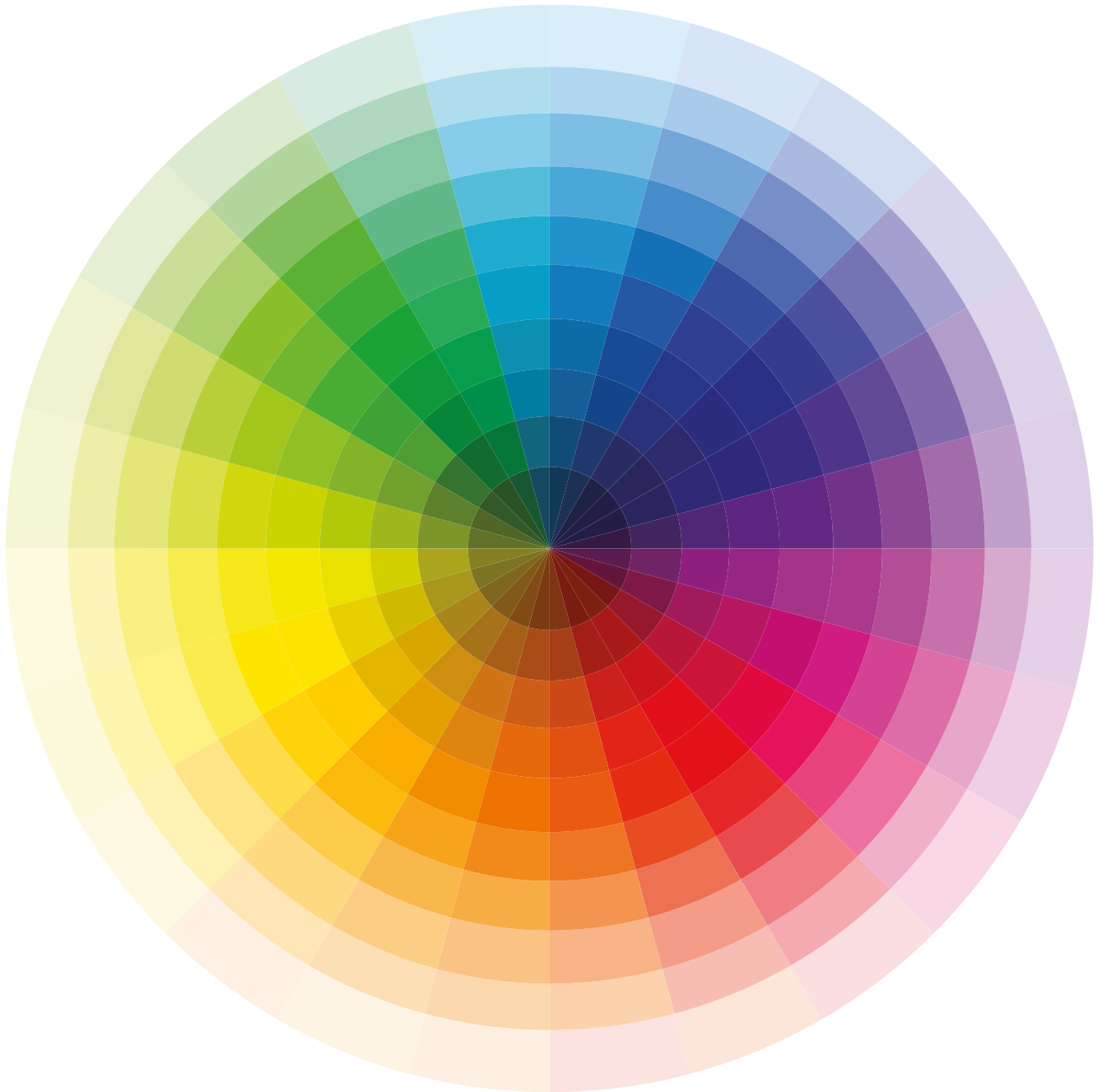


Antitrust[®] Chronicle

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Industrial Policy

TABLE OF CONTENTS

04

Letter from the Editor

05

Summaries

06

**What's Next?
Announcements**

08

**INDUSTRIAL STRATEGY AND THE ROLE OF
COMPETITION – TAKING A BUSINESS LENS**
By Marcus Bokkerink

15

**INDUSTRIAL POLICY, ANTITRUST, AND
ECONOMIC GROWTH: SOME OBSERVATIONS**
By David S. Evans

24

**BOLDER BY DESIGN: CRAFTING PRO-
COMPETITIVE INDUSTRIAL POLICIES FOR
COMPLEX CHALLENGES**
By Antonio Capobianco & Beatriz Marques

34

**COMPETITION-FRIENDLY INDUSTRIAL
POLICY**
*By Philippe Aghion, Mathias Dewatripont &
Patrick Legros*

39

**COORDINATING MARKET ACTORS FOR THE
PUBLIC GOOD: COMPETITION POLICY AS
THE INDUSTRIAL POLICY OF DEMOCRATIC
ECONOMIC GOVERNANCE**
By Audrey Stienon & Daniel A. Hanley

51

**STATE OWNERSHIP IN INDUSTRIAL POLICY:
ASSESSING ANTICOMPETITIVE RISKS ON
MIXED MARKETS**
By Jasper P. Sluijs

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LETTER FROM THE EDITOR

Dear Readers,

This edition of the Chronicle gathers a set of contributions grappling with one of the most pressing economic governance questions of our time: how should competition policy respond to, align with, or constrain the resurgence of industrial policy? Amid geopolitical upheaval, technological flux, and mounting climate imperatives, governments are once again reaching for tools once thought passé. The articles in this volume illuminate the renewed relevance of industrial strategy and the critical tensions—and complementarities—that emerge in its interplay with competition law and policy. Taken together, they offer a pluralistic yet coherent portrait of an evolving global consensus: that neither market fundamentalism nor dirigisme alone can sustain democratic economic prosperity.

Audrey Stienon & Daniel A. Hanley contend that competition policy must be seen not as a foil to industrial policy but as its constitutional backbone in democratic economies. Their essay reconceives competition enforcement as a mechanism of democratic economic governance—one essential to structuring transitions in ways that preserve openness, resist capture, and distribute opportunity. Surveying five structural risks posed by industrial policy—ranging from monopoly power to incumbent entrenchment—they argue that without a robust competition framework, even well-intentioned industrial strategies may ultimately undermine their own societal aims.

Marcus Bokkerink draws on his experience at the helm of the UK's Competition and Markets Authority to offer a practitioner's lens on the formulation of industrial strategy. Arguing that all governments conduct industrial policy—whether explicitly or not—he suggests that they would do well to learn from how successful businesses set strategy: by defining ambition, choosing where (and where not) to compete, and aligning resources to win. Bokkerink cautions that industrial policy cannot succeed without healthy competition and warns against a return to scale-for-scale's-sake interventions that history has shown to fail.

David S. Evans brings a critical perspective, urging caution about industrial policy's potential to suppress innovation and saddle economies with politicized inefficiency. Drawing on decades of global economic trends, he argues that while market failures justify some interventions, competition authorities should focus on their core role as “cops on the beat.” Industrial policy, in his view, often suffers from false positives, poor execution, and capture. Instead of integrating the two policy spheres, Evans calls for preserving the predictability and independence of antitrust enforcement amid shifting political currents.

Antonio Capobianco & Beatriz Marques, writing from the OECD, articulate a vision of industrial policy that actively fosters competition rather than distorts it. They present a typology of tools—supply-side, demand-side, governance—and show how pro-competitive design, combined with competition advocacy and enforcement, can turn industrial policy into a catalyst for dynamic markets. With examples spanning digital infrastructure, climate transition, and standards-setting, the authors make a compelling case for structured coordination between regulators, guided by principles of neutrality, contestability, and strategic transparency.

Jasper P. Sluijs explores the re-emergence of state ownership as a policy lever, particularly in sectors central to strategic autonomy and the green transition. Focusing on State-Owned Enterprises (“SOEs”), he systematically analyzes the risks these entities pose to fair competition—especially in mixed markets where public and private actors co-exist. While acknowledging that SOEs can sometimes deter private collusion or serve social goals, the author also warns that abuse of dominance remains insufficiently theorized and enforced, and urges further research to inform more effective safeguards.

Philippe Aghion, Mathias Dewatripont & Patrick Legros advocate for what they term “competition-friendly industrial policy,” drawing on both theoretical modeling and empirical evidence from China. They argue that sectoral support can enhance innovation and productivity—but only when it is dispersed, contestable, and aligned with market incentives. The authors highlight the success of the U.S. ARPA agencies as examples of targeted, mission-oriented public investment that complements rather than displaces market competition, and propose that Europe adopt similar models to address its productivity lag.

None of these contributions purports to settle, on its own, the debate on the future of industrial policy. What they offer is a multi-dimensional reflection on how competition policy might evolve—not by retreating from its principles, but by reaffirming them within a changed policy landscape. If the market is to remain a servant of democratic ends rather than a master of technocratic inertia, it will be through precisely the kind of careful, critical engagement on display in these pages.

As always, many thanks to our great panel of authors.

Sincerely,

CPI Team

08



INDUSTRIAL STRATEGY AND THE ROLE OF COMPETITION – TAKING A BUSINESS LENS

By Marcus Bokkerink

This article suggests a refreshed approach to industrial strategy by drawing on principles from business strategy. Recognizing the disruptive shifts in geopolitics, global trade and technology, it lays out ways that government can act more like a strategic business—focusing on areas of long-term attractiveness and competitive advantage, making deliberate trade-offs, and aligning actions across policy levers. The article is structured around the core questions central to both business and industrial strategy: *What is our ambition?*, *Where to play?*, *How to win?*, and *What capabilities must be in place?* The article applies these questions to the context of the UK and EU, arguing that their industrial strategies must now meet the dual objectives of raising economic growth through raising productivity, and strengthening economic resilience against foreign sovereign or monopoly intervention. Taking the UK as a live example, it encourages a more purposeful, yet disciplined, industrial strategy that leverages competition and trade rather than distorts them. Emphasis is placed on making clearer strategic choices, strengthening competition and competitive alternatives in strategic sectors, greater coherence across policy levers, and regulatory reform. Ultimately, the article advocates for a pragmatic, evidence-led approach — one where industrial strategy supports, rather than undermines, a competitive, innovative, and resilient economy.

15



INDUSTRIAL POLICY, ANTITRUST, AND ECONOMIC GROWTH: SOME OBSERVATIONS

By David S. Evans

Economic growth has slowed in many countries, in some cases posing significant long-run threats to national well-being and security. Governments are considering industrial policy to accelerate growth and gain competitive advantages over other countries. Antitrust authorities are looking at how to deal with industrial policy, and governments are looking at how to deal with antitrust authorities. This article makes three observations. First, countries need to balance how much to rely on industrial policies versus markets to drive growth, and that balance should be struck soundly in favor of markets, given the evidence. Second, competition authorities should focus on being vigilant cops on the beat and leave industrial policies to others as much as possible. Third, sound competition policy is based on balancing competing considerations and the circumstances of the country. It could make sense to adjust the balance, or consider a paradigm shift, when there are radical long-term changes in economic circumstances and objectives, such as the “existential crisis” facing Europe.

24



BOLDER BY DESIGN: CRAFTING PRO-COMPETITIVE INDUSTRIAL POLICIES FOR COMPLEX CHALLENGES

By Antonio Capobianco & Beatriz Marques

Competition policy, through advocacy and enforcement, is essential in ensuring effective industrial policy strategies and outcomes. Drawing on examples from telecommunications, public procurement for the green transition, and digital payment infrastructure, this article highlights certain pro-competitive industrial policies and the role of competition authorities in co-designing policies that promote open, dynamic and competitive markets. Despite the risks of tensions, this article underscores how competition and industrial policy can be aligned to achieve long-term growth and consumer welfare by emphasizing the importance of policy coordination and regulatory vigilance.

34



COMPETITION-FRIENDLY INDUSTRIAL POLICY

By Philippe Aghion, Mathias Dewatripont & Patrick Legros

Industrial policy, essential for addressing market failures, encounters concerns regarding protecting inefficient firms. We advocate for competition-friendly industrial policies, underscoring the complementary relationship between industrial and competition policies and the benefits of targeted sector-specific subsidies. We emphasize the significance of market competitiveness for sustainable industrial development, drawing from theoretical models and empirical evidence from China. We argue that Europe's productivity decline relative to the United States since the 1990s can be partly attributed to the absence of a European counterpart to the United States' Advanced Research Projects Authorities (“ARPAs”), which foster frontier innovation. Their success, exemplified by the rapid development of COVID-19 vaccines through the Biomedical Advanced Research and Development Authority (BARDA, now ARPA-Health), underscores the importance of targeted sector-specific subsidies in overcoming coordination challenges. While the European Union has progressed in vaccine procurement, a genuine European ARPA equivalent remains lacking, hindering breakthrough innovation in strategic sectors.

39



COORDINATING MARKET ACTORS FOR THE PUBLIC GOOD: COMPETITION POLICY AS THE INDUSTRIAL POLICY OF DEMOCRATIC ECONOMIC GOVERNANCE

By Audrey Stienon & Daniel A. Hanley

We argue that industrial policy characterizes the ways that governments shape markets in order to achieve a specific outcome, especially during moments of economic transition, and that competition policy provides the means for industrial policy strategies to achieve an outcome essential to the health of democratic societies: democratic economic governance. Competition policy provides governments with powerful legal tools to ensure that markets remain fair, open, and resilient and that dangerous concentrations of economic power are prevented. We assert that competition policy is and must be a fundamental component of industrial policy by reviewing how market concentration can threaten industrial policy outcomes, and that competition policy and industrial policy tools can work together to address these threats. Given the unpredictability of long-term outcomes during economic transitions, competition policy tools must be used to prevent incumbent firms from resisting change or monopolizing new markets—and to ensure that emerging industries are designed to be fair, open, and resilient. By placing competition policy at the center of industrial strategy, governments can preserve democratic oversight of markets and ensure that the benefits of economic transitions are broadly and fairly shared.

51



STATE OWNERSHIP IN INDUSTRIAL POLICY: ASSESSING ANTICOMPETITIVE RISKS ON MIXED MARKETS

By Jasper P. Sluijs

State ownership has re-emerged as a pivotal element in global industrial policy, particularly in the context of strategic autonomy and sustainability transitions. In this paper, I systematically examine the anticompetitive risks associated with the increased presence of State-Owned Enterprises (“SOEs”) in mixed markets. By drawing on industrial organization and competition policy literature, as well as EU enforcement practice, I offer a comprehensive risk assessment of SOEs involved in collusion and abuse of dominance (monopolization). I find that notwithstanding telling examples of cartel enforcement against SOEs, the literature supports that SOEs either form welfare-enhancing cartels, or deter collusion by private firms altogether. At the same time clear patterns from enforcement practice emerge of SOEs with a statutory monopoly abusing their dominance, however, without enough guidance from the literature. More theoretical and empirical research on the incentives and likelihood of abuse of dominance by SOEs is therefore urgently needed.

WHAT'S NEXT?

For June 2025, we will feature an Antitrust Chronicle focused on issues related to (1) **Theories of Harm**; and (2) **Messaging & E-Discovery**.

ANNOUNCEMENTS

CPI wants to hear from our subscribers. In 2025, we will be reaching out to members of our community for your feedback and ideas. Let us know what you want (or don't want) to see, at: antitrustchronicle@competitionpolicyinternational.com.

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The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers on any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topics. Co-authors are always welcome.



INDUSTRIAL STRATEGY AND THE ROLE OF COMPETITION – TAKING A BUSINESS LENS



BY MARCUS BOKKERINK¹



¹ Former Chair of the UK Competition and Markets Authority.

I. INTRODUCTION

All governments execute an industrial strategy, even when they claim not to. As soon as a government taxes, subsidizes, licenses, regulates or otherwise promotes different economic sectors or constituents, it is making strategic choices. It is allocating taxpayer investment – and steering the nation's private sector resources and activity – in line with these choices.

Not every government makes these strategic choices strategically, or even explicitly. Some simply continue with the choices that they find already in place. They may tweak some of these around the edges. But by not making explicit, consequential choices about where to allocate taxpayer resources and steer the nation's activities, they are still making choices – that is, to continue their predecessors' industrial strategies.

If governments are to have an industrial strategy whether they intend to or not, they might as well set that industrial strategy explicitly and strategically. In doing so, there is a lot they can learn from how businesses set business strategies. Around the world, almost every business pursues some form of strategy. They set a purpose and ambition; decide where to compete, where not, and their priorities; decide the business model and capabilities they need to succeed, and how to line up the necessary resources; and mobilize the organization and partner stakeholders to execute the strategy effectively. And they do this in an external environment where, like governments, they face external competition, change or disruption, and uncertainty.

So, what can a government learn from business strategy and what lessons could be applied to an industrial strategy? Moreover, what is the role here of competition?

Successful business strategies explicitly answer five questions:

1. What is our ambition? What value are we aiming to create, what is the opportunity we are creating, the problem we are solving?
2. Where are we going to compete – and where not?
3. How are we going to compete – and win? What competitive advantages will we build, reinforce, renew?
4. How will we make sure we get this done well – business model, people, funding?
5. How will we know we're successful, how will we stay ready to adapt?

This article focuses on the first three questions, taking each in turn to suggest how lessons from business strategy could be applied to a government's industrial strategy. Where possible it will take as a live example the UK where the government intends to set a new industrial strategy during the first half of 2025.²

II. WHAT IS OUR AMBITION? WHAT VALUE ARE WE AIMING TO CREATE? WHAT IS THE OPPORTUNITY WE ARE CREATING, THE PROBLEM WE ARE SOLVING?

In setting strategy, businesses are very clear in having an ambition anchored on economic value creation. They are clear on the relative attractiveness of their markets, their competitive position, and their performance. They are clear on what drives growth, returns, and value in their business, and the potential to create further value. They are clear on the opportunities and threats from changes in their external environment – be they geopolitical, macroeconomic, technology, or competitive disruptions – and try to anticipate them.

For governments seeking to create value for their countries through an industrial strategy, this analogy generally translates into setting the objective as raising economic growth, predominantly by raising productivity so that growth is accompanied by rising prosperity that benefits citizens and enterprise across the economy.

The objective of driving productivity growth through industrial strategy has been common across development stages of countries. In the years following the Second World War, Japan sought to develop high-quality manufacturing in sectors with large, growing export markets, especially in automobiles and electronics. South Korea developed large family-owned conglomerates like Samsung, Hyundai, and LG with an emphasis on innovation- and technology-intensive sectors with high export potential. Germany's strategy was to nurture its "*Mittelstand*" of small and medium enterprises in highly specialized and export-oriented manufacturing sectors. In all cases, becoming globally competitive in relatively higher technology sectors was seen as a catalyst for productivity growth. In the more recent past, in an economically advanced U.S., the 2022 CHIPS and

² UK Government Department for Business and Trade, *Invest 2035: the UK's modern industrial strategy* (November 24, 2024).

Science Act and Inflation Reduction Act aimed to spur economic growth and resilience by boosting domestic research, manufacturing and supply capability in key growth-enabling technologies, including semiconductors, quantum computing, materials science, and clean energy. In the UK, the new government's 2024 draft industrial strategy³ also sets economic growth as the single overriding objective of its industrial strategy.

Looking ahead, this question of “what are we aiming to achieve” is impacted by three, overlapping, trends as we enter “a new era” of geopolitical and macroeconomic fragmentation.

First, a weakening understanding that economic growth requires productivity growth and therefore effective competition. Previously, countries pursuing ambitious industrial strategies such as Japan, Korea, and Germany, recognized that productivity and global competitiveness could only come about in a competitive environment. They therefore supported, directly or indirectly, multiple competitors rather than single national champions in each of their prioritized industries. There was a broad-based understanding that being competitive on the world market would both require and spur leaps in productivity, and innovation to drive yet further productivity, in the prioritized industry sectors; and that the benefits of this innovation and productivity would only diffuse across the economy when the main players were not shielded from competition. Even as recently as the early 2020s, the U.S. Biden administration's Executive Order on Promoting Competition in the American Economy⁴ explicitly recognized effective competition as a prerequisite for driving innovation, productivity and economic growth, a view also shared explicitly by authorities in the EU and UK⁵ at the time.

In contrast, the UK government's recent stance on economic growth in general, and industrial policy more specifically, appears more muted on competition as core to productivity, innovation and therefore economic growth. Instead, the overriding focus appears to be on raising absolute investment⁶ in major sectors. This could raise challenges: strategies focused on investment, if pursued without competition, do not have the best record of success, as seen in the Soviet Union, in Communist China prior to the 1980s reforms, as well as in the UK in the 1970s, when absolute investment without competition led to stagnation and decline, not growth.

Second, the traditional objective of economic growth is rapidly being supplanted by national (or regional) economic resilience as the primary objective for government industrial strategies. Having come to the fore following the pandemic and Ukraine war on the back of supply shocks to key inputs such as vaccines and energy, this has been reinforced by the subsequent broader deterioration of the geo-political landscape. These exposed the vulnerability of national economies and security when critical assets such as telecommunications, energy, microchips and digital infrastructure are owned and controlled by foreign firms open to influence by adversarial or volatile states.

Governments' initial industrial strategy responses to this need for greater resilience have included banning or more heavily scrutinizing foreign ownership, such as Huawei in telecommunications and the UK's beefed up Security and Investment Act 2021 (“NSI Act”); and accelerating the development of domestic supply of strategic resource, for example the U.S. CHIPS Act 2022; or recommendations similar to that of the Draghi report on EU competitiveness.⁷ However, the sheer scale of geopolitical tensions and trade upheaval unleashed by the U.S. Trump administration has brought into sharper focus the degree of economic dependence and vulnerability of European and UK economies to the “kindness of strangers.” This is reinforcing calls to improve national and regional competitiveness and self-sufficiency across a broadening range of sectors including energy, cloud infrastructure and AI.

Consequently, government industrial strategies must now satisfy not one but two primary objectives, protecting security of supply for critical products and services in addition to promoting economic growth. In the case of the UK, the new industrial strategy will therefore need to identify nationally strategic sectors not only from an economic growth perspective but also from a perspective of national economic resilience and security.

The unlock to meeting these two objectives is competition. As with Airbus in airplanes, Europe and the UK may now start using their industrial strategies to promote the competitive, scale provision of solutions in areas such as energy, transport, and telecommunications, and to accelerate the development of competitive alternatives to current dominant or near-dominant supply in digital infrastructure and services.

³ *Id.*

⁴ United States Government Executive Office of the President Executive Order 14036, *Promoting competition in the American economy* (July 9, 2021).

⁵ UK Government Department for Business and Trade, *Strategic Steer to the Competition and Markets Authority 2023* (November 23, 2023).

⁶ UK Government Department for Business and Trade, *Strategic Steer to the Competition and Markets Authority* (February 13, 2025).

⁷ Mario Draghi, *The future of European competitiveness: Report by Mario Draghi* (September 9, 2024).

Another way of looking at this trend is that the geopolitical fragmentation and trade upheaval brought by the second Trump administration is accelerating a drive by governments, particularly in the EU and Asian nations, and to some extent in the UK to create competing alternatives in industries considered strategic where U.S.-headquartered global firms have dominated.

While it is in its early stages, there is a third trend emerging towards a growing emphasis on free trade amongst a coalition of willing partner nations who share a belief in the rules-based international trading system. This trend flows directly from the two primary objectives to raise both economic growth and economic resilience and security of supply. For the UK, that means removing trade barriers with the EU and other large and medium-sized rapidly developing economies that together drive 75 percent of global trade. Easier access to a far bigger market will enable the most competitive businesses to grow and achieve economies of scale, while exposure to wider competition will spur greater innovation, choice and productivity. It is often the most innovative but smaller businesses that are held back by bureaucratic barriers to trade, unlike multinational incumbents whose scale can absorb the additional administrative burden.

III. WHERE ARE WE GOING TO COMPETE – AND WHERE NOT?

In business, a tried and tested approach to setting corporate or portfolio strategy involves looking at sectors, markets, segments, within the current portfolio and future option set, through two key lenses. One, what is the relative attractiveness of different sectors, markets or segments, in terms of growth and their potential for superior investment returns or value for a leader. Two, what is our competitive position and our ability to become an advantaged leader and win there. Combining these lenses, businesses make choices about which existing market leadership positions to protect and reinforce, which contested or emerging markets or segments to grow to leadership positions, and which challenged or less attractive markets or segments to divest.

