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Merger control

Merger analysis in dynamic markets: The importance of innovation

*By **Antonio Buttà,** Europe Economics**

In many markets, innovation is a prominent feature of the competitive process. It thus seems desirable that, in such dynamic environments, innovation becomes an important element of merger investigations.

This brief article discusses how innovation could be analysed in the context of merger investigations, in the light of the approach put forward in a recent study by Europe Economics for DG Enterprise on the development of analytical tools for assessing competition in dynamic markets.

Innovation and merger analysis

The incessant change in products and production methods is an essential element of the competitive process in many dynamic markets. Firms compete not only in selling a given set of products ("product market competition"), but also in changing the set and/or characteristics of products sold and of production processes used ("competition in innovation").

Not only is innovation an important aspect of competition, but also it is widely considered to be a main source of economic growth and social welfare. In fact, it has even been observed that, over the long run, the benefits to consumers from increased variety and/or quality of products, and lower production costs, may far outweigh those from static market efficiency.

It seems beyond doubt, therefore, that the economic analysis undertaken in the context of merger investigations should adequately take innovation into account, especially in dynamic markets where innovation is a key feature of the competitive process.

On the one hand, this attention is necessary because innovation may, over a relatively short period of time, drastically change the competitive environment in which the impact of the merger has to be assessed. On the other hand, it is important to recognise that the design and enforcement of competition policy may have a significant impact on innovation in the economy and therefore on economic growth and consumers' welfare.

In general, innovation has two distinct roles to play in the investigation of mergers in dynamic markets.

- Firstly, innovation needs to be taken into account in the traditional assessment of product market competition. For instance, innovation could open up new (future) relevant markets and/or substantially affect the evolution of the boundaries of current relevant markets and of the competitive constraints therein.
- Secondly, competition in innovation deserves consideration on its own. A merger may have an impact on innovation as well as on prices: it could improve the capabilities or incentives of firms to innovate or, conversely, reduce the incentives of firms to improve the efficiency of production processes or to introduce new or better products in the market.

It is important that these two aspects are considered separately in order to maintain a clear distinction between considerations pertaining to product market competition and those relating to competition in innovation.

Product market competition in dynamic markets

Product market competition can be defined as rivalry between firms in selling a given set of products with specific characteristics (including their production costs). Most notably, such competition is considered to determine the prevailing prices of the products sold in the market.

The methodology to analyse product market competition is a relatively consolidated one, which generally entails the analysis of competition within relevant markets. However, in dynamic environments, it is important that the instability brought about by innovation is adequately considered.

Innovation may create relevant markets that exist only in the future, e.g. for new drugs in the pipeline of two pharmaceutical companies, or it could substantially affect the evolution of the competitive constraints in current relevant markets over time, on both the demand and the supply sides.

The instability originating from innovation does not lessen the importance of undertaking market definition in dynamic environments, but it calls for an appropriate approach to deal with change as a crucial aspect of the competitive process.

The usefulness of defining relevant markets in dynamic environments has not always been explicitly recognised. Some commentators have argued that market definition is not always useful in competition policy cases dealing with dynamic markets and may constitute an unnecessary analytical step *(e.g. OFT, Innovation and Competition Policy)*.

However, even apart from the possible legal need to define relevant markets, market definition should be considered a valuable conceptual exercise to understand fundamental, albeit fast changing, competitive constraints in the market under consideration. In fact, possible alternative approaches to the analysis of mergers that do not rely on precise market definition, such as merger simulations, may not be of practical use in highly unstable markets.

Notwithstanding the usefulness of market definition even in dynamic markets, as long as it is correctly understood as being

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an analytical tool rather than an end in itself, the question arises of whether the traditional hypothetical monopolist test is an appropriate approach to deal with the relevant instability and uncertainty.

Some economists have suggested that the definition of relevant markets in dynamic environments should not be undertaken on the basis of the traditional hypothetical monopolist test. For instance, it has been suggested that market definition in dynamic markets should be undertaken on the basis of a hypothetical monopolist test focusing on hypothetical changes of products' attributes other than prices *(e.g. Pleatsikas and Teece, op cit infra)*.

Such alternative approaches probably raise more problems than they are meant to solve. In fact, defining relevant markets on the basis of demand-side substitutability to changes of products' relative prices does not need to be drastically changed in dynamic markets. Rather, it needs to be complemented by a forward-looking analysis of the evolution of market boundaries as driven by innovation.

For this exercise, it may be useful to think in terms of "technological trajectories." The notion of technological trajectory is that innovation proceeds along relatively ordered techno-economic patterns that can be forecast with some degree of accuracy *(Dosi, op cit infra)*.

Considering technological trajectories in terms of vertical or horizontal product differentiation, as well as cost improvements, can be useful in drawing a picture of the evolution of market boundaries over time and in identifying new relevant markets within which competitive constraints can be analysed to assess the impact of a merger on product market competition.

For instance, in several markets (e.g. personal computers) innovations constantly push forward the frontier of technology, making older products obsolete as new better products are discovered. In other markets, different technologies proliferate and coexist with each other, possibly in the same or in different relevant markets.

Competition in innovation

Despite the importance of innovation for economic growth and consumers' welfare, the desirability of thoroughly analysing innovation in the context of competition policy investigations in dynamic markets is not always recognised. In a merger investigation, attention may be mainly devoted to assessing the impact of the concentration on prices rather than on other aspects of competition.

After all, this approach does not appear too unreasonable given that economists do not even seem to have reached any consensus view on the relationship between competition and innovation. Some economic models suggest that increased competition would result in higher innovation rates. Some conclude that competition would reduce innovation. Others indicate that the relationship need not be always positive or always negative.

Given the absence of clear theoretical indications, assessing the economic impact of a merger on innovation seems a daunting task. However, the analysis of innovation can be feasible if it focuses on the notion of competition in innovation.

Competition in innovation can be thought of in terms of rivalry: firms competing in innovation exercise mutual competitive constraints on each other's behaviour in the sense that innovation decisions by one firm have an impact on the innovation decisions of the others. Most notably, this takes the form of the incentive of not falling behind innovating rivals. This behaviour might reflect expectations, by these firms, that they may supply competing products, stemming from this innovative activity, on the same market in the future.

The impact of a merger on competition in innovation can be analysed by assessing whether a competitive constraint in innovation would be lost as a result of the merger and whether this loss results in an impediment to competition in innovation.

In general, the set of rivals at the product market level may or may not coincide with the set of firms competing in innovative activities. Moreover, although in some cases the competitive constraints at the product market level may also capture those that characterise competition in innovation, this is not always the case. A specific in-depth assessment of the latter may be warranted.

Conclusions

Innovation is an integral part of the competitive process in many markets, and competition policy practice is increasingly recognising this.

Despite the difficulties involved in considering "dynamic competition" in merger investigations, existing concepts and tools of competition analysis can be adapted to take account more explicitly of the effects on competition in innovation and competition in future product markets.

By its nature this analysis will be subject to considerable uncertainty. But, where dynamic considerations are important, this uncertainty is not a reason to give undue emphasis to more tractable short-term price effects.

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