

# EU MERGER CONTROL: THE INNOVATION THEORY OF HARM - THE DEBATE CONTINUES

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It has been just over a year since I last wrote on EU Merger Control and the Innovation Theory of Harm (the *ITOH*), see [here](#).

And what a year it has been. We still have no real idea what Brexit means. We still do not know who will win the World Cup this year, but we know it will not be Italy (sorry Tommaso).

But Elon Musk successfully launched the Falcon Heavy. Sending his own Tesla Roadster on a 20 million year orbit of the sun, travelling at 75,000 mph at its perihelion. Making it literally the fastest car in the universe.

With somewhat less pace, the debate on the *ITOH* continued.

We saw on 27 March 2017, the adoption of the decision in *Dow/DuPont*. A redacted version of it was published in October 2017 (see [here](#)). A new “monster” was born.

We also saw throughout the year the circulation of a number of drafts of a paper by members of the Chief Economist’s Team on innovation (let’s call them the *CET Papers*).\*

They sought to firm up the theoretical underpinnings of the *ITOH* in the

*Dow/DuPont* decision.

Think of those CET Papers as the equivalent of an extended genealogical table and a thick photo album for the new addition to the Frankenstein family.

It looked as if the ITOH was here to stay. Wandering unchallenged across the industrial fields and innovation meadows of Europe, sowing horror wherever it went.

Yesterday, the Commission approved the *Bayer/Monsanto* transaction, subject to remedies. These appear to have included a major R&D divestment: the sale of vegetable seeds, pesticides and digital technology to BASF (see press release [here](#)).

Has the monster struck again? Restless commentators are already noting the “*momentum*” this has given to the Commission’s “*innovation drive*”.

We wait with baited breath to scrutinise the inevitably heavily-redacted decision. A flotilla of conference proposals will be launched. The ITOH’s place in EU merger control history will be further cemented.

But academic papers published in the last four weeks appear to challenge the ITOH (by Jullien/Lefouili and Denicolo/Polo – all respected industrial economists; Denicolo is an advisor to both the Commission and the UK’s CMA).

The new academic literature confirms the view that I espoused last year.

Bottom line, there cannot be a presumption of harm for mergers between innovative companies in concentrated sectors with high barriers to entry. Rather, any analysis must commence from a neutral starting point and undertake a careful case-by-case analysis.

Recent comments by CET members now appear to also espouse this view; this has helped calm the restless chickens.

Yet intervention has struck again. So has the monster theory really been reigned in, tamed? Or are these comments just mood music until the next strike? The speculation and fear will no doubt continue.

In the meantime, this new academic literature is a welcome addition to this

fascinating debate.

## **The CET Papers - what's it all about?**

The CET Papers develop an economic model that seeks to reinforce the theory that was ultimately deployed in *Dow/DuPont*. The CET proceeds with an economic model that assesses how a merger can affect product innovation as a result of its effect on market power.

I set out below a summary of its key findings (to avoid being labelled “*selective*”).

- The CET considers two key “*channels*”: (i) the price coordination channel (i.e. the extent to which the merger reduces price competition between the merging firms), and (ii) the innovation externality channel (i.e. the extent to which the merger reduces the expected profits from an innovation).
- In the first channel, the CET finds that a merger reduces price competition between firms by “*internalizing*” the constraint that each merging firm previously exerted on each other. As a consequence of this reduction in price competition, the profit levels of the merged entity change, and as a result, impact on its incentives to innovate.
- The CET then considers this effect but concludes that it is “*ambiguous*”: if the merger increases pre-innovation profits in the product market by more than post-innovation profits, price coordination exerts a downward (i.e. negative) pressure on the incentive to innovate. In the alternative, however, it exerts an upward (i.e. positive) pressure. So far, so good.
- However, in the second channel, the CET paper examines how innovation by one of the merging firms reduces the profits of its merger partner if that firm has innovated, and, if it has not.
- It considers that innovation by one firm diverts profitable post-innovation sales of the other firm in the former case; whereas in the latter case, the innovation cannibalizes the pre-innovation sales of the other firm. Both cases, therefore, involve a negative effect on the incentive to innovate post-merger. This is less cool.
- The CET concludes that the loss of innovation competition is expected to be significant if the merger brings together two of a limited number of

innovators, and the merging firms (absent the merger) would have been likely to divert significant future sales from each other when introducing innovative products.

