



Munich Personal RePEc Archive

New industrial policy design and competition: a computational approach

Boulieris, Petros and Carballa-Smichowski, Bruno and
Fourka, Maria Niki and Lianos, Ioannis

Athens University of Economics and Business, Université Sorbonne
Paris Nord, University College London

March 2025

Online at <https://mpra.ub.uni-muenchen.de/124187/>
MPRA Paper No. 124187, posted 01 May 2025 16:34 UTC

New industrial policy design and competition: a computational approach *

Petros Boulrieris¹, Bruno Carballa-Smichowski², Maria Niki Fourka¹, and
Ioannis Lianos³

¹Athens University of Economics and Business

²Université Sorbonne Paris Nord

³University College London, UK Competition Appeal Tribunal

March 2025

Abstract

Following a period during which the two fields evolved separately, a consensus has emerged that competition and industrial policy are not inherently incompatible. This reflects broader intellectual shifts. Industrial policy is now viewed more favorably, not only for traditional development goals but also to strengthen technological capabilities for national security and secure global economic dominance. “Techno-nationalist” approaches to industrial policy may conflict with global technology diffusion efforts addressing issues like climate change (“techno-globalism”). Despite recent developments in the intersection of competition and industrial policy, there is a lack of evidence on how techno-nationalist and techno-globalist approaches interact with competition policy goals. This article fills this gap by empirically assessing the competitive effects of policy measures. We use a text-as-data approach, combining AI-driven document analysis with structured classification criteria. The data show that techno-globalist industrial policies are generally more pro-competitive than techno-nationalist ones, due to their broader scope and ability to lower entry costs. Moreover, we find that certain policy instruments are primarily associated with anti-competitive criteria, while others tend to exhibit predominantly pro-competitive features. Our results provide a fine-grained characterization of new industrial policy design in light of competition policy goals.

JEL Classification: 025, D02, L50.

Keywords: Industrial policy, competition, techno-globalism, techno-nationalism, text-as-data, large language models, data analysis.

*The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the UK Competition Appeal Tribunal. All co-authors contributed equally to this paper, providing substantive intellectual input throughout the entire research process. Their collaborative efforts spanned the development of the conceptual framework, comprehensive data collection, empirical design and implementation, analysis and interpretation of empirical results, and the drafting of the manuscript.

1 Introduction

Until recently, the economic literature viewed industrial and competition policies as pursuing contradictory goals (Sauter, 1997; Tirole, 2024). These tensions reached a peak in merger control, following the adoption in February 2019 by the French, German, and Polish governments of a Manifesto for a European industrial policy fit for the 21st Century (Lianos, 2019). This joint initiative followed up the call from nineteen EU governments in December 2018 to update the EU antitrust rules to facilitate the emergence of European industrial giants able to face “fierce competition” from the United States and China (Friends of Industry, 2018). The debate coincided with that generated by the blocking by the European Commission of the acquisition of Alstom by Siemens in February 2019 (European Commission, 2019). National policymakers criticized it arguing that “European competition law is obsolete, it was created in the twentieth century, it faces the emergence of industrial giants of the twenty-first century and which does not allow Europe to create its own industrial champions” (Le Maire, 2019)).

The severity range and complexity of the Covid-19 pandemic made it even clearer that a number of collective action problems had to be overcome through bold public intervention, public and private-sector firms, but also intra-industry collaboration across various sectors and value chains. Competition authorities, in turn, had to use the enforcement of competition rules both as a “sword” to achieve public health goals if there was a restriction of competition, and as an “enabling” shield in order to enhance specific collaboration if this was necessary for public interest purposes (Lianos et al., 2022). This offered a future blueprint for enforcing competition law to address broader public interest challenges in areas that require rapid, responsible, and sustainable interventions (Lianos, 2022).

Recent developments have confirmed this new trend: the Letta (2024) and Draghi (2024) reports on the future of competition in the European Union have sparked considerable debate within the competition law community, particularly regarding their suggestions for revamping EU competition law. Some commentators referred to the report to support their criticisms of aggressive EU competition law enforcement and the EU digital regulation’s “red tape”, arguing that these could stifle innovation and disincentivize investment. Others note the more nuanced and forward-thinking approach proposed by Draghi in favour of a vigorous competition law enforcement, albeit more geoeconomics and geopolitics aware (Scott Morton, 2024).

Critics see competition law in Europe as an obstacle (e.g., in its restriction of state aid or aggressive merger enforcement) to implementing a virtuous industrial policy and the development of European champions. But in the era of the entrepreneurial state and a mission economy (Mazzucato, 2011, 2021), competition law is also as a way of shaping markets to enhance competitiveness (European Commission, 2025). From this perspective, Draghi’s approach to competition policy represents a departure from conventional competition law and economics thinking. It extends the scope of EU competition policy well beyond its traditional boundaries as defined by micro-economics thinking (Lianos, 2024). Throughout various horizontal and sectoral chapters, the Draghi report recognizes the crucial role of competition policy. However, it notes that in an economy characterized by increasing returns, network effects, and feedback loops, as well as growing dependence on dominant designs in the evolution of technological trajectories, competition law must evolve. It should also foster productivity, growth, and the generation and diffusion of innovation, while incentivizing significant public and private investments (Draghi, 2024).

This vision is shared by the recent Competitiveness Compass published by the European Commission (European Commission, 2025)).

The emerging consensus is that there is not necessarily an incompatibility between competition and industrial policy, and there is ample room for a “pro-competitive industrial policy” (OECD, 2024). The broader intellectual environment has also changed since the 1980-2009 neoliberal consensus (Davies, 2016).¹ There is now a more positive stance on industrial policy, particularly to promote technological capabilities for either national security purposes or, more broadly, to maintain or ensure a dominant position in the global economy (Seidl and Schmitz, 2024). This contrasts with the pursuit of more global endeavors in the diffusion of technology that may deal with global issues, such as the climate crisis. Such “techno-nationalist” industrial policy may enter into tension with the predominantly “techno-globalist” perspective of competition law, in particular as it is inspired by a global policy standard of consumer welfare. However, in competition law, we have also witnessed a shift towards a more “polycentric approach” (Lianos, 2018), which would see competition law enforcement as a means to achieve broader goals, such as resilience or the green transition (Von Der Leyen, 2024), but also technological sovereignty (or “techno-sovereignty”) (Montresor, 2001; Bauer and Erixon, 2020). In that respect, a number of countries have recently faced a ‘wake-up call’ due to the unilateral protectionist policies adopted by the Trump administration in the United States.

These developments require a more thorough and empirical analysis of the interaction between competition law and industrial policy and a better understanding of the various rationales for adopting industrial policy interventions, particularly since the Covid-19 pandemic and the resurgence of industrial policy interventions. The literature on the intersection of competition (policy) and industrial policy is already grounded in empirical analysis. However, given the novelty of new industrial policy interventions post-Covid, we lack evidence on how new industrial policy in general, and techno-nationalist and techno-globalist industrial policies in particular, interact with the goals of competition policy. This article makes a contribution in that direction.

The rest of the article is structured as follows. Section 2 discusses the literature on the intersection between competition and industrial policy. Section 3 presents the data and the methodology employed. Drawing on the characteristics of pro- and anti-competitive industrial policy design identified in Section 2, Section 4 provides an empirical analysis of the pro- and anti-competitive features of new industrial policy design. It documents their presence and intensity, correlations and drivers for all new industrial policies enacted in 2023. It also breaks down these results by distinguishing between techno-globalist, new techno-nationalist and traditional techno-nationalist policies. Section 5 concludes.

2 Related Literature

Industrialization has always been at the heart of any discussion on competition, economic development, and technological sovereignty. According to the “infant industry” argument, a country should have productive power by first strengthening its infant industries to level the playing field before opening its doors to free trade and competition (List, 1856). Such approaches have inspired the emphasis put on the construction of

¹Note that the crucial role of competition and market power for domestic industrial organization and global trade were already recognized in the 1930s (Peinert, 2021).

“industrial states”. This does not only refer to government intervention through planning in order to promote national champions or to intensify efforts of industrialization. It also comprises the organization of economic activity by large multinational M-form corporations (conglomerates and vertically integrated firms), whose tight managerial structure has been a key mechanism for managing savings, developing investment strategies in new markets, and unlocking productivity in the post-Second World War decades, as economic entities plan their industrial production, but also “manage demand” (Galbraith, 1967). Profit maximization, which for Galbraith, “the only goal that is consistent with the rule of the market,” is not the goal of the technostructure of major corporations, which exercises power in order to pursue other goals, and in particular the organization’s own survival, price stability serving one of the main objectives of industrial planning, growth, as it facilitates “control and minimize[s] the risk of a price collapse that could jeopardize earnings and the autonomy of the technostructure” (Galbraith, 1967). Galbraith expressed a critical judgment with regard to competition law, noting that antitrust laws, “in seeking to preserve the market, are an anachronism in the larger world of industrial planning” to the extent that “[t]hey do not preserve the market” but “preserve rather the illusion of the market,” thus becoming a sort of “charade,” “an act that helps to conceal the reality of industrial planning and associated price control by the great corporation” (Galbraith, 1967).

2.1 The traditional industrial policy and competition debate

The infant industry argument shaped approaches that emphasize developing domestic technological capabilities to strengthen national security and economic sovereignty (Edgerton, 2007), or in the development of national innovation systems (Freeman, 1995).

Such approaches broke away from the usual emphasis of industrial organization on a static competitive partial equilibrium that has long dominated competition policy. This equilibrium is considered to be the most satisfactory position for consumers and producers, as it leads to the elimination of any above-normal profit and maximizes consumer surplus. Its pursuit has been particularly influential in the development of the “law and economics revolution” in competition law enforcement in the US, the EU, and other parts of the world (Gerber, 2010). Under this mainstream view, issues of competitiveness and industrial policy were neglected, the emphasis being put instead on competitive markets as “the ideal (and idealized) mechanism of governance” (Jessop, 2015). Previous to the law and economics revolution, Schumpeter’s theory of economic development had broken away from this concept of static equilibrium (Lianos et al., 2013). It focused instead on the crucial role of discontinuous bursts of innovative investment by entrepreneurs as the central autonomous cause of economic development and innovation. Accordingly, in a dynamic context, above-normal profits provide reward to innovation, thus leading to surplus that cannot be present in perfect equilibrium conditions. However, this view has not been influential in the development of competition law and policy, until very recently (Futia, 1980; Hovenkamp, 2008; Kerber, 2023) .

