

ARTICLE

The Rise of Industrial Policy in Europe and the Search for Growth and Innovation: A Golden Opportunity for Competition Authorities

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The Network Law Review is pleased to present a special issue on “Industrial Policy and Competitiveness,” prepared in collaboration with the International Center for Law & Economics (ICLE). This issue gathers leading scholars to explore a central question: What are the boundaries between competition and industrial policy?

Abstract: This paper argues that the unintended and unanticipated costs of globalization revealed during the 2008 financial crisis and the 2020 COVID-19 pandemic have led to a renewed embrace of industrial policy. The rising market concentration and profit margins have also contributed to this development. And the challenges of regulating the digital economy through competition law instruments have further reinforced this trend. Together, these factors have produced a shift of societal goals toward innovation, resilience, sustainability and strategic independence. The paper then analyzes how competition law should evolve toward a more dynamic framework incorporating the goals of innovation, sustainability, and resilience. Adapting to these changing circumstances is a challenge which must be met by competition authorities if they want to keep their independence but also a chance to remain relevant.

You can sail in a ship by yourself,
Take a nap or a nip by yourself.
You can get into debt on your own.
There are lots of things that you can do alone.
But it takes two to tango
(written and composed by Al Hoffman and Dick Manning, 1952)

Over the last twenty years, a number of factors have converged to support a more active involvement of the state through industrial and innovation policies to make possible or accelerate the necessary transitions toward a more desirable future:

- The unanticipated costs of the economic globalization pursued in the 80s and 90s in terms of loss of jobs in non-competitive industries, loss of economic independence and loss of resilience of our economic system;
- The comparatively disappointing financial performance of some of the most important market economies during the first two decades of the 21st century, and the apparent failure of competition law enforcement to ensure the delivery of the assumed macroeconomic benefits of competitive market systems,
- The emergence in the mid-1990s of the “digital economy” as a distinct driver of GDP followed by the development of Big Tech and the platform economy at the turn of the century, the rise of the data economy and artificial intelligence starting in the second decade of the 21st century and the difficulties faced by competition authorities to deal with competition issues on those new markets,
- A shift of our collective preferences from short-term allocative efficiency benefits toward resilience and long-term sustainability and independence.

1. The rise of European Industrial Policy in the 21st century

In line with this evolution in Europe, the first sign of a thrust toward an active industrial policy (except for a long-lasting drive toward the integration of the European market) came with the adoption by the European Council of the Lisbon Agenda (The Lisbon Strategy) in 2000. The announced goal was to make the EU “the most competitive and dynamic knowledge-based economy in the world” by 2010. The Lisbon Agenda aimed to raise the EU average GDP growth to around 3% per year, increase R&D spending to 3% of GDP (with two-thirds financed by business), and advance the knowledge society (education, ICT, innovation), while also strengthening social cohesion and promoting environmental sustainability. It was based on the notion that firms’ innovation plays a crucial role in fostering productivity and economic growth

The Lisbon Council in March 2000 adopted the Open Method of Coordination as a principal instrument for coordinating the Member States’ policies in an area where the EU has limited legal competence. The Open Method of Coordination involved: the definition of guidelines and timetables for achieving goals in the short, medium, or long term; the establishment of quantitative and qualitative indicators and benchmarks “against the best in the world” and “tailored to the needs of different Member States and sectors,” the translation of EU-level guidelines into national or regional policies and the setting of national target measures, taking into account varying starting points.

The main weaknesses of the Lisbon strategy, which never achieved its initial goals and did not close the productivity gap with other developed countries such as the US or Japan, were its lack of focus and its lack of incentive or enforcement mechanisms.

With respect to incentives, the Lisbon strategy did not provide for any of the policy tools suggested by the literature to promote innovation in spite of the fact that innovation was key to achieving its goals.¹

With respect to enforcement, there were no penalties or legal sanctions for failing to meet targets. Member States had flexibility in how to achieve goals, depending on their national circumstances. Performance-based evaluation was in the form of monitoring, peer review, benchmarking, periodic reports. The idea was that Member States would report on how they were doing with respect to the indicators and benchmarks.

The weakness of the Lisbon strategy and the financial and economic crisis of 2008 led the EU Commission in June 2010 to adopt “The Europe 2020 strategy,” which represented a more targeted attempt at industrial policy.²

Innovation, sustainability, and competitiveness were moved to the centre stage of the European industrial policy. The Commission set five concrete headline targets (employment, R&D, climate/energy, education, poverty) and gave the EU

¹ See, for example, Nicholas Bloom, John Van Reenen, and Heidi Williams, “A Toolkit of Policies to Promote Innovation,” *Journal of Economic Perspectives*—Volume 33, Number 3—Summer 2019—Pages 163–184. The authors suggest a policy toolbox to foster innovation which includes R&D grants, R&D tax credits, immigration of skilled workers, universities incentives and an increased supply of graduates in training in science, technology, engineering, and mathematics, greater competition and trade openness, a reform of IP laws with respect to the types of technologies which are patent eligible and with respect to patent-trolling, removing constraints on the development of an active early-stage finance market, the provision of subsidized loans for young firms, and the development of “mission-oriented” R&D projects

² COMMUNICATION FROM THE COMMISSION, An Integrated Industrial Policy for the Globalisation Era Putting Competitiveness and Sustainability at Centre Stage, SEC(2010) 1272

Commission a coordinating role in areas previously considered purely national and a stronger governance.