This rigorous business approach to making portfolio choices translates directly to governments making industrial strategy choices for their country. Overall, this has been reasonably well understood by governments setting industrial strategies, which have tended to identify and prioritize sectors that are judged to be most attractive – because of their existing weight in the economy or their role in driving future productivity, innovation, and economic growth – and that are believed to play to the country's relative strengths

However, looking forward, making these choices has become harder for governments, because of the expansion of the list of problems industrial strategies are meant to solve and of the opportunities they are meant to create in the new global geopolitical and trade era. That means that in practice, national governments are grappling with an expanding set of economic sectors deemed essential and requiring boosting that now encompasses at least 3 types of industries:

First, core supply side, infrastructure sectors, which have a disproportionate knock-on effect on the ability of the economy to raise productivity, innovation and growth. Such sectors include energy (in particular, renewable energy, grid capacity and battery storage capacity), transport (including, in particular, rail links), core digital and technology infrastructure (in particular, access for established businesses and new innovators alike to cloud, AI foundation models, and supercomputer capacity), and as the UK has recently argued, steel. The added complication is that these must now not only be developed to the point where the supply is readily available from a capacity and growth catalyst perspective, but also from a security of supply perspective and therefore not reliant on a few global corporations that are vulnerable to influence or intervention by foreign powers.

Second, high-growth industrial sectors that are fueled by new technologies and that represent a major future growth opportunity for an economy, including artificial intelligence, advanced materials and manufacturing, life sciences and biotech, and climate-tech (as well as, in a fragmenting geopolitical world, defense).

Third, sectors that, if they do not already fall into the first two buckets, represent a major global strength for the national economy such as, for the UK, the creative sector, financial services and broader professional services.

In the UK, this expanding scope has resulted in the current government proposing a focus on no less than 8 priority growth sectors in its first draft industrial strategy – advanced manufacturing, clean energy industries, creative industries, defense, digital and technologies, financial services, life sciences, and professional and business services⁸ – and that is before being forced by shifting pressures to add steel and automotive industries to the list.

⁸ Invest 2035, *supra* note 2.

When faced with a plethora of opportunities and options, businesses have learned that not making difficult choices on where to invest and where not – firmly, quickly, with frank transparency about both the rationale and the consequences – ends up diluting resources across too many initiatives than can be supported by the funding, time, and effort available, resulting in competing less and less successfully in many spaces without winning and creating value in any. National governments today are discovering the same. For example, while the UK has prioritized life sciences and digital and AI as two of the country's growth sectors, it was not able to support AstraZeneca's planned investment in a major vaccine manufacturing plant and had to scrap planned investment in AI and technology innovation, including in national exascale and supercomputer capacity.

The good news is that, for medium-sized economies at least, there are at least two ways to tackle this problem of too little resource chasing too many industrial strategy opportunities.

The first is, regional specialization. For example, the UK's Greater Manchester region has pre-empted the upcoming national industrial strategy by focusing on four of the potential eight national frontier sectors – advanced materials and manufacturing, health innovation and life sciences, digital and creative, and net zero – which build directly on the region's strengths. This means the city-region can mobilize a full suite of resources and levers – private sector investment, university and research center R&D, local government support, the development of relevant skills and enabling infrastructure – against this smaller set of high-potential areas.

The second solution is simply, to use the power of competition to spur productive, private sector investment and innovation across multiple priority sectors at once, a point covered in the next section on “how to compete” in prioritized sectors.

IV. HOW ARE WE GOING TO COMPETE AND WIN? WHAT COMPETITIVE ADVANTAGES WILL WE BUILD, REINFORCE, SUSTAIN, HOW?

Businesses think hard about how they are going to create, reinforce and renew their competitive advantages in their chosen markets.

If we treated the economy as a business portfolio and wanted to drive some of our industry sectors, we would naturally deploy those levers that work best to achieve that goal. Applying this corporate analogy to government, the core question becomes: what will it take for the country to build and sustain a competitive advantage in the priority sectors? There are three lessons that help inform the answer – if, like business, one looks at the evidence dispassionately and without ideology.

First, recognizing that competition is core to enabling a prioritized sector to become more competitive and productive. Second, encouraging competing alternatives that can challenge dominant incumbents in strategic sectors will assist the economy in becoming more resilient in the face of resurgent protectionism particularly where those incumbents are influenced by hostile or unreliable states. Third, it is essential to take a system view to building the competitiveness of prioritized sectors, ensuring that all other levers, including government policy levers, are mobilized alongside private sector investments in support of those prioritized industries.

A. Competition as the Core Ingredient

Any national strategy that aims to boost certain sectors in a country or region (outside natural monopolies) will be far more successful if competition is a critical ingredient – as Japan, Korea, and Germany demonstrated when promoting and supporting multiple competitors in their prioritized industries. Without competition, investment alone won't make a prioritized industry more productive, innovative, and growing – as Europe discovered in the 1990s when white elephant Spanish regional airports had to be mothballed, or as China and the Soviet Union discovered over decades of unproductive investment and was demonstrated by Argentina's failed import substitution policies. More recently, the UK re-discovered this lesson after heavy investment in a single South-North rail line that has ended up being serially delayed, over budget, and whittled down to a point where the route ended up with less rather than more capacity. Not only has this failed to grow productivity and effective capacity, worse, it siphoned off potential investment in transport links between cities and towns *within* regions that would have had a more positive impact on productivity and capacity, faster.

Investment without effective competition, whether through protection, unitary focus on national champions, or *de facto* capture of licensing by a monopoly provider, has resulted in debt write-offs, deteriorating productivity, and economic stagnation. Where markets are not contestable, monopoly incumbents avoid challenge and the need to innovate and become more productive. A sobering example is the U.S. commercial aerospace industry, where consolidation into one *de facto* monopoly provider resulted in the U.S. losing its lead in both technology

and safety. Whichever market or period we look at, the evidence points to the fact that effective competition in industries and markets spurs innovation, enables the most productive players and entrants to grow, and brings about the exit of the most unproductive firms – all improving productivity and growth. As every citizen knows: when they have a choice they get better service, quality, and value, and where they don't have choice, service quality and value are worse.

B. Economic Resilience Through Competition

The recent resurgent protectionism of the U.S. has coincided with increasing vulnerability of remaining “mid-sized” G7 sovereign governments to the demands of powerful global providers on whom governments have become reliant for critical national infrastructure and services.⁹ In contestable markets this problem can be addressed through the enforcement of competition law, as the UK Competition and Markets Authority demonstrated in its intervention against Motorola Solutions Inc's monopoly provision of mobile radio services to the UK's emergency services.¹⁰ However, reliance on a few dominant providers, and the associated exercise of market power, has become harder for governments to tackle in digital services such as cloud and productivity software where there is less effective competition. Stark evidence of this is the admission by senior government ministers in the UK and Europe that they must act “with a sense of humility” when dealing with global digital firms¹¹ and that “need to be cautious with these digital corporations because we have no real alternatives to the offering by the American digital industry.”¹²

Countries now find that essential services are reliant on firms that are not only able to dictate terms but are also vulnerable to foreign sovereign intervention and can be used to threaten the economies of democratic nations even further. A live example is the negotiations between the UK and U.S. trading off U.S. trade tariffs, the UK creative sector's copyright protection against scraping by AI firms, and the UK's digital services taxes, whose role was to even the previously skewed competitive playing field between online and offline commerce.¹³

These developments underscore a growing call for European, UK and other G7 nations to bring competition and choice back into essential digital infrastructure and services. This has three implications for upcoming industrial strategies:

One, recognize that in many infrastructure sectors, government can achieve its goal without having to divert material tax resources. In most key infrastructure sectors such as transport and energy that are not natural monopolies, it will be competing operators, not government or state-championed single providers, that will deliver more capacity more productively. Governments can enable this simply by getting out of the way and letting competition do its work – in construction to build affordable homes, in renewable energy capacity, in battery storage and grid connections, and transport links within regional clusters. This means tackling the bureaucratic inertia and fragmented planning rules impeding new projects by willing competitors who stand ready to bring the additional investment, innovation and choice the country needs, as in the UK Luma and Hull trains did in rail – driving improvements in service, prices, demand, productivity and growth.

Two, actively favor diversity of suppliers in key sectors. Rather than relying on a small handful of firms who can dictate terms to suppliers, customers, and governments, encourage and enable investment across multiple competing providers when establishing, for example, small nuclear reactors, data centers, and advanced manufacturing facilities in different regions; including firms that are home grown or from trusted ally nations; and avoiding permanent lock-ins for supply beyond technology cycles, but rather locking in continued healthy competition amongst the first wave providers, based on relative performance, for the next generation of investment opportunities.

Three, bring more effective competition into public procurement, by streamlining the bureaucratic procedures and lock-ins that favor large monopolistic suppliers over more innovative entrants. In the UK this would also mean reducing government reliance for cloud services, key software and the like on one or two corporations and avoiding falling into that trap with the country's hugely valuable NHS data. Having picked a set of industries or sectors where it wants to win, governments cannot allow themselves to pick winners *within* those industries.

C. Implementing a System View

For prioritized sectors to achieve their maximum potential, competition alone will not be sufficient. It will also require joined up policies that ensure businesses and their investors have easy access to relevant R&D and innovation capability; to workers with the right skills; to energy at

⁹ James Titcomb, *Tech will quit Britain over online safety crackdown*, THE TELEGRAPH, Feb. 16, 2025.

¹⁰ Press Release, Competition and Markets Authority, CMA wins appeal in emergency services case (January 30, 2025).

¹¹ Chris Blackhurst, *Britain must treat tech giants like nation states, minister warns*, THE TIMES, Nov. 12, 2024.

¹² Paola Tamma, *Germany warns against EU hitting Big Tech in retaliation to*, FINANCIAL TIMES, Apr. 11, 2025.

¹³ Anna Gross and George Parker, *UK looks at ways to soften impact of its digital tax on US tech groups*, FINANCIAL TIMES, Mar. 24, 2025.

an internationally competitive cost; and to the required transport and other enabling infrastructure. As the UK's draft industrial strategy paper recognizes in theory, this requires system thinking. In practice, that systems thinking will require further tough trade-offs that have historically been challenging for governments in practice. The three most pressing ones are:

One, recognize that if within its prioritized sectors, an industrial strategy aims to support energy-intensive industries for economic growth or national security reasons, it must address any uncompetitive cost of key inputs for those industries, namely energy. As the UK has found, having a cost of electricity for industry that is 50 percent higher than in Germany and France, and multiple times the cost in the U.S. results in divestment, as we have seen in the case of the steel industry where the government was forced into emergency nationalization to preserve its virgin steel-making capacity.

Two, recognize that tax policy also plays a role in enabling or preventing effective competition. In the UK for example, one of the prioritized sectors is the creative industry, a historic strength. Yet today in entertainment or publishing, businesses that offer competing services face different tax or regulatory burdens (for example in the regulation of content and watersheds) depending on whether their business model is online or offline, broadcast or streamed, local or global. In such situations, system thinking would mean letting competition, not government tax or regulatory arbitrage, drive consumer choice and business success.

Three, use the industrial strategy as a catalyst to tackle unnecessary regulation. Applying system thinking, that would mean encouraging competition authorities to increase the share of the economy where rigorous competition enables the market to regulate itself as opposed to be subject to public regulations written by officials, or private regulation imposed by entrenched firms who restrict their businesses customers accessing inputs they need or reaching their customers. One example is the mandate given by the Netherlands government to the country's Authority for Consumers and Markets ("ACM") to recommend cuts in existing regulations on a regular basis.

V. CLOSING OBSERVATIONS

Being explicit about what problem we are solving, what opportunity we are creating, about our ambition. Making explicit choices about where we are going to compete and where not. Making explicit choices about how we are going to compete, about the levers we will bring together to build a competitive advantage. Recognizing that economic growth and prosperity come above all from growing productivity and innovation. Recognizing competition as a core ingredient, and that economic resilience requires more, not less, competition and choice. Adopting a system view to solutions that are coherent across all the levers that matter to the prioritized sectors, including government's supply side, trade and tax policies.

To a business reader these may seem obvious lessons to follow. Yet they involve making challenging trade-offs that are difficult for elected governments in practice. They are nonetheless necessary. What could it take to cut through this difficulty? Continuing the analogy of learning from business, part of what it takes is mindset. First, getting good at identifying the problem to solve – requiring appetite for evidence and analysis, and the patience to understand the evidence. Second, in designing solutions, having the strategic courage to take a long-term horizon and learning to take a system view. And third, being prepared to lead by making hard choices, unambiguously, with a clear rationale based on evidence, against which the leadership team will hold itself accountable.



INDUSTRIAL POLICY, ANTITRUST, AND ECONOMIC GROWTH: SOME OBSERVATIONS

BY DAVID S. EVANS¹



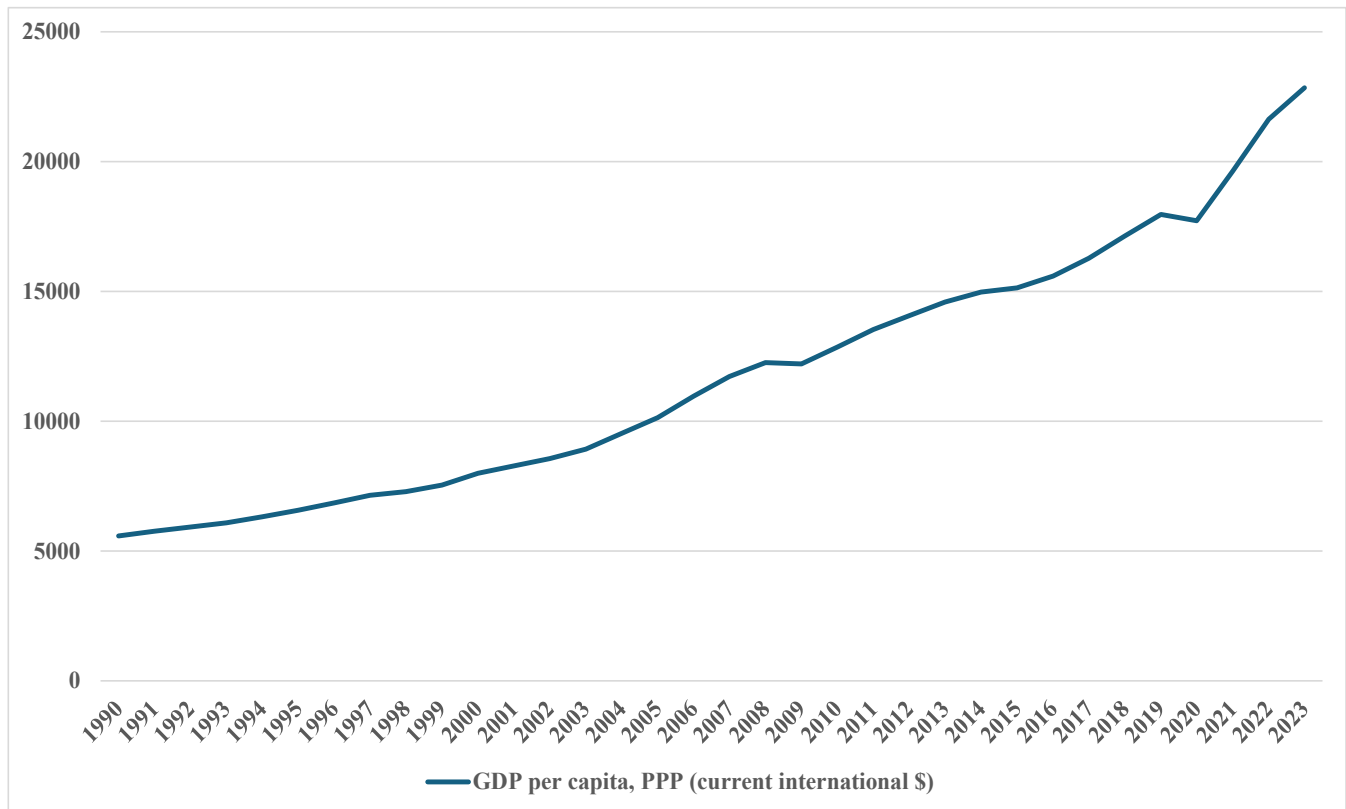
¹ Chairman, [Market Platform Dynamics](https://www.davidsevens.org/) and Managing Director, Berkeley Research Group. For more details on me, including my books and articles, see [davidsevens.org](https://www.davidsevens.org/). I have been an advisor to and investor in digital businesses, particularly startups, and an economic expert in litigation and investigations, on behalf of government authorities and private plaintiffs, in the United States, the European Union, China, and other countries.

I. INTRODUCTION

Starting in the mid 1980s, country after country embraced markets to drive development and growth. For some countries, such as Vietnam, markets and entrepreneurship were largely new. For others, such as Sweden, governments reduced the role of the state in running industries and curtailed regulations. The world's experiment with strong forms of socialism ended. Markets displaced state planning on a massive scale.

World GDP per capita exploded. It increased from \$5,578 per person in 1990 to \$22,850 per person in 2023 as shown in Figure 1.² The percentage of people living in extreme poverty declined from 39.0 percent in 1989 to 8.1 percent in 2020.³ The market-driven transformation of China (with more than a billion people) was a significant contributor to these gains.⁴

Figure 1: World GDP Per Capita, 1990-2023⁵



Economic growth and prosperity did not come from “anything-goes” capitalism. Markets don’t work well without rules. Few businesses aspire to the life of low profits and intense rivalry. The desire to escape from competition can drive innovation. Unfortunately, it can also lead businesses to form cartels, merge to monopoly, and stifle competition.

Most countries that embraced markets also adopted competition laws and launched competition authorities. The number of countries with competition authorities increased from about 40 in the mid 1980s to 140 in 2024.⁶ The global association of competition authorities (the

² Adjusted for purchasing power parity in current dollars. *GDP per capita, PPP (current international \$)*, World Bank Group, <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>.

³ Nishant Yonzan et. al., *Estimates of global poverty from WWII to the fall of the Berlin Wall*, WORLD BANK BLOGS (November 23, 2022), <https://blogs.worldbank.org/en/open-data/estimates-global-poverty-wwii-fall-berlin-wall>.

⁴ *GDP per capita, PPP (constant 2021 international \$) – China*, WORLD BANK GROUP, <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD?locations=CN>.

⁵ *GDP per capita, PPP (current international \$)*, WORLD BANK GROUP, <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>.

⁶ *The United Nations Set of Principles and Rules on Competition: implementation after 40 years*, UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (February 2025), https://unctad.org/system/files/official-document/ditcclp2024d2_en.pdf.

“ICN”) represents 141 competition authorities from 129 countries.⁷ Enforcement of competition laws became more vigorous in many of these countries. Nations recognized that markets, and competition, must have rules, enforcement, and penalties.

These “antitrust cops” are crucial figures in market economies. Like any cop, their success hinges on prevention. Their main contribution is making sure bad stuff does not happen in the first place.

Growth has slowed in many developed countries (including the European Union), as well as developing ones, such as Brazil. Governments are looking to industrial policy to accelerate growth. Some are turning to industrial policy to increase their competitive advantage over other countries whose success they attribute to savvy industrial policies. Sadly, threats of war are palpable, which provide reasons for governments to protect, or create, industries that are vital to national defense and security.⁸

The antitrust cops — and the broader antitrust community — are discussing how to deal with industrial policies. It is a common subject at conferences, and also the subject of papers, blogs, and posts on social media. Yet, at the same time, some jurisdictions, including the UK and EU, are rethinking the role of competition authorities in driving growth and innovation.

This article makes three observations related to these discussions.

- First, countries pursuing growth and innovation should be cautious about how much they rely on industrial policy. Like regulation, industrial policy can make economies more efficient by solving market failures; and, like regulation, industrial policy can suppress market-driven growth and innovation. Now that more countries are recognizing that wrapping markets around the axle with regulations saps growth, it would be a mistake to wrap them around the axle with industrial policies.
- Second, competition authorities should focus on being vigilant cops on the beat. They should leave industrial policies to others. The lines between competition and industrial policy are not always bright so there are doubtless exceptions. Competition authorities can also caution against adopting industrial policies that could reduce economic growth by suppressing competition.
- Third, markets work more efficiently when antitrust policy is stable and predictable. That enables businesses to better plan investments and assess risks. However, sound policy is based on balancing competing considerations and the circumstances of the country, not on immutable laws. It could make sense to adjust the balance, or consider a paradigm shift, when there are radical long-term changes in economic circumstances and objectives. That is the subject of discussion in Europe following the release of the Draghi Report in September 2024 and his alarming prediction that the continent needs radical change for “self-preservation.”⁹

II. INDUSTRIAL POLICY AND THE GOLDBLOCKS RULE

“Kaput.”

That’s the title of Wolfgang Munchau’s book on the “end of the German miracle.”¹⁰ German industrial policy bet on automobiles and mechanical engineering. It was great, until it wasn’t. Germany’s national champions are in decline largely because of disruptive innovation in the U.S. and China.

Germany did not bet on digital. Meanwhile multiple waves of the digital revolution have bypassed the largest economy in Europe over three decades.

7 Press Release, Competition and Markets Authority, CMA to Host 2025 International Competition Network Conference (May 17, 2024), <https://www.gov.uk/government/news/cma-to-host-2025-international-competition-network-conference>.

8 These statements were true before the recent forays into trade wars and will likely continue to be true regardless of how those play out.

9 *The Draghi Report on EU Competitiveness*, European Commission (September 9, 2024), https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en. *European Economy Faces ‘Existential Challenge,’ Draghi Report Says*, Le Monde (September 9, 2024), https://www.lemonde.fr/en/international/article/2024/09/09/european-economy-reportedly-faces-existential-challenge_6725363_4.html.

10 Wolfgang Munchau, *Kaput: The End of the German Miracle* (2024).

There isn't much disagreement on the ground that Germany faces a serious challenge to its continued prosperity and position in the world. The German government is urgently figuring out what to do.

A. Industrial Policy Works in Theory

Industrial policy is one of many government policies that promote economic growth.

Horizontal policies cut across industries. These include intellectual property law, competition policy, and property and contract law. Horizontal policy also includes government funding of basic research and development.

Vertical policies focus on promoting certain industries, including the creation of new ones, targeted research funding, as well as regulation of industry. Much of the debate over industrial policy concerns vertical initiatives — ones that target a specific industry or sector. Industrial policy may focus on collections of industries that are related to a common objective such as national defense. For the following discussion industrial policy refers to industry or sector specific policy.¹¹

Economists have shown that industrial policy can work in theory. Markets do not always promote economic welfare or as much as they should. There are several well-known “market failures.”

- Coordination failures. Businesses provide complementary products. There may be situations where a system of products cannot deliver any value without the necessary complements or as much value if it could with important complements. The market may fail to provide complements that are interoperable with each other or may fail to create important complements at all.
- Agglomeration failures. Businesses may benefit from locating near each other. That could reduce transactions costs, help create a more liquid market for high-skill jobs or provide spillovers in knowledge across employees and firms. A type of coordination failure could arise where businesses would be better off collectively by co-locating but do not choose to do so individually.
- Positive externalities. Businesses, and their employees, can generate positive externalities that other businesses benefit from. Intellectual property rights do not cover basic ideas for businesses. Entrepreneurs who prove there is market for a new product or service will attract more firms. It is possible that the profits from being an early mover isn't sufficient to get the market off the ground. This category also includes positive externalities that benefit society at large such as industries that have important spillovers for national security.
- Infrastructure and public goods. There may be situations where one or more industries depends on the existence of an infrastructure that the government could provide more efficiently than private actors or that markets would not provide at all. These usually stem from coordination failures but are worth noting separately.

Free markets can solve some of these “failures” with little if any government involvement. Numerous standard-setting organizations, such as the Financial Accounting Standards Board, have arisen that deal with coordination and externality issues.¹² Agglomeration happens naturally, such as with Shenzhen in China. The 19th century world had privately operated interoperable telegraph networks spanning the world. Private companies have wired the 21st century globe with interoperable fixed and mobile broadband.

The question is whether the government could address some market failures more efficiently than private actors, and whether governments generate net social benefits from being more proactive in doing so.

B. Industrial Policy May Not Work in Practice

Despite the theory, a number of things could go wrong.

11 Lane et al have a broader definition: “We defined industrial policies as those government policies that explicitly target the transformation of the structure of economic activity in pursuit of some public goal.” Réka Juhász, Nathan Lane & Dani Rodrik, *The New Economics of Industrial Policy* (NBER, Working Paper No. 31538, 2023). Juhász, Réka and Lane, Nathaniel and Rodrik, Dani, *The New Economics of Industrial Policy* (August 2023). NBER Working Paper No. w31538, Available at SSRN: <https://ssrn.com/abstract=4533252>.

12 See for example, Elinor Ostrom, *Governing The Commons: The Evolution Of Institutions For Collective Action* (1990). Field, B. C. (1992). [Review of *Governing the Commons: The Evolution of Institutions for Collective Action*, by E. Ostrom]. *Land Economics*, 68(3), 354–357. <https://doi.org/10.2307/3146384>.

The market failure identified is a false positive. That could be a simple logical mistake, or an analysis based on faulty evidence. There could be great uncertainty about how a market would evolve, including complex systems, or the ability of industrial policy to achieve a better outcome.

Special interests can push industrial policy that benefits them, not society. This can happen in democratic systems. The benefits of industrial policy are concentrated in a few who have the incentive to lobby for it. The costs are diffuse or unknown for most voters.

Governments, like any institution, aren't always adept. The government may fail to execute a policy that solves the market failure and may cause problems that reduce economic welfare. It is harder in practice for the government than markets and private businesses to reverse course to minimize the harm from bad choices.

