Merger Control Z

Jorge Padilla, Joe Perkins, Salvatore Piccolo and Paul Reynolds[1]

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Abstract

This paper focuses on industries that require intensive investment to compete and innovate well before demand materialises (or fails to do so). In these industries, the existence of exit barriers may cause firms to become "zombies" *ex post* and result in significant underinvestment *ex ante*. We first discuss the link between the investment decisions of firms and the existence and significance of exit barriers. Then, we consider the role of mergers as an exit mechanism that promotes efficient investment and fosters competition. We conclude with a discussion about optimal merger policy.

Keywords: Entry and Exit, Investment, Merger Control, Zombie Firms

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[1] Jorge Padilla, Joe Perkins, Salvatore Piccolo and Paul Reynolds are economists at Compass Lexecon. The authors' views do not necessarily represent the views of Compass Lexecon or its clients. The opinions in this article are the authors' sole responsibility. Please send your comments to jpadilla@compasslexecon.com.

INTRODUCTION

This paper is about zombies and how to get rid of them. It is not a science fiction piece. While none of us has ever seen a walking dead outside the TV screens, we are aware of many "zombie firms." Zombie companies are firms burdened by large amounts of debt, which are just able to manage their existing liabilities with the help of weak banks afraid of acknowledging that theirs are non-performing loans.

Zombie firms are a serious problem for future growth. They tie up scarce resources and trap industries and economies in cycles of low productivity, as they neither have the incentive to innovate nor leave the market through voluntary liquidation. Most worryingly, the proliferation of zombie firms deters the entry of new and more productive businesses. Start-ups are either deterred because of the aggressive pricing policies of firms gambling for resurrection, crowded out from access to credit, or both.

Europe was populated by zombie firms before the COVID pandemics went on the rampage through our economies.[2] This was one of the reasons for its poor productivity growth. The COVID crisis and the policy response aimed at maintaining economic activity and protecting employment during lockdowns has increased the number of walking dead corporations in our economies.[3] For the reasons stated above they pose a clear threat for business dynamism and, more generally, economic recovery post pandemic.

It is not easy to get rid of zombies; they are very resilient. This is for two mutually reinforcing reasons. First, they are sustained by poorly capitalised banks fearing the intervention of the prudential regulators and myopic governments concerned about the impact of a wave of bankruptcies on their electoral prospects. Second, they are protected by inefficient bankruptcy laws and poor banking supervision.

Mergers are one of the ways in which zombie firms can and, sometimes, do exit the market. Healthy firms have an incentive to purchase their zombie rivals to force their exit, since they would not leave the market otherwise and their presence has a negative impact on the healthy firms' return on investment. Of course, such acquisitions give rise to a welfare trade off. On the one hand, they are likely to inflate the prices consumers pay, since zombies may set prices low; often unsustainably so. On the other hand, such mergers reallocate business assets to more

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[2] *See* Andrews, D. & Petroulakis, F. (2019). "Zombie Firms, weak Banks, and Depressed Restructuring in Europe," VOX EU, CEPR. Available at https://voxeu.org/article/zombie-firms-weak-banks-and-restructuring.

[3] *See* Zingales, L. (2021). *Attack of the COVID Zombies*. Available at https://www.project-syndicate.org/commentary/separating-healthy-firms-from-corporate-zombies-by-luigi-zingales-2021-07?mkt_tok=MjExLUVNSS00NTQAAAF-Occ1AI7jc5-KfRf7b5L2ugVNSGAoLoTTN6Z4cMjeD0mlvK7umtUsrFgSHMUAN0gcxeLzve3B2FqAVM1TkkuI3YG349UqKVf2RjL6AHw0Gy0dGA.

productive firms. As the OECD states, "reallocation of resources across firms, entry of new businesses and efficient exit mechanisms are key to boosting aggregate productivity growth."[4] Moreover, the option to exit via merger can help encourage investment *ex ante* for all market participants, as it reduces the risk of investments which prove unsuccessful, and the risk that failed firms undermine the profitability of otherwise successful investments.

It is this last dynamic effect that we discuss in greater detail in what follows because it is the one that may tip the balance in favour of a more permissive merger control in industries where investment is key but costly and the return on investment is subject to considerable uncertainty, since investment takes place before demand materialises, or not.