The Europe 2020 strategy was more focused than the Lisbon strategy on tackling environmental market failures, and it established specific benchmarks to be reached with respect to sustainability and climate change. Among its targets were lifting R&D/innovation budgets to 3% of EU GDP (which had already been a target of the Lisbon Strategy) and achieving a 20% reduction in greenhouse gas emissions, 20% of energy from renewables, and a 20% increase in energy efficiency.

The target of 3% of GDP for R&D/Innovation was missed (the EU stayed around 2%, behind the U.S. and Korea). Still, the EU cut emissions by over 20% (compared to 1990 levels), renewables reached about 20% of energy consumption, and energy efficiency improved.

The Europe 2020 strategy was still market-oriented: the EU set targets (such as the regulatory targets for average emissions), created incentives (for example, to improve the efficiency of appliances) and price signals (for example, through the creation of a carbon price signal), but left it largely to markets and firms to deliver.

One example of this approach which combines strategic goals and market-oriented instruments can be found in the area of public procurement rules. The 2014 Public Procurement Directive contains several recitals and operative provisions that explicitly refer to the Europe 2020 strategy. Recital 2 of Directive states: “Public procurement plays a key role in the Europe 2020 strategy ... as one of the market-based instruments to be used to achieve smart, sustainable and inclusive growth while ensuring the most efficient use of public funds.³ For that purpose, the public procurement rules adopted ... should be revised and modernised in order to increase the efficiency of public spending, facilitating in particular the participation of small and medium-sized enterprises (SMEs) in public procurement and to enable procurers to make better use of public procurement in support of common societal goals.” Further, Recital 47 of Directive states: “Research and innovation, including eco-innovation and social innovation, are among the main drivers of future growth and have been put at the centre of the Europe 2020 strategy for smart, sustainable and inclusive growth. Public authorities should make the best strategic use of public procurement to spur innovation. Buying innovative products, works and services plays a key role ... while addressing major societal challenges. It contributes to achieving best value for public money as well as wider economic, environmental and societal benefits...”

³ Directive 2014/24/EU

One significant change introduced by the Commission was the new state aid regime for Important Projects of Common European Interest (IPCEI).⁴ It allows direct state aid for large firms, covers the entirety of the innovation process (and not just the financing of the Research and Development stage), and promotes cross-border alliances of firms and states. The new regime allows the funding of projects which address market failures or critical systemic challenges (e.g., energy transition, digital sovereignty), contribute significantly to EU objectives (green deal, digital agenda, strategic autonomy), generate positive spillovers across the EU, not just national benefits, go beyond what the market would finance alone (high-risk and innovative), and ensure transparency and the proportionality of the aid which must only fill the “funding gap.”

An interesting aspect of the state aid regime for IPCEI is that it contains mechanisms designed to maintain competition and innovation such as, a selection of beneficiaries through a competitive, transparent and non-discriminatory procedure,⁵ performance-contingent funding⁶ (through funding-gap method, repayable advances, loans, reimbursable grants, milestone reporting and audits) and (optional) claw-back systems.⁷ Although there is no provision establishing a uniform sunset clause for all projects (or making such a sunset clause mandatory), IPCEI approvals set clear project end-dates, payment deadlines and reporting periods so support is time-limited and subject to ex-post checks.

Independently of the question of whether the instruments to implement the EU industrial policy adopted in the 2010s have delivered (and there are suggestions that the IPCEI reform of 2014 was a move in the right direction but too limited in the scope of the innovative projects that could be financed at the European level and too

⁴ In 2014 Instrument: Communication from the Commission — Criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of Important Projects of Common European Interest

⁵ The selection of beneficiaries through a competitive, transparent and non-discriminatory procedure will be considered as a positive indicator.

⁶ Article 33 of the IPCEI Communication (2021/C 528/02): “The maximum permitted aid level will be determined with regard to the identified funding gap in relation to the eligible costs. If justified by the funding gap analysis, the aid intensity could cover all of the eligible costs. The funding gap refers to the difference between the positive and negative cash flows over the lifetime of the investment, discounted to their current value on the basis of an appropriate discount factor reflecting the rate of return necessary for the beneficiary to carry out the project, notably in view of the risks involved.”

