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When entering is easy but leaving is impossible: regulatory asymmetry hindering digital investment in Europe

Judith Arnal

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Executive summary

This paper analyses one of the most significant structural tensions in the European digital economy: the growing gap between the telecommunications sector's high investment needs and its actual capacity to finance them in an environment of intense price competition. The central argument is that the gap cannot be explained solely by technological or demand factors but is largely due to a persistent regulatory asymmetry between the ease of entry and the difficulty of exiting from the market, resulting from the interaction between sectoral regulation and the application of merger controls in the EU.

The analysis argues that European competition policy has for decades prioritised the reduction of barriers to entry without developing an equivalent framework to allow for an orderly and efficient exit in capital-intensive sectors. This asymmetry has weakened the effective contestability of telecommunications markets, understood not as the number of operators present, but as the existence of credible threats of entry and exit without prohibitive costs. In a sector characterised by indivisible assets, high fixed costs and long investment cycles, the practical impossibility of exiting the market through intra-market consolidation erodes the incentives to invest, even when entry is widely facilitated.

From an analytical point of view, the paper is based on the theory of contestable markets and shows that, in telecommunications, the dimension of exit is particularly critical. European evidence indicates that the application of the effective competition test in merger control has relied predominantly on static and short-term effects, especially on prices, while the dynamic benefits associated with investment, innovation, network quality and financial sustainability are assessed secondarily and under extraordinarily demanding evidentiary standards. The asymmetry has been reinforced by recent case law, which extends the European Commission's discretion to block intra-market consolidation operations even in the absence of the creation or strengthening of a dominant position.

The paper documents how this logic has translated into a decision-making practice aimed at artificially preserving the previous morphology of markets,

in particular the implicit rule of maintaining four mobile operators with their own networks, through the systematic imposition of structural remedies. The ex post experience in several Member States (Austria, Germany, Ireland and Spain) shows that these remedies, designed to replace exit with regulated entry, have had limited success in generating sustainable infrastructure-based competition and, in some cases, have favoured opportunistic strategies rather than long-term investment.

In contrast to this European pattern, the paper analyses a set of comparative experiences (the US, Brazil, India and Taiwan) in which a more dynamic approach to merger control, focused on investment, coverage and quality objectives, has coexisted with substantial improvements in network performance, the deployment of advanced technologies and, in many cases, without systematic adverse effects on consumer welfare. These experiences suggest that consolidation is not inherently anti-competitive and that, in network industries, it can be a necessary mechanism for efficient adjustment when accompanied by appropriate regulatory governance.

This diagnosis takes on particular strategic relevance in the current European context. The persistent decline in average revenue per user, investment that is systematically lower than in other advanced economies, and a return on capital that is structurally below its cost are jeopardising the sector's ability to sustain the deployment of infrastructure that is critical for the EU's digitalisation, resilience and strategic autonomy. In this context, a competition framework that effectively blocks orderly market exit risks perpetuating excessive fragmentation and chronic underinvestment.

In light of the ongoing review of the Horizontal Merger Guidelines, the paper proposes a reorientation of merger control towards a genuinely dynamic approach. This involves operationally integrating investment, innovation and quality parameters into the effective competition test; balancing the evidentiary treatment of risks and efficiencies; redesigning remedies to focus on verifiable competitive outcomes rather than the artificial preservation of structures; and substantially strengthening ex post monitoring of the commitments made. The aim is not to facilitate consolidation per se, but to ensure that, when it does occur, it contributes to creating economically sustainable and competitively efficient market structures capable of supporting the investment that the European digital economy needs in the medium and long terms.

1. Introduction

The EU's digital competitiveness depends, to a large extent, on the capacity of its telecommunications operators to deploy and upgrade next-generation networks, such as fibre and 5G, and to support subsequent technological layers, including cloud computing, edge computing and future 6G infrastructures. This challenge unfolds in a context of rapidly growing data demand and increasingly ambitious public objectives in terms of connectivity, resilience and strategic autonomy. However, the European telecommunications sector is facing a structural imbalance of increasing complexity: while investment needs remain high and are set to intensify, average revenues per user have been on a downward trend and retail competition continues to be predominantly price driven. This combination puts pressure on the return on invested capital and narrows the financial margin for sustaining long investment cycles that, in turn, affects service quality, the pace of technological deployment and the EU's ability to close connectivity gaps.

This paper argues that a significant part of the tension is not only the result of technological or demand factors, but also of a regulatory asymmetry that has shaped the sector's competitive structure. European liberalisation and sectoral regulation have for decades been geared towards reducing barriers to entry, particularly through access obligations and mechanisms that facilitate retail competition without a full duplication of infrastructure, with the aim of intensifying competitive pressure, particularly on prices. However, at the same time, the ability to exit the market in an orderly manner, mainly through intra-market consolidation operations, has been increasingly restricted by the way in which merger control is implemented in the EU, as well as by the use of remedies aimed at preserving the morphology of pre-existing market structures.

The argument is based on a classic analytical framework of industrial organisation: the theory of contestable markets. From this perspective, a market can generate competitive outcomes not so much because of the number of operators present, but because of the credible threat of potential entry, provided that there are low barriers to entry and exit, ie, no significant sunk costs and the possibility of efficient market reconfiguration. Although

perfect contestability is a theoretical ideal that is difficult to achieve, the approach remains useful as a criterion for identifying whether the behaviour of incumbents is effectively disciplined by potential competition. In telecommunications, where network assets are indivisible, fixed costs are high and amortisation requires critical mass, the 'exit' dimension takes on a particularly central role: if exit is blocked or excessively conditioned, contestability is weakened even when entry is facilitated by regulation.

In the EU, this asymmetry is clearly evident in merger control policy. The 'significant impediment to effective competition' (SIEC) test formally incorporates multiple competitive dimensions –price, quality, variety and innovation– but its practical implementation relies predominantly on static, measurable and short-term effects, especially on prices. At the same time, the efficiencies claimed by the parties are subject to a demanding standard of proof, which is particularly difficult to meet when the efficiencies are dynamic, long-term or dependent on investment and innovation trajectories. In oligopolistic markets, recent case law has also reinforced the Commission's discretion to intervene in the face of probable risks to competition, consolidating an approach that, in practice, tightens exit conditions and favours remedies that attempt to 'recreate' competition through regulated entry, rather than allowing structural adjustments compatible with the sector's economic sustainability.

It is important to clarify from the outset what this paper advocates and what it does not. The argument developed here is not to propose deregulation of the telecommunications sector or to advocate consolidation as an end in itself. Nor is it a question of subordinating competition policy to industrial policy considerations or replacing competitive analysis with assumptions favourable to companies. What this paper argues is that merger control must assess the effects of a transaction on effective competition in a comprehensive, systematic and balanced manner, incorporating both static (price) and dynamic (investment, innovation and quality) parameters, with time horizons consistent with the sector's production cycles. This requires rigorous ex post monitoring of the value creation commitments made by companies, verifiable through objective indicators and subject to effective consequences in the event of non-compliance. The aim is not to facilitate the unconditional elimination of a competitor, but to ensure that when such an exit occurs it generates economically sustainable and competitively efficient market structures capable of sustaining the investment and innovation that European consumers need in the medium and long terms.

The paper develops this thesis in several steps. First, it clarifies why contestability offers a more informative criterion than the market structure considered in isolation for assessing competitive pressure, and why, in telecommunications, exit is an indispensable component of the analysis. Secondly, it describes how European liberalisation reduced barriers to entry and altered the value chain, intensifying retail price competition in

an environment of flat rates and high transparency. Third, it analyses the predominantly static approach to merger control in the EU and its limited suitability for sectors with strong investment needs and indivisible assets. Fourth, it shows how this approach has resulted in de facto exit barriers, including a decision-making practice aimed at avoiding reductions in the number of operators, and in the intensive use of remedies that substitute exit with regulated entry, with often disappointing ex post results. Fifth, it contrasts this experience with comparative cases in which a more dynamic approach has coexisted with improvements in investment and network performance. Finally, the paper connects the diagnosis with the ongoing process of revising the Merger Guidelines and proposes specific elements of reform to operationally integrate dynamic parameters into merger control, balance the treatment of efficiencies and redesign remedies towards verifiable outcomes.

