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Safeguarding Competition in Digital Markets: A Comparative Analysis of Emerging Policy and Regulatory Regimes

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Safeguarding Competition in Digital Markets: A Comparative Analysis of Emerging Policy and Regulatory Regimes

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ABSTRACT

This paper presents a comparative analysis of alternative competition policy and regulatory regimes that are proposed to safeguard competition in the digital economy. We review the causes of concentration in several digital markets, and differentiate the objectives of promoting competition *in*, and *for* incumbent digital platforms. Then, we analyze five regimes currently suggested in the research literature and explored by practitioners, ranging from precautionary competition policy and traditional *ex ante* regulatory remedies to *ex post* competition policy enforcement, *ex post* regulation and various self-regulation mechanisms. In a time when policy imitation is widespread, our main conclusion is that policy and regulatory regimes, to be effective to promote competition and investment in digital markets, must observe country-specific conditions and challenges. No single approach fits all conditions. This analysis should help policymakers to have a clearer picture on how to design measures to promote competition in the platform economy considering their local context.

Keywords: digital platforms, competition, policy, regulation, antitrust, innovation

JEL Codes: L1, L4, L5, D6, O2

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1. Introduction

The rise of digital platforms, both as a critical infrastructure and an increasingly important business model in the digital economy, has fostered debate among scholars and policymakers around the world. Of special interest is how, and to what extent, these developments affect society and current policy regimes for digital networks and services. The internet has had positive impacts on competition, investment, and innovation in many industries. However, big technology companies increasingly act as intermediary platforms and providers of services and goods in several markets. High market concentration and the dominance of platforms have heightened concerns about potential harms to innovation and welfare in the digital economy. Such concerns have motivated scholars and governments worldwide to discuss competition policy and regulatory alternatives to safeguard competition in digital markets.

This paper presents a comparative analysis of different approaches that are currently suggested in the research literature and explored by practitioners to safeguard competition in the digital economy. First, we are reviewing the causes of the concentrated market structure of several digital markets and the trade-offs it raises. Second, the main objectives of interventions aimed at promoting competition in digital markets are explored. The analysis considers the context of different stages of development of the digital economy and the need to promote investment, innovation, and large-scale adoption of digital services by the end-users. Third, two regimes are analyzed. One focuses on promoting competition in markets served by dominant digital platforms (e.g., competition among sellers in e-commerce platforms, among drivers in ride-railing platforms, etc.). The other aims at promoting

competition for these dominant digital platforms (see Crémer et al., 2019). Here, a spectrum of approaches is compared, ranging from stringent precautionary competition policy and traditional ex ante regulatory remedies to ex post competition policy enforcement, ex post regulation and various self-regulation mechanisms. Finally, we provide a scenario-based analysis of the effects of adopting different policy and regulatory regimes. This allows to assess their appropriateness and efficiency of alternative approaches to achieve the objectives of countries at different stages of development of their digital ecosystem.

This conceptual analysis of different objectives and regimes (which can be adopted exclusively or in combination) offers several insights. With regards to alignment between platform policy and regulatory models and national conditions, we argue that no single best regime exists that can promote competition and innovation in digital markets of every country. Rather, national and regional conditions (e.g., the developmental phase of the digital economy, the landscape of potential players) suggest that different instruments should be pursued by countries to promote competition without harming incentives for innovation and investment in the development of their digital ecosystem. Consequently, national policymakers and regulators should adopt different, customized approaches that consider the country's digital economy and institutional context.

More specifically, we argue that a few countries that have a big internal market, a widespread adoption of digital technologies and services, a well-developed ecosystem of technology innovation, and a robust venture capital activity have comparative advantages to give birth to strong, new digital platforms able to compete with the current tech giants. If this is the case, interventions aimed at fostering competition *for* the incumbent digital platforms should be effective to promote competition in the digital ecosystem. Differently, interventions with the objective of fostering fair competition among stakeholders that transact *in* marketplaces served by dominant digital platforms should have a more extensive adoption

throughout the countries to protect platform users from anticompetitive behavior of incumbent platforms.

This analytical exercise contributes to the debate on how policymakers and regulatory authorities should act to safeguard and promote competition in digital markets, protecting the strong benefits brought by the incumbent intermediation platforms and the incentives for innovation in the digital economy. It may serve as a tool to guide policymakers and regulators to decide about which policy and regulatory approaches are more suitable to their own context and objectives.

The remainder of this paper is organized as follows. Section two reviews the conditions for the rise of dominant digital platforms, as well as the controversies over potential benefits and risks brought by the concentrated market structure of digital markets. Section three discusses different objectives policymakers and regulators should adopt to guide the design of interventions aimed at safeguarding competition in digital markets. Section four presents and discusses the five main competition policy and regulatory frameworks proposed by the research literature to deal with platform dominance in the digital economy. In Section five we outline and discuss four common scenarios of countries at different stages of development of their digital ecosystem, and the appropriateness and efficiency of adopting in each scenario the five different regimes discussed in Section four. Section six concludes the paper.

2. Market concentration in the platform economy

The internet has had positive impacts on competition, investment, and innovation in many industries. However, the rise of big technology companies, such as Google, Amazon, Apple, Microsoft, and Facebook, that act both as intermediary platforms and as providers of services and goods in several markets, has heightened concerns among

scholars and policymakers about potential economic harms brought by the concentrated structure of the digital economy. The earliest studies of two-sided markets date from the 1970s (e.g., Rosse, 1970) and have a long tradition among media economic scholars. During the past twenty years, this terminology has been broadly accepted and a variety of other fields have started to pay attention to platforms.

2.1. The rise of a concentrated platform economy

The huge advances in data processing and storage capacity technologies have created new business opportunities for big digital companies. More than intermediating the communication between internet users and firms, they collect and process a vast amount of information about behaviors, preferences, interests, ideas, knowledge, as well as the physical and psychological traits of their billions of users around the world. Digital firms have used such information strategically, for example, to improve their own services, develop new businesses models, anticipate trends, understand the strategies of their competitors, launch new products and services, expand their business to promising markets, and do risk management.

According to Crémer et al. (2019), what differentiates big incumbent digital platforms from other corporations are the strong direct and indirect network effects derived from their size and multimarket presence, along with the great economies of scope and scale brought by the intensive use of digital technologies. Digital platforms fundamentally act as intermediators connecting users and suppliers. In these two-sided markets, different types of configurations emerge according to the nature of network effects. In most cases, users strongly value the presence of other users (direct network effects), and, in some cases, also the presence of suppliers (indirect network effects). Also

in most cases, suppliers strongly value the presence of users on the other side of the intermediation platform (indirect network effects).