⁷ Article 36 of the IPCEI Communication (2021/C 528/02) states: “As an additional safeguard to ensure that the State aid remains proportionate and limited to the necessary, the Commission may request the notifying Member State to implement a claw-back mechanism (30). The claw-back mechanism should ensure a balanced distribution of additional gains when the project is more profitable than forecasted in the notified funding gap analysis and should apply only to those investments which reach, based on the ex-post cash flow results and of State aid disbursements, a rate of return exceeding the beneficiaries’ cost of capital. Any such claw-back mechanism should be clearly defined in advance in order to provide financial predictability for beneficiaries at the moment of decision-making on participation in the project. Such mechanism should be designed in such a way as to maintain strong incentives for beneficiaries to maximise their investment and project performance.”

bureaucratic in its procedures), it appears that the EU Commission has shifted in the early 2020s to a new perspective on industrial policy promoting cooperation between states and private firms to facilitate the development of innovations in selected technology fields to overcome information or coordination failures and to allow the creation of new markets which will contribute through positive externalities to the achievement of the Commission's developmental goals and social preferences.

The EU has had a long-standing interest in the protection of the environment and the fight against climate change. The Single European Act (1986) introduced a new Title on the Environment into the EEC Treaty, now Articles 191-193 TFEU, which are the legal basis for the environmental policy of the EU. Article 191(1) provides *inter alia* that Union policy on the environment shall contribute to the preservation, protection and improvement of the quality of the environment, the prudent and rational utilization of natural resources, and the promotion of measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change. The commitment of Europe to the protection of the environment was reinforced by the Maastricht Treaty (adopted in 1992 and entered into force in November 1993) which introduced "sustainable development" as an EU objective in what is now Article 3(3) TEU which made environmental protection a foundational goal of the Union. Article 3(3) states: "The Union shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at a high level of protection and improvement of the quality of the environment." This objective was further reinforced by the Amsterdam Treaty (adopted in 1997 and entered into force on May 1, 1999) which added what is now Article 11 TFEU stating: "Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities... in particular with a view to promoting sustainable development." Thus environmental protection and the promotion of a sustainable environment must be integrated both in competition policy and law enforcement and of industrial policy. Finally, the Treaty of Lisbon (2007, entered into force in December 2009) modified article 191(1) TFEU which now includes "in particular combating climate change" as a core EU environmental objective. The Lisbon Treaty is the basis for today's European Green Deal and European Climate Law.

At the level of implementation, the EU, first, adopted in 2003 the Emissions Trading System (ETS) based on a "cap and trade" principle. The cap refers to the limit set on the total amount of greenhouse gases that can be emitted by installations and operators covered under the scope of the system. This cap is reduced annually in line with the EU's climate target, ensuring that overall EU emissions decrease over time. The system applies to a few industries: power and heat generation, energy-intensive industries (steel, cement, chemicals, refineries, paper, etc.), and was extended to

aviation within the EEA in 2012, and to maritime transport, buildings, and road transport via a new system (EU ETS 2) starting in 2024. Yet, especially in the early years, some critics denounced the price volatility of carbon, the overallocation of free allowances, and the limited impact on sectors outside the ETS.⁸ These criticisms led to several reforms of the ETS and according to the European Environment Agency by 2022, emissions in ETS sectors were 41% lower than in 2005.

With the Green Deal adopted in December 2019 and the New EU Industrial Strategy adopted in March 2020 and revised in 2021, the EU moved past “market signals” and adopted a much more interventionist approach through “mission oriented innovation policies” involving massive public investment, direct subsidies for specific sectors (for example for green steel, hydrogen, batteries, renewables or semiconductors), mandated domestic industrial capacity (for example the fact that 40% of solar panels, wind turbines, batteries, and hydrogen electrolyzers must be produced in Europe by 2030) or the creation or development of new markets (for example through the adoption of a ban on sales of new internal combustion engine cars by 2035), the relaxation of competition rules (for example, state aid rules under the Temporary Crisis and Transition Framework (TCTF) introduced in March 2023 as part of the Green Deal Industrial Plan allow higher aid intensities and ceilings so that Governments can cover a larger share of investment costs in clean tech, simplified approvals and faster clearance by the Commission for subsidies linked to renewable energy, hydrogen, battery production, etc., matching of subsidies offered by non-EU countries, and direct plans for strategic autonomy in green/digital sectors).

Thus, the EU, which originally relied on a carbon tax, now uses a combination of a carbon tax and subsidies to research and development to promote the adoption of such technologies. It is worth noting that Daron Acemoglu, Philippe Aghion, Leonardo Bursztyn, and David Hemous studying endogenous and directed technical change in a growth model with environmental constraints suggest that “optimal environmental regulation should always use both an input tax (“carbon tax”) to control current emissions, and research subsidies or profit taxes to influence the direction of research. Even though a carbon tax would by itself discourage research in the dirty sector, using this tax both to reduce current emissions and to influence the path of research would lead to excessive distortions. Instead, optimal policy relies less

