

# The 2010 Horizontal Merger Guidelines: A Static Compass in a Dynamic World?

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The 2010 U.S. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines<sup>1</sup> are finally here, and we commend the authors for making significant improvements to the 1992 Guidelines in a variety of areas.<sup>2</sup> The 2010 Guidelines more closely reflect the Agencies' current practices and provide the merging parties a plethora of detail regarding methodologies used in merger review. The 2010 Guidelines also introduce important new analytical tools to aid in the assessment of likely competitive effects. These tools build on, and effectively exploit, the implications of first-order conditions for profit maximization in static oligopoly models. In our view, however, the 2010 Guidelines fall short in better integrating the dynamic aspects of competition into merger assessment. As the matter stands now, "dynamic" competition analysis appears to be an afterthought to the more traditional approach. In this note, we suggest a few areas where dynamic analysis is likely to be especially valuable in better aligning the workings of markets with conclusions on merger effects.

The term "dynamic competition" is generally used in two different ways. First, commentators often apply the term to markets that experience significant change in their underlying structural conditions such as rapid decline, growth, or technological progress. Markets in which competition is driven by innovation naturally fall into this category. In such markets, the standard static tools of merger assessment are generally inadequate for the task at hand. The new section in the 2010 Guidelines on innovation and product variety addresses the unilateral effects from a merger on competition in innovation-intensive markets.<sup>3</sup> This section is a significant step forward in analysis of mergers in innovation-intensive markets. However, the section does not sufficiently reflect the notion that in innovation-intensive markets, the current market positions of the merging firms (and their rivals) are often a poor proxy for future competitiveness.

In this essay, we use the term dynamic competition in a second sense, namely as a shorthand for the link between firms' current actions and future profits stemming from strategic decisions aimed at maximizing the expected net present value of current and future profits. These types of dynamic considerations underlie Section 2 cases and are important for analyzing competitive effects in industries where intertemporal dynamics are relevant to the full assessment of merger effects.<sup>4</sup> These types of dynamic considerations enter into the analysis of pricing, output, investment, entry, exit, and product repositioning decisions.

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<sup>1</sup> U.S. Dep't of Justice & Federal Trade Comm'n, Horizontal Merger Guidelines (2010) [hereinafter 2010 Guidelines], available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

<sup>2</sup> U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines (1992, rev. 1997) [hereinafter 1992 Guidelines], available at <http://www.justice.gov/atr/public/guidelines/hmg.pdf>.

<sup>3</sup> 2010 Guidelines, *supra* note 1, § 6.4.

<sup>4</sup> For example, dynamic considerations are central to *Brooke Group's* recoupment test. See *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

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Despite the significant advances in analyzing dynamic models of competition,<sup>5</sup> the core methodology for reviewing mergers under the 2010 Guidelines relies heavily on the static “workhorses” of industrial organization economics, namely the oligopoly models of Cournot and Bertrand.<sup>6</sup> We acknowledge that the 2010 Guidelines address various issues that pertain to dynamic competition, as did the 1992 Guidelines.<sup>7</sup> However, the 2010 Guidelines continue to regard dynamic competition considerations not as core elements of merger review but rather as either evidence that may be used to rebut the presumptions created by the various static filters or as a source of additional competitive concern.

This point can be illustrated by the analysis of unilateral effects from mergers in differentiated products industries. The 2010 Guidelines’ merger review in such industries is based on a notion that a merger of two (close) rivals creates static upward pricing pressure (UPP) that potentially may be countered by savings in marginal costs flowing from the transaction.<sup>8</sup> However, the UPP method builds on premerger profit-maximization conditions, and as such, it inevitably ignores potential responses by non-merging firms and the feedback from these anticipated responses on the behavior of the merging firms. Under the 2010 Guidelines, the inferences from the UPP method (or static merger simulations) may be rebutted by considering dynamic aspects of competition such as entry and repositioning. Because the 2010 Guidelines’ core method for analyzing mergers in differentiated products markets (and also in homogeneous products markets) is based on a static framework, this creates the risk that dynamic considerations will be relegated to an afterthought, especially in view of how difficult it can be (in practice) to rebut the presumption of harm and to develop and quantify evidence on dynamic effects.

