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Towards an effective merger review policy: A defence of rebuttable structural presumptions

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Stigler Center

for the Study of the Economy and the State

Towards an Effective Merger Review Policy: A Defence of Rebuttable Structural Presumptions

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Abstract:

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Towards an Effective Merger Review Policy: A Defence of Rebuttable Structural Presumptions*

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Introduction

Mergers and acquisitions (“M&A”) are an integral part of a market economy. Companies are regularly acquiring or merging with counterparts as a way to gain access to new inputs, increase their size and efficiency, or manage the uncertainty associated with contractual relationships (Hart, 2017). However, companies also merge to raise barriers to entry, increase their market power, and extract higher rents from consumers, workers, and other suppliers. This is why most market economies in both developed and developing countries enacted antitrust laws that empower authorities to review certain M&A transactions. Under such systems,¹ private parties must notify antitrust authorities whenever a given transaction is above pre-determined

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¹ Most countries enacted an ex-ante merger review policy, meaning that private parties must obtain clearance before the transaction is concluded. However, some countries (especially in the developing world) still operate under an ex-post system where authorities can challenge the merger after it was concluded.

legal thresholds, allowing the authorities to review, remedy and potentially block transactions that are harmful to society because they diminish competition, restrict innovation, or negatively impact a range of other public policy considerations (Bradford et al., 2020).

Antitrust laws cover the entire economy of a given country (with exceptions for certain sectors). Therefore, legislators and competition authorities must design merger review programs that can operate at scale. For example, some estimate that the US economy witnessed around 345,000 M&A transactions over the last two decades, ranging from small “acquihires”² to very large and complex multi-billion-dollar mergers that spanned the entire world (Statista, 2024).

To better separate harmful from benign transactions, authorities rely on different combinations of notification thresholds, legal presumptions, and economic tools. This is challenging, not only because of the natural complexity of the endeavor but also because some industry players have strong incentives to lobby for more lenient interventions (Lancieri et al., 2023). Indeed, one of the most effective strategies to undermine the effectiveness of antitrust enforcers is simply to deprive them of the resources they need to operate efficiently (Lancieri et al., 2023). This combination leads to difficult policy tradeoffs. For example, between 2001 and 2020, US antitrust authorities (the Department of Justice and the Federal Trade Commission) received 31,500 notifications for transactions above legally established thresholds (Billman & Salop, 2023). Out of these, only 970 transactions received a “closer look” by antitrust agencies, and about 300 were either abandoned or blocked by the same agencies. This means that two of the most sophisticated, well-resourced antitrust authorities in the world were only informed about the existence of 9.1% of the 345,000 M&A transactions that took place in the US over the past 20 years, scrutinized in detail 0.28% of cases, and blocked 0.09% of them (that is, less than one in a thousand). European data are not dissimilar (Koltay et al., 2023). In the meanwhile, industrial concentration increased significantly across both economies, markups and profits—a proxy of market power—also rose, and productivity growth stagnated.³ Weak antitrust enforcement is not the sole culprit for these trends, but it is certainly also part of the story (Levonyan & Mengano, 2024).

This article focuses on the challenge of designing an effective merger review policy. In particular, it argues that the practice of the past decades is inadequate and proposes a move towards much stronger rebuttable structural presumptions for mergers. These presumptions are grounded on solid economics and are important because they also acknowledge the real-world limitations in enforcement resources and information asymmetries between companies and regulators, diminish incentives for undertakings to spam regulators with submissions of “expert assessments” (Jugl et al., 2023; Valletti, 2020), and encourage companies to disclose private information they have at hand.

This article is divided into three parts. The first part outlines the theoretical reasons why societies have decided to review and possibly block M&A transactions, stressing how mergers can

² This term describes the process of a company acquiring a small startup mostly because it is interested in hiring some of its employees for their technical knowledge, rather than its products or services.

³ Industry concentration: (Akçigit et al., 2021; Bajgar et al., 2019; Grullon et al., 2019; Koltay et al., 2023), aggregate profitability: (Barkai, 2020), markups: (Akçigit et al., 2021; De Loecker et al., 2020; Diez et al., 2019).

negatively impact price and output, as well as have broader effects on companies' abilities to lobby or influence democratic governance. In this part, we highlight the role of structural parameters on the impact of a merger.

The second part argues that our current approach to merger review—which is largely based on trying to identify short-term price increases resulting from a given merger (which some call the “Consumer Welfare Standard”)—is flawed and excessively complex.

The third part, the core of the article, articulates our proposed change towards a system based on rebuttable structural presumptions for mergers. It outlines why such presumptions are an improvement over current reform initiatives that simply tighten the current system (though these are a step in the right direction), how to establish such presumptions in practice, and which merger-related efficiencies can rebut the presumption. A brief conclusion follows.

I. Merger control in theory: Why screen and block harmful mergers?

a. The negative consumer impacts of horizontal mergers

i. How market structure impacts consumers

Economic theory supports a rebuttable structural presumption for mergers among rivals. These are sometimes referred to as “horizontal” mergers. We sketch here a very simple model to show the basis for this result. Imagine an industry with N firms that engage in Cournot competition. Take a linear inverse demand function $p(Q) = A - bQ$, where Q is total output, and imagine firms have constant marginal costs c_i that may differ by each firm i . From the first-order conditions for a Nash equilibrium in quantities, the equilibrium margin of each firm i is:

$$p^* - c_i = bq_i^*$$

where the asterisk denotes the equilibrium (we assume an interior equilibrium exists).

