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Fiscally constrained developmentalism:

IPCEIs and the development of innovative European industrial policy

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ABSTRACT

How did Important Projects of Common European Interest (IPCEIs) become one of Europe's most potent yet underexamined industrial policy tools? This paper answers that question by tracing how IPCEIs evolved into a legal and fiscal workaround within the EU's state aid regime. Unlike existing work that treats IPCEIs as contemporary instruments, this is the first study undertaking a historical analysis of the Commission's legal rulings and administrative interventions. Using archival research, participant observation, and expert interviews, it shows how the Commission leveraged innovation rhetoric and legal discretion to carve out space for strategic public investment in what some scholars term a developmental network state. Born in the 1970s energy crises, IPCEIs grew from ad hoc national responses into a supranational mechanism for steering critical industries. The paper highlights an underappreciated developmental mindset within EU institutions —revealing a fiscally constrained yet quietly interventionist evolution not easily accommodated by the 'derisking state' framework.

Keywords: Europe, economic growth, public finance, political economy, competition, industrial organisation

JEL classification: P11 Capitalist Systems: Planning, Coordination, and Reform; O25 Industrial Policy; O38 Technological Change: Government Policy

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Fiscally constrained developmentalism: IPCEIs and the development of innovative European industrial policy

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1. Introduction

'It is an economic and national security imperative to preserve a European edge on critical and emerging technologies. [….] Because *Europe will do "whatever it takes" to keep its competitive edge.'*
Ursula von der Leyen, 2023 State of the Union Address

'We cannot afford to delay public support for the energy transition or measures to decarbonise the European industry and enable its competitiveness.'
Teresa Ribera, in her Parliament briefing questionnaire

'We will develop a European industrial policy to ensure the growth of the key technologies of tomorrow, improving existing EU instruments such as Important Projects of Common European Interest, and modernising EU competition rules and practices with a view to enhancing our competitiveness at global level.'
Draft European Council Budapest Declaration on European Competitiveness

'The state is back!' Except it was never gone. While the above quotes illustrate the proactive position the EU has assumed in promoting an industrial agenda, and while European industrial policy recently (see Bulfone 2022; Di Carlo and Schmitz 2023; McNamara 2023) has attracted scholarly attention, the European Union never stopped pursuing a vertical industrial strategy after the *trentes glorieuses* (Bianchi and Labory 2020; Canihac 2021). Indeed, few noticed that industrial policy only changed its shape. Sauter (1997), for example, notes the intractable relationship between competition law and industrial policy, and Botta (2016) and Di Carlo and Schmitz (2023) highlight the role of strategic forbearance (cf Dewey and Di Carlo 2022) as a de facto tool to steer markets in a desirable direction. The rediscovery of a European developmental network- (Di Carlo and Schmitz 2023); catalytic- (Prontera and Quitzow 2022); or investor (Lepont and Thiemann 2024; Mertens and Thiemann 2019) state marks the transition of a scholarly agenda from development studies to the European context. Thurbon (2016) illustrate the important role of the state in the continuous development of modern South Korea, while many of the tools described in the case of China by Beck and Larsen (2024) echo in European policy.

Because of its limited own fiscal resources, the Union—led by the European Commission (EC)—has developed and used financial instruments to achieve its goals. Mirroring the Chinese 'green state' (Beck and Larsen 2024), the literature explores how the EC steers finance through promotional banks, venture capital (Braun, Gabor, and Hübner 2018; Braun and Hübner 2018; Mertens and Thiemann 2018; Lepont and Thiemann 2024), or other forms of 'blended finance' and 'de-risking' measures (Cooiman 2023; Gabor 2023). This has given rise to a post-neoliberal social formation, what Gabor

has termed ‘the European derisking state’. In essence, this emerging scholarship has mapped a financial or leverage ‘fix’ to climate-, growth-, and competitiveness crises (Braun and Hübner 2018). Not only is the EU itself fiscally limited, but its competition rules also limit the fiscal space of its member states. States avoid official balance sheets by relying on a complex network of off-balance sheet fiscal agencies (OBFAs) and non-bank financial institutions (NBFIs), like the EIB, national promotional banks, non-bank special purpose vehicles, and repo markets, as illustrated by Guter-Sandu, Haas, and Murau (2024). As such, the leverage fix suggests a governance regime based around a private sector-led and public sector-derisked system, which stands in sharp contrast with the state-guided and market-driven Chinese ‘green state’ (Beck and Larsen 2024). The organising principle of the system in Europe is courtship of financial markets using the capacity of the EC (and its financial arms in the EIB complex) to incentivise, steer, and leverage.

In this system the EC must negotiate its powers with both member states and the private sector, creating governance structures that work around the EC’s exclusive competences rather than through them (cf Botta 2016; Kerber and Eckardt 2007). The purpose of this paper is to show how the EC used Important Projects of Common European Interest (IPCEIs) as an instrument of industrial policy camouflaged as innovation instruments exempt from the strict fiscal and competition rules of the EU. While existing research has begun to explore this role, scholars have not yet unearthed the long gestation of IPCEIs into previous variants, some of them going back to the 1970s.

Di Carlo and Schmitz (2023) view them as part of the facilitative axis of the developmental network state, akin to other simplifications such as common standards. Others go further. Eisl (2022) and Bora (2023) see potential in using IPCEIs to roll out large scale industrial projects, especially given the IPCEI cross-border requirement. Lavery and Lopes-Valença (2025) on the other hand note that IPCEI practice reveals that the cross-border requirement exists in name only. Because of the long and haphazard development process of ‘modern’ IPCEIs and their corresponding definitional flexibility, there is a grain of truth in all these contributions.

This paper argues that IPCEIs are a mechanism to fund industrial policy within, rather than despite, the EU’s legal framework. I demonstrate how their long gestation process—thus far overlooked by the literature—created what can be described as a legal loophole, a strategically useful bug in the system. They offer a hidden, vertically integrated, and legally palatable industrial policy tool, one that sidesteps the rigidities of EU competition law while maintaining institutional legitimacy. I go beyond previous contributions by tracing the development of IPCEIs through court practice, official communication, newly uncovered archival material, and industry press, as well as triangulating the information through expert interviews and participant observation. I show how they developed alongside the EC’s growing legal and political powers, in reaction to member state initiatives, and flourished as support for the European microelectronics industry. Their unique legal position may offer a way to integrate industrial policy into public balance sheets without the need to resort to complex and obtuse financial engineering.

The main empirical claim of the paper is that IPCEIs were born from legal manoeuvres by and around the Commission and that these came to a head not in the 2010s, as most of the literature on IPCEIs assumes, but during the 1980s, with the first seeds planted in the 1970s. Indeed, while most scholarly work and EU communication around IPCEIs assume them to be products of the 2010s polycrisis,

IPCEIs are steeped in the stagflation and energy shock economy of Europe during the 1970s coupled with the ostensibly neoliberal, competition-promoting 1980s and 1990s.

While unintentional at first, the EC has conflated industrial- and innovation policy, encasing IPCEIs in the regulatory protections of cross- border (and therefore Court-, and competition-proof) research, turning them into a potentially unlimited fiscal spigot. I demonstrate how the European Commission used an entrepreneurial interpretation of its innovation mandate to craft a discreet industrial policy tool within the framework of existing treaties. By defining IPCEIs in a way that makes participation in them appealing for individual member states under the Commission's guidance, this approach encourages cross-border collaboration while bolstering the Commission's role in the EU's industrial policy governance. In addition to the scholarship on IPCEIs, the paper contributes to a growing literature on European governance, particularly in connection to the EC's industrial policy powers and expands on the role of compliance in institutional change. I do so by underlining the curious and often under-theorised (Cini and McGowan 2009) role of state aid regulation in European studies, and echo McNamara (2023) in presenting a novel and complementary governance solution.

After covering background and theory, the following sections will trace the expansion of the European Commission's competition and innovation policy competences, setting the stage for a deeper investigation into how IPCEIs have evolved as a covert but crucial instrument of European industrial strategy.