Identifying market failures and devising policies to correct them usually require policymakers to predict the future or assume that the future is the same as the present. France had much of its populace online in the 1980s due to launching its domestic Minitel service. It was never adopted outside of France. Meanwhile the U.S. government invested in ARPANET which led to the commercial internet, globally.

Any government that adopts industrial policies will make mistakes. This litany of problems is not a basis to reject an initiative. The practical issue is whether the government can do enough industrial policy that generates social benefits to outweigh the social cost of mistakes.

C. Economic Studies Provide Mixed Evidence that Industrial Policy Works in Practice

Professors Juhász, Lane & Rodrik have an excellent comprehensive survey of the new empirical literature on industrial policy. Recent studies are based on more careful econometric analysis than earlier ones and attempt to identify causal effects.

The literature is in its early days. Most of the studies examine whether the justification for a particular intervention is valid. Some assess the effect of the intervention over long time periods. A few of the studies are based on exogenous events that favored an industry such as the impact of the Napoleonic blockade on French cotton spinners. The studies to date cannot establish whether interventions caused an increase in social welfare, only whether they were capable of doing so.¹³

The empirical studies have mixed results, although many have found support that there is an economic justification for an intervention. The authors conclude that:

To us, a balanced reading of the emerging literature suggests that it is no longer possible to dismiss industrial policy as ineffective or counter-productive. In stylized environments where industry policy comes about “by accident,” we have seen the potential for long-lasting, transformational local effects. Put differently, the market failures that justify its use seem large. This should fill us with concern as the current [industrial policy] literature is mostly far too removed from the real world to inform policymaking in any serious way.¹⁴

That is a well-deserved call for economists to study industrial policy systematically and not to dismiss it out of hand.¹⁵ It is not a ringing endorsement of industrial policy.

D. Industrial Policy in Practice Is Widespread

Professors Juhász, Lane & Rodrik begin their paper noting that, “There are few economic policies that generate more kneejerk opposition from economists than industrial policy.” Professor Tirole asks, “[w]ith such solid arguments [for it], why are most economists wary of industrial policy.”¹⁶ He attributes the litany of failures in France to “a mix of hubris, capture, protectionism and just very poor information.”

¹³ As the authors put it, “it is important to bear in mind that most of the outcomes we discuss here are a necessary but in themselves insufficient building block of a full efficiency evaluation, which requires a model.” Réka Juhász, Nathan Lane & Dani Rodrik, *The New Economics of Industrial Policy* (NBER, Working Paper No. 31538, 2023), p. 19.

¹⁴ *Ibid.*

¹⁵ Even when industrial policy seems to work, it is hard to know whether the outcome is better overall than what would have happened in the alternative. Germany is an example. It had a good run as a manufacturer and exporter of automobiles. It ended with policymakers and commentators highly pessimistic about the country's economic future. It is unknowable whether a more hands-off policy would have resulted in a better long-term outcome.

¹⁶ Jean Tirole, *Competition and industrial policy in the 21st century*, 3 Oxford Open Economics S1, i983-i1001 (2024), p. i994.

The easiest way to get this kneejerk reaction is to use the phrase industrial policy and talk about national champions. The industrial policy debate tends to focus on the big initiatives like China subsidizing EVs or the European Union creating Airbus.

In fact, governments adopt many policies that are targeted at solving perceived problems in domestic industries or to promote new ones. Like regulation, many of these are not controversial and some look sensible *ex post*.

The U.S. relies on free markets more than most countries. Yet federal, state, and local governments regularly adopt vertical policies. These range from big initiatives such as the Hatch-Waxman Act of 1984 that was responsible for creating generic competition in the pharmaceutical industry to small ones such as the City of Boston's investments in Seaport, a new tech hub in the dilapidated waterfront, in the early 2000s.

A small Congressional grant in March 1843 helped ignite the telegraph industry, and the Federal Highway Act of 1956 created the multistate highway system which greatly benefited the automobile industry. The U.S. has subsidized space exploration for a long time.

Of course, the U.S. government subsidized the development of what became the commercial internet after many years. More controversially, the U.S. Congress adopted Section 230 of the Communications Decency Act of 1996 which was a boon to platforms with third-party content because it shielded them from liability.

E. Goldilocks Rules

The algorithm for assessing proposed government interventions in markets, including industrial, has been well known for decades. Is there a market failure? Are the expected benefits from addressing that market failure, with the tools available, greater than the expected costs? Are there possible unintended consequences that should be factored into those expected costs and that could be avoided through better design?

This algorithm is the basis for the U.S. policy that subjects proposed regulations to a “cost-benefit test.” Professor Cass Sunstein has referred to this as the “economic constitution of the United States.”¹⁷ The European Union 2021 Better Regulation legislation incorporates cost-benefit analysis as well.¹⁸

Like regulation, industrial policy is just another response to market failure, and policymakers can apply this algorithm to it. Professor Tirole has proposed an eight-step program for tailoring a cost-benefit algorithm to industrial policy. When applied to proposed policies, the cost-benefit algorithm will necessarily result in false positives and false negatives.

An overarching question for countries is the extent to which they should rely on industrial policies versus markets. Countries that are more prone to use these policies will consider and implement more. Even if cost-benefit analysis is applied rigorously, industrial-policy prone countries will adopt more policies and rely on markets less.

Countries tend to decide at a high level whether they want to intervene in markets more and then consider policies to do that. They could base this decision on maximizing long-run expected social welfare. They can apply the Goldilocks Rule — not too little, not too much, but just right. The implementation of the rule depends on facts, and facts vary across countries, and over time. The optimal balance will lead to different dependencies on industrial policy based on the circumstances of the country.¹⁹

That said, there is strong evidence for relying on markets to drive growth and innovation and not for tilting towards significant use of industrial policy. Competition authorities should bear this in mind.

F. Chinese Lessons

It is an extreme case, and industrial policy is only part of the story, but China provides some lessons.

China veered from using mainly industrial planning prior to the Deng reforms in 1978 to increasing reliance on markets. This stimulated massive economic growth. It pulled hundreds of millions of people from deep poverty. And it created world-class Chinese companies that were not state owned.

¹⁷ Cass R. Sunstein, *The Economic Constitution of the United States*, 38 JOURNAL OF ECONOMIC PERSPECTIVES 2, 25-42 (2024).

¹⁸ *Better Regulation Guidelines*, EUROPEAN COMMISSION (November 3, 2021), https://commission.europa.eu/document/download/d0bbd77f-bee5-4ee5-b5c4-6110c7605476_en?filename=swd2021_305_en.pdf.

¹⁹ David S. Evans, *Why Different Jurisdictions Do Not (and Should Not) Adopt the Same Antitrust Rules*, Chicago Journal Of International Law, Forthcoming (2009).

Starting in the mid 2010s, under Chairman Xi, China shifted its emphasis toward state-owned enterprises and industrial planning and away from free markets. It has not gone well. By the end of 2024, China's growth had slowed considerably, domestic consumption was weak, and it was widely understood that the country faced serious long-term economic challenges, accentuated by sharply declining population.

During 2024, the Chinese government revived encouraging private business, investment, and entrepreneurs to stimulate growth. There was a stunning affirmation of the importance of private enterprise for innovation in January 2025. DeepSeek unveiled its pioneering large language model and became a national champion in AI. A few weeks later, Chairman Xi held "peace talks" with the Chinese Big Tech firms which had been the crown jewels market reforms.

Advocates for industrial policy may point to the success of the Chinese EV industry. The leading companies such as BYD are private companies started by entrepreneurs. But the Chinese government has poured hundreds of billions of dollars of subsidies into the car and battery makers. This has been a massive success for global consumers who are getting cheap high quality EVs from China. It has been a major problem for EU automakers, but it has not helped the Chinese economy.

China and Germany both ended up staring at economic crises by 2024.

III. COMPETITION POLICY IN THE TIME OF ECONOMIC CRISIS

Modern competition law and policy reflects legislative, court, and enforcement decisions to defer to market forces rather than intervene in most business decisions. Competition authorities referee the game of competition. They call out fouls and, and when necessary, impose penalties or restrictive orders.

Competition policy in most countries does not prevent firms from obtaining or having market power, including monopoly power, or becoming big and important, organically. Firms must just behave themselves on their path to whatever success they achieve and as they participate in markets.

Implicitly, competition policy relies on dynamic competition among firms to advance economic progress. That is particularly important when economic progress is driven by innovation and the diffusion of new technologies. Within this broad framework, countries may be more or less stringent, so that conduct that might be allowed in some countries, may not be in others. There is a tendency, however, for commentators to exaggerate the differences and ignore the consistency.

Competition policy works in concert with many other policies, including intellectual property, sectoral regulation, taxation, social welfare and employment, trade, and others to promote economic progress and address societal concerns. As in most activities, it makes sense for each of these policies to specialize and work together rather than for each policy to achieve many or all objectives. Economists have shown that it is challenging and may be counterproductive for policies, or agencies, to pursue multiple competing objectives.²⁰

Competition authorities in complex economies typically have a big job and spare resources for accomplishing it. They should focus on being antitrust cops. There is always lots to do.

That's not the end of the story, though.

A. Optimal Antitrust Policy Depends on the Circumstances for a Country

It is useful to think of the design of antitrust rules as the solution of an optimal control problem under uncertainty.²¹ The country is maximizing long-run social welfare recognizing that enforcement of rules will lead to false positive and false negative outcomes. The optimal control could include other objectives in addition to long-run social welfare but the rules that countries have adopted are consistent with that being the main objective.

20 For instance, economists have found that central banks that are less independent — that is, pursue political objectives other than minimizing inflation — are less effective at minimizing inflation. See e.g. Alberto Alesina & Roberta Gatti "Independent Central Banks: Low Inflation at No Cost," *American Economic Review*, May 1995, 85(2) 196–200; See also Jeffrey Clemens & Benedic Ippolito, "Uncompensated Care and the Collapse of Hospital Payment Regulation: An Illustration of the Tinbergen Rule," *Public Finance Review* 47, no. 6 (2019): 1002–1041.

21 David S. Evans, *Why Different Jurisdictions Do Not (and Should Not) Adopt the Same Antitrust Rules*, CHICAGO JOURNAL OF INTERNATIONAL LAW (2009).

The optimal policy depends on national circumstances. A country with a history of cartel-like behavior could decide to have more stringent rules than one with an entrepreneurial culture. A country that lacks a sophisticated well-funded judicial system might find that it is optimal to have bright-line rules.

It is likely that the optimal antitrust policy should remain stable even if some of the underlying inputs into the optimal control problem change. That is because increasing uncertainty for businesses by changing the policy frequently would reduce investment in growth and innovation.

Drastic changes in inputs or in the objectives, however, could make it desirable to reconsider the competition rules and the role of the competition authority.

B. Europe's Existential Crisis and Competition Policy

The EU, most of its Member States, and the UK faced the same problems at the end of 2024.²² Economic growth had slowed, labor productivity was low, private investment in transformative technologies was low, and innovation was lacking. The disparity in GDP per capita with the U.S. was large and widening. The gap in innovation with the U.S. and China was wide. It was not a global player in AI. And then the European automobile industry went into a tailspin.

Europe faces decline with a sluggish economy, fewer working age people to support an expanding older population, and the need to raise spending on defense.²³

Mario Draghi, an economist, head of the ECB during the great recession, and former Prime Minister of Italy was asked to prepare a report on Europe's competitiveness.²⁴ He concluded that the EU faces an "existential crisis." This term is commonly used by EU officials and others to describe the situation. It means that Europe risks losing its way of life and relevance in the world. EC-commissioned studies have warned this day would come for decades, and now it has.

That's enough to consider a long-term change in competition law and enforcement.

Draghi does not call for radical reform. He endorses Tirole's view that "what is needed is not a drastic change in antitrust law." Draghi recommends, however, that "competition authorities need to be more forward-looking and agile." That includes emphasizing "the weight of innovation and future competition in DG-COMP decisions." It also means recognizing that innovation may require scale. DG-COMP should be more receptive to cross-border mergers, particularly in telecoms, where Draghi sees the need for a large EU player to compete on the world stage.²⁵

If DG-COMP and the EU courts indeed placed decisive weight on dynamic competition and scale, these recommendations would lead to a drastic departure from the ordo-liberal tradition and merits-based competition. It is not clear that is in the plans. The Commission's Competitiveness Compass roadmap,²⁶ which is working its way through the legislative process, echoes some of Draghi's recommendations, but it is unclear they would have much effect in practice. Meanwhile, the Commission's proposed guidelines on exclusionary abuses, which were released a month before Draghi's report, emphasize merits-based competition and deemphasize the modern effects-based approach to competition policy.²⁷ It is hard to see how a serious analysis of long-run economic growth and innovation fits in.

²² There's no need to venture into 2025 for the following discussion.

²³ David S. Evans, *Why Can't Europe Create Digital Businesses?* (2024), <https://ssrn.com/abstract=4781503>.

²⁴ Mario Draghi, *The future of European competitiveness – Part A | A competitiveness strategy for Europe*, EUROPEAN COMMISSION (September 2024). Mario Draghi, *The future of European competitiveness – Part B | In-depth analysis and recommendations*, EUROPEAN COMMISSION (September 2024).

²⁵ Draghi also says that enforcement should consider "security, resilience, and the related disruption risks to the EU economy" but a separate body should provide that assessment as an input on the public interest. He cautions that DG-COMP should consider the impact of enforcing the Digital Markets Act and Foreign Subsidies Regulation on "the reduced appetite of multinational companies to invest in Europe and the delayed development of technological advances." He advocates market investigations to address and solve structural competition issues but would limit its remit to a few areas such as "markets where economic resilience is weak."

²⁶ *A Competitiveness Compass for the EU*, EUROPEAN COMMISSION (January 29, 2025), https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en?filename=Communication_1.pdf.

²⁷ *A Competitiveness Compass for the EU*, EUROPEAN COMMISSION (January 29, 2025), https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en?filename=Communication_1.pdf.

IV. STRIKING THE RIGHT BALANCING BETWEEN MARKETS, INDUSTRIAL POLICY, AND ANTI-TRUST

The Draghi Report argues that oppressive regulation is a substantial barrier to innovation in Europe. He concludes that “we are failing to translate innovation into commercialisation, and innovative companies that want to scale up in Europe are hindered at every stage by inconsistent and restrictive regulations.” This is particularly onerous in the tech sector. The Report finds that the EU has around 100 tech-focused laws and over 270 regulators active in the digital sector across the EU. The sweeping regulations reflect a long-standing entrenched distrust of free markets.

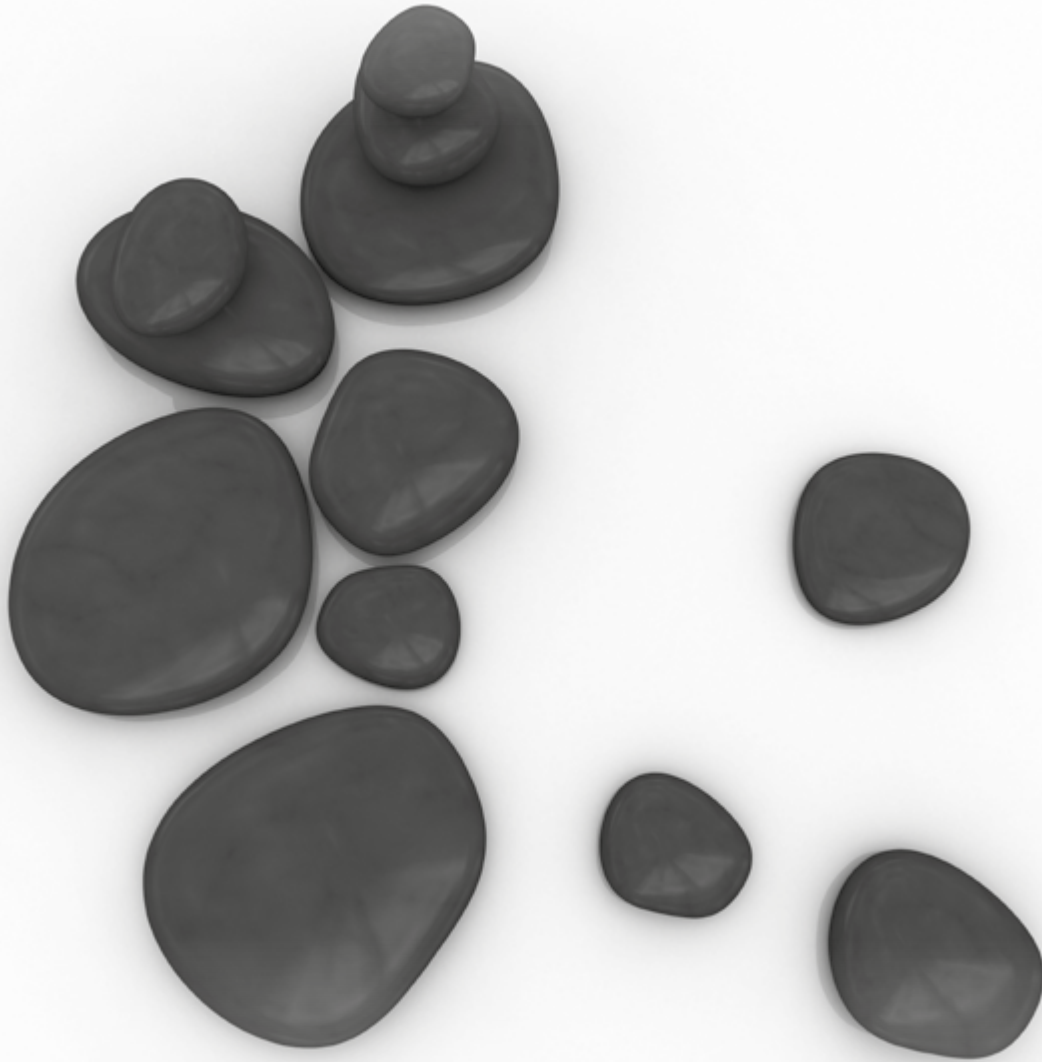
As part of its Competitiveness Compass, the Commission “aims at reducing drastically the regulatory and administrative burden.”²⁸ It remains to be seen whether the EU will move toward a greater reliance on markets or end up replacing fewer regulations with more industrial policies.

It would be easy if we had a sound playbook for devising industrial policies that were likely to maximize long-run economic growth and well-being, or if we could dismiss industrial policy as a fool’s errand. We do not. There are strong reasons, however, to use industrial policy sparingly and to rely on markets subject to sensible rules and vigilant antitrust cops.



28 Press Release, European Commission, An EU Compass to Regain Competitiveness and Secure Sustainable Prosperity (January 28, 2025), https://ec.europa.eu/commission/presscorner/detail/en/ip_25_339.

BOLDER BY DESIGN: CRAFTING PRO-COMPETITIVE INDUSTRIAL POLICIES FOR COMPLEX CHALLENGES



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I. THE REVIVAL OF A BOLDER INDUSTRIAL POLICY: MARKET-CRAFTING

The last decade has witnessed a resurgence of industrial policies, a largely debated and, at times, controversial topic area.² This revival can be attributed to a general weakening of the belief that market mechanisms on their own can deliver optimal policy outcomes and to the need for government intervention to shape better outcomes by intervening and more actively responding to multiple simultaneous challenges, including global financial, economic and health crises, geopolitical tensions, technological advancements, and climate change. While industrial policy traditionally focused on objectives such as economic growth, productivity, competitiveness, employment and inclusiveness, the focus has expanded to include economic resilience (the ability of an economy to withstand and recover from shocks) and strategic autonomy (the capacity to make independent decisions and actions in key economic sectors), reducing inequality, and supporting the climate and digital transition.³ But the list is swiftly growing! The complexity and urgency of the current economic goals have necessitated the adoption of bolder public policies, which have expanded beyond addressing market failures to potentially creating new markets or shaping existing markets.⁴ This expansion has reopened a long-standing debate about the relationship between industrial policies and competition policy, a debate that has never really stopped but has regained momentum in the last years. We argue that, despite the risks of tensions and trade-offs, sound industrial policy is not incompatible with competition policy. They are complementary policies, as well-designed industrial policy opens new opportunities and potential benefits for markets and consumers.

Global events such as the 2008 global financial crisis and the COVID-19 pandemic have underscored the necessity for government intervention, where markets on their own could not respond effectively to crises. The latter, in particular, has highlighted the vulnerability of various industries and their supply chains, necessitating government intervention to stabilise production capabilities and innovations or stimulate demand. Ongoing geopolitical tensions may also impact supply chains, leading to higher global prices across strategic supply chains, from energy to food. The increased reliance on certain technology infrastructures and the emergence of transformative technologies, such as artificial intelligence, further emphasise the potential need for governments to step in and mitigate potential risks while preserving the potential benefits for markets and consumers of the technology and ensuring they are widely felt. Climate change challenges require fostering the development and adoption of clean or climate-neutral technologies. Government intervention is necessary because markets often do not cater for societal or environmental concerns. Market-led innovations are often path-dependent, with previous investment decisions determining future investment directions.⁵ In turn, through industrial policy, governments can invest in or shape the direction of future innovations, especially where this investment may be riskier or too high to diffuse.

Broadly defined, industrial policy is government action that explicitly seeks to transform and improve the structural performance of key strategic economic activity or sectors to pursue a specific goal (e.g. growth, defence, energy transition, or security of supply).⁶ A wide range of instruments are available to governments to help achieve industrial policy objectives. These include:⁷

- Supply-side instruments that affect firm performance include direct measures such as public spending to incentivise investment, such as grants, subsidies, tax incentives, loans, and guarantees. Governments may also affect firm performance by providing access to public infrastructures and addressing information asymmetries through knowledge-sharing of government research and development.
- Supply-side instruments that affect industry dynamics between firms include promoting well-functioning capital markets that facilitate the flow of capital from investors to businesses and governments, labour mobility, efficient tax systems, intellectual property, and technical standardisation policies.⁸ While these instruments may achieve broader objectives, they may complement targeted industrial policies in specific sectors.

2 Cherif & Hasanov (2019), *The return of the policy that shall not be named: Principles of Industrial Policy*, IMF Working Paper WP/19/74, International Monetary Fund, Washington, DC, <https://www.imf.org/en/Publications/WP/Issues/2019/03/26/The-Return-of-the-Policy-That-Shall-Not-Be-Named-Principles-of-Industrial-Policy-46710>.

3 OECD (2024), "Pro-competitive industrial policy," OECD Roundtables on Competition Policy Papers, No. 309, OECD Publishing, Paris, <https://doi.org/10.1787/7c6b4708-en>.

4 *Supra*, at 3.; Hughes, C. & P. Spiegler (2023), "Marketcrafting: A 21st-Century Industrial Policy," The Roosevelt Institute, <https://rooseveltinstitute.org/publications/marketcrafting-a-21st-century-industrial-policy/>; Andrews, et al. (2015), *Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries*, OECD Productivity Working Papers, Vol. 2, <https://doi.org/10.1787/5jrql2q2jj7b-en>.

5 *Supra*, at 3.

6 *Supra*, at 3.

7 *Ibid.*, at 10-11; see also OECD (2023), *Government support in industrial sectors: A synthesis report*, OECD Trade Policy Papers, No. 270, OECD Publishing, Paris, <https://doi.org/10.1787/1d28d299-en>; Criscuolo & Lalanne (2023), *A New Framework for Better Industrial Policies*, <https://www.promarket.org/2023/01/17/a-new-framework-for-better-industrial-policies/>.

8 The regulatory framework, including competition law, can also affect industry dynamics between firms.

- Demand-side instruments that affect the demand for products and services incentivise domestic consumption by influencing the price, availability, and public demand through public procurement, product regulation, standards, and awareness-raising campaigns.
- Governance instruments oversee supply and demand-side instruments and incentivise coordination among stakeholders and between the private and public sectors, avoiding coordination failures.

While this list is not exhaustive, it includes a large set of instruments frequently used in combination by governments.⁹ These instruments can address multiple externalities, from informational externalities to overcoming external economies of scope through shared infrastructures. As discussed below in Section II, complementary policy areas such as competition policy can bolster these instruments' effectiveness.

Industrial policy can be a very effective tool in fixing market failures, particularly when markets alone cannot generate efficient or inclusive outcomes. When carefully targeted, industrial policy interventions can correct structural distortions, such as underinvestment, that prevent markets from functioning optimally. While the objectives of industrial policies are not always framed explicitly in terms of market failures but rather in terms of broader political or strategic objectives, market failures are often at the core of such goals.¹⁰ For instance, catching up with the technological frontier or ensuring inclusive access may entail addressing the positive externalities of innovation and coordination failures in interlinked investment decisions.

By addressing market failures, industrial policy can enhance the functioning of markets and support competitive outcomes. If well-crafted and successful, it is a win-win case. In this sense, successful industrial policy restores the conditions under which markets can function effectively, reducing the need for prolonged intervention.¹¹ A well-designed industrial policy can repair malfunctioning markets and pave the way for competition to flourish by addressing the root causes of inefficiency. In other words, regulation may not be required where industrial policies effectively address market failures and, as a result, markets restart their effective functioning.