The main link in today’s Industrial Organization competition models between competition and growth is the relation between competition and dynamic efficiency (Spence, 1986; Dutz and Hayri, 2000). The earliest Schumpeterian models predicted that, through the operation of the appropriability effect, competition reduces the prospective monopoly rents spurring innovation and therefore growth. New models insist on the non-monotonous

relationship between competition and growth: although the increase in the intensity of competition will tend to reduce the level of profits of a successful innovator, it will reduce the profits of an unsuccessful innovator even more, thus having an overall positive effect on the rate of innovation (Aghion et al., 1999). The management of the firm will also be forced to innovate more (Aghion et al., 2001).

Arguments for infant industries rest on the assumption that production costs for newly established domestic industries are initially higher than those of well-established foreign producers. Protecting the national champion from foreign competition would enable it to go down its learning-by-doing curve faster, thus capturing more of the market, provided competition is in strategic substitutes (Dasgupta and Stiglitz, 1988). Such policy might be welfare-enhancing if the domestic learning possibilities are strong and dependence on a foreign monopoly would mean that profits occurring in the domestic market are repatriated abroad. Problems of coordination and imperfect markets may also lead to underinvestment, which may justify a competition-suppression measure, such as a tariff, to temporarily raise profitability in the market. State measures supporting a larger domestic champion may also aim to deal with imperfect capital markets that either do not finance the investments required or, due to problems of adverse selection and moral hazard, require collateral that would penalize small firms and market entry, or as a means for building a reputation in export markets (Grossman and Horn, 1988).

From an economic perspective, evidence about the “infant industry” approach remains quite ambiguous, the hypothesis working only in very specific circumstances. In contrast, there is significant evidence that competition policy and competition law enforcement enhances the development potential of an economy. It is widely accepted that competition promotes institutional innovation and the emergence of efficient institutions that support economic growth (Acemoglu et al., 2018). There is now empirical evidence that competition law enforcement and competition policy is linked to economic growth in developed countries (Dutz and Hayri, 2000; Buccirossi et al., 2013; Ma, 2011).

More generally, there is evidence that competition increases productivity levels and the rate of growth of productivity (Disney et al., 2003). For instance, good management practices are strongly associated with productivity and those are better when product market competition is higher (Bloom et al., 2006), while an efficient market for corporate control with open rules for takeovers reinforces the impact of competition on productivity (Nickell et al., 1997; Januszewski et al., 2002) and competition leads to higher rates of innovation (Blundell et al., 1999; Aghion and Griffith, 2008). However, it has also been alleged that the appropriate level of competition may differ for different stages of economic development (Singh, 2002).

More importantly, research has highlighted the important links between industrial policy, in particular export-oriented (not import-substitution oriented) Technology and Innovation policy, and competition law policy for economic development, showing that although the state should play an important role in steering labor and capital in activities that the private investors might not engage in, in particular in order to build sophisticated products and services for which learning-by-doing plays an important role (Stiglitz and Greenwald, 2014; Mazzucato, 2011), the pursuit of “fierce competition both abroad and domestically” enhances accountability and constitutes an important complement to such industrial policy (Cherif and Hasanov, 2019).

Public policies, such as industrial policy, need therefore to address different forms of market failure, such as externalities, coordination or agglomeration failures, lack of provision of public goods/inputs, imperfect capital markets, and imperfect information (including lack of reputation in export markets). These policies have been usually criticized as governments face information shortcomings to pick winners and there is a risk the policies may be captured by vested interests, hence the need to ensure that interventions are also “pro-competitive” (Piechucka et al., 2024). Until recently, the economics consensus was that, while markets fail, governments may fail as well. Therefore, (industrial) policymaking has to balance these two risks. For instance, public institutions may be captured by special interests with the result that government action does not reflect the general welfare of society. Hence, according to this view, before intervening in markets, one needs to balance the benefits of government intervention (correcting market failures) versus the costs of such intervention (competition law and regulation failure). This has led to the development of a competition assessment toolkit to ensure that public policies do not suppress competition and if they do, it is limited to the specific market failures identified (OECD, 2019b,a) or specific forms of control of state subsidies. The aim of this approach is to curtail the development of protectionist industrial policies that could compromise the objectives of the Internal Market.

2.2 The emerging consensus: pro-competitive design of industrial policy

Recent consensus views competition and industrial policy as potentially complementary (Scott Morton, 2024; Landesmann, 2015; Criscuolo et al., 2022). Pro-competitive industrial policies are increasingly seen as effective (Cherif and Hasanov, 2019), shifting the debate from whether to *how* such policies should be designed (Andreoni and Chang, 2019). Thus, the recent literature on the intersection between industrial policy and competition has identified multiple features of industrial policy design that can make it pro- or anti-competitive .

Horizontal policies (applicable to all firms) are more pro-competitive than vertical ones targeting specific sectors (OECD, 2024; Väilä, 2006). Vertical policies targeting few firms within a sector limit competition (Aghion et al., 2015, 2011). Mature technologies face higher anti-competitive risks from intervention (UNCTAD, 2023), as they are employed in markets with more established players.

Industrial policy can foster competition by favoring market entry and contestability. Subsidies to non-incumbents (e.g., SMEs, startups) positively affect competition (OECD, 2024; Pop and Connon, 2020; Aghion et al., 2011). Conversely, R&D subsidies to incumbents may discourage entry of productive firms due to reallocation effects (Acemoglu et al., 2018). Entry cost reduction (e.g., VC programs, deregulation) enhances competition (OECD, 2024), while local content requirements harm it (Kovacic, 2024; Sturgeon et al., 2017).

The level of market concentration before the intervention also plays a role in the competitive effect of industrial policy. If the policy targets a market with few competitors and/or concentrated, it is likely that it will entrench incumbents, thereby limiting competition (UNCTAD, 2023; Pop and Connon, 2020; Coppens et al., 2015).

Finally, the design of the measures included to reach the policy’s objective(s) may be

pro- or anti-competitive. Imposing conditionalities for firms to receive a benefit (e.g., a subsidy) stimulates competition. Be it ex-ante (e.g., adopting a cleaner technology to be eligible to a subsidy) or ex-post (e.g., export targets), conditionalities induce firms to undertake actions that they would not have undertaken in absence of the policy, while diminishing the risk of regulatory capture and rent-seeking (Juhász and Lane, 2024; Mazzucato and Rodrik, 2023; OECD, 2024). The literature on the economic development of the Asian Tigers shows that conditionalities have been one of the key mechanisms used by governments to make industrial policy competition-friendly (Amsden, 2001; Pack and Westphal, 1986). The exception are local content conditionalities, which have anti-competitive effects (Kovacic, 2024; Sturgeon et al., 2017; Stone et al., 2015; Pursell, 2001).

3 Data and Methodology

In this section, we provide information on the dataset used and its main characteristics, as well as on the methodology employed.

Section 3.1 presents our main data source, the New Industrial Policy Observatory (NIPO) database (Evenett et al., 2024). Section 3.2 explains how we used large language models (LLMs) to assess the pro- and anti-competitive characteristics of the industrial policies contained in the NIPO database. Section 3.3 explains the methodologies employed to produce the results presented in Section 4, namely: the calculation of competition scores (Section 3.3.1), the clustering of policies (Section 3.3.2) and the logistic regressions (Section 3.3.3).

3.1 Data source and characteristics

This study uses data from the New Industrial Policy Observatory (NIPO) database (Evenett et al., 2024), which documents policy interventions associated with the resurgence of industrial policy. The dataset contains structured information on policy measures implemented across multiple jurisdictions, including their economic impact, regulatory scope, and sectoral focus.

We use the NIPO 2.0 version of the database accessed in December 2024. The data extracted covers industrial policies announced between October 2015 and November 2023 and (to be) implemented between July 2020 and December 2029 across 76 jurisdictions.

The NIPO 2.0 database’s definition of “new industrial policies” covers “targeted/selective government intervention aimed at developing or supporting specific locally-based firms and sectors of economic activity with certain economic or noneconomic (e.g., security, social, or environmental) objectives in mind. Each announcement documented by the GTA team includes at least one new and credible promise for policy change that if executed would change competitive conditions between firms in markets at home or abroad.”²

Each policy entry in the dataset includes the following attributes:

- **Entry ID:** A unique identifier assigned to each policy intervention.

²See the Methodological note at <https://globaltradealert.org/reports/new-industrial-policy-observatory-nipo>.

- **Jurisdiction:** The country, supra-national, or sub-national entity responsible for implementing the policy.
- **Title:** A brief description summarizing the policy intervention.
- **Policy Type:** The classification of the intervention, such as tax relief, subsidies, or regulatory measures.
- **Implementation Timeline:** Dates of policy announcement, implementation, and removal.
- **Affected Sectors:** Industry classification codes (CPC and HS codes) that identify the economic sectors and products impacted.
- **Competitive Characteristics:** Whether the policy is horizontal (applicable across multiple industries) or targeted at specific firms or technologies.
- **Strategic Objectives:** The policy’s stated motives, such as national security, supply chain resilience, or industrial competitiveness.
- **Trade and Financial Metrics:** The estimated trade value and financial size of interventions, where available.
- **Source and Documentation:** Official documents and external references supporting the intervention.

Given that the same entry ID might apply to multiple jurisdictions (e.g., in the case of a European Commission policy applied to all EU countries), our unit of observation is a unique entry ID/jurisdiction couple, which we identify with a *policy ID*. The final dataset includes 2,580 policy IDs. Hereafter, we use the term “policy” to refer to a new industrial policy identified by a unique policy ID in our final dataset.

To systematically analyze these policies, we extract relevant text descriptions and additional metadata from the NIPO dataset. The final dataset consists of structured policy entries that serve as inputs for our automated classification framework.

3.2 Detection of pro- and anti-competitive features in industrial policy design

This study draws on text-as-data methodologies from Juhász et al. (2022) and the New Industrial Policy Observatory (NIPO) dataset from Evenett et al. (2024). We apply supervised machine learning to analyze the pro-/anti-competitive dimensions of industrial policies and their alignment with techno-nationalist/techno-globalist rationales. Based on the literature on the intersection between competition and industrial policy, we define 15 criteria of industrial policy design that can make an industrial policy pro- or anti-competitive. Table 1 details them.