1.1 Background: Unpacking IPCEIs

An IPCEI is a cross-border public-private partnership through which EU member states can subsidise private, predominantly research-oriented projects with theoretically unlimited amounts of money: up to 100 % of the funding gap. IPCEIS follow in part the derisking logic, given that they allow public funding without the sticks associated with developmental state funding (Amsden 1989).
A wide variety of projects can be—and have been—funded under the auspices of an IPCEI, ranging from bridges to battery manufacturing plants, to hydrogen transportation infrastructure. In theory, by allowing individual member states to open their fiscal taps, IPCEIs constitute an indirect fiscal steering mechanism for the European Commission. It is therefore not surprising that EU policymakers push for their scaling up (cf Draghi 2024, 301).

Table 1: Modern IPCEIs (Source: European Commission)

	No. of projects	Approved aid (EUR bn)	Participating MS	Illustrative project
Microelectronics IPCEI #1 (2018)	45	1.9	5 (FR, DE, IT, UK, AT)	Globalfoundries' energy efficient semiconductors
Batteries IPCEI #1 (2019)	23	3.2	7 (BE, FI, FR, DE, IT, PL, SE)	BMW developing more efficient automotive batteries
Batteries IPCEI #2 (2021)	46	2.9	12 (AT, BE, HR, FI, FR, DE, EL, IT, PL, SK, ES, SE)	Construction of (the now bankrupt) Northvolt Ett gigafactory

Hydrogen IPCEI #1 (2022)	41	5.4	15 (AT, BE, CZ, DK, ET, FI, FR, DE, EL, IT, NL, PL, PT, SK, ES)	Construction of electrolyzers and carbon-capture technology by Ørsted
Hydrogen IPCEI #2 (2022)	35	5.2	14 (AT, BE, FI, FR, DE, EL, IT, NL, PL, PT, SE, NO)	Construction of an EDP electrolysis plant; HYBRIT TLR development
Microelectronics IPCEI #2 (2023)	68	8.1	14 (AT, CZ, DK, ET, FI, FR, DE, EL, IE, IT, MT, NL, PL, RO, SK, ES)	Use of novel materials in semiconductor manufacturing by Infineon
Cloudtech IPCEI (2023)	19	1.2	7 (FR, DE, IT, NL, PL, HU, ES)	Development of a European global cloud computing competitor
Hydrogen IPCEI #3 (2024)	33	6.9	7 (FR, DE, IT, NL, PL, PT, SK)	Construction of hydrogen transportation infrastructure
Hydrogen IPCEI #4 (2024)	13	1.4	7 (ET, FR, DE, IT, NL, PT, SK)	Development of mobile hydrogen storage and refueling capacity
Medtech IPCEI (2024)	14	1	6 (BE, FR, HU, IT, SK, ES)	Development of AI diagnosis solutions
Total	335	37.2	22	

As a black sheep nested within a globally unique system of rules that govern the capacity of sovereign states to spend their own fiscal resources (Cini and McGowan 2009, 136), IPCEIs are peculiar industrial policy instruments. Since no other government in the world must contend with the specificities of the European multi-level-governance system, an analysis of this instrument gives insight into the unfolding of a specifically European developmental network state.

2. The European Developmental mindset

The rediscovery of industrial policy in Europe is, at its core, a rediscovery of the 'developmental mindset'—a concrete strategy for economic development rooted in common ambitions and common tools (Thurbon 2016, 5). But unlike its East Asian counterparts, Europe's embrace of industrial policy remains constrained by its institutional DNA. For decades, European integration has been governed by neoliberal market logics that place the onus on the private sector to drive innovation and competitiveness, while the state plays a facilitating, rather than directive, role (Buch-Hansen and Wigger 2010). The result is a European model at odds with the strategic targeting of key industries seen in South Korea (Thurbon 2016), China (Beck and Larsen 2024) or the US (Block 2008; Ferguson 2024; Mazzucato 2014).

Contrary to these studies, this paper argues that European industrial policy has not been entirely absent—just less visible and more fragmented. This expresses the emergence of a fiscally constrained EU developmental mindset. Scholars have long noted the parallels between DARPA-style instruments in the US and European industrial coordination (Block 2008; Mazzucato 2014) and even conceptualise contemporary European industrial policy as a variation of Block's 'developmental

network state' (DNS)—one that brokers and facilitates rather than directly finances and controls (Di Carlo and Schmitz 2023; Prontera and Quitzow 2022). In the vein, Di Carlo and Schmitz and Prontera and Quitzow (2023; 2022) highlight how the Commission has built up developmental powers understood in this way. All note that the EC primarily pursues industrial policy through its role as broker between industrial projects and financiers. Here, 'targeted resourcing' in Di Carlo and Schmitz or 'treasury-based' tools in Prontera and Quitzow entails the funding of technological breakthroughs through various balance-sheet adjacent tools like Horizon Europe, the European Regional Development and Cohesion Funds, and the Recovery and Resilience Facility. 'Brokering', 'facilitation', and 'nodality-based' tools on the other hand, represent the EC's attempts to incentivise industrial collaboration by providing reinterpreting competition rules and provide forums, such as the Industrial Alliances and High-Level Working Groups. The last part of the European DNS includes protecting the single market from outside competition through for example the Foreign Direct Investment (FDI) screening tool. Common to these contributions is the fact that the while the EC tries to apply vertical policies, it is heavily constrained by the EU's lack of powers of taxation and subsequent meagre own resources (cf Bulfone, Ergen, and Maggor 2024). In other words—Europe has a clear mindset, but the tools are not quite there.

2.1 The European Derisking State

The constraints put on the European developmental network state yield a 'derisking' logic (Gabor 2023) or the shifting of private risk into public risk, either through loosely disciplined public-private partnerships, guarantees, loans, seed investment or tax exemptions. This derisking state plays an increasingly prominent role in the promotion of industrial policy. Derisking occurs on two levels: fiscally, by injecting capital into funds-of-funds through the EIB-OBFA-NBFI-nexus, and monetarily, by backstopping European repo markets (Gabor 2023). This leads to a measure of infrastructural and ideological capture, by which public authorities—acting as investors—must abide by the rules of the game. Accordingly, the efficacy of public interventions, especially in comparison to the much more embedded Chinese investor (Beck and Larsen 2024) or shareholding state (Wang 2015) is hampered, and the move limits democratic oversight given how much investment is transferred off-balance sheet.

The goal of derisking is to correct 'market failures' by reducing project risk to private investors such that they can cover what is missing from the public purse (Kedward, Gabor, and Ryan-Collins 2024). Much of this is structural. Unlike the EU, the US and Chinese derisking entails higher capacities to discipline capital because of those countries' higher relative position in the global investment chain (Alami et al. 2023) and access to different 'monetary architectures' (Guter-Sandu, Haas, and Murau 2024). Because of the structural limitations to the EU's exercise of financial power, Gabor and Braun (2025) use weak derisking to describe the European approach to (post)neoliberal industrial policy. This strategy relies on leveraging financial capital by boosting risk returns to fill gaps where the market cannot provide on its own.

A telling example of Europe's weak derisking is the Commission's BlueInvest program, which channels public capital into blue economy startups via a fund-of-funds model. Because the European Investment Fund relies on private co-investors to multiply its capital, it avoids strong policy conditions—leading to scant oversight and revealing the tensions between public goals and financial market constraints (Cooiman 2023). In BlueInvest, carried interest is conditional on hitting blue KPIs—but those KPIs are set by fund managers, not the EIF. Reporting isn't mandatory, nor is noncompliance penalized. By relying on financial intermediaries to channel green investment, the

state loses leverage: disciplining capital risks severing the very pipelines it depends on, reinforcing a structurally lopsided form of green financial governance. While these exhibit similarities with Chinese government guided funds, Li and Ban (2025) demonstrate how strong local management—effectively a more financially embedded state—yields better returns in terms of increased manufacturing capacity and technological breakthroughs.

Being forced to de-risk additionally shifts the design of policy. Indirect subsidies results in an approach to industrial policy that is made for-, of-, and by finance. Lepont and Thiemann (Lepont and Thiemann 2024) demonstrate how the EU's turn towards a capital markets-based industrial policy makes it behave like an investor. Through its 'financial gaze' (Chiapello 2017), it evaluates policies in terms of their potential return, and it places itself in a collective of investors it seeks to enlist (Lepont and Thiemann 2024). Tellingly, this transformation is visible through the introduction of the politically salient category of 'investment' on public balance sheets, which no longer solely encompasses gross capital formation but also financial aspects. Accordingly, the state begins to seek not only the achievement of policy goals, but also a concrete return on investment, even when it acts as a 'public banker', investing directly into the productive economy.