2. What makes a market competitive? Contestability as a relevant criterion

A central issue in competition policy is determining what it means, in economic terms, for a market to be competitive. Traditional structural approaches have tended to rely on static indicators of the degree of concentration, such as the Herfindahl-Hirschmann index or the number of companies present in a market. However, since the early 1980s the industrial organisation literature has converged towards a more nuanced view: competition is not fundamentally determined by the number of operators, but by the market's degree of contestability (Baumol, 1982; Baumol, Panzar & Willig, 1982).

Contestable markets theory challenges the assumption that high concentration necessarily implies the existence of market power. According to this theoretical framework, even highly concentrated markets can generate competitive outcomes if entry and exit conditions are sufficiently free. What disciplines the behaviour of incumbent firms is not so much actual competition as the credible threat of potential entry. If an operator raises prices above competitive levels or deteriorates the quality of service, a new entrant can enter the market, capture demand and subsequently exit without incurring significant losses. Anticipating this possibility, incumbents have incentives to behave competitively ex ante (Baumol et al., 1982; Tirole, 1988).

Contestability therefore rests on two closely linked conditions: the existence of low barriers to entry and low barriers to exit. In practice, both conditions translate into the absence of significant sunk costs. When entry requires high and irreversible investments, or when exit involves substantial losses due to asset specificity or regulatory constraints, the possibility of hit-and-run entry disappears. In such cases, potential competition loses its disciplinary power and market outcomes may persistently deviate from competitive levels, even in the absence of explicit collusive behaviour (Baumol *et al.*, 1982; Carlton & Perloff, 2005).

This approach has had a lasting influence on modern industrial organisation theory and economic analysis of competition. As reference manuals emphasise, contestability is a more informative criterion for assessing competitive pressure than market structure considered in isolation. Prices close to average cost, normal profits, and strong incentives to maintain quality and efficiency may arise not because there are numerous competitors, but because firms face the constant threat of entry by equally efficient operators (Tirole, 1988; Carlton & Perloff, 2005).

From a competition policy perspective, this idea has important implications. In particular, it suggests that concentration, considered in isolation, is an imperfect indicator of market power. The determining factor is whether market conditions allow new operators to enter and exit without prohibitive costs, so that the behaviour of incumbents is effectively disciplined (Schmalensee, 1987). When these conditions are not met, mere structural fragmentation may be insufficient to ensure efficient market performance.

3. How the European telecommunications sector works and how barriers to entry have been reduced

The way in which competition has been ensured in the European telecommunications sector is closely linked to the liberalisation process that began in the 1990s. After decades of public monopolies or national quasi-monopolies, the sector's opening up was conceived primarily as an exercise in introducing price competition, on the premise that consumer welfare depended mainly on short-term tariff reductions (Motta, 2004; Tirole, 2017). This approach has left a deep mark on both sectoral regulation and the application of competition law.

Given that telecommunications is a capital-intensive sector, with high initial investments and scale requirements, liberalisation was not dependant exclusively on entry based on infrastructure duplication. Instead, a regulatory framework was designed to reduce barriers to entry by requiring access to existing networks. Under the 'ladder of investment' paradigm, incumbent operators were required to make their infrastructure available to new entrants at regulated prices, with the aim of facilitating retail competition even in the absence of their own network investment (Cave, 2006).

Thus, in the field of fixed telecommunications networks, liberalisation was based on the separation of infrastructure and service provision and the introduction of regulated wholesale access mechanisms to the networks of incumbent operators. The possibility for alternative operators to provide services without having to replicate the entire physical network brought these markets closer to a contestable market framework, reducing barriers to entry and exerting competitive pressure on operators with their own networks (Baumol *et al*., 1982; Motta, 2004).

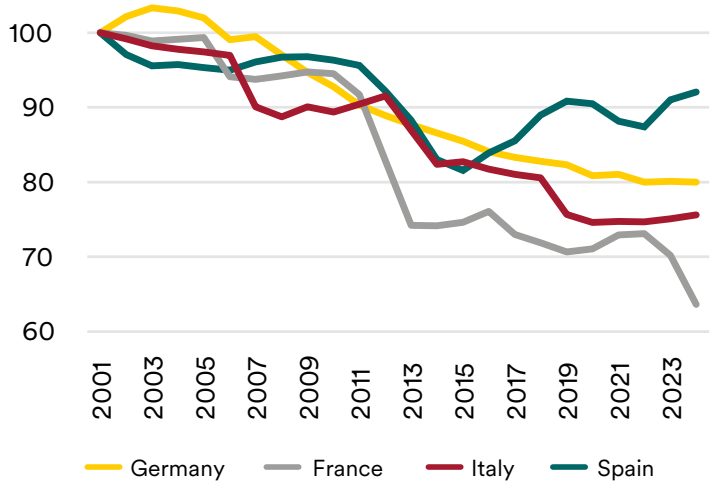
The same logic was transferred to mobile markets, where competition in the provision of services was introduced by allowing access to the infrastructure of operators with their own networks. Along with the consolidation of mobile network operators (MNOs), the entry of mobile virtual network operators (MVNOs), capable of offering services without making large investments in physical assets, was actively promoted.

As the market liberalised and matured, competition in the European telecommunications sector also evolved in terms of structure and economic scope. The digitisation process led to a gradual separation between the different levels of the value chain, altering the nature of traditional competition focused exclusively on connectivity services. At the top layer, online services, including communications, content, entertainment and business services, exert indirect but significant competitive pressure on traditional telecommunications services, reducing the relative weight of the latter in operators' revenues.

At the intermediate levels of the chain, competition has shifted towards customer operations, where operators compete on price, service packaging and user experience. At the same time, at the bottom layer of the value chain, corresponding to network assets, the competitive structure has also changed significantly. Physical infrastructure (fibre, towers, backbone networks and data centres) has gradually been separated from integrated operators. Infrastructure funds and tower companies have taken on a central role in the provision of passive assets, while hyperscalers have gained prominence in areas such as data centres and processing capacity. These dynamics have transformed the sector into a more modular ecosystem and facilitated the entry of new players into specific segments of the value chain.

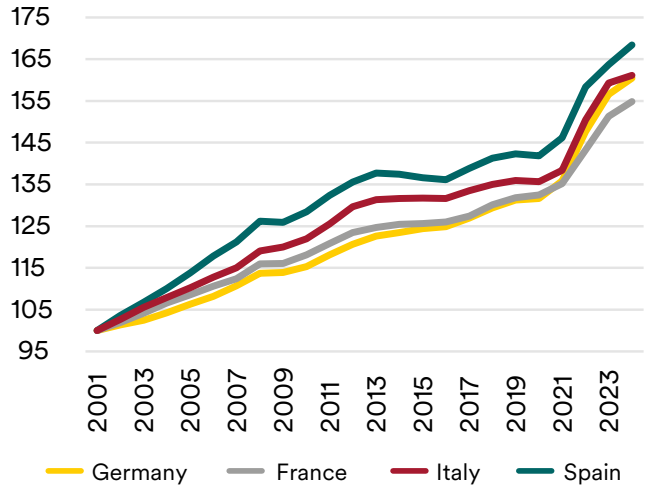
The increase in the number of operators and the intensification of competition have had clear effects on market outcomes. The evolution of telecommunications prices in the EU reflects the traditional emphasis of competition policy on end prices. As shown in Figures 1 and 2, for more than two decades, the sector has been subject to persistent deflationary pressure, unlike most other sectors of the economy, as measured by the evolution of the General Consumer Price Index.

Figure 1.
Prices of telecommunications services (CPI 2001=100)



Source: the author with Eurostat data.

Figure 2.
General consumer prices (CPI 2001=100)



Source: the author with Eurostat data.

The sustained fall in prices has also occurred in a context in which operators have continuously increased network performance, expanded their service portfolio and improved their offerings through new features and higher transmission speeds (European Commission, 2023; OECD, 2021). This phenomenon suggests that, although static efficiency has been optimised, the sector has operated under a dynamic of 'commoditisation' of connectivity services.

A key element in understanding this dynamic is the widespread adoption of flat-rate models for both mobile and fixed broadband services. Under this scheme, consumers pay a fixed monthly price for a high, or apparently unlimited, volume of services, which reduces the sensitivity of marginal consumption to price and shifts competition towards customer acquisition through promotions on the fixed charge. The combination of flat rates, high price transparency and low switching costs has contributed to a high degree of homogenisation in retail offerings, limiting differentiation strategies and reinforcing competitive pressure on prices in the short term.