Moreover, the 2010 Guidelines make extensive use of inferences from the Lerner condition—another workhorse of industrial organization economics—which relates a product’s short-term margin to its short-term elasticity of demand. However, in dynamic settings (and in other settings, such as markets with multi-sided platforms), the link between this elasticity and margins may not be consistent with the standard Lerner condition. In particular, in such dynamic settings, applying the Lerner condition to current margins may lead to incorrect inferences about demand elasticity and UPP measures.

It is our view that dynamic competition analysis should be a core part of the merger screening process (i.e., before the Agencies’ findings of rebuttable presumptions). Below we sketch out how dynamic competition models can be more effectively incorporated into basic merger analysis. We focus on the 2010 Guidelines’ treatment of non-merging firms’ response and margins—areas in which dynamic competition models may be particularly relevant.

### Responses of Non-Merging Firms

Under the 2010 Guidelines, the Agencies consider two potential types of responses by non-merging firms in assessing whether the responses would be sufficient to “deter or counteract any

<sup>5</sup> See Liran Einav & Jonathan D. Levin, *Empirical Industrial Organization: A Progress Report*, 24 J. ECON. PERSP., Spring 2010, at 145.

<sup>6</sup> See DENNIS W. CARLTON & JEFFREY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 160–76 (4th ed. 2005).

<sup>7</sup> For example, both the 1992 and the 2010 Guidelines include a section on entry. 1992 Guidelines, *supra* note 2, § 3; 2010 Guidelines, *supra* note 1, § 9.

<sup>8</sup> 2010 Guidelines, *supra* note 1, § 6.1.

competitive effects of concern.”<sup>9</sup> The two types of responses are: (1) entry,<sup>10</sup> and (2) repositioning, in the case of differentiated products markets.<sup>11</sup> For entry, the 2010 Guidelines largely follow the 1992 Guidelines in focusing on whether entry would be “timely, likely, and sufficient in its magnitude, character, and scope to deter or counteract the competitive effects of concern.”<sup>12</sup> A similar standard applies to repositioning.<sup>13</sup>

To assess whether entry would be timely, likely, and sufficient, the Agencies consider a number of factors, including evidence of actual history of entry into the relevant market, sunk costs associated with entry, output levels that the entrant is likely to obtain, likely post-entry price levels, per unit costs that the entrant is likely to incur, whether the market values of firms in the industry exceed the replacement cost of capital, whether there are reputational barriers or other impediments that the entrant would face, and whether the entrant’s scale and strength exceeds that of one of the merging firms.<sup>14</sup> However, the 2010 Guidelines do not provide clear guidance on how to ascertain whether the presence or absence of these factors is sufficient to deter or counteract the competitive effects of concern or how these factors can be traded off against each other. Such absence of clear guidance can lead to significant uncertainty for the merging parties.

Moreover, many of the factors the 2010 Guidelines consider in entry analysis could be further developed and placed in a context of a comprehensive dynamic model. For example, the 2010 Guidelines state that the “sufficiency” requirement for entry would be satisfied if a single firm’s entry “will replicate at least the scale and strength of one of the merging firms.”<sup>15</sup> But given that mergers do not typically discard *all* of the assets of one of the merging firms, replacing all of the scale and strength of one of the merging firms is likely unnecessary to counteract the competitive effects of concern.

In addition, what matters for entry analysis is not necessarily whether post-merger entry would be likely and timely but whether the increase in the likelihood of or advance in the timing of entry in response to a post-merger price increase (or reduction in quality) would be sufficient to deter such price increases (or reductions in quality). Since the 1992 Guidelines were issued, there has been significant progress in the economic modeling of entry.<sup>16</sup> However, this progress is not reflected in the 2010 Guidelines. Perhaps a more effective approach to entry analysis would be to incorporate entry into a dynamic model of competition (data permitting) and to estimate the

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<sup>9</sup> *Id.* § 9.

<sup>10</sup> *Id.* Although the 2010 Guidelines discuss output expansion by non-merging firms, the discussion is largely confined to calculating market shares and focuses on output expansion using existing capacity rather than on developing new capacity in response to a merger. *See, e.g., id.* § 5.2.

<sup>11</sup> *Id.* § 6.1.

<sup>12</sup> *Id.* § 9.