Notwithstanding industrial policy's rationale and important objectives, if it is not well-designed, it can undermine competition and competitiveness (e.g. misallocating resources, undermining contestability, and distorting competition by creating an uneven playing field by picking winners and losers). Indeed, one of the risks of industrial policy is that it may translate into protectionism, limiting international competition, with negative consequences for total welfare. Thus, competition principles are the cornerstone of well-designed industrial policy, providing a solid foundation for ensuring pro-competitive outcomes. Subsidies for example, may be a useful industrial policy tool when carefully targeted to complement certain policy goals. In infant industries, temporary subsidies may nurture these nascent industries, fostering their growth and competitiveness. However, like all industrial policies, subsidies are most effective when the goals incentivising the use of these tools are well-defined, and their application is narrowly tailored.

II. COMPLEMENTARITY OF COMPETITION AND INDUSTRIAL POLICY

Competition and industrial policies are not substitutes. Each achieves distinct results that the other cannot.¹² Combined, they can create a virtuous cycle that drives innovation and productivity. There are at least three ways each policy complements the other.¹³

Industrial policy is most effective in competitive markets and should be designed to preserve or enhance competition. Competitive markets amplify the impact of industrial interventions, including by boosting productivity growth. Competition enforcement plays a crucial role in this, strengthening the dynamism and contestability of markets and providing a strong foundation for successful policy implementation. For instance,

⁹ These instruments may also serve other policy objectives, which may be complementary. As such, industrial policy should focus on its objectives rather than specific instruments.

¹⁰ A more broadly encompassing notion of market failure — including traditional static inefficiencies and dynamic failures such as missing markets, lack of public inputs, or the entrenchment of market power — can be instrumental in designing bolder industrial policies.

¹¹ For example, industrial policies designed to improve rural broadband access have corrected long-standing under-provision, enabling market-driven service expansion across jurisdictions. A notable example is Estonia's EstWin project. Funded by European Structural and Investment Funds ("ESIF"), this initiative, launched in 2009, has extended broadband access to citizens by addressing the under-provision of digital connectivity in rural regions. By providing the foundational infrastructure, private operators have been enabled to offer last-mile services, fostering market-driven competition and significantly enhancing Estonia's digital landscape. See European Commission (2024), *Digital Connectivity in Estonia*, <https://digital-strategy.ec.europa.eu/en/policies/digital-connectivity-estonia>.

¹² Competition policy refers to the set of laws, enforcement practices, and economic policies aimed at preserving and promoting competitive markets. Well-designed competition law, effective enforcement, and competition-based economic policy work together to safeguard consumer welfare and support economic growth. By preventing anti-competitive conduct and fostering open and fair markets, competition policy enhances market flexibility, encourages innovation, and ensures efficient allocation of resources across the economy.

¹³ *Supra*, at 3.

through merger control, competition enforcement can directly support some industrial policy objectives, encouraging innovation, investment, and long-term growth and preventing incumbent firms' attempts to increase and entrench their economic power.¹⁴ However, the success of industrial policy may depend heavily on choosing and designing pro-competitive policy instruments, as discussed further in Section III. For example, research and development subsidies can incentivise innovation or facilitate market entry. Yet, poorly designed subsidies can distort competition by protecting incumbents or discouraging the entry of more efficient firms, strengthening and entrenching existing market power. This underscores the need for careful design and selection of policy instruments, which are critical to ensuring that interventions maintain a level playing field and deliver the intended benefits.

Competition and industrial policy can complement each other by fostering competition through different mechanisms, including reducing barriers to entry or expansion. Lowering barriers to entry or expansion is a critical aspect of promoting competition. Industrial policy can play a key role in addressing structural barriers to entry, such as high capital requirements, by offering subsidies, reforming regulations, or supporting new entrants.

Last, but certainly not least, competition enforcement also plays a vital role by actively combating exclusionary practices that block, delay, or steer market entry. Through merger control and enforcement against anticompetitive conduct, competition authorities ensure that dominant firms do not engage in conduct that unfairly raises entry or expansion costs or limits opportunities for nascent or potential entrants. This combination of industrial policy and competition enforcement thus may create a level playing field, encouraging innovation and ensuring that established firms face ongoing competitive pressures.¹⁵

III. PRO-COMPETITIVE INDUSTRIAL POLICY DESIGN

The design of pro-competitive industrial policy requires a broad and long-term strategic view, recognising that its full impact will affect other policies and may unfold over many years. Industrial policy often aims to achieve efficiencies and to foster economic growth, which takes time to materialise. As such, policymakers must consider the immediate effects of their interventions as well as their longer-term consequences, which may include unintended distortions in market dynamics or the entrenchment of market power. To mitigate such risks, policies should be designed with continuous monitoring and evaluation mechanisms. This allows for adjustments as necessary, ensuring that the policy remains proportionate and aligned with its objectives without undermining other policies, including competition.¹⁶ For this reason, industrial policies should also include clearly defined exit strategies and sunset clauses, ensuring that measures, such as subsidies or preferential support measures, are wound down once policy objectives are met. This ensures that market forces can resume their role in preserving the firm's incentives to increase efficiency and innovate, preventing dependency or distortions from perpetuating beyond what may be considered necessary.¹⁷

Achieving pro-competitive industrial policy requires a competitively neutral approach to policy design — ensuring that no market player, regardless of nationality, size, or market position, is unfairly advantaged by a government intervention. The OECD's Competition Assessment Recommendation and related Toolkit provide a starting point to assist governments in weighing different policy objectives and identifying less restrictive measures that achieve the same policy objectives.¹⁸

Competitive neutrality principles in designing industrial policies can ensure that policy interventions foster competition, enabling market players of all sizes to compete on equal footing. One additional way to ensure neutral industrial policy is to involve diverse stakeholders in the

¹⁴ The most effective industrial policies target strategic sectors, such as energy, technology, and healthcare. They reinforce competition by ensuring competitive access to or supply of inputs and fostering investment, innovation, and technological adoption, contributing to both productive and allocative efficiency.

¹⁵ See e.g. Calligaris at al. (2024), *Exploring the evolution and the state of competition in the EU*, Protecting competition in a changing world, European Commission, https://competition-policy.ec.europa.eu/system/files/2024-06/Exploring_the_evolution_and_the_state_of_competition_in_the_EU_launch.pdf.

¹⁶ That said, there may be instances where trade-offs against competition are considered necessary to achieve broader public interest objectives, such as security, environmental sustainability, or technological sovereignty. In such cases, it is essential that any deviation from competitive principles be transparent, proportionate, and time-bound. The OECD advocates maintaining competitive neutrality even within industrial policy frameworks, ensuring that any preferential measures do not unduly distort competition or entrench advantages absent clear, legitimate policy justifications, as discussed in this Section.

¹⁷ *Supra*, at 3.

¹⁸ OECD (2019), *Recommendation on Competition Assessment*, OECD/LEGAL/0455; OECD (2024), *Competitive Neutrality Toolkit: Promoting a Level Playing Field*, OECD Publishing, Paris, <https://doi.org/10.1787/3247ba44-en>; *Supra*, at 1. (Questions such as the following help guide the design and implementation of industrial policy: What are the core objectives of the policy? What are the means to achieve these objectives? Is there proportionality between the policy instruments and the objectives? How will the policy be evaluated over time?).

policy design process. This includes competition authorities, industry participants, potential market entrants, academia, and civil society.¹⁹ By engaging various stakeholders, policymakers can identify possible areas where competition might be compromised and design interventions that foster inclusivity and innovation across the market.

A. The Critical Role of Competition Authorities

Competition authorities can (and probably should) play a crucial role in advocating for the effective design of successful industrial policy and warning against poorly designed instruments with anti-competitive effects. Their expertise ensures that industrial policy interventions achieve their goals while safeguarding competition. Coordination between competition authorities and other regulators is essential to ensure that pro-competitive industrial policies are effective and coherent. Industrial policy decisions often have long-term consequences for market competition, and competition authorities are uniquely positioned to understand the market dynamics at play. Therefore, it is vital for competition authorities to work closely with other public bodies to ensure that industrial policies do not inadvertently stifle competition.

Beyond acting as advisors to other parts of government to help design effective industrial policies, support by competition authorities for industrial policy goals can take place in various forms. For example, enforcement could be more pronounced in industries that are key for industrial policy objectives. In some cases, enforcement could be prioritised or even slightly adapted to better align with specific industrial policy goals while maintaining competitive market dynamics. For example, competition authorities can clarify the scope of pro-competitive co-operation between firms, helping to understand which types of co-operation, such as those aimed at achieving sustainability goals, do not contravene and align with competition law. This contributes to incentivising collaboration where it is beneficial for broader policy objectives, such as environmental sustainability, while avoiding harmful anti-competitive conduct and effects.

In addition to traditional enforcement, competition authorities can leverage advocacy tools like market studies to gain insights into how industrial policy measures affect competition in a particular sector. These studies can reveal where existing policies hinder market competition and guide the development of new, more effective policy interventions. Some jurisdictions have also introduced pro-competitive intervention powers, allowing competition authorities to take targeted actions to address market failures, for example in digital markets stemming from network effects and other innate characteristics of these markets, even without direct competition violations. These powers can be beneficial in advancing industrial policy goals while maintaining market fairness.²⁰

That said, aligning industrial policy with competition policy is not necessarily straightforward. Competition enforcement is inherently reactive and case-specific, focused on identifying and remedying anti-competitive conduct or structures based on facts and effects in a given case and in identified relevant antitrust markets. Industrial policy, by contrast, is proactive and systemic, at times, aimed at transforming entire sectors of the economy through broad-based interventions. Industrial policy typically seeks visible, short- to medium-term results — such as boosting demand for specific products or promoting investment, increasing capacity, or accelerating deployment of strategic technologies — while the full effects of competition enforcement, such as restored rivalry or market entry, may take longer to materialise. These temporal and methodological differences can create complexity when aligning the two policies. For instance, a government may prioritise rapid consolidation of companies and resources to achieve scale or deploy infrastructure, while competition authorities may need to assess whether such consolidation risks entrenching market power or undermining longer-term dynamic competition. As such, achieving coherence requires deliberate institutional dialogue across policy communities, mutual understanding of policy tools and objectives, and an appreciation for the long-run benefits of contestability — even when short-run pressures push in other directions.

B. Effectively Combining Policy Instruments

One of the hallmarks of pro-competitive industrial policy is the effective combination of different policy instruments to achieve broader goals. First, relying on a single policy tool may not address complex challenges, particularly those involving market failures, such as externalities. For example, to promote climate neutrality, supply-side measures like subsidies for innovation should be complemented by demand-side instruments, such

¹⁹ Industry participants have a significant and legitimate interest in the direction of competition policy. However, certain industry participants are likely to have specific vested interests in the direction of competition policy. Therefore, it may be a concern if these vested interests exert an outsized influence on the direction of competition policy independently of the optimal design of such policies. The OECD Competition Committee will discuss Corporate Influence in Competition Policy Making [unpublished] in its June 2025 session. See OECD (2025), *Corporate Influence in Competition Policy Making*, OECD Publishing, Paris, <https://www.oecd.org/en/events/2025/06/corporate-influence-in-competition-policy-making.html#:~:text=In%20June%202025%2C%20the%20OECD%20will%20hold%20a,as%20the%20challenges%20in%20distinguishing%20between%20the%20two>.

²⁰ *Supra*, at 3.

as carbon taxes or public procurement, to stimulate market demand for cleaner technologies.²¹ By combining instruments in this way, industrial policy can create a more dynamic and competitive market environment.

Second, ensuring the effectiveness of industrial policy requires more than just designing appropriate interventions. A holistic, coordinated approach between competition authorities and other regulatory bodies is necessary to foster a competitive environment that promotes long-term innovation and growth. For example, in addition to competition policy, trade policy may also play an important role in enhancing the effectiveness of industrial policy by creating a more competitive and dynamic external environment that complements domestic policy interventions. For example, trade policy may open domestic markets to global competition and enable firms to access larger markets, achieve economies of scale, and benefit from increased competitive pressures.

In sum, through continuous engagement and co-operation, competition authorities and regulators can help ensure that industrial policies achieve their objectives, foster competition, drive innovation, and benefit consumers. Multilateral and multidisciplinary international organisations, such as the OECD, are critical in supporting this engagement. They offer a unique platform for dialogue, peer learning, and evidence-based guidance across policy communities. By bringing together competition authorities, sector regulators, and policymakers responsible for multiple policy areas, international organisations help bridge disciplinary silos, align incentives, and foster a more coherent policy ecosystem.

IV. ADDRESSING TENSIONS: INDUSTRIAL POLICY, COMPETITION AND NATIONAL CHAMPIONS

Industrial policy is not inherently synonymous with supporting protectionism or national champions. Indeed, where industrial policy aims to improve an industry's competitiveness and intensify the innovative drive, one can distinguish it from a national champions policy and ensure that it pursues the same objective as competition policy. Empirical evidence does not support any perceived benefits of adopting a national champion policy.²² Where scale can be significant in certain industries, its expected benefits, such as cost savings and increased innovation, are best realised when companies are not shielded from dynamic competition.

Nonetheless, perceived tensions between industrial and competition policies have arisen, particularly in merger control, where competition authorities assess mergers that could create national or regional champions. A notable example is the 2019 *Siemens/Alstom* merger, where the European Commission blocked the deal on competition grounds despite the strong support of the French and German governments for such consolidation of two European champions on arguments that it would create an even more formidable European competitor in the global market.²³ This case highlights the delicate balance between promoting industrial strength and safeguarding market competition.

While industrial policy can pursue a wide array of legitimate goals — ranging from promoting innovation, fostering employment, boosting resilience, and enabling strategic autonomy, to accelerating clean or digital transitions — competition and merger control are typically anchored in a more narrowly defined objective: protecting and promoting consumer welfare through the preservation of competitive markets. This divergence can complicate alignment.

On the one hand, evidence of increased market concentration combined with high profits in certain industries has led to arguments that merger control has not been enforced vigorously enough in recent decades, leading to a softening of competitive pressure and to increased market power.²⁴ From this perspective, stricter enforcement is necessary to protect and preserve contestability and promote more competitive market structures. On the other hand, it has also been argued that merger control has been too rigid, curbing firms' ability to scale, integrate vertically, or pool resources — particularly in strategic sectors — thereby limiting the emergence of globally competitive players. These competing perspectives reflect tensions, especially when industrial objectives call for consolidation while competition enforcement raises concerns about diminished rivalry.

Reconciliation requires nuanced approaches. A competition authority's role is not to promote consolidation for its own sake or to block mergers reflexively, but to thoroughly assess whether the likely effects of a transaction are compatible with competitive, dynamic, and innovative

21 Governments should, however, consider the optimal policy mix. This may include assessing the costs effectiveness of different measures and take into account limited resources.

22 OECD (2009), *Competition Policy, Industrial Policy and National Champions: Key findings, summary and notes*, OECD Roundtables on Competition Policy Papers, No. 96, OECD Publishing, Paris, <https://doi.org/10.1787/c22d258d-en>.

23 European Commission, *Siemens/Alstom* (COMP/M.8677), Commission decision of 6/2/2019.

24 Calligaris, et al. (2024), *Industry concentration in Europe: Trends and methodological insights*, OECD Science, Technology and Industry Working Papers, No. 2024/06, OECD Publishing, Paris, <https://doi.org/10.1787/c4c371fb-en>; Gutierrez & Philippon (2023), *How European markets became free: a study of institutional drift*, Journal of the European Economic Association, <https://doi.org/10.1093/jeea/jvac071>.

markets. Where complementary industrial policy objectives are at stake, they can be considered by competition authorities — but not at the expense of long-term consumer welfare. Clear frameworks for integrating efficiency considerations and engagement with industrial policymakers can help ensure that competition assessments remain rigorous while responsive to legitimate policy goals. In the coming years, an example of how competition authorities are trying to address these tensions and establish balance will emerge from the United Kingdom. As underscored in the 2025 to 2026 Competition and Market Authority programme, the Competition and Markets Authority commits to driving growth and investment as a key priority while fulfilling its core purpose of promoting competition and protecting consumers.²⁵

Striking the right balance between these objectives is essential, as effective merger control not only preserves dynamic markets but it can also provide room for efficiencies that could align with broader industrial policy goals. Integrating competition and industrial policy requires a nuanced understanding of the relevant market, market forces, efficiencies, and the long-term competitive landscape, all of which require the expert analysis of competition authorities.

More broadly, and as underscored by the Draghi Report for the European Union, multiple pro-competitive opportunities exist that can align with industrial policy, thus revamping competition.²⁶ Enforcement could be more pronounced in industries that are key to industrial policy objectives. For example, enforcement could be prioritised or even slightly adapted in those industries, including by providing relevant recommendations for designing industrial policies where, for example, certain enforcement or authorisation of a merger would not achieve the sought-after objectives.

V. PRO-COMPETITIVE INDUSTRIAL POLICY OPPORTUNITIES

The section below does not aim to be exhaustive but provides some examples of the role of competition authorities and opportunities for designing industrial policies that are pro-competitive.

A. Mergers in the Mobile Communication Market and Spectrum Assignment

The mobile communication market offers a clear example of how competition and industrial policy can pursue shared objectives — driving innovation, encouraging investment, and improving consumer outcomes. Rather than viewing merger control and industrial policy as inherently at odds, the two can be aligned to shape better market outcomes, provided enforcement is forward-looking and policy design is well-informed. A key message emerging from recent policy debates — including the Draghi Report — is that Europe must unlock more significant investment and innovation in strategic sectors such as telecoms.²⁷ However, simply allowing consolidation to proceed in the hope of achieving scale is not the answer.²⁸

The evidence on global mergers in the mobile communication market has shown that consolidation does not automatically lead to higher investment or innovation, but substantially lessens competition.²⁹ Studies suggest that some mergers have been associated with reduced network investment, higher prices, and weaker competitive incentives. This includes mergers that were approved with investment commitments

25 UK CMA (2025), *CMA's Annual Plan to drive growth by promoting competition, protecting consumers and enhancing business and investor confidence*, <https://www.gov.uk/government/news/cmas-annual-plan-to-drive-growth-by-promoting-competition-protecting-consumers-and-enhancing-business-and-investor-confidence>.

26 Draghi (2024), *The future of European competitiveness*, European Commission, <https://ec.europa.eu/newsroom/growth/items/847989/en#:~:text=On%209%20September%2C%20Mario%20Draghi%2C%20former%20Italian%20Prime,the%20industry%20and%20companies%20in%20the%20Single%20Market>.

27 The Draghi Report generally advocates for the importance of competition to stimulate innovation and investment. See e.g. *ibid.*, at 13-7 ("Promoting competitiveness should not be seen in a narrow sense of a zero-sum game focused on conquering global market shares and raising trade surpluses. It should also not lead to policies of defending "national champions" that can stifle competition and innovation, or using wage repression to lower relative costs. . ."; "The evidence is overwhelming that competition stimulates productivity, investment and innovation. . .")

28 OECD (2021), *Recommendation of the Council on Broadband Connectivity*, OECD/LEGAL/0322 (The OECD's Council Recommendation on Broadband Connectivity underscores the importance of both competition and investment to promote high-quality connectivity at affordable prices.) See also Duso, et al. (2024), *Draghi is right on many issues, but he is wrong on telecoms*, CEPR, https://cepr.org/voxeu/columns/draghi-right-many-issues-he-wrong-telecoms#footnote5_65ng5r3 (last accessed 29 March 2025); Scott Morton (2024), *The Draghi report and competition policy*, Bruegel, <https://www.bruegel.org/first-glance/draghi-report-and-competition-policy> (last accessed 29 March 2025).

29 OECD (2021), *Emerging trends in communication market competition*, OECD Digital Economy Papers, No. 316, OECD Publishing, Paris, <https://doi.org/10.1787/4ad9d924-en>.

and structural remedies.³⁰ This raises legitimate questions about whether remedies can be counted on to preserve dynamic rivalry in highly concentrated markets.³¹

On the other hand, this does not mean that all mergers are undesirable. Instead, it means their review should be guided by rigorous competition analysis that integrates industrial policy goals. For example, competition authorities may consider tailored remedies that preserve competition while requiring commitments to invest in infrastructure, improve service quality, or expand coverage. Such conditions align with industrial policy aims while maintaining the benefits of a contestable market. However, they require scrutiny and ongoing monitoring, and their success may not achieve the same results as competition would have.³²

In the future, the UK's recent experience with the *Vodafone/Three* merger will prove informative regarding implementing remedies in mobile communication mergers. In December 2024, the UK Competition and Markets Authority ("CMA") conditionally approved the creation of a joint venture combining the UK mobile network operators of Vodafone Group and Three, subject to behavioural remedies. The decision has been strongly criticised on traditional competition grounds as it would promote further consolidation in the UK mobile industry and strengthen an incumbent mobile operator by eliminating a maverick competitor.³³ However, for purposes of this article, it is interesting to note that the CMA imposed legally binding commitments on the combined entity, including a GBP 11 billion network investment programme to deploy a 5G standalone ("SA") network and time-limited price caps on key tariffs pending the 5G SA network roll-out.³⁴ While the success of these behavioural remedies will rest on their ongoing monitoring, scrutiny and enforcement by the CMA, they indicate a desire to integrate industrial policy considerations in merger control.

Competition authorities can help shape better industrial policy by advising governments on how proposed policies affect market dynamics or how to achieve certain goals based on industry-specific expertise. More broadly, competition authorities' expertise is crucial in advising governments and communication regulators on market design — particularly concerning access to critical and scarce national resources, such as spectrum. Spectrum is a key component of wireless networks and applications, and its assignment remains a cornerstone of the mobile communication market structure. Especially in cases where demand exceeds supply in certain spectrum bands, such as those for mobile communication services, market assignment mechanisms, such as auctions, are best practice in OECD countries.³⁵ Given the necessity of spectrum to provide mobile services, spectrum auction design can significantly influence competitive outcomes and market structure. Here, competition agencies are well-placed to advise on how to lower entry barriers, encourage innovation, and avoid undue concentration of essential inputs. Spectrum auction design, therefore, is one possible policy lever to increase investment in mobile communication infrastructure and improve consumer outcomes while incorporating appropriate pro-competitive safeguards against monopolisation.³⁶

30 See e.g. Lear, et al. (2024), *Exploring aspects of the state of competition in the EU: Final report*, European Commission, https://competition-policy.ec.europa.eu/system/files/2024-06/KD0224126enn_exploring_aspects_of_the_state_of_competition_in_the_EU.pdf; Genakos et al., *Evaluating market consolidation in mobile communications*, Economic Policy, Volume 33, Issue 93, January 2018, Pages 45–100, <https://doi.org/10.1093/epolic/eix020>; Body of European Regulators for Electronic Communications (2018), *BEREC Report on Post-Merger Market Developments -Price Effects of Mobile Mergers in Austria, Ireland and Germany*, BEREC, https://www.berec.europa.eu/sites/default/files/files/document_register_store/2018/6/BoR_%2818%29_119_BEREC__Report_Mergers_Acquisitions.pdf.

31 See e.g. *New York v. Deutsche Telekom AG*, No. 1:19-cv-05434 (S.D.N.Y. Feb. 11, 2020) (*T-Mobile/Sprint* merger litigation); OECD (2024), *OECD Digital Economy Outlook 2024 (Volume 2): Strengthening Connectivity, Innovation and Trust*, OECD Publishing, Paris, <https://doi.org/10.1787/3adf705b-en> (underscores that mobile communication prices in the United States are higher across most baskets as compared to other jurisdictions); Rewheel Research (2024), *The Sprint / T-Mobile 4-to-3 mobile merger made the US one of the most expensive markets in the world*, https://research.rewheel.fi/downloads/The_state_of_mobile_and_broadband_pricing_1H2024_PUBLIC_REDACTED_VERSION.pdf (last accessed 29 March 2025).

32 See e.g. OECD (2022), *Remedies and commitments in abuse cases*, *OECD Competition Policy Roundtable Background Note*, www.oecd.org/daf/competition/remedies-and-commitments-in-abuse-cases2022.pdf; OECD (2012), *Remedies in Merger Cases: Key findings, summary and notes*, OECD Roundtables on Competition Policy Papers, No. 125, OECD Publishing, Paris, <https://doi.org/10.1787/51e1d94a-en>.

33 See e.g. Vickers (2024), *Should competition monopolise merger policy*, ACE Keynote Lecture, https://www.competitioneconomics.org/_files/ugd/9203cc_0ccee88c86644027b-61142c48e8e220d.pdf ("Whereas structural remedies seek to safeguard competitive incentives, the investment commitment approach does not do so, for the commitment is presumably to undertake investments significantly above and beyond the level that the parties would themselves wish to do post-merger. . . So great scepticism seems warranted, no matter how many economic models have been supplied by the parties to the competition authority. *Reculer pour mieux sauter* might be all very well in theory, but just *reculer* in practice.); Valletti (2025), *Vodafone/Three*, LinkedIn, https://www.linkedin.com/posts/tommaso-valletti-95b079b_as-expected-the-vodafone-three-uk-mobile-activity-7270341334647943168-sk-DE?utm_source=share&utm_medium=member_desktop&rcm=ACoAABmQHwMBPT8pUCDH88OILwCTbG8fJfBTQ (last accessed 11 April 2025).