⁸ See, for example: Grubb, M. (2012). Strengthening the EU ETS: Creating a stable platform for EU energy sector investment. *Climate Policy*, 12(5), 652–676. Kollenberg, S., & Taschini, L. (2016). The European Union Emissions Trading System and the Market Stability Reserve: Optimal dynamic supply adjustment. *Journal of the Association of Environmental and Resource Economists*, 3(4), 857–894. Martin, R., Muûls, M., & Wagner, U. (2016). The impact of the EU ETS on regulated firms: What is the evidence after ten years? *Review of Environmental Economics and Policy*, 10(1), 129–148. Cludius, J., & de Bruyn, S. (2020). Carbon leakage and industry compensation under the EU ETS: A review of evidence. *Energy Policy*, 145, 111771

on a carbon tax and instead involves direct encouragement to the development of clean technologies.”⁹

The New EU Industrial Strategy (updated in 2021) also included a digital component in addition to the Green strategy. It framed digital transformation as a twin priority alongside the green transition. It set three main goals: 1) building European leadership in strategic digital technologies (Cloud & data infrastructure, artificial intelligence (AI), 5G/6G networks, Semiconductors); 2) ensure industrial competitiveness through digital adoption in SMEs and traditional sectors and 3) Protect technological sovereignty by reducing European dependence on U.S. (cloud, platforms) and China (5G, hardware, rare earths).

It proposed to achieve these goals through various proactive industrial interventions including the creation of European common data spaces (where companies can share data securely and collaboratively (European Data Strategy Feb 2020), the development of a federated cloud infrastructure not dominated by Amazon/Azure/Alibaba, a push for the deployment of 5G across all EU regions by co-financing the roll-out, the development of a European ecosystem of excellence, the adoption of a risk-based legal framework distinguishing between high-risk AI system uses and low-risk AI systems uses and imposing differentiated obligations on providers from outright prohibition to unrestricted use depending on the level of risk (achieved by the AI Act¹⁰ adopted in 2024).¹¹

Finally, the digital component of the New EU Industrial Strategy highlighted chips as a strategic dependency in 2020 and pointed out the need to reduce the dependency on external suppliers, to foster domestic production, and strengthen Europe’s technological sovereignty.

⁹ Daron Acemoglu, Philippe Aghion, Leonardo Bursztyn, and David Hemous, *The Environment and Directed Technical Change*, *The American Economic Review*, February 2012 102(1): 131-166 <http://dx.doi.org/10.1257/aer.102.1.131>

¹⁰ Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence

¹¹ The AI Act also contributes to the creation of a data-rich regulatory infrastructure that could enhance the factual grounding of innovation theories of harm, potentially improving the innovation assessment in merger control in the digital sector. The AI Act’s provisions—most notably those on technical documentation, dataset governance, API and interface transparency, and audit and supervisory powers—introduce legally enforceable requirements that generate verifiable, standardized data on AI systems’ design, inputs, and performance. By mandating the documentation of training data, model architectures, and risk management processes, the Act can enable national competition authorities in Europe and the DG Competition to map innovation overlaps across merging entities and to assess the substitutability of key technological inputs with greater precision. Access to records of dataset composition and API usage conditions further supports analysis of potential input foreclosure or ecosystem consolidation, central to merger inquiries in data-driven markets. Moreover, the AI Act’s audit and post-market monitoring provisions create a longitudinal evidence base for assessing post-merger innovation outcomes, thus facilitating ex ante and ex post evaluation of merger effects on technological progress.

In short, the digital component of the 2020 Industrial Strategy turned the EU from a market referee into an industrial player – investing in strategic technologies, creating alliances, and using EU funds to shape outcomes.

2. Lessons from the past for Industrial Policy

As mentioned previously, there has been a move toward a much more interventionist policy by the EU in market mechanisms. Tampering with market mechanisms poses risks, including a decline in competition. Therefore, it is essential to ensure that the adverse effects of industrial policy interventions do not undermine the firms’ incentives to be efficient and innovative.

There appears to be an emerging consensus in the literature that the success or failure of past industrial policy interventions was, to a large extent, dependent on their implementation.

One often quoted example to support the idea that implementation is key to the success or failure of industrial policies is the “import substitution” policy, which was pursued in many countries, apparently successfully in countries like Korea, and apparently less successfully in other countries such as India or Brazil. Such a policy is based on the infant industry argument that there are within-industry externalities that are such that if the domestic industry grows and is protected from international competition, it will become more competitive.

Various authors suggest that the success of this industrial policy in Korea was due to two elements.¹²

First, the protection accorded to the Chaebols in Korea was complemented by subsidies, which were a function of the performance of the Chaebols on export markets and therefore preserved the incentives of these groups to remain competitive. Second, the fact that the Korean State is characterized by what Peter Evans calls “embedded autonomy”¹³ meaning that it can set and implement policies that promote industrial transformation effectively and independently while being connected to societal actors, such as businesses, labor unions, and civil society enabling it to consider various perspectives and to ensure that its policies are more likely to be accepted and effective.

With respect to the procedures of industrial policy, Mario Draghi in his well-known report on the future of competitiveness in Europe has drawn attention to the model developed in the US by the Defense Advanced Research Projects Agency

¹² See for example Dani Rodrik, “Taking Trade Policy Seriously: Export Subsidization as a Case Study in Policy Effectiveness,” in A. Deardorff, J. Levinson, and R. Stern (eds.), *New Directions in Trade Theory*, Ann Arbor, University of Michigan Press, 1995

¹³ Peter Evans, “Embedded Autonomy: States and Industrial Transformation,” Princeton, NJ, Princeton University Press, 1995.