- In the two-stage model simulation (of a four-to-three merger) that follows, the CET papers observe the following:

- (i) the model's merger reduces R&D investment in each of the merger firm's products;

- (ii) even though competitors of the merged entity respond with an increase in R&D investment (in anticipation of increased profits), in all cases, the increase in innovation does not outweigh the decrease by the merged entity, so there is an overall decrease in innovation in the industry;

- (iii) the strength of this negative effect on innovation incentives increases the closer the merging parties' products are closer substitutes; and

- (iv) the model's merger results in a decrease in consumer welfare (in addition to the loss in overall innovation).

The CET finds that firms are spurred to innovate by the fear that rivals will innovate and displace them. Buying an innovative rival reduces this pressure. This lost innovation rivalry is not offset by the potentially higher post-merger margins available to the merging parties (as the merger relaxes product market competition).

The March 2018 CET paper concludes, *"our simulations thus support the antitrust concern that a merger between two out of a limited number of innovators is likely to lead to a reduction in innovation in a market characterised by limited knowledge spillovers and in the absence of other possible countervailing R&D efficiencies"*.

All of this lends considerable weight to the formulation of a – at least structural – presumption of harm in certain circumstances. So whilst placating public speaking comments from the CET are welcome – the wind is blowing in a certain direction.

### **What about this new academic literature then?**

*"The Innovation Theory of Harm: An Appraisal"* (the Denicolo/Polo Paper) is an

engaging and accessible paper (see [here](#)). It not only presents a survey of the prior academic literature, but reviews the robustness of the economic model put forward in the CET's October 2017 Paper.

Critically, the authors previously found a serious mistake in the CET Papers (see prior paper [here](#)).

When first reviewing the CET's economic model, the authors found that the CET checked the "*second order conditions*" applied to the merging firms, but not to the merged entity. In essence, the authors found that the CET Papers are based on the incorrect assumption that the merged entity will always find it optimal to spread total R&D expenditure evenly across the individual research units of the merging firms.

Denicolo/Polo find that even if R&D investments exhibit decreasing returns, it may be optimal, after the merger, to shut down some research units and concentrate the R&D effort on others. This possibility arises because these research units may replicate the same discovery, or make discoveries that are close substitutes.

Denicolo/Polo show that this streamlining strategy can reverse the negative effects of mergers on innovation incentives found in the CET Papers.

The merged entity may in fact increase its R&D investment in the research units that remain active to such an extent that the overall probability of invention increases. As such, horizontal mergers may be good both for innovation and for consumer welfare.

This possibility is more likely the greater the value of innovations, the less rapidly diminishing are the returns to R&D, and the more highly correlated are the R&D projects of different firms.

All good stuff.

Denicolo/Polo also focus on effects that indicate that mergers spur innovation even without synergies and regardless of the now-famous "*appropriability*". The merging parties are able to engage in strategic coordination, combine their physical assets, and give rise to the sharing of innovative technological knowledge.

So more good things there - yet these elements are largely ignored (or mentioned in passing) by the CET Papers.

In fact, Denicolo/Polo believe that innovation mergers may increase the incentive to innovate. This is because innovation efforts can be used across a broader output of the merged entity (thereby reducing costs) and in turn spur further investment. As the output base grows, Denicolo/Polo find that this increases the incentive to invest in innovation.