34 See CMA, *Vodafone/CK Hutchison JV*, merger inquiry case page, <https://www.gov.uk/cma-cases/vodafone-slash-ck-hutchison-jv-merger-inquiry>.

35 OECD (2022), *Developments in spectrum management for communication services*, *OECD Digital Economy Papers*, No. 332, OECD Publishing, Paris, <https://doi.org/10.1787/175e7ce5-en> (Market assignment mechanisms are an effective way to ensure the spectrum is used most efficiently, as it is granted to the party that values it most, and ensures transparency in spectrum assignment. Spectrum auction design can explicitly incorporate competitive aims, such as reserving spectrum blocks for new entrants, providing bidding credits for certain market participants, or implementing spectrum caps to prevent one market participant from concentrating spectrum resources.)

36 Duso et al. (2024), *supra*, at 28.

Ultimately, the experience of the mobile communication industry is that markets will operate most effectively when industrial and competition objectives are pursued together. Ensuring that market structures remain competitive while facilitating investment and innovation is not a trade-off but a shared goal. Competition enforcement can catalyse investment in mobile communication infrastructure to support inclusive access to mobile communication networks and services when aligned with industrial priorities.

B. Public Procurement Creating Demand for Sustainable Innovations

Public procurement can serve as a strategic tool to pursue a variety of policy objectives. For example, governments can incentivise firms to shift their innovation trajectories by designing tenders targeting cleaner, more sustainable technologies. Public procurement measures favouring environmentally friendly solutions can break the path-dependency cycle, compelling firms to invest in greener alternatives.³⁷ This proactive use of public procurement can stimulate innovation in sustainable technologies and broaden market participation. For example, the Norwegian government mandated that all new ferry tenders prioritise low or zero-emission technologies. The government employed a strategic tendering process emphasising environmental performance without prescribing specific technologies. This approach encouraged a diversified supplier base and spurred technological advancements across the industry, encouraging new and established suppliers to propose diverse solutions to meet the zero-emission requirements. The policy led to the development and deployment of electric and hybrid ferries.³⁸ Moreover, results from an OECD 2022 survey on green public procurement (“GPP”), carried out in 38 countries, underscore that countries increasingly recognise GPP as a major driver for innovation.³⁹

Competition enforcement is critical in ensuring that the public procurement process remains fair and competitive, preventing collusion, bid-rigging, or other anti-competitive behaviours that could undermine the intended outcomes of procurement tenders. Well-designed competitive tenders can promote wider participation, lower bidding costs, and foster more innovative solutions — particularly through transparent, proportionate, and streamlined procurement processes. The OECD Recommendation on Fighting Bid Rigging in Public Procurement and accompanying Guidelines highlight how strategic tender design, including lot structuring and appropriate qualification criteria, can strengthen competition and reduce the risk of collusion.⁴⁰

By monitoring and intervening when necessary, competition authorities can ensure that dominant or incumbent firms do not unfairly dominate the procurement process, allowing new and innovative players to compete on an equal footing. This combination of pro-competitive public procurement practices and competition enforcement helps to create a more dynamic market, encouraging innovation and providing opportunities for emerging firms to challenge established players.

C. Access to Digital Infrastructure for Payments

In mobile payments, the design and provision of digital infrastructure can significantly shape market outcomes — determining whether innovation flourishes, new entrants thrive, and consumers benefit from lower prices and greater choice. When left entirely to market forces, mobile payment systems often develop in a fragmented, siloed manner. Large incumbents frequently have access to key technical infrastructure that may entrench their market position, where interoperability is restricted. In response, many jurisdictions have adopted a proactive approach: building open, inclusive, and publicly operated infrastructures that level the playing field and promote contestability. These initiatives are examples of pro-competitive industrial policies.⁴¹

Notable among these initiatives are India’s Unified Payments Interface (“UPI”) and Brazil’s Pix — public digital infrastructures that have transformed their respective payment landscapes. UPI, launched by the Reserve Bank of India and operated by the not-for-profit National Payments Corporation of India, enables real-time, bank-to-bank transfers through a unified platform accessible to all providers. Mobile payment developers can build applications on top of UPI, and transactions can be initiated and received across apps using interoperable QR codes and secure APIs. UPI has dramatically increased access to mobile payments and enabled FinTech competition by decoupling front-end service provision from back-end infrastructure. Notably, regulators have also introduced safeguards to avoid new monopolies — such as capping the volume of transactions any one app can process — to ensure continued dynamism and user choice.

37 Aghion, et al. (2011), *Rethinking Industrial Policy*, Bruegel Policy Brief Issue 2011/04, <https://www.bruegel.org/policy-brief/rethinking-industrial-policy>.

38 Nkesah & Solvoll (2024), *Accelerating the transition to zero-emissions ferries*, Danish Journal of Transportation Research, 10.54337/ojs.djtr.vi6.8072.

39 ECD (2024), *Harnessing Public Procurement for the Green Transition: Good Practices in OECD Countries*, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/e551f448-en>.

40 OECD (2012), *Recommendation of the Council on Fighting Bid Rigging in Public Procurement*, OECD/LEGAL/0411; OECD (2009), *Guidelines for Fighting Bid Rigging in Public Procurement*, OECD Publishing, Paris, <https://doi.org/10.1787/8cfeafbb-en>.

41 The OECD Competition Committee will discuss Competition in Mobile Payment Services in its June 2025 session. See OECD (2025), *Competition in Mobile Payment Services* [unpublished], *OECD Roundtables on Competition Policy Papers*, OECD Publishing, Paris, <https://www.oecd.org/en/events/2025/06/competition-in-mobile-payment-services.html>.

Similarly, Brazil's Pix — designed, managed, and operated by the Central Bank of Brazil — was introduced as a public good to address long-standing inefficiencies in a fragmented payments system dominated by a few large banks. Pix enables free or low-cost instant transfers between individuals and businesses, with mandatory participation for banks to ensure broad uptake and strong network effects. The central bank's direct involvement, including the imposition of interchange fee caps and open API standards, has allowed new providers — especially FinTechs — to compete on fairer terms. Pix is now used by nearly 90% of Brazil's population, and its widespread adoption has lowered transaction costs, increased inclusion, and fostered a more competitive market structure.

These examples highlight how publicly provided open payment infrastructures can serve as a form of “market-crafting” — actively shaping the competitive environment through industrial policy by dismantling bottlenecks and reducing dependencies on certain digital infrastructures. When underpinned by open architecture, inclusive governance, and pro-competitive rules, public digital infrastructure can unlock entry, reduce switching costs, and drive down prices.

Notably, such initiatives complement — rather than replace — competition enforcement. Even in jurisdictions with robust public infrastructure, dominant actors may still engage in exclusionary conduct. Thus, regulatory vigilance and effective enforcement remain necessary to ensure that new forms of “gatekeeping” do not undermine the benefits of open infrastructure. Finally, as more jurisdictions explore similar models, opportunities for international co-operation grow. Harmonising technical standards — especially around APIs and messaging protocols — can help reduce cross-border frictions and extend the benefits of interoperability and inclusion beyond national borders.

VI. CONCLUSION

The renewed prominence of industrial policy offers a timely opportunity to address complex challenges and carefully assess trade-offs. Its success depends on how it is designed and implemented. Poorly crafted interventions can entrench incumbents, distort markets, and ultimately hinder innovation and growth. This article argues that industrial and competition policies are compatible and mutually reinforcing. When grounded in competitive principles, industrial policy can correct market failures, open bottlenecks and catalyse innovation.

Conversely, competition policy helps ensure that industrial strategies do not result in concentrated markets or inefficient allocation of resources.

Several key takeaways emerge:

- ***Pro-competitive industrial policy design matters.*** Success depends on the choice of instruments — and they must be neutral, proportionate, and well-targeted — combined with mechanisms for continuous evaluation and adaptation.
- ***It is beneficial for competition authorities to participate as co-designers of industrial policy actively.*** Leveraging their market expertise and tools, such as market studies, will help to shape open, dynamic markets.
- ***Thorough merger control remains essential.*** This is especially where industrial policy objectives are invoked to justify consolidation.
- ***Domestic and international coordination is critical.*** Achieving coherent policy outcomes requires close collaboration and policy cross-fertilisation among competition authorities and regulators, also across borders.

Effective industrial policy may mean rethinking the state's role as a market shaper, which crafts markets to be competitive, contestable, and innovation-driven. With thoughtful design and institutional co-operation, industrial and competition policies can help address many complex challenges today.



COMPETITION-FRIENDLY INDUSTRIAL POLICY



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I. INTRODUCTION

The discourse on industrial policy has evolved from discussions regarding its necessity to analyses of its optimal design and implementation. The widespread occurrence of market failures, from climate-related externalities to geopolitical uncertainties, renders industrial policy a crucial instrument. Although industrial policy potentially presents substantial advantages, a significant concern is the inclination to protect inefficient firms instead of promoting competitive dynamism. This paper examines the interaction between industrial and competition policies in general and then focuses on empirical cases from the pharmaceutical sector, namely COVID-19 vaccines and treatments for rare diseases. It calls for pragmatic, adaptable, strategically focused, and methodologically rigorous competition-friendly industrial policies.

Given the recent proposals following the Draghi report within the European Union (Draghi, 2024), this discussion is timely.² Indeed, whether governments should concentrate resources on specific sectors or adopt broader economic missions and whether industrial policy should be co-integrated with competition policy to advance innovation, economic productivity, and market stability remains contentious.

For instance, (Mazzucato, 2021) advocates for a mission-oriented industrial policy and draws parallels to historical and technological endeavors such as the Apollo program.³ While targeted interventions may yield substantial advancements, one should not forget that they risk distorting competitive market mechanisms if not appropriately regulated and may result in suboptimal resource allocation, rent-seeking behavior, and regulatory capture. On the empirical front, an exhaustive review by Juhász et al. (2023) asserts that industrial policies can effectively achieve desired objectives, such as developing infant industries.⁴ However, the review remains silent on its effects on competition policy, beyond stressing that successful examples of industrial policy, e.g. in east-Asian countries, have been “export-oriented” instead of going for “import substitution,” thereby forcing domestic firms to compete on international markets.

The three of us contributed to a paper (Aghion et al., 2015) that provides theoretical and robust (China-based) empirical support for competition-friendly industrial policy, arguing that market competitiveness is integral to sustainable industrial development.⁵ We summarize our findings in section II. In section III, we revisit the European strategy for innovation (following the Draghi report), highlighting the possibility of achieving some of its goals without conflicting with competition policy, stressing the role of the U.S. ARPA agencies, and detailing its success in recent COVID-19 vaccines. Finally, section IV concludes.

II. THE COMPLEMENTARITY BETWEEN INDUSTRIAL AND COMPETITION POLICIES

The stylized theoretical model presented in Aghion et al. (2015) examines the dynamics of two large firms, two product markets ranked by the marginal cost of innovation, and competitive fringes within each market.⁶ The equilibrium mechanism works through two well-known main forces: the “replacement” effect, which says that a firm in a monopoly situation will invest less than when it faces competition, and the “escape competition” role of product differentiation. By the replacement effect, firms’ incentives to innovate are reduced when they diversify (produce in different markets) compared to when they are present in the same market (especially when innovation has the lowest marginal cost). This divergence presents an opportunity for industrial policy intervention to foster innovation if the laissez-faire outcome is for firms to diversify. The policy disrupts the diversification outcome by “pushing firms,” through a more favorable tax or subsidy regime, to “focus” on the high-innovation market. It promotes an equilibrium with higher innovation outcomes whenever firms cannot collude on prices easily when they are in the same market. The lower the probability of collusion (our proxy for more competition), the more innovation-enhancing the industrial policy.

In addition to this positive correlation between a market’s competitiveness and the increase in innovation due to policy, our model leads to two other predictions. First, the tax/subsidy policy must target the market with high innovation benefits. Second, taxes/subsidies to only one firm will not affect the equilibrium outcome. Hence, the dispersion of tax/subsidies among firms is essential for a competition-friendly industrial policy.

These predictions are supported in our longitudinal analysis of Chinese companies covering the period 1998 to 2007, where we evaluate the impact of industrial policy on firm productivity. The results suggest that industrial policies that foster sectoral competition enhance pro-

2 Draghi, Mario (2024), “The Future of European Competitiveness Part A: A competitiveness strategy for Europe,” report to the European Commission.

3 Mazzucato, Mariana (2021), “Mission economy: A moonshot guide to changing capitalism,” *Penguin Books*.

4 Juhász, Réka, Nathan Lane & Dani Rodrik (2023), “The new economics of industrial policy,” *Annual Review of Economics*, 16.

5 Aghion, Philippe, Jing Cai, Mathias Dewatripont, Luosha Du, Ann Harrison & Patrick Legros (2015), “Industrial Policy and Competition,” *American Economic Journal: Macroeconomics*, 7 (4), 1-32.

6 *Ibid.*

ductivity. The Herfindahl index was used in this study to quantify market competitiveness, while industrial policies were split into four categories: direct subsidies, tax holidays, low-interest loans, and tariffs. The evidence indicates that policies encouraging firm entry and competition enhance overall market efficiency. These findings align with our theoretical model in which, in the absence of industrial policy, strategic entry by innovative firms into less competitive sectors may be profitable by diminishing market rivalry but reduce incentives for innovation. Well-structured industrial policies counteract this phenomenon by ensuring innovation remains crucial to competitive market dynamics.

In the example of China, the design of industrial policy mattered significantly.

- The instrument employed for policy is critical. Indeed, only two of the four industrial policies in the dataset (subsidies and tax holidays) positively correlate with our productivity (“TFP”) measure.
- Like in the theoretical model, spreading subsidies out more improves company performance, even if giving subsidies to initially more competitive sectors doesn’t boost productivity.
- Targeting smaller but not larger firms significantly enhances the positive impact of industrial policies on total factor productivity.

The empirical evidence suggests that introducing policies that increase competition leads to a rise in TFP. However, China’s policy design does not appear to have aligned with this hypothesis. Notably, the Chinese government did not implement higher tariffs or subsidy levels in cities or industries characterized by higher levels of competition. One plausible conclusion is that if China had implemented an industrial policy that maintained and enhanced competition, it could have achieved even more favorable outcomes. The following section provides an example of an explicitly competition-friendly industrial policy that used dispersed subsidies rather than solely targeting incumbent firms.

Despite implementing a sectoral state aid policy, the challenge persists in minimizing the influence activities of sectoral interests. Competition-friendly policies can assist by allocating state aid to a less concentrated and more competitive sector. This reduces the number of firms in that sector that will lobby for assistance as they anticipate lower profits. In essence, political economy considerations should encourage the interaction between competition and the efficiency of sectoral state aid. A comprehensive analysis of the optimal governance of sectoral policies remains an area for further research.

III. THE DRAGHI REPORT AND THE ROLE OF U.S. “COMPETITION-FRIENDLY” INDUSTRIAL POLICIES

Until very recently, competition economists expressed strong suspicion vis-à-vis any form of industrial policy or sectoral state aid, on the ground that industrial policy tries, with limited success, to “pick winners,” i.e. favor particular firms, thereby limiting competition.

Yet, over the past year, several strong advocates of competition policy have shifted their views and are now open to considering the possibility of suitably designed and governed industrial policy.

The first reason lies in the general observation that the competition that matters is increasingly *between* Europe and other economic powers, most prominently the U.S. and China, rather than *within* Europe, and both the U.S. and China are forcefully promoting industrial policies.

A second reason, closely related to the previous one, is that Europe has been experiencing a productivity decline relative to the U.S. since the 1990s, partly because it did not develop the equivalent of the U.S. DARPA (Defense Advanced Research Project Agency) to foster frontier innovation.

Institutions like DARPA (now “ARPA-Defense”), or BARDA (“Biomedical Advanced Research and Development Authority,” now “ARPA-Health”) in biotech, turn out to play a key role when coordination problems make it difficult to move from basic research to operational industrial innovation, in domains where urgency commands that concrete progress be made rapidly. An example in point is COVID-19 and BARDA: basic research produced the RNA messenger discovery, but, as discussed below, it took the BARDA machinery to turn this discovery into a mass production of new vaccines with a very short time scale.

Whether they arise between actors, between key sources of funding, or between layers when dealing with the transformation of a whole supply chain (see Aghion et al. (2024)),⁷ coordination problems are a primary obstacle to breakthrough innovation. Horizontal policies alone fall

⁷ Aghion, Philippe, Lint Barrage, Eric Donald, David Hémous & Ernest Liu (2024), “Transition to green technology along the supply chain,” LSE working paper.

short of overcoming them: a primary reason is that coordination problems give rise to multiple equilibria, and only vertical policies involving targeted sector-specific subsidies can succeed in selecting the efficient equilibrium.

The attractive feature of systems such as DARPA or BARDA is that they blend a top-down policy whereby the government selects particular missions in which to invest public funds and picks project managers – typically top scientists or entrepreneurs – with a bottom-up and competition-friendly approach whereby the project managers elicit several competing projects and approach several competing firms and labs to fulfill the missions.

The development of successful COVID-19 vaccines (which proved to be very safe and effective against the severe symptoms of the disease, even if they did not reduce contagiousness that much) in record time (less than a year) has proved to be a triumph of modern life science. As discussed in (Aghion et al., 2020)⁸ and Dewatripont (2022),⁹ the U.S., through BARDA, played a decisive role in this respect. Indeed, following the model of other applied R&D authorities, and in particular its defense counterpart DARPA, BARDA concentrated significant funding on a limited number of competing projects. In this case, it chose to allocate the following amounts to six projects based on three different technologies:

1. 1.95 billion \$ to BioNTech (Germany) + Pfizer (U.S.).*
2. 2.48 billion \$ to Moderna (U.S.).*
3. 1.46 billion \$ to Johnson & Johnson (U.S.).**
4. 1.20 billion \$ to Oxford/AstraZeneca (UK/Sweden).**
5. 1.60 billion \$ to Novavax (U.S.).***
6. 2.07 billion \$ to Sanofi/GSK (France/UK).***

(where * refers to the mRNA technology, **the viral vector technology, and ***the protein subunit technology).

This policy was exceptionally successful: all six projects led to vaccines authorized by the European Medicines Agency in the EU and/or the Food and Drug Administration in the U.S. We can talk about a massive industrial policy success that managed to “pick winners”!

And we can certainly talk about a competition-friendly industrial policy :

- These projects were all meant to deliver a “similar” product, namely a COVID-19 vaccine.
- Diversification occurred in that three technologies were chosen, with “dual sourcing” in each case.
- The whole world could enter the competition. For each technology, one non-U.S. project (funded by U.S. taxpayer money, during the first Trump Administration ...) was chosen (from Europe in all three cases, taking into account that BARDA did not fund Pfizer, only BioNTech, Pfizer came along only at the later production stage).
- There was a big contrast between the identities of these six winners and those of the top vaccine leaders of the world pre-COVID-19 in the West: GSK, Sanofi, Pfizer, and MSD. The “best” vaccine technology, the mRNA one, was developed by biotech firms BioNTech and Moderna (which later teamed up with the Swiss pharma firm Lonza for production).

While the U.S. played a central role in the R&D stage of COVID-19 vaccines, the EU innovated in another dimension by introducing joint purchases of these vaccines. After an initial stage, four of its Member States (Germany, France, Italy, and the Netherlands) decided to join forces and bargain separately from the other 23 Member States. While agreeing to such a delegation did lead to some delay, it ensured more equal access to these vaccines to all Member States within the EU, including the less prosperous ones.

(Fischer et al., 2022) argue that such joint procurement could also improve the innovation/access tradeoff for treatments for rare diseases. It is well-known that such treatments are costly.¹⁰ While high prices can be justified to some extent by low patient numbers, current trends show that rare-disease treatments already represent significant shares of public drug budgets overall. In this respect, joint procurement could be a way to introduce some buyer power to counter the well-documented tendency of global pharma companies to “play one country against another” in terms of price and speed of access to treatments (see Kyle (2007)).¹¹ Interestingly, this idea could be seen as another example of

8 Aghion, Philippe, Sofia Amaral-Garcia, Mathias Dewatripont & Michel Goldman (2020) “How to strengthen European industries’ leadership in vaccine research and innovation,” VoxEU, CEPR Policy Portal.

9 Dewatripont, Mathias (2022), “Which policies for vaccine innovation and delivery in Europe?,” *International Journal of Industrial Organization*, 84.

10 Fischer, Alain, Michel Goldman & Mathias Dewatripont (2022), “Improving the innovation/access trade-off for rare diseases in the EU after Covid-19,” VoxEU.

11 Kyle, Margaret K. (2007), “Pharmaceutical price controls and entry strategies,” *The Review of Economics and Statistics*, 89 (1), 88-99.

competition-friendly industrial policy since, by further “completing the EU Single Market,” one induces more firms to compete for what has become a larger pie (and thereby address complaints about market fragmentation).

Finally, in line with the model of (Aghion et al., 2015) one could combine the above ideas with authorization policies trying to limit the proliferation of “me-too drugs,” marginal innovation strategies that prioritize incremental improvements over transformative breakthroughs (the latter being less profitable than the former, a phenomenon documented for the U.S. at least by Fojo et al. (2014)).¹² In this respect, stricter regulatory criteria for pharmaceutical innovation can ensure that research efforts are mainly focused on substantive advancements rather than rent-seeking behavior. Encouraging competition-friendly innovation while safeguarding affordability is crucial for sustainable advancements in rare disease treatments.

Let us end this section by stressing that these issues are relevant beyond the pharma sector. As convincingly argued in a recent report by Fuest et al. (2024),¹³ nothing yet in Europe can pretend to be a true counterpart of DARPA or BARDA. In particular, the European Innovation Council focuses on helping small and medium-sized enterprises, which, in itself, is a commendable objective to pursue. Still, it has not achieved the goal of promoting breakthrough innovation. In contrast, by delegating decision-making and project management to top scientists and entrepreneurs and having the project managers elicit competing projects, the ARPAs have helped the U.S. government continuously stimulate disruptive innovation in strategic sectors. Among the famous successes associated with this strategy are the GPS, the Internet (derived from Arpanet), and, as we just mentioned, the COVID-19 mRNA vaccines.

IV. CONCLUSION

The opposition between industrial and competition policies is artificial; instead, these policies must be viewed as interdependent levers for sustainable economic growth. The Chinese experience in this matter, as well as that of ARPAs in the U.S. (with the recent success of COVID-19 vaccines) exemplify the viability of competitive-sensitive industrial policies. Moving forward, policymakers must prioritize frameworks that are not only pragmatic and adaptable but also structurally coherent and strategically nuanced. The future trajectory of European industrial policy will depend on its ability to balance these imperatives with precision and foresight.

¹² Fojo, Tito, Sham Mailankody & Andrew Lo (2014), “Unintended consequences of expensive cancer therapeutics—the pursuit of marginal indications and a me-too mentality that stifles innovation and creativity,” The John Conley Lecture, *JAMA Otolaryngology–Head & Neck Surgery*, Special Communication.

¹³ Fuest, Clemens, Daniel Gros, Philipp-Leo Mengel, Giorgio Presidente & Jean Tirole (2024), “EU innovation policy: How to escape the Middle Technology Trap,” [EconPol Policy Reports](#) Report, ifo Institute - Leibniz Institute for Economic Research at the University of Munich.



COORDINATING MARKET ACTORS FOR THE PUBLIC GOOD: COMPETITION POLICY AS THE INDUSTRIAL POLICY OF DEMOCRATIC ECONOMIC GOVERNANCE

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I. INTRODUCTION

In recent years, it has been common to hear that the United States is experiencing a revival of industrial policy, usually in reference to Biden Administration policies like the Inflation Reduction Act (“IRA”) or CHIPS and Science Act, which use government subsidies and other incentives to catalyze the domestic production of critical technologies such as semiconductors and electric vehicles.

Under this narrative, industrial policy is the policy toolkit most associated with government-induced industry growth — it is the policy toolkit that creates (or opens) new markets,² or shifts capital resources into targeted sectors.³

If we were to follow this logic, it might appear that industrial policy and competition policy are antithetical to each other, with the former policy toolkit aiming to encourage growth by shielding sectors from the forces of market competition, and the latter aiming to expose companies and sectors to greater competitive market discipline.⁴

Traditional competition policy experts might scoff at such a reductionist description of their field, and well they should. But the reductionism of this common narrative applies just as well to its description of industrial policy. Neither field should be characterized by a focus on firm or industry size, but rather on the broader outcomes that they aim to create in markets, and in society.

In this paper, we argue that industrial policy characterizes the ways that governments shape markets in order to achieve a given outcome, and that competition policy provides the means for industrial policy strategies to achieve an outcome essential to the health of democratic societies: democratic economic governance.