This result is particularly relevant given that deflationary price trends have occurred in an increasingly challenging economic environment. Operators are facing difficulties in monetising data traffic growth, while the costs associated with deploying and maintaining next-generation networks continue to rise. Added to this are rising content costs and competitive pressure from digital service providers, which capture a growing share of the value generated in the chain without being subject to the same regulatory burdens of investment and interoperability (Bourreau et al., 2020). From a political point of view, operators must also respond to the huge investments set by the European Commission for 2030 within the framework of the Digital Decade.

4. How mergers are currently analysed in the EU: a predominantly static approach

4.1. The SIEC test and the primacy of price analysis

To understand the possibilities of exiting a market, it is important to be familiar with the regulatory framework of competition law and its implementation by the European Commission. The assessment of mergers in the EU is based on the SIEC test, established in the Merger Regulation. Under this framework, a transaction may be prohibited if it is considered likely to significantly impede effective competition in the internal market or in a substantial part of it, regardless of whether or not it leads to the creation or strengthening of a dominant position (European Commission, 2004).

From a formal point of view, the European Commission's analysis is not limited exclusively to price effects. The Horizontal Merger Guidelines explicitly recognise that competition can be affected in multiple dimensions, including not only price, but also choice, quality and innovation. In this respect, the reduction in the number of competitors resulting from a merger may manifest itself in a narrower range of products and services, a deterioration in quality or a slowdown in innovation processes, even in the absence of immediate price increases (European Commission, 2004).

However, although the conceptual framework incorporates these non-price-related dimensions, there is a methodological gap in its application. In decision-making practice, economic analysis focuses primarily on price

effects, which are the most directly observable, quantifiable and ex ante modellable parameter. Tools such as upward price pressure analysis (measured using the Gross Upward Pricing Index-GUPPI), competitive proximity indicators or merger simulations make it possible to project foreseeable results in terms of short-term consumer welfare (Motta, 2004). Competitive proximity indicators or merger simulations make it possible to link a given market structure relatively directly to predictable results in terms of prices and consumer welfare in the short term (Motta, 2004).

Conversely, the dimensions of choice and quality are usually incorporated inferentially. It is commonly assumed that a reduction in the number of operators or the elimination of an 'important competitive force' necessarily leads to a deterioration in these variables, but no independent quantitative assessment is carried out.

Innovation occupies a relatively marginal position in merger control practice, although its treatment varies significantly depending on the sector. Although the Horizontal Merger Guidelines recognise that innovation is a key dimension of competition, especially in dynamic and technological markets, its ex ante consideration presents significant methodological difficulties. In sectors such as pharmaceuticals and digital, competition authorities have more systematically incorporated analysis of the possible effects of mergers on innovation, while in other areas, such as telecommunications, this type of analysis has historically been more limited.

In any case, even when innovation is taken into account, it is usually analysed predominantly from a negative perspective, as a possible theory of harm associated with reduced incentives to innovate, and rarely as a source of efficiencies linked to increases or improvements in innovative activity resulting from the transaction. This asymmetry reflects, in part, the high uncertainty, non-linearity and long-time horizons in which the effects on innovation materialise, making it difficult to integrate them into economic models designed to assess predictable and relatively immediate effects. As a result, innovation tends to be treated qualitatively and secondarily, and rarely manages to offset the price risks identified in static models (Tirole, 1988).

The asymmetry between competitive parameters has relevant implications for capital-intensive sectors characterised by strong investment dynamics, such as telecommunications. By privileging measurable, immediate and short-term effects, merger analysis tends to adopt a predominantly static approach, focusing on current price competition rather than future market developments. In this context, the potential dynamic benefits associated with consolidation, such as greater investment capacity, economies of scale, long-term efficiency improvements, or improvements in innovation or product, are subject to a particularly demanding standard of proof that is difficult to meet in practice.

This methodological asymmetry raises a profound debate about the very definition of consumer welfare. It must be recognised that the caution shown by competition authorities towards transactions that reduce the number of operators is based on the legitimate risk of reduced competitive pressure on prices in the short term. However, a comprehensive analysis requires a multidimensional assessment of welfare. The benefit that a user obtains from a marginally lower price (static welfare) may be clearly offset by the opportunity cost of obsolete infrastructure or delayed deployment of critical technologies (dynamic welfare). Ultimately, the risk of a moderate increase in nominal prices must be weighed against the structural risk of chronic underinvestment. A market that guarantees low prices at the expense of financial inability to sustain innovation is not maximising social welfare: it is compromising the technological basis of the European digital economy.

4.2. Indivisibility of networks and limits of the static approach

Beyond recent developments in revenue and investment, the adequacy of merger control in the telecommunications sector also depends on understanding its underlying productive structure. Telecommunications networks are highly indivisible assets, deployed in discrete geographical units that cannot be continuously adjusted to changes in demand. Once a network has been deployed in a given area, its economic viability depends on reaching a critical mass of users sufficient to amortise the initial investment and finance its maintenance and technological upgrading (Herrera, 2022).

This characteristic is particularly relevant in the current context, marked by the widespread use of flat-rate models. In these schemes, operators no longer monetise the traffic carried but rather access to the network. As a result, the economically relevant variable is no longer the volume of use, but rather the number of active accesses. In this environment, the sustainability of investment requires achieving a minimum market share in each area covered, a threshold that rises as competition based on fixed charges reduces average revenue per user (Herrera, 2022).

From this perspective, intra-market consolidation is not necessarily an attempt to reduce competition, but rather a recurring adjustment mechanism in a sector characterised by high fixed costs, the need for scale and indivisible assets. Applying a structural approach focused on preserving a certain number of operators, without taking these productive constraints into account, risks creating market structures that achieve low prices in the short term at the expense of the financial viability necessary for network maintenance.

Such a bias is particularly problematic when combined with high exit barriers. By preventing consolidation as an adjustment mechanism, merger control can perpetuate excessive fragmentation that weakens investment capacity, limits dynamic efficiency and compromises the timely deployment of new technologies. Under these conditions, competition becomes purely destructive to margins, without proportional benefits in terms of innovation or service quality.

5. Exit barriers and contestability: a structural asymmetry in the European telecommunications market

In light of the prevailing approach described in the previous section, it is possible to understand why the design and application of merger control in the EU has led to a persistent asymmetry between entry and exit conditions in the telecommunications sector.

From the perspective of contestable markets theory, the possibility of exiting the market is as relevant as the possibility of entering it. The competitive discipline exerted by the threat of potential entry is only effective when companies can leave the market without incurring significant losses from sunk costs or institutional constraints. When exit is administratively restricted, contestability is eroded, even if barriers to entry are low (OECD, 2019b).

In the European telecommunications market, the regulatory framework has succeeded in substantially reducing barriers to entry, mainly through obligations to provide access to existing networks and mechanisms to facilitate the entry of new operators. However, this design has led to a structural asymmetry between entry and exit: while entry is largely facilitated by regulation, exit has become a highly restricted process.

5.1. The four-operator rule of thumb and tighter control of exits

This difficulty in exiting the market, resulting from the static approach taken by the European Commission in implementing the Horizontal Merger Guidelines and the Merger Regulation itself, is reflected, first and foremost, in the existence of an implicit rule of maintaining at least four mobile operators per country. Although this structural presumption is not normative, its practical application has been reiterated in the European Commission's merger control policy, especially in transactions that would have reduced the number of mobile operators with their own network from four to three in national markets. In such cases, the Commission has consistently tended to consider that such a reduction entails significant risks to competition, regardless of the specific market conditions, technological developments in the sector or the economic sustainability of the resulting structure.

As a result, intra-market consolidation transactions, which are the main mechanism for orderly exit in mature and capital-intensive sectors, have mostly been blocked or subject to extremely demanding conditions. The case of the acquisition of Telefónica Europe (O2) by Hutchison 3G UK (Three) is paradigmatic in this regard. In 2016, the European Commission prohibited the transaction, which would have reduced the number of mobile operators in the UK from four to three, on the grounds that the merger would give rise to a SIEC, even though it would not create or strengthen a dominant position (European Commission, 2016).

Although the decision was initially overturned by the General Court (General Court of the EU, 2020), the annulment was subsequently corrected by the Court of Justice of the EU. In its judgment, the Court explicitly rejected the General Court's restrictive interpretation and confirmed the Commission's broad discretion to intervene in oligopolistic markets, including so-called gap cases (Court of Justice of the EU, 2023). In particular, the Court held that the Commission is not required to demonstrate with a 'high probability' the existence of a SIEC, but only that, on the basis of a sufficiently robust and coherent set of evidence, it is more likely than not that the transaction will significantly harm competition.

