

# INCREASING MARKET POWER AND MERGER CONTROL\*

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## 1. Introduction

A significant body of empirical research has documented a structural increase in margins across a wide range of industries and countries.<sup>1</sup> On average, firms enjoy appreciably greater pricing power today than used to be the case in prior decades.<sup>2</sup> Research also showed that this increase in mark-ups coincided with a decline in the labour share of output, higher aggregate concentration, larger corporate profitability, and a slump in business dynamism (as measured by indicators such as entry, investment and innovation).<sup>3</sup>

The broader phenomenon of increased pricing power appears largely (though not unanimously) accepted among researchers. Even so, there is substantial dispute about its underlying causes and implications. Some researchers have attributed recent margin trends primarily to the growth of so-called “superstar firms”—highly profitable companies that have successfully seized the opportunities generated by globalization and technological change (such as digitization and automation).<sup>4</sup> Others have linked increasing mark-ups to a lack of competition, e.g., caused by overly permissive merger control.<sup>5</sup> Since our earlier work on this topic,<sup>6</sup> also antitrust practitioners and agency representatives have started to weigh in on the debate.<sup>7</sup> Moreover, both the FTC and the OECD have held public hearings on market power and concentration to discuss the significance of recent academic findings for competition policy.

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\* The views expressed in this paper are those of the authors and do not necessarily reflect the views of DG Competition or the European Commission.

<sup>1</sup> See, for instance, De Loecker, Eeckhout and Unger (2018), De Loecker and Eeckhout (2018a), IMF (2019), and the references cited therein. Criscuolo (2019) provides a survey. On the measurement of market power, see also Traina (2018) and De Loecker and Eeckhout (2018b).

<sup>2</sup> Here, and in what follows, we use the term “pricing power” in its usual economic meaning to denote firms’ ability to raise prices materially above marginal cost.

<sup>3</sup> E.g., see Barkai (2017), Autor et al. (2017) and Gutiérrez and Philippon (2017).

<sup>4</sup> E.g., see Autor et al. (2017) and Shapiro (2018).

<sup>5</sup> E.g., see Gutiérrez and Philippon (2017) and Grullon, Larkin and Michaely (2019).

<sup>6</sup> See Valletti et al. (2017) and Valletti and Zenger (2018).

<sup>7</sup> E.g., see Padilla (2018a), Werden and Froeb (2018a), and Wright (2018).

In this article, we explore the implications of increased pricing power for merger control. When conducting this exercise, it is important to keep in mind that seemingly anti-competitive outcomes such as high margins can be a consequence of either too little or a lot of competition. For instance, some low-cost airlines earn considerably larger margins than used to be the norm in air travel markets historically. Nonetheless, their successful growth has put significant pressure on fares. Low-cost carriers thus achieved higher profits and market shares not on the back of insufficient competition, but through pro-competitive cost cutting that also benefited consumers. It would therefore be wrong to mechanically associate increases in pricing power with a lack of competition.

It would be equally wrong, however, to claim that merger control should ignore structural increases in pricing power as long as they stem from efficiency-driven conduct (rather than an anti-competitive malaise). For better or worse, merit-based market power is still market power. Secular increases in mark-ups therefore do have important implications for the assessment of prospective mergers, irrespective of whether their origin is benign or not. It is those implications that we will try to explore in this paper.

The structure of the article is as follows. Section 2 discusses the implications of increased pricing power for the assessment of potential competition (i.e., competition “for the market”). We argue there that in a world of highly successful incumbents, safeguarding market contestability and the potential for entry is essential to protect a functioning competitive process. Section 3 then goes on to discuss the implications of increased margins for the assessment of actual competition (i.e., competition “in the market”). Building on our previous work, this section argues that merger enforcement should be particularly vigilant in a world of high mark-ups, since margin increases imply that otherwise comparable mergers are more likely to be problematic. Section 4, finally, concludes.

## **2. Competition “for the market”**

### **2.1 Changing economies and potential competition**

One of the most striking findings of recent empirical research is that the observed upward trend in mark-ups is predominantly driven by a relatively small number of successful firms at the upper end of the profitability distribution. These superstar firms are often large companies with lower labour dependence and higher productivity than many of their industry peers. Over time, these superstars have gained market share vis-à-vis less efficient rivals and managed to further expand their already superior margins.<sup>8</sup> Importantly for enforcers, these firms define the perimeter of competition law scrutiny, as much smaller parties with less market power are much less likely to be the subject of antitrust investigations.

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<sup>8</sup> See Autor et al. (2017), De Loecker, Eeckhout and Unger (2018) and IMF (2019).