Ultimately, the Denicolo/Polo Paper concludes that there can be no economic or structural presumption of harm for mergers in innovative industries. The economic modelling in the ITOH Papers is “*too fragile*” for the basis of a policy change by antitrust agencies to accommodate such a presumption.

I like these guys.

Similarly, “*Horizontal Mergers and Innovation*” (the Jullien/Lefouili Paper) is a comprehensive and compelling paper (see [here](#)).

Importantly, it also notes that the CET Papers’ assumptions are highly restrictive. As a result, the CET Papers can only result in a negative conclusion as to the outcome of mergers on innovation.

Jullien/Lefouili consider the extent to which, as a result of a merger, the newly gained position of the firm has a “*demand expansion effect*”, which in turn drives innovation incentives.

“*What is that?!*” the lawyers may ask.

Well, the new position of the merged firm allows it to increase its price-cost margins, thereby generating greater returns for innovative products. As a result, the merged entity invests in innovation, which in turn stimulates demand; ultimately, the demand effect may be greater than the effect the merger has on prices.

This is a critical element – again, not considered by the CET Papers.

Jullien/Lefouili – like Denicolo/Polo – also find that there are important spillover effects and synergies arising from innovation mergers (such as knowledge sharing, pooling of patent portfolios and the combining of R&D talents) that yield important natural benefits (even before the creation of a merged firm’s newly determined innovation strategies that may give rise to efficiencies).

These benefits can decrease production costs or raise the quality of products that in turn produce production synergies and an expansion effect on output (a scale effect) – thus spurring incentives to further invest in innovation.

So two academic papers, highlighting the importance of spillovers.

Jullien/Lefouili conclude *“our analysis strongly suggests that competition authorities should take a neutral position when assessing the impact of a merger on innovation, and should balance the various effects at work. Competition authorities should take account of both theories of harm and benefits. All the effects of a merger on the incentives to innovate ...including spillover effects, should be part of the main competitive assessment carried out by competition authorities”*.

Again, this is all great stuff.

### **Some thoughts on EU Merger Policy Considerations**

From the new academic literature, a number of important policy considerations can be drawn.

It is clear in the first instance that over-regulation appears to have a dampening effect of innovation competition. Getting the balance and the approach *“right”* is essential.

No one would disagree that innovation is proper subject for assessment in EU merger control. It is enshrined in the EU Merger Regulation itself. Technical and economic progress.

However, proper debate should be had, and continue, as to the correct extent of EU merger control enforcement in innovative industries.

Pipeline products, close to market, no doubt. Development products, with certain degrees of success of getting to market, let's have a discussion. But the scrutiny of pure research, the investigation of *“innovations spaces”*, with no discernible market, requires real caution, if it cannot be resisted.

The new academic literature underlines that there is no economic consensus on the complex interplay between concentration and innovation. As noted above, a careful, case-by-case analysis is required, and any presumptions need to be

challenged. Important pro-competitive effects on incentives should be not simply ignored.

Intervention should be limited to only clear cut cases where harm is demonstrated clearly, not in simple reliance on an allegation or an unfortunate internal document – that may not be reflective of an entire organization and its senior management. Convincing and compelling evidence supporting a “*particularly plausible*” ITOH is required.

### **But what does this all of this mean in practice?**

This new academic literature enriches the on-going debate. It counters the head of steam building up behind the ITOH.

It is clear that there can be no economic or structural presumption of harm for mergers in innovative industries. This must be respected and that message appears to have registered with the CET.

Antitrust agencies need to conduct a case-by-case analysis of any merger in the context of the specific features of the relevant industry before intervening.

And it may be that an ITOH can be substantiated – and maybe that was the case in *Bayer/Monsanto*. Let's see.

But the reasoning of any ITOH must be based on the proper foundations, taking into account all of the elements identified by the new academic literature. Observing the appropriate limits of the applicable legal framework.

Yet, that literature raises a critical merger policy question in practice (that's why I included the full quote above from Jullien/Lefouili).