The Court also clarified that the Commission is not required to demonstrate cumulatively that a merger eliminates a significant competitive link between the parties and reduces competitive pressure on the remaining operators. The mere elimination of a significant competitive constraint may be sufficient to establish a SIEC in concentrated markets. Similarly, it confirmed that the Commission does not need to prove that a company is a 'particularly aggressive' price competitor in order to classify it as an important competitive

force, it being sufficient that it exercises a competitive influence greater than that reflected by its market share. Finally, the Court reaffirmed that efficiencies cannot be presumed and that it is up to the parties to demonstrate their nature and magnitude in a verifiable manner.

This shift in case law consolidates an approach to merger control that structurally tightens the conditions for exit in oligopolistic markets such as telecommunications. By lowering the evidentiary threshold required of the Commission and broadening the scope of the SIEC test, the ruling strengthens the ability of competition authorities to block intra-market consolidation transactions, even when they do not lead to the creation or strengthening of a dominant position.

It is also worth highlighting the asymmetry in the standards of proof that characterises merger control in this area. While, following recent case law, the European Commission can prohibit a transaction on the basis that it is more likely than not that the merger will give rise to a SIEC, the efficiencies claimed by the companies are subject to much stricter scrutiny. Under the Merger Regulation and the Horizontal Merger Guidelines themselves, efficiencies cannot be presumed and must be demonstrated by the parties in a verifiable manner, specific to the merger, capable of being passed on to consumers and sufficient to offset any restrictive effects on competition. In practice, this standard of proof is particularly difficult to meet, especially in capital-intensive sectors such as telecommunications, where many efficiencies are dynamic, long-term or dependent on technological and investment conditions that are difficult to quantify ex ante. The result is a structural bias in the analysis: the authority can intervene with a wide margin in the face of potential risks to competition, while the benefits of consolidation are only considered in exceptional cases.

5.2. Remedies as a regulatory substitute for exit

Closely linked to the implicit four-operator rule, the restriction on exit is implemented through the intensive use of structural remedies. When mergers are not directly blocked, the remedies imposed tend to be aimed at artificially preserving the number of existing operators or even creating new entrants. In practice, these remedies function as an attempt to replicate the previous market structure, even in contexts where the market shows clear signs of maturity, pressure on margins and high investment needs.

However, experience in the EU shows that these remedies have had limited effectiveness in generating sustainable infrastructure-based competition.

The Austrian case is illustrative. In 2012 the merger between H3G and Orange was approved subject to a combination of structural and behavioural remedies, including the obligation to facilitate the entry of a new operator with its own network and wholesale access to MVNOs (European Commission, 2012). Ex post evidence suggests that these measures failed to attract a viable new MNO within a reasonable timeframe, while prices rose significantly after the transaction, highlighting the limits of the model of artificially preserving the previous structure (Genakos *et al.*, 2018).

A similar pattern can be observed in Ireland (European Commission, 2014a) and Germany (European Commission, 2014b). In both cases the 2014 mergers were authorised subject to complex remedies aimed at strengthening the role of MVNOs or keeping open the possibility of future entry by a fourth operator. However, neither in Ireland nor in Germany did an effective entry of a new MNO materialise, and MVNOs continued to play a marginal role in terms of competitive discipline and investment incentives. These experiences contributed decisively to the subsequent tightening of the Commission's approach.

The withdrawal of the transaction between Telenor and TeliaSonera in Denmark in 2015 reinforces this interpretation (European Commission, 2015a). In this case, the Commission considered that the proposed remedies did not guarantee the preservation of four operators with their own networks and, given the impossibility of designing a credible substitution mechanism, the transaction was abandoned. The implicit message was clear: in the absence of a fully functional fourth MNO, the exit was not acceptable, regardless of the economic conditions of the market or the potential dynamic benefits of consolidation.

The Spanish case is also illustrative. In 2015 the European Commission authorised the acquisition of Jazztel by Orange, subject to commitments that allowed MásMóvil to acquire Jazztel's fibre-to-the-home (FTTH) network on favourable terms, as well as access to Orange's fixed network and national mobile roaming services (European Commission, 2015b). These conditions facilitated the consolidation of MásMóvil as the fourth integrated operator. However, just four years later, MásMóvil sold the network to private equity funds, obtaining significant capital gains, without this translating into structurally stronger infrastructure-based competition. This episode highlights how remedies can create incentives for opportunistic exit strategies, rather than promoting sustainable long-term competition (Telefónica, 2022).

5.3. Exceptions within the EU: when exit is permitted and dynamic efficiency improves

In contrast to this widespread practice, there is one exceptional case within the EU in which a consolidation from four to three operators with their own networks was authorised without the imposition of structural remedies aimed at preserving the previous market structure. This was the merger between T-Mobile Netherlands and Tele2 Netherlands in 2018. The Commission considered that the transaction did not significantly impair effective competition, given the limited combined market share of the resulting operator, the small increase attributable to Tele2 and doubts about its role as a relevant competitive force in a market characterised by strong asymmetry in favour of KPN and VodafoneZiggo. In this context, the authority accepted the market reconfiguration without imposing corrective measures, reflecting greater tolerance for structural changes when the formal preservation of the number of operators does not in itself guarantee effective competition or adequate incentives for investment (European Commission, 2018).

Ex post results show a sustained increase in per capita investment, rapid deployment of 5G networks and the country's leadership in the EU in advanced 5G coverage in the 3.4-3.8 GHz band. At the same time, there is no evidence of a systematic deterioration in consumer welfare: competition has progressively shifted towards a 'value for money' approach, with significant improvements in network quality and technological development, without structural price increases.

This case is a clear exception within the EU and shows that allowing exit, within an appropriate supervisory framework, is not incompatible with competitive markets or favourable outcomes for consumers.

5.4. Implications for the contestability of the European market

From the point of view of contestability, these elements show that ease of entry is not sufficient to guarantee competitive markets if exit is restricted. When merger control and remedies are systematically used to prevent a

reduction in the number of operators, the market can become trapped in a structure characterised by excessive fragmentation, persistently low margins, and difficulties in absorbing high fixed costs and sunk investments.

European competition policy seems to have operated on the premise that 'more competitors equals more competition', ignoring the fact that, in network industries, scale is a precondition for technological rivalry.

European evidence suggests that remedies aimed at replacing exit with regulated entry have repeatedly failed to generate sustainable competition, while the only case in which effective exit was allowed (the Netherlands) shows clearly superior results in terms of investment, quality and technological deployment.

However, it is true that a single case does not constitute sufficient proof of the benefits of a dynamic approach, which is why it is advisable to study other cases at the international level.

6. Some success stories of a dynamic approach to merger policy

The previous sections have highlighted the limitations of a predominantly static approach to the assessment of mergers, especially in capital-intensive sectors such as telecommunications. To complement this analysis, it is necessary to examine comparative experiences in which market consolidation has been assessed from a more dynamic perspective, taking into account its effects on investment, network quality, innovation and the financial sustainability of the sector in the medium and long terms.

This section analyses several international cases –Brazil, the US, India and Taiwan– in which processes to reduce the number of mobile operators with their own networks have not only failed to have anti-competitive effects on consumer welfare, but have coincided with substantial improvements in network performance, the deployment of new technologies and the sector's investment capacity (Telefónica, 2025).

The selection of these markets is not based on cherry-picking positive results, but rather on the need to analyse the impact of consolidation in different regulatory contexts and states of technological maturity. In particular, the following have been included: (a) markets of continental scale and high geographical complexity (Brazil and India), where extreme fragmentation threatened universal coverage; (b) a market that is a leader in innovation and consumer maturity (the US), where consolidation was evaluated from the perspective of global technological leadership; and (c) a market with high density and digital adoption (Taiwan), which illustrates efficiency in the management of scarce resources such as spectrum. This multi-jurisdictional approach allows us to isolate the effect of market structure on investment, regardless of local macroeconomic conditions.

6.1. Brazil: consolidation, network performance and investment following the reorganisation of the mobile market

The Brazilian case offers a significant comparative experience on how a consolidation process in a capital-intensive mobile market can coexist with substantial improvements in terms of service quality, technological deployment and aggregate network performance. After an initial period of liberalisation with multiple operators, the Brazilian mobile market underwent a structural reorganisation following the exit of the operator Oi Móvel and the redistribution of its customer base among the three main operators with their own networks: Vivo, TIM Brasil and Claro.