What the de-risking logic coupled with the EU's newfound role as investor entails for the funding of the green transition is a complex web of entanglements between entities like the EIF and the European Investment Bank (EIB), and national development banks as well as a host of various off-balance-sheet-entities. By moving investment off the public balance sheet and into proximate entities, the EU and its member states can avoid some of the pressure stemming from the fiscal discipline embedded into the EU's legal framework (cf Buch-Hansen and Wigger 2010). Simply put, even outside of the field of development banking, there exists an increasingly complex network of off-balance-sheet-entities that all rely on the logics of finance to leverage the public purse. Guter-Sandu, Haas, and Murau (2024) even claim that with very little public intervention there exists sufficient fiscal elasticity in the Eurozone to muster all of Draghi's €800bn in additional annual investment purely using these off-balance-sheet operations. In relying heavily on off-balance-sheet financial actors (OBFAs) and non-bank financial institutions (NBFIs), the derisking logic reaches full circle.
Ultimately, the EU's derisking strategy is hamstrung by structural limitations: its lack of taxation powers, its adherence to market neutrality, and its weak central banking tools. While the U.S. combines infrastructure investment with conditional tax incentives, it too faces constraints from relying on private investors. China, by contrast, wields fiscal and monetary tools in concert—channelling green finance through state-controlled banks, imposing conditionalities, and using industrial policy to discipline capital. Its embedded financial governance and proactive central bank enable strategic credit allocation and effective intervention. Successfully exercising the obviously existing developmental mindset—coordinating and derisking based on identified market failures—through derisking requires a bigger, more coordinated state—something the EU, under current conditions, cannot achieve. IPCEIs promise a return of sorts to a time when European states were less financially subordinated and more willing to engage in economic statecraft, namely the 1970s.

3. Methods and Data

Drawing on Lichbach (2005) I take as my starting point the 2014 IPCEI communication. This is in many ways the founding document for modern IPCEI strategy, and it codifies concepts that do not appear in the treaties, namely innovation and the cross-border requirement. From there, I trace the mechanisms that contributed to the elaboration of the modern IPCEI instrument, and corner the

'strategic situations' (Lichbach 2005, 240) that prompted a specific line of action. Going beyond previous contributions, I rely on a combination of newly uncovered archival material, a systematic analysis of all legal cases pertaining to the use of the treaty article, industry press, communication from the EC, and 20 interviews with industry experts to understand how the contours of the IPCEI instrument were elaborated, and how those contours shape contemporary instrumentalisation of the tool.

4. Made in the 1970s

The 1970s caused two interrelated developments: the emergence of the EC's market-regulating powers, without which the capacity to wield IPCEIs as tools of strategic forbearance would not exist; and the turn to innovation as the way out of the crisis. While a detailed discussion on the development of the Commission's state aid- and innovation practice is beyond the scope of this paper, they are intimately tied together. Owing to the political acuteness (Cini, 2021) of state aid regulation, the EC has been relatively restrictive in its practice, to ensure it retains its legitimacy vis-à-vis the member states. In attempting to foster innovation, competition policy has therefore become a double-edged sword. While strict regulation boosts legitimacy and authority—providing the Commission the capacity to use forbearance as a policy tool—it creates legal precedent from which the EC cannot deviate much.

Acknowledging the underappreciated role of the Court in this shift, the next sections survey the legal and political developments that led to the making of IPCEIs as innovation vehicles and the Commission's role sole custodian of the underlying treaty article. This transformation is closely tied to historical developments: the 1970s energy crises led to a fundamental reformatting of—if not the economy as a whole—then at least the EU diagnosis of what went wrong. Out of this interpretative struggle emerged the idea of research and development as the solution to the Union's economic woes. The result was initiatives catalysing policy action whereby the Court helped clarify the boundaries of Commission policy discretion. In the end, a forgotten treaty article, originally meant for infrastructure funding, found an ally in the European microelectronics industry and unexpectedly became key to the EC's modern industrial strategy.

The result of this transformation has been a form of 'demand-led' policy (where states are precluded from inducing supply) (see Peterson 1991; Sharp 1989) by way of loose industrial collaborations. As Sauter (1997) describes, the 1970 Colonna Report argued for keeping collaborations between enterprises "within narrow limits" to prevent discrimination, with the Commission's aim being to "establish competitive industrial structures through the execution of technological programs." Accordingly, this has been the throughline of European innovation collaboration until relatively recently. From the European Strategic Programme for Research in Information Technology (ESPRIT) in the early 1980s to the European Technology Platforms (ETPs) and Joint Undertakings (JUs) in the 2000s, the EU has relied on loose, industry led collaboration backed by meagre fiscal resources.

Reeling from the hit to state finances and grappling for a solution to seemingly obsolete industrial policy building on the 'rescue' of economically non-viable industries, such as ship building (Ergas 1986; Sharp 1989), member states shifted their focus towards innovation. The Community was running on outdated technology. By researching energy saving initiatives and alternative fuel sources, the thinking went, Europe could kill two birds with one stone: solve the energy crisis and lay the groundwork for a more modern economy. Europe had to become more technologically innovative to not get eclipsed by its economic rivals—chiefly the USA.

With no coherent European framework in place, member states launched numerous projects or initiatives, making it difficult for the Commission to keep up. Instead, it reacted to what happened in the member states, causing internal discussions on how to potentially use state aid to shore up European industry. What emerged from these reflections within the directorates for competition, industry, and technology was a refined, narrow, and intentionally designed industrial policy instrument that could rival international competition backed by real fiscal firepower.

The oil crises of 1973 and 1979 thus led European states to invest heavily in energy-saving infrastructure, but there was little deliberate use of the IPCEI framework. Most projects did not claim to be of particular importance. Instead, many were approved by the Commission partly based on the IPCEI clause (see Table 1) simply because they were seen as aligning with broader EU energy strategies. Key among these were the Community Action Plan on the Rational Use of Energy (Commission 1974b) and Towards a New Energy Policy Strategy for the European Community (Commission 1974a). Official EU bulletins from the late 1970s reinforce this retrospective justification, citing that the EC 'felt' or 'thought' that action for the 'rational use of energy' fulfilled the criteria to be considered an important project of common European interest (EU Bulletin 12/76, point 2131; 10/77, points 2.1.20-24).

Indeed, neither the member states nor the Commission applied the IPCEI clause with much in the way of consistency, even when some formal criteria were introduced. For example, in the 1977 edition of the EC's annual report on Competition policy, point 250 notes that 'an improvement in the Community's energy situation [could be] considered as constituting [an important] project.' (European Commission et al. 1978). As noted in a letter to Sutherland's cabinet, however, 'one cannot, however, speak of criteria properly established in this field, at least not in comparison with the very precise criteria governing aid for the environment' (Sutherland 1987, 76).

At this juncture, EU member states were clearly willing to engage in economic statecraft. They went from industrial rescue operation to forward-facing buildup of novel capacities. Strategies were, however, disjointed, and few of the modern practices of the developmental network- or derisking state had formed, at least not across the whole of the continent. It is against this backdrop that IPCEIs emerged. The next section traces the development of IPCEIs into an alternative, competition-friendly funding model that nevertheless accommodates vertical industrial policy. As the next section shows, by the early 1980s the situation did not change much, eased by falling oil prices. Yet what the energy crisis did was to open the black box of European innovation policy and use it to conceal EC-coordinated industrial policies.

4.1 Hiding Behind the Veil of Innovation (1980s)

The pattern of lackadaisical application and minimal consultation between member states and the EC as established in the 1970s continued through the 1980s, and 92(3)(b) seemed to get thrown around ad hoc, resting on the simple logic that the Commission previously had approved similar schemes (Sutherland, 1987, p. 76; EU Bulletin 6/79, point 2.1.35; 7/8/79, point 2.1.35; 6/81, point 2.1.39). In short, IPCEI's were born from the EC adapting itself to member-state driven energy initiatives with little in the way of considering cross-border implications of their interventions.