Table 1: Pro- and Anti-Competitive Characteristics of Industrial Policy Interventions

Dimension	Criterion	Impact on competition
Number of competitors	Number of competitors (few)	Reduces competition
Number of competitors	Number of competitors (many)	Increases competition
New competitor	Policy creates new competitor	Increases competition
Competitive advantage	Policy advantages existing competitors	Decreases competition
Conditions	Ex-ante conditionality (non-local)	Increases competition
Conditions	Ex-post conditionality (performance)	Increases competition
Local content	Ex-ante conditionality (local content)	Decreases competition
Local content	Ex-post conditionality (local content)	Decreases competition
Entry cost	Reduces entry cost	Increases competition
Entry cost	Increases entry cost	Decreases competition
Scope	Horizontal policy scope	Increases competition
Scope	Sectoral policy scope	Increases competition
Scope	Selective intervention	Decreases competition
Technology Readiness Level (TRL)	TRL (higher values)	Decreases competition

The framework for techno-nationalist/techno-globalist categorization is adapted from Luo (2021) Table 2 compares (new) techno-nationalist and techno-globalist industrial policies.

Table 2: Comparison of Techno-nationalism and Techno-Globalism

	Traditional Techno- nationalism	New Techno- nationalism	Techno-Globalism
Dominant logic	Mainly developmental purpose	Mainly national security logic and domination of global economy	Mainly pursuing Global Sustainable Development Goals (SDGs), such as green transition and sustainable development
Strategic intent	Strengthening national competitiveness of domestic industries	Weaken foreign companies; competitiveness and access to the domestic or foreign markets	Strengthening global competitiveness
Type of interaction	Possibility of win-win game, although asymmetrical distribution of benefits	Zero-sum or win-lose game	Win-Win game with more or less symmetrical distribution of benefits
Technology & Innovation diffusion	Limited global diffusion of technological opportunities and innovation to conform to national developmental purposes	Restricted global diffusion of technological opportunities and innovation to conform to geo-economic and geopolitical interests	Global diffusion of technological opportunities and innovation to enhance the achievement of SDGs
Application	Territorial	Extra-territorial	Territorial, Extra-territorial
Policy areas	Key manufacturing industries	A more expansive list of strategic industries	Horizontal application
Selectivity of interventions	Sectors, Industries	Firms, Sectors, Industries	Those satisfying the SDGs goals

To assess the competitive impact of industrial policy measures, we employ a text-as-data approach, combining artificial intelligence-driven document analysis with structured classification criteria. Our methodology involves three key stages: (1) policy information retrieval, (2) AI-assisted classification, and (3) structured data processing.

3.2.1 Policy Information Retrieval

For each policy entry, we generate structured queries and retrieve relevant contextual information from Perplexity AI³, an external knowledge repository. Perplexity AI is a

³See <https://www.perplexity.ai/>

conversational search engine that uses large language models (LLMs) to answer queries using sources from the web and cites links within the text response. The retrieval step focuses on key aspects of the policy, including:

- Whether the measure introduces a new policy or modifies an existing one.
- The specific industries, firms, or markets affected.
- The presence of jurisdictional cooperation in the policy’s implementation.
- The existence of regulatory conditions such as local content requirements.

The extracted responses provide a detailed context for each policy and inform the subsequent classification phase.

3.2.2 AI-Assisted Classification

Building on the retrieved policy context, we employ OpenAI’s language models to systematically classify each measure based on predefined competition-related criteria. The model answers a structured set of 14 questions, assessing factors such as:

- Market concentration before and after the policy.
- Whether the policy creates new competitors or benefits incumbents.
- The nature of conditionalities imposed (ex-ante or ex-post).
- The extent of horizontal vs. vertical application across industries.
- The level of technology readiness (TRL) of the targeted technologies.

Each classification is accompanied by a justification, ensuring transparency in the model’s decision-making process. The responses are formatted to provide standardized categorical outputs (e.g., Yes/No, numerical TRL ratings) for subsequent analysis.

3.2.3 Structured Data Processing

The final stage involves transforming AI-generated classifications into a structured dataset suitable for empirical analysis. The output is stored in an Excel database, with:

- A *Raw Data* sheet containing the original policy details along with AI-generated classifications.
- A *Long Format* sheet, where each policy entry is linked to its corresponding classification criteria, responses, and justifications.

3.3 Analysis of the results

In this subsection we explain the main methodological choices behind the results shown in Section 4

3.3.1 Calculation of competition scores and their correlations

We calculate a “competition score” to quantify, for each policy and in each of the 8 dimensions grouping the 15 competition criteria identified (see Table 1, to which extent the policy-dimension is pro- or anti-competitive. To do so, whenever we detect the

criterion is present, we assign a value of 1 if the criterion increases competition and of -1 if decreases it. If the criterion is not present, we assign a value of 0 indicating competition neutrality. The exception is the criterion “Technology readiness level” (TRL), which is a natural number between 1 and 9.⁴

To transform it into a score bounded between -1 (the most anti-competitive score, equivalent to TRL=9) and 1 (the most pro-competitive score, equivalent to TRL=1), with 0 meaning competition neutral (TRL=5), we performed the following transformation of the TRL value TRL dimension $d = TRL$ to obtain its competition score $s_{d=TRL}$:

$$s_{d=TRL} = \frac{5}{4} - \frac{TRL}{4} \quad (1)$$

Then, the competition score s of policy p in competition dimension d with $K \in \{1, 2, 3\}$ criteria is given by:

$$s_d^p = \frac{1}{K} \sum_{k=1}^K s_{d,k}^p \quad (2)$$

And the competition of score of a dimension d is given by:

$$s_d = \frac{1}{N} \sum_{i=1}^N s_d \quad (3)$$

Where N is the number of policies.

Finally, we can define a “composite competition score” s_d^g of a group g made of m policies as:

$$s_d^g = \frac{1}{M} \sum_{i=1}^M s_d^m \quad (4)$$

This composite indicator takes the average of the competition score of each policy-dimension (calculated using Equation 2) for all the policies belonging to the same group. It therefore assumes that the 14 criteria are equally relevance in determining how pro/ or anti-competitive design of an industrial policy is.

3.3.2 Clustering of policies

We employ an unsupervised learning pipeline that combines dimensionality reduction and clustering. First, we merge two parts of the dataset:

1. *Policy-level data*: Jurisdiction, intervention type, whether the policy is a subsidy or a regulation, and other metadata (e.g., whether it primarily targets manufacturing or services).

⁴See Technology Readiness Level definition by NASA.

2. *Competition-criteria data*: Scores capturing the presence or absence of pro- or anti-competitive features (Section 4.1).

We one-hot encode the relevant categorical fields (e.g., `jurisdiction`, `policy_category`) and standardize all numeric columns to ensure comparability across features. We then reduce the dimensionality of this high-dimensional matrix to two dimensions using Uniform Manifold Approximation and Projection (UMAP) (McInnes et al., 2020). Finally, we apply k -means clustering (with $k = 3$) to the UMAP-projected data, obtaining three distinct policy clusters.

3.3.3 Logistic regressions

To gain insights into what are the main drivers of pro- and anti-competitive criteria, we performed logistic regressions on each of the 15 criteria described in Table 1. We considered all categorical variables encoding policy attributes from the NIPO database (see Section 3.1) as potential predictors. Given that some target variables predictors has few positive cases, to ensure a robust prediction, we implemented a bootstrapped Lasso logistic regression approach. This method allowed us to assess the stability and importance of predictor variables across multiple resampled datasets. Our procedure included the following steps:

1. **Threshold Definition**: We applied a threshold for selecting predictors and target variables. Each predictor was required to have at least 70 positive cases, and only target variables with at least 5% of positive cases relative to the total number of observations were included. This criterion ensured that only variables with sufficient representation in the dataset were considered.
2. **Bootstrap sampling**: We conducted 500 bootstrap iterations for each target variable. In each iteration, we sampled the data with replacement to create a bootstrap sample.
3. **Lasso model fitting**: Within each bootstrap iteration, we fitted a cross-validated Lasso logistic regression model. The model was tuned to select an optimal regularization parameter that minimized cross-validation error. We then extracted the non-zero coefficients (excluding the intercept) as indicators of variable selection.
4. **Aggregation of results**: After completing all bootstrap iterations, we aggregated the results to calculate the selection frequency for each predictor, which is defined as the proportion of iterations in which the predictor was selected. Only predictors with a frequency above 0.7 were retained. We then computed the average and exponentiated average coefficients for the predictors retained.

4 Results

In this section, we present our main results of the analysis of the NIPO database enhanced with the LLM classification of the competition criteria and the industrial policy categorization mentioned above. Tables 3 and 4 present summary statistics of these classifications and the composite competition scores calculated.

Table 3: Summary statistics of the categorical variables identified in the policies

Variable	Percentage of positive cases*	N
Creates new competitor	0.62	2,572
Ex-ante conditions	22.2	2,578
Ex-ante local content	4.11	2,578
Ex-post conditions	2.79	2,580
Ex-post local content	0.04	2,580
Few competitors	28.9	2,554
Increases entry cost	8.69	2,567
Many competitors	20.5	2,576
Multiple sectors	40.3	2,577
One sector, all firms	21.4	2,571
Provides competitive advantage	46.8	2,571
Reduces entry cost	4.43	2,576
Targets specific firms	34.9	2,567
TRL	66.2	2,487
New Techno-Nationalism	35.0	902
Techno-Globalism	34.2	883
Traditional Techno-Nationalism	29.1	752
NA	1.67	43
All policies	-	2,580

*For TRL, we report the percentage of observations to which the criterion applies.

Table 4: Summary Statistics of the composite competition score

Q1	Q2	Q3	Mean	SD	N
-0.21	0.08	0.21	0.01	0.28	2,580

From these summary statistics we can see that new industrial policy is frequently competition-neutral with respect to most competition criteria. A salient exception is the (anti-competitive) “Provides competition advantage to an incumbent” criterion, which is present in about 47% of the 2,580 policies analyzed. Moreover, the three policy categories have a very similar number of observations in our dataset. Only less than 2% were found not to belong to any of these categories. However, as seen in Table 5, this distribution is not as even within the main jurisdictions (China, European Union, United Kingdom and United States), which represent about 39% of the observations.