From the point of view of market results, the available evidence suggests that the consolidation process did not lead to a deterioration in the user experience. On the contrary, independent network performance analyses show that, following the migration of Oi customers to the networks of the acquiring operators, there were significant improvements in quality indicators, including download speed, connection stability and overall user experience. These results point to operational efficiency and quality gains from network integration, consistent with economies of scale and a greater capacity for infrastructure investment (OpenSignal, 2022).

Subsequent market developments reinforce this interpretation. In terms of aggregate network performance, Brazil ranks among the countries with the highest average mobile download speeds worldwide in 2025, exceeding 200 Mbps and ahead of advanced economies such as the US and South Korea (Ookla, 2025). The result is particularly relevant given the size of the country and its geographical heterogeneity, and suggests a high level of investment in the modernisation and densification of mobile networks.

Likewise, the deployment of standalone 5G networks has advanced rapidly. By 2025, a majority of the Brazilian population already had access to this type of network, reflecting not only extensive infrastructure deployment, but also a firm commitment to new-generation technologies that require high levels of CAPEX and long-term planning. This progress has been possible in a more concentrated market context, in which operators have greater scale and financial capacity to undertake intensive investments (Anatel, 2025).

From a regulatory perspective, the Brazilian telecommunications authority, ANATEL, has accompanied this process by adopting frameworks aimed at

preserving effective competition while facilitating the sector's modernisation. In particular, the regulator has prioritised investment, coverage and service quality objectives, explicitly recognising the need for sustainable market structures to ensure compliance with the obligations associated with the deployment of advanced networks (Anatel, 2025). In fact, in its most recent assessment, ANATEL concluded that the degree of competition observed after the market reorganisation did not justify the introduction of new ex ante regulatory obligations, either in terms of spectrum or in relation to virtual operators, as it found that effective competition existed.

6.2. The US: consolidation, dynamic efficiency and technological leadership

The merger between T-Mobile and Sprint, approved in 2020, reduced the number of mobile operators with their own networks from four to three, in a market characterised, like Europe's, by high fixed costs, the need for scale and a capital-intensive technological transition to 5G networks.

The US authorities assessed the transaction with an explicit emphasis on the dynamic effects and the ability of the resulting structure to sustain high levels of investment. The remedies imposed focused primarily on network deployment and coverage commitments, as well as on preserving a minimum level of competitive pressure through the entry of Dish as a mobile operator, avoiding resorting to the artificial creation of fully integrated competitors as a structural condition for approval.

From an investment perspective, the available evidence indicates that the US sector has recorded exceptionally high levels of capital expenditure following the merger. In the period following the transaction, the US has consolidated its position as the global leader in per capita investment in mobile networks, with an annual average of close to US$250 per inhabitant between 2020 and 2024. The investment effort has resulted in the accelerated deployment of 5G networks on a national scale, with a very significant increase in the penetration of this technology in a short period of time.

The results in terms of network performance reinforce this interpretation. In just four years, 5G penetration went from marginal levels to covering approximately 70% of mobile connections, placing the US among the countries with the highest average mobile download speeds worldwide in 2025. In particular, the network of T-Mobile, the operator resulting from the merger, has seen substantial improvements in quality and capacity, doubling the

performance of its main competitors in some indicators. These advances are consistent with the hypothesis that greater scale and asset integration allowed for the exploitation of network economies and accelerated technological modernisation.

From a consumer welfare perspective, the available empirical studies find no evidence of systematic adverse effects associated with the reduction in the number of operators. Hazlett & Crandall (2024) show that, following the merger, prices continued to fall in real terms, mobile data usage per connection increased significantly, and market competition remained intense.

6.3. India: consolidation as a condition for restoring dynamic efficiency after disruptive competition

The Indian telecommunications market offers a particularly illustrative example of how an initial phase of extremely aggressive competition, based on very low prices and rapid expansion of demand, can lead to severe economic sustainability problems that necessitate subsequent consolidation to restore the sector's dynamic efficiency.

The disruptive entry of Reliance Jio in 2016 profoundly transformed the market by introducing virtually unlimited LTE data plans at nominal prices. This strategy led to an unprecedented increase in mobile data consumption, which reached approximately £17 per user per month in 2024, with very high annual growth rates since the entry of the new operator (Analysys Mason, 2025). However, the expansion in demand occurred in a context of persistently low average revenue per user (around £2 per month) and very limited per capita investment, putting significant pressure on the sector's profitability and resulting in a high and unsustainable CAPEX/revenue ratio (Omdia, 2025).

As a result, the market underwent an intense process of exit and consolidation. In just four years, the number of mobile operators nationwide fell from more than six to three, with most of the revenue and spectrum concentrated in Reliance Jio, Bharti Airtel and Vodafone Idea. The process was not the result of a deliberate strategy to reduce the number of competitors, but rather the economic unviability of a model of extreme fragmentation in a sector characterised by high fixed costs, strong economies of scale and indivisible network assets.

From a dynamic perspective, consolidation allowed for a gradual recovery of the sector's investment capacity. Between 2020 and 2024, per capita investment increased steadily, facilitating the acceleration of the deployment of next-generation networks. This investment effort resulted in a rapid migration to 5G technologies, the expansion of fixed broadband, with fibre-optical representing a majority share of fixed broadband connections, and a significant improvement in coverage in rural and less profitable areas, traditionally neglected in phases of purely price-based competition (Telecom Regulatory Authority of India, TRAI, 2024).

The advancement of 5G in India is particularly significant. In a very short period of time the country has become one of the fastest markets for the deployment of this technology, with a significant proportion of standalone 5G connections and a growing availability of associated advanced services, such as industrial applications, private networks and edge computing-based solutions. These developments have strengthened the innovation ecosystem, with the creation of numerous laboratories and test platforms geared towards business and sectoral use cases, and have laid the foundations for a future transition to subsequent technological generations (Press Information Bureau, Government of India, 2025).

From an analytical point of view, the Indian case highlights the limits of a static approach to competition focused exclusively on low prices and high market fragmentation. The initial phase of intense competition generated clear short-term benefits for consumers in terms of access and affordability, but did so at the cost of a profound erosion of profitability and investment capacity. Subsequent consolidation partially corrected these imbalances, restoring minimum conditions of economic sustainability compatible with long-term investment, innovation and the expansion of critical infrastructure.

6.4. Taiwan: consolidation, efficient use of spectrum and transition to value-based competition

In 2023 the authorities approved two major mergers –of Taiwan Mobile with T Star and of Far EasTone with Asia Pacific Telecom–, which reduced the number of mobile operators with their own networks from five to three.

One of the most immediate and significant effects of these operations was the reallocation and combination of radio spectrum. Following the mergers, the resulting operators achieved broader and more continuous spectrum configurations, both in mid-bands (3.5 GHz) and millimetre waves (28 GHz), enabling a more efficient use of a scarce and strategic resource. From an economic perspective this reorganisation facilitated economies of scale and scope in the deployment of 5G, reducing unit costs and improving the technical performance of networks (Ookla, 2023).

The benefits of this increased efficiency were passed on to consumers in a tangible way. In the case of Taiwan Mobile, the integration of the Taiwan Star network made it possible, through optimisation and intelligent network management processes, to increase coverage by around 30% and significantly improve the experience of migrated users, with increases of close to 30% in 4G speeds and over 70% in 5G. These results suggest that consolidation facilitated a more efficient allocation of assets and a substantial improvement in service quality, even in the absence of an increase in the number of operators.

Subsequent market developments reinforce this interpretation. By 2025, 5G coverage in Taiwan reached approximately 97% of the population nationwide and 95% in rural areas, figures that are particularly high for a country with complex terrain and high data traffic density. This extensive rollout highlights the ability of established operators to sustain high levels of investment and long-term planning, key elements of the sector's dynamic efficiency.

From a competitive standpoint, the reduction in the number of operators did not translate into a relaxation of competitive pressure. On the contrary, competition between the three remaining operators has remained intense, gradually shifting from price-focused rivalry to value-based competition. This new phase is characterised by the development of advanced 5G solutions for businesses, high-capacity data services and applications geared towards industrial digitalisation, areas that require scale, financial stability and high levels of CAPEX.

The cases analysed in this section share a common element that is worth highlighting: in none of them was consolidation approved without conditions or subsequent supervision. In the US the T-Mobile/Sprint merger was subject to extensive and verifiable deployment commitments. In Brazil, ANATEL maintained coverage obligations and actively supervised the transition of customers from Oi. In Taiwan, the NCC established investment and service quality targets as a condition of approval. The lesson is not that consolidation per se generates dynamic benefits, but that more concentrated market structures can generate better results when accompanied by regulatory frameworks that make approval conditional on verifiable investment

commitments and monitor their effective compliance. This distinction is fundamental: the dynamic approach proposed in this paper does not consist of deregulating or presuming benefits, but rather of evaluating static risks and dynamic benefits in a balanced manner, making approval conditional, if deemed necessary, on specific investment commitments and verifying their materialisation ex post through rigorous supervision.