Interestingly, the phenomenon of superstar firms is by no means limited to technology markets but spans a wide spectrum of industries across developed economies, including sectors as diverse as manufacturing, mining and utilities. Generally speaking, the phenomenon appears to be more pronounced in developed than in developing economies and, in turn, more pronounced in the U.S. than in Europe.<sup>9</sup>

Proponents of the “superstar” hypothesis have attributed the success of these firms largely to a combination of globalization and technological change (such as increased automation and digitization). Indeed, such factors tend to create opportunities for the most productive companies in a sector to grow at the expense of less efficient rivals. For instance, market integration permits the most dynamic regional leaders to expand internationally and capture market share from less productive suppliers abroad. Moreover, both increased automation and digitization lead to a relative shift in cost functions from variable towards fixed costs of operation, thereby facilitating “winner take most” dynamics. Superstar firms, then, are often those companies that have been capitalizing on the most salient economic changes of recent times, e.g., by exploiting economies of scale, scope and network effects in globalized markets.

The success of these companies is an accomplishment, and in most cases, it has brought considerable benefits to consumers. Even so, “winner take most” dynamics rarely bring about only positives. In particular, economic theory predicts that increasing scale economies and sunk costs will tend to magnify barriers to entry. E.g., when markets become globalised, only a handful of firms will be able to spend sufficient sums on R&D and other intangibles to compete on international markets, thus commanding large market shares and high margins, while potential entrants will often be unable to match their expenditures.<sup>10</sup> Over time, this may lead to decreased levels of entry, lower aggregate investments, increased concentration and incumbency rents. These predictions of economic theory are at least consistent with the empirical work cited in the introduction, which found considerable decreases in business dynamism and entry, while the margins of the most successful firms continued to soar.

When industries become dominated by a small number of powerful firms (not rarely operating in adjacent, rather than the same, antitrust markets), this brings about a relative shift in the locus of competition from competition “in the market” towards competition “for the market”. In view of entrenched incumbents protected by significant entry barriers, such outside competition is often precarious, however. A key consequence of recent market developments is therefore that it becomes increasingly important for antitrust authorities to safeguard the possibility of competitive challenge via potential competition.

Importantly, the concept of “potential competition” not only encompasses the possibility of small start-ups trying to replace large incumbents through disruptive innovations. On the contrary, established companies operating in neighbouring markets may equally well

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<sup>9</sup> See IMF (2019) for a discussion.

<sup>10</sup> E.g., see Sutton (1998).

pose a significant threat of potential competition.<sup>11</sup> Such lateral entry and expansion can be particularly important in technology markets, as venture capitalists rarely find it compelling to finance start-ups that intend to compete head-to-head with a dominant incumbent—much less if that incumbent is protected by unrivalled network effects, scale economies and access to customer data. It is therefore often preferable for a potential entrant to first establish a solid base in a neighbouring market, which allows building scale and network effects before daring to encroach on core fields of activity of the dominant rival.<sup>12</sup>

Proponents of laissez faire merger control sometimes argue that in technology markets, concerns about potential competition are unwarranted, because Schumpeterian dynamics are vital and effective. Since current technology leaders face an imminent threat of disruption by novel technologies, they continuously have to innovate and compete to stay ahead of the pack. As a result, whatever market power large tech incumbents may appear to possess is at most temporary in nature and subject to continuous challenge.

Unfortunately, we see little evidence for this proposition. The most-cited real-world example in support of the argument still appears to be the decline of Myspace.<sup>13</sup> Apart from the fact that it is difficult to generalise from a single case, Myspace was hardly an organization that anyone would have characterized as a “superstar” even at the peak of its popularity.<sup>14</sup> Conversely, among the various tech firms that have actually come under antitrust scrutiny over recent decades, we are not aware of much erosion of market power (let alone displacement by disruptive competitors). The vast majority of these companies enjoy enormous market power to this day and have consistently increased their profits.<sup>15</sup> Accordingly, capital markets price an exceedingly low likelihood of displacement into the stock market valuations of large tech firms. In our view, it would therefore be naïve to expect the competitive process to erode their market power without critical scrutiny of potential restrictions of competition.