Table 5: Number of observations by policy category and main jurisdictions

Policy Category	China	EU	UK	USA	Total
New Techno-Nationalism	62	154	44	152	412
Techno-Globalism	7	219	19	74	319
Traditional Techno-Nationalism	19	69	17	139	244
NA	0	16	1	4	21
Total	88	458	81	369	996

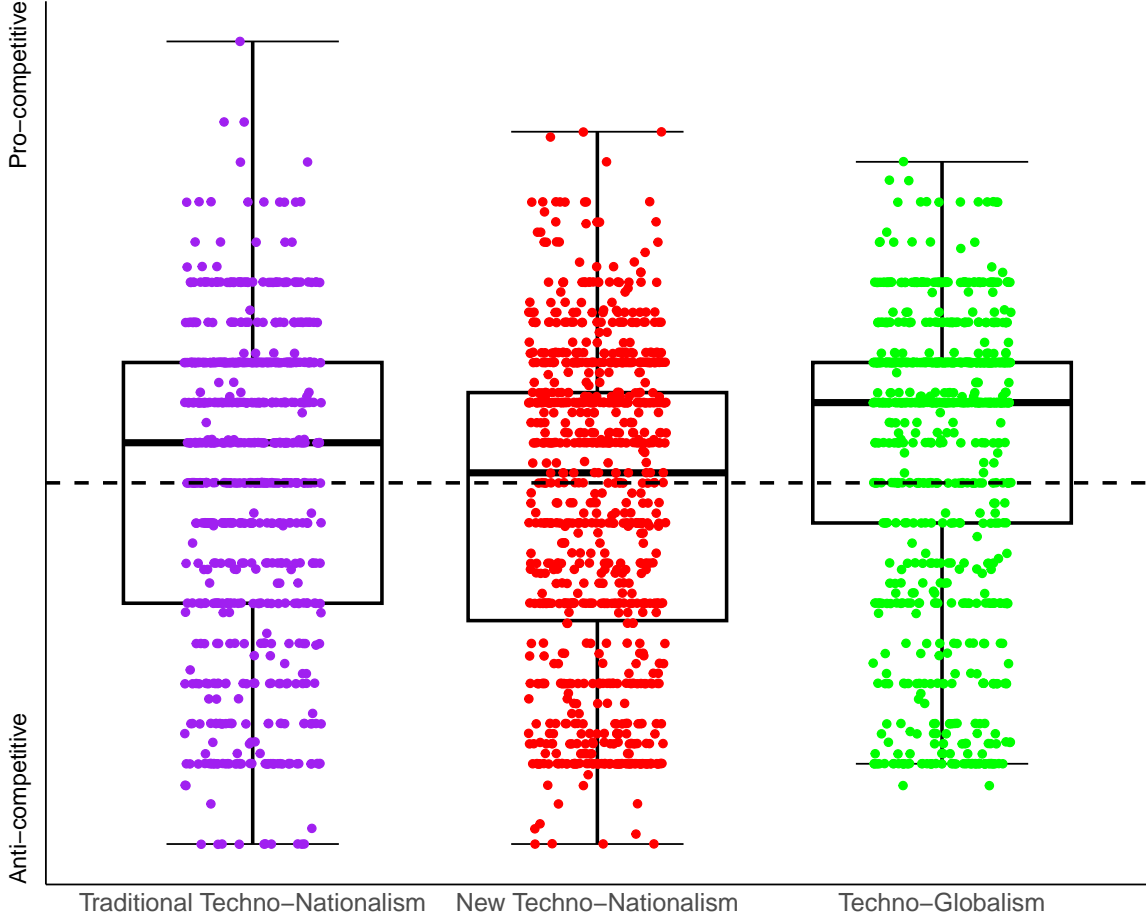
In China, new techno-nationalist industrial policy predominates: they constitute 70% of the observations. In the European Union⁵, techno-globalist policies represent close to half of the observations (48%), followed by new techno-nationalist policies (34%). The UK seems to follow a predominately new-techno-nationalist industrial policy (more than 54% of the observations), followed by techno-globalist (23%) and traditional techno-nationalist (21%) industrial policy interventions. In the United States, the share of traditional techno-nationalist policies is particularly high (38%) and close to the share of new-techno-nationalist ones (41%).

Figure 1 captures our main result. It shows how pro- and anti-competitive each policy (represented by a dot) and the policy category it belongs to. Techno-globalist policies are on average the most pro-competitive. New techno-nationalist policies are the most anti-competitive, with about half of the policies belonging to this group being anti-competitive on average. Traditional techno-nationalist policies, in turn, fall in the middle, with more than half of the policies being pro-competitive on average.

In the remaining of this section we nuance and flesh out these results. To do so, we present three types of stylized facts about the intersection between new industrial policy design and competition. Section 4.1 shows how pro- or anti-competitive the design of new industrial policy is. In doing so, we assess 8 dimensions of competition and distinguish between new industrial policy in general, and techno-nationalist and techno-globalist industrial policies in particular. Section 4.2 uses logistic regressions to explain the main predictors of various pro- and anti-competitive industrial policy design. Section 4.3 employs clustering to obtain a typology of new industrial policies in terms of their attributes and their pro- and anti-competitive design features.

⁵We consider industrial policies adopted by the 19 member States of the EU included in the database. There is no data for the following countries: Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta and Romania.

Figure 1: Pro- and anti-competitive industrial policies by policy category

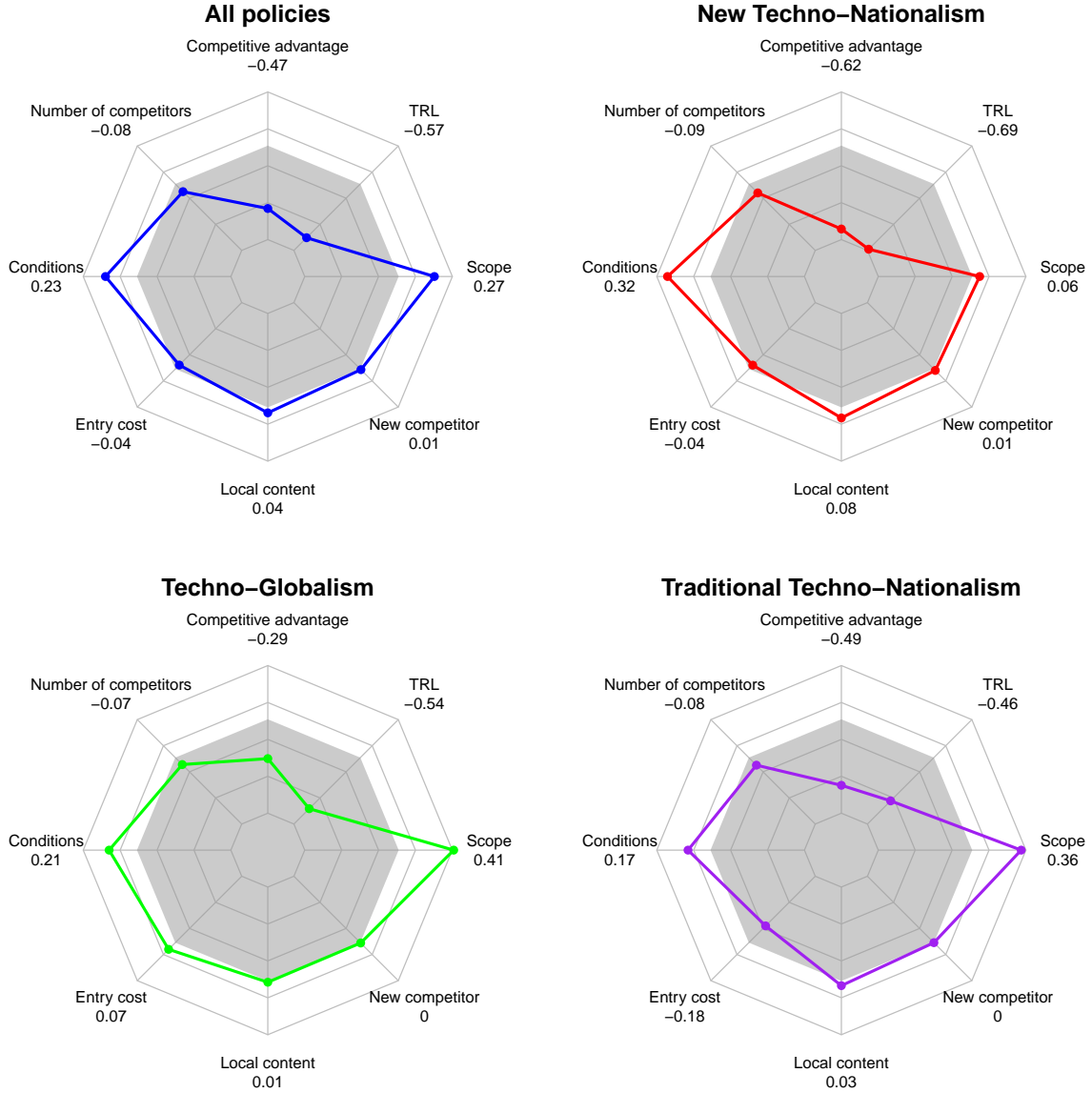


Note: Each dot corresponds to an industrial policy. The y-axis represents the composite competition calculated as per the methodology detailed in Section 3.3.1. The horizontal dashed line corresponds to competition-neutral policies.

4.1 The pro- and anti-competitive features of new industrial policy design

Figure 2 compares the average competition scores of each category of industrial policy (new techno-nationalism, techno-globalism, and traditional techno-nationalism) and all industrial policies for the 8 defined competition dimensions (see Table 1). The score ranges from -1 (the most anti-competitive score) to 1 (the most pro-competitive score), with a score of 0 meaning the policy is competition-neutral. Points within the gray areas correspond to average anti-competitive scores.

Figure 2: Average competition score by competition dimension and policy category



Note: The gray areas correspond to average competition scores below 0.

Figure 2 provides stylized facts on the nature and extent of the pro- and anti-competitive design of new industrial policy. When looking at all the new industrial policies (upper-left figure with blue lines), we can see that they are competition-neutral in half of the dimensions. There are two dimensions of new industrial policy design that are particular pro-competitive: the use of (ex-ante and ex-post) conditionalities other than local content requirements and its scope, which is usually horizontal or sectoral. Conversely, new industrial policy design is anti-competitive in that it tends to target mature technologies and provide competitive advantages to incumbents.