In our first section, we define this relationship between industrial policy, competition policy, and the goal of democratic economic governance.

In our second section, we look at the process by which industrial policy can guide an economy through a transition, and discuss ways that competition policy approaches protect the goal of democratic economic governance. We use this section to highlight how industrial policy and competition policy strategies must work in tandem to address (1) the harms caused by concentrated markets; (2) incumbent firms’ resistance to change and innovation; (3) risks that incumbent industries will capture the gains of industrial policy; (4) risks that industrial policy will create concentrated markets; and (5) the rise of monopoly nations in the international economy. We conclude by reviewing the implications of this analysis on our current moment of transition.

II. INDUSTRIAL POLICY, COMPETITION POLICY, AND DEMOCRATIC ECONOMIC GOVERNANCE

Industrial policies are the mechanisms that governments use to shape markets — and, more importantly, the mechanisms they use to coordinate actors within a sector of the economy in the pursuit of a given outcome. Industrial policies allow governments to influence the types of goods and services available in communities, their price, and the methods in which they are produced. Industrial policies also influence which jobs will be available, to whom, in which region, of what quality, requiring which skills, and providing how much income. This means that the various fields of socio-economic policy, from trade policy to labor policy to competition policy, can all be part of an industrial policy strategy, just as industrial policy strategies can be developed around the goals of any of these fields.

Furthermore, industrial policies are critical to a government’s ability to initiate and guide change. People and firms resist change and the instability that it brings — but a society that remains unchanging faces economic and industrial stagnation and decline, especially as other countries continue to innovate and grow. Market competition can be a powerful driver of change among market actors, encouraging them to innovate to survive. However, the drivers of change often come from outside of markets — from new social expectations, for example, or from environmental shocks — and market forces are imperfect indicators of what is in the public interest. Worse, powerful market incumbents characteristically use their position to encourage change that helps them further consolidate power, and to divert any benefits that come from change back towards them. Because transitions affect not just markets, but also the degree of opportunity and power within society, governments have a responsibility to actively guide them toward outcomes that serve the public interest.

2 Stephen Cohen & J. Bradford DeLong, *Concrete Economics: The Hamilton Approach to Economic Growth and Policy* (2016).

3 Todd Tucker, *Industrial Policy and Planning: What It Is and How to Do It Better*, Roosevelt Inst. (July 2019).

4 E.g. D. Daniel Sokol, *Tensions between Antitrust and Industrial Policy*, 22 Geo. Mason L. Rev. 1247 (2015) (“Sound antitrust law and policy is in tension with industrial policy.”).

American history is filled with such industrial policy-backed socio-economic transitions.⁵ The U.S. industrialized — transitioning from the agrarian economy designed to support British mercantilist interests into a more self-sufficient and economically diversified economy — through a mix of tariffs, public procurement and investments, and a host of other policies that became known as the American System. Meanwhile, the agrarian economy of the American South was long defined by government policies enforcing, expanding, and eventually eradicating the markets of enslaved people. Westward expansion was driven by government sale and distribution of (militarily acquired) land, both to farmers and the railroad companies that would connect them to national markets. The New Deal and wartime mobilization spread new industrial opportunities across the country, preparing the U.S. to become the leading manufacturing exporter in the world, with Cold War public investments in research expanding the country's financial and living standard gains from innovation.

The last major transformation of the American economy has taken place over the course of the last forty years. There exists a lot of discussion about the varying interest groups and power dynamics that cemented neoliberal economic theory as the leading orthodoxy of American economic policymaking. From an industrial standpoint, however, this paradigm underpinned a policy strategy aimed at transitioning the U.S. from an economy centered on manufacturing to one centered on services — and in particular, what were considered high-value-add, high-productivity, high-skilled services like finance and software engineering.

The vision behind this change can perhaps be seen most clearly through the shift in American trade policy that occurred during the 1980s and 90s. The U.S. ensured that the World Trade Organization (“WTO”) expanded global oversight into trade in services, like telecommunications, through agreements like the General Agreement on Trade in Services (“GATS”) and Trade-Related Aspects of Intellectual Property Rights (“TRIPS”). Meanwhile, regional and bilateral free trade agreements like the North American Trade Agreement (“NAFTA”) facilitated the offshoring of American manufacturing capabilities to countries like Mexico or China that had lower production costs. Taken together, the U.S. government was pursuing a trade strategy designed to reduce the role of manufacturing in the American economy in favor of protecting American exports of services and intellectual property from its innovation sectors; Americans would earn their income from the highest-value activities in global supply chains, while benefiting from access to cheaper goods from abroad. This trade strategy complemented domestic deregulatory policy that expanded the role of finance in the economy, such that market actors from across industries would come to be governed according to the profit-maximizing priorities of the financial industry.⁶

It should be no surprise that the “revival” of industrial policy discourse in the U.S. has coincided with a similar “revival” in the use of policies and legal tools from across economic policy fields. This has less to do with the U.S. government deciding that it should use policies like tariffs or antitrust enforcement just for the sake of using them — as implied by debates that frame policymaking as the choice between more or less government action — than it does with the fact that the priorities of the U.S. government have shifted in the face of rapidly evolving and transnational socio-economic challenges. This change in the underlying priorities of the government has required policymakers to change their industrial policy strategy, adopting a different set of policy tools to achieve a different set of policy outcomes.

Looking at the challenges ahead, it is clear that new industrial strategies are needed to help guide the American economy through at least four critical transitions. The first is the climate transition in which the U.S. must minimize carbon emissions across all its industries, strengthen industrial resilience to increasingly frequent climate shocks, and rapidly expand the production and adoption of green technologies that will underpin the future global economy.

Second is the technology transition, in which the U.S. must encourage innovation for digital technologies, like AI, while protecting the rights and interests of the varied industries and stakeholders that may come to depend on these technologies.

Third, the U.S. must manage a demographic transition, rapidly expanding the supply of care services for the country's aging population, while helping industries adapt to a shrinking native labor force.

Finally, the U.S. needs a resiliency transition, in which it increases domestic manufacturing and diversifies its global supply chains for critical technologies to reduce risks from climate or geopolitical shocks.

Although each of these transitions has different goals and will require different policy strategies to achieve, they all share one critical priority: to succeed, these transitions must create an economy that supports and strengthens democratic social and economic governance; that

5 Cohen & DeLong, *supra* note 2; Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (2002); Steven K. Vogel, *Markercraft: How Governments Make Markets Work* (2018).

6 Cohen & DeLong, *supra* note 2; Vogel *supra* note 5; Ann Pettifor, *State of Emergency*, *Bos. Rev.* (Sept. 15, 2021), https://www.bostonreview.net/forum_response/state-of-emergency/.

keeps markets open, fair, and accountable to democratic institutions; and that ensures market benefits are widely shared rather than captured by entrenched private interests.

“Democracy” is rarely cited as an explicit goal of industrial policy. But the ongoing assaults on democratic norms and institutions in the U.S. and globally are strong evidence that this is a mistake. It bears repeating in these times that democracy is in the public interest, in that it is the form of government with the greatest capacity to create and distribute wealth widely and equitably across a society.⁷ Promoting democratic governance, and democracy more broadly, does not require that people sacrifice their economic wellbeing in the interest of higher ideals of equality and justice. Instead, democratic ideals like equality, justice, and fairness are what protect the rights and material interests of all people, and all market actors.

A democratic government that is accountable to the public should define its priorities and develop industrial strategies to achieve them, reflecting the public interest: ensuring that the economy produces the goods, services, jobs, and incomes that people need for their own well-being, while preventing behaviors that cause social harms. This is not the case for all types of governments, as non-democratic governments frequently use industrial policy to reward political allies, and weaken alternative centers of power.⁸ Once again, the motivations behind the use of industrial policy matters.

A commitment to democratic governance also matters to a government’s selected strategy because industrial policies, with their potential to transform social and economic aspects of a society, fundamentally impact that society’s governing institutions. The new economic opportunities created through industrial policies create new sources of market power which, if allowed to concentrate, can easily translate into political power.

Furthermore, one of the greatest risks of any industrial strategy is that the beneficiaries of the government’s policies will use the power they have gained from these policies to rent-seek, ensuring that markets continue to be favorable for them, even if their gains come at the public’s expense. This can include lobbying for continued public support, for preferred industry regulations, or even for lax enforcement of competition or other rules. Thus, industrial policies can cause concentrations of power that ultimately undermine the goals that the government set out to achieve in the first place.

This is what makes competition policy such a critical component of any industrial strategy in a democratic society. Competition policy establishes the foundational rules for lawful market conduct and coordination.⁹ Ultimately, competition policy helps structure economic incentives so that firm behavior aligns with socially beneficial goals such as investment in innovation, productive capacity, and worker wages and benefits, all of which support and advance the aims of industrial policy initiatives deployed to manage or induce an economic transition. When properly implemented, competition policy helps ensure that the benefits of transition — such as increased innovation, productive investment, and higher wages — are broadly shared and that markets remain open, fair, and democratic.

III. COMPETITION POLICY CONTRIBUTIONS TO INDUSTRIAL POLICY STRATEGIES

Competition policy defines how firms compete and sets the boundaries of acceptable conduct. It is, therefore, an essential component of industrial policy strategies and helps ensure that market actors do not undermine the government’s policy goals by placing their own interests ahead of the public’s.

This section looks at how industrial policy strategies respond to, or are threatened by, firm attempts to use their power to unfairly distort markets, and discusses how American competition policy complements industrial policy efforts to protect the public interest. In particular, we discuss policy strategies to address: (A) the harms of market concentration; (B) incumbent firms’ resistance to change; (C) the capture of industrial policy gains by incumbents from adjacent industries; (D) the capture of industrial policy gains by new monopolists; and (E) the rise of monopoly nations in the international economy.

A. Addressing the Problem of Monopoly

Industrial policies are often introduced to address the consequences of monopolization and other unfair market behavior. For example, governments may want to increase supply, or lower prices of a good or service that is important to the public’s welfare, such as pharmaceutical drugs. Competition policies should therefore be an integral part of the industrial policy strategy used to address these harms.

⁷ Amartya Sen, *Democracy as a Universal Value*, 10 J. Dem. 3 (1999).

⁸ Chris Miller, *Putinomics: Power and Money in Resurgent Russia* (2018).

⁹ See Sanjukta Paul, *Antitrust as Allocator of Coordination Rights*, 67 UCLA L. Rev. 378 (2020).

Competition policy delivers fair markets and democratic economic governance by placing limits on how corporate power can be exercised, including the methods of competition firms use to succeed in the marketplace and how firms may coordinate.¹⁰ This is evident in the language of American antitrust laws. Section 2 of the Sherman Act prohibits monopolization and attempts and conspiracies to monopolize.¹¹ Section 2 — written as an add-on provision to target dominant firms attempting to unilaterally control a market¹² — functionally defines the desired market outcome as one in which the success of firms is determined through “[the development of a] superior product, business acumen, or historic accident,” rather than “the willful acquisition or maintenance of . . . power.”¹³ Other antitrust provisions tackle different methods of competition to shape firm behavior. For example, Section 7 of the Clayton Act prohibits mergers “in any line of commerce . . . [where] the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.”¹⁴ This law is an incipient statute, where the risk of adverse competitive effects is sufficient to trigger a violation.¹⁵ In the 1960s, courts enjoined mergers that caused firms to gain a market share as low as 7.5%.¹⁶

By delineating between permissible and prohibited forms of competition, the antitrust laws promote fair competition and protect the public interest — without requiring the government to define the unique social importance of every economic sector. Fair market competition is a desired outcome protected by the law because market concentration allows individual firms to extract rents and otherwise gain at the expense of other market actors, and more broadly at the expense of the public interest. This implies that competition policy, when consistently and vigorously enforced, is a preventative measure — a form of industrial policy intended to create market conditions across all sectors that reduce the risk of adverse outcomes like high prices, under-supply, low innovation, or even an erosion in the quality or quantity of jobs in a sector.

Nevertheless, market concentration and unfair practices continue to be problems in industries that deliver critical goods and services. For example, a major driver of high prices for generic pharmaceutical drugs, like insulin, is the high market concentration of the pharmaceutical manufacturing industry.¹⁷ Approximately 40% of generic drugs are produced by a single manufacturer.¹⁸ Pharmaceutical companies frequently extend their monopoly over the production and sale of drugs past the expiration of their patent through practices like predatory pricing, which make it difficult for new manufacturers to enter the market and increase competition.¹⁹

In these instances, we have gone past the point of needing to defend fair competition as a goal in and of itself; competition policy is now the mechanism for achieving other industrial policy priorities. Increased antitrust law enforcement can therefore be an important means of combating illegal practices, like predatory pricing, that harm the public by concentrating markets.²⁰ However, the failure of competition policy to act as a preventative measure means that increased enforcement will often have to take place alongside other measures that address the harms directly — even if these measures do not address the root cause of the problem. For example, the IRA imposed a \$35 cap on Medicare beneficiaries’ monthly out-of-pocket insulin expenses.²¹

Beyond increasing antitrust law enforcement, competition policy analysis can inform industrial strategies that attempt to increase market competition through other policy means, such as using public resources to support the growth of other competitors. For example, the California government has contracted a nonprofit drug producer to manufacture and sell affordable insulin — a tactic intended to incentivize

10 See Tara Pincock & Daniel A. Hanley, *Rules of the Game: Sports as a Lens for Understanding Fair Competition* (2025), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5144173.

11 15 U.S.C. § 2.

12 *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1, 60-61 (1911).

13 *United States v. Grinnell Corp.*, 384 U.S. 563 (1966).

14 15 U.S.C. § 18.

15 *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 577 (1967).

16 *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966) (enjoining a merger between two firms that would have resulted in a company with 7.5% market share.); *United States v. Aluminum Co. of America (Rome Cable)*, 377 U.S. 271 (1964) (enjoining a merger of a firm with 27.8% market share that attempted to acquire a firm with 1.3% market share).

17 Ernst R. Berndt, Rena M. Conti & Stephen J. Murphy, *The Landscape of US Generic Prescription Drug Markets, 2004-2016* (Nat'l Bureau of Econ. Rsch., Working Paper No. 23640, July 2017), <https://www.nber.org/papers/w23640>.

18 *Ibid.*

19 Nick Dearden, *Pharmanomics: How Big Pharma Destroys Public Health* (2023).

20 *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

21 Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1818 (2022).

the three incumbent insulin manufacturers to lower their prices, and keep them low in the long term.²² An alternative to this arrangement would be publicly-owned manufacturing — just as the military long produced its own vaccines and other critical drugs — using public options to maintain competition in critical industries.²³ Thus, industrial policy becomes the mechanism for advancing competition policy priorities, and vice versa.

B. Overcoming Incumbent Resistance to Change

Industrial policy is closely associated with the process of change and moments of economic transition. As a precondition for this change, it is in the public interest to support innovation that can generate the new technologies or practices that will make up the industries of the future, and thus supply new benefits to the public.²⁴ However, incumbent firms resist economic change, because change can threaten their market dominance and their profits, or create unpredictable financial returns. Competition policy can thus help ensure that markets are open to new players and new innovations.

Companies that stifle innovation are effectively withholding the benefits of the innovation — including the economic gains from the growth of new industries — from the public. For example, the former telecommunications monopolist AT&T deliberately withheld a number of technologies from the public that had been developed or acquired by Bell Labs, but that threatened their profits from providing telephone services.²⁵ AT&T was eventually required to enter into a sweeping settlement with the government, resulting in its patent portfolio being released to competitors in the telecommunications and electronics appliances industries. These other companies soon used them to develop technologies like the answering machine, modems, and, eventually, the internet.²⁶

In another example, the automaker General Motors (“GM”) responded to a 1990 California mandate for automakers to deliver zero-emission vehicles within a decade by taking control of the intellectual property of Ovonic Battery Company, and developing an electric vehicle (“EV”) prototype, EV1, intended to demonstrate the economic infeasibility of achieving the mandate; GM canceled its EV program by 2000 and sold its shares of Ovonic to Texaco.²⁷ Meanwhile, in Japan, Toyota partnered with Matsushita (now Panasonic) to develop the hybrid Prius, laying the groundwork for Japan to build world-leading EV and battery industries.²⁸

Among the more notable ways that incumbents resist change is through killer acquisitions, in which a firm uses their capital reserves to acquire a competitor in order to neutralize any threats to their business model. Scholars have conservatively estimated that between five and seven percent of mergers are killer acquisitions.²⁹ This implies that today’s leading technology companies — who between 1987 and 2018 acquired over 700 companies — have reaped significant benefits from stifling new competitors and preventing the growth of potentially socially beneficial innovations that could challenge their business status quo.³⁰

In addition to killer acquisitions, other practices, like refusals to deal or exclusive dealing arrangements, can undercut new competitors in ways that prevent them from gaining the skills, capital, or networks to innovate or otherwise challenge the incumbent. For example, attempts by companies like Deere to deny customers the right to repair their own equipment prevent independent repair businesses from entering the market, and thus gaining skills and opportunities to profit from innovation.³¹ Similarly, the classic *Lorain Journal Co. v. United States* Supreme Court decision centered on a local newspaper using its monopoly power to undermine a new radio

22 Audrey Stienon, *Public Pharma’s Biggest Barrier*, Am. Prospect (Jan. 5, 2024), <https://prospect.org/health/2024-01-05-public-pharmas-biggest-barrier>.

23 Ganesh Sitaraman & Anne L. Alstott, *The Public Option: How to Expand Freedom, Increase Opportunity, and Promote Equality* (2019).

24 Ganesh Sitaraman, *Industrial Revolutionaries*, Am. Prospect (Sept. 10, 2020), <https://prospect.org/economy/industrial-revolutionaries-franklin-hamilton-madison-jackson/>.

25 Daniel A. Hanley, *Structuring Competition to Foster Socially Beneficial Innovation*, Competition Pol’y Int’l: Antitrust Chronicle 8 (Sept. 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4586770.

26 Tim Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (2018).

27 Matthew Eisler, *Public Policy, Industrial Innovation, and the Zero-Emission Vehicle*, 94 Bus. Hist. Rev. 779 (2021).

28 *Ibid.*

29 Colleen Cunningham, Florian Ederer, & Song Ma, *Killer Acquisitions*, 129 J. Pol. Econ. 649 (2021).

30 Diana L. Moss, *The Record of Weak U.S. Merger Enforcement in Big Tech*, Am. Antitrust Inst. 4-5 (July 8, 2019). See also Walter Adams & James W. Brock, *The Proposed Emasculation of Section 7 of the Clayton Act*, 65 Neb. L. Rev. 813, 819 (1986).

31 Daniel A. Hanley, *Per Se Illegality of Exclusive Deals and Tyings as Fair Competition*, 37 Berkeley Tech. L.J. 1057, 1083-84 (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4101909; Daniel A. Hanley, Claire Kelloway, & Sandeep Vaheesan, *Fixing America: Breaking Manufacturers’ Aftermarket Monopoly and Restoring Consumers’ Right to Repair*, Open Markets Inst. 16 (Apr. 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4089852.

competitor by refusing to deal with any local business that advertised on the radio — thus suppressing the growth of what would become a new industry.³²

A basic function of competition policy is to prevent this sort of behavior, and thus to allow the public to benefit from new innovation, and the resulting emergence of new types of business, jobs, and industries.

The classic mechanism for preventing killer acquisitions is Section 7 of the Clayton Act, with its prohibition of mergers whose effect “may be substantially to lessen competition, or tend to create a monopoly.” Furthermore, Congress enacted separate, sector-specific restrictions in critical industries like telecommunications, railroads, electrical transmissions, and banking.³³ Once incumbents have gained a stranglehold on market innovation, divestitures and structural breakups of companies, like AT&T (on three separate occasions) have been a common remedy imposed by courts.³⁴

Meanwhile, practices like exclusive deals and refusals to deal are actionable under the Sherman Act, as well as under Section 5 of the Federal Trade Commission (“FTC”) Act.³⁵ While the FTC is the only agency empowered to enforce this provision, Section 5 covers a broad range of exclusionary practices that may not meet the higher legal thresholds of other antitrust laws. Section 5 also has lower procedural and evidentiary barriers, making it a critical tool for addressing emerging or subtle forms of unfair market behavior.³⁶ Section 5, therefore, offers a flexible and forward-looking legal framework for keeping essential channels of commerce open and ensuring that economic transitions remain competitive, innovative, and broadly beneficial.³⁷

C. Preventing Incumbent Capture of Adjacent Industries

One of the primary uses of industrial policy is to help an industry to grow and so that it may generate public benefits like increased supply, new jobs, and competition. This is often done using policies like trade protections or subsidies that create new opportunities for market actors to earn profits in a given sector. However, an important question of industrial policy is which market actors will capture the gains of this growth.

Unfortunately, the market actors that are often best placed to capture the gains of industrial policies are the incumbent firms in adjacent sectors, whose priorities may not align with the public priorities driving the industrial policy.

Incumbent firms may enter adjacent markets in order to avoid having to invest in building up their own capabilities in a growing sector — especially if that sector competes with the incumbent. For example, evidence presented in the FTC’s lawsuit against Facebook’s parent company, Meta, shows that Facebook acquired Instagram and WhatsApp in order to avoid having to invest in building its own photo-sharing and telecommunications products, and to reduce the competition that the company faced from these services.³⁸

Competition policy is therefore an important means of ensuring that dominant firms cannot leverage their existing power to gain an unfair advantage, or to stifle competition, in adjacent markets. Once again, the most important tools are consistent oversight over mergers and enforcement of competition policy rules. The antitrust laws, for example, restrict the use of tying arrangements, which companies can use to extend their dominance into new markets by combining, or mandating the use of two separate products or services.³⁹

Furthermore, Congress has repeatedly established industry-specific safeguards to prevent companies from using market power in one area to gain an unfair advantage in another, or to limit systemic economic risk. For example, the Glass-Steagall Act prohibited investment banks

32 *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951). For more on the adverse effects of refusals to deal, see Daniel A. Hanley, *Illuminating the Anti-Coercion Foundations of Refusals to Deal*, Competition Pol’y Int’l: Antitrust Chronicle (Sept. 2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4974547.

33 Daniel A. Hanley, *Administrative Antimonopoly*, Open Markets Inst. (Feb. 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4044077.

34 *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1, 60-61 (1911); Daniel A. Hanley, *America’s Fourth Estate: History and Law*, Open Markets Inst. 12, 19 (Nov. 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4628618. For a defense of break ups as an antitrust remedy, see Rory Van Loo, *In Defense of Breakups: Administering A “Radical” Remedy*, 105 Cornell L. Rev. 1955 (2020).

35 15 U.S.C. § 45.

36 *Atlantic Refining Co. v. FTC*, 381 U.S. 357, 371 (1965).

37 Sandeep Vaheesan, *Resurrecting “A Comprehensive Charter of Economic Liberty”: The Latent Power of the Federal Trade Commission*, 19 U. Pa. J. Bus. L. 645 (2017).

38 Brendan Benedict, *Zuckerberg on the Stand: The Trial to Break Up Facebook Starts Monday*, Big Tech on Trial (Apr. 10, 2025), <https://www.bigtechontrial.com/p/zuckerberg-on-the-stand-the-trial>.

39 *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5–6 (1958).

from operating as commercial banks.⁴⁰ Similar provisions exist in the Air Mail Act of 1934 (separating aircraft carriers and aircraft equipment manufacturers),⁴¹ the Hepburn Act (prohibiting railroads from transporting goods in which they have a “direct or indirect interest”),⁴² and the Panama Canal Act of 1912 (separating railroads and ocean carriers operating in the Panama Canal).⁴³ Congress has also empowered federal agencies to enact similar restrictions. The Federal Communications Commission (“FCC”), for example, developed Fin-Syn rules that separate television networks from the television studios and production houses that produce their content.⁴⁴ Similarly, the FCC’s media ownership rules limit the number of media outlets that any corporation can own, and historically prevented any one entity from simultaneously owning a broadcast (radio or TV) station and a newspaper in the same geographic area.⁴⁵

Meanwhile, common carriage obligations require firms to treat all customers and trading partners on equal and non-discriminatory terms, limiting opportunities for adjacent incumbents to discriminate against the firms in a new industry.⁴⁶ The Robinson-Patman Act, for example, prevents firms from arbitrarily selling their goods at discriminatory prices to favored customers, and prevents large firms from demanding preferential treatment due to their size.⁴⁷ In select industries, particularly in transportation, Congress has imposed common carriage obligations by statute; railroads and ocean carriers being prominent examples.⁴⁸ Given their central importance to the digital economy, cloud providers like Amazon, Microsoft, and Google have inherited a similar role to the railroads in that they control essential technological highways that interconnect our entire technological infrastructure and can unilaterally determine who can access the digital economy. As such, policymakers should undoubtedly extend common carriage obligations to services like cloud computing, ensuring that competition and access remain open, fair, and democratic.

Finally, competition policy analysis is critical for ensuring that industrial policy strategies incorporate diverse policy mechanisms to not only avoid the capture of growing sectors but also to ensure that unfair market behavior does not threaten the public goals of the industrial policy.