Policy entrepreneurs challenged this status quo. Having already succeeded in fostering research collaborations, activist competition commissioner Peter Sutherland moved to expand the EC's innovation competences. Throughout his tenure in the late 1980s, through a series of letters, reports, and internal meeting notes, he and his chef de cabinet engaged with other affected services to explore how then-Article 92(3)(b) could be leveraged for broader policy goals, such as research and development (Sutherland 1987, p. 2). Relying on the cases above to reveal how 92(3)(b) could be deployed here resulted in a gradual conflation of 'important project' and innovation. In effect, Sutherland looked to carve out an EC niche in innovation using energy as a lever.

Table 2: IPCEIs not in COMP database

Year	Name	Short recap	Country	Source	Aid amount
1974	*Airbus*	The EC reasoned that the 'project [was] set up jointly by several companies in the Common Market and [its] technical and economic features matched the criteria of 'Joint European Interest' '	DE	Bulletin 4-74 point 2112	N/A
1976	*Investment in energy saving R&D*	The EC felt that 'aids were compatible with the approach [in the] Community programme for the rational utilization of energy [making the programme] an 'aid to promote the execution of an important project of common European interest''	DK	Bulletin 12-76 point 2131	5.3 Mn EUA
1977	*Energy saving schemes*	Three aid programmes to promote investment in energy-saving technology, all of which adhered to the 'guidelines laid down in [the] Communication to the Council entitled 'Towards a new energy policy strategy for the European Community' and the 'Community action programme on rational utilization of energy'', meaning that they promoted the execution of an 'important project of common European interest'	DE, DK, NL	Bulletin 10-77 points 2.1.20-24	>197.4 Mn EUA (includes variable component for power generation)
1977	*Investment in energy saving R&D*	The EC thought that 'action in favour of energy-saving investments qualified for exemption [...] as 'aid to promote the execution of an important project of common European interest''	DE	Bulletin 11-77 point 2.1.44	*no information/variable*
1978	*Energy saving schemes*	The EC felt that the 'aid scheme adhered to the guidelines of its proposals to the Council on energy-saving and therefore qualified […] as 'aid to promote the execution of an important project of common European interest'.	UK	Bulletin 5-78 point 2.1.30	£50 Mn
1978	*Energy saving schemes*	The 'aid scheme followed much the same policy as [the EC's] own proposals to the Council on energy saving and therefore qualified [...] as 'aid to promote the execution of an important project of common European interest''.	NL	Bulletin 7/8-78 point 2.1.42	HFL 75 Mn
1979	*Environmental aid and energy saving scheme*	The energy saving scheme followed Commission proposals, and the EC had 'already expressed a favourable view on several occasions in respect of such aid for energy-saving in regard to earlier schemes'	NL	Bulletin 6-79 point 2.1.35	*no information/variable*

1979	*Renewable energy*	The scheme 'was in conformity with the Community incentives for the economical use of energy. The Commission has several times approved aid of this kind in the past'	DK	Bulletin 7/8-79 point 2.1.35	7.5 Mn EUA
1980	*Production pollution*	The EC 'decided that the proposed aids satisfied the conditions laid down in the Community approach to State aids in environmental matters [and that] they qualified […] as 'aid to promote the execution of an important project of common European interest''	DK	Bulletin 12-80 point 2.1.38	7.7 Mn EUA
1981	*Energy saving schemes*	The EC 'had in the past given sympathetic consideration to aids for energy-saving […].' It therefore felt that this project qualified for exemption under Article 92(3)(b) of the Treaty.'	UK	Bulletin 6-81 point 2.1.39	£50 Mn
1985	*Environmental research*	The EC ' took the view that increasing technological and scientific know-how with a view to improving environmental protection could be regarded as being of common European interest.'	DE	Bulletin 3-85 point 2.1.41	DM 532 Mn
1986	*Research in wind power*	The EC 'felt that attainment of the Community's energy policy objectives was sufficient reason to exempt the scheme under Article 92(3) (b) or (c).'	NL	Bulletin 10-86 point 2.1.70	HFL 105.5 Mn
1989	*EUREKA HD-TV I*	Participation in a EUREKA project to establish PAL-compatible HDTV standards was sufficient for the aid to qualify as an IPCEI.	DE, UK	Bulletin 3-89 point 2.1.64	ECU 68 Mn
1989	*Airbus privatisation*	The EC considered the 'importance of the aircraft industry for the economic and technological position of the Community' claiming that the proposal would 'strengthen the overall competitiveness of the industry and will thus contribute materially to the common European interest'.	DE	Bulletin 3-89 point 2.1.73	*no information*
1989	*EUREKA Eprom*	The EC granted an exemption 'under Article 92(3)(b) of the Treaty in respect of participation in Eureka project 102 (Eprom), which is considered to be an important project of common European interest.'	FR	Bulletin 6-89 point 2.1.81	ECU 55.45 Mn
1991	*EUREKA JESSI I*	The EC considered that 'the project is an important project of common European interest, so that the aid qualifies for exemption under Articles 92(3)(b) of the EEC Treaty.'	DE	Bulletin 7/8-91 point 1.2.55	ECU 29.3 Mn
1991	*EUREKA HD-TV II*	See reasoning for EUREKA HD-TV I	FR, IT	Bulletin 7/8-91 points 1.2.59-60; 62	>ECU 446.5 Mn (*partly variable*)
1992	*EUREKA Software Factory*	The EC thought that the *European software factory* project 'has been deemed to be an important project of common European interest and therefore qualifies for the exemption provided for in Article 92(3)(b) of the EEC Treaty.'	UK	Bulletin 11-92 point 1.3.64	*no information/variable*
1994	*EUREKA JESSI II*	See reasoning for EUREKA JESSI I	DE	Bulletin 3-94 point 1.2.56	ECU 165 Mn

References to technology policy in such initiatives catalysed further institutional activity across the Commission. The directorates responsible for technology and industry, increasingly saw Article 92(3)(b) as a tool for strategic intervention. The former suggested a notion that has been carried through to the 2014 and 2021 IPCEI communications, namely that the word 'execution' 'should acknowledge [that aid be] compatible not only for the initial stages of a project, but also its execution' (Sutherland, 148). In other word, the scope of what aid could be used for should be broadened, to not only support the initial design phase of a project, but also the deployment of for example pilot lines or first industrial deployment.

During this period in the late 1980s lasting language was also introduced by the suggestion that projects could be an amalgamation of many discrete ones (Sutherland 1987, 149). These discussions underlined the potential role for IPCEIs in the implementation of ESPRIT (Sutherland 1987, pg. 148). Over successive meetings and revisions of an October 1987 'note de reflexion', Sutherland, the DGs for technology and industry, as well as the legal service, coalesced around an interpretation of IPCEI that eschewed the perceived ad-hoc approach of energy saving aid coming from the 1970s and favoured narrowly construed, concrete R&D&I projects. Applying criteria cumulatively would ensure that 'an exceptional importance should be required' (Sutherland 1987, 11) for the IPCEI moniker to come into play. Put simply, the application of the statute would confer a 'kind of marque d'excellence' (Sutherland 1987, pp 7; 53; 77). This period marks the first steps toward establishing IPCEIs as an instrument with promise. Giving IPCEIs a concrete purpose clarified both their role and the position of the EC to apply discretionary control.

Eager to bolster participation in cross-border research projects in response to threats to European geopolitical supremacy, member states attempted to grant state aid to parts of ESPRIT projects. The Commission reasoning in FIOV and Brussels R&D (see) are instructive in this regard. Here, the Commission allowed narrow exceptions in line with then-92(3)(b) for certain parts of these innovation measures only if the applicants could show that they formed part of an IPCEI. These exemptions remained narrow, however, and it is clear from the reasoning in the court case Exécutif Régional Wallon from the late 80s that the threshold to attain 'common European interest [was] high', and that 'a project may not be described as being of common European interest for the purposes of [then-] Article 92(3)(b) unless it forms part of a transnational European programme supported jointly by a number of governments of the Member States' (Exécutif Régional Wallon 1988, para 22). Additionally, this case was crucial in establishing Commission discretion since 'it follows [from the fact that aid may be permissible under 92(3)(b)] that the Commission enjoys a discretion in the matter' (Exécutif Régional Wallon 1988, para 21).