Differences on the strength of network effects between the user-side and the supplier side of intermediation platforms allow them to adopt cross-subsidy schemes between user-side markets and supplier-side markets (Rochet and Tirole, 2003). This important characteristic helps to explain why many digital services are offered to end users for free. For example, in social media markets, advertisers and publishers value much more the size of platform's user base, than users value the number of ad-suppliers reaching them through the social media platform. So, the platform subsidizes the service to end-users, at the expenses of suppliers.

This scenario, where platforms offer subsidized digital services to end-users sponsored by suppliers interested in reaching those users to offer their products and services, gave rise to the current concentrated structure of many digital markets. Early-mover, technology-intensive platform intermediaries like Google, Facebook, and Amazon were able to acquire in a few years high levels of market share among users in many digital markets, through the offer of immediate-welfare-enhancing, zero-priced services. Simultaneously, or in some cases later on, the platforms remunerate their investments in infrastructure needed to acquire a big user base by extracting surplus from suppliers, strongly interested in reaching the unique base of billions of end users gathered by the platforms.

2.2. Potential risks of concentration in the platform economy

The concentrated market structures, derived from the exploitation of different strengths of network effects between users and suppliers, have been seen with concern by many scholars and competition policy enforcers. Mansell and Steinmueller (2020) review

the main arguments of neoclassical and institutional economists to intervene in market operations to promote competition as the most effective regulator of behavior of dominant agents. The risk of displacement would push market agents to a better allocation of inputs and a more efficient distribution of outcomes when compared to a scenario of where competition is absent. The authors also suggest that, based on these traditional economic theories, the perception is growing among policymakers around the world that potential harms derived from the level of concentration in the platform economy are sufficient to require a response.

Scott-Morton et al. (2019) and Furman et al. (2019) summarize the discussions among many scholars and governmental agencies about the potential harms derived from concentration in digital markets. Fundamentally, they focus on risks to innovation in the short and long-run, and on mark-ups paid by suppliers to platform intermediaries, that, consequently, imply higher prices of goods and services to retail consumers or lower profits to retailers in highly competitive retail markets.

Using this perspective, Prat and Valletti (2018), for example, consider social media platforms as attention brokers that have proprietary information about their users' product preferences and sell targeted ad space to retail product industries. The authors then demonstrate that the platforms' dominance in digital ad markets leads to concentration and consequently to an increase in the prices of ads. Such an effect, the authors explain, harms competition and innovation in retail markets, given that only incumbents in these markets are able to pay the higher prices of advertisements. In other words, the higher prices of digital ads induced by the concentration in digital ads market create an entry barrier to new and small innovators in retail markets that need to purchase digital ads. In turn, this has negative impacts on consumer welfare.

The list of antitrust cases investigating potential, anti-competitive practices of the big, digital platforms such as Google, Facebook, and Amazon, is extensive (Just, 2018). One of the most recent cases was opened by the U.S. Department of Justice against Google in the market of online search (U.S. Department of Justice, 2020). In addition, concerns about the large number of acquisitions of early stage, competing startups by the big techs grew in recent years. Competition authorities in the EU and the United States have recently begun to analyze the past decade of acquisitions by digital platforms that has originally not received any scrutiny by competition authorities (U.S. Federal Trade Commission, 2020a). The U.S. Federal Trade Commission sued Facebook for anticompetitive behavior and called for a break-up the platform (U.S. Federal Trade Commission, 2020b). The lawsuit claims that Facebook has engaged in a strategy of acquiring potential rivals to eliminate threats to its monopoly in social media market.

2.3. Potential benefits of concentration in the platform economy

On the other hand, it is important to note that the concentrated structure of digital markets, with a large accumulation of capital, technology, and data in the hands of few big techs, has favored the emergence of innovative digital solutions. It has met the growing demand for efficiency and agility in the processes of production, collaboration, and communication that permeate the economy. These include, for example, gains of efficiency and welfare brought to small business owners to distribute their products and services, reach their audience, scale their technology solutions, etc., or even the reduction of time to obtain relevant results in searches carried out by end users. Also, the drastic increase in the demand for digital products and services that the COVID-19 pandemic brought have highlighted the importance of the robust technology infrastructure provided

by the big digital platforms, which were built thanks to a sustained process of capital accumulation and investments.

In fact, some scholars advocate that the already mentioned special characteristics of many digital markets (strong network effects, economies of scale and scope, as well as the adoption of cross-subsidies) make them naturally concentrated. Schumpeterian competition, where a dominant follows the other, is present in digital markets despite concentration (Haucap and Heimeshoff, 2014). For example, early studies reported by Caillaud and Jullien (2003) recognized that, in intermediation markets, concentration may not necessarily result in inefficiencies, as consumer's surplus would be well protected in the presence of enough contestability.

Frieden (2018) points that market concentration should be seen as a reward to those ventures offering desirable digital services, and so governments should accept some aspects of it. In a similar argument, Dasgupta and Williams (2020) advocate that policymakers should not be concerned with digital market concentration, as direct and indirect network effects and economies of scale and scope are what generates values and welfare to consumers. According to the authors, instead of adopting measures to encourage entry into platform intermediation business, policymakers and competition authorities should focus on managing the consequences of market concentration, to avoid abusive misconduct of dominant incumbent platforms.

Some scholars view market concentration as a natural outcome of the special characteristics of digital markets, such as strong network effects, economies of scale and scope, as well as the adoption of cross-subsidies. Whereas such markets may be concentrated, even dominant firms would be disciplined by a dynamic process of Schumpeterian competition in which non-performing firms are displaced by rivals (Haucap and Heimeshoff, 2014). Therefore, given the potential welfare-enhancing effects

of concentration in digital markets, its benefits should be carefully analyzed against the costs of potential anticompetitive misconduct (Calvano and Polo, 2021).

In response to these trade-offs between risks and benefits of the concentrated structure of important digital markets (e.g., search, social media, app stores, operational systems, etc.), the scholarly debate has concentrated on three main important topics, needed for the design of a comprehensive regulatory framework to the platform economy. First, the potential harms created by the concentrated market structure in several digital markets are yet to be properly articulated theoretically and demonstrated empirically. On this topic, Kamepalli et al. (2020) and Prado and Bauer (2022) discuss short and long-term effects on innovation and provide empirical grounding to the debate on potential negative effects for the venture capital funding for the start-up ecosystem. Second, controversies surrounding the definition of an objective, theory-based criteria to identify which digital platforms should be addressed in which market are a current subject of research. Wu (2018), Scott-Morton et. al (2019) and Prado (2020) discuss the nuances of the assessment of market power in the platform economy, as well as new tools to be used in the definition of market boundaries when price is not the single form of charging end users for consuming services.