A growing threat to current industrial policy strategies is that of capture by the financial industry — and in particular, by private equity. Much like the Gilded Age money trusts of the 19th century, private equity funds use their financial power to acquire businesses across industries and reshape their behavior for their own benefit, often at the expense of other stakeholders.⁴⁹ Private equity has been particularly destructive across care industries (like nursing homes, hospitals, hospice care, home care, or child care) that provide services essential to public welfare, and where the profitability of private businesses is largely dependent on the public money (i.e., subsidies) provided through programs like Medicare or Medicaid. Despite making substantial profits from the public money being invested in care industries, private equity tactics largely undermine public priorities for these sectors. Private equity-owned care businesses are more likely to offer lower quality services to customers, lower wages and poorer job quality to their workers, and to risk bankruptcy and thus a reduction of care supply to a community.⁵⁰

Competition policy has started offering limited protection against the threat of private equity capture. Private equity funds are increasingly engaging in serial acquisitions, entering highly fragmented markets and profiting from market consolidation. Although this means that

40 Banking Act of 1933, ch. 89, §§ 16, 20, 21, and 32, 48 Stat. 162.

41 Air Mail Act of 1934, 48 Stat. 933 (1934).

42 Hepburn Act, Pub. L. No. 59-337, § 1, 34 Stat. 584, 584 (1906).

43 Panama Canal Act of 1912, Pub. L. No. 62-337, § 11, 37 Stat. 560.

44 Hanley, *supra* note 34, at 15.

45 *Ibid.*

46 For a background on common carriage obligations, see A. K. Sandoval-Strausz, *Travelers, Strangers, and Jim Crow: Law, Public Accommodations, and Civil Rights in America*, 23 L. Hist. Rev. 53 (2005); Edward A. Adler, *Business Jurisprudence*, 28 Harv. L. Rev. 135 (1914); Joseph William Singer, *No Right to Exclude: Public Accommodations and Private Property*, 90 Nw. U. L. Rev. 1283 (1996).

47 15 U.S.C. § 13; *FTC v. Henry Broch & Co.*, 363 U.S. 166, 174 (1960) (“Congress enacted the Robinson-Patman Act to prevent sellers and sellers’ brokers from yielding to the economic pressures of a large buying organization by granting unfair preferences in connection with the sale of goods.”); see also Daniel A. Hanley, *Controlling Buyer and Seller Power: Reviving Enforcement of the Robinson-Patman Act*, 52 Hofstra L. Rev. 313, 319-325 (2024) (describing the Robinson-Patman Act as an anti-discrimination law).

48 49 U.S.C. § 11101(a) (railroads); 46 U.S.C. § 41102(c) (ocean carriers).

49 Brendan Ballou, *Plunder: Private Equity’s Plan to Pillage America* (2023); Eileen Appelbaum & Rosemary Batt, *Private Equity at Work: When Wall Street Manages Main Street* (2014).

50 Atul Gupta, Sabrina T. Howell, Constantine Yannelis, & Abhinav Gupta, *Owner Incentives and Performance in Healthcare: Private Equity Investment in Nursing Homes* (Nat’l Bureau of Econ. Rsch., Working Paper No. 28474, Aug. 2023), <https://www.nber.org/papers/w28474>; Eileen Appelbaum, Emma Curchin & Rosemary Batt, *Profiting at the Expense of Seniors: The Financialization of Home Health Care*, Ctr. Econ. & Pol’y Rsch. (Sept. 27, 2023), <https://cepr.net/publications/profitting-at-the-expense-of-seniors-the-financialization-of-home-health-care/>; Richard M. Scheffler et al., *Monetizing Medicine: Private Equity and Competition in Physician Practice Markets*, Am. Antitrust Inst. (July 10, 2023), https://www.antitrustinstitute.org/wp-content/uploads/2023/07/AAI-UCB-EG_Private-Equity-I-Physician-Practice-Report_FINAL.pdf.

individual acquisitions are quite small, the controlling law, aptly summarized in the 2023 Merger Guidelines, empower U.S. competition policy regulators to consider the cumulative impact of serial acquisitions in determining whether to block future acquisitions.⁵¹ Competition policy enforcement can also be used to prevent private equity funds, and their portfolio companies, from using unfair market tactics to limit competition in local markets,⁵² or even exclusive deals between the different companies in a private equity fund's portfolio.

Beyond these tactics, competition policy can inform efforts to use other industrial policy tactics to strengthen competitors to private equity-backed companies.⁵³ Competition policy considerations can be embedded in the ways that public funding is distributed to different industries. For example, Massachusetts has capped the share of public childcare funding available to any single company, thus restricting the profitability of using serial acquisitions to capture the market.⁵⁴ Policymakers can also prioritize public programs for small businesses, nonprofits, and co-ops for funding, or create public service suppliers that set the baseline for quality, price, and accessibility. It is also important to empower industry regulators, or public program administrators, to monitor market health, and know how to identify signs of unfair business practices that can be brought to competition policy enforcers.

D. Prevent New Monopolists

Finally, among the most critical tasks of any industrial policy strategy is ensuring that the industries it is transforming come out at the other end with fair, pro-democracy markets. Whether or not an industrial policy strategy manages to protect an industry from capture or coercion from incumbent firms and adjacent industrial actors, it must prevent the firms in this sector from becoming the next generation of monopolists.

The history of the American railroad industry offers a cautionary tale about government policies that fail to position democratic governance and competition considerations at the forefront of their strategies. Throughout the nineteenth century, the U.S. federal government, along with state governments, provided immense support to railroad companies to encourage the expansion of this sector — which in turn promoted growth in agricultural and heavy industrial production.⁵⁵ The federal government ultimately transferred about 179 million acres of land — equivalent to seven percent of the continental U.S. — to private railroad companies, giving them control not only of the rails themselves, but also of many of the western settlements that were constructed around them.⁵⁶

However, the government's strategy did not adequately anticipate the consequences of the enormous power that the railroad companies would accumulate. Not only were the railroad companies unscrupulous in their behavior towards each other, but they also leveraged their position as a critical transportation provider to extort rents from the manufacturing and agricultural producers that depended on their services, and used their market power to expand their own business into adjacent sectors.⁵⁷ Although the railroad companies successfully built a nationwide transportation network, they ultimately developed an industry so corrupt and exploitative of other stakeholders that it placed an enormous strain on the democratic governance of the country itself.

Fortunately, in large part due to the enormous political backlash that grew in response to the corruption of the railroad and other Gilded Age robber barons, the U.S. now has a series of laws — like the Interstate Commerce Act and its many subsequent amendments,⁵⁸ the antitrust laws, and institutions like the FTC — intended to ensure that the government can prevent any industry, firm, or financier from gaining a similar chokehold over the American economy. However, it remains primarily in the hands of lawmakers and policy experts to enforce these rules against unfair behavior, even when the perpetrators are in critical industries receiving other forms of government support. The history of the railroads

51 U.S. Dep't of Justice & the Fed. Trade Comm'n, Merger Guidelines (Dec. 2023).

52 See Press Release, *FTC Challenges Private Equity Firm's Scheme to Suppress Competition in Anesthesiology Practices Across Texas*, FTC.gov (Sept. 21, 2023), <https://www.ftc.gov/news-events/news/press-releases/2023/09/ftc-challenges-private-equity-firms-scheme-suppress-competition-anesthesiology-practices-across>.

53 Audrey Stienon & Melissa Boteach, *Children Before Profits: Constraining Private Equity Profiteering to Advance Child Care as a Public Good*, Nat'l Women's L. Ctr. & Open Markets Inst. (June 2024), <https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/66798e200b1524426bb44b79/1719242272751/Children+Before+Profits+-+WEB.pdf>.

54 An Act ensuring affordability, readiness and learning for our youth and driving economic development, S.2697 (2024) (Massachusetts), <https://legiscan.com/MA/text/S2697/id/2953697>.

55 Lloyd J. Mercer, *Railroads and Land Grant Policy: A Study in Government Intervention* 2 (1982).

56 *Ibid.* at 6-7.

57 Joseph R. Blasi, Richard D. Freeman, & Douglas L. Kruse, *The Citizen's Share: Reducing Inequality in the 21st Century* (2014); Cohen & DeLong, *supra* note 2; David B. Danbom, *Born in the Country: A History of Rural America* (1995).

58 Interstate Commerce Act, 24 Stat. 379 (1887).

shows that even industries that have been structured to yield public benefits on one area of the economy can attempt to stifle innovation and competition that threatens their market position, and to capture the gains from other growing sectors.

Competition policy enforcement must therefore be incorporated into industrial policy strategy from the start, and industrial strategies must be designed to reduce opportunities for industries to use the power they gain from the government's support to weaken democratic economic governance and fair competition.

To start, industrial strategies should aim to create market conditions that direct firms towards desired behaviors and outcomes, rather than attempt to provide targeted assistance to a specific set of preferred firms. This latter “national champion” approach is exceptionally risky because it reduces the competitive pressures that these firms face, and implies that these firms will receive government support irrespective of whether they succeed in promoting public interest priorities.

Instead, industrial policies should be applied fairly across an industry. For example, the government should provide open access to subsidies for all qualifying firms — just as the Post Office Act of 1792 allowed all newspapers to use the U.S. mail system at low rates in order to help build a robust news and information distribution system to buttress the nascent American democracy.⁵⁹ The government can also set uniform and open standards for services and parts, allowing more firms to adjust their operations and provide services for tasks.⁶⁰

Industrial strategies should also incorporate policies to encourage growth among varied firms, providing extra support to smaller or weaker firms as needed for them to remain active in the sector. Government procurement can be structured to solicit bids, and source from, multiple providers — as was the norm for NASA when partnering with private firms during the Apollo Mission.⁶¹ The government can also authorize small providers to increase their coordination in order to achieve economies of scale, so that they can compete with larger firms while maintaining deconcentrated markets. For example, the 1942 Small Business Mobilization Act authorized businesses to coordinate in streamlining wartime production without violating antitrust laws.⁶²

Industrial strategies should nevertheless set conditions that link government support to firms' contributions to the public interest. This can include caps on the amount of money that firms can use to pay executives or investor dividends while they are receiving government payments. The government can also impose licensing requirements to prevent firms from wielding their intellectual property to lock-in or extort dependent firms.⁶³ Firms that fail to advance these priorities, including firms that abuse the power they gain through government policies, should lose this support.

Each of these mechanisms proactively prevents the concentration of power and any one firm from exclusively benefiting from a particular government initiative facilitating an economic transition, all while keeping markets open and fair.

E. Monopoly Nations

The laws and institutions governing competition policy are designed to structure national markets. However, unfair market dynamics also exist in the international economy — with the main difference that the monopolistic actors are countries rather than companies.

A recognition of the parallels between the trade and competition policy fields is not new. The Hirschman-Herfindahl Index, now used to measure market concentration within an industry, was initially developed by Albert Hirschman in 1945 to measure countries' dependence on their trade partners as part of his analysis of how countries exploit their trade relationships to accumulate national power.⁶⁴

59 An Act to Establish the Post-Office and Post Roads Within the United States (the Postal Act of 1792), 1 Stat. 232 (1792); see also Hanley, *supra* note 34, at 7-9.

60 For example, the FCC sets interconnection standards for telecommunications systems. See Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 Cal. L. Rev. 1889, 1899 (2002).

61 Mariana Mazzucato, *Mission Economy: A Moonshot Guide to Changing Capitalism* (2021).

62 Small Business Mobilization Act, ch. 404, §§ 1101–1112, 56 Stat. 351 (1942). For additional background on the Small Business Mobilization Act and its antimonopoly underpinnings, see Basel J. Musharbash & Daniel A. Hanley, *Toward a Merger Enforcement Policy That Enforces the Law: The Original Meaning and Purpose of Section 7 of the Clayton Act*, 63 Duquesne L. Rev. 1, 117 (2025), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4745310.

63 Jonathan M. Barnett, *The Great Patent Grab*, in *The Battle Over Patents: History and Politics of Innovation* 213 (Stephen H. Haber & Naomi R. Lamoreaux, eds., 2021) (“[Between 1941–1959] an estimated 40,000–50,000 patents, representing 8 percent of all unexpired patents at that time[, were under a compulsory licensing requirement due to antitrust litigation].”).

64 Albert O. Hirschman, *National Power and the Structure of Foreign Trade* (1945).

Despite these warnings, our existing international economic system, governed by institutions like the WTO, was designed with an insufficient appreciation of the risks of market concentration. By incentivizing industries to geographically concentrate their productive capabilities to lower costs and maximize efficiency, the system enabled the rise of monopoly nations, like China, on whom the world is now dependent for the supply of critical goods — including goods, like critical minerals, batteries, EVs, and solar panels which are essential to the success of the climate and technology transitions.⁶⁵ Like monopolist firms, monopoly nations can leverage their control over supply chain chokepoints to extort their trade partners during economic or geopolitical disputes, and can protect their industrial advantage by, for example, dumping underpriced goods on global markets to undercut the growth of potential competitors.⁶⁶

Monopoly nations, of course, cannot be broken up like a monopolistic company to restore fair market competition. Instead, competitors need to be built up, using industrial policy, to offer alternative sources of supplies of critical goods. The Biden Administration's Inflation Reduction Act and CHIPS and Science Act both represented attempts to support American production of critical goods, like EVs and semiconductors, and reduce risks from supply chain chokepoints.⁶⁷

However, the goal of American industrial policy should not be to make the U.S. the sole producer of the goods that Americans consume. Concentrating critical industries solely in the U.S. perpetuates many of the resiliency risks that exist in today's economy, especially given the growing risks from climate shocks disrupting concentrated production. Furthermore, American industries are strengthened by competition with foreign rivals. The U.S. therefore needs an industrial strategy that, in each critical sector, works in tandem with other countries to build up multiple sources of production that compete with, yet reinforce each other. For example, U.S. lawmakers could consider ways to require critical industries to source from multiple countries — with domestic producers counting as only one source of supply.⁶⁸ Not only will this help make the global economy more resilient in the face of growing climate and geopolitical risks, but it will also help spread the economic gains of industrial growth across countries and regions.⁶⁹

While industrial policy is needed to rebuild global productive capabilities, the challenge in the long-term will be to reform the international trade system to prevent production from concentrating in any country once industrial policy support is removed. The expertise of the competition policy field will be invaluable in these discussions to help define what a fair international economy looks like, and what kinds of institutions are needed to rein in the power of both monopoly nations and monopolistic multinational firms.

IV. CONCLUSION

The world is embarking on a moment of profound economic transformation. If we are successful, countries like the U.S. will come out on the other side of this transition with a society that is cleaner and more sustainable; where people can access the goods and care services that they need at every stage of their lives; where people's jobs pay them wages that enable them to achieve ever higher standards of living; and in which people can use new, advanced technologies to innovate and imagine even better futures. The key to this success is to ensure that we navigate this economic transition through democratic governance, ensuring that no industry or company or individual is able to concentrate power and divert the direction of change towards ends that benefit them over the public.

Unfortunately, we are starting this journey facing numerous threats from concentrated power — many of which are a direct consequence of the laissez-faire industrial policy strategies implemented in recent decades. The climate transition, long delayed by incumbent fossil fuel and other incumbent industries, is dependent on new industries heavily concentrated in China. The finance and tech industries, which were among the greatest beneficiaries of the deregulatory choices of the last transition, are spreading their influence across the economy, including into critical care and emerging green tech sectors. In doing so, they are reshaping markets to increase their own wealth and power at the expense of society. Meanwhile, the U.S. and China seem poised to enter into a zero-sum struggle for supremacy in the global economy, both of them preparing to weaponize their respective control over market chokepoints to inflict economic harm on the other.

⁶⁵ The U.S. controls its own chokepoints, notably over military equipment, international financial systems, and telecommunications infrastructure. See Edward Fishman, *Chokepoints: American Power in the Age of Economic Warfare* (2025); Henry Farrell & Abraham Newman, *Underground Empire: How America Weaponized the World Economy* (2023).

⁶⁶ Janet Yellen, Secretary of the Treasury, *Remarks on the U.S. - China Economic Relationship at Johns Hopkins School of Advanced International Studies* (Apr. 20, 2023), <https://home.treasury.gov/news/press-releases/jy1425>.

⁶⁷ Inflation Reduction Act, Pub. L. No. 117–169, 136 Stat. 1818 (2022); CHIPS and Science Act, Pub. L. No. 117–167, 136 Stat. 1366 (2022).

⁶⁸ Barry C. Lynn, *Manufacturing and Liberty*, Wash. Monthly (Jan. 8, 2023), <https://washingtonmonthly.com/2023/01/08/manufacturing-and-liberty/>.

⁶⁹ Katherine Tai, U.S. Trade Representative, *Remarks at the National Press Club on Supply Chain Resilience* (June 2023), <https://ustr.gov/about-us/policy-offices/press-office/speeches-and-remarks/2023/june/ambassador-katherine-tais-remarks-national-press-club-supply-chain-resilience>.

It is clear that a decentralized, democratic, fair, and open economy is not a natural outcome of an economic transition. It is a deliberate political and economic choice, made possible by democratically enacted laws and institutions. Industrial policy will be critical for guiding countries through these transitions, but alone, it cannot achieve broad-based prosperity or resilient democratic markets. Without competition policy as a fundamental component of its implementation, industrial policy instead risks facilitating new and entrenching current concentrations of private power rather than promoting inclusive economic transformation.

As governments deploy industrial strategies to guide economies through major transitions, competition policy must be placed at the forefront — not as a secondary concern but as a primary condition for success. It is the instrument that ensures that economic change serves the public good rather than allowing private empires to capture and control the future.



STATE OWNERSHIP IN INDUSTRIAL POLICY: ASSESSING ANTICOMPETITIVE RISKS ON MIXED MARKETS

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I. INTRODUCTION

State ownership has made a remarkable comeback as a driver for industrial policy around the world, particularly in the nexus of strategic autonomy and sustainability transitions.² For example, the British government nationalized its electricity grid operator in 2024, to boost both energy security and accelerate energy transition.³ Both Chile and Mexico, moreover, nationalized their lithium extraction market in 2023 to safeguard access to this rare earth minerals while ensuring environmentally and socially-conscious mining.⁴ Furthermore, Chinese State-Owned Enterprises (“SOEs”) are regarded as actors of Chinese geopolitical industrial policy,⁵ as well as drivers of energy transition.⁶ Finally, the US, not exactly known as friendly to state ownership, boasts over 2000 energy companies owned by (local) governments,⁷ the potential of which has been recognized as a drivers for energy independence and clean energy policy.⁸

The promise of state ownership as a part of (green) industrial policy is intuitively compelling. At the same time, with this potential may come an increased presence of SOEs on markets, with effects on competition between state-owned and private firms. In fact, anticompetitive behavior by SOEs has been mentioned as a risk of increased state ownership,⁹ with some authors arguing that SOEs are more likely than private firms to behave anticompetitively.¹⁰

A coherent risk assessment of anticompetitive effects of resurgent state ownership as part of industrial policy, however, is altogether lacking. This article, therefore, systematically analyzes actual and potential anticompetitive effects of increased state ownership, by drawing on literatures in industrial organization and competition policy, as well as enforcement practice in mainly the EU. To start, I will offer a primer on state ownership and cover insights from research on mixed markets, where SOEs and private firms compete. This will set the stage for a risk assessment of anticompetitive behavior by SOEs. To this effect I will discuss the manifestation and prevalence of both collusion in markets with SOEs and abuse of dominance (monopolization) by SOEs. The concluding section, then, will indicate competition law enforcement priorities and directions for further research.

II. A PRIMER ON STATE OWNERSHIP IN INDUSTRIAL POLICY

State ownership has often been approached as a binary variable in the literature: a firm is either state-owned, or private.¹¹ However, conceptually state ownership is a lot richer: it can materialize at all levels of government; can involve minority, majority and complete shareholding; and be premised on direct or arms-length management by public officials. Government ownership, therefore, can range from complete shareholding and direct management of municipal waste management companies,¹² to minority, passive shareholding by a national government in a multinational firm.¹³ Furthermore, the

2 An increasing role of state-owned enterprises in the global economy calls for better governance, OECD (2025), <https://www.oecd.org/en/blogs/2023/07/an-increasing-role-of-state-owned-enterprises-in-the-global-econ.html> (last visited Feb 3, 2025).

3 Department for Energy Security and Net Zero, *New Publicly Owned National Energy System Operator to Pave the Way to a Clean Energy Future*, GOV.UK (2024), <https://www.gov.uk/government/news/new-publicly-owned-national-energy-system-operator-to-pave-the-way-to-a-clean-energy-future> (last visited Apr 22, 2025).

4 Carolina Pulice & Nelson Bocanegra, *Mexico's Lopez Obrador Orders Ministry to Step up Lithium Nationalization*, REUTERS, FEB. 19, 2023, <https://www.reuters.com/world/americas/mexicos-lopez-obrador-orders-ministry-step-up-lithium-nationalization-2023-02-19/> (last visited Apr 22, 2025); Alexander Villegas & Ernest Scheyder, *Chile Plans to Nationalize Its Vast Lithium Industry*, REUTERS, APR. 21, 2023, <https://www.reuters.com/markets/commodities/chiles-boric-announces-plan-nationalize-lithium-industry-2023-04-21/> (last visited Feb 21, 2024).

5 Benoit Mayer, Mikko Rajavuori & Mandy Meng Fang, *The Contribution of State-Owned Enterprises to Climate Change Mitigation in China*, 7 CLIMATE LAW 97 (2017).

6 Mengye Zhu, Ye Qi & Nathan Hultman, *Low-Carbon Energy Transition from the Commanding Heights: How State-Owned Enterprises Drive China's Wind Power "Miracle,"* 85 ENERGY RESEARCH & SOCIAL SCIENCE 102392 (2022).

7 AMERICAN PUBLIC POWER ASSOCIATION, *2025 Public Power Statistical Report*, (2025), <https://www.publicpower.org/resource/public-power-statistical-report> (last visited Jan 31, 2025).

8 Arjuna Dibley, *When Does "Leviathan" Innovate? A Legal Theory of Clean Technological Change at Government-Owned Electric Utilities*, 47 HARV. ENV'T L. REV. 135, 188–196 (2023).

9 Anna Grosman, Ilya Okhmatovskiy & Mike Wright, *State Control and Corporate Governance in Transition Economies: 25 Years on from 1989*, 24 CORPORATE GOVERNANCE: AN INTERNATIONAL REVIEW 200, 201 (2016).

10 David E. M. Sappington & J. Gregory Sidak, *Incentives for Anticompetitive Behavior by Public Enterprises*, 22 REVIEW OF INDUSTRIAL ORGANIZATION 183 (2003).

11 Garry D. Bruton et al., *State-Owned Enterprises Around the WORLD as Hybrid Organizations*, 29 AMP 92 (2015).

12 Giulia Romano, Claudio Marciano & Mario Minoja, *Successful Remunicipalization Processes in Italian Waste Management: Triggers, Key Success Factors, and Results*, 89 INTERNATIONAL REVIEW OF ADMINISTRATIVE SCIENCES 648 (2023).

13 Judith Clifton, Daniel Diaz Fuentes & Mildred Warner, *The Loss of Public Values When Public Shareholders Go Abroad*, 40 UTILITIES POLICY 134 (2016).

objective function of a SOE is typically situated on a scale between public interest and profit orientation.¹⁴ This ‘mixed’ objective function has efficiency effects: because of public interest objectives, often through public service obligations, SOEs necessarily operate less efficiently than private firms.¹⁵

The resurgence of state ownership as a form of crisis-relief,¹⁶ and the successful contribution of SOEs to the advent of economies outside of the Global North¹⁷ thus prompted a renewed interest in state ownership in policy and academic circles. The common thread in this new approach is to view government ownership as a driver for economic, social, and general institutional resilience,¹⁸ which in turn led to a re-thinking of the contribution of GOEs to technological, industrial and societal progress.¹⁹

Indeed, there are many reasons why the potential of state ownership is recognized as part of industrial policy towards strategic autonomy and sustainability transitions. SOEs tend to be large, influential firms,²⁰ which operate in critical markets such as extraction and energy,²¹ where governments can have more influence on strategy and operations than in private firms.²² Practically this potential of state ownership can be tapped into by governments by nationalizing private firms into SOEs,²³ capitalizing existing SOEs,²⁴ engaging in (more) active shareholding in SOEs,²⁵ regulating SOEs,²⁶ or a combination thereof.

A nascent empirical literature underscores the potential of state ownership towards (green) industrial policy,²⁷ and state ownership is increasingly being positioned as a policy tool to manage energy and sustainability crises.²⁸ At the same time, this development has a profound effect on market structures: through nationalization private markets are turned into mixed markets where SOEs and private firms compete, and capitalization, active shareholding and regulation may affect competitive dynamics on existing mixed markets. The next section, therefore, discusses insights on the functioning of mixed markets.