(DARPA), which has been adapted in other sectors than the defense (ARPA-E in energy, ARPA-H in health).¹⁴ The ARPA model is often considered one of the most effective public innovation funders in the world. Over the years, it has supported the development of many innovations, including the Internet, GPS, stealth aircraft, autonomous vehicles, and mRNA vaccine platforms. Its procedures have several strong points compared to the EU industrial policy procedures.

The ARPA projects are designed to fund high-risk, high-payoff projects. The ARPA procedure tolerates a high failure rate (about 80% of the projects fail) but registers impressive successes. Pierre Azoulay, Erica Fuchs, Anna P. Goldstein, and Michael Kearney analyze the main features of the ARPA model which keep innovative dynamism high.¹⁵ The most important features mentioned are:

1. A General Organizational Flexibility allowing agencies to respond quickly to changing technological conditions through the hiring of program managers from technical positions in academia, industry, and government, typically serving one term of three to five years, and the ability to award flexible contracting for the performers of ARPA projects;
2. A Bottom-Up Program Design with projects which are, to a large extent, cross-disciplinary initiatives designed to address long-term strategic challenges with potential for commercial applications, often include specific technical targets and are focused on outcomes more than on scientific publications;
3. A Large Discretion is accorded to program directors to decide how to allocate funds within a program;
4. And an Active Project management, with program directors able to make decisions related to capital, tasks, milestones, and technical goals throughout the project and to act like venture capitalists with flexible budgets.

This kind of mission-oriented procedure typical of ARPA projects fairly clearly fits the model of “embedded autonomy” mentioned by Dani Rodrick. It maintains a competitive pressure between the teams benefiting from a contract, has a strict mechanism to eliminate underperformers, and involves the businesses that could develop and scale the successful innovations.

This example, which on several dimensions differs from the way industrial policy projects used to be managed in Europe in the 20th century, is a helpful

¹⁴ Mario Draghi, *The future of European Competitiveness*, European Commission, September 2024

¹⁵ Pierre Azoulay, Erica Fuchs, Anna P. Goldstein, and Michael Kearney, in “Funding Breakthrough Research: Promises and Challenges of the ARPA Model,” *Innovation Policy and the Economy* 2019 19:, 69-96

reference in an attempt to make our industrial interventions more conducive to innovations.

3. Industrial policy and the future of competition policy

An important question is what these developments mean for competition policy and for competition law enforcement in the EU?

As mentioned previously, the 2020 Industrial Strategy and the New EU Industrial Strategy (updated in 2021) are more interventionists than previous industrial policy plans. The industrial policy interventions entail two risks.

One risk is that they might restrict competition. For example, setting minimal shares for European-made electricity generating equipment by 2030 could lead to a weakening of competition if, to achieve this goal, the EU mostly rely on trade restrictions; it could however promote competition if, to achieve this goal, the EU finances projects which will allow the development of innovation and the investments in domestic production capacity of competitive electricity generating equipment which will meet the domestic demand. This means that there is an important role for competition authorities to monitor industrial policy interventions and to suggest ways to achieve the public interest goals while preserving competition.

Another risk is that EU interventionism designed to protect our economic independence and resilience (security) might overburden economic actors with regulation which might have unintended consequences of restricting competition and innovation. For example, the Draghi report echoes the concern that the adoption of a precautionary approach in the regulation of AI systems dictating specific business practices *ex ante* to avert potential risks *ex post* has had a negative effect on both innovation and competition.

To avoid these risks and to promote innovation, industrial policy projects should favor openness, modularity, and interoperability.

Competition authorities should engage in discussion on appropriate industrial policy interventions, using their advocacy function. They could play a very useful role in analyzing the least anticompetitive ways to achieve the socio-political goals that these interventions are trying to achieve. This engagement would be analogous to the participation of competition authorities in the regulatory reform movement with the difference that the intervention of the competition authority could be *ex ante*.

With respect to competition law enforcement, Mario Draghi makes several useful suggestions, some of which will be commented here.

First, he observes that “[t]he economy has shifted towards more innovation-heavy sectors where competition is usually based on digital technologies and brands, where both scale and innovation are critical to compete rather than just low prices” and that “since innovation in the tech sector is rapid, merger evaluations in this sector must assess how the proposed concentration will affect future innovation potential, despite its uncertainty. This evaluation is more complex than the simple assessment of the price effect of a merger.”¹⁶

Mario Draghi implicitly considers that competition authorities have, historically, focused on the price dimension of competition, only recently incorporating considerations of innovation. They have applied the methodology used to assess price effects to the issue of competition, without sufficiently accounting for the specificities of the innovation process.