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<sup>11</sup> For instance, in Case M.7995 *Deutsche Börse/London Stock Exchange* (Commission decision of 29 March 2017) the Commission initially raised the concern that DB would contest LSE’s near-monopoly in OTC derivatives absent the transaction, whereas LSE would challenge DB’s near-monopoly in exchange-traded derivatives. After the transaction was prohibited, DB in fact launched a successful competitive campaign in OTC derivatives, whereas LSE retaliated in the on-exchange market. See Financial Times, “DB makes ground in UK derivatives push” (5 February 2018), Financial Times, “Derivatives exchange CurveGlobal readies for fixed income push” (6 February 2018). Note, however, that the transaction was ultimately prohibited for reasons other than the concerns described here.

<sup>12</sup> Interestingly, commercial activity in neighbouring markets can sometimes have a restraining effect on incumbents long before lateral entry actually occurs. E.g., the entry of low-cost airlines on adjacent routes caused legacy carriers to reduce their fares materially, even absent any actual competition on the affected routes. See Goolsbee and Syverson (2008).

<sup>13</sup> E.g., see Finch (2018).

<sup>14</sup> As one former executive puts it: “MySpace actually didn’t really exist as a company. [...] I’m pretty sure that in almost every market we lost money, with the exception of Mexico.” The Guardian, “MySpace – what went wrong: ‘The site was a massive spaghetti-ball mess’” (6 March 2015).

<sup>15</sup> Even the allegedly “failed” IBM is expected to earn after-tax profits of more than \$10b in 2019, with an EBIT margin of 18% and an enterprise value of \$161b. If this is failure, it will be interesting to see success.

Prominent examples of mergers that some observers have interpreted as eliminating potential competition are Facebook's acquisition of Instagram in 2012 and of WhatsApp in 2014 (for a price of \$1b and \$19b, respectively).<sup>16</sup> Unease about these transactions has grown in the years that followed, due to a number of reasons. First, a recent UK parliamentary investigation of Facebook uncovered confidential documents showing that the company diligently monitored and assessed the progress of potential competitors. Some observers have interpreted these documents as indicating that Facebook acquired potential rivals because it considered them a competitive threat.<sup>17</sup> Second, over the years, Facebook has developed a track record of either acquiring potential competitors outright (as in the case of Instagram or WhatsApp) or relentlessly copying their features when acquisition was not possible (as in the case of Snapchat or Path). This has gotten some industry observers to wonder: "Will Facebook kill all future Facebooks?"<sup>18</sup> Finally, post-merger evidence showed that Facebook had provided misleading information to the European Commission during the WhatsApp merger proceeding.<sup>19</sup> This led to a fine of €110m against Facebook, which adds to fines in other jurisdictions for various data breaches and privacy violations. All the while, reports emerged that founder Mark Zuckerberg habitually ended Facebook staff meetings by shouting: "domination!"<sup>20</sup>

The Facebook merger reviews are many years behind us, and we have no specific insight into the evidence that was brought to bear in those cases at the time. Clearly, it is easier to look back with the benefit of hindsight, whereas actual decisions have to be taken based on whatever facts are available at the time. Even so, the story of Facebook is a useful reminder that safeguarding the possibility of potential competition against dominant incumbents is far more important today than may have been the case before the ascent of superstar firms.

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<sup>16</sup> Case ME/5525/12 *Facebook/Instagram* (OFT decision of 14 August 2012), Case M.7217 *Facebook/WhatsApp* (Commission decision of 3 October 2014).

<sup>17</sup> E.g., see [bit.ly/2XT1Tkp](https://bit.ly/2XT1Tkp) ("Now, newly published confidential Facebook emails and charts show exactly why CEO Mark Zuckerberg spent a small fortune for the messaging app. For months, the company had been tracking WhatsApp obsessively using Onavo, a VPN and data analytics app, whose data showed that the messaging app was not just a rising competitor, but a potential Facebook killer."); [bit.ly/2XR5RKm](https://bit.ly/2XR5RKm) ("The documents, which are labeled 'highly confidential,' show slides from an internal presentation in 2013 that compares Facebook's reach to competing apps, including WhatsApp and Snapchat. While Facebook and Instagram lead in market share, it's clear why Facebook may have viewed Snapchat and WhatsApp as potential threats."); [tinyurl.com/yk5bftx](https://tinyurl.com/yk5bftx) ("This isn't the first time Facebook has used Onavo's app usage data to make major decisions. The info reportedly influenced the decision to buy WhatsApp, as Facebook knew that WhatsApp's dominance in some areas (99 percent of Android phones in Spain had it) could cut it out of the loop.").

<sup>18</sup> [bit.ly/2y77ICR](https://bit.ly/2y77ICR) (citing an industry participant as stating: "It was common knowledge, even back then, that Facebook would just approach a company and say something to the effect of, 'Join us or we will copy you'").