Third, given considerable controversies on the potential harms created by concentration, as well as on the assessment of market power in the platform economy, different objectives for policy and regulatory interventions have been explored. Also, the effectiveness of alternative policy and regulatory regimes designed to deal with concentration and potential anticompetitive misconduct in digital markets have been investigated. Hybrid forms of intervention, such as precautionary antitrust policy and ex post regulation, have received strong interest, especially in Europe. However, considerable

controversy persists on the advantages and disadvantages of alternative approaches and on whether any of the proposed policy and regulatory regimes is superior.

3. Objectives of policy and regulatory interventions

Considering the trade-offs brought by the concentrated structure of many, important digital markets, the adoption of ex ante and ex post policy and regulatory measures needs careful analysis to ensure that the digital economy continues to generate high and long-lasting levels of investments and innovation in support of economic development and social welfare. A first step in this analysis is defining clearly whether the objective of a potential intervention is primarily fostering competition *in* the digital platforms or fostering competition *for* the digital platforms (Crémer et al., 2019).

3.1. Competition *in* the digital platforms

As digital platforms are the main providers of many, important services to end users and suppliers in today's economy, they end up acting as regulators of marketplaces created by themselves and used by billions of people and companies worldwide. By enabling greater scalability of small business, reducing costs of communication, and making possible that new entrepreneurs explore platform features and capabilities to distribute services and reach new customers, these platforms have enabled increased competition and innovation in several on-line and off-line markets.

On the other hand, this central role played by the platforms gives them access to privileged information related to demand and supply of many different businesses that use their platforms to trade. In scenarios of limited competition for the intermediation platform, such advantages may create incentives for incumbent platforms to behave anticompetitively (e.g., self-preference, enter exclusivity agreements with selected

suppliers, etc.). Cusumano et al. (2021) explain that the absence of clear boundaries to the operation of incumbent digital platforms creates a “moral hazard”, as platforms may exploit their users of both sides of the intermediation business with relatively weak adverse consequences.

Therefore, an objective of policymakers should be to create measures to guarantee that the rules and conducts imposed by incumbent platforms on their own marketplaces do not distort free and vigorous competition and the incentives to innovation in markets of both sides of the intermediation platform. For this, ex post and ex ante regulatory interventions can be designed to deal with specific aspects of the operation of marketplaces created by the incumbent platforms. Examples are regulation to limit self-preferencing on the distribution of services and goods, transparency mandates on algorithms employed to determine exposure of different products on platforms, boundaries on data collection and processing, the creation of codes of ethics on the use of artificial intelligence, among others.

A key question, however, is whether such interventions are needed, or platform do have incentives to balance interests. Also, suitability of ex ante vs. ex post interventions should be always weighed considering the tradeoff between the aim for immediate welfare gains to consumers and the creation of rigid regulatory structures over very dynamic markets, which may end up limiting innovation and harming consumers’ welfare in the long run.

3.2. Competition for the digital platforms

Fostering competition for the intermediation platforms concerns creating a set of competition policy and/or regulatory measures with the objective of promoting the entry of new players into the intermediation business. This approach assumes that the long-term

net outcome of concentration in digital markets is welfare diminishing, and, based on this assumption, policy and regulatory interventions should be designed to reduce entry barriers to new players without harming too much the incentives that incumbent platforms have to keep innovating and investing.

The adoption of measures to increase contestability of intermediation markets should start with the definition of which markets are to be addressed, followed by the definition of clear criteria for identifying which incumbent intermediation platforms have market power on those markets. However, the operationalization of market power in the platform economy and the methods to define which digital platforms and markets should be targeted by pro-competitive remedies, either under a competition policy framework or under a regulatory regime, remain highly contested.

For example, Scott-Morton et al. (2019) and Furman et al. (2019) argue that the traditional conceptualization of market power, which relates to the capacity of a firm to increase and sustain prices above the competitive equilibrium, needs to be re-defined in the context of digital markets. In these new markets, retail prices are mostly zero. Competitive advantages and entry barriers would be created by the accumulation and ownership of customer data and attention (time spent on the platform).

A framework for measuring the market power of digital platforms is proposed by Prado (2020). The author argues that incumbent technology platforms leverage their market power across markets in the digital economy to make their end users unlikely to switch to smaller competitors, even when those newcomers offer better services. So, instead of market-specific approaches, such as the commonly used Significant Market Power (SMP) framework, a new set of tools should be developed to identify digital platforms with market power in two-sided, digital markets. Tools that measure the response of incumbent's market share to increases in different factors that impact users

and suppliers' utilities other than price (e.g., the amount of ads shown in the platform, the amount of data collected from users, etc.).

4. Alternative competition policy and regulatory regimes

Given these different objectives of policies to foster competition in the digital economy, several alternatives are proposed by the research literature to design competition policy and regulation. The spectrum of measures ranges from harsh precautionary competition policy and ex ante regulatory remedies to hands-off self-regulation mechanisms, passing through reformed ex post competition policy enforcement and regulation. The adoption of each alternative, exclusively or in combination, should be weighted carefully by policymakers. It should recognize the need of protecting the strong benefits brought by incumbent digital platforms, discussed in Section 2, as well as mitigate the risk to innovation and investment associated with a concentrated market structure. Following we provide a detailed review of each of these approaches.

4.1. Self-regulation

The alternative of self-regulation is suited for cases where competition policy and regulatory enforcers aim at promoting healthy competition in the platforms but recognize that there are strong transaction costs and risks associated with imposing ex ante and/or ex post regulatory measures in very complex, fast-moving dynamic markets. This approach recognizes that the current concentrated structure of many digital markets has welfare enhancing characteristics, although it may create room for abusive misconduct by digital platforms with market power.

Cusumano et al. (2021) argue that dominant digital platforms would engage in self-regulation to avoid rigid government oversight. According to the authors, incumbent

platforms would be motivated to take steps toward creating private coalitions for the establishment of common rules (e.g., interoperability standards) and codes of conduct due to the risk of embarking in a scenario known as the “tragedy of commons.” This situation would occur when incumbent intermediation platforms, driven by their own self-interests, deplete the main, common source of their success (in this case, user trust). The authors suggest that self-regulation¹, encouraged by credible threats and pressure from policymakers and competition policy authorities, would prevent a scenario of tragedy of commons and yield better outcomes than traditional competition policy and regulatory remedies.