The producer surplus of each firm i , which coincides with its profits in the absence of fixed costs, is:

$$PS_i = (p^* - c_i)q_i^* = bq_i^{*2}$$

Aggregating over all firms, total (industry) producer surplus is:

$$PS = \sum_{i=1}^N PS_i = b \sum_{i=1}^N q_i^{*2}$$

Consumer surplus with a linear demand is:

$$CS = bQ^{*2}/2$$

Taking the ratio between producer and consumer surplus, we obtain:

$$\frac{PS}{CS} = 2 HHI$$

where $HHI = \sum_{i=1}^N s_i^2$ is the Herfindahl-Hirschman Index, a common measure of market concentration. The HHI is calculated by squaring the market share $s_i = \frac{q_i^*}{Q^*}$ of each firm competing in a market, and then summing the resulting numbers. By construction, it can range from close to 0 to 10,000, with lower values indicating a less concentrated market, and 10,000 = 100^2 , corresponding to monopoly.

This result indicates that the ratio of producer-to-consumer surplus is an increasing function of the HHI, implying that consumers obtain a *lower* share of the total surplus when the HHI of the market is higher. While this conclusion (and the factor 2) is specific to the linear demand in a Cournot model, (Spiegel, 2021) shows that the relationship extends to a broad range of oligopoly models.

This result relates to the distribution of total welfare (what economists sometimes call the share of the pie) rather than its level (the size of the pie), but it is a very policy-relevant finding. Structure matters for consumers: in concentrated markets, firms extract more profits while consumers get a lower share of the surplus.

An analysis of how changes in market structure impact industry margins confirms this basic intuition. Consider next the industry Lerner index, where the Lerner index computes the wedge between prices and costs, a direct indicator of market power. In a general Cournot model with marginal costs c_i' (and first-order condition $p - c_i' = -p'q_i$), this is equal to:

$$L = \sum_{i=1}^N s_i L_i = \sum_{i=1}^N s_i \frac{p - c_i'}{p} = \sum_{i=1}^N s_i \frac{-p'q_i}{p} = \sum_{i=1}^N s_i \frac{s_i}{\varepsilon} = \frac{1}{\varepsilon} \sum_{i=1}^N s_i^2 = \frac{HHI}{\varepsilon}$$

where ε denotes the absolute value of the elasticity of demand. In other words, industries with higher levels of HHI command higher market power, which results in higher margins of prices above costs. This is, *ceteris paribus*, to the detriment of consumers.

What about mergers? The previous analysis already suggests that there should be a policy interest in not allowing mergers that increase HHI in a given market: margins would otherwise be higher, and consumers would get a lower share of the total surplus. This is particularly worrying in already concentrated markets: intuitively, a 3-to-2 merger is so much more harmful than (say) a 6-to-5 merger, since the risk of allowing it when it should not (type II error) is much larger than blocking it when it was innocuous (type I error). Indeed (Nocke & Whinston, 2022) formalize the idea that the (naively computed) change in the Herfindahl index matters for consumers in a variety of canonical models in Industrial Organization. They show that the presence of consumer harm from a merger involving rivals is strongly related to the change in HHI.

These insights are not lost on antitrust enforcers—who base much of their decisions on structural presumptions connected both to level and to changes in HHI. What antitrust enforcers do, in practice, is first to define relevant markets, and calculate the pre-merger concentration levels. Then they would calculate the pre-merger HHI, defined as $HHI_{pre} = \sum_{i=1}^N s_i^2$. Imagine now that two firms, denoted as 1 and 2, propose to merge, and also assume that market shares do not change post-merger (this is sometimes called “naively-computed” market shares). Using the pre-merger market share of the firms, enforcers would then proceed to calculate the post-merger HHI, defined as $HHI_{post} = \sum_{i=1}^N s_i^2 - s_1^2 - s_2^2 + (s_1 + s_2)^2$ as well as the change in the HHI: $\Delta HHI = HHI_{post} - HHI_{pre} = 2s_1s_2$.

Then, if a combination of a level of the HHI and of the change in HHI is above pre-determined thresholds, they would normally move to a much deeper assessment in which they might block the merger or require remedies to mitigate consumer losses.

ii. How efficiencies may make consumers better off

It is possible, though, that a given merger generates so many efficiencies that consumers end up being better off. To understand how, imagine that two firms, 1 and 2, merge into a new firm denoted as M . Consider the same linear demand as at the outset of this section, and general (and not necessarily constant) marginal costs c_i' . Before the merger, these firms maximize:

$$\begin{aligned} p^* - c_1' &= bq_1^* \\ p^* - c_2' &= bq_2^* \end{aligned}$$

By adding them up, we have pre-merger:

$$p^* - c_1' + p^* - c_2' = b(q_1^* + q_2^*)$$

Imagine now that the merged firm would have a marginal cost c_M' . From its own first-order condition, post-merger, the new firm will produce:

$$p^* - c_M' = bq_M^*$$

Based on this, one can theorize what will happen to market prices after the merger, netting out possible efficiencies and the increase in market power. Quite generally, if $q_M^* > q_1^* + q_2^*$, then the new aggregate market output will be higher, and prices will fall. This is because the rivals not involved in the merger would diminish the amount they produce, as they face a more efficient competitor, but by less than the output expansion of the new, more efficient merged firm (see (Farrell & Shapiro, 1990) for a general treatment). More specifically, market prices will decrease with the merger if and only if $q_M^* > q_1^* + q_2^*$, or:

$$p^* - c_M' > p^* - c_1' + p^* - c_2'$$

That is, prices will drop if and only if the merged firms' markup is greater than the sum of the pre-merger markups of firms 1 and 2 (at the pre-merger outputs, in the more general case beyond constant marginal costs). This implies that, for the price to fall and benefit consumers, the merged firm's marginal cost must be below the marginal cost of the more efficient merger partner.