III. COMPETITION ON MIXED MARKETS

Economists in the field of industrial organization have long studied mixed markets, typically modeling private firms as purely profit driven and SOEs with a objective function of part profit and part social welfare orientation.²⁹ Generally, this literature has focused either on optimal governance of SOEs on mixed markets, or on competitive outcomes between SOEs and private firms absent government intervention.

14 Maddalena Sorrentino, *State-Owned Enterprises and the Public Mission: A Multidimensional Lens*, in THE ROUTLEDGE HANDBOOK OF STATE-OWNED ENTERPRISES (Luc Bernier, Massimo Florio, & Philippe Bance eds., 2020), <http://ebookcentral.proquest.com/lib/uunl/detail.action?docID=6210763> (last visited Sep 10, 2024).

15 Richard Bozec, Gaëtan Breton & Louise Côté, *The Performance of State-Owned Enterprises Revisited*, 18 FINANCIAL ACCOUNTABILITY & MANAGEMENT 383 (2008).

16 Michael Howlett & M. Ramesh, *State-Owned Enterprises as Policy Tools*, in THE ROUTLEDGE HANDBOOK OF STATE-OWNED ENTERPRISES 553 (Luc Bernier, Massimo Florio, & Philippe Bance eds., 2020).

17 PRZEMYSŁAW KOWALSKI ET AL., *STATE-OWNED ENTERPRISES: TRADE EFFECTS AND POLICY IMPLICATIONS*, (2013), https://www.oecd-ilibrary.org/trade/state-owned-enterprises_5k4869ckqk7l-en (last visited Mar 31, 2022).

18 Massimo Florio, *Rethinking on Public Enterprise: Editorial Introduction and Some Personal Remarks on the Research Agenda*, 27 INTERNATIONAL REVIEW OF APPLIED ECONOMICS 135 (2013).

19 María del Carmen Sánchez-Carreira, Xavier Vence & Óscar Rodil-Marzábal, *The Role of State-Owned Enterprises as Drivers of Innovation*, in THE ROUTLEDGE HANDBOOK OF STATE-OWNED ENTERPRISES (2020).

20 María Aguilar-Fernández & José Otegi-Olaso, *Firm Size and the Business Model for Sustainable Innovation*, 10 SUSTAINABILITY 4785 (2018).

21 Benoit Mayer & Mikko Rajavuori, *State Ownership and Climate Change Mitigation: Overcoming the Carbon Curse?*, 11 CARBON & CLIMATE LAW REVIEW 223 (2017).

22 Roberto Cardinale, *The Industrial Policy Role of European State-Invested Enterprises in the 21st Century: Continuity and Change across Phases of Domestic and Global Transformation*, in THE ROUTLEDGE HANDBOOK OF STATE-OWNED ENTERPRISES 179 (Luc Bernier, Massimo Florio, & Philippe Bance eds., 2020).

23 Romano, Marciano, and Minoja, *supra* note 11.

24 Debarati Ghosh & Meghna Dutta, *Environmental Behaviour under Credit Constraints – Evidence from Panel of Indian Manufacturing Firms*, 63 STRUCTURAL CHANGE AND ECONOMIC DYNAMICS 490 (2022).

25 Roberto Cardinale, *The European Gas Sector: Political-Economy Implications of the Transition from State-Owned to Mixed-Owned Enterprises*, in THE REFORM OF NETWORK INDUSTRIES 220 (Massimo Florio ed., 2017), <https://www.elgaronline.com/edcollchap/edcoll/9781786439024/9781786439024.00020.xml> (last visited Jul 3, 2024).

26 Philippe Benoit et al., *Decarbonization in State-Owned Power Companies: Lessons from a Comparative Analysis*, 355 JOURNAL OF CLEANER PRODUCTION 131796 (2022).

27 Bjarne Steffen, Valerie Karplus & Tobias S. Schmidt, *State Ownership and Technology Adoption: The Case of Electric Utilities and Renewable Energy*, 51 RESEARCH POLICY 104534 (2022); Toon Meelen & Jasper P. Sluijs, *Government-Owned Enterprises and Sustainability: Review and Research Agenda*, 122 ENERGY RESEARCH & SOCIAL SCIENCE 103994 (2025).

28 Aoife Brophy Haney & Michael G. Pollitt, *New Models of Public Ownership in Energy*, 27 INTERNATIONAL REVIEW OF APPLIED ECONOMICS 174 (2013); Milan Babic & Adam D. Dixon, *Decarbonising States as Owners*, 28 NEW POLITICAL ECONOMY 608 (2023).

29 See, e.g. Leena Lankoski & N Craig Smith, *Alternative Objective Functions for Firms*, 31 ORGANIZATION & ENVIRONMENT 242 (2018); Liisa T. Laine & Ching-to Albert Ma, *Quality and Competition between Public and Private Firms*, 140 JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION 336 (2017).

As to the first category, the governance of SOEs in governments' industrial policy has been researched extensively in the mixed markets literature, often related to decisions to nationalize or privatize firms in a market. In an early study it is shown how welfare is maximized when governments nationalize either one or all firms on a market, as compared to a market with multiple SOEs co-existing. In this sense, nationalization can be used as a policy tool to increase welfare.³⁰ Later studies have built on this premise, by demonstrating that SOEs can be used by policy-makers as indirect entry regulation, in order to prevent excess entry by private firms.³¹ Furthermore, governments are advised to let SOEs pursue profit alongside social welfare orientation, as this leads to the highest social welfare outcomes.³² Finally, under some assumptions privatization leads to diminished R&D activity in markets,³³ and to lower welfare when the privatized former SOE remains a (Stackelberg) market leader.³⁴

A second category of the mixed markets literature has focused on competitive outcomes on mixed markets. For instance, it is demonstrated how competition in mixed markets yield a higher level of social welfare, but reduced profitability for firms.³⁵ Moreover, product differentiation can be significantly lower in mixed markets as compared to private markets,³⁶ while under certain conditions increased product differentiation accelerates competition between SOEs and private firms.³⁷ At the same time, when an SOE is engaged in price competition against a private competitor while also investing in R&D, this leads to free-riding on the SOE's innovation — which however does increase overall welfare.³⁸

It should be noted that the above studies rely on economic modelling with varying assumptions, types of competition (Bertrand, Cournot, Stackelberg) and market structures (duopoly, oligopoly). Consequently, it is hard to arrive at generalizable conclusions on the pros and cons of mixed markets based on the industrial organization literature. This diffuse review of the literature should serve as a cautionary tale: competition on mixed markets is a highly complex affair, which doesn't necessarily allow for the tried-and-tested policy interventions of private markets.

IV. ANTICOMPETITIVE OUTCOMES ON MIXED MARKETS

As mixed markets are particular, their actual or potential anticompetitive outcomes may be unpredictable. At the same time, with the increased prominence of state ownership on markets has come concern about incentives towards anticompetitive behavior by SOEs.³⁹ The current section, then, conceptualizes the actual or potential anticompetitive conduct by SOEs by focusing on collusion and abuse of dominance (monopolization).

A. State Ownership and Collusion

State ownership can potentially induce collusion in two ways: SOEs can be members or ring-leaders of cartels, or the presence of SOEs on markets can lead competing private firms to collude. These scenarios will be analyzed in terms of examples from enforcement practice, coupled with insights that follow from the literature.

Collusion driven by SOEs has been quite common in markets for mining and (fossil fuel) extraction, with the aim of stabilizing markets and revenue streams through price or output cartels.⁴⁰ There are also prominent examples of cartel enforcement against SOEs in other (network) industries. In transportation markets, the Hungarian Competition authority fined 3 state-owned rail cargo operators for price fixing,⁴¹ while in a

30 Helmuth Cremer, Maurice Marchand & Jacques-Francois Thisse, *The Public Firm as an Instrument for Regulating an Oligopolistic Market*, 41 OXFORD ECONOMIC PAPERS 283 (1989).

31 Toshihiro Matsumura & Osamu Kanda, *Mixed Oligopoly at Free Entry Markets*, 84 J ECON 27 (2005); A. BRANDÃO & S. CASTRO, *STATE-OWNED ENTERPRISES AS INDIRECT INSTRUMENTS OF ENTRY REGULATION*, 92 J ECON 263 (2007).

32 Wenhui Zhou et al., *On the Benefit of Privatization in a Mixed Duopoly Service System*, MANAGEMENT SCIENCE (2022), <https://pubsonline.informs.org/doi/abs/10.1287/mnsc.2022.4424> (last visited Mar 6, 2023).

33 Maria José Gil-Moltó, Joanna Poyago-Theotoky & Vasileios Zikos, *R&D Subsidies, Spillovers, and Privatization in Mixed Markets*, 78 SOUTHERN ECONOMIC JOURNAL 233 (2011).

34 Kenneth Fjell & John S. Heywood, *Mixed Oligopoly, Subsidization and the Order of Firm's Moves: The Relevance of Privatization*, 83 ECONOMICS LETTERS 411 (2004).

35 Xuan Nguyen, *On the Efficiency of Private and State-Owned Enterprises in Mixed Markets*, 50 ECONOMIC MODELLING 130 (2015).

36 Toshihiro Matsumura & Yoshihiro Tomaru, *Mixed Duopoly, Location Choice, and Shadow Cost of Public Funds*, 82 SOUTHERN ECONOMIC JOURNAL 416 (2015).

37 Minoru Kitahara & Toshihiro Matsumura, *Mixed Duopoly, Product Differentiation and Competition*, 81 THE MANCHESTER SCHOOL 730 (2013).

38 Debasmita Basak & Leonard F. S. Wang, *Cournot vs. Bertrand in Mixed Markets with R&D*, 48 THE NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE 265 (2019).

39 Grosman, Okhmatovskiy, and Wright, *supra* note 8; Sappington and Sidak, *supra* note 9.

40 Raymond Vernon, *Uncertainty in the Resource Industries: The Special Role of State-Owned Enterprises*, in RISK AND THE POLITICAL ECONOMY OF RESOURCE DEVELOPMENT 207 (DAVID W. PEARCE, HORST SIEBERT, & INGO WALTER EDS., 1984).

41 Hungarian Competition Authority (GVH), Case Vj-3/2008/363, https://www.gvh.hu/en/resolutions/resolutions_of_the_gvh/archive/resolutions_2008/7590_en_vj-32008363 (last visited Apr 24, 2025).

French mixed market price cartel case among logistic providers, a government-owned cartel member received the highest fine.⁴² The European Commission, in turn, enforced against a price fixing cartel with multiple SOEs in the rail cargo market in 2015,⁴³ and in 2021 fined the Belgian, German and Austrian state-owned railway operators for forming a customer allocation cartel in the rail cargo market.⁴⁴ Also in air cargo the European Commission enforced against a price fixing cartel between 11 airlines, 3 of which were partially state-owned.⁴⁵

Interestingly, a (small) literature highlights the positive effects of (duopoly) cartels including SOEs. Firstly, research shows how SOEs can be positioned by governments to be stabilizing members of an output cartel with the aim of improving social welfare. The authors explain this outcome by pointing out the role of state-owned banks and energy firms who complement under-investment by private competitors.⁴⁶ These findings have been extended in further research, demonstrating that an SOE that is sufficiently social welfare minded will lead to higher social welfare outcomes when part of a public-private cartel. The intuition behind this is that collusion leads the SOE to produce more efficiently by diminishing excess output.⁴⁷

A somewhat larger literature, then, discusses the extent to which SOEs can deter private cartels in oligopolistic markets. The oldest available research on the topic is a data-driven study on waste collection in the Netherlands, which finds that collusion among private firms is highly likely premised on pricing data and concentration levels—this effect is offset, however, by the presence of government-owned waste collectors on the market.⁴⁸ Later theoretical research finds, conversely, that the presence of a welfare-maximizing SOE on a mixed market incentivizes private competitors to collude on output, effectively by making deviating from the cartel less attractive.⁴⁹ In a later game-theoretic study, however, it is demonstrated how a governments' threat to nationalize a firm is effectively leading private competitors not to form a cartel. The state's threat of intervention through nationalization thus disrupts incentives to collude.⁵⁰ The inverse situation, focusing on the effect of privatization on collusion, has also been studied.⁵¹ Here, the authors found that (output) collusion in fully private markets is easier to sustain than in mixed markets, and that maintaining an SOE thus acts as a deterrent for effective collusion. At the same time, and perhaps counterintuitively, as the number of private competitors in a mixed market becomes larger, their collusion becomes easier to sustain. These findings were expanded in further research on collusion in energy generation markets.⁵² Even though these authors find collusion is easier to sustain in a mixed market, colluding is less profitable and less harmful for consumers as compared to a private market. Moreover, this outcome is strengthened when more renewable energy is generated in the market.

In conclusion, it seems that collusion involving SOEs is not a hypothetical scenario: European competition enforcement practice shows telling examples of cartels in (mainly) transportation markets in which SOEs were involved. From the literature, however, emerges a mixed impression of the degree to which SOEs affect the likelihood of collusion. On the one hand, it seems that in duopoly markets SOEs can form cartels that improve social welfare — however, these findings are premised on very few studies. The somewhat larger literature on private cartels on oligopolistic mixed markets, on the other hand, predominantly shows how SOEs deter collusion — either by making private cartels less sustainable, or less profitable.

B. State Ownership and Abuse of Dominance

SOEs can also engage in unilateral anticompetitive conduct: abuse of dominance under EU competition law or monopolization in US antitrust law. Here it is important to stress that such abuse of a dominant position may not (and need not) be intentional: as an SOE (partially) pursues social welfare, it may refuse access, raise output and/or lower prices as a dominant firm through various means. This would leave less remaining demand for private competitors or force them to lower prices — setting off a development that drives them from the market. I will discuss abuse of dominance by SOEs through examples from enforcement practice, followed by insights from the literature.

42 Autorité de la Concurrence, Décision 15-D-19 du 15 décembre 2015 (2015), <https://www.autoritedelaconcurrence.fr/fr/decision/relative-des-pratiques-mises-en-oeuvre-dans-les-secteurs-de-la-messagerie-et-de-la> (last visited Apr 24, 2025).

43 European Commission, AT.40098 - Blocktrains, <https://competition-cases.ec.europa.eu/cases/AT.40098> (last visited Apr 24, 2025).

44 European Commission, AT.40330 - Rail Cargo, <https://competition-cases.ec.europa.eu/cases/AT.40330> (last visited Apr 24, 2025).

45 European Commission, AT.39258 - Airfreight, <https://competition-cases.ec.europa.eu/cases/AT.39258> (last visited Apr 24, 2025).

46 Junichi Haraguchi & Toshihiro Matsumura, *Government-Leading Welfare-Improving Collusion*, 56 INTERNATIONAL REVIEW OF ECONOMICS & FINANCE 363 (2018).

47 Filipa Mota, João Correia-da-Silva & Joana Pinho, *Public-Private Collusion*, 62 REV IND ORGAN 393 (2023).

48 Elbert Dijkgraaf & Raymond Gradus, *Collusion in the Dutch Waste Collection Market*, 33 LOCAL GOVERNMENT STUDIES 573 (2007).

49 Stefano Colombo, *Mixed Oligopolies and Collusion*, 118 J. ECON. 167 (2016).

50 Flavio Delbono & Luca Lambertini, *Nationalization as Credible Threat Against Collusion*, 16 J IND COMPET TRADE 127 (2016).

51 João Correia-da-Silva & Joana Pinho, *Collusion in Mixed Oligopolies and the Coordinated Effects of Privatization*, 124 J. ECON. 19 (2018).

52 Marc Escrihueta-Villar, Carlos Gutiérrez-Hita & José Vicente-Pérez, *May a Greener Technology Mix Mitigate Market Power? Mixed vs Private Competition in the EU Electric Power Market*, 313 ENERGY 133813 (2024).

Particularly in European enforcement practice there have been quite some examples of abuse of dominance cases involving SOEs, often enforced against state-owned postal operators.

Most prominently, the European Commission has brought predatory pricing charges against multiple state-owned postal operators. In *Deutsche Post*, the Commission found that the German state-owned postal service had set pricing below its incremental cost level through fidelity rebates in the business parcel market—cross-subsidizing this loss through its statutory monopoly in the letter market.⁵³ Similarly, the Danish state-owned postal service was fined for pricing below cost in the (liberalized) unaddressed mail market, through cross-subsidization via its statutory monopoly on the addressed mail market—thus setting prices that were unsustainable in the long run for competing private firms in the unaddressed mail market.⁵⁴ The Dutch competition authority brought predatory pricing charges, combined with discrimination, against the state-owned railway company in 2017, claiming that a below-cost bid in a public procurement tender for a regional railway line constituted predatory pricing.⁵⁵ This decision was annulled by the appeals court, however.⁵⁶

Another type of abuse charge that has in several cases been brought against SOEs concerns rebates. The landmark case in this respect is *Post Danmark II*, in which the Danish state-owned postal provider was (again) found to have abused its dominance through a conditional rebate scheme in the direct advertising market, forcing private competitors out of the market.⁵⁷ In a similar case, the Spanish Competition Authority issued a ~€33 million fine to the dominant state-owned postal operator Correos for deterring entry through a rebate scheme in the letter market.⁵⁸

Furthermore, there have been some examples of refusal to supply cases brought against SOEs. At the European level, the SOE Bulgarian Energy Holding (BEH) was initially fined €77 million by the European Commission for refusal to supply. BEH was vertically integrated by operating the gas infrastructure while also offering gas to consumers downstream, and allegedly restricted access and hoarded infrastructure capacity to exclude downstream competitors.⁵⁹ Upon appeal, however, the Commission's Decision was annulled by the General Court on various grounds.⁶⁰ The Spanish competition authority fined the Spanish state-owned postal provider for refusing access by competitors at the wholesale level to the Spanish postal network.⁶¹ Another noteworthy refusal to supply case is *Lithuanian Railways*, if only for the brazen kind of abuse of dominance it portrays. Here the vertically integrated, state-owned railway company of Lithuania demolished 19km of its railway tracks to prevent competing railway operators downstream to use a shorter route towards ports in Latvia.⁶² This case stands out because it is one of the very few cases in which the European courts found that firm behavior could have no other plausible motivation but to deliberately restrict competition, so that actual anticompetitive effects would not even need to be established.⁶³

Given the prevalence and scope of abuse of dominance enforcement against SOEs, it stands out how sparse the literature is on this topic. In a set of related articles, Sappington & Sidak formally explain how the objective function of an SOE towards social welfare and profit leads to a preference of expanded scale and scope: higher output through below-cost prices. The authors thus argue that SOEs have the incentive to engage in predatory pricing.⁶⁴ These findings are affirmed in subsequent legal research that factors in the price level (average variable cost, average incremental cost, average total cost, etc.) at which predatory pricing charges have been brought against SOEs and private firms across jurisdictions.⁶⁵ More recently the initial findings of Sappington & Sidak were replicated through the modeling of a mixed duopoly market with both

53 Case COMP/35.141 — *Deutsche Post AG*, OJ 2001 L125/27, (2001).

54 Case C-209/10 - *Post Danmark v. Konkurrencerådet*, ECLI:EU:C:2012:172, (2012).

55 Autoriteit Consument & Markt, 16.0691.31: Besluit Gedragingen van NS inzake Openbaarvervoerconcessie in Limburg, ACM/DJZ/2017/203854 (2017), <https://www.acm.nl/sites/default/files/documents/besluit-boete-ns-voor-misbruik-machtspositie-bij-limburgse-aanbesteding.pdf> (last visited Apr 25, 2025).

56 *NS v. ACM*, (Rb. Rotterdam 2019), <https://deepink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBROT:2019:5089> (last visited Apr 25, 2025); For further background, see Mariska Van de Sanden & Beetstra, *Abuse of Dominance Fine of € 41 Million for Dutch Railway Operator Annulled*, KLUWER COMPETITION LAW BLOG (2019), <https://competitionlawblog.kluwercompetitionlaw.com/2019/07/09/abuse-of-dominance-fine-of-e-41-million-for-dutch-railway-operator-annulled/> (last visited Apr 25, 2025).

57 Case C-23/14 *Post Danmark A/S v. Konkurrencerådet*, ECLI:EU:C:2015:651 (ECJ 2015).

58 Comisión Nacional de la Competencia, Expte. S/0341/11, CORREOS (2013), <https://www.cnmc.es/sites/default/files/322403.pdf> (last visited Apr 25, 2025); For further background, see Candela Sotes, *CNMC Fines the Spanish National Postal Company Eur 32.6 Million for Abuse of Its Dominant Position*, <https://www.twobirds.com/en/insights/2022/spain/cnmc-fines-the-spanish-national-postal-company-eur-32,-d,-6-million-for-abuse-of-its-dominant-position> (last visited Apr 25, 2025).

59 European Commission, AT.39816 - BEH (2018), <https://competition-cases.ec.europa.eu/cases/AT.39816> (last visited Apr 25, 2025).

60 Case T-136/19 *Bulgarian Energy Holding EAD and Others v. European Commission*, ECLI:EU:T:2023:669 (GC 2023).

61 Comisión Nacional de la Competencia, *supra* note 57.

62 European Commission, AT.39813 - Baltic Rail, <https://competition-cases.ec.europa.eu/cases/AT.39813> (last visited Apr 25, 2025).

63 Case T-814/17 *Lietuvos geležinkiai AB v. European Commission*, ECLI:EU:T:2020:545 (GC 2020); *Lietuvos geležinkiai AB v. European Commission*, ECLI:EU:C:2023:12 (ECJ 2023).

64 David E.M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 ANTITRUST L.J. 479 (2003); Sappington and Sidak, *supra* note 9.

65 D Daniel Sokol, *Competition Policy and Comparative Corporate Governance of State-Owned Enterprises*, BRIGHAM YOUNG UNIVERSITY LAW REVIEW, 1773–1801 (2009).

Bertrand and Cournot competition, where indeed an SOE that values output over profit will engage in below-cost (predatory) pricing when facing an equally efficient private competitor.⁶⁶

As with collusion, the above analysis shows that abuse of dominance charges against SOEs are not uncommon at all. In fact, a pattern emerges in which SOEs with a statutory monopoly in network industries abuse their dominance in adjacent or downstream markets. The super-dominance that a statutory monopoly entails, seems to allow these SOEs the independence from competitors and consumers to engage in abusive behavior in other markets. In this sense, the European Court of Justice (“ECJ”) rightly remarked that while dominant firms have a (generally applicable) special responsibility not to allow their conduct to impair “genuine, undistorted competition,” this responsibility holds especially true in case of (former) statutory monopolies.⁶⁷

The paucity of literature on abuse of dominance by SOEs is problematic considering the patterns found in enforcement practice. As the scarce available literature is squarely focused on predatory pricing, there appears to be no comprehensive research available on the incentives of SOEs to engage in rebates or refusal to supply. Moreover, the literature on predatory pricing is purely theoretical and lacks empirical support, either through data science or experimental research.

V. CONCLUSION

State ownership is increasingly becoming a tool for industrial policy across the globe, particularly when this industrial policy is geared towards strategic autonomy and/or sustainability transitions. The promise of state ownership towards these policy goals is compelling, both intuitively and supported by a growing empirical literature. State ownership may indeed provide better opportunities to pursue energy independence, energy transition and reduced emissions.

However, with the advent of state ownership, competitive dynamics on existing mixed markets change and new mixed markets emerge. SOEs may gain market power and behave anticompetitively. In this article I have developed a risk analysis of the actual or potential anticompetitive behavior by SOEs following from their increased prominence on markets.

It turns out that there is quite a recent track record of collusion by SOEs engaged in cartels, particularly in transportation markets. The image that emerges from the literature, however, is that at least in duopoly markets collusion involving an SOE may improve social welfare. Moreover, multiple studies have demonstrated how collusion is less attractive on a mixed oligopoly than on a private oligopoly: SOEs thus effectively deter collusion by private competitors. Based on this assessment of enforcement practice and literature, it seems that the risk of collusion that follows from increased SOE presence on markets may be minor.

There has also been significant enforcement against SOEs allegedly engaged in abuse of dominance (monopolization), particularly concerning cases of predatory pricing, rebates and refusal to supply. Clear patterns emerge where dominant SOEs benefit from the safety of a statutory monopoly and leverage this market power towards adjacent markets. Here, however, the literature is able to provide much less guidance, as there is only (theoretical) research available on predatory pricing by SOEs. Therefore, the risk of an increase of dominant SOEs abusing their market power is currently hard to substantiate, where indeed there is a need to better qualify and quantify this risk. Further theoretical and empirical research should thus be directed towards the incentives and likelihood of SOEs to abuse their dominance, beyond only predatory pricing. Insights from such further research would allow competition agencies to contribute to the promise of state ownership in industrial policy by effectively enforcing against SOEs.

66 Joan-Ramon Borrell & Carlos Suárez, *Mixed Oligopoly and Predatory Public Firms*, IR21 IREA – WORKING PAPERS (2021), <http://diposit.ub.edu/dspace/handle/2445/180055> (last visited Feb 7, 2023).

67 Case C-209/10 - Post Danmark v. Konkurrencerådet, ECLI:EU:C:2012:172, *supra* note 53 at 23.



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