While embryonic, the developmental mindset was forming. The Commission had begun to develop a concrete IPCEI strategy that folded precisely in line with its diagnosis of the European economic slowdown. Inspired by already existing member state initiatives, Sutherland and his colleagues had established an IPCEI vision. IPCEIs, in contrast to existing initiatives, also enabled the Commission to position itself as the central node in a cross-border research network. Using state aid, however, necessitates a measure of legal palatability for a bureaucracy and court tasked to ensure an unimpeachable competition regime. Any instrument had to be able to withstand court scrutiny, and once again member states sprung to action to clarify the legal boundaries of an IPCEI.

Table 3: Decisions relating to xx(3)(b)

Year	Number	Name	Country	Type
1964	64/651/EEC	*Ford Tractor*	BE	Decision
1983	83/320/EEC	*Belgian Textiles*	BE	Decision
1987	87/419/EEC	*Sicily Sea Fishing*	IT	Decision
1990	91/389/EEC	*Hamburg*	DE	Decision
1990	C 25/90	*FIOV*	BE	Notice
1991	413/90	*Hessen*	DE	Notice
1992	93/134/EEC	*Brussels R&D*	BE	Decision
1996	C 49/95	*Brandenburg*	DE	Notice
1996	C 50/95	*Austrian Internationalisation*	AT	Notice
1996	C 51/95	*Austrian Ost-ERP*	AT	Notice
1997	C 57/96	*Austrian Wine*	AT	Notice
2001	C(2001) 1762	*Navarre*	ES	Decision
2001	C(2001) 1760	*Álava*	ES	Decision
2002	C 50/2001	*Finance Companies*	LU	Decision
2002	C 49/2001	*Coordination Centres*	LU	Decision
2002	C(2002) 1785	*Sardinia Agriculture*	IT	Decision
2003	C 65/2002	*Austrian Air*	AT	Decision
2004	C(2004) 327	*Bank Berlin*	DE	Decision
2004	C(2004) 3953	*German Brandy*	DE	Decision
2004	C(2004) 471	*Sardinia Blue Tongue*	IT	Decision
2005	C(2004) 4769	*Italian Olives*	IT	Decision
2006	C 46/200	*French Tax*	FR	Decision
2018	SA.37977	*Correos*	ES	Decision
2014 (2009)	SA.36662	*Øresundsbro Konsortiet*	SE	Decision
2020 (2014)	SA.39078	*Femern A/S*	DK	Decision

4.2 Establishing the IPCEI legal regime (1980s-1990s)

This legal palatability was established through an extensive back-and-forth between the EC, the member states, and the Court. A systematic analysis of all DG Competition (DG COMP) decisions concerning Article 107(3)(b) and its predecessors, as well as the corresponding ECJ jurisprudence yields three key insights. First, as we saw above, IPCEIs as innovation instruments crystallised

through member state mobilisation and its corresponding EC response. Second, this innovation-centric framing taking place across this triad afforded the Commission significant discretionary power in its application of state aid rules. Third, the non-discrimination principle—typically invoked to privilege horizontal over vertical policy—has been transposed into a formal legal requirement mandating the participation of multiple member states in any given IPCEI.
While the court accepted the Commission's early interpretation of an IPCEI as an innovation tool, it required more than just the mere existence of innovation. As AG Lenz explains in the Opinion to Exécutif Régional Wallon, 'the attempt to achieve self-sufficiency and to conquer world markets cannot be treated as an important project of common European interest.' (Opinion in Exécutif Régional Wallon, para 38). What was missing there, and what was missing in a series of cases involving the Italian government (cf Italy v Commission; Unicredito; Hotel Cipriani), were intentionality and cross-border aspects. Intentionality in the sense that projects needed ex ante notification, and cross-border aspects in the sense that other member states needed to have been involved from the outset and receive direct economic benefits from their participation (Hotel Cipriani, para 337; Germany v Commission).

The Commission's insistence on IPCEI designation being contingent on participation in a cross-border project seemed to satisfy the Court's neoliberal aversion toward "distortionary" vertical policy. Interestingly, because of the application of the IPCEI clause in the context of innovation projects, the Court was content with applying its preference for horizontal policy purely on a geographical basis. Given the nature of ESPRIT ventures, this established legal precedent that allowed for de facto vertical industrial policy so long as it is sufficiently geographically disbursed.

Restrictiveness in application has furthermore served the Commission well. It has led to Court practice that enshrined the EC's discretion in case law—to the point that Éxecutif régional Wallon is mobilised as the legal basis for Commission IPCEI decision making (see European Commission 2021, footnote to para. 27). Decades of relatively restrained legal practice dealing with policy areas—namely innovation—in which the Commission has enjoyed a measure of discretion, has thereby served to leave the Commission alone in its development of innovation policy.

Table 4: Cases dealing with 107;87;93(3)(b)

Year	Name	Description
1969	*France v Commission*	Court underlines the restrictive nature of article 92 derogations
1985	*LPF*	Court criticises the brevity of the EC's statement of reasons in a decision
1998	*Opinion in Éxecutif regional wallon*	AG Lenz reads then-92(3)(b) in the light of article 110 of the treaty which states that the common commercial policy should contribute to the *harmonious development of world trade*, which would imply that 'conquering world markets' is not a project of common European interest. He then underlines the fact that neither S.A. Glabervel nor the Belgian government claimed to use 92(3)(b) in the original administrative procedure, laying the groundwork for the intentionality that has since become part of the IPCEI process.

1998	*Éxecutif régional wallon*	Court highlights the idea that an IPCEI entails a joint undertaking, and that it is not simply enough for an MS to use then-92(3)(b) to claim that investments in underserved areas are a common European interest as such
2003	*Sicilcassa*	Court does not rule on the admissibility of 87(3)(b) considering that it is a referred case (although *Hotel Cipriani* may give some guidance on how it *would have* ruled)
2005	*Italy v Commission I*	Court disagrees that the full and permanent privatisation of Italian banking institutions may constitute a 'project of common European interest'
2005	*Unicredito*	See reasoning above
2008	*Hotel Cipriani*	Court underlines the fact that an IPCEI must benefit other countries than just the project instigator
2009	*Germany v Commission*	ECJ highlights the cross-border aspect of then 87(3)(b), according to which an RDI effort in isolation cannot constitute an IPCEI
2011	*Italy v Commission II*	Italy tries to use the 87(3)(b) exception in its defence of an expired, reapplied, and non-notified aid scheme, but the court rejects it on procedural grounds
2014	*Albergo Quattro*	See reasoning in *Hotel Cipriani*
2014	*Greece v Commission*	ECJ underlines that derogations to the general state aid regime under 107(3)(b) must be interpreted strictly (which also as seen in later decisions applies to the IPCEI part of that article, despite that not being at issue)
2018	*HH Ferries*	Partial annulment of the 2014 decision following a complaint from a ferry operator (on primarily procedural grounds)
2018	*Scandlines I*	Partial annulment of previous decision, but the Court heeded the IPCEI communication and found no issue with the argument that this was, in fact, an IPCEI
2021	*Scandlines II*	Court rejects the appeal

While court practice and a more activist and intentional Commission established a prototype for what an important project of common European interest could be, they were not picked up as policy solution just yet. Instead, the Commission focused its resources on the ESPRIT-cum-framework programmes—an early model for the Union's budgetary frameworks—while some member states continued stop-and-start funding research through the EUREKA programme—a separate research funding mechanism driven primarily by France. What both ESPRIT and EUREKA gestated, however, was a 'departure in style' (Sharp 1989) for European industrial collaboration. These mechanisms fostered collaboration in high-tech sectors and aligned expectations for the future, moulding European industry into seeing itself as European rather than domestic players, and created organisations able to lobby for- and effectively use state funds for innovative purposes (Sharp and Pavitt 1993).

Table 5: A legally stabilised IPCEI prior to the 2014 Communication

Criteria	Contribute to a project of Common Interest (most likely R&D or infrastructure)	Involve *more than one* member state	Give rise to *direct* benefits to *all* project participants
Case law	*Exécutif Régional Wallon*	*Italy v Commission; Unicredito; Hotel Cipriani; Italy v Commission II*	*Germany v Commission; Unicredito*

This period thus established some key component of current European industrial policy. Legal debates granted the EC the wielding of strategic forbearance that remains in the contemporary DNS, while cross-border research collaborations anchored a common problematisation of the state of the European economy.