Note that if one (or both) the merging firms have already market power prior to the merger, this increases the right-hand side of the last inequality, making it less likely that the merger will decrease prices (or, put differently, this would happen only if efficiencies are extremely large).

The inequality can be further manipulated to provide additional insights. Imagine that, before the merger, firm 1 has a marginal cost that is lower than or equal to the marginal cost of firm 2. Then we re-arrange the last inequality as:

$$c_1' - c_M' > p^* - c_2'$$

which indicates that the reduction in the marginal cost of the most efficient firm 1 must be larger than firm 2's pre-merger mark-up. In words, the required marginal cost reduction is larger the larger is the firms' pre-merger market power. Using the Cournot first-order conditions, it is also possible to rewrite the last condition as:

$$\frac{c_1' - c_M'}{c_1'} > \frac{s_2}{\varepsilon - s_1}$$

This condition says that the required percentage reduction in marginal cost below the marginal cost of the most efficient firm 1 must exceed a threshold $\frac{s_2}{\varepsilon - s_1}$. The condition becomes more and more demanding when either the market share of firm 1 or of firm 2 increases (and/or as the price elasticity of demand decreases). In particular, if the joint market shares pre-merger are large enough, then the merger can never reduce price even if marginal costs were to become zero after the merger (the condition is $s_1 + s_2 > \varepsilon$).⁴

⁴ The analytical simplicity of these expressions is due in part to the assumption of Cournot competition among homogenous products. But the core insights of the analysis extend to differentiated products under Bertrand competition. In particular, if products 1 and 2 are symmetric, the formula for the minimum required efficiencies would become (Roller et al. 2006):

$$\frac{c_1' - c_M'}{c_1'} > \frac{1}{\varepsilon_{11} - 1} \frac{\delta_1}{1 - \delta_1}$$

where ε_{11} denotes the own-price elasticity of good 1 and δ_1 is the diversion ratio. The diversion ratio is defined as $\delta_1 = \varepsilon_{12}/\varepsilon_{11}$ where ε_{12} is the cross-price elasticity between the two goods. In words, the diversion ratio calculates the proportion of customers that are lost by firm 1 and that go to firm 2 when the price of good 1 increases. In case

From this discussion, we can also derive that some categories of mergers can never reduce price. For instance:

- 1) A merger that reduces fixed but not marginal costs; or
- 2) A merger that leads to no synergies—or no reduction in marginal costs (including one where the efficiencies involve only a *reallocation* of output across merging firms).

All in all, a rebuttable structural presumption is based on simple and well-grounded economic ideas. First, the loss of a significant competitor in a concentrated market will likely enhance market power. Second, entry barriers exist in concentrated markets such that high prices can persist over time.⁵ Both ideas find strong support in how companies themselves formulate and execute competitive strategy, and in how they select merger partners—and this powerful message goes through almost any standard model in Industrial Organization. Finally, for the rebuttable part, synergies can exist and the merging parties are better positioned to show if they arise out of a merger because proving them requires company-specific information. We will return to this point further below in Section III.b.ii.

b. Mergers have other negative impacts besides increased consumer prices

The previous section showed that, absent efficiencies, mergers among rivals are bad for consumers because they raise prices. However, merger policy is about much more than consumer prices. Indeed, antitrust laws were historically enacted to help curtail the political power of large corporations—their ability to use their market power to shape governmental laws and regulations to their advantage. In the US, Senator John Sherman, after whom the main US antitrust law, the Sherman Act, is named, famously exhorted his colleagues to pass antitrust laws because “If we will not endure a king as a political power, we should not endure a king over the production, transportation, and sale of any of the necessities of life. If we would not submit to an emperor, we should not submit to an autocrat of trade” (see also (Brandeis, 1914; Crane, 2021; Wu, 2020)). European competition policy historically reflected the general diagnosis of the German Ordoliberal movement that industrial cartels facilitated the rise of Fascism and Nazism, with strong antitrust enforcement as a potential antidote (Beltrametti, 2015; Crane, 2019; Lancieri, 2019). The later shift towards a price-centric policy that happened in the 1980s was partially to exclude these forms of non-price considerations from merger review (Posner, 2023).

The theory behind the link between market power and political power is straightforward. Incumbent firms can use their market rents to lobby politicians to erect barriers to entry and protect their market power. This is another form of consumer harm, but one that flows through

the ratio of the two products’ market shares are independent of the available products in the market (possibly a strong assumption), the diversion ratio can be calculated in a simple way from market shares: $\delta_1 = s_2 / (1 - s_2)$. See Valletti and Zenger (2021) for approaches that further relax these assumptions and involve increasing levels of analytical complexity in merger analysis.