Most firms, possibly all, become zombies unwillingly. They are the result of investment and financing decisions proven wrong in time, weak banks unwilling to acknowledge non-performing loans, and a bad policy mix: lenient monetary policy, insufficient prudential supervision, and strict bankruptcy laws. We show that adding to this policy mix a strict merger control cannot constitute appropriate public policy.

In what follows, we first discuss the link between the investment decisions of firms and the existence and significance of exit barriers. Then, we consider the role of mergers as an exit mechanism that promotes efficient investment. We conclude with a discussion about optimal merger policy in industries that require intensive investment to compete and innovate and where the existence of exit barriers may result in the proliferation of zombie companies.

EXIT BARRIERS AND INVESTMENT

When analysing competition, innovation, and market structure, economists have focused their research on market entry. They have placed less emphasis on market exit, even though barriers to exit have been debated in policy circles on both sides of the Atlantic for many years (e.g., Ghemawat & Nalebuff, 1985; Fudenberg & Tirole, 1986; Frank, 1988; Ezekiel, 1992; Ratnam, 1992).[5] Both entry and exit affect companies' incentives to compete and innovate. The threat of entry pushes incumbents to keep prices low and improve what they offer consumers. Exit is the other side of the same coin. Indeed, "most guidelines link exit barriers to entry barriers, as exit costs can deter entry if firms can anticipate them before entering."[6] Exit sanctions companies that

[4] OECD. (2021). *Declining Business Dynamism: Cross-Country Evidence, Drivers and the Role of Policy*. Available at https://www.oecd.org/sti/ind/declining-business-dynamism.pdf.
[5] *See* Ghemawat, P., & Nalebuff, B. (1985). "Exit," *RAND Journal of Economics*, 184-194; Fudenberg, D., & Tirole, J. (1986). "A Theory of Exit in Duopoly," *Econometrica*, 54(4), 943-960; Frank, M. Z. (1988). "An Intertemporal Model of Industrial Exit," *Quarterly Journal of Economics*, 103(2), 333-344; Ezekiel, H. (1992). "A Theory of Industrial Exit. *Economic and Political Weekly*," 27(4), 159-163; and Ratnam, C. V. (1992). "Exit Policy: An Overview of Some Issues," *Indian Journal of Industrial Relations*, 27(4), 370-382.
[6] OECD. (2019). *Barriers to Exit*. Available at https://one.oecd.org/document/DAF/COMP(2019)15/en/pdf.

fail to compete and innovate profitably and – through creative destruction – reallocates their resources to those that can (Schumpeter, 1942).[7]

Barriers to exit matter in any industry. However, the height of barriers to exit is of particular significance in industries, such as many infrastructure industries, that require intensive investment to compete and innovate. Ultimately, firms will only invest when they expect returns to (at least) cover their cost of capital. But often the return on new investment is highly uncertain and the range of possible outcomes is wide. Firms could earn good returns on their investments, but alternatively could face significant losses. That potential downside is greater when investors' opportunities to mitigate their losses through mergers or divestments are few and costly, i.e. when barriers to exit are material. Without lower barriers, or greater rewards, fewer companies will refuse to invest to enter the market or improve their offers to customers.

A. A Model of Exit and Investment

In a recent paper,[8] we have built a formal economic model to investigate rigorously the relationship between exit policy and investment in infrastructure industries that require substantial investment to compete. Exit policies affect the value a firm expects to receive when exiting the market, including not only merger policy but also policies that reduce or increase labour-related exit costs (e.g., costs related to employees' contractual rights such as staff redundancy costs and insurance benefits), bankruptcy rules (e.g., filing and litigation fees), and environmental regulations (e.g., remediation costs).

The structure of the basic model is that there are two firms competing to serve customers. One firm is a strong incumbent ('the incumbent'), which is committed to invest and stay in the market. The other firm is a weaker competitor ('the challenger'), which first decides whether to sink considerable costs investing to improve its product prior to the realisation of demand (which is uncertain *ex ante*) and, later on, chooses whether to exit the market depending on the actual level of demand that eventuates. This sequence is meant to replicate the asymmetry found in many infrastructure industries: the firm makes its investment decision in a situation of uncertainty – it does not know how much demand there will be for the new technology. Investment is costly to the firm, but increases the value of its product to consumers, meaning that both the firm and consumers can benefit.