4.3 Weaponising the IPCEI legal regime (1990-2010)

In the shadow of Maastricht, the 1990s saw the elevation of innovation policy into a core political issue. The Union remained committed to the 'market-creating' (Lepont and Thiemann 2024) strategy of neoliberal competition, and the Commissioner for internal market and industrial affairs, Martin Bangemann, championed the post-1992 single market as part of an 'open, competition-oriented industrial policy' (Bangemann 1992, 17, in Seidl and Schmitz 2023). Indeed, a Commission communication from the same year indicated that while article 130 of the Single European Act gave the EC the power to direct research policy, and while its research efforts were 'insufficient compared to that of the USA and Japan' (European Commission 1992, 11), it could at the same time 'be no doubt that the Community should only support research which is precompetitive' (Ibid, 16). ESPRIT and its successors, with their demand-led approach, fit right into this framework, but industry still felt it lacked the funds to compete with their global peers. While the EC noted some flexibility in its funding mechanisms (Ibid, 16-17), the limits to its industry support left firms without a clear-cut framework to rely on. Meeting notes from the Joint Submicron Silicon Initiative (JESSI)—a EUREKA collaboration partly funded through ESPRIT—reveal that funding insecurity remained constant. The project listed 'open questions' in 1992 including 'Are the public authorities ready to help European IC makers to operate on an equal footing with their competitors?' and 'Are the key actors [...] in Europe ready to set up actions to improve the situation and avoid increased dependency?' (JESSI Board and JESSI Committee 1993).

The answers to those questions were mostly negative. Projects 'shifted from national PA's to EC and visa versa [sic]' (JESSI Government Action Team and JESSI Board Support Group 1993), and the final assessment of the programme noted a 'lack of synchronisation in funding for projects' and that 'the impacts of these decentralised and non-harmonised procedures have in the past been dramatic' (JESSI Coordination Group 1995). For example, the Basic- and Long-Term Research Programme (BLR) of the JESSI consortium struggled to get going because of a 'simple and fundamental [problem]—lack of funds' (JESSI Government Action Team and JESSI Board Support Group 1993, 31). Consequently, the board of that initiative had to engage in a 'fire-fighting exercise', that succeeded in part through the shifting of funds between different projects but with the result that the EC gained more control, seeking to reorganize the project and mandating 'fundamental [changes] [...] often against the wishes of JESSI' (Ibid, 31-32).

Therefore, despite a shared developmental mindset—a shared idea that Europe had to grow through innovation—fragmented funding and coordination failures coupled with the imperative to safeguard competition meant that the European economy did not play ball. Following anaemic GDP and productivity growth compared to the US (cf JESSI Government Action Team and JESSI Board Support Group 1993), the special Lisbon council summit in 2000 committed to turn Europe into 'the most competitive and dynamic knowledge-based economy in the world' (European Union, 2000). The thinking went that the difference between the two continents was due to better ICT adoption in the US workforce. The 'technology gap' (Duff 1986) of old had thus been replaced by a 'widening skills gap' in information technology (European Council, 2002).

4.4 Leveraging the global competition imperative (2010-2018)

'Solving' the skills gap in information technology and competing with the burgeoning US tech sector in an environment that favoured austerity and consolidation (cf Streeck 2014; 2015) would be tricky. European policymakers nevertheless thought that the answer lay in poorly funded collaborations between the public and private sector backed by non-coercive mechanisms such as the open method of coordination and other benchmarking tools. This resulted in an extension of ESPRIT and the framework programmes, and the Commission facilitated various research collaborations that cemented the organisational structures established in the 1980s and 90s. These included the ETPs and JUs. Embodying the fiscal and policy design spirit of the era, these were essentially industry roundtables and a legal form that gave collaborations a distinct legal personality complete with a discrete budget. Illustrative ventures include EuMaT (European Technology Platform for Advanced Engineering Materials and Technologies); ARTEMIS (Advanced Research & Technology for EMbedded Intelligent Systems); and Food for Life. These covered (and still cover) a broad range of technological innovation, from biotech to microelectronics manufacturing. Participants in these time and time again called for more funding options for research. Towards the end of the 2000s, state aid rules had been slated for reform, and businesses called for direct fiscal support for their ventures.

In the mid 2000s, the EC had pitched itself, successfully, as coordinator of numerous disparate collaborations and projects in lieu of substantive fiscal contributions from either the EU itself or the member states. As evaluation reports and an increasingly homogenous and EU-friendly European private sector highlighted, however, collaboration and diffusion were not enough (Bernotat et al. 2010; Manners 2013b).

In tandem with the European semiconductor industry, the Commission released a flurry of reports, communications, and papers calling for solutions to the perceived skills gap between Europe and its geopolitical rivals. Playing the 'market card' (Brandão and Camisão 2022; see also Seidl and Schmitz 2023), Neelie Kroes, the then-commissioner for competition, pitched competition policy as part of the solution (Kroes 2006). Her mission was to reform state aid to align it with the Lisbon agenda. DG Competition produced a vade mecum—a fact finding report—in 2004, that mapped the possibilities available to member states to fund innovation through state aid. While it made scant reference to the IPCEI statute, instead focusing on its sibling 87(3)(c) and its support of certain economic activities—it concluded that the market failures on the innovation market were manifold and called for a revision of all relevant funding instruments (European Commission 2004). Building on these findings, Kroes noted in speeches in 2005 and 2006 that public money must play a role in the fulfilment of the Lisbon goals. 'To think otherwise would – even for the most liberal of minds – be simply irresponsible' (Kroes 2005b).

The Commission launched an action plan for state aid reform in 2005 that highlighted the possibility to explore how innovation could be considered an important project of common European interest (European Commission 2005), and Kroes, as well as leaders in European microelectronics confirmed that increasing European innovative output was key to European success: 'we are clearly losing ground against our main international competitors (the USA, Japan) and we have to maintain a competitive edge as regards new technological powerhouses in China, India or Korea […] either we embrace a more innovative growth path, or we face a slow decline' (Kroes 2005a); 'we have to get the best brains together to tackle the key societal challenges' (Luc van den Hove, Imec, in Manners 2013e); 'we have to manufacture in Europe or we will lose these competencies' (Huber Lakner, Fraunhofer, in Manners 2013e).

Consequently, in its 2006 revamped R&D&I guidelines, the Commission continued the market failure narrative, acknowledging that 'level of R&D&I is considered not to be optimal for the economy in the Community' and that it therefore 'expands the existing possibilities of aid to R&D' (European Commission 2006). Heeding the call from the Council to ensure that R&D&I funding reached 3 % of GDP as part of the Lisbon agenda (European Council 2002; 2003a; 2003b), and seemingly anticipating what would come in its proposal for joint undertakings and what would appear in the evaluation reports of those JUs, the EC broadened the remit of acceptable activities. Funding could now be extended to not only outright research, but also surrounding activities such as feasibility studies, IP rights costs or advisory services (Ibid, sec 1.5). These guidelines revived the IPCEI clause from its slumber, continuing down the Sutherland path by noting that 'Aid for R&D&I to promote the execution of an important project of common European interest may be considered to be compatible with the common market' (Ibid, sec 4). In its proposals for the establishment of the ARTEMIS and ENIAC joint undertakings, the Commission continued to lobby for IPCEIs. Here '[the ENIAC/ARTEMIS JU] is responsible for managing a research, development and innovation programme of European interest, which shall be considered as a Project of common European interest' (European Commission 2007a; 2007b, my emphasis).