⁵ Some Chicago School scholars challenged these conclusions on the basis that entry by smaller firms in response to prices above competitive levels would prevent price increases (Hovenkamp & Morton, 2019). These claims, however, remain mostly theoretical—there is little support for them in more comprehensive economic studies (Hovenkamp & Shapiro, 2018).

the channel of regulation that favours incumbents. Market power begets political power, and vice-versa.⁶

Since mergers can increase market power, one could expect to see data connecting mergers to increases in lobbying spending. This is studied by (Cowgill et al., 2022). The authors collect US data spanning almost two decades, 1999-2017, and their results suggest that the average merger is associated with about a \$200,000 (or 33%) permanent increase in yearly lobbying expenditures after the merger (and a smaller and less statistically robust increase in campaign contributions). Given the high numbers of M&A transactions occurring every year, this translates into billions of dollars in lobbying expenditures due to concentration caused by mergers. (Cowgill et al., 2022) also find that the results are mostly driven by “large” firms merging with other companies in similar industries. (Lancieri et al., 2023) use a range of data sources to argue that the weakening of US antitrust enforcement over the past many decades happened under the significant influence of large business interests, which saw the strong enforcement of these laws as an impediment to their growth.⁷

Sticking to the impact that mergers have in markets, their effects go well beyond consumer prices. Importantly, they can impact both innovation and workers.

Starting with innovation. The theoretical literature is divided on the linkage between market power and innovation: some believe that some minimum levels of market power are necessary for companies to actually have resources to invest in Research and Development (R&D), while others argue that competition is what encourages firms to invest in R&D—monopoly, ultimately, buys one a quiet life (Baker, 2007).

Recent contributions in the economics literature focus on the impact of mergers on innovation more specifically in contexts where R&D investments are an important competitive factor. The main insight is that the effect of a merger among rivals on innovation competition is similar to the unilateral “diversion” effect for price competition: if additional investment in R&D by a firm allows it to steal customers away and reduces the expected profits of a rival (and vice versa) then a merger between these two firms internalizes this negative externality and leads to less investment in R&D. This is not the only effect – though a central one.⁸

Mergers can also lead to anticompetitive output reductions resulting from diminished competition not only on the selling side, but also on the buying side of the market. In fact, the antitrust laws pertaining to mergers, at least in the US, do not distinguish between seller side and buyer side competitive harm (Marinescu & Hovenkamp, 2019), nor does the economics—monopsony power is the exact flipside of monopoly power in output markets illustrated in part I.a above.

This insight is directly applicable to the analysis of monopsony power in labor markets, with growing research finding significant harm arising out of such market structures. (Azar et al.,

⁶ See (Broso & Valletti, 2024). They discuss why the consumer welfare standard breaks down when there are failures by the policymakers to pass pro-competitive policies.

⁷ See also (Broulík, 2022) discussing the risks of cultural capture in antitrust policy.

⁸ This goes sometimes under the name “the innovation theory of harm”. This was developed in the *Dow/DuPont* decision of the European Commission (Coublucq et al., 2024). See (Federico et al., 2018) for a formal treatment, and (Kokkoris & Valletti, 2020) for a summary of the debate that ensued. See also (Cunningham et al., 2021) for the notion and evidence (in the pharmaceutical industry) of “killer” acquisitions, which means shutting down the acquired firm’s projects, and reducing or eliminating product-market rivalry via the merger.

2022) calculate labour market concentration in the U.S. by adapting the same HHI indexes described above. Their general finding is that labour markets are fairly concentrated (well above the 2,500 threshold for high concentration according to the 2010 US Horizontal Merger Guidelines that were in force at the time), although concentration varies by occupation and city, with larger cities being less concentrated. The authors also show that average posted wages are robustly associated with labour market concentration, as measured by the HHI. Depending on the specific statistical model used, a 10% increase in labour market concentration leads to a 0.3% to 1.3% decrease in wages. Furthermore, the impact of concentration on wages is larger in smaller cities.⁹

II. Merger control in practice: a poor track record

The theoretical foundations of a presumption against mergers, at least those involving large rival firms with market power, clash with the data reported in the introduction suggesting a different story: antitrust authorities have little information on most mergers taking place in a given year, scrutinize very few in detail, and do not block almost any transactions. While this could theoretically reflect selection—firms internalizing the likelihood of bad deals being blocked—the data also indicate weak enforcement. Indeed, according to a recent meta-study of existing retrospectives of approved mergers, prices went *up* in 52% of the cases (Stöhr, 2024)—the opposite of what one would expect from mergers that were vetted and approved by regulators. Other studies show significant welfare losses arising out of mergers consummated below minimum merger notification thresholds (Cunningham et al., 2021; Wollmann, 2021). Indeed, most of the time economists analyze consummated mergers generally, they find price increases.¹⁰ This begs the question: how did we get here?

Legal standards and established processes play a big role. During a traditional merger review process, regulators are typically required to: (i) use various tools to define the relevant markets impacted by the transaction; (ii) calculate concentration ratios in these markets; (iii) assess barriers to entry and expansion in these markets; (iv) create a prima-facie case of market dominance; and, finally, (v) predict the likelihood of price increases or output decreases. Laws

⁹ At the outset of this paper, we mentioned the phenomenon of “acquihires”, that is, startups that are acquired for the purpose of hiring specialized talent. This not always innocent. (Bar-Isaac et al., 2024) show that the goal of such acquihires might be to shut down the most relevant labour market competitor. This grants the acquirer monopsony power over specialized talent. As a consequence, acquihiring may harm employees and be socially inefficient. Empirically, (Ng & Stuart, 2022) study tech startups and draw on LinkedIn data to compare the employment outcomes of workers who join a firm via acquisition to those hired directly. They find that acquired employees actually stay for shorter periods in the acquired company compared to matched direct hires (1.75 vs 3.1 years).