It is fair to say that competition authorities have not waited for the publication of the Draghi report to attempt to analyze the effect of mergers on innovation. However, the Commission has for the most part focused its attention on identifying mergers that can be a threat to innovation and, in particular, “killer acquisitions.” The innovation defense presented by parties in merger cases have, typically been dismissed because they were considered uncertain and/or speculative. In contrast, the risks that the mergers would decrease the incentives of the merging parties to engage in parallel R&D was considered crucial. The possibility that the productivity of the R&D of the merged parties would be higher than the productivity of the merging parties before the merger, thanks to the combination of their capacities, was not considered.

There were three major reasons for this skepticism of the Commission toward the pro-innovation benefits of mergers.

First, the EU Commission mostly focused its analysis on the short-term effects of mergers (three to five years after the merger) arguing that the longer term was uncertain. Innovation typically takes time to develop (up to seven to ten years in innovation heavy sectors) and therefore often fall out of the scope of analysis of the Commission.

To assess the possible effect of mergers on innovation, it is necessary for competition authorities to adopt a longer time frame for the analysis than the short term they are used to and to accept making decisions in an environment partially affected by uncertainty which may require more caution on their part than decisions in a more certain environment. The reason for this is that as Frank Easterbrook said long ago: “An antitrust policy that reduced prices by 5 percent today at the expense of reducing by 1 percent the annual rate at which innovation lowers the costs of

¹⁶ Mario Draghi, “The future of European competitiveness,” European Commission, September 2024

production would be a calamity. In the long run a continuous rate of change, compounded, swamps static losses.”¹⁷

Second, the analytical tools that the EU Commission and national competition authorities have used to assess the impact of mergers on innovation were rather basic.

This is partially because there is no consensus on the framework that competition authorities should use as a guide to assess innovation effects.

Economists are divided on this issue between “competition economists” who (with some exceptions) focus principally on the way in which structural changes may affect the incentives of the merging firms and their actual or potential competitors to engage in R&D and “business school economists” who argue that innovation depends less on static market structure and more on the firms’ dynamic capabilities (ability to integrate, reconfigure, and adapt resources) and on their ability to appropriate the value created by innovation.

Even, among competition economists there is a divide between those, inspired by Joseph Schumpeter, who argue that larger firms have greater incentives and ability to invest in R&D because they can fund risky R&D, to benefit from economies of scale in R&D, and have a prospect of benefiting from a monopolistic position by innovating and those, inspired by Kenneth Arrow, who focus on the replacement effect and argue that competition spurs innovation because monopolists already earn rents and fear the cannibalization of their activity and their profits, while entrants gain more by innovating. Straddling the two, some economists like Philippe Aghion argue that too much competition and too little competition are both likely to reduce innovation. The attempt to link market structures and the intensity of competition to innovation ends up being very confusing and does not provide clear guidance to competition authorities on how to proceed.

It is, however worth mentioning that Carl Shapiro has proposed a framework which evades the above mentioned trap, tries to unify the Arrow and Schumpeter approaches and can be consistent with the business economist approach by focusing the analysis on three dimensions in the assessment of the potential impact of a merger on innovation:

1. Contestability: “The prospect of gaining or protecting profitable sales by providing greater value to customers spurs innovation.”¹⁸
2. Appropriability: “Increased appropriability spurs innovation,” and

¹⁷ Frank H. Easterbrook, Ignorance and Antitrust, in *Antitrust, Innovation, & Competitiveness* 82, 122-23 (Thomas M. Jorde & David J. Teece, eds. 1992);

¹⁸ Carl Shapiro, “Competition and Innovation : Did Arrow Hit the Bull’s Eye?” *Competition and Innovation: Did Arrow Hit the Bull’s Eye?* March 2012, in “The Rate and Direction of Inventive Activity Revisited” Josh Lerner & Scott Stern, editors, University of Chicago Press

3. Synergies: “Combining complementary assets enhances innovation capabilities and thus spurs innovation.”

Third, the interpretation of EU competition law leads the Commission to apply a much higher standard of proof for efficiency or innovation defence arguments than the standard of proof it uses for establishing the possibility of a restriction in competition. First, it is always for the merging parties and not for the EU Commission to address the issue of efficiencies. The standard of proof for merger prohibitions require that the Commission establishes that it is “more likely than not that the merger would result in an SIEC” whereas when parties to the merger claim static or dynamic, they must demonstrate that the claimed efficiencies are verifiable (i.e., documented and quantifiable) which is rarely possible for dynamic efficiencies given the prospective and uncertain nature of the innovation process.

Thus, the first recommendation of the Draghi report with respect to competition, which states: “Emphasise the weight of innovation and future competition in DG COMP decisions, enhancing progress in areas where the development of new technologies would make a difference for consumers (...)” seems appropriate in light of the insufficiencies of the analysis mentioned previously. This recommendation would require the adoption of a longer term perspective in competition analysis of the effect of mergers on innovation and a dynamic approach to competition law enforcement focusing both on the capacities and the incentives of the merging firms and their competitors to innovate together with the publication of guidelines explaining, on the one hand, how the authority assesses the impact of competition on innovation (and innovation on competition), and on the other hand, the criteria for accepting an efficiency defence from the parties. Mario Draghi is careful to point out that an innovation defence should not be used “to justify further concentration by already dominant companies or in cases in which the concentration poses a significant risk of entrenching a dominant position, ultimately harming effective competition.”