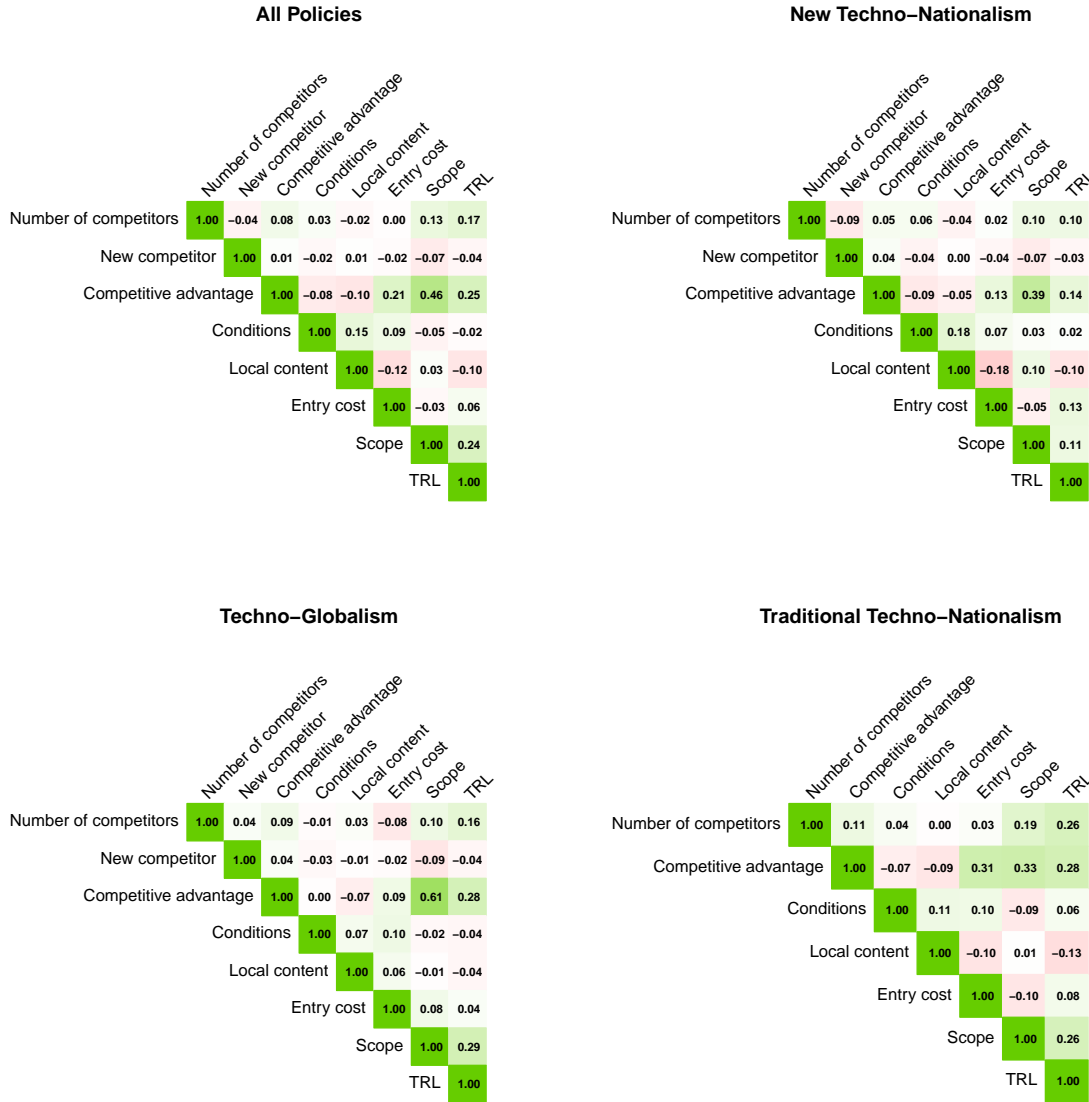
Techno-globalist industrial policies (which represent 35% of the observations) resemble the average policies in their design. However, they are more likely wider in their scope (which makes them more pro-competitive) but less likely targeting a young technology (which makes them more anti-competitive).

The design of new techno-nationalist policies (which represent 36% of the observations) are more pronouncedly anti-competitive in the dimensions that make the average new industrial policy anti-competitive: the targeting of mature technologies and providing a competitive advantage to incumbents. Regarding their pro-competitive design features, they are more competitive than the average policy in that they are more likely to impose conditionalities. However, they are close to competition-neutral in their scope.

Finally, the design of traditional techno-nationalist policies (which represent 30% of the observations) is anti-competitive in that they tend to create entry costs (contrary to all other policies), they provide competitive advantage to incumbents (in a similar frequency to the average policy) and they target mature technologies (although to a lesser extent than the rest of the policies). Their design is pro-competitive in that their scope is wide and in that they impose conditionalities.

Important to these results is that, as shown by Figure 3, the competition scores of the 8 dimensions studied are in most cases uncorrelated. This confirms the pertinence of analyzing industrial policy design's expected effect on competition by focusing on multiple dimensions. The exception to this is the correlation found between the dimension "competitive advantage" and the dimensions "scope" (0.46), on the one hand, and "Technology readiness level" (0.25), on the other hand. In other words, policies that do not provide a competitive advantage to incumbents tend to also be pro-competitive in that they have a wide scope (horizontal and/or sectoral interventions), and, to a lesser extent, to target young technologies, and vice-versa. These correlations are expected, with causality going from the latter to the former. If a policy targets a young technology and is applied horizontally or at the sector level, it is less likely that it will give a competitive advantage to an incumbent, unless another provision does. The association between the "competitive advantage" and "scope" dimensions is stronger for techno-globalist policies. Traditional techno-nationalist policies, in turn, present other positive correlations specific to this group. For these policies, low scores for "competitive advantage" are also linked to low scores for "entry costs" (0.31). This could suggest a causality going from the latter to the former that is particular to traditional techno-nationalist policies. For example, by imposing protectionist measures, these policies could limit competition from foreign firms and entrench local incumbents.

Figure 3: Correlation between competition dimensions by policy category



Note: The numbers correspond to Spearman correlation coefficients. The matrix for techno-nationalist policies does not contain the dimension "new competitor" because no positive cases were found for this dimension.

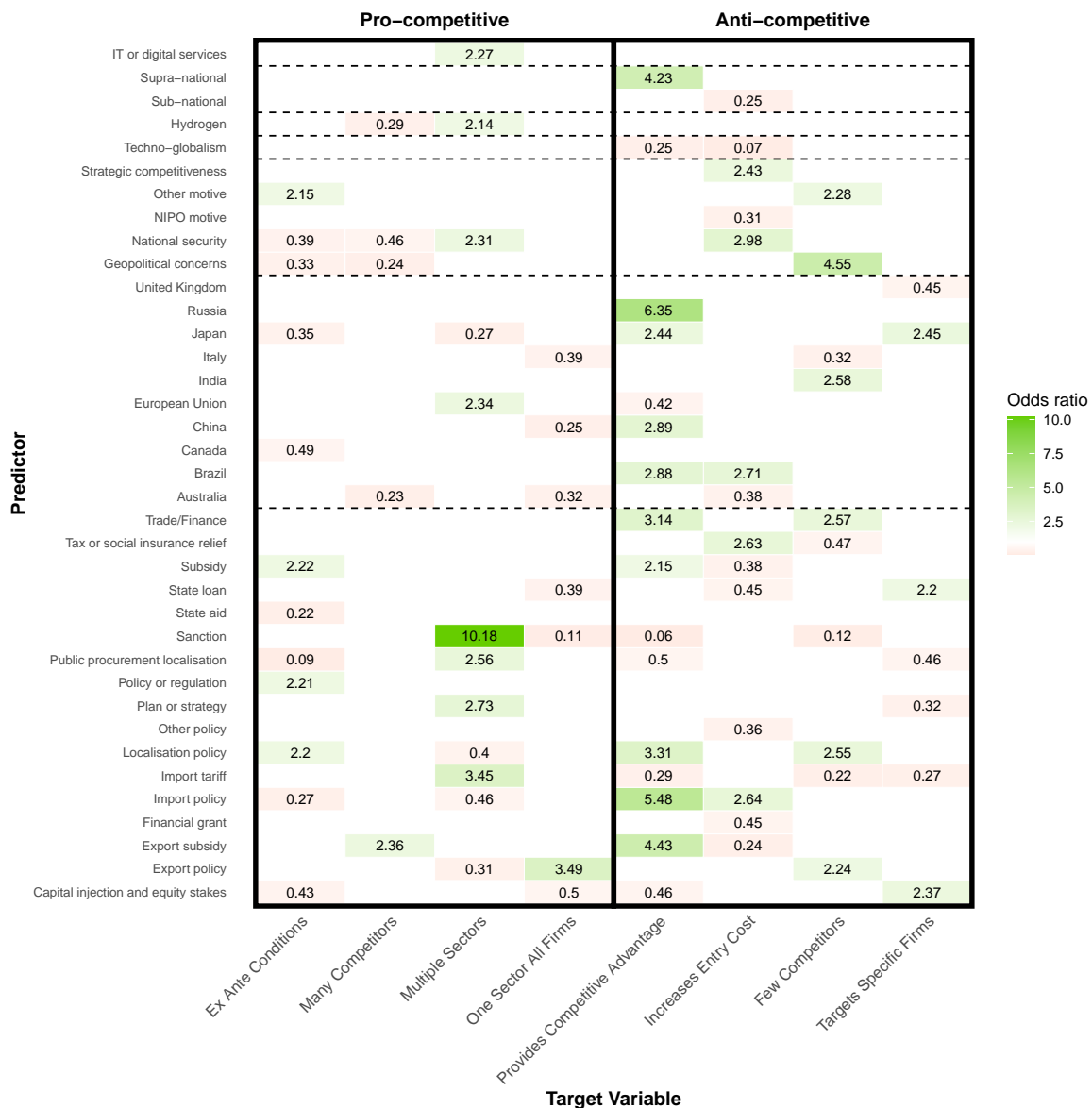
4.2 The drivers of pro- and anti-competitive industrial policy design

In this subsection we study what are the most relevant predictors of pro- and anti-competitive industrial policy design.