¹⁰ See (Lancieri et al., 2023) for a review of the literature pertaining to the US. (Asker & Nocke, 2021) survey that most ex-post studies of mergers find price increases. It is important to try to distinguish, among existing results, if the merger retrospectives refer to transactions that had or had not been vetted by the enforcers – this is not always done in a transparent way in existing studies and, therefore, some results are hard to interpret. What is important in the meta-study of (Stöhr, 2024) is that she considers *only* transactions that had been vetted and approved by competition authorities, some with and some without remedies. The fact that price increases also follow vetted mergers indicates a failure of the current policy in delivering on its own (rather restrictive) stated welfare goals.

also impose on regulators a deadline for such reviews—after which transactions may be automatically approved.

This focus on requiring regulators to prove consumer harm for each specific transaction—which many refer to as the Consumer Welfare Standard—has theoretical flaws and ignores real-world dynamics that undermine merger review policy.

In theoretical terms, this approach tries to assess the impact of a given merger on Marshallian demand, a criterion that has been criticized in welfare economics (Glick et al., 2023) and in law (Newman, 2021). That is because it struggles *de facto* to account for important variables such as quality, innovation, and the harms of vertical concentration (Salop, 2018); assumes that transfers of surplus between consumers and producers are welfare neutral; and disregards the non-market effects of reduced competition (Posner, 2023).

In practical terms, this approach ignores the inequalities in resources and the large information asymmetries between private parties and regulators. As courts have increased the burdens of proof enforcers must meet to show that a given merger may “substantially lessen competition”, with a very high standard of proof, regulators have had to dedicate more and more resources to any given merger challenge (Woodcock, 2020). On the other hand, the number of mergers is going up, and companies and mergers are getting larger, so enforcers’ workload is going up exactly when undertakings have more resources to challenge each and every action of regulators. Recurrent budget cuts, then, forced regulators such as the FTC to curtail much of their ability to follow the evolution of markets through independent market studies and other similar initiatives (Pautler, 2018). This means that cash-strapped authorities depend on the information provided by the merging parties to understand market dynamics and build their cases.

Regulators, therefore, became increasingly overwhelmed. The historical solution was to: (i) raise merger notification thresholds, exempting an increasing number of transactions from any form of review; and (ii) diminish enforcement (Billman & Salop, 2023). Both are detrimental to welfare, as they simply allow a larger number of deals to pass without serious scrutiny. We discuss next how we can reverse this course.

III. A proposal for change: stronger rebuttable structural presumptions for mergers

One potential solution to this under-enforcement problem is to build on the “flexibility” of the consumer welfare standard and develop ever more complex economic models that consider changes in market conditions or new theories of harm. This would be a poor fix because it ignores the imbalances in resources and information asymmetries that effectively sap today’s approach. The more complex the models, the more resource-intensive they are, the more likely they require information that defendants alone possess—and can exploit—and the more subject to casting-of-doubt strategies they are. The added complexity also decreases judges’ abilities to understand such models, making them more susceptible to external influences (Ash et al., 2022) and to issue decisions that misapply economic theory even in reasonably settled areas (Pereira Neto & Lancieri, 2020).

Fixing merger review policy requires significant reforms that recognize the current system's theoretical and practical limitations. Stronger rebuttable presumptions for mergers are an important tool at regulators' disposal. In summary, these presumptions establish that all mergers above certain thresholds are illegal unless the merging parties can prove that merger-specific efficiencies will be shared with consumers and yield tangible welfare gains. Their adoption is important for four reasons.

First, structural presumptions for mergers are grounded on robust economics. Every merger among rivals is bad for consumers in the absence of efficiencies—a concept that has been lost for too long in antitrust policy discussions. Indeed, as reported in Part II, most of the data shows that mergers involving large firms regularly lead to price increases. This makes sense—such large companies may have already exhausted the efficiencies generated by scale economies, increasing the likelihood that mergers take place to increase market power. Raising the legal thresholds to approve mergers is a necessary step to help mitigate the under-enforcement gap.

Second, rebuttable structural presumptions change the practical dynamics of merger review. Requiring firms to demonstrate the pro-competitive aspects of the merger is coherent from an informational perspective—no party knows better how a given market works than the companies operating in that market. If those firms cannot prepare a *prima facie* case that their transaction improves welfare, no one else can. The inversion of the burden of proof diminishes incentives for firms to engage in tactics that are primarily focused on blocking the work of regulators rather than shedding light on the impacts of the transaction—the clock is no longer ticking against the regulator. As regulators switch their primary role from building legal challenges to analyzing the strength of the evidence presented by the involved parties, they will also free up resources for industry studies and other initiatives that will increase their capacity to produce and process such evidence independently.

Third, a rebuttable structural presumption safeguards pro-competitive mergers: firms can still demonstrate the existence of significant synergies to be shared with consumers. As better discussed below, this would require firms to prove that the merger is necessary to achieve such efficiencies—that is, no less anticompetitive actions can reach the same effect.

Finally, a structural presumption does not punish large and potentially more efficient firms. Firms can still grow organically, including by diversifying lines of businesses or entering new markets—all pro-competitive decisions that normally benefit consumers and suppliers. Rather, the presumption acknowledges that such large firms are more likely to have market power, whatever the source. Those firms should generally “make” rather than “buy”, a decision that is usually welfare-enhancing.

From a practical perspective, rebuttable structural presumptions can be implemented either through incremental reforms to current antitrust practices or through a more fundamental revision of the whole system. We outline both below.

a. The incremental path: changes to Merger Guidelines

Some regulators have already started moving towards incorporating stronger rebuttable structural presumptions in merger review through an “incremental” path that relies on changes

to agency enforcement guidelines. In the US, for example, the revised 2023 Merger Guidelines have tightened HHI and market-share thresholds and lowered the burden of proof for authorities to challenge transactions, creating rebuttable presumptions for mergers that surpass pre-determined levels¹¹. In the EU, the 2024 Revised Market Definition Notice did not go as far, but it placed more weight on non-price variables potentially impacted by mergers, such as quality and innovation.