4.2. Precautionary competition policy

The adoption of ex ante, competition policy remedies serve the objective of fostering competition for the incumbent intermediation platforms. It assumes that concentration is welfare diminishing, as it allows incumbent platforms to exploit users’ and consumers’ surplus unfairly (moral hazard). Moreover, concentration is considered detrimental to the pace of innovation in the long run. Theoretically, this approach is grounded in Arrow’s “replacement effect” (Gilbert, 2020). It states that innovative processes and goods generate higher profits when compared to profits generated with the use of old technology, and this would be the main incentive for firms to keep innovating even in a competitive market where they cannot extract too large surplus from their innovations. Applied to the platform economy, Arrow’s “replacement effect” gives ground for policymakers to foster entry in the platform business, with the expectation that competition will not affect the current pace of investment in Research & Development (R&D) of incumbent platforms.

¹ Some authors call this “co-regulation”. E.g., Marsden (2011).

However, this application of the precautionary principle also may have effects that reduce innovation and entrepreneurship and should therefore be examined carefully. First, the tools to define i) the markets to be addressed, ii) the platforms with market power in those markets, and iii) the right remedies to foster competition for the intermediation platforms are not well-established in the research literature and in practice (Prado, 2020). Second, the potential harms to innovation and social welfare arising from the concentrated market structure of the platform economy, the main motivation for the adoption of precautionary measures, are not well-proven (specially with robust, empirical analysis), as detailed by Prado and Bauer (2022).

Third, the digital economy is in constant evolution, and there are limitless opportunities of product differentiation in several digital markets. This may render ex ante measure outdated very quickly. For example, Haucap and Heimeshoff (2014) discusses measures to foster competition for the platform, taking Skype as an example of a quasi-monopolist platform that is hard to compete against. A few years later, product differentiation in this market has given rise to communication platforms that replaced Skype to a great extent, without competition policy or regulatory interventions.

An example of precautionary competition policy measures under discussion in the U.S. Congress is the imposition of restrictions for incumbent intermediation platforms to acquire nascent, technology companies (U.S. House of Representatives, 2021; U.S. Senate, 2021). This initiative is based on controversial allegations that the start-up acquisition strategies of incumbent platforms have the purpose of killing potential competitors and would be harming venture capital investment and the innovation ecosystem. The measure received strong opposition from venture capitalists, who counter that prospective start-up acquisitions by incumbent platforms has been an important positive incentive for venture

investment and entrepreneurship in the United States (NVCA, 2021a; NVCA, 2021b), an argument that was empirically supported by Prado and Bauer (2022).

Khan (2017) argues that a revision of competition law is needed to empower antitrust agencies with newer, more agile, and effective tools to combat pre-emptive acquisitions and other competitive misconduct of incumbent digital platforms. Some scholars argue that the lengthy competition policy battles fought against the big techs in the last decade in the United States and in the EU demonstrate the limitations of purely ex post, anti-trust remedies to foster competition in the platform economy (Wheeler et al., 2020). These authors argue that ex post antitrust remedies, although welcomed, are not fast enough to secure competition in extremely dynamic digital markets. Therefore, they would benefit from ex ante remedies to effectively discourage competitive misconduct in the short term from incumbent platforms identified with market power.

Traditionally, interventions based on competition law are triggered not by market power per se, but by evidence of its abuse. As argued by one of the panelists at U.S. Department of Justice (2020), Professor Erik Hovenkamp, it should not be considered a competition policy issue if it is just too hard to compete against the big techs because of high network effects or data and artificial intelligence (AI) capabilities. He pointed that the merger framework focuses on figuring out what will be the effect on prices in the short-term after an acquisition. However, nothing is expected to happen immediately after the acquisition of a start-up by a big tech because the start-up is still too small. Instead, he claims that the impact may appear in the long run, in lower levels of innovation and investment, and that the current merger framework fails to weigh these long run factors.

The adoption of competition policy remedies to avoid having the big tech start-up acquisitions resulting in harm to innovation in the long run is highly controversial. While only some start-up acquisitions should be viewed as motivated by a tentative of pre-

empting competition for the incumbent platforms, the definition of objective criteria to decide whether an acquired start-up would have means to challenge an incumbent platform in the long run is very complex.

In this context, Motta and Peitz (2021) point out that changes in the current notification thresholds, as well as on the current tools available to stop such mergers would be required. For example, due to the complexity and lack of transparency in very dynamic digital markets, they propose the reversion of the burden of proof in merger reviews that involve incumbent digital platforms. Instead of requiring that antitrust authorities provide enough evidence of the harm of a big tech start-up acquisition, the incumbent digital platform is the one who would be obligated to provide supportive evidence that the acquisition will not harm innovation and consumer welfare in the short and long run. However, as discussed by Prado (2020), the assessment of market power in platform digital markets is still under debate. This poses challenges for the definition of clear, well-supported criteria on which merger reviews to reverse the burden of proof.

On the other hand, Cabral (2021) presents important critiques to this proposal. First, the author claims that the shift in the burden of proof would not be as efficient to overcome the complexity of the merger reviews than a strategy that would better equip antitrust enforcers to provide evidence of the harm of a big tech start-up acquisition. Second, he explains that such measures would impose difficulties to start-up acquisitions, with harmful impacts to the incentives for venture capital investments in nascent start-ups and consequently to the innovation ecosystem (especially in the United States), as already discussed in this essay.

Also, proposals for reforming the merger framework to introduce a simple, precautionary blanket prohibition of big tech start-up acquisitions have emerged. The rationale behind such proposal is that, by avoiding incumbent digital platforms to protect

their dominant positions through the incorporation or the killing of nascent competitors, they would have more incentives to invest in sustained innovating or risk that they may be replaced by competitors at some point in the future. Also, other firms would have more incentives to invest in disruptive innovations, aiming at replacing the incumbent platforms.

However, there are at least two important drawbacks of banning big tech, start-up acquisitions. First, Cabral (2021) argues that making start-up acquisitions more difficult would harm the innovation ecosystem, because, as already discussed in the previous Section, big tech start-up acquisitions fuel venture capital investment in the short-term and are a very important exit strategy to venture capitalists. A blanket ban of big tech start-up acquisitions would increase the risk and lower profit prospects of venture investment, as it would reduce the chances of a VC investor successfully selling a start-up for a profit. Lower levels of VC investment may also discourage entrepreneurship and start-up creation, with negative impacts to consumer welfare.