Figure 4 shows how the presence of certain policy attributes (predictors in rows) affect the probability of certain pro- or anti-competitive criteria (the target variables, in columns) being present. For example, as seen in the lower-left side of the figure, if a policy uses a subsidy, it is 2.22 times more likely to include ex-ante conditions (a pro-competitive policy criterion) than if it does not. Conversely, as seen in the upper-left side of the figure, policies that invoke national security motives are 2.56 times (i.e., $\frac{1}{0.39}$) less likely

to include ex ante conditions (another pro-competitive criterion) than those that do not.

Figure 4: Stronger predictors of pro- and anti-competitive industrial policy criteria



Note: The odds ratios indicate the change in probability of the target variable (the competition criterion) occurring if the predictor takes place. Only odd ratios above 2 or below 0.5 are depicted. Dashed lines separate families of policy attributes.

We can derive many insights from this figure. Here, we focus on two. First, in consonance with our results from Section 4.1, techno-globalist policies are strong predictors of the absence of two anti-competitive criteria: providing a competitive advantage to an incumbent and increasing entry cost. Second, certain instruments are associated with multiple pro- or anti-competitive criteria. The instruments most associated to several (mostly) anti-competitive criteria are trade/finance instruments, import policies, localization policies, and capital injection & equity stakes. Other instruments, in turn, are associated with several (mostly) pro-competitive features. This is the case of sanctions,

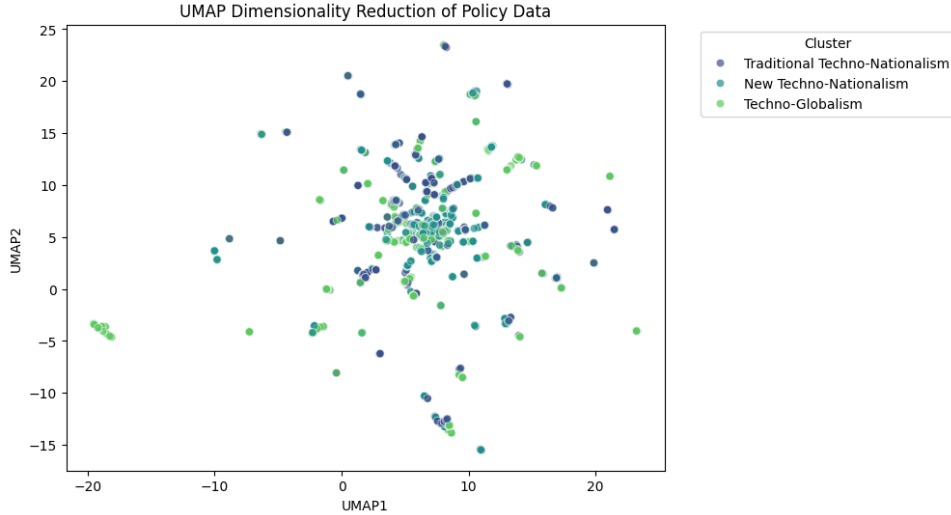
import tariffs and public procurement localization. In the latter case, as shown by the specific criteria to which these instruments are associated, it is likely that the broad scope of these instruments is what makes them pro-competitive.

4.3 A taxonomy of new industrial policy design in light of competition

In this subsection, we use the method defined in Section 3.3.2 and build on the pro- and anti-competitive criteria developed in Sections 3.3.1 and 4.2 to construct a taxonomy of new industrial policy design. Our aim is to identify distinct groups (clusters) of policies that share common design features relevant to competition. Specifically, we look for sets of policies that are systematically pro- or anti-competitive in one or more of our defined competition dimensions (e.g., barriers to entry, local content requirements, technology maturity, scope).

Visualizing the clusters. Figure 5 shows the two-dimensional Uniform Manifold Approximation and Projection (UMAP) projection of policies, color-coded by our prior classification into techno-globalist, new techno-nationalist, and traditional techno-nationalist policies. We observe that these broad policy categories partially overlap in the UMAP space, reflecting shared features across some groups but also highlighting that policy categories do not perfectly map to any single cluster.

Figure 5: UMAP Dimensionality Reduction of Policy Data, Color-Coded by Policy Category



Next, Figure 6 displays the same UMAP projection but color-coded by the k -means cluster assignments. Although the clusters overlap somewhat, three broad groupings emerge, each reflecting different constellations of policy design attributes and competition criteria.

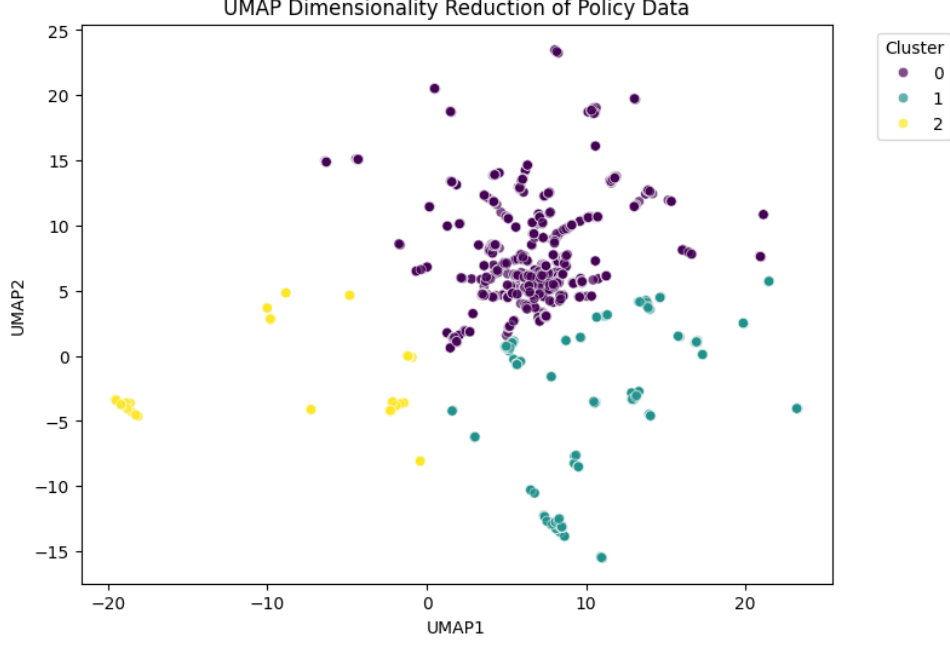


Figure 6: UMAP Dimensionality Reduction of Policy Data, Color-Coded by k -means Clusters.

Decision tree interpretation. To better understand what *drives* the assignment of policies to each cluster, we fit a decision tree that predicts the cluster labels from the original (non-UMAP) standardized features. Figure 7 shows a visual representation of this decision tree, illustrating which features best split the data into the three clusters. The topmost splits in the tree are typically those with the highest discriminatory power for separating clusters.

Figure 7: Decision Tree Explaining k -means Clusters.

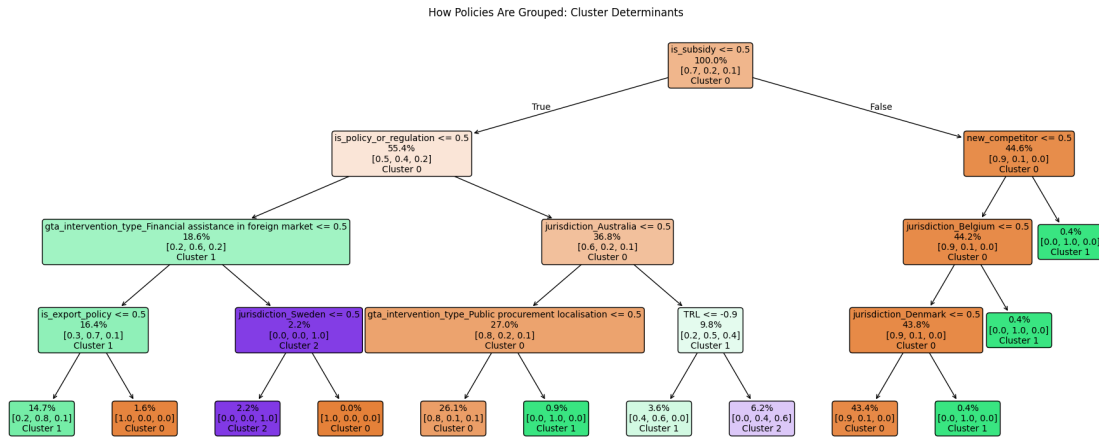
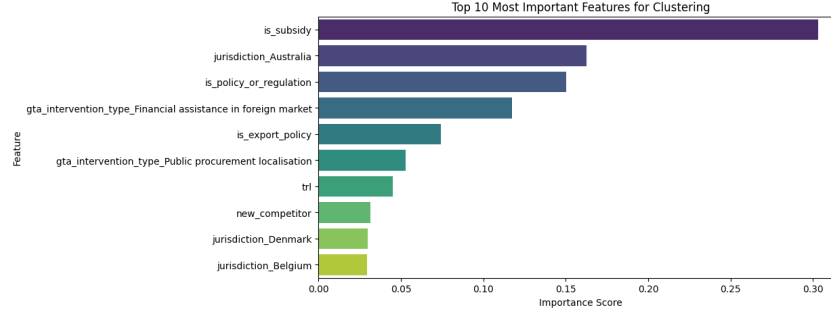


Figure 8 further illustrates the *feature importances* derived from this decision tree. We see that the presence of `is_subsidy` is the single most important factor determining a policy's cluster membership, followed by other variables such as `jurisdiction_Australia` and `is_policy_or_regulation`. Several competition-related features

(e.g., `creates_new_competitor`, `TRL`, `new_competitor`) also appear among the top predictors, confirming that policies differ substantially in how they handle entry barriers, technology readiness, or incumbents’ advantage.

Figure 8: Top 10 Most Important Features for Cluster Membership



Cluster profiles. By combining the decision tree insights with a closer examination of each cluster’s mean competition scores (Section 4.1), we can describe each cluster’s general profile⁶:

Cluster 1 *Subsidy-oriented policies with entry barriers.* This cluster is strongly associated with the `is_subsidy` feature. On average, these policies tend to create or reinforce competitive advantages for incumbents, for instance through selective financial support or export subsidies. They often involve middle or high TRL technologies, indicating a tilt toward mature or near-commercialized technologies. They exhibit moderate to high anti-competitive design features, especially in the dimension of entry costs.