We find that the challenger's return of the investment is positive and determined by two intuitive forces. First, the challenger exits less often when it invests compared with when it does not invest. Second, conditional on remaining in the market, the challenger has a larger market

[7] Schumpeter, J. (1942). *Capitalism, Socialism, and Democracy*. Harper & Brothers, New York.
[8] Bisceglia, M., Padilla, J., Perkins, J. & Piccolo, S. (2021). "Optimal Exit Policy with Uncertain Demand," SSRN Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3889226.

share when it invests, since the investment spurs demand. We also show that the relationship between the challenger's ability to exit and its incentive to invest takes the form of an inverted U shape. That is, an increase in the exit value tends to stimulate investment when the exit value is not too large, while reducing the incentive to invest when it is large enough. Therefore, the private investment return is maximized for an intermediate exit value, which in turn is increasing with demand volatility, market size, and the degree of substitutability between products. When the exit value is high, further increases in that value reduce the investment return since they make exit more likely and the return on investment only materializes when the challenger remains in the market. In contrast, when the exit value is small, an increase in that value increases the set of circumstances (i.e., demand realizations) for which the investment pays off and results in a larger market share.

Of course, consumers prefer duopoly to monopoly and more investment by the challenger to less. Hence, their attitude to the existence of exit barriers is complex. On the one hand, high exit barriers mean more rivalry for a given level of investment even in circumstances in which demand is low. On the other, exit barriers also make investment less likely which reduces price and quality competition in high demand states. We then compare how the value investors receive on exit impacts the relationship between the private and social (consumer welfare) value of investment. We identify an under-investment problem: consumers value the challenger's investment more than the challenger does. This is because when the challenger is indifferent between investing or not, consumers prefer investment, as it allows them to appropriate a greater share of the value of a higher quality product.

B. Optimal Exit Policy with Demand Uncertainty

We use this model to characterize the optimal exit policy that a regulator whose objective is to maximize consumer surplus would choose. This exercise hinges on the idea that regulators can influence the challenger's exit option but cannot regulate its investment choices. If the investment cost is sufficiently low, whereby there is no under-investment, the regulator optimally sets the exit value at zero, since, conditional on the investment taking place, consumers always benefit from increased rivalry, which is achieved by minimizing the challenger's incentives to leave the industry. If the investment cost is very high, then the regulator cannot affect the level of investment by reducing exit costs, and hence it will also seek to maximise rivalry.

However, for intermediate values of investment costs, when the exit value affects the challenger's incentives to invest, the regulator always sets a positive exit value determined by the challenger's (binding) incentive compatibility constraint. In this range of parameters, the regulator's main concern is to solve the under-investment problem. As before, this is because the investment creates value and when the challenger is indifferent as to whether to invest, that value

is fully appropriated by consumers, who must therefore be better off with the investment than without it. The range of parameters in which this happens expands with demand uncertainty.

In conclusion, we find that a policy that facilitates the exit of firms when demand fails to materialise and their profits are low (albeit positive) encourages investment, fosters competition and benefits consumers. That is, policies aimed at facilitating the exit of zombies *ex post* benefit consumers and not just their competitors. Not surprisingly, we show that bankruptcy laws that allow investors to recover a greater proportion of their investments in case of liquidation, induce the challenger to invest and maximizes consumer surplus. Industries in which investments are considerably costly require a relatively more lenient liquidation policy to secure the investment.

MERGERS, EXIT VALUE AND INVESTMENT INCENTIVES

We make use of the model described above to understand how merger policy affects firms' incentives to invest in new technologies and the consequences for consumer welfare. If firms are unable to merge or are allowed only very limited opportunities to merge, they may receive relatively little for their assets if they wish to leave the market; knowledge of this fact may then deter investment. The firm might stay in the market as a zombie, offering low quality products cheaply. However, because consumers benefit from greater investment in higher-quality goods, they may better off with less competition when demand is low in exchange for more investment and hence greater quality products and more head-to-head competition when demand is high.