Second, a blanket prohibition of big tech start-up acquisitions would prevent legitimate, welfare-enhancing acquisitions motivated by the expectation of profit increase. In this case, not only would the incumbent platforms be unable to profit from the integration of complementary innovations, but a wide range of consumers (end users and small firms) would be prevented from accruing the positive effects of many innovations in the long run, as most start-ups fail to scale-up their innovations (U.S. Department of Justice, 2020).

4.3. Reformed ex post competition policy

Ex post, competition policy remedies serve the objective of fostering competition for the incumbent digital platforms. They assume that concentration is not necessarily welfare diminishing, as direct and indirect network effects and economies of scale and

scope bring great value for consumers and suppliers that use the intermediation platform. Theoretically, this approach builds on the Schumpeterian theory of imperfect competition, which argues that temporary market power is needed to earn a sufficient risk premium (Gilbert, 2020). Therefore, a concentrated market structure could be tolerated, and competition policy enforcers should deal with concrete cases of abusive misconduct undertaken by incumbent platforms with market power.

To allow better oversight, many scholars have pointed that new competition policy tools should be added to the current framework available in the United States and Europe (Shapiro, 2021). For example, Khan (2017) argues that the current competition policy framework is short-sighted, as it focuses only on analyzing anticipated, short-term impacts of mergers and acquisitions on consumer welfare (mainly the impacts on price and total output). Furthermore, Scott-Morton and Kades (2021) propose that competition policy enforcers establish standardized interoperability and data portability procedures, to be used as remedies and quickly implemented by incumbent platforms in cases of evident competitive misconduct and abuse of market power.

To deal with the risk of overlooking acquisitions aimed at preempting competition, instead of a precautionary, blanket prohibition of acquisitions, or a reversal of the burden of proof to all start-up acquisitions made by dominant digital platforms, as discussed in Section 4.1, reforms to the current merger framework are proposed to harness acquisitions' positive effects and diminish negative ones. For example, Katz (2019) supports a shift in the burden of proof in merger reviews, but only in the cases where the plaintiff can show harm to the competitive process and harms to one or more user groups.

The research literature also has generated several other proposals of ex post measures to enhance the current merger framework. For example, Scott-Morton et al. (2019) questions the capacity of generalist judges to deal with complex, conduct remedies

and enforcement mechanisms required to address the abuse of market power by digital platforms. The authors then propose the establishment of a specialized antitrust court in the United States, which would decide cases involving digital platforms and, over the years, accumulate expertise that would allow a faster pace for merger reviews.

Furthermore, they propose that competition policy enforcers establish standardized interoperability and data portability procedures, to be used as remedies and quickly implemented by incumbent platforms in cases of evident competitive misconduct and potentially pre-emptive acquisitions (e.g., acquisition of a start-up to have exclusive access to certain data).

Finally, Federico et al. (2020) argues that in cases where an incumbent digital platform wants to acquire a nascent, disruptive start-up, the main challenge for competition policy enforcers to develop a theory of harm is evidentiary. The authors explain that this happens because the start-up's product, in most cases, is not yet a close substitute for the product of the incumbent platform. For example, when Facebook acquired Instagram, it would be hard to hold that it was a threatening substitute to Facebook. The authors propose some useful methods to be adopted in merger review to diminish the risks of under- and overenforcement under conditions of uncertainty.

To avoid underenforcement, first, the authors point that the factors that determined the price of an acquisition should be carefully analyzed, as it provides insights on whether the incumbent platform is sharing monopoly rents with the owners of the acquired start-up, or actually pricing the present value of profit-maximizing, long-term synergies (a sign that the acquisition is motivated by Arrow's "replacement effect"). Second, the authors suggest an analysis of past acquisitions of the incumbent platform seeking to acquire a nascent start-up, to assess whether the platform has a track record of killing-off acquired innovation projects or integrating them to enhance their products and services. Third, the

nature of the acquired start-up, whether a substitute or a complement to the platform, is another good sign, as substitutes have greater chances of disrupting incumbents' dominant positions.

On the other hand, to mitigate overenforcement, Federico et al. (2020) suggest that antitrust enforcers should assess the likelihood of the acquired start-up successfully bringing its product to the market in a great scale, and the expected time she will take to do so. The results of this assessment could be compared with the performance of the acquirer digital platform in achieving these outcomes in past acquisitions. Such measures would allow an error-cost assessment that increases the chances of antitrust enforcers blocking mergers aimed at pre-empting competition, without prohibiting those that are motivated by legitimate competition forces.

4.4. Ex post regulation

The adoption of ex post regulatory oversight of incumbent platforms aims at managing consequences of concentration for competition in the incumbent platforms. Similar to ex post competition policy measures, it is theoretically grounded on the Schumpeterian theory of imperfect competition. Moreover, instead of anticipating potential harms to competition in the platforms due to the exercise of market power by incumbent platforms, as proposed by those who advocate for ex ante regulation, ex post regulatory measures focus on responding to complaints and flagrant misconduct, and on the application of behavioral remedies to non-compliant platforms.

Examples of ex post regulatory measures under discussion are responses to limit potentially unfair sorting of offers in e-commerce platforms (e.g., the Google Shopping case in Europe). Such measures should avoid self-preferencing of platform's own retail business in detriment to smaller retailers that rely on the platform to commercialize their

products. On the other hand, Beard et al. (2022) explain that consumers, overwhelmed by an immense number of products offered online, benefit from some guidance. The authors also show that prohibitions to the establishment of criteria-based sorting, or imposition of randomized sorting are welfare-reducing. Other examples of ex post, regulatory measures are related to responses to privacy breaches and mishandling of user's data. However, the effectiveness of applying fines or obligating the inclusion of extra layers of consent forms to consumers are questionable, as the value of privacy to end users of many countries is still small and may not affect consumers' behavior strongly (Prince and Wallsten, 2022).

The enforcement of ex post regulatory remedies would require a specialized enforcement authority, which would be able to accumulate expertise in the analysis of different digital markets and follow the compliance history of incumbent intermediation platforms. Also, a specialized regulator would add value by acting faster than competition policy enforcers and the judiciary system, that usually takes years to reach decisions to remedy complaints of abuse of dominant position (Scott-Morton et al., 2019).