This is a welcome shift in paradigm, and it would be important for antitrust authorities around the world—many times even more under-resourced than the FTC, the DOJ, or DG Comp—to follow suit. If authorities decide to continue pursuing this more incremental path, a general recommendation that comes out of our analysis is that they should focus their presumptions and analysis on structural parameters such as HHI levels.¹²

Implementing rebuttable structural presumptions through changes in Guidelines has several upsides. In many jurisdictions, these can be accomplished without legislative change, making them relatively lower-cost solutions. In addition, because they are implemented directly by the authorities themselves, they allow for better policy fine-tuning.

This incremental path, however, also has two important downsides. First, changes through guidelines can be more easily reverted than changes in the law. The US, for example, went from a strict merger review policy in the 1950s-1970s to an increasingly lax one largely through changes in merger review guidelines (Posner, 2023; Shapiro & Shelanski, 2021). Indeed, politicians at the time considered changing the law but concluded that they would not have political support—opting for guideline changes as a more stealthy way to implement an anti-enforcement agenda (Lancieri et al., 2023). Second, and more important, these new guidelines still require regulators to model the individual impacts of every given merger. In practical terms, authorities will remain bound to the requirements of calculating transaction-specific market shares and finding market power in a well-defined relevant antitrust market.¹³ From a defendant's perspective, the game

¹¹ Guideline 1, for example, establishes that mergers that involve firms with a combined HHI of 1800 points or a market share above 30% of the market *and* an increase in 100 HHI points are presumed illegal, with undertakings bearing the responsibility to rebut the presumption by presenting merger-specific efficiencies. See (US Department of Justice & Federal Trade Commission, 2023, p. 6).

¹² A note is important on the contribution by (Nocke & Whinston, 2022). While they do argue that it is the *change* in the HHI rather than the *level* of the HHI to be more informative in their model, they obtain this result under some important assumptions. First, in their empirical application, the level of the HHI is not informative only *conditional* on using the increment. If one runs their regressions on the HHI level only, their results already suggest that the required efficiencies would need to be higher in more concentrated markets, as there is a positive correlation between the change in HHI and its level. Second, the paper dedicates a whole section to screening based on HHI levels, showing that looking at levels would make sense particularly when an authority's objective reflects a desire to prevent *significant consumer harm*. Recent work by (Bhattacharya et al., 2023) lends further support to the positive relationship between prices and HHI levels. Using a large sample of consummated mergers in US consumer goods, they find significant price increases for high levels of HHI, regardless of the change of HHI. These findings support the use of screens and presumptions based on HHI levels.

¹³ Some antitrust circles have created a real obsession with relevant market definition, whereby products are either 'in' or 'out' of a market. The purpose of market definition should be to identify the most important competitive constraints acting on the merging parties. Competitive constraints are a matter of degree, not a binary

was and remains clear: a broad enough relevant market will not trigger the structural presumption, leading to approval of the merger without an assessment of its real impacts. Regulators will still have to spend significant resources to define the relevant markets impacted by each and every merger in an environment of both large information asymmetries and resource constraints. Authorities, therefore, continue to have limited capacity to focus on what really matters—understanding whether the transaction will end up harming welfare because potential efficiencies do not outweigh increases in market power.

Ultimately, this incremental system risks missing the forest for the trees. A more fundamental change is needed.

b. A more fundamental change: ex-ante rebuttable presumptions

If merger review policy is to truly deliver on its stated goals in an environment of large information asymmetries and resource imbalances, it must undergo more fundamental change. One alternative is to transition to a more radical system of ex-ante rebuttable presumptions for mergers. In simple words, such presumptions would require all “large” firms to demonstrate that a given M&A transaction will result in significant synergies that will be shared with consumers or suppliers. If the parties cannot prove such synergies, the transaction would be presumptively illegal and, therefore, blocked. This shifts the trigger of the presumption, which is no longer focused on the transaction but rather on the firms.

i. Establishing the ex-ante presumption: a combination of firm and industry-level characteristics

An immediate challenge in the implementation of the structural presumption is the definition of triggering legal thresholds. Every metric will be imperfect—the same way that the current merger notification thresholds are also imperfect—but policymakers can rely on a broad array of indicators such as turnover, market capitalization, market shares in broadly defined markets, to fine-tune the policy. In particular, a combination of firm-level and industry-level characteristics adapted to specific market dynamics is a good stepstone.

Firm-level characteristics

This group of indicators focuses on identifying the largest companies in a given economy. It starts with simple statistics such as turnover, market capitalization, or market penetration measured against a well-defined benchmark (e.g., national population) —all of which can be calculated based solely on data belonging to a given firm.

Examples of policies that followed this approach in the context of digital platforms, and that can serve as a benchmark for changes in the antitrust laws, are the European Digital Services Act (DSA), and Digital Markets Act (DMA) in the European Union.¹⁴

‘yes they are’ or ‘no they are not’ in the relevant market. Academics challenged the importance of relevant market definition decades ago (Kaplow, 2010).

¹⁴ See (De Streel et al., 2023; Edelson et al., 2023) for more details.