<sup>19</sup> See [http://europa.eu/rapid/press-release\\_IP-17-1369\\_en.htm](http://europa.eu/rapid/press-release_IP-17-1369_en.htm).

<sup>20</sup> Financial Times, "How Facebook grew too big to handle" (28 March 2019). See also the rather exceptional opinion piece of a co-founder of Facebook calling both for its break up and regulation; New York Times, "It's Time to Break Up Facebook" (9 May 2019).

## 2.2 Adjusting policy to market realities

A practical complication in the endeavour to scrutinize potential competition cases is that merger thresholds are typically revenue-based rather than value-based. Since potential competition cases revolve around future commercial activities, however, using past revenues as the sole benchmark implies that many important cases will fly under the radar.

For instance, the Furman Report commissioned by the UK Government noted that Amazon, Apple, Facebook, Google and Microsoft made close to 250 acquisitions over the last five years alone, none of which was subjected to an antitrust review.<sup>21</sup> While one would expect the majority of these acquisitions to be pro-competitive, complementary mergers, it would hardly be a surprise if at least some of them might raise significant potential competition concerns.<sup>22</sup>

How likely is it in practice that problematic cases will escape merger review on account of inflexible revenue thresholds? Empirical evidence suggests that this is far from a theoretical concern. For instance, Cunningham, Ederer and Ma (2018) investigate the commercial motivations of pharmaceutical mergers. They find that about 6% of the thousands of mergers in their database are so-called “killer acquisitions,” i.e., transactions that permit the acquiring firm to terminate competing drug developments.<sup>23</sup> As it turns out, such killer acquisitions occur disproportionately often just below the merger control threshold.

Such concerns are certainly not limited to pharmaceutical mergers. For instance, Wollmann’s (2019) extensive cross-industry analysis shows that an increase in the U.S. exemption threshold led to a substantial increase in merger activity between horizontal competitors once they were exempted from antitrust review. Sometimes, deals also appear to be structured so as to avoid merger control thresholds. For example, the food delivery platform Delivery Hero recently sold its German operations to Dutch rival Takeaway.com, thereby effectively creating a monopoly in the German delivery platform market. While the purchase was worth almost €1b to the acquirer, the careful carve-out of Delivery Hero’s German operations permitted the parties to avoid merger control scrutiny by staying below the relevant thresholds.

Besides a lack of value-based thresholds, a second stumbling block that makes the assessment of potential competition cases difficult in practice is a common (though not necessarily obvious) interpretation of the applicable legal standard. In *Impala*, the Court

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<sup>21</sup> See Furman et al. (2019) at 91.

<sup>22</sup> Note that raising a concern in such cases does not imply that the merging partner could not be acquired by another large purchaser. It merely implies that acquisition by one specific purchaser is impossible: the dominant incumbent in the area where the competition concern arises.

<sup>23</sup> Incidentally, the rate of 6% roughly corresponds to the Commission’s intervention rate, i.e., the proportion of notified transactions where there is some form of intervention (e.g., a prohibition or divestiture).

of Justice established that in merger control “[t]he standard of proof required in that regard is that of the balance of probabilities and it is for the Commission to demonstrate where the balance falls.”<sup>24</sup>

This “balance of probabilities” standard is often interpreted literally. A transaction is then considered problematic if and only if a likelihood of competitive harm of at least 50% can be established. Note that this interpretation implies that one should entirely ignore the magnitude of harm in the ultimate assessment, as the legal outcome only turns on the probability of harm (but not on its size). In potential competition cases, this is bound to lead to substantial under-enforcement. Consider, for instance, a pharmaceutical company with a patented blockbuster drug that undertakes a killer acquisition to eliminate a competitor who is developing a promising rival compound. One can easily agree that such a transaction would be anti-competitive, because its sole purpose is to eliminate competition. Yet, under the narrow interpretation of the balance of probabilities standard it would have to be cleared, since the average success rate in clinical trials is considerably below 50%. It is therefore “more likely than not” that such killer acquisitions will cause no competitive harm—never mind their pernicious nature or the potential severity of the competitive damage that may flow from them.

How did we get there? In different areas of law, very different standards of proof apply, ranging from “some evidence” (for minor disciplinary violations) to “beyond reasonable doubt” (in the most serious criminal proceedings). This variety of standards defines a spectrum of threshold probabilities for a showing of harm that ranges from far below to far above 50%. In concrete areas of the law, a specific standard is normally chosen by weighing the expected social costs of false convictions and false acquittals.<sup>25</sup> For instance, obtaining a licence for operating a nuclear power plant is subject to a far more exigent standard of proof than the balance of possibilities. After all, few citizens would find it comforting to learn that “more likely than not” a nuclear disaster can be avoided. The particularly high social costs of under-enforcement in this situation therefore make it optimal to explicitly incorporate the magnitude of potential harm into the legal standard.