4.5. Ex ante regulation

The adoption of ex ante regulatory measures may serve not only the objective of promoting competition for the platform, but also fostering healthy and vigorous competition in the platforms. These measures are based on similar theoretical grounds of precautionary competition policy measures, and they generally aim at imposing safeguards to remedy anticipated harms of quasi-monopolist or oligopolist market structures. Some scholars point out that, while competition authorities can impose ex ante regulatory measures over incumbent platforms, the long-term oversight of regulatory interventions, specially aimed at fostering competition in the platforms, would require the establishment of a dedicated regulatory authority (Scott-Morton, 2019; Wheeler et al., 2020).

Ex ante regulatory interventions to promote competition in the platform would be similar to utility-based economic regulation and would focus on managing anticipated consequences of inevitably concentrated digital markets (Dasgupta and Williams, 2020). Examples are the establishment of privacy regulation, customer care obligations, price caps to intermediation fees and to the insertion of advertisement content, among others. On the other hand, as discussed by Frieden (2018), the fast-paced evolution of digital markets requires extensive analysis prior to the adoption of any of these ex ante measures, as it is hard to predict for how long their impact will remain positive.

Examples of ex ante regulatory interventions aimed at fostering competition for the platform are the establishment of mandatory interoperability and data portability for digital platforms that hold market power in specific digital markets (Krämer, 2020; Scott-Morton and Kades, 2021). These proposed measures aim at reducing switching costs for stakeholders of both sides of the biggest digital platforms and foster entry of newcomers in the platform business. However, Engels (2016) points that data portability mandates would harm competition when platforms are substitutes, as it reduces the incumbents' incentives to invest. Also, Lam and Liu (2020) argue that such measures would encourage end users and suppliers to reveal even more information to incumbent platforms, creating higher data analytics network effects for them that would strengthen their dominant positions.

Many of these and other examples of ex ante regulatory measures are being proposed by European countries under the Digital Markets Act (European Union Council, 2022). As happened with the European Union's General Data Protection Regulation – GDPR, once approved, the DMA has the potential of shaping ex ante regulatory measures towards digital platforms around the world. Years after its adoption, the drawbacks to the digital economy of EU members brought by the GDPR are starting to be weighed (Janssen et al., 2022). This suggests that a more careful analysis should be undertaken by

policymakers of countries of other regions before importing remedies designed under the specific economic conditions of European countries. The next Section provides a scenario-based analysis of the alternative competition policy and regulatory regimes discussed in this Section and provides guidance on their effectiveness to promote competition for digital platforms and in digital platforms.

5. Alternative scenarios to safeguard competition in digital markets

With the adoption of new competition policy and regulatory measures by the European Union to promote competition *for* the platform business and *in* marketplaces created by the digital platforms, policymakers and regulators around the world will consider introducing similar measures. However, additional guidance is needed, as simply copying the European approach may not align with the specific national conditions of the platform economy. The welfare enhancement and complementary innovations brought by incumbent digital platforms affect virtually all geographic markets where the digital platforms are presently offering their services. In search for appropriate policy responses, countries should weigh which competition policy and regulatory measures are best suited to the local scenario.

As already discussed in Section 2, concentration in digital markets is not seen as harmful by all research scholars. Rather, it has been contributing to digital inclusion and affordability of digital services that enhance productivity and promote socioeconomic development (e.g., search engines, web browsing, app stores, e-commerce). Also, the adoption of *ex ante*, pro-competitive measures will alter the incentives of incumbent digital platforms to sustain investment, innovation, and the provision of affordable digital services. It should, therefore, consider whether the economic and institutional conditions for entry in the platform intermediation business are present in the country.

For example, the maturity of countries' or regions' innovation ecosystems and the size of the relevant consumer markets may constrain the likelihood that strong competitors to the incumbent digital platforms will emerge and find sustainable business opportunities. Success as a new entrant would require considerable scale (market size), expertise in the development of advanced data processing technologies (e.g., machine learning and deep learning algorithms, etc.), a large, specialized labor force (e.g., software and machine learning engineers, data scientists, etc.), and abundant venture investment for the complementary start-up ecosystem (Prado and Bauer, 2022).

To contribute to the definition of balanced, effective country-specific platform regulation and competition policy remedies it is necessary to consider the potential risks and benefits of alternatives measures reviewed in Section 4. In an attempt to better tailor policy responses to context, we describe four scenarios of countries based on the economic, institutional, and developmental conditions as they relate to the digital economy. This allows to discuss to which degree pro-competitive remedies can be recommended to safeguard competition, contingent on the relevant context. Table 1 summarizes the four scenarios, their conditions, and the main recommendations. These scenarios represent the most frequent, or prototypical, constellations of conditions encountered in countries around the world.

Scenarios	Adoption of Digital Services	Incumbent Digital Platforms	Market size (population)	Innovation ecosystem (level of development)	Availability of skilled tech workers	Institutional Maturity	Approaches to foster competition FOR the incumbent platform	Approaches to foster competition IN the incumbent platform
Scenario 1	High	Local	Big	High	High	Mature	Reformed, ex post competition policy to promote contestability	Ex post regulation to remedy concrete misbehavior.
Scenario 2	High	Foreign	Big	High	High	Mature	Reformed, ex post competition policy to promote contestability; and ex ante competition policy to promote entry of local players	Ex post regulation to remedy concrete misbehavior, and ex ante regulation to safeguard local business from unfair competition of the foreign incumbent platform
Scenario 3	Moderate	Local	Big	Moderate	Moderate	Moderate	Reformed, ex post competition policy remedies to keep contestability. Additional measures to attract multinational digital platforms	Ex ante regulation to promote quality improvements and remedy incumbent inefficiencies. Ex post regulation to avoid anticompetitive conduct of incumbent, local players.
Scenario 4	Low	Foreign	Big or Small	Low	Low	Moderate	Reformed, ex post competition policy to promote contestability, without harming incentives for adoption of digital services and investment of foreign incumbents.	Ex ante regulatory measures to promote local innovation and tech jobs creation. Ex post regulatory measures to remedy concrete misbehavior.

5.1. Scenario 1

This scenario represents highly populated countries that have digital services widely adopted by people and businesses², incumbent digital platforms are domestic corporations, the innovation ecosystem is generative (start-up creation, patenting, and venture capital activity is intense), skilled tech workers are available, and competition policy and regulatory institutions are mature and stable. Examples of countries with these conditions are the United States and China.

Countries that meet such conditions are accruing considerable benefits of the platform economy. The large adoption of digital services offered by incumbent platforms and other tech corporations have boosted productivity and economic growth throughout the economy. Investments in innovation, technology development, and high-skilled jobs creation have also been promoted locally by the domestic, incumbent platforms, generating long-term, socioeconomic development. In such scenarios, the potential risks associated with a concentrated market structure of digital markets are diminished by the presence of other local, big corporations with means (funding, tech workers, tech infrastructure, etc.) to contest the dominance of incumbent platforms.