The DMA, for instance, relies on a set of parameters to trigger its obligations that apply to “Gatekeepers”. To be considered “Gatekeepers”, firms must meet four criteria:

- (i) Provide one out of ten pre-defined “core platform services”;
- (ii) Have a significant impact on the internal European market, presumed when firms achieve an annual turnover in the EU equal or above to EUR 7.5 billion in each of the last three financial years or an average market capitalization or equivalent fair market value of at least EUR 75 billion in the last financial year;
- (iii) Be a gateway for business users, presumed whenever the firm provides a core platform services that reaches at least 45 million EU monthly active users or services at least 10,000 EU business users in a given year;
- (iv) Their position is durable, meaning that these thresholds are met for three consecutive financial years.

Both for the DSA and DMA, firms must notify the European Commission whenever they meet the requirements, and the regulation foresees mechanisms to update thresholds.

A rebuttable structural presumption for mergers could be based on a similar combination of firm-specific indicators—turnover, market capitalization/fair market value, or penetration above a certain, pre-determined threshold—adapting the thresholds to the particularities of antitrust. In other words, the presumption would cover, say, all firms with at least £ X billion in annual turnover, all firms with more than £ X billion in market capitalization or fair market value, and all firms supplying at least X% of the total population of a given jurisdiction.

Firms would need to notify antitrust authorities that they meet such criteria, leading to a formal designation process. Once finalized, all mergers and acquisitions by that undertaking would be presumptively illegal, with the undertaking having the opportunity to rebut the presumption by proving that the transaction will enhance welfare (as discussed below).

Industry-level characteristics

A second, complementary set of legal thresholds would be based on industry-level characteristics that indicate the presence of concentrated market structures. The main difference with regard to firm-level indicators is that this latter group requires more active involvement by antitrust authorities to collect and process industry-wide information on market shares and other relevant data.

In this case, the rebuttable structural presumption would apply to transactions taking place in concentrated markets. As outlined in section I above, the more concentrated and the fewer the number of firms in a given market, the more damaging the potential harms arising from the merger in the absence of offsetting efficiencies. Fewer viable rival firms means that non-merging firms replace less of any reduction in the merging firms’ supply.

Authorities would need to first define the level of aggregation of industry-level metrics, and then find a source of statistical data at that level of aggregation. The first can be based on standards that classify business establishments, such as the North American Industry Classification System (NAICS) and the European Nomenclature of Economic Activities (NACE).

Statistical data are available from the census, statistical offices, or private company data providers. Researchers routinely use different methods that rely on similar data/classifications to understand long-term industry-wide trends (Bajgar et al., 2019; Koltay et al., 2023; Philippon, 2019). These methods were not developed specifically to trigger a structural presumption, but they could be adapted for such purposes with relative ease.

The presumption would apply to transactions by firms holding more than X% share in a given industry (e.g., 30%) or whenever the market-share of the four-largest firms in a given market is above a certain threshold (e.g., 50% - this corresponds to the empirical findings of (Koltay et al., 2023) that EU transactions above this threshold are more likely to generate potential concerns).

The economics and statistics departments of antitrust authorities could create an “Industry Unit” whose job is to regularly update existing databases, or have access to the most fine-grained census economic data, calculating concentration levels and trends for the different industries. Authorities would then publish a list of specific firms for which transactions are subject to the structural presumption—increasing legal certainty. This list would be updated in an ongoing-basis according to pre-defined intervals, so as to ensure that it reflects the most up-to-date information. As authorities obtain a better understanding of the distributions of industry concentration and market power, they can refine thresholds. Case teams involved in merger assessments could then directly obtain the structural indicators from the Industry Unit—rather than building their cases almost from scratch at every transaction. The Industry Unit would employ a variety of experts, including economists, statisticians, and industry specialists. This arrangement would have the added benefit of ensuring consistency in data collection and analysis across mergers.

In summary, all transactions captured by either the firm-level or the industry-level thresholds would be subject to: (i) mandatory notification to the antitrust authorities; and (ii) the prima facie presumption that it will have anti-competitive effects. Undertakings are then given the opportunity to present efficiencies that rebut the presumption.

ii. Rebutting the presumption: the role of efficiencies

Merging parties caught by the prima facie presumption of anticompetitive effects can rebut it by proving that the transaction is essential to achieve tangible consumer and supplier gains. Current antitrust laws do not have a very coherent treatment of efficiencies (Rose & Sallet, 2019), something that would naturally change as this step becomes a much more central part of merger review. Still, in order to be “cognizable” and therefore entitled to consideration under current standards, efficiencies must be merger-specific, verifiable, and should not arise from anticompetitive reductions in output or service. One can build on these standards to develop three more general principles on the type of evidence firms must present to rebut the presumption of illegal effects for a given transaction:

- (i) **No ability to “make”:** Firms must prove that they could not achieve the same efficiencies by increasing production through independent investments;
- (ii) **No less restrictive alternative:** Second, firms must show that no less restrictive alternative to the merger exists. For example, if firms claim that property rights

prevent them from expanding production, they must also show that they could not negotiate a licence that would enable them to achieve the same outcome;

- (iii) **Clear net positive effects for consumers/suppliers:** Finally, firms must prove that the merger will lead to direct consumer and/or supplier benefits. This means increased output and lower prices, higher wages, increased levels of innovation/R&D investments, and others. Firms must also commit to meet the levels they advance in the timeframe they propose—authorities should revisit and potentially require the unwinding of the merger if firms promise significant efficiencies, but fail to deliver. Because of this requirement, authorities should give more weight to transactions that propose benefits that are easier to audit.