Mario Draghi also suggests that sustainability, resilience, and security are additional public interest considerations that should be taken into account by competition authorities in their assessment of practices or mergers in addition to the innovation analysis.

With respect to vertical or horizontal agreements, Mario Draghi’s suggestion is to consider sustainability as a public interest when analyzing agreements that could restrict competition. He states: “(...) horizontal cooperation agreements and concerted practices are sometimes necessary to achieve R&D investment, sustainability transitions, and other initiatives that require standardisation and coordination of solutions across players but greatly benefit European consumers.”

Mario Draghi recognizes that not all horizontal agreements between competitors can be justified by the desire to overcome a coordination failure or to allow the creation of a new market and limits himself to requiring that the Commission: “provide clear guidance and templates on novel agreements, coordination and co-deployment between competitors.”

The Draghi report also suggests that competition authorities consider security and resilience as a public interest in strategic industries. Specifically, its third recommendation regarding competition states: “Develop security and resilience criteria by expert authorities and include them in DG COMP assessments. The current practice of enforcing competition policy does not emphasize security, resilience, and the related disruption risks to the EU economy. Although security and resilience aspects are somewhat taken into account in the competition assessment (e.g., when looking at the viability of firms, supplies to the market along the supply chain), these elements should get more weight in competition evaluations, since they have become increasingly important in today’s world.” The security and resilience analysis should be reserved exclusively for sectors where they are “particularly crucial,” such as security, defence, energy, and space (e.g., in dual-use decisions).

An additional recommendation from the Draghi report concerns the importance of allowing firms to scale up in specific innovative service sectors (such as the digital sector) and infrastructure sectors (such as the energy and transportation sectors). Scaling up of firms is “a critical condition for competitiveness and economic growth.” As it is clear that allowing firms to scale up in fragmented markets would raise serious competition concerns, the report emphasizes the importance of eliminating the regulatory fragmentation of European service markets as a condition to allow the scaling-up of firms in the service sectors.

Competition authorities of the member states (in the context of the ECN) and the DG Comp clearly have an important advocacy role to play to suggest the reforms and regulatory harmonization under which European markets could be less fragmented.

The Draghi report emphasizes the underdevelopment of the EU system of financing for innovation. It notes that the external funding of EU companies to a large extent still takes the form of debt financing, “which is unsuitable for funding innovative projects in their early stages and generally insufficient for large-scale investment projects.” This opens a discussion on whether and why venture capital financing seems to play such a limited role in Europe.

The role of venture capital in the financing of high-risk innovative projects has been analyzed in a number of recent papers.¹⁹ It is generally recognized that the

¹⁹ Bronwyn H. Hall, “The Financing of Innovative Firms,” *Review of Economics and Institutions*, Vol. 1 – No. 1, Spring 2010. Samuel Kortum; Josh Lerner: “Assessing the Contribution of Venture Capital to

strengths of the venture capital model include “its strong emphasis on governance by venture capital investors through staged financing, contractual provisions, and active involvement with their portfolio companies.” Economic research also shows that venture capital seems to contribute importantly to the financing of innovation. For example Kortum and Lerner find that: “the amount of venture capital activity in an industry significantly increases its rate of patenting. While the ratio of venture capital to R&D has averaged less than 3% in recent years, our estimates suggest that venture capital accounts for about 15% of industrial innovations.”²⁰

It is also interesting to note that in the United States venture capital took off in the early 1980s, just after the Department of Labor ruled that pension fund managers who had to invest their funds’ resources with the care of a “prudent man,” could take portfolio diversification into account in determining prudence, which “implied that the government would not view allocation of a small fraction of a corporate pension fund portfolio to illiquid funds like venture capital as imprudent, even if a number of companies in the venture capitalist’s portfolio failed.”²¹

The weakness of the financing of high-risk innovative projects in the EU raises the question of whether, besides the fragmentation of the financial markets of the member states, banks are being required to hold too much regulatory capital, including buffers (“prudential constraints”), and whether some of these constraints should be relaxed to reduce “funding gap” for investment innovation in Europe.

What this tells us is that when it comes to growth and innovation, competition law enforcement will have very different dynamic effects depending on whether or not the financial sector can finance risky and large projects. There has not been, up to now, an extensive discussion of this issue by European competition authorities. Yet the effectiveness of their enforcement activity is dependent on the well-functioning of the financial market. Competition authorities, possibly in cooperation with the financial regulators, could investigate the causes of its underdevelopment (fragmentation? risk aversion of regulators or of potential investors? lack of competition between financial institutions? insufficient demand for venture capital services?), how this financial underdevelopment impacts competition, and whether there are ways to overcome this underdevelopment of our financial system to make competition more dynamic.