Merger control has borrowed its own standard of proof from civil law. As it turns out, in civil law disputes the social costs of a false conviction and of a false acquittal are often symmetric. E.g., if two parties have a commercial dispute over €10,000, then the potential cost of a judicial error is €10,000 for either side. From an error cost perspective, it is therefore sensible to impose a balance of probabilities standard for such cases. Given symmetric costs of a type I and type II error, this standard minimizes the expected social costs of a judicial error and therefore constitutes a sound legal rule.

A similar logic may apply in merger cases involving actual competition, such as *Impala*, where the Court has established the balance of probabilities standard. Indeed, it appears plausible that in ordinary merger reviews, the social costs of a wrongful prohibition could

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<sup>24</sup> Case C-413/06 P, *Bertelsmann AG and Sony Corporation of America v. Impala* (ECJ judgment of 10 July 2008).

<sup>25</sup> See Kaplow (2012) for a general discussion of this error cost approach towards defining the applicable standard of proof.

be roughly of the same order of magnitude as those of a wrongful clearance. It is therefore not difficult to see why the Court chose a balance of probabilities standard in the cases that were brought before it.

Unfortunately, that same logic does not apply to potential competition cases. Note, in particular, that these cases often concern entry against incumbents with exceptional market power. The social costs of monopolization, however, are by an order of magnitude larger than the social costs of type II errors in most actual competition cases (where concentration levels tend to be substantially lower). In order to accurately weigh the risks of under- and over-enforcement and maximize consumer welfare, it is therefore necessary to consider not only the likelihood of harm, but also its magnitude.<sup>26</sup> Otherwise, competition law will miss many transactions with probability of entry below 50% whose expected competitive harm is severe.

Dominant incumbents sometimes happily lay out billions of euros for targets that have no earnings to speak of, because they are considered to pose a risk of future competition. If these firms take events with a probability of less than 50% as seriously as they do, then probably so should competition authorities. In our view, this implies:

- 1) Reviewing more potential competition cases on the basis of deal value (instead of letting the size of revenues alone predetermine the outcome)
- 2) Engaging in deeper scrutiny in those cases that are being investigated (e.g., through more extensive reviews of internal communications and valuation models)
- 3) Applying a standard of proof that minimizes expected competitive harm (rather than maximizing incumbents' likelihood of avoiding a competition assessment)

### **3. Competition “in the market”**

In the previous section, we have explored how the observed increase in pricing power can affect the assessment of competition “for the market” (i.e., potential competition). We will now turn to the assessment of competition “in the market” (i.e., actual competition). In our earlier work, we had pointed out that in a world where firms' ability to charge prices above cost has been continuously increasing, old rule of thumb benchmarks do not have the same meaning as they used to.<sup>27</sup> Put differently, when pre-merger margins increase, otherwise identical transactions are likely to cause significantly greater competitive damage.

One way of seeing this is by noting that high margins reflect a larger degree of pre-merger pricing power. The less effective competition is before a transaction, however, the less likely further concentration is going to be desirable for the competitive process.

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<sup>26</sup> Maximising expected consumers surplus is proposed also by Crémer, de Montjoye and Schweitzer (2019). This is equivalent to the “balance of harm” test advocated by Furman et al. (2019).

<sup>27</sup> Valletti and Zenger (2018).

But not only the level of market power is a potential concern associated with increasing mark-ups. Higher margins are also likely to exacerbate the *change* in market power caused by horizontal concentrations. To see this, note that a key consequence of a merger is that the parties will start taking the impact of their competitive decisions on their merging partner into account. Yet, the higher the margins the partner earns, the more damaging is the cannibalization of its sales that is caused by competition. Higher margins therefore tend to soften the merged entity's incentives to compete, in order to avoid such cannibalization post-transaction.

In our earlier paper, we had shown that increases in margins of the order of magnitude found in the empirical literature are likely to cause appreciably more severe competitive effects for otherwise similar transactions. Specifically, we had demonstrated through a plausible example that, once one considers an increase in margins of the size found in the literature, the anti-competitive effect of a 5-to-4 merger today may well be comparable to the effect caused by an otherwise identical 4-to-3 merger before the increase in mark-ups.<sup>28</sup>

This numerical example did not mean to suggest that the average 5-to-4 merger today is *literally* as problematic as the average 4-to-3 merger prior to the observed increases in pricing power. Too many other variables have changed in our economy in the past 30 years to make this a meaningful comparison. Instead, the purpose was to corroborate the broad significance of recent empirical findings on mark-ups through an illustrative example.