In our model, the challenger may be acquired by the incumbent. The price paid by the latter is the former's exit value. A strict merger control policy is equivalent to an exit policy that sets the value of exit at zero. With a lenient merger policy, the exit value is positive and set by the acquirer.

The core result from the model is that, for a range of investment costs, there is an inverted-U shaped relationship between the strictness of merger policy and investment. That is, as merger policy becomes less strict (and so the firm's exit value increases), investment initially rises, before falling again. This is because a less strict merger policy increases the incentive for the firm to invest, as the firm can leave the market on reasonable terms if it invests and then finds out that demand is limited. However, a very high exit value (a very lenient merger policy) means that the firm will almost always decide to leave the market, reducing competition and investment. The stance of merger policy will matter most when potential returns are uncertain, as greater uncertainty makes the support to investment provided by less strict merger policy more important.

The model therefore suggests that investment can be increased by an *ex-ante* commitment to be more receptive to mergers in markets where future demand and investment returns are uncertain and investment costs are neither too high nor too low. Such a policy stance can make

consumers better off. While mergers reduce rivalry *ex post* when demand is low, the potential for exit on reasonable terms incentivises investment *ex ante* and fosters competition when high demand materialises. In such scenarios, consumers receive higher quality services as a result of the investment, which leads to lower quality-adjusted prices than would be the case with a lower investment, low quality equilibrium.

In addition, the model suggests that an *ex-ante* commitment to less strict merger policy does not necessarily lead to more consolidation *ex post*. Because less strict policy can induce firms to invest, making them more competitive (and increasing overall competition), they are better able to prosper and may consequently find exiting the market less attractive. This counterintuitive result is comparable to other economic phenomena, such as a central bank's commitment to support liquidity in the event of a crisis making it less likely that a crisis occurs.

Credibility of merger policy is therefore likely to be particularly important to investment incentives. The regulator faces a time-consistency problem. Long-run welfare may be maximised by a permissive policy that encourages investment. But once investment has taken place, the short-run incentives of the regulator are to adopt a strict policy. With significant investment already sunk, regulators may decide to give less weight to a policy approach which protects investment returns. Knowing this risk, initial investment may be lower unless authorities commit in advance to their approach to assessing mergers, for instance by emphasising how their approach might change in an investment-intensive sector.

IMPLICATIONS FOR MERGER CONTROL

There is a current debate over whether merger policy should be changed to better balance the risks of type 1 errors (prohibiting pro-competitive mergers) and type 2 errors (authorising anti-competitive mergers). For example, Furman *et al* , with a focus on digital markets, have called for mergers to be assessed under a standard that takes into account both the probability and the cost of errors have called for competition law to translate the general insights of error costs into legal tests.[9] The CMA in the UK has recently changed its merger guidelines to place more emphasis on the assessment of potential and dynamic competition and has proposed to the UK Government that mergers by digital firms with strategic market status should be assessed under a lower standard of proof of whether there is a 'realistic prospect' that a merger gives rise to a substantially lessening of competition.[10] Motta and Peitz have called for a change in the burden

[9] Furman, J. *et al.* (2019). *Unlocking Digital Competition*. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf;.

[10] CMA. (2020). *A New Pro-Competition Regime for Digital Markets – Advice of the Digital Markets Taskforce*. Available at https://assets.publishing.service.gov.uk/media/5fce7567e90e07562f98286c/Digital_Taskforce_-_Advice.pdf.

of proof in EU merger regulation to require the merging parties to show that a merger would not be anti-competitive.[11]

Horizontal mergers are not popular among many economists these days, and that is an understatement. Several well-respected academics sustain that they bring no good to society, as they rarely result in efficiencies and almost always result in higher prices and less innovation.[12] The academic hostility towards mergers has extended beyond IO economics; several macroeconomists consider mergers at the root of the decline of the labour share, the productivity slowdown, and the increase in inequality in western economies.[13] Some economist practitioners have come close to apologise for having defended acquisitions in the past.[14]

Not every economist is so negative, however. For example, the academic debate on the impact of mergers on innovation is very much alive. While some economists consider that all, or almost all, mergers have an adverse effect on investment and innovation and thus advocate for a structural presumption,[15] others consider that the relationship between mergers and innovation is much more nuanced and sustain that it should be investigated on a case by case basis.[16] This is an important debate since competition authorities are increasingly keen to emphasise the dynamic impact of mergers in analysing cases and discussing merger policy. The implications of the formal model described above are that taking dynamic impacts seriously also means recognising the potential detrimental effects of a restrictive merger policy in discouraging upfront investment.