7. The urgency of a change of approach: competitiveness and strategic autonomy at stake

The relevance of exit barriers and the approach applied to merger control takes on particular importance in the telecommunications sector due to its structural economic characteristics. It is a capital-intensive sector with high fixed costs, strong economies of scale and scope, and an increasingly demanding investment profile associated with the deployment and maintenance of next-generation networks. In this context, the economic sustainability of operators and their ability to generate sufficient cash flows are crucial to ensuring both dynamic efficiency and the fulfilment of the EU's strategic objectives.

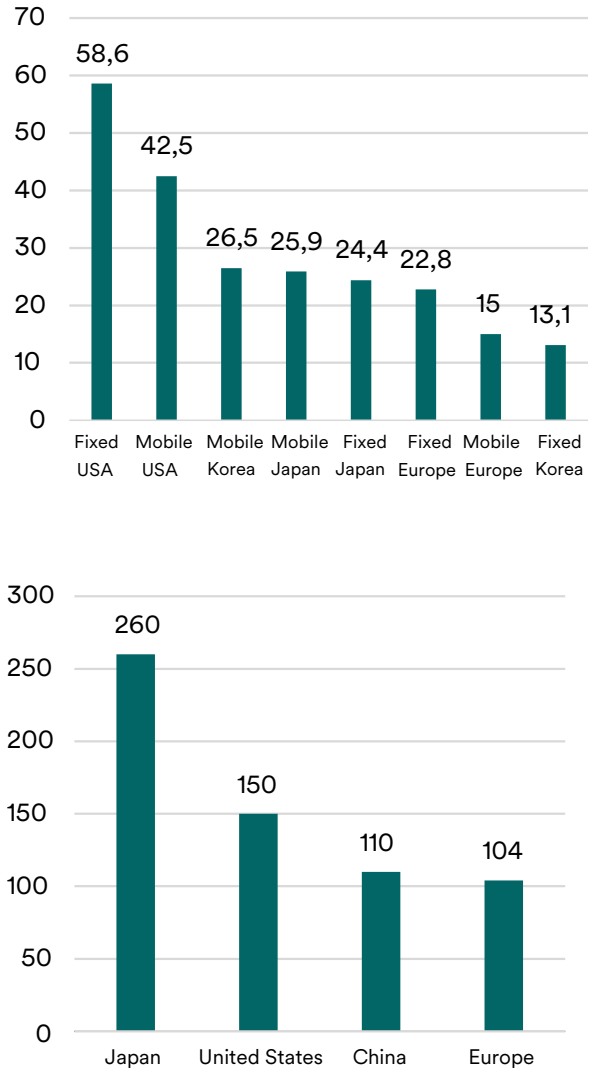
A first key element is the structurally adverse evolution of revenues. Over the last decade, European telecommunications markets have seen a persistent decline in average revenue per user (ARPU) for both mobile and fixed broadband services. This reflects an intense price competition, the widespread adoption of flat rates and the difficulty of monetising the exponential growth in data traffic. Unlike other sectors, the increase in consumption volume has not translated into a proportional increase in revenue, which has progressively eroded the sector's profitability (European Commission, 2023; OECD, 2021).

As shown in Figure 3, average revenue per user in Europe in 2022 was consistently lower than in other advanced economies: in mobile services, European ARPU (€15) was only 35% of that in the US (€42.5) and 58% of that in Japan (€25.9). In fixed broadband, the gap was even more pronounced: European ARPU (€22.8) was equivalent to 39% of that in the US (€58.6). At the same time, as shown in Figure 4, investment in telecommunications

normalised by GDP per capita in 2021 placed Europe (€104) significantly below the US (€150) and far behind Japan (€260), despite the ambitious connectivity targets set by the Digital Decade.

Figure 3 & 4.

Average revenue per user (ARPU) in telecommunications services, 2022



Source: the author with data from the European Commission

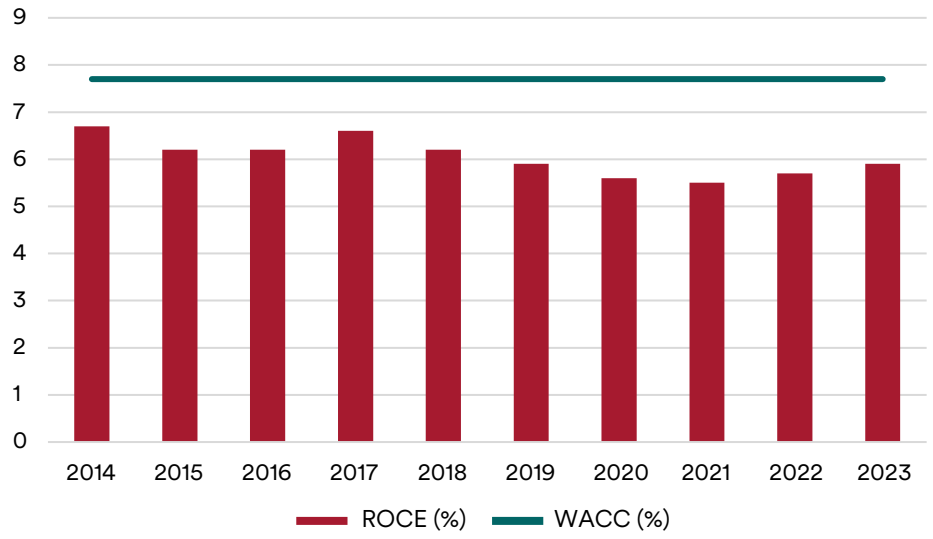
This combination of structurally low revenues and lagging investment highlights the fundamental tension that characterises the European telecommunications sector: competitive pressure on prices has achieved short-term redistributive effects that favour consumers, but at the cost of progressively eroding the financial base needed to sustain technological modernisation and the deployment

of next-generation infrastructure, which are essential for the development and adoption of advanced digital services and transformative technologies, and which will ultimately take their toll on consumers themselves.

This deterioration in revenues is particularly problematic when contrasted with the dynamics of invested capital. Far from declining, the sector's investment needs have intensified with the roll-out of fibre optic networks, 5G and, predictably, future generations of technology. The investment effort required to meet the EU's connectivity targets, including those set out in the Digital Decade, is high and growing, and is not proportional to revenue growth. As a result, European operators face a structural gap between their CAPEX needs and their ability to generate internal resources (Arnal & Jorge, 2023).

The most direct manifestation of this gap can be seen in the evolution of return on invested capital. A clear sign of this structural gap can be seen in the evolution of return on capital in the European telecommunications sector. As shown in Figure 5, the sector's return on capital employed (ROCE) has consistently been below its weighted average cost of capital (WACC) throughout the period 2014-23. While the WACC remains at around 7.7%, the sector's aggregate ROCE ranges between 5.5% and 6.7%, failing to reach the threshold needed to cover the cost of financing in any financial year. This sustained divergence suggests structural value destruction and points to an inability of the sector to generate returns consistent with the risk assumed, even before considering the growing investment needs associated with the deployment of next-generation networks.

Figure 5.
Comparison of ROCE and WACC, 2014-24



Source: the author with data from Barclays Equity Research, Network Operators of the Future, 23/IV/2024.

This continued destruction of economic value is particularly problematic in a capital-intensive sector that requires sustained investment flows for the deployment of next-generation technologies. When ROIC is persistently below WACC, operators cannot finance their CAPEX needs on economically efficient terms, their access to external financing deteriorates, and incentives to undertake long-term investments with high technological risk are weakened. The combination of declining ARPU and persistent or increasing CAPEX puts significant pressure on return on invested capital. In an environment of intense competition and reduced margins, this pressure limits operators' ability to self-finance investments, access financing on favourable terms, or absorb risks associated with long technology cycles. From a dynamic efficiency perspective, this context is particularly sensitive to market structure and the possibility of adjusting that structure as the sector matures.