For countries of this scenario, instead of structural, ex ante competition policy remedies to promote entry in the platform business, at the cost of innovation incentives of incumbent platforms and other agents of the innovation ecosystem (venture capitalists, start-up founders, etc.), one should want adopt measures aimed at safeguarding contestability. The risk of displacement by another powerful, tech corporation running in an adjacent market should be strong enough to regulate the behavior of incumbent platforms towards maximizing efficiency in the allocation of inputs, as well as to the

² For example, the International Digital Economy and Society Index (I-DESI), elaborated by the European Union, measure the development of the digital economy in five dimensions: connectivity, human capital, use of internet services, integration of digital technology, and digital public services (European Commission, 2021).

continued offer of affordable, innovative services to platform users. Alternatively, reformed, ex post competition policy measures should help keeping digital markets contestable by avoiding that the incumbent digital platforms can abuse their market power to hinder the emergency of superior, digital services.

Also, it is reasonable to assume that the imposition of abusive terms and conditions in digital services provided by incumbent platforms is unlikely in highly contestable markets. Therefore, the adoption of behavioral, ex ante regulatory remedies (see Section 4.5) is suboptimal, especially due to their potential negative effects to innovation and the emergency of alternative, yet unknown business models that may use the platform services to operate. Due to the maturity of competition policy and regulatory institutions, ex post, agile regulation that remedies misbehavior and promotes self-regulation should bring the right balance between keeping incentives to innovation and efficiency, while safeguarding competition in digital marketplaces controlled by local, incumbent platforms.

5.2. Scenario 2

Countries in Scenario 2 share some similarities with countries of Scenario 1. This scenario represents highly populated countries in which digital services are widely adopted by people and businesses. Moreover, these countries have a strong innovation ecosystem, skilled tech workers, and mature and stable competition and regulatory institutions. However, incumbent digital platforms are foreign corporations that offer their digital services over the Internet. In such a scenario, the adoption of platform services by the population and small business entailed strong productivity gains and long-term growth in several economic sectors. On the other hand, capital accumulation, investments in innovation and technology development, and high-skilled jobs creation happen mainly in

the country of origin of the incumbent digital platforms. This scenario is typical among countries of Western Europe.

Therefore, although contestability should be enough to regulate the appetite for efficiency of dominant platforms in countries of Scenario 2 (due to the existence of local, big corporations with capital, infrastructure, and tech expertise to launch competing platform services), policymakers will likely have a special interest in intervening in the market structure to promote the emergence of local platforms that would promote local innovation, capital accumulation, tax collection, tech job creation, etc. As a result, the introduction of harsher ex ante, competition policy remedies (to promote entry of local players), in combination with reformed ex post measures (to keep contestability of digital markets) seems natural. However, the tradeoffs between adopting ex ante competition policy remedies to more actively promoting entry of local players in the platform business should be weighed vis-à-vis the costs to innovation and efficiency already documented in the research literature and discussed in Section 4.2.

The mere expectation that contestability is sufficient to prevent incumbent, foreign platforms from an abuse of their intermediation position and from unfair conduct in the markets they serve should not be enough for policymakers of countries of Scenario 2. Anticompetitive conduct in digital markets cannot be detected and proven easily and quickly. While investigations are pending, rents could be being extracted from local businesses (platform users) and used to promote innovation and investment in the home country of the incumbent platform. The adoption of ex ante, regulatory remedies along with ex post measures would help to better protect the local economy of countries described by Scenario 2 in the short-term against such risks. A softer intervention as proposed for countries of Scenario 1 would not provide equivalent safeguards. In the long term, however, the costs created by this more stringent approach will need to be compared

with the concrete benefits of such measures (e.g., local platform creation), to guarantee that only measures with a positive net outcome are retained.

5.3. Scenario 3

Countries described by this scenario are highly populated but with a low adoption of digital services among people and businesses. Innovation activity is moderate, much lower than in Scenario 1 and 2 countries, and skilled tech workers are in short supply. Competition and regulatory institutions are well-established, although their capacities and budget are frequently affected by political and economic instability. Incumbent digital platforms are local corporations, although they offer less innovative services when compared to multinational digital platforms. Such conditions are easy to find among developing countries of Latin America and Asia, for example.

Countries in this scenario have not yet accrued extensive gains from increased productivity and economic growth driven by a wide adoption of digital services (especially among small businesses), nor with capital accumulation and technological progress promoted by incumbent, local digital platforms. Therefore, policymakers should primarily aim at promoting the adoption of digital services, as well as providing incentives for incumbents to invest in process and product innovation to improve their ability to compete against potentially incoming multinational digital platforms.

The dominance of local platforms in digital markets of such countries is highly contestable, as foreign players with superior technology and capital availability are expected to enter the main digital markets of these countries in the short-term, attracted by their big potential. The risk of displacement should offer strong incentives for local, incumbent platforms to improve their efficiency. Therefore, instead of engaging in special competition policy regimes that may limit the ability of local platforms to strengthen

themselves for competing against international players, policymakers may want to focus on fostering adoption of digital services and promoting the country' innovation ecosystem.

For this set of objectives, competition policy may not be the right instrument. Rather, ex post, traditional case-by-case analyses would constitute the right balance. The focus should be on promoting affordability, digital inclusion, digital skills, and connectivity infrastructure. Measures of market openness to foster the entry of foreign platforms, combined with incentives for them to build local data centers, innovation centers, tech-related jobs, etc., should raise contestability and provide incentives for local incumbents to keep innovating and investing.

Given the dominance of local platforms that offer suboptimal digital services, an assumption of this scenario, agile, well-designed ex ante regulation could be used to promote quality improvements and protect consumers from platform inefficiencies (e.g., customer care, billing, privacy, etc.). Ex post regulation should also be important to protect platform users from unfair competition of the incumbent platforms, without creating too much regulatory burden to an underdeveloped digital ecosystem.

5.4. Scenario 4

Countries approximated by this scenario have a low penetration of digital services among people and businesses, and they may have a small or a big market size. Maturity of competition and regulatory institutions is moderate as in countries of Scenario 3. Innovation activity is low, skilled tech workers are lacking, and incumbent digital platforms are foreign corporations. These conditions are typical among least developed countries of Latin America, Africa, and Asia.