Overall, the standard of proof to be met for each of these steps should be higher the more potentially “dangerous” the merger—that is, the larger the firm, the more concentrated the market, or the higher the level of horizontal overlap between the firms. For example, when the merger involves a clear horizontal overlap, the parties must meet a very high standard of proof that they would not be able to expand production through independent investments. In the case of mergers involving distant goods, parties should have more leeway to show the presence of barriers that prevent their independent expansion.

Authorities can also add weight to transaction-specific characteristics, in particular, the acquisition price and the margins of the involved firms. The acquisition price is informative because a very high-acquisition price when compared to earnings or other metrics can be a prima-facie signal that the acquirer is imputing anti-competitive rents into the evaluation.¹⁵ As for the margins of the involved firms, Section I showed that they capture the ability to sustain prices above marginal cost. Therefore, they work as proxies for merger review as they are the textbook definition of market power, without expressing any normative judgment on the source of such power.¹⁶ The higher the acquisition price, or the higher the pre-merger margins of the involved firms, the higher the standard the involved firms must meet to rebut the presumption that the transaction will have anti-competitive effects. The burden of proof rests with the firms.

Ultimately, there is no correct single optimal standard or burden of proof that firms must meet to prove efficiencies: this is a normative decision for legislators and competition authorities to make in consultation with society, while constantly reviewing the available evidence.

iii. What happens below the thresholds?

An important question regards what happens below the legally defined thresholds that trigger the structural presumption. Authorities should not automatically approve all mergers

¹⁵ There are different methods that authorities can employ in such evaluation. (Fumagalli et al., 2020) provides both a theory to support such presumption and an empirical test authorities can employ to screen problematic acquisitions. Their test is based on finding proxy firms that work as a potential control of the market price of the company net of the market power effect generated by the acquisition. (McLean, 2021) proposes a goodwill test. A robust system will likely rely on a combination of different methods.

¹⁶ Firms with sustained high margins, therefore, are firms with sustained market power. Section II showed how the higher pre-merger margins the less likely that efficiencies can compensate for the anti-competitive effects of a given merger.

involving other firms, as otherwise, there would be significant space for regulatory gaming. As mentioned, studies have shown that significant welfare decreases happen exactly below the minimum notification thresholds (e.g. (Cunningham et al., 2021; Wollmann, 2019, 2021)). Rather, the current system would continue to apply to mergers below the presumptions thresholds. If anything, the resources that would be freed by the implementation of the new system could be used to lower mandatory notification thresholds for other mergers, increasing the scope of the current merger policy. Authorities could, though, establish safe harbors for very small mergers, as a way to ensure they are not flooded with notifications of small transactions.

c. Horizontal vs. Vertical Mergers

Our analysis is mostly focused on mergers involving rivals because of the direct theoretical implications and the strength of the economic evidence. As mentioned in Section II, these are sometimes referred to as “horizontal” mergers. However, the (rebuttable) structural presumption applies in a unified way to all mergers, also including “vertical” and “conglomerate.” This is appropriate for four reasons.

First, the distinction between horizontal and vertical is often artificial. Think, for instance of mergers, involving digital platforms where the boundaries change over time, leading to the phenomenon of “annexation” (Athey & Morton, 2022). Indeed, this is the direction of the revised 2023 US Merger Guidelines that have removed the traditional horizontal and vertical merger labels. The Guidelines apply to *all* mergers. That is because while neat on paper, the distinction between horizontal and vertical transactions appears artificial in practice—many transactions have fuzzy boundaries that present both elements.

Second, a unified approach has the merit to reverse erroneous claims, arising from some policy circles, that posited that vertical mergers are usually efficiency-enhancing—a presumption that does not exist in economics (Beck & Scott Morton, 2021; Salop, 2018). Donna & Pereria (2024) discuss how anticompetitive presumptions apply to non-horizontal mergers, and relate them to the economics literature.

Third, and following to the previous point, the main distinction between horizontal and vertical transactions is that vertical mergers may generate larger benefits from integration, which can be good for consumers. Firms, however, do retain the ability to rebut the presumption by proving their efficiency claims. Authorities could account for differences by lowering thresholds on the types of evidence that are accepted for such a rebuttal on the vertical part of a given transaction. The evidence would have to come from the parties.

Fourth, if one kept a strict distinction between horizontal and vertical mergers, then the benefit of a system based on presumptions would be lost if the burden of proof to distinguish between horizontal and vertical was still on the authority. This is because the authority would have to re-engage in discussions about relevant markets up front, which is precisely what instead presumptions are trying to avoid.

In practice, choices made on the parameters that trigger the presumption will have implications for the types of mergers covered by the presumption. A case in point would be legal thresholds based on industry-level characteristics. The more granular the level of NAICS or NACE

codes adopted, the more likely that transactions will be of the “horizontal” type and involve rival firms.¹⁷

IV. Conclusion

Merger review policies are an essential part of a solid market economy. Yet, the approach to merger review that prevails around the world has produced systematic underenforcement accompanied by continuous consolidation. While antitrust authorities have started to take steps in the right direction, these are not enough. More fundamental reforms are needed.

We propose a shift towards much stronger rebuttable presumptions for mergers, and a standard of proof for showing efficiencies that becomes more difficult to satisfy at the top. Societies need to be bold if they are to ensure that antitrust laws are adequately enforced in an environment of increasing market concentration and corporate political power.

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¹⁷ As an example, the 6-digit NAICS 327320 describes the very narrow category of “wet, nonrefractory mortars & concrete”, while the higher level 3-digit NAICS 327 describes more generally “nonmetallic mineral products”.

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