Our conclusion that structural increases in margins will make otherwise comparable mergers more problematic is not particularly controversial.<sup>29</sup> Even so, in two recent papers, Greg Werden and Luke Froeb have argued that this "European" view is not sufficiently nuanced compared to theirs.<sup>30</sup> They point out that besides the direct, price-increasing effect of higher margins there can also be an indirect, price-reducing effect. Specifically, this is the case when higher margins reflect reduced substitutability of the merging products (rather than, say, a decrease in the market's elasticity of demand). Such reduced substitutability would make mergers comparatively less harmful, since the merging parties would then be less close competitors. Once one takes account of this countervailing effect, higher margins may not in fact aggravate merger effects, and sometimes may even make them less harmful.

We are somewhat puzzled about this criticism. Perhaps mostly, because our article did not in fact ignore the possible countervailing effect of decreased substitutability. On the contrary, our paper first presented a formal derivation of the effect and then provided a quantification of its impact on merger outcomes.<sup>31</sup> What our example shows, with real-

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<sup>28</sup> Our example was based on a market with symmetric firms, using margin data from De Loecker and Eeckhout (2017) and elasticity data from Clements (2008).

<sup>29</sup> E.g., see Padilla (2018b) and Caffarra et al. (2018).

<sup>30</sup> Werden and Froeb (2018b) and Froeb et al. (2018).

<sup>31</sup> See Valletti and Zenger (2018) at 342, where we derive the effect in the second equation.

world parameters taken from the empirical literature, is that the *net* impact of increased margins on merger effects is likely to be problematic. This is true even in a conservative scenario where higher margins are assumed to derive entirely from lower substitutability (and thus the countervailing effect is strongest).<sup>32</sup>

Rather than basing themselves on empirical estimates, Werden and Froeb simply assume different parameter values in their example, which accordingly produce a different result. Let us inspect the plausibility of their figures. Their main example considers a market with an elasticity of 1.5 in which firms' margins increase to 60%. In that case, further margin increases lower incremental merger effects. It is easy to show, however, that these parameter values imply that there is next to no substitution between products inside the market. Specifically, the assumed figures imply that when customers switch their supplier, merely 10% of switchers will substitute to a competing product in the market, whereas 90% will switch to different products altogether.<sup>33</sup> However, a market that is so narrowly defined that 90% of all substitution takes place with products outside the market and merely 10% of switching takes place inside the market hardly appears representative of a typical, contested merger dealt with by competition authorities.<sup>34</sup> The empirical relevance of such examples for average merger effects in contested cases is therefore not exactly obvious.

Even in the rare cases relevant for in-depth review where higher margins can imply lower merger effects, this is usually hardly good news for consumers (let alone grounds for permissive merger control). As we show in the Annex, the price-reducing effect of decreased substitutability can only be significant when margins are sufficiently close to the monopoly level in the relevant antitrust market.<sup>35</sup> Technically, this is the case when a relatively large proportion of firms' own-price elasticity is caused by the general market elasticity of demand rather than competitive pressure from rivals inside the market. Werden and Froeb's argument for "pro-competitive" margin increases therefore effectively relies on the fact that when prices are close enough to monopoly, further

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<sup>32</sup> Had we ignored the possibility of decreased substitutability and instead considered a world where literally all else is equal, the anticompetitive effect would have been even more pronounced than the figures we derived. Concretely, the anticompetitive effect of a 5-to-4 merger amounted to 10% in our numerical example. Had we ignored the impact of lower substitutability, the effect would instead have increased to 11.3%. A 5-to-4 merger with today's margins would then be even worse than a 4-to-3 merger before the increase in margins, suggesting implicit intervention thresholds should decrease even more.

<sup>33</sup> This follows because in markets with symmetric firms the so-called "recapture ratio" (i.e., the proportion of switchers that substitute within the market) is equal to  $1 - m\varepsilon = 1 - 0.6 \cdot 1.5 = 10\%$  here. See Moresi and Zenger (2018).

<sup>34</sup> By comparison, the parameter values we had used in our analysis (based on estimates from the empirical literature), imply that 80% of substitution occurs within the market, whereas 20% of substitution occurs with products outside the market.