At this point, exit barriers take on central importance. In capital-intensive sectors, the orderly exit of operators through consolidation processes is an essential mechanism for efficient adjustment. It allows excess capacity to be absorbed, economies of scale to be exploited and minimum conditions of profitability compatible with long-term investment to be restored. However, when the merger control framework systematically restricts these operations, the market runs the risk of becoming trapped in a situation of persistent fragmentation, characterised by numerous financially weakened operators with limited incentives to invest.

From the perspective of contestable markets theory, this scenario is particularly problematic. Although entry may remain relatively easy thanks to access regulation, the inability to exit the market on reasonable terms removes one of the fundamental pillars of contestability. Potential competition ceases to effectively discipline the behaviour of incumbents and becomes a dynamic of permanent pressure on margins, without proportional improvements in investment, innovation or service quality.

The potential negative consequences are aggravated by the strategic role of telecommunications in the European economy. Connectivity infrastructure is not only an essential input for digitalisation, but also a key element of the EU's strategic digital autonomy, economic resilience and industrial competitiveness. A structurally weakened sector, with operators unable to sustain adequate levels of investment, compromises the EU's ability to achieve its objectives in terms of connectivity, security and technological leadership (Arnal & Jorge, 2023).

In short, the combination of a predominantly static approach to merger assessment and high barriers to exit is particularly costly in the telecommunications sector. Rather than strengthening effective competition in a dynamic sense, this framework risks perpetuating a fragmented and financially fragile market structure, with adverse effects on profitability, investment and, ultimately, the strategic objectives of the EU.

8. Public policy recommendations

8.1. The policy framework for the revision of the Horizontal Merger Guidelines

In September 2024, Mario Draghi presented a far-reaching report on the future of European competitiveness, prepared at the request of European Commission President Ursula von der Leyen. Among its many recommendations, the report highlighted the need to adapt the European merger control framework to make it easier for European companies to achieve the necessary scale in global markets, and called for the introduction of an 'innovation defence' in merger analysis (Draghi, 2024).

This diagnosis was immediately endorsed by President von der Leyen, who explicitly incorporated it into the new Commission's political agenda. In her Mission Letter to the new Commissioner for Competition, Teresa Ribera Rodríguez, dated 17 September 2024, the President formally commissioned a review of the Merger Guidelines, with the aim of modernising European competition policy to make it 'more conducive to companies achieving scale in global markets' and 'better geared to our common objectives, including decarbonisation and a just transition' (Von der Leyen, 2024).

In January 2025 the European Commission published its Competitiveness Compass, a strategic roadmap designed to translate the recommendations of the Draghi Report into concrete policies. In this document, the Commission explicitly committed to revising the merger guidelines so that 'innovation, resilience and investment intensity in competition in certain strategic sectors are given appropriate weight in light of the most pressing needs of the European economy' (European Commission, 2025a).

Responding to this political mandate, on 8 May 2025 the European Commission launched two parallel public consultations on the revision of the Horizontal Merger Guidelines and the Non-Horizontal Merger Guidelines:

(a) A general consultation, aimed at the general public and various stakeholders, requesting high-level feedback on the principles that should underpin the revision of the guidelines.

(b) An in-depth consultation, aimed at technical experts in merger control, focusing on seven key topics: (a) competitiveness and resilience; (b) market power assessment; (c) innovation and other dynamic elements; (d) sustainability and clean technologies; (e) digitalisation; (f) efficiencies; and (g) public policy, security and labour market considerations (European Commission, 2025b).

Both consultations closed on 3 September 2025, receiving 243 contributions from companies, industry associations, academics, consumer organisations, national competition authorities and other stakeholders. On 29 October 2025 the Commission published a summary of the main trends identified in the responses, confirming broad support for a more dynamic approach that considers the impact of mergers on innovation, investment, resilience and the ability of European companies to compete globally, albeit with a widespread demand for greater methodological clarity on how to carry out this analysis in practice (European Commission, 2025c).

As part of the review process, DG Competition is organising interactive technical workshops with stakeholders on 4 December 2025 and 20 January 2026 to discuss the main trends emerging from the consultations and how they could be incorporated into the revised guidelines. In addition, the Commission has requested an economic study on the dynamic effects of mergers, which will provide analytical foundations for assessing whether a merger has a positive or negative impact on dynamic factors such as the capacity and incentives to invest and innovate, and how these balance against static factors such as changes in prices and output (European Commission, 2025d).

The planned timetable envisages the publication of a draft of the revised guidelines in spring 2026, followed by a new round of public consultation, before their final adoption is scheduled for the end of 2027. However, it is likely that the Commission will begin to apply some of the new approaches emerging from this process in specific cases well before the formal completion of the review.

8.2. Towards a dynamic approach to merger control: key elements of the reform

In light of the analysis developed in the previous sections, and in the context of the ongoing review of the Horizontal Merger Guidelines, it is possible to identify a set of elements that should guide the modernisation of the European merger control framework in capital-intensive sectors such as telecommunications.

8.2.1. Integration of dynamic competitive parameters in the assessment of loss of competition

The first key element is to explicitly and systematically incorporate the dynamic dimensions of competition into the assessment of whether or not a merger significantly restricts effective competition. Although the Horizontal Merger Guidelines formally recognise that competition operates in multiple dimensions –price, quality, variety of choice and innovation– the Commission's decision-making practice has asymmetrically favoured the analysis of effects on prices, relegating dynamic dimensions to a secondary or merely qualitative role.

This asymmetry is particularly problematic in sectors characterised by high investment needs, long technological cycles and strong economies of scale, where the ability of companies to invest, innovate and deploy new infrastructure is a competitive parameter that is as important as, or even more important than, short-term price levels. In these contexts, an assessment focused exclusively on static effects risks blocking transactions that, although they may reduce the number of competitors, generate substantial benefits in terms of dynamic efficiency, quality of service and technological deployment.

To correct this bias, the analysis of loss of competition should systematically incorporate metrics related to investment, innovation, quality and the ability of companies to compete in relevant markets. Greater attention should also be paid to the productive forms of companies, beyond their market share or purely structural indicators. In sectors with indivisible assets and high fixed costs, the economic sustainability of the resulting structure and the ability of operators to achieve economies of scale should be central elements of the analysis, not secondary or external considerations to the SIEC test.

In addition, the assessment should explicitly address the EU's strategic objectives in terms of resilience, sustainability and strategic autonomy, insofar as these factors directly affect the ability of European companies to compete effectively in the medium and long term. This does not imply subordinating competition analysis to industrial policy considerations, but rather recognising that, in an increasingly competitive and geopolitically fragmented global environment, the economic viability of strategic sectors and their investment capacity are relevant dimensions of effective competition (Arnal, 2025).

8.2.2. Review of the treatment of efficiencies: standard of proof, time horizon and recognition of systemic benefits

The second key element of the reform is to balance the standard of proof applied to efficiencies claimed by the parties with the standard applied to competitive risks identified by the Commission. As discussed in section 4, recent case law of the Court of Justice has significantly lowered the evidentiary threshold required for the Commission to intervene in oligopolistic markets, allowing transactions to be prohibited on the basis that it is 'more likely than not' that the concentration will generate an SIEC. At the same time, the efficiencies claimed by the companies are subject to extraordinarily strict scrutiny, as they must be verifiable, specific to the transaction, capable of being passed on to consumers and sufficient to completely offset the restrictive effects on competition.

This asymmetry creates a structural bias in the analysis, especially in capital-intensive sectors where efficiencies are predominantly dynamic, long-term and difficult to quantify accurately ex ante. In these contexts, the standard of proof should be more balanced, allowing companies to demonstrate dynamic efficiencies on the basis of reasonable analytical frameworks and robust empirical evidence, without requiring absolute certainty that is impossible to achieve over long-time horizons.

Likewise, the analysis of efficiencies should explicitly incorporate a long-term perspective, taking into account the investment and innovation cycles specific to each sector. In telecommunications, for example, the deployment of next-generation networks requires planning and investment horizons that extend over a decade or more. Assessing the efficiencies derived from a merger exclusively in terms of observable short-term effects is inappropriate and can lead to decisions that sacrifice substantial long-term benefits in order to preserve formally competitive but economically unsustainable market structures.

A third relevant aspect is the recognition of efficiencies that transcend the markets directly affected by the transaction. The current Horizontal Merger

Guidelines require that efficiencies be 'likely to benefit consumers in markets where the merger is expected to have anti-competitive effects'. This restriction is excessively narrow in sectors characterised by strong network externalities, spillover effects and close links to other segments of the digital economy.