Cluster 2 *Broad-scope regulations and “mixed” competition criteria.* Policies in this group typically involve broader regulatory measures (`is_policy_or_regulation` = Yes) and can be found in multiple jurisdictions, including Australia and some EU member states. They are more likely to impose ex-ante or ex-post performance conditions, which can be pro-competitive, but also occasionally incorporate local content requirements that risk dampening competition. Overall, they show a more balanced combination of pro- and anti-competitive features.

Cluster 3 *New competitor creation and strategic interventions.* This cluster is more frequently linked with policies that either directly foster the emergence of new competitors (e.g., through new state-owned enterprises or by favoring start-ups) or actively localize critical supply chains. They often appear in jurisdictions concerned about technological sovereignty or resilience. Their average competition scores are mixed: while new competitor creation is pro-competitive, local content restrictions can be anti-competitive, resulting in a “dual” profile.

⁶All statements about clusters here are stylized facts based on average feature scores and the most common traits in each cluster. In practice, many policies likely have a mix of pro- and anti-competitive design features.

Implications for policy design. These results confirm that new industrial policy (including those pursuing the new techno-nationalist agenda) is not monolithic; rather, it encompasses diverse designs with varying implications for competition. From a competition policy perspective, the presence or absence of certain design features (e.g., selective subsidies, local content rules, or ex-ante conditionalities) can be just as crucial as the broad policy category (e.g., “techno-globalist” vs. different categories of “technonationalism”). Our clustering analysis highlights how different configurations of these features can yield distinct policy archetypes:

- Policies that prioritize subsidies for incumbents may pose substantial risks to market contestability, especially if they raise entry barriers or tilt technology development toward already-dominant players.
- Regulations or strategies that impose performance-based conditionalities can maintain a more neutral or pro-competitive stance, especially if these conditionalities apply horizontally across sectors or encourage new entrants.
- Policies seeking to create new competitors may enhance dynamic competition, but local content requirements or other restrictions can partially offset these benefits.

Our research significantly enhances the implementation of effective industrial policy strategies by enabling public authorities to identify and concentrate resources on genuinely problematic cases where tensions between industrial and competition policies inevitably arise. These conclusions derive from our fundamental premise that competition policy’s primary objective is to foster contestable markets and preserve the integrity of the competitive process. However, we deliberately refrain from conducting a comprehensive analysis of the welfare implications and the broader geo-economic and strategic ramifications of such policies—an essential analytical step for thoroughly evaluating the relative desirability of various industrial policy frameworks. By providing this targeted analytical framework, our work streamlines decision-making processes for policymakers facing complex trade-offs, thereby substantially improving the precision and overall effectiveness of industrial policy interventions in an increasingly complex global economic landscape.

5 Conclusion

Historically, industrial and competition policies have been considered as pursuing opposing goals or functioning separately. Friction reached its height during early EU merger control development in the late 1980s and 1990s, and reemerged after the 2019 proposal by French, German, and Polish governments requesting modernized EU antitrust regulations to enable the rise of European corporate champions able to rival American and Chinese counterparts. This controversy escalated following the European Commission’s rejection of the Siemens-Alstom acquisition, with detractors claiming European competition regulations had grown outdated against 21st-century business behemoths.

Current discussions, including the Letta and Draghi assessments on EU competition’s future, and the recent resurgence of industrial policy, particularly following the Covid-19 pandemic, have again fueled discussion regarding the interaction between competition law and industrial policy. Some contend that stringent EU competition law implementation and digital oversight create excessive bureaucracy that hampers innovation and deters

investment. Others highlight Draghi’s subtler strategy advocating robust but strategically conscious competition law application.

Skeptics perceive competition law as a barrier to executing industrial strategy and fostering national or European leaders. Nevertheless, in today’s entrepreneurial state and mission-driven economy, competition policy also concerns molding markets to boost competitiveness. The growing consensus that competition law and industrial policy may pursue compatible goals, indicates no inherent clash exists between competition and industrial policy, with considerable space for “competition-friendly industrial policy”. The intellectual climate has also evolved since the neoliberal period of 1980-2009, adopting a more favorable view toward industrial policy for development aims, defense priorities, or sustaining leading positions within global commerce.

However, industrial policy comes in different sorts: A “techno-nationalist” industrial policy approach may oppose more universal efforts in technology dissemination addressing worldwide challenges like environmental degradation (techno-globalist industrial policy). Competition law might also be interpreted through a “techno-globalist” perspective when confronting global market influence to improve consumer advantages, or it can progress toward a “multi-centered method” serving broader techno-globalist aims such as reinforcing distribution chain durability or supporting ecological transformation. Alternatively, competition law can serve techno-nationalist objectives to cultivate national champions through biased enforcement benefiting local enterprises.

Any study of the intersection between industrial and competition policy should therefore recognize the various sorts of industrial policy and the differential relation these may have to competition policy.

The research engages in a data-driven examination drawing on more than 2,500 industrial policy interventions contained in the NIPO database (Evenett et al., 2024) during the period using advanced language models to explore pro- and anti-competitive elements of industrial policy strategies, juxtaposing techno-globalist and techno-nationalist approaches. We establish 15 benchmarks of industrial policy structure that could render policies pro- or anti-competitive, and classify approaches as traditional techno-nationalism (seeking development targets), new techno-nationalism (motivated by security reasoning and global economic supremacy), or techno-globalism (pursuing global sustainable development goals).

Findings reveal that techno-globalist policies typically appear most competition-enhancing. New techno-nationalist policies emerge as most competition-restricting, with approximately half proving anti-competitive on average. Traditional techno-nationalist policies occupy middle ground, with over half showing pro-competitive tendencies on average.

In China, as well as in the United States and United Kingdom, techno-nationalist industrial policies now dominate the economic landscape. By contrast, within the European Union’s 27 Member States, techno-globalist approaches constitute nearly half of all policy initiatives observed during the examined period. This notable difference may stem from the gradual erosion of “national industrial states” across Europe over recent decades. This erosion likely stems from the EU’s post-1980s prioritisation of the establishment of the Internal Market and its commitment to ordoliberal competition principles (frequently described as neoliberal), both emphasising the liberalisation and opening of European markets to enhanced competition (Owen, 2012). Importantly, these national approaches

have not been replaced by a cohesive EU-level “industrial state”. Recent policies in the EU supporting Sustainable Development Goals connected to the green transition and the European Green Deal, seem to abandon the ordoliberal approach for a more Keynesian one (Notermans and Piattoni, 2025), but, due to this institutional path-dependence, they primarily reflect a techno-globalist industrial policy framework.

These discoveries suggest the recent revival of industrial strategies aligned with technonationalist agendas portrayed as geopolitical winner-takes-all scenarios might weaken market competition. However, modern industrial policy is not uniform; it comprises various designs with differing implications for competition. From a regulatory standpoint, particular design characteristics can prove as vital as the broad policy grouping.

Further evaluation using cluster analysis underscores how varying arrangements of features produce distinct policy models. For instance, strategies favoring subsidies for established businesses may present significant threats to market openness. Policies mandating performance-related conditions can preserve a more balanced or competition-enhancing stance. Approaches aiming to generate new rivals may strengthen dynamic competition, though domestic production requirements can diminish these advantages. This investigation assists government authorities in identifying and addressing problematic cases in which tensions between industrial and competition policies surface. The deductions originate from the assumption that competition policy strives to nurture contestable markets and safeguard competitive mechanisms. Without undertaking exhaustive welfare assessment or analyzing wider geo-economic consequences, which needs to be performed for the most contentious industrial policy policies, this focused analytical structure simplifies decision-making for policymakers confronting intricate trade-offs, enhancing the efficacy of industrial policy measures in an increasingly sophisticated global economic environment.

It is undeniable that current geopolitical tensions have catalyzed a profound revival of state interventionism and industrial policy (Evenett et al., 2024), now strategically oriented toward securing competitive advantages in an increasingly fluid global landscape characterized by shifting diplomatic and economic alliances. This environment often creates the temptation to implement interventions without fully considering their competitive implications—a shortsighted approach that undermines economic growth potential and produces significant social and distributional consequences, given competition policy’s essential role as a regulatory instrument maintaining systemic resilience (Lianos, 2020). A more nuanced and targeted analysis of these interactions, examining specific categories and criteria of industrial policy interventions, including a global value chain perspective that would also assess the possibilities of economic (industrial) and social “upgrading” of domestic stakeholders (Gereffi and Lee, 2016; Wiryawan et al., 2023), would enable public authorities to allocate their constrained resources more effectively toward assessing the welfare and broader geo-economic impacts of truly contentious industrial strategies, thereby substantially enhancing governance quality in today’s emerging “Industrial State” paradigm (Galbraith, 1967).

References

- Acemoglu, D., Akcigit, U., Alp, H., Bloom, N., and Kerr, W. (2018). Innovation, reallocation, and growth. *American Economic Review*, 108(11):3450–3491.
- Aghion, P., Boulanger, J., and Cohen, E. (2011). Rethinking industrial policy. Technical report.
- Aghion, P., Cai, J., Dewatripont, M., Du, L., Harrison, A., and Legros, P. (2015). Industrial policy and competition. *American economic journal: macroeconomics*, 7(4):1–32.
- Aghion, P., Dewatripont, M., and Rey, P. (1999). Competition, financial discipline and growth. *The Review of Economic Studies*, 66(4):825–852.
- Aghion, P. and Griffith, R. (2008). *Competition and growth: reconciling theory and evidence*. MIT press.
- Aghion, P., Harris, C., Howitt, P., and Vickers, J. (2001). Competition, imitation and growth with step-by-step innovation. *The Review of Economic Studies*, 68(3):467–492.
- Amsden, A. H. (2001). *The rise of "the rest": challenges to the west from late-industrializing economies*. Oxford University Press.
- Andreoni, A. and Chang, H.-J. (2019). The political economy of industrial policy: Structural interdependencies, policy alignment and conflict management. *Structural change and economic dynamics*, 48:136–150.
- Bauer, M. and Erixon, F. (2020). Europe’s quest for technology sovereignty: Opportunities and pitfalls. Technical report, ECIPE Occasional Paper.
- Bloom, N., Sadun, R., and Van Reenen, J. (2006). It ain’t what you do it’s the way that you do it investigating the productivity miracle using multinationals. *Centre for Economic Performance, London School of Economics*. Retrieved September, 12:2007.
- Blundell, R., Griffith, R., and Van Reenen, J. (1999). Market share, market value and innovation in a panel of british manufacturing firms. *The review of economic studies*, 66(3):529–554.
- Buccirossi, P., Ciari, L., Duso, T., Spagnolo, G., and Vitale, C. (2013). Competition policy and productivity growth: An empirical assessment. *Review of Economics and Statistics*, 95(4):1324–1336.
- Cherif, R. and Hasanov, F. (2019). *The return of the policy that shall not be named: Principles of industrial policy*. International Monetary Fund.
- Coppens, P., Hilken, K., and Buts, C. (2015). On the longer-term effects of state aid on market shares. *European State Aid Law Quarterly*, 14(2):271–279.
- Criscuolo, C., Gonne, N., Kitazawa, K., and Lalanne, G. (2022). An industrial policy framework for oecd countries: Old debates, new perspectives.
- Dasgupta, P. and Stiglitz, J. (1988). Learning-by-doing, market structure and industrial and trade policies. *Oxford Economic Papers*, 40(2):246–268.