<sup>13</sup> *Id.* § 6.1. Although the 2010 Guidelines devote an entire section to entry, there is very little discussion about product repositioning. In particular, the 2010 Guidelines do not explain what repositioning entails in actual markets or describe the economic analyses that the Agencies would perform to assess whether repositioning would be timely, likely, and sufficient. As product repositioning can significantly alter the effects of a merger on competition, the Agencies should pay significant attention to this type of competitive response by non-merging firms and clarify their approach. *See, e.g.,* Amit Gandhi, Luke Froeb, Steven Tschantz & Gregory J. Werden, *Post-Merger Product Repositioning*, 56 J. INDUS. ECON. 49 (2008).

<sup>14</sup> 2010 Guidelines, *supra* note 1, § 9.

<sup>15</sup> *Id.* § 9.

<sup>16</sup> *See, e.g.,* Patrick Bajari, C. Lanier Benkard, & Jonathan Levin, *Estimating Dynamic Models of Imperfect Competition*, 75 ECONOMETRICA 1331 (2007).

merger effects directly (including the effect of the merger on the likelihood of entry and its consequent effect on competition).

The 2010 Guidelines' analysis of non-merging firms' responses appears to focus on large-scale entry. However, effective response by non-merging firms may take variety of forms, such as building or expanding existing manufacturing facilities, introducing new products and services, expanding sales teams, opening new sales office locations, launching new marketing campaigns, intensifying research and development efforts, using new distribution channels, or establishing new partnerships with other firms.<sup>17</sup> These strategies may be undertaken in conjunction with aggressive pricing and other incentives to win customers from the merging parties. Even if such responses by non-merging firms are modest in scale for each individual firm, in aggregate, these responses may provide potent deterrents against any potential reduction in competition. Thus, responses by incumbent non-merging firms are potentially important features of dynamic competition that are insufficiently reflected in the 2010 Guidelines.

A natural question about such post-merger responses is why these strategies would only be profitable post-merger. One reason is that mergers may confer benefits not only on the merging parties but also on the non-merging firms. The post-merger competitive landscape can create new opportunities for non-merging firms. For example, non-merging firms may be in a position to acquire assets shed by the merging parties at a relatively low cost; may be able to hire experienced staff formerly employed by the merging parties without paying a premium; or more readily pursue merging parties' customers. Such customers may be more likely to switch suppliers because of service disruptions resulting from merger integration or because of a close relationship with a sales representative no longer employed by the merging parties.

Moreover, opportunities for the non-merging firms would be further amplified if the merging parties raised prices or reduced services. Importantly, non-merging firms also may receive a "closer look" from some customers post merger. In a bidding context, it is common for customers to consider closely only a few competing bids.<sup>18</sup> Thus, a customer who, premerger, considered competing bids from the merging parties will now be willing to (or will have to) consider a bid from a non-merging firm or firms. This effectively reduces marketing costs for the non-merging firms and improves exposure to customers with the concomitant benefits to dynamic competition.

## Margins

Merging parties' premerger margins play a central role in merger review under the 2010 Guidelines. The Agencies use margins in a number of analyses, including: (1) market definition; (2) the UPP method for screening for unilateral price effects in differentiated products markets; and (3) assessing the likelihood of a "unilateral output suppression strategy" in "markets involving relatively undifferentiated products."<sup>19</sup> However, the Agencies' use of margins, as described in the 2010 Guidelines, appears to be flawed in certain respects. Consider the following statement in the market definition section of the 2010 Guidelines: "Unless the firms are engaging in coordinated interaction (see Section 7), high pre-merger margins normally indicate that each firm's product

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<sup>17</sup> In declining industries, a non-merging firm response may take the form of retaining assets that would have exited but for the output reduction (or price increases) by the merging firms. In this case, retaining assets that would have exited otherwise has the same effect as entry but without the associated sunk costs of entry.

<sup>18</sup> Full assessment of bids is costly for customers, but customers need to consider two competing bids for the purposes of benchmarking and negotiations.

