represent an attempt to establish a formal legal or policy standard for how to evaluate one kind of efficiency or another. Nor are they intended to rule in or rule out any specific category of efficiency claim. Rather, they are an attempt to frame the problem in a way that will be useful and tractable given the limited evidence available in real-world cases.

We now turn to the principles. First and most obviously, the set of alternative merger partners through which non-proximity-based efficiencies would be achieved only includes firms that would actually be willing to merge. This point is reflected in the Horizontal Merger Guidelines, which state that only “practical” alternatives to the merger under review will be considered. As noted above, direct evidence on this is often not available, but it may be possible to determine whether a hospital has attributes that make it attractive to potential partners. For example, there may be evidence on whether similar hospitals had recently been purchased, or had attracted serious interest in the form of a bid or an offer. There may also be evidence on whether an aggressively expanding system had recently acquired or expressed serious interest in similar hospitals. Other attributes such as being located in a particular part of the country, or having a particular religious affiliation, may be relevant as well.

Aside from the general fact that hospital mergers between non-proximate partners are common, there is also some direct empirical evidence on this point. As reported in Balan (2016),<sup>16</sup> there were four recent cases in which the FTC took an enforcement action to block a merger, and for which the final disposition of the would-be acquired facility was known at the time the article was written. All four found alternative partners following the FTC’s enforcement action. The fact that these alternative partnerships occurred suggests that they involved non-proximity-based efficiencies that were at least large enough to justify the merger.

Second, the nature of the non-proximity-based efficiencies matters as well. Some are more clearly achievable through an alternative merger than others. While certainly not a complete typology, the following examples provide a broad sketch of some factors to be considered.

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15 Sometimes alternative partners publicly declare an interest in merging with one of the parties to the merger under review. When this happens, it is obviously useful evidence. But even then, there is often no detailed analysis of which non-proximity-based efficiencies such a merger would achieve.

16 Balan, “Hospital Mergers That Don’t Happen,” *NEJM Catalyst*, 2016 (<http://catalyst.nejm.org/hospital-mergers-dont-happen/>).

- **Efficiencies arising from pure economies of scale**

Some efficiencies come from an increase in the pure size of a hospital system. One commonly-claimed efficiency in this category is that higher total patient volume makes it easier for the merged entity to enter into risk-based contracts. This benefit comes from size alone, which means that these efficiencies would be realized through a merger with *any* willing alternative partner of the same size. Similarly, scale-based efficiencies from combining back-office administrative functions are likely to be achievable with nearly any potential partner.

- **Non-proximity-based clinical quality efficiencies**

As discussed in Romano & Balan (2011), one possible source of quality efficiencies is when one hospital is clinically superior to the other, and can export its superior practices. As noted above, some part of this may be proximity-based. But what about the part that is not proximity-based? This can be quite nuanced. For example, suppose a high-quality, but not outstanding, hospital system proposes to buy a lower quality hospital. Insofar as the weaker hospital appears likely to be attractive to similar-quality systems, this efficiency is unlikely to be merger-specific. At the other extreme, suppose that the would-be acquired hospital is in such poor condition that it is not an attractive merger partner, and so it is likely that *only* the proposed merger partner is willing to take it on, essentially as a public service. In this case, the efficiency would likely be credited as merger-specific.<sup>17</sup> Intermediate instances are also possible. For example, the proposed acquirer could be of unusually high quality. In that case, it may be better than the best of the alternative acquirers, and so some portion of the efficiencies should be credited. For another example, suppose the proposed acquirer is known to have a specific strength, say successful infection-reducing protocols, and the proposed acquired hospital is weak in this area. It is possible that the most preferred of the alternative acquirers would have a similarly good protocol. But it is also possible that it wouldn't. The more specific the efficiency, the less justified is an assumption that it would be realized with an alternative partner.

## IV. CONCLUSION

Analysis of efficiencies is central to the evaluation of horizontal mergers. This is true of both cost efficiencies and quality efficiencies. Quality efficiencies loom particularly large in cases involving mergers of hospitals and other healthcare facilities. The correct way to evaluate efficiency claims, specifically regarding whether or not the claimed efficiencies are merger-specific, can be somewhat subtle. The purpose of this article is to illuminate one of these subtleties, namely the role that geographic proximity or non-proximity between the merging firms plays in determining whether efficiencies are merger-specific.

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<sup>17</sup> As noted above, such an efficiency might be thought of as proximity-based insofar as the interest of the buyer is the product of its involvement in the local community.