Should the natural spillovers and other benefits identified above, and their effects on the incentives to innovate, be assessed by the antitrust agencies upfront as part of the main competitive assessment of harm? Rather than being relegated to the backend weighing of efficiencies (for which the parties have the burden of showing)?

Let's not kowtow to the formalistic legal answer.

This is different territory. The existing approach is not fit for this type assessment.



Comment by CET members acknowledging that a longer duration than that foreseen in the Horizontal Merger Guidelines is required for the innovation incentive assessment (up to 10 years?) surely makes my point here.

A new approach is required for the assessment of innovation.

So, my answer would be: do a holistic assessment of innovation incentives upfront. And why?

Well, most of these incentive effects arise naturally as a result of the combination of the companies' upstream R&D activities (they are not the result of a commercial strategy decision-making process). And innovative incentive effects are distinguishable from classical downstream "synergies" that are rightly assessed in the weighing of efficiencies (e.g. production synergies that reduce marginal cost as a result of a commercial strategy).

It would seem perverse if certain (positive) innovation incentive effects were excluded whilst other (negative) innovation incentive effects are only considered at the first point of the substantive analysis. Surely the antitrust agencies should undertake - with engagement of the parties - a comprehensive and holistic assessment of innovation incentives upfront?

But maybe somewhere hidden in the bowels of the Madou Tower this is already happening behind the scenes. It's odd what you can find if you look for it.

Perhaps a useful example that has flown under the radar is the *Axalto/Gemplus* SIM card case, in which the Commission specifically examined the impact of the merger on innovation.

I was not involved in the case but it - somewhat ironically - supports some of the key findings of the new academic literature, particularly on the streamlining of R&D efforts and the maintenance of innovation incentives.

The *Axalto/Gemplus* decision found that innovation was a "key driver for competition" among the most important SIM card manufacturers, as customers (i.e. mobile telecommunication operators) regularly seek to upgrade their offering by supplying new products and new services (see [here](#)).

The market investigation showed that the two merging companies were exerting a constraint on each other as the most important innovators (the parties' data

illustrated that they were the first to introduce major innovations in seven major innovation events out of eleven in the past six years).

Nonetheless, the Commission found that the new entity and its main competitors would have a strong incentive to innovate.

This was because SIM card manufacturers make their margins in the first year immediately following the launch of a new product. After this initial period, prices decrease dramatically as competitors are able to supply the product. As a result, the Commission concluded that the parties would have no interest in reducing R&D efforts.

To the contrary, the new entity would *“reallocate R&D capacities so that the number of R&D projects post-merger is likely to be greater than the R&D projects of the two companies pre-merger”*.

The market investigation and the parties’ internal documents confirmed that the parties would maintain a strong incentive to innovate in both the short-term and the long-term. Note the importance of internal documents (which I think we all agree are the real silver bullet if verified).

The *Axalto/Gemplus* case is a rarity and is highly fact-specific. It’s unclear if those innovation incentives were argued and assessed upfront or were part of a meaningful traditional efficiencies submission. But let’s hope that we see more cases like this.

At the end of Mary Shelley’s work, the monster says *“Fear not that I shall be the instrument of future mischief. My work is nearly complete”*.

I fear that the work here is only beginning. But perhaps it is proceeding on a more reasonable and rational basis than what we first feared.

Perhaps there are ways of taming the monster. Perhaps there was no monster after all.

Let the debate continue.

**\* See, Federico, G., Langus, G. and T. Valletti, *Horizontal Mergers and Product Innovation*, (July and October 2017 and March 2018). Note the discernible change in tone and approach in the versions of this paper**

through the year. See also Federico, G., *Horizontal Mergers, Innovation, and the Competitive Process*, *Journal of European Competition Law and Practice* (November 2017); and Federico, G., Langus, G. and T. Valletti, *A Simple Model of Mergers and Innovation*, *Economics Letters* (May 2017).