<sup>35</sup> Keep in mind that another requirement is that higher margins are caused by decreased substitutability of products inside the market (rather than, say, a reduction in the market elasticity of demand).

increases in margins will not aggravate merger effects anymore, because there is not sufficient competition left to restrict.<sup>36</sup>

Werden and Froeb do not appear troubled by this and conclude “the proper enforcement action could be to stop the merger if the margin is 40 per cent but allow it if the margin is 60 per cent”.<sup>37</sup> In our view, competition authorities should conclude just the opposite: When competition in the market is already strongly derailed and competitive switching has become more and more difficult, one should usually be *more*, not less, cautious about permitting further concentration. As we noted in our earlier paper: “In addition to [the direct] impact of high margins on incremental merger effects, merger control is also likely to be concerned about high margins in their own right. For example, if one of the merging parties is a strong incumbent with correspondingly large mark-ups, then its acquisition of a smaller challenger may cause competition concerns even if the immediate price effect of the transaction is relatively small. After all, such a merger might eliminate what little competition there still exists in the market.”<sup>38</sup>

#### 4. Conclusion

According to the empirical literature, firms’ ability to charge prices above incremental cost has considerably increased over recent decades. This trend has coincided with a decrease in aggregate investment, reduced entry and a decline in productivity growth. At the same time, scale economies and sunk costs have become more important in many industries, leading to higher barriers to entry.

These trends have benefitted a relatively small group of so-called superstar firms—often the most profitable firms in their sectors in both the old and the new economy. While the group is small in number, it is responsible for a large proportion of the observed increase in aggregate margins in the data. It is therefore not surprising that researchers also found an increase in sectoral concentration in an appreciable number of industries.<sup>39</sup>

Competition law deals particularly frequently with the most powerful firms in the economy. Since precisely those firms have gained further ground over recent decades, the observed increases in aggregate margins likely even understate the increase in pricing power of companies that are most relevant for competition law. Yet, not everyone regards higher margins and the prospect of increased concentration as a potential concern. Some

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<sup>36</sup> E.g., their “pro-competitive” numerical example assumes an elasticity of  $\varepsilon = 1.5$  and a margin of  $m = 60\%$ , so  $m\varepsilon = 0.9$ . Mathematically, this implies that the market is 90% of the way towards fully collusive pricing.

<sup>37</sup> Werden and Froeb (2018b) at 522.

<sup>38</sup> Valletti and Zenger (2018) at 337.

<sup>39</sup> To be sure, such broad industry measures of concentration do not represent antitrust markets in the sense of competition law. E.g., see Shapiro (2018) and Werden and Froeb (2018a). Even so, the economic factors that have propelled the emergence of superstar firms are the same that also facilitate the emergence of concentration in antitrust markets. To the extent that superstar firms grow at the expense of less efficient rivals, it would therefore not be a surprise to see antitrust markets become more concentrated over time.

commentators have instead cautioned for restraint in drawing any inferences from recent data. Werden (2018), for instance, notes that he is “sceptical there has been any increase in margins. [...] I just don’t think we know very much.”<sup>40</sup> Along the same lines, Wright (2018) argues, “the fundamental question presented by the current debate—should merger policy be tightened or relaxed from current levels—is premature”.<sup>41</sup> Werden concurs: “Sorting that is a massive project, it will take a decade.”<sup>42</sup>

We think it should not. While some of the papers that have triggered the current antitrust debate are fairly recent, the observation of increasing margins and superstar firms hardly is. These trends have been evolving for decades, ready for anyone who cared to see. For instance, the steep decline in the labour share of GDP and concomitant increase in the capital and profit share is in no way a recent phenomenon. It started more than 30 years ago, and the economic literature has discussed it intensely for more than a decade.

Likewise, the substantial increase in large corporations’ profitability over recent decades has hardly been a secret. U.S. companies have long published their net margins, and across cycles, these have only known one direction. E.g., profitability in the S&P500 more than doubled in the past 25 years, with net margins increasing from around 4% to around 10%.<sup>43</sup> For this reason, stock market commentators have been openly concerned about a possible mean reversal of profit margins since at least the late 1990s. It never came.<sup>44</sup>

There are still many open questions to be explored about these trends. However, in our mind this is no reason to avoid a debate that commentators from outside the field are already starting to capture. If antitrust as a discipline does not engage in it constructively, others will take the lead.

In competition circles, much of the attention has focused on the question whether insufficient enforcement was a major contributor to the observed trends. This is an interesting (and ultimately unresolved) question that can only be addressed through more ex-post analyses.<sup>45</sup> Arguably, however, the single-minded focus on this question also risks becoming a distraction. As we have tried to show in this paper, increases in market power have implications for optimal policy irrespective of their origin (be it efficiency,

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<sup>40</sup> Werden (2018).