Innovation” *The RAND Journal of Economics*, Vol. 31, No. 4. (Winter, 2000), pp. 674-692. Bronwyn H. Hall And Josh Lerner, “The Financing Of R&D And Innovation,” NBER Working Paper Series Working Paper 15325 <http://www.nber.org/papers/w15325>

²⁰ Kortum, Samuel S. and Lerner, Josh, Does Venture Capital Spur Innovation? (December 1998). NBER Working Paper No. w6846, Available at SSRN: <https://ssrn.com/abstract=227614>

²¹ Josh Lerner and Ramana Nanda: “Venture Capital’s Role in Financing Innovation: What We Know and How Much We Still Need to Learn,” *Journal of Economic Perspectives* vol. 34, no. 3, Summer 2020 (pp. 237-61)

4. Conclusion

The revival of industrial policy in Europe is, to a large extent, a reaction against perceived insufficiencies of competition law enforcement during the last twenty years, a consequence of the shifting socio-political goals of governments, and a response to the geo-strategic challenges raised by the emergence of new digital technologies. The analysis of the development of the industrial policy agenda of the EU Commission over the last decade reflects a growing desire to shape new markets as well as to correct perceived market failures with a view to promoting growth and innovation while preserving the sustainability of our economic development and the resilience of our strategic industries. It is thus concerned with the dynamics of markets.

Industrial policy has the potential to complement competition law and policy rather than to ignore or contradict competition (as that has happened in the previous century). However, for the combination of competition law, policy, and industrial policy to succeed, each must be implemented in a way that combines their respective strengths, is mindful of the goals of the other policy, and ensures compatible procedures.

Industrial policies succeed or fail depending on the way they are implemented. They need to preserve the economic incentives of firms to compete and innovate. Lessons of experience suggest that to be effective, they must be defined through a cooperation between the business community and the state in the framework of an “embedded independence” model and they will need, when they are trying to develop new technologies or new markets, to be designed in a way which ab initio preserves competition and includes strict procedures allowing the elimination of underperformers or failing technological efforts, rather than to pick the winners.

Symmetrically, competition law enforcement needs to shift from a static approach to a more dynamic one and from a strict short-term efficiency paradigm to a longer-term perspective, taking into consideration the multi-dimensional nature of economic performance, which, in addition to efficiency includes innovation, growth, sustainability, and resilience.²²

The Commission has already analyzed in some cases the impact of potentially anticompetitive transactions or agreements on innovation and the future

²² In her mission letter to Commissioner Ribera, Mrs Von der Leyen stated: “In your responsibilities linked to the competition portfolio, you will modernize the EU’s competition policy to ensure it supports European companies to innovate, compete and lead world-wide and contributes to our wider objectives on competitiveness and sustainability, social fairness and security” and “Your work to modernize competition policy will include a review of the Horizontal Merger Control Guidelines. This should give adequate weight to the European economy’s more acute needs in respect of resilience, efficiency, and innovation, the time horizons and investment intensity of competition in certain strategic sectors, and the changed defence and security environment.

development of markets. However, more needs to be done to develop coherent frameworks that would clarify the conditions under which parties could present a defense based on innovation, sustainability, or resilience.²³ The multi-dimensional nature of economic performance implies that competition authorities must consider the possibility of trade-offs in their analysis (as some national competition authorities have already done), and the conditions under which such trade-offs would be analyzed should be made public together with the framework of analysis.

Finally, competition authorities have an essential role to play as advocates with respect both to industrial policy interventions and to the factors that limit the integration of markets in the EU, as this integration is, in several cases, a prerequisite to allowing firms to grow while protecting competition or with respect to factors that limit the effectiveness of competition to deliver increased economic performance (such as the underdevelopment of our financial market).

More than technical solutions to coordinate complementary policies, the changes advocated are an attempt to make competition law and policy more relevant to the new European economic and political context while preserving the integrity of competition law. The stakes are high for European competition authorities and DG Comp as the recent past has shown us, in the United States, in Mexico, in South Africa, in the United Kingdom, in Israel and in a number of other countries that governments have little tolerance and respect for the independence of regulators when they are not seen to contribute to the broader economic and political goals of their countries. The ultimate benchmark for the success of industrial policy and of competition policy is whether together they enhance European innovative capacity, thus contributing to economic growth, while ensuring the sustainability, strategic independence and resilience of the European economy.

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²³ It should be noted that In the context of the review of its Horizontal and Non-Horizontal Merger Guidelines, the European Commission has, on 8 May 2025 launched a General Consultation which includes high-level questions on how the Commission should assess mergers within the framework of the Merger Regulation and on the principles that should underpin its revised Guidelines. In addition to the General Consultation, the Commission launched an In-depth Consultation on 8 May, which includes more technical questions primarily for input by stakeholders knowledgeable in merger control. This In-depth Consultation covers 7 specific topics relevant to the Commission's merger control assessments, including Innovation and other dynamic elements in merger control, as well as efficiencies. The results of this consultation are expected in the second part of 2026.

References

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