While the budgets of these JUs were projected at 2.6 and 2.8 bn €, of which private actors were expected to contribute around 65 %, and the EU and Member States the rest, funding fell short of expectations, did not grow at the expected rate, cannibalized other initiatives, namely the still-ongoing EUREKA. Especially notable was the lack of funding from larger member states, which had knock-on effects on both private and EU funding, causing the non-funding for some projects because the requisite co-funding was not there. In other words, even committed resources were sometimes not accessible. The 2010 interim evaluation report was stark in its criticisms. JUs were 'not able to accept funding for R&D from all possible sources' and they were 'not able to support activities other than R&D that would contribute to their objectives' (Bernotat et al. 2010). These were considered major hurdles against attainment of their aims. The evaluation report therefore recommended that JUs thenceforth receive multi-annual member state fiscal commitments, that the EC should be able to make more significant financial contributions, and that JUs should pursue European strategic programmes instead of member state priorities (Bernotat et al. 2010). Both the Commission and the industrial leaders involved in the collaborations thus called for more funding and more derisking of innovative initiatives, and to centralise governance. Crucially, it was not here a question of 'finding' funding as in the case of for example the Capital Markets Union (CMU) (Braun and Hübner 2018), but of 'unlocking' extant funding from sources that were legally barred from using it.

Subsequent years therefore saw aggressive calls to action. Kroes, now vice-president for the digital agenda, continued down the path she established as competition commissioner, by proposing an 'Airbus for Chips' that would buck the downwards trend of European chips production (Kroes, 2012). In her speech at the 2012 IMEC Technology Forum, she warned of international dominance in the chip market, asking if '[we don't] want one of those global players to be European? Shouldn't we consolidate and cooperate on our own terms – rather than wait for it to be forced on us?' (Kroes, 2012). This '10/100/20'-plan, was envisioned to use 10 bn € to crowd in 100 bn € in private investment to increase Europe's share of global semiconductor manufacturing to 20 % by 2020 (Manners 2013b). It was supposed to source funding from the EU—yes—but most importantly from the member states. While supported by the now-combined ENIAC and ARTEMIS joint undertakings, broader industry support was lukewarm. Europe's biggest microelectronics manufacturers saw semiconductors as commodities, whose production was best left outsourced elsewhere, while they focused on the more lucrative business of building applications (Manners 2013a; Interview with industry executive 2025). Reinhard Ploss, the then-CEO of Infineon, remarked that 'It's not about production it's about value generation' (Manners 2013a). Similarly, STMicroelectronics shied away from large investments during 2013-2014, instead engaging in a 'progressive structural modification of its industrial footprint' (Jacquin 2014). The 'plan to build more IC manufacturing capacity in Europe is dead', said Malcolm Penn of Future Horizons in 2014 (Manners 2014a), seemingly because the 'CEOs of the Big Three European semiconductor manufacturers Carlo Bozotti, Reinhard Ploss and Rick Clemmer don't want to build fabs in Europe – or indeed anywhere else.' (Manners 2014b). Kroes' attempt at taking flight thus clashed with established business practices in the microelectronics sector.

The Commission therefore pursued other avenues in parallel. The 2012 state aid modernisation project underlined that it should support the 'Europe 2020 strategy for smart, sustainable, and inclusive growth in a pro-competitive way' (Commission 2012). Part of this strategy included the continued support of JUs, where 'the Commission [would] explore how to simplify and accelerate state aid approvals including through a Project of Common European Interest according to [now] article 107.3(b) of the TFEU'. Channelling this energy, the Commission funded PwC report that noted that 'the greatest competition comes from outside Europe and not from within' (Commission 2013). Kroes charged the high-level Electronic Leaders' Group with producing a roadmap to 20 % of global semiconductor market share. Its recommendations were delayed numerous times, leading industry commentators to speculate that the fundamental difference in how the EC and industry viewed the semiconductor manufacturing market prevented consensus (Manners 2013c). In the end, the group relented, calling for new forms of public support for the European semiconductor industry. This support had to 'come through a focused package, preferably as an Important Project of Common European Interest (IPCEI)' (Electronic Leaders' Group, 2014, original emphasis).

Pushing for IPCEIs was not only a way for the EC to pour more money into the semiconductor industry, but it enabled control. The joint undertakings only began to see success when they were decoupled from Commission leadership. Put differently, member states were reluctant to fund initiatives when—in their view—they lacked influence over the direction of projects. Both ENIAC and ARTEMIS, and subsequently ECSEL—the merged entity—had therefore undertaken governance reforms that allowed member states greater say in the allocation of project resources. In other words, under the auspices of a joint undertaking, the Commission lacked the proper tools to mobilise industry

in its geopolitical direction (Interview with industry executive 2025). It is against this backdrop that IPCEIs as expressions of the developmental mindset and as tools of the DNS crystallise. Given the Commission's exclusive control over state aid decisions, it is able to effectively strongarm industry to follow its directions.

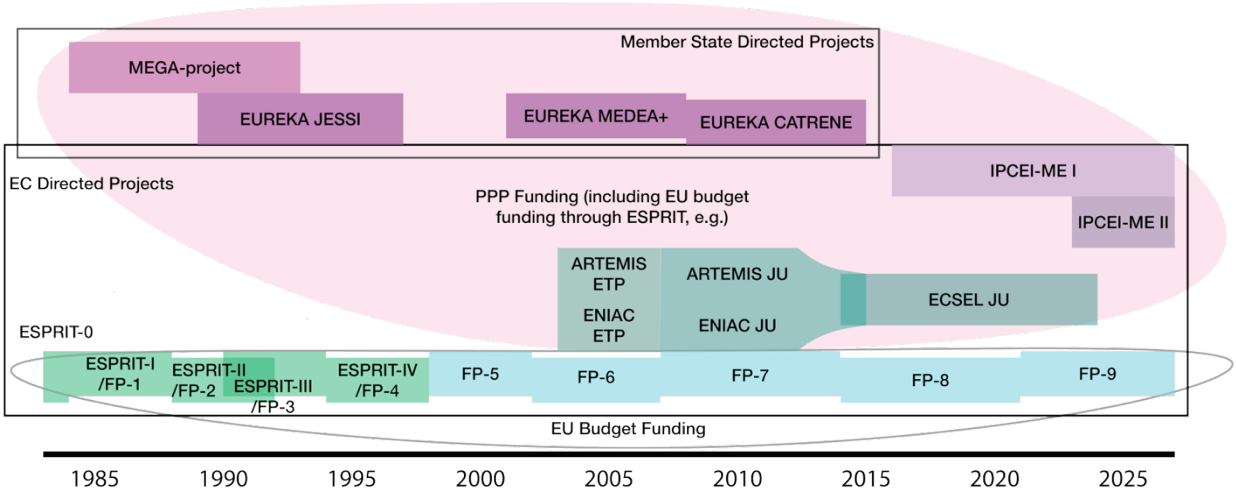

Figure 1: Timeline of European cross-border microelectronics research initiatives

4.5 Scaling IPCEIS under the geopolitical Commission (2018-)

The first 'modern' IPCEI was established in 2018 and was based on the new 2014 guidelines, seeking to accelerate research in microelectronics, particularly building on the popularity of the JU 'pilot lines'. The experience of launching the first post-2014 IPCEI demonstrates how the Commission and industry were able to 'solve' investment issues by disguising direct state contributions under the auspices of a research programme. Resting on now established jurisprudence meant that the Commission was allowed wide discretion in how to allocate essentially unlimited funding, so long as the project in question adhered to the 'horizontal' geographical requirements. Making these collaborations competitive entailed somehow unlocking new funding, which was achieved through the opening of the state aid black box.

The publication of the IPCEI communication serves as the point at which the treaty article becomes the basis of the cross-border innovation funding instrument super omnis. It marks the endpoint (and failure) of a strategy with roots in the 1980s to coordinate Europe towards technological sovereignty. If IPCEIs were conceived as an evolved innovation instrument upon the publication of the 2014 guidelines, then the scope has increased. Supply chain crunches stemming from COVID and the Russian war in Ukraine and increasing protectionism and internal state investment in the US and China have once again heightened tensions and brought competitiveness to the agenda. Because of the at least nominal subscription to norms of fiscal restraint, European policymakers have scratched their heads trying to find a solution to match the massive amounts of investment pursued by the EU's geopolitical rivals—visible not least in the reference to the 2020 Industrial Strategy in the revised 2021 IPCEI communication, which explicitly notes that reshoring critical manufacturing is 'about Europe's sovereignty' (European Commission 2020, original emphasis). The derisking literature describes some of these solutions well—including various European investment funds and other blended finance instruments—but IPCEIs are gaining ground. What has become evident in the years after the first modern IPCEI is that the Commission is able to strategically wield the position of the

instrument in the limbo between competition- and innovation policy to effectively coordinate pan-European sectoral industrial policy.