<sup>41</sup> Wright (2018) at 19.

<sup>42</sup> Werden (2018).

<sup>43</sup> E.g., see E. Yardeni and J. Abbott, “S&P 500 Sectors & Industries Profit Margins” (10 April 2019) at 3. The starting point for the increase in variable cost margins is even earlier (around 1980) as shown in De Loecker, Eeckhout and Unger (2018).

<sup>44</sup> For instance, in 1999 Warren Buffett was so worried that a recent increase in margins might be unsustainable that he went public to caution that a profit share of 6% was at the upper end of historical norms. “In my opinion, you have to be wildly optimistic to believe that corporate profits as a percent of GDP can, for any sustained period, hold much above 6%.” Yet, in the two decades that followed, the profit share of GDP unflinchingly moved further up, eventually passing the 10% mark. See W. Buffett and C. Loomis, “Mr. Buffett on the Stock Market”, *Fortune* (22 November 1999).

<sup>45</sup> Personally, we are doubtful that variations in competition policy could have an impact on macroeconomic trends that comes close to the influence of globalization or technological change.

market transformation or imperfect oversight). Moreover, debates about policy causality tend to become partisan quickly, often leading to reflexive defensiveness on one side and generalized accusation on the other. In this article, we have therefore taken a different approach, focusing less on how past policies may have influenced the observed trends and more on how these trends should influence policy going forward.

First, in the face of the emergence of superstar firms and increased barriers to entry, it becomes increasingly important to protect the possibility of potential competition (i.e., competition “for the market”). If superstar firms themselves take potential competitors as seriously as they do, then so should competition authorities. Second, in a world of high margins, competition policy should be particularly vigilant when assessing mergers in concentrated markets. As we noted in our earlier article, mergers are more prone to be problematic when the pricing power of merging firms is already large to begin with. Structural increases in pricing power—such as those we observe today in a large variety of markets—should therefore have a direct bearing on how to assess further concentration.

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## Annex

This annex analyses the impact of margin increases on merger effects in a market with  $n > 2$  symmetric firms, margins  $m$  and market-wide elasticity  $\varepsilon$ . As in our earlier paper, we conservatively assume here that increases in  $m$  leave the market elasticity  $\varepsilon$  unchanged (and hence the increase in margins is caused entirely by a reduction in substitutability of products inside the market).<sup>46</sup>

As shown in our earlier paper, in such a setting the anti-competitive effect of a merger in terms of its compensating marginal cost reduction (CMCR) is given by:

$$\frac{\Delta c}{p} = \frac{m(1 - m\varepsilon)}{n - 2 + m\varepsilon}$$

This expression not only captures the direct, price-increasing effect of higher margins, but also the indirect, price-reducing effect caused by lower substitutability. Taking the derivative of the above expression with respect to  $m$  and rearranging, one finds that higher margins increase the CMCR if and only if:

$$m\varepsilon < \sqrt{n - 2}(\sqrt{n - 1} - \sqrt{n - 2}) \equiv \overline{m\varepsilon}$$

The right-hand side of this expression defines a threshold  $\overline{m\varepsilon} \geq 0$  below which increases in  $m$  *aggravate* merger effects. Conversely, as stated in the main text, increasing margins *alleviate* merger effects if and only if  $m\varepsilon$  is sufficiently large.

$m\varepsilon$  is a conduct parameter that measures how close market pricing is to the monopoly level. This is easy to see by noting that firms' profit maximization implies the inverse elasticity rule  $m = 1/\varepsilon_i$  where  $\varepsilon_i$  denotes the own-price elasticity of firm  $i$ . It follows that  $m\varepsilon = \varepsilon/\varepsilon_i \in [0,1]$  measures the proportion of a firm's own-price elasticity that is due to the general market elasticity of demand, rather than competitive pressure from rivals inside the market.

It is easy to show that  $(\partial \overline{m\varepsilon} / \partial n) > 0 \forall n > 2$ . Moreover, we have

$$\lim_{n \rightarrow \infty} \sqrt{n - 2}(\sqrt{n - 1} - \sqrt{n - 2}) = \frac{1}{2}$$

Simple algebra yields  $\overline{m\varepsilon} = 0.41$  for  $n = 3$  as a lower bound. In other words, the threshold  $\overline{m\varepsilon}$  converges from around 41% to 50% as market concentration is decreased from highly concentrated to atomistic markets.

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<sup>46</sup> See Valletti and Zenger (2018).