In the case of telecommunications, investments in high-capacity networks generate benefits that extend far beyond the connectivity services market, facilitating the digital transformation of other sectors, the provision of advanced public services and the development of industrial applications based on low-latency connectivity. Ignoring these systemic effects leads to an incomplete assessment of the economic impact of the transaction and may result in suboptimal decisions from the point of view of aggregate welfare.

Finally, it is advisable to explicitly incorporate references to comparative regulatory frameworks into the efficiency analysis. The experience of the UK Competition and Markets Authority (CMA) in its assessment of the merger between Vodafone and Three in 2024 offers a relevant precedent. In this case, the British authority made its approval of the transaction conditional on verifiable investment commitments subject to ex post regulatory oversight, rather than blocking the transaction on the basis of hypothetical short-term risks. This approach, which is more results-oriented and less focused on the artificial preservation of pre-existing market structures, deserves serious consideration in the European context.

8.2.3. Remedies aimed at competitive outcomes, not the artificial preservation of market structures

The third key element is to reorient the design and application of remedies in merger transactions. As discussed in section 4, European practice has tended to use remedies as a regulatory substitute for exit, imposing structural and behavioural obligations aimed at artificially preserving the number of existing operators or facilitating the entry of new competitors, even in contexts where the market shows clear signs of maturity and excessive fragmentation.

The available empirical evidence suggests that these remedies have repeatedly failed to generate sustainable infrastructure-based competition. Cases in Austria, Ireland, Germany, Portugal and Spain show that wholesale access obligations, roaming facilities and commitments to allow new MNOs to enter the market have failed to attract viable operators within a reasonable timeframe, while generating opportunities for regulatory arbitrage and weakening the investment incentives of established operators.

Instead of focusing on preserving pre-existing market structures, remedies should focus on ensuring measurable and verifiable competitive outcomes. In capital-intensive sectors such as telecommunications, this means prioritising

investment commitments, coverage and service quality targets, and verifiable technological improvements over access obligations or entry facilities that generate artificial competition without adequate incentives for investment.

The experience of the Netherlands, where the merger between T-Mobile and Tele2 was approved without remedies aimed at preserving static efficiency, is illustrative. Ex post results show that consolidation led to a sustained increase in per capita investment, accelerated deployment of 5G networks and the country's leadership in advanced 5G coverage, without any systematic deterioration in consumer welfare. This case demonstrates that allowing orderly market exit, within an appropriate supervisory framework, is not only compatible with competitive markets, but can also generate superior results in terms of dynamic efficiency.

Remedies should also incorporate mechanisms for alignment with the EU's strategic objectives in terms of competitiveness, sustainability and resilience. This could include, for example, verifiable commitments to deploy networks in rural or less profitable areas, investments in low-energy technologies or the development of network capabilities geared towards critical industrial applications. These commitments, duly monitored by national regulatory authorities, would enable mergers to be transformed into a catalyst for investment and technological modernisation, rather than merely mitigating hypothetical short-term risks.

8.2.4. Ex post supervision and verification of commitments: a necessary condition for a dynamic approach

A critical element, which must be made explicit to avoid misinterpretation, is that a more dynamic approach to merger control does not equate to a relaxation of competitive oversight or a favourable bias towards consolidation. On the contrary, the viability of a framework focused on dynamic efficiencies depends, indispensably, on the existence of rigorous ex post monitoring mechanisms and effective verification of the commitments made by companies.

When a merger is approved on the basis of expected dynamic efficiencies –improvements in investment, accelerated technological deployment, expansion of coverage or verifiable increases in quality– these commitments cannot remain mere declarations of intent. They must be translated into

specific, quantifiable obligations, subject to specific deadlines and linked to clear consequences in the event of non-compliance. This requires, first, that commitments be formulated in terms of observable ex post results (eg, percentage of population covered by standalone 5G on a given date, minimum average download speeds and per capita CAPEX investment levels), not in terms of generic efforts or intentions.

Secondly, it requires national competition authorities and sectoral regulators to have the institutional capacity, technical resources and clear mandates to systematically monitor compliance with these commitments. The UK's experience in assessing the Vodafone/Three merger (2024) offers a relevant model: approval was conditional on a verifiable investment plan, subject to oversight by Ofcom and with explicit mechanisms in place in the event of non-compliance. This type of regulatory architecture transforms commitments into effective constraints on business behaviour, rather than mere formal conditions.

Third, a dynamic approach requires ex post transparency and accountability. Competition authorities should publish regular assessments of the degree of compliance with commitments made in previous transactions, identifying what worked, what did not work and why. This practice, which is still limited in the EU, would make it possible to learn from accumulated experience, adjust the design of future remedies and generate reputational incentives for companies to effectively comply with their commitments.

The central message is clear: allowing consolidation based on dynamic efficiencies is only compatible with effective competition protection if it is accompanied by ex post supervision of investment remedies that is at least as rigorous as ex ante analysis. A framework that favours dynamic parameters without effective verification and enforcement mechanisms would not be a step towards a more sophisticated competition policy, but rather an abdication of regulatory responsibility. The proposal defended here therefore requires more institutionality and more supervisory capacity, not less.

Conclusions

This paper has argued that the central issue in assessing competition in the European telecommunications sector is not only how many operators exist in each national market, but also to what extent the market is contestable in an economically relevant sense: that is, whether potential entry disciplines incumbents and whether the market structure can be efficiently adjusted through orderly exit processes when technology, demand or profitability conditions change. In a sector with indivisible assets, high fixed costs and long technology cycles, the sustainability of investment requires critical mass and financial capacity, and therefore exit, through intra-market consolidation, is a particularly important adjustment mechanism.

European experience suggests, however, the consolidation of a structural asymmetry: entry has been greatly facilitated by regulation, while exit has been restricted through merger control applied with a predominantly static bias. Although the SIEC framework formally recognises non-price-related dimensions, decision-making practice has favoured the price variable and tools geared towards immediate effects, relegating investment, innovation and quality to a secondary or inferential role. This approach becomes particularly costly when combined with the economic logic of the sector: under flat tariffs and persistent deflationary pressure, adjustment does not occur through marginal prices but through the ability to sustain CAPEX and finance new generation networks. In this context, a policy that systematically prevents exit can perpetuate market structures that are formally competitive in terms of price but economically fragile, with low margins, weakened incentives to invest and delays in technological deployment, reducing innovation, investment and quality.

Remedies have been a central channel for this restriction on exit. In many cases, they have been used to artificially preserve the number of operators or to attempt to generate competition through regulated entry, even in mature markets with high pressure on profitability. The evidence discussed suggests that these remedies have had limited effectiveness in creating sustainable infrastructure-based competition and, in some cases, have opened up opportunities for regulatory arbitrage. In contrast, episodes in

which consolidation with a greater emphasis on dynamic efficiency has been allowed, in the EU and, more clearly, in comparable jurisdictions, show that a reduction in the number of operators is not, in itself, incompatible with favourable outcomes for consumers when the regulatory framework and ex post commitments are geared towards investment, quality and technological deployment.

These conclusions have direct implications for the ongoing review of the Horizontal Merger Guidelines. If the EU seeks a competition policy consistent with its objectives of innovation, resilience and investment intensity in strategic sectors, it is necessary for merger control to internalise the dynamic parameters of competition more systematically. This does not require replacing competitive analysis with industrial policy logic, but rather recognising that, in capital-intensive network industries, effective competition in the medium and long term depends critically on the ability to invest, innovate and maintain service quality.

In terms of reform, the paper proposes three main guidelines. First, to integrate metrics and operational frameworks that allow for the explicit assessment of the effects of a merger on investment, quality and innovation, in addition to prices, with time horizons consistent with the cycles of the sector. For this analysis, it is essential to have a good understanding of the productive characteristics of each sector. Secondly, to balance the treatment of efficiencies against competitive risks, avoiding an evidentiary asymmetry that systematically penalises dynamic efficiencies that are difficult to quantify ex ante but relevant to aggregate welfare. Third, reorient remedies from the artificial preservation of structures towards verifiable performance commitments, such as investment, coverage, quality and deployment, subject to monitoring and effective enforcement, so that competition intervention mitigates real risks without blocking the structural adjustment necessary to sustain the sector.

In short, in strategic network industries such as telecommunications, protecting competition cannot be equated solely with preserving the number of companies or minimising short-term price increases. Protecting effective competition also requires protecting the economic conditions that sustain investment, innovation and quality over time. A merger control framework capable of recognising this dynamic dimension would not weaken European competition policy; on the contrary, it would make it more consistent with the productive reality of the sector and with the EU's strategic objectives.

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