- Davies, W. (2016). The limits of neoliberalism: Authority, sovereignty and the logic of competition.
- Disney, R., Haskel, J., and Heden, Y. (2003). Restructuring and productivity growth in uk manufacturing. *The Economic Journal*, 113(489):666–694.
- Draghi, M. (2024). *The future of European competitiveness: A competitiveness strategy for Europe*. European Commission.
- Dutz, M. A. and Hayri, A. (2000). *Does more intense competition lead to higher growth?*, volume 2249. World Bank Publications.
- Edgerton, D. E. (2007). The contradictions of techno-nationalism and techno-globalism: A historical perspective. *New Global Studies*, 1(1).
- European Commission (2019). Case m.8677 - siemens/alstom. February 6th, 2019.
- European Commission (2025). Communication from the commission - a competitiveness compass for the eu. COM(2025) 30 final.
- Evenett, S., Jakubik, A., Martín, F., and Ruta, M. (2024). The return of industrial policy in data. *The World Economy*, 47(7):2762–2788.
- Freeman, C. (1995). The ‘national system of innovation’ in historical perspective. *Cambridge Journal of economics*, 19(1):5–24.
- Friends of Industry (2018). Joint statement of 18 december 2018. Sixth Ministerial Meeting, 18 December 2018.
- Futia, C. A. (1980). Schumpeterian competition. *The Quarterly Journal of Economics*, 94(4):675–695.
- Galbraith, J. K. (1967). The new industrial state. *Antitrust L. & Econ. Rev.*, 1:11.
- Gerber, D. (2010). *Global Competition: Law, Markets, and Globalization*. Oxford University Press.
- Gereffi, G. and Lee, J. (2016). Economic and social upgrading in global value chains and industrial clusters: Why governance matters. *Journal of business ethics*, 133(1):25–38.
- Grossman, G. M. and Horn, H. (1988). Infant-industry protection reconsidered: the case of informational barriers to entry. *The Quarterly Journal of Economics*, 103(4):767–787.
- Hovenkamp, H. J. (2008). Schumpeterian competition and antitrust.
- Januszewski, S. I., Köke, J., and Winter, J. K. (2002). Product market competition, corporate governance and firm performance: an empirical analysis for germany. *Research in Economics*, 56(3):299–332.
- Jessop, B. (2015). The course, contradictions, and consequences of extending competition as a mode of (meta-) governance: towards a sociology of competition and its limits. *Distinktion: Journal of Social Theory*, 16(2):167–185.

- Juhász, R. and Lane, N. (2024). The political economy of industrial policy. *Journal of Economic Perspectives*, 38(4):27–54.
- Juhász, R., Lane, N., Oehlsen, E., and Pérez, V. C. (2022). The who, what, when, and how of industrial policy: A text-based approach. *What, When, and How of Industrial Policy: A Text-Based Approach (August 15, 2022)*.
- Kerber, W. (2023). Towards a dynamic concept of competition that includes innovation. In *OECD, DAF/COMP/WD(2023)42*.
- Kovacic, W. (2024). The contribution of competition agencies to formulating industrial policy. Technical report, OECD.
- Landesmann, M. A. (2015). Industrial policy: Its role in the european economy. *Intereconomics*, 50(3):133–138.
- Le Maire, B. (2019). Discours de bruno le maire, ministre de l’economie et des finances. <https://presse.economie.gouv.fr/wp-content/uploads/2020/11/d263a9ac3acbf9375e3d713a2ad7893b.pdf>. Institute of International & European Affairs, Dublin.
- Letta, E. (2024). Much more than a market-speed, security, solidarity: Empowering the single market to deliver a sustainable future and prosperity for all eu citizens.
- Lianos, I. (2018). Polycentric competition law. *Current Legal Problems*, 71(1):161–213.
- Lianos, I. (2019). The future of competition policy in europe—some reflections on the interaction between industrial policy and competition law. *CLES Policy Paper Series*, 1.
- Lianos, I. (2020). Competition law as a form of social regulation. *The Antitrust Bulletin*, 65(1):3–86.
- Lianos, I. (2022). Reorienting competition law. *Journal of Antitrust Enforcement*, 10(1):1–31.
- Lianos, I. (2024). What the Draghi report really means for the future of european competition policy. *ProMarket*.
- Lianos, I., Mateus, A., and Raslan, A. (2013). Is there a tension between development economics and competition? In Lianos, I. et al., editors, *Competition Law and Development*, pages 35–51. Stanford University Press, 1st edition.
- Lianos, I., Minssen, T., and Kollmar, C. (2022). Tackling grand challenges with competition law: lessons from the pandemic. In *EU Competition Law and Pharmaceuticals*, pages 279–297. Edward Elgar Publishing.
- List, F. (1856). *National system of political economy*. JB Lippincott & Company.
- Luo, Y. (2021). Illusions of techno-nationalism. *Journal of International Business Studies*, 53(3):550.
- Ma, T.-C. (2011). The effect of competition law enforcement on economic growth. *Journal of Competition Law and Economics*, 7(2):301–334.

- Mazzucato, M. (2011). The entrepreneurial state. *Soundings*, 49(49):131–142.
- Mazzucato, M. (2021). *Mission economy: A moonshot guide to changing capitalism*. Penguin UK.
- Mazzucato, M. and Rodrik, D. (2023). Industrial policy with conditionalities: a taxonomy and sample cases.
- McInnes, L., Healy, J., and Melville, J. (2020). Umap: Uniform manifold approximation and projection for dimension reduction.
- Montresor, S. (2001). Techno-globalism, techno-nationalism and technological systems: organizing the evidence. *Technovation*, 21(7):399–412.
- Nickell, S., Nicolitsas, D., and Dryden, N. (1997). What makes firms perform well? *European economic review*, 41(3-5):783–796.
- Notermans, T. and Piattoni, S. (2025). From ordo-liberalism to ordo-keynesianism? the contradictory nature of eu economic governance. *Journal of European Integration*, pages 1–22.
- OECD (2019a). *Competition Assessment Toolkit: Operational Manual*, volume III. OECD Publishing, Paris, version 4.0 edition.
- OECD (2019b). Competition assessment toolkit: Principles.
- OECD (2024). Pro-competitive industrial policy policy. Technical report.
- Owen, G. (2012). Industrial policy in europe since the second world war: what has been learnt? Technical report, ECIPE occasional paper.
- Pack, H. and Westphal, L. E. (1986). Industrial strategy and technological change: theory versus reality. *Journal of development economics*, 22(1):87–128.
- Peinert, E. (2021). Cartels, competition, and coalitions: the domestic drivers of international orders. *Review of International Political Economy*, 28(6):1652–1676.
- Piechucka, J., Sauri-Romero, L., and Smulders, B. (2024). Competition and industrial policies: Complementary action for eu competitiveness. *Journal of Competition Law & Economics*, 20(4):384–408.
- Pop, G. and Cannon, D. (2020). *Industrial Policy Effects and the Case for Competition*. World Bank.
- Pursell, G. (2001). *Australia’s Experience with Local Content Programs in the Auto Industry: Lessons for India and Other Developing Countries*, volume 2625. World Bank Publications.
- Sauter, W. (1997). *Competition law and industrial policy in the EU*. Oxford University Press.
- Scott Morton, F. (2024). The three pillars of effective european union competition policy. Technical report, Bruegel Policy Brief.

- Seidl, T. and Schmitz, L. (2024). Moving on to not fall behind? technological sovereignty and the ‘geo-dirigiste’ turn in eu industrial policy. *Journal of European Public Policy*, 31(8):2147–2174.
- Singh, A. (2002). Competition and competition policy in emerging markets: international and developmental dimensions. *Growth and Economic Development: Essays in Honour of AP Thirlwall*.
- Spence, M. (1986). Cost reduction, competition and industry performance. In *New developments in the analysis of market structure: Proceedings of a conference held by the international economic association in Ottawa, Canada*, pages 475–518. Springer.
- Stiglitz, J. E. and Greenwald, B. C. (2014). *Creating a learning society: A new approach to growth, development, and social progress*. Columbia University Press.
- Stone, S., Messent, J., and Flaig, D. (2015). Emerging policy issues: localisation barriers to trade.
- Sturgeon, T., Lima Chagas, L., and Barnes, J. (2017). Inovar auto: Evaluating brazil’s automotive industrial policy to meet the challenges of global value chains.
- Tirole, J. (2024). Competition and industrial policy in the 21st century. *Oxford Open Economics*, 3(Supplement_1):i983–i1001.
- UNCTAD (2023). Interaction between competition and industrial policies. Technical report, Bruegel Policy Brief.
- Välilä, T. (2006). No policy is an island-on the interaction between industrial and other policies. *EIB papers*, 11(2):8–33.
- Von Der Leyen, U. (2024). Mission letter to teresa ribera rodríguez. https://commission.europa.eu/document/download/5b1aaee5-681f-470b-9fd5-ae14e106196_en?filename=Mission%20letter%20-%20RIBERA.pdf.
- Wiryanan, B. A., Aginta, H., and Fazaalloh, A. M. (2023). Does gvc participation help industrial upgrading in developing countries? new evidence from panel data analysis. *The Journal of International Trade & Economic Development*, 32(7):1112–1129.