These countries neither have accrued all the benefits of widespread use of digital services for enhancing productivity in the economy, nor have benefited from the rise of

local platforms and the associated local capital accumulation, investment in innovation and technology infrastructure, and tech job creation. To step up, policy should focus on increasing adoption of digital services for productivity growth, on educating skilled tech workers, as well as on promoting local innovation and venture investment. Such conditions would create a proper environment for the birth of local platforms to compete against foreign incumbents and also to enter in other markets and niches of the underdeveloped, local digital ecosystem.

Ex ante competition policies measures to raise means for local players to compete against foreign, platform incumbents should not be the first choice in this scenario. First because these measures create costs and inefficiencies that may negatively affect adoption of digital services currently provided by incumbent platforms (see Section 4.2). Second, because entry of local players would depend on conditions that are hard to alter in the short-term, like the availability of venture investment and skilled tech workers, an attractive environment for start-up entrepreneurship, among other conditions. Therefore, ex post competition policy remedies should provide the right balance between the need of increasing contestability and entry in the platform business, without harming incentives for adoption of digital services and investment of foreign incumbents.

Ex ante regulatory measures, on the other hand, could be designed to provide incentives for foreign, incumbent platforms to contribute to the local innovation ecosystem, as well as to promote local tech job creation. On the other hand, the adoption of ex ante regulatory remedies focused on avoiding anticompetitive conduct of incumbents in their marketplaces should be carefully weighed against their potential harms to affordability and adoption of digital services by the population and small businesses. In this scenario, ex post regulatory measures should be well-measured to remedy concrete

cases of abuse of market power (e.g., unfair terms and conduct of incumbents, exclusionary agreements, self-preferencing, etc.).

5.5. Implementation Challenges

The task of creating policy and regulatory measures to promote competition in markets dominated by very influential and powerful incumbents is not new for governmental authorities of many countries. Indeed, competition policy and regulatory authorities have been dealing with lobbying and agency endeavors of big corporations in several economic sectors, like telecommunications, mass media, air transportation, oil and gas, banking, among others. Resourceful companies spend millions of dollars every year hiring consulting and advocacy firms to influence political and technical decisions of governmental authorities towards their private interests.

Setting new competition policy and regulatory rules in digital markets would trigger similar reactions from incumbent digital platforms. Wheeler et al. (2020) points out that incumbent platforms have successfully convinced policymakers that governmental oversight would harm their capacity to innovate. As a result, thirty years after the creation of the Internet, governmental agencies have limited understanding of the complex business models adopted by most digital companies. Adding to that, the exponential, fast-paced evolution of data accumulation and processing technologies, frequently based on proprietary algorithms, exacerbates information asymmetries between regulators and incumbent digital platforms.

This heightened information disparities, associated with the lack of a stablished culture of governmental oversight over digital markets (even for understanding their business models), are the main challenges faced by competition policy and regulatory authorities to adopt any of the five policy and regulatory alternatives discussed in the last

Section. As a first step towards overcoming these challenges, Scott-Morton et al. (2019) proposes the establishment of a specialized antitrust court, that would judge many cases involving digital platforms over the years and so accumulate some expertise on the topic.

Also, the creation of a specialized regulatory authority, or the empowerment of current regulatory authorities should be considered. It could be charged to oversight digital markets, produce studies and critical mass regarding their main business models, as well as adopt suitable ex post regulatory measures. Over the time, this would help reducing information asymmetries that currently undermine the credibility of governmental efforts to promote competition for the platforms and in the platforms.

Another important challenge to the effectiveness of competition policy and regulatory measures to the platform economy is the bounded rationality of the market agents of both sides of the digital platforms. The mainstream economic theory behind the adoption of competition policy and regulatory measures over platform intermediaries assumes that agents have infinite cognitive abilities and willpower to make the best decisions for themselves, without falling tempted by transitory benefits or altruism (Thaler, 2016). However, as the whole discipline of behavioral economics points, more favorable market conditions per se only provide incentives for users and suppliers switching, but they cannot force them to do so (Mullainathan and Thaler, 2000).

On this topic, Scott-Morton et al. (2019) recognizes that platform consumers have bounded rationality, what may create challenges for the success of policy interventions. For example, consumers are most likely to use the default apps pre-installed in their smartphones, access only the first search results they are shown, and incautiously agree with terms and conditions that allow platforms to collect, process, and extensively use their private information. According to the same authors, consumers make these non-rational decisions because of inherent behavioral biases, such as discounting the future too

much and being too optimistic. Such behavioral attributes of internet users aid in diminishing the efficacy of competition policy and regulatory measures in the digital economy.

6. Conclusion

In this paper, we analyzed the appropriateness and efficiency of alternative competition policy and regulatory regimes proposed to safeguard competition in digital markets. We reviewed the causes of the concentrated market structure of several digital markets, and how they should inform the definition of clear objectives of promoting competition *in*, and *for* incumbent digital platforms. Then, we compared five different policy and regulatory approaches that are currently suggested in the research literature and explored by practitioners to achieve these two objectives. Finally, we discussed the effectiveness of these five alternative approaches and provided recommendations on their adoption for four common scenarios of countries characterized by different socioeconomic, innovation, and market conditions.

A main conclusion is that carefully designed, fit-for-purpose competition policy and regulatory regimes, which observe country-specific conditions and challenges, are key to effectively promote competition and investment in digital markets and ensure that the digital economy continues generating high and long-lasting support to economic development and social welfare increases. Our analysis supports a very limited use of *ex ante*, competition policy remedies to boost competition for the incumbent digital platforms, as the effectiveness of such approach to promote entry of new players is very unlikely in most scenarios. Reformed, *ex post* competition policy remedies should provide a better balance between raising contestability in concentrated, digital markets, and keeping incentives for incumbents invest in innovation and efficiency.

Furthermore, ex post regulatory regimes are recommended in all scenarios to remedy concrete cases of misbehavior and anticompetitive conduct of incumbent digital platforms in their own marketplaces, as well as to correct inefficiencies of scenarios with absence of imminent entry. Finally, ex ante, regulatory regimes should also serve to safeguard competition in digital marketplaces controlled by platforms, although it also can and should be used to promote local innovation and development in scenarios where incumbent platforms are foreign, big techs.

Through this analysis, policymakers and regulators around the world should have a clearer picture on what to consider when designing their policies to promote competition in the platform economy. They could also understand what competition policy and regulatory approaches have been proposed by the research literature, as well as have preliminary subsidies to carefully weigh the effectiveness of each one given the countries' local conditions and challenges.

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