<sup>19</sup> 2010 Guidelines, *supra* note 1, §§ 4.1.3, 6.1, 6.3.

individually faces demand that is not highly sensitive to price. Higher pre-merger margins thus indicate a smaller predicted loss as well as a smaller critical loss.”<sup>20</sup>

The statement regarding the relationship between margin and elasticity follows from the Lerner condition, which is a static equilibrium condition. However, the standard Lerner condition is unlikely to be satisfied under many real-world market circumstances, including markets with network or consumer externalities, markets for exhaustible resources, innovation markets, markets undergoing significant change in underlying structural parameters, markets in which suppliers face learning curve effects, two-sided markets, markets in which participants engage in limit pricing, markets with lagged demand responses to price changes, and numerous other market scenarios.<sup>21</sup> In these cases the static optimization conditions will not generally hold because of intertemporal dependency among prices, demand, production costs, entry, and investment decisions. In real-world market settings, firms make business decisions that satisfy dynamic optimization conditions, i.e., firms take into account the effect of current period actions on expected future period profits. In addition, as the 2010 Guidelines recognize, the standard Lerner condition will not generally be satisfied in those market settings where firms engage in some degree of coordinated interaction. Thus, because firms in actual market settings do not generally set prices based on static optimization, inferring demand elasticity from static margins (as the 2010 Guidelines appear to do) can lead to wrong inferences regarding the likely effects of a transaction.<sup>22</sup>

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### Dynamic Models of Competition

One of the drawbacks of dynamic models is that these models are often characterized by multiple equilibria.<sup>23</sup> Because standard economic analysis assesses merger effects based on comparison of pre- and post-merger equilibria, the possibility of multiple post-merger market outcomes poses a special challenge to such analyses. The multiplicity of equilibria in dynamic models makes these models problematic for predicting merger outcomes. This is likely a major reason why the Agencies have not fully embraced dynamic models in merger review.

However, in recent years there has been significant progress in the analysis of dynamic models. One promising approach is to model dynamic competition under the assumption that firms deploy so-called Markov strategies, whereby each firm’s strategy is a function of the current (observable) state of the industry.<sup>24</sup> This “simplification” imposes sufficient structure to provide a practical framework to forecast competition outcomes (without running into a multiplicity of equilibria problem) and at the same time retain key features of competition in an industry. Although these models impose significant data and computational demands on estimation and forecasting procedures, the model assumptions may be chosen to strike the right balance between, on the one

<sup>20</sup> *Id.* § 4.1.3 (citation omitted). Section 7 of the 2010 Guidelines indicates that “coordinated interaction” involves conduct by multiple firms that results in prices that exceed the benchmark static equilibrium prices.

<sup>21</sup> See Robert S. Pindyck, *The Measurement of Monopoly Power in Dynamic Markets*, 28 J.L. ECON. 193, 193–95 (1985).

<sup>22</sup> According to the 2010 Guidelines, “the profit margin on incremental units is the difference between price and incremental cost on those units.” 2010 Guidelines, *supra* note 1, § 4.1.3. Such margins do not accurately reflect the full economic benefits of sales because they do not account for the effects of sales on future demand and costs, for example.

<sup>23</sup> It is common in industrial organization literature to analyze dynamic models as repeated plays of static games. However, there are other more general formulations of dynamic models.

<sup>24</sup> See, e.g., Bajari, Benkard, & Levin, *supra* note 16; C. Lanier Benkard, *A Dynamic Analysis of the Market for Wide-Bodied Commercial Aircraft*, 71 REV. ECON. STUD. 581 (2004); Richard Ericson & Ariel Pakes, *Markov-Perfect Industry Dynamics: A Framework for Empirical Work*, 62 REV. ECON. STUD. 53 (1995).

hand, practical application and, on the other hand, accurately capturing the relevant competitive forces in the industry.<sup>25</sup>

### Conclusion

The merger review process would benefit from additional integration of dynamic competition analysis into the Agencies' basic merger review methodologies. Dynamic competition models are generally applicable for merger analysis in all types of markets. However, merger analysis using dynamic competition models is particularly important for markets with significant intertemporal dependencies among prices, demand, production costs, entry, and investment decisions, i.e., markets for which static optimization conditions generally do not adequately reflect the full range of business considerations that motivate firms' decisions, including the decisions of the merging firms and their current and likely future rivals. Economics has made significant progress in analyzing dynamic competition models over the past decade and, thus, we anticipate that these new tools will be embraced by the Agencies before the next overhaul. ●

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<sup>25</sup> Note that static models strike this balance in favor of practical application but at the expense of capturing relevant aspects of competition.