Innovation Theories Of Harm Are Crucial In Merger Control

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The European Commission analyzed whether incentives to invest in innovation would reduce following the mergers in both Dow/DuPont and Bayer/Monsanto. In this article we describe why innovation theories of harm, or ToHs, are important in merger control, how they relate to conventional merger analysis, and the challenges for agencies seeking to pursue a more comprehensive approach.

Importance of Innovation ToHs in Merger Control

Economists largely agree that competition policy should help support innovation. However, economists have debated for decades whether more competition is good or bad for innovation. Empirical answers have faced a considerable challenge — the available proxies for innovation, such as weighted patent counts, are highly imperfect.[1]

The ambiguity in the economic literature suggests a case-by-case analysis is appropriate. In practice, innovation ToHs have played a prominent role in merger control in both the U.S. and Europe, but typically in conventional terms.

Innovation in Conventional Merger Evaluation

Agencies have often adapted longstanding conventional frameworks for analyzing innovation ToHs. For example:

- Mergers involving a potential entrant: Mergers involving an incumbent acquiring a firm with a product under development have occurred in the pharmaceutical sector (e.g., Pfizer/Hospira or Medtronic/Covidien).[2] The 2010 U.S. Horizontal Merger Guidelines describe mergers where the lessening of competition is more likely to be substantial: larger incumbent market share implies greater competitive significance of the potential entrant — both for itself and relative to others.[3]

- Mergers involving nonprice effects: Agencies’ nonprice evaluations typically mirror their approach to evaluating price competition. Examples include those in the telecommunications sector (e.g., Hutchison 3G Italy/Wind/JV).[4]
• Mergers involving vertical foreclosure concerns: Innovation-related ToHs can relate to either input foreclosure (wherein competitors may lose access to a merging firm’s product) or customer foreclosure (wherein competitors may lose access to downstream customers). Examples include Intel/McAfee and ARM/Giesecke & Devrient/Gemalto.

The Challenges in Moving Beyond Well-Established Practice

In Dow/DuPont, the commission introduced a discussion of target “innovation spaces,” defined as “small groupings of crop/pest combinations.”[5] It sought to delineate firms’ “lines of research” — sets of scientists, patents, assets, equipment and chemical classes, dedicated to a given discovery target innovation space and whose final output comprised pipeline active ingredients. The commission’s assessment considered “the overlaps between the Parties’ lines of research and early pipeline products as well as between lines of research and early pipeline products of a Party that will compete in a market where the other Party is an existing or potential supplier.”[6] This includes overlaps where products were still in a relatively early “discovery” phase (i.e., during the three- to four-year initial stage of the R&D process before the five- to six-year development phase).

The potential loss of competition between two potential future competitors with pipeline products (e.g., J&J/Actelion) depends on the likelihood of successful innovation causing a future overlap. Consider two firms developing products where the prospects of successful innovation for each firm are independent and involve a 70 percent chance of a product successfully reaching the market. Both firms will succeed only with a 49 percent probability, meaning that the likelihood of a potential future competitive overlap is less than 50 percent.

Is this the right test for a substantial lessening of competition, or SLC? A different result could arise if we consider whether the merger significantly lessens the probability that the innovation appears in the market overall. If the merged firm pursues only one investment project, there would be a 70 percent chance of successful innovation whereas when firms compete, absent the merger, the likelihood that at least one firm would innovate is 91 percent. This loss from competition to innovate could harm future customers, as they are denied access to the innovation. It represents a legitimate policy concern for competition authorities.

Of course, even legitimate activities can introduce a risk of error in practice. The agencies’ concern is that a focus on short-term price effects of a merger may introduce a risk of type I (false positive) errors. When agencies try to evaluate innovation SLCs, the economic toolkit is less developed and the data required are less likely to be available, increasing the risk of type II (false negative) errors. Better evidence can reduce the risk of both types of error. Economics suggests collecting evidence about the effect of a merger on the parties’ incentives to invest in innovation and the consequences of a diminution.

Relevant Factors in Assessing Whether a Merger Will Change Incentives to Invest

The market’s invisible hand requires firms to compete along price and nonprice dimensions, aiming to steal business from others. Competition authorities argue that, by analogy, mergers that reduce firms’ willingness to steal business from competitors by investing in innovation may be bad for customers.

The economic literature on investment and entry suggests there are limits to the strength of this analogy. Decisions to invest are intertwined with expectations of future price competition — firms may
not wish to invest up-front to develop new products when they believe they will face intense competition ex-post. If so, product markets will ultimately be highly concentrated and so mergers between potential future competitors may have few negative competitive effects and may even be desirable if a merger would avoid significant duplication of sunk or fixed costs, including R&D.