In the current merger policy debate, little attention has been given to the benefit of firms' ability to merge in promoting investment because the option to exit via a merger helps to reduce the risk of investments which prove unsuccessful.[17] In this regard, merger policy can have effects

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[11] Motta, M. & Peitz, M. (2019). "Challenges for EU merger control," *Concurrences,* 2, 44-49.
[12] *See*, among others, Fumagalli, C., Motta, M. & Peitz, M. (2020). "Which Role for State Aid and Merger Control During and After the Covid Crisis?," *Journal of European Competition Law & Practice*, 11, 294 – 301.
[13] *See*, among others, Philippon, T. (2019). *The Great Reversal: How America Gave Up on Free Markets*, Harvard University Press.
[14] "There is *no* #procompetitive merger. Ever. Period. From 25 years of doing them. At best they are #not_seriously_anticompetitive. "Pro-competitive" is the mantra economists have reassured lawyers they will back them to argue, and it's there every single time. #Reality_check". Cristina Caffarra Twitter post June 29, 2021. Available at https://twitter.com/caffar3cristina?lang=en.
[15] *See*, among others, Federico, G., Langus, G., & Valletti, T. (2017). "A Simple Model of Mergers and Innovation." *Economics Letters*, 157, 136-140; and Federico, G., Langus, G., & Valletti, T. (2018). "Horizontal Mergers and Product Innovation." *International Journal of Industrial Organization*, 59, 1-23.
[16] *See* Bourreau, M., & Jullien, B. (2018). "Mergers, Investments and Demand Expansion." *Economics Letters*, 167, 136-141; Denicolò, V., & Polo, M. (2018). "Duplicative Research, Mergers and Innovation." *Economics Letters*, 166, 56-59; Denicolò, V., & Polo, M. (2021). "Mergers and Innovation Sharing." *Economics Letters*, 202, 109841; and Bourreau, M., Jullien, B., & Lefouili, Y. (2021). "Mergers and Demand-enhancing Innovation." TSE Working Paper.
[17] An important exception is Fumagalli, C., Motta, M., & Tarantino, E. (2020). "Shelving or Developing? The acquisition of potential competitors under Financial Constraints." CEPR Discussion Paper No. DP15113. They argue that merger policy does not need to be lenient to foster investment *ex ante*, as the same purpose is achieved by a strict merger policy that pushes the incumbent towards the acquisition of

that go beyond transaction-specific type 1 and type 2 errors. Our model indeed suggests that competition authorities should factor the risk of a strict merger "policy" in deterring *ex-ante* investment in industries, such as many infrastructure and high technology industries, where investment is a key competitive variable and significant investments must be sunk when demand uncertainty is very high. We find that mergers can have a cleansing effect which, by helping markets get rid of zombie firms *ex post*, can encourage investment *ex ante* and, therefore, lead to more investment and no less price competition. The cost of a lenient merger policy is less price competition from the zombies when demand is low, but that needs to be offset, and most often is more than offset, by the positive impact on price and quality competition by healthy firms when demand is high.

While, given their adverse micro and macro effects, it seems imperative to adopt policies aimed at facilitating the exit of zombies to free resources for more dynamic firms to use and encourage investment, well-intentioned competition agencies may block their acquisitions by other market participants by misinterpreting their continuous presence in the market as evidence that they are not in distress, and their low profitability as evidence of a maverick role. They may be encouraged to do so by the many voices crying foul every time a merger is approved. We trust they will not be persuaded by such agitprop, as economic policy, and competition policy is no exception, should not be dictated by angry tweets.

potential competitors lacking the financial resources to develop their projects independently, or equivalently by blocking takeovers whose acquisition price is above a certain threshold. Also, in our model the optimal merger policy turns out to be based on the proposed takeover price. Another exception is Cabral, L. (2021). "Merger Policy in Digital Industries." *Information Economics and Policy*, 54, 100866.