More generally, the entry and investment literature provides a useful framework for considering the question of whether, in oligopolistic markets, firms have too great or too little incentive to make up-front investments under a given level of competition. It proposes an evaluation of the nature and magnitude of business stealing effects against the extent to which firms’ investments, if made, would result in benefits to customers that firms would not capture, referred to as uncaptured customer benefits. If uncaptured customer benefits from new products are large then firms may underinvest because their returns to investment are less than the full social benefit.

In annex 4 to the commission’s Dow/DuPont decision, the language is slightly different but the relevant factors are familiar. First, the commission asks whether a merger significantly reduces “contestability,” the extent to which a firm can gain profitable sales from its rivals by offering greater value to customers; and second, whether the resulting reduction in innovation incentives can be offset by increased “appropriability,” the extent to which a successful innovator can capture the social benefits resulting from its innovation.

The Scope and Assessment of Appropriability

In Dow/DuPont, the commission assessed appropriability as a possible merger efficiency. While economists have no objection in principle to this approach, there is clearly some considerable force in the concern raised by the European defence bar that no merger case—ever—has been approved by the commission exclusively on the basis that the merger-specific efficiencies would offset consumer harm. The concern is therefore that application of the test described in Dow/DuPont, despite being grounded in the economic literature, will in practice lead to a one-sided assessment given the high bar faced by efficiency arguments.

In addition, the commission defined the potential for an appropriability efficiency narrowly, relating to only the strength of intellectual property protections, or IPP. More specifically, the commission assumes that if an industry has strong IPP, then appropriability is high, and therefore any increase in appropriability due to the merger will have negligible benefits to innovation.

However, even perfect IPPs grant only an intellectual property right and do not provide any right to a product market monopoly. There certainly can be alternative ways to deliver products which are good substitutes in the eyes of consumers, each produced using its own distinct intellectual property rights. If so, even perfect IPPs can provide an imperfect ability to appropriate the overall benefits from investments in innovation.

To see why, consider innovators following a “fast second” strategy where established firms seek to replicate an innovation and win sales from the first-mover. In some markets it will be true that “imitation is still possible without infringing [on IPP],” due to the nature of the technology or the industry. As an extreme example, suppose two firms, using entirely different technologies protected by perfect intellectual property, can invest to produce products that will be very good substitutes in the eyes of consumers. An investment case will be made markedly harder by the prospect of intense price competition and consequent low appropriability if competitors are successful, despite the strong IPP in the industry.
Conversely, appropriability can be high even in a market with weak IPP, particularly if firms depend on other means to protect their competitive advantage. Notably, exploitation of lead-times, the use of complementary manufacturing processes, and secrecy can all replace IPP in protecting innovation.[16] For example, Coca-Cola has reportedly used trade secrets for over 100 years, rather than a patent, to protect its competitive advantage from replication.[17]

Conclusions

The broad theoretical considerations that are relevant to an economic assessment of whether a merger is likely to reduce innovation are undisputed. In practice, however, the commission’s interpretation of the relevant economic literature is contentious — there remains plenty of room for interesting debate between economists on future cases.

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[2] In Pfizer/Hospira, for example, Hospira was already marketing a particular biosimilar while Pfizer was at an advanced stage of development of a competing biosimilar (to [a particular drug] infliximab).


In doing so it draws inspiration from a paper, C. Shapiro, “Competition and Innovation: Did Arrow Hit the Bull’s Eye?,” 2012, pp. 363, 364.

Dow/DuPont Decision, Annex 4 ¶95.

See European Commission, “EU Merger Control and Innovation,” Competition Policy Brief, April 2016, http://ec.europa.eu/competition/publications/cpb/2016/2016_001_en.pdf. That paper does, however, describe that in some cases efficiency claims made by merging parties were partially accepted by the Commission and balanced against the competition harm. This was notably true in Case Nos. COMP/M.4267 Deutsche Börse/Euronext, COMP/M.6570 UPS/TNT Express, COMP/M.6905 Ineos/Solvay, COMP/M.7421 Orange/Jaztel, and COMP/M.7278 GE/Alstom. Moreover, in Case No. COMP/M.7630 FedEx/TNT Express, even though the transaction was ultimately not considered to lead to a significant impediment to effective competition, the Commission found that the transaction would give rise to verifiable, merger-specific efficiencies due to network cost savings which would benefit customers.

See, e.g., Dow/DuPont Decision, Annex 4 ¶94: “If imitation concerns are properly dealt with by effective [intellectual property rights], then [the appropriability] channel is largely irrelevant.”