After the first microelectronics IPCEI proved promising, attracting €1.9bn in public support and the late joining of Austria to the project, the EC began to investigate how IPCEIs could unlock even more potential investment. In a speech to the European Battery Alliance in 2020, the Commissioner for inter-institutional relations (and previously for energy) Maroš Šefčovič described them as 'a game-changer, a powerful instrument in our toolbox, and a top priority for the European Commission' (Šefčovič, 2020).

Officials describe them as almost 'too successful' (Interview with European Official H, 2023); that there was 'a realisation, a much broader realisation, both within the Commission and in the member states and industry that this instrument existed and could be used for different purposes' (Interview with European Official D, 2023). This in combination with the fact that this was one of the few ways in which DG GROW could 'fund the industry' (Interview with European Officials E, F, and G, 2023) led to increased demand for approvals and attempts to make IPCEIs bigger. Using IPCEIs to fund microelectronics production or the ramping up of battery manufacturing capacities constituted 'a coordinated push [to use IPCEIs] from different point [sic] of view, from the Commission, from the industry, and of course, member states' (Interview with European Official A, 2023).

While the Commission has no official role in the selection and design process, it plays an important role in practice. Sectoral DGs nudge member states and industries to design projects such that they more easily pass assessment muster. Here even DG Competition suggests the inclusion or exclusion of certain parts of the project to make it more compliant with the rules (Interviews with European Officials D; E, F, and G, 2023). The role of the EC becomes even more marked when considering the dauting task of designing an IPCEI. Already in the public consultation following the initial publication of the 2021 Communication did member states begin calling for more explicit guidance and best practices (cf Government of Sweden 2021), in part to stymie the flow of state aid, and the EC has since published technical guidance (European Commission, 2025) and a code of good practices (European Commission 2023), as well as having established a high-level forum to discuss IPCEI strategy. This forum includes representatives from all member states, and reflects the developmentalist turn of broader EU politics, acknowledging 'the importance of Important Projects of Common European Interest (IPCEI) as a State aid tool supporting important EU strategic objectives'. IPCEIs—member state led as they are—thus represent a coordinated, pan-European effort to support European geostrategic goals.

IPCEIs have undergone an interpretative shift. The 'marque d'excellence' from the 1980s has been interpreted first as a way to launch breakthrough innovation; then to fund the bridge over the so-called 'valley-of-death' between pre-competitive research and that which is ready to launch to market; and finally to use 'first industrial deployment' as described in the 2014 and 2021 IPCEI communications as carte blanche for member states to 'subsidise larger investment projects of companies with State Aid' (Correspondence with National Official, 2023). Put differently, an instrument originally intended to help bring research from its pre-competitive form to industrial deployment has turned into something enabling the construction of gigafactories for battery production (Batteries IPCEI), reshoring of critical raw materials (a 'candidate' project), the construction of electrolysers, and the repurposing of old gas mains into being able to carry hydrogen (Hy2Use, Hy2Infra). While research

may require the construction of large-scale manufacturing plans, the projects' overall link to innovation is tenuous at times.

5. Discussion

This paper showed that IPCEIs have emerged as both an alternative funding- and governance model for the European green transition. Instead of derisking through financial markets, which remains the dominant form of 'modern' European industrial policy, IPCEI can channel funding directly through the member states. IPCEIs thereby remove the self-imposed fiscal noose that Europe struggles to escape. The instrument reached its modern form through repeated interactions between the microelectronics industry, member states, the Commission, and the Court, which stabilised the legal boundaries of an IPCEI. These interactions meshed with an energy-crisis infused turn towards innovation policy, which has since remained the dominant response to economic and geopolitical challenges, particularly in semiconductors.

This paper identifies four key pivot points in the evolution of modern IPCEIs. First, sluggish economic growth was problematized as a research challenge, prompting the creation of horizontal, cross-border research initiatives—though these were weakly financed. Second, member states sought to strengthen these efforts through national state aid, only to encounter a Commission and Court intent on shaping IPCEIs according to their own institutional logic. As a result of the specific legal cases at play, IPCEIs became increasingly codified as instruments of innovation. Third, following the energy crises—and in response to both uncoordinated national support schemes and prior Court rulings—the Commission began to formalize IPCEIs, seeking to bring intentionality and coherence to their use. Although the instrument briefly faded from prominence, it returned to the agenda when softer coordination mechanisms proved insufficient for meeting Europe's industrial R&D needs, reviving debates from the 1980s. Finally, faced with mounting geopolitical pressures from the U.S. and China, the EU sought new tools to finance large-scale industrial deployment. The ambiguous wording of the IPCEI communication, combined with the wide discretion afforded to the Commission through past legal battles, has given it effective control over an instrument capable of overriding standard state aid constraints and channelling funds toward strategic priorities.

By virtue of their hybridity—resting on the confluence between innovation- and industrial policy—IPCEIs have become a flexible funding instrument that because of their institutional position grants the EC significant discretion in directing the allocation of funding. Consequently, IPCEIs represent a turn towards increasingly supranational industrial policy governance, where the EC not just coordinates, but uses strategic forbearance as a funding measure.

If weak derisking is part of a greater attempt to 'fix' fiscal issues with financial tools (Braun and Hübner 2018), then IPCEIs constitute a fiscal fix for those same fiscal problems. In contrast to financial derisking, which unlocks funding by reaching outside the exclusive competences of the institutions, IPCEIS demonstrate how Europe can tap into its existing fiscal resources through the innovation-reproblematisation of its woes. They show an expression of a persistent but constrained developmental mindset present since the 1970s energy crises and provide a model for how strategic regulatory forbearance through the state aid framework can enable nodality-based governance without formal control of fiscal taps.

All of this rests on the innovation framing, which is a type of camouflage under which this complementary form of industrial policy can operate. By appealing to innovation policy rather than

state aid, the EC circumvents the Court's power to pre-emptively neuter the potential of IPCEIs, since the instrument is now placed on a fuzzy border between policy areas with different norms and regulations. Without the underlying innovation policy agenda and the slow march of cross-border precompetitive research collaborations, the EC and industry alike would have struggled to find a context in which IPCEIs could be deployed with similar discretion.

Needing to overcome these institutional barriers necessitates a measure of concession. While the inclusion of more than one member state suits both the integrationist trajectory of the European Commission and the pattern established by prior research collaborations, it serves to appease the Court. This is because releasing aid to several different member states at once mitigates prima facie the distortionary effects on the internal market. The cross-border criterion as such becomes the alibi the Commission and its collaborators need to pursue their agenda unburdened by potential investigations into the detrimental effects on competition that may arise from the use of the instrument.

This is especially pertinent given the geographical concentration of IPCEI funding. Lavery and Lopes-Valença (2025) show how the networks of corporate power of German auto manufacturers enable Germany to effectively bypass the cross-border criterion and use IPCEIs as a constitutionally palatable fiscal tap. Given the unequal distribution of corporate power between the 'core' and 'periphery' (Lavery and Lopes-Valença 2025) of the EU— resulting from historical contingencies leading to export-led or FDI-led growth strategies (Baccaro and Pontusson 2016)—the cross-border condition mitigates market distortions in name only.

Finally, while moving from weak financial derisking to state subsidies in strategic sectors is a far cry from the full arsenal of developmental state instruments (while IPCEIs may signal a government 'stamp of approval' that derisks bank lending, they do not overhaul credit policy, and while firms must be present in Europe, there are no 'buy European'-clauses), it nevertheless insulates the actors involved in the process from the vagaries and logics of the market. IPCEIs have the potential to become a more effective industrial policy governance tool than what Europe currently has access to. Compared to the 'old' European style of intervention, IPCEIs promise the capacity to discipline capital much more effectively. Intervention by way of an exclusive policy tool (or the wielding of strategic forbearance) is like American taxation-based industrial policy but suffers less from the procyclicality of subsidy through tax equity investors. Indeed, while European institutions through IPCEIs may be able to better discipline beneficiaries and attach conditionalities, the targeting of non-financial corporate ventures may reduce the need to discipline altogether, given that corporate and public investment plans align. Pushing through the seemingly sacrosanct noose of European fiscal policy may therefore present an opportunity to pursue industrial policy that approximates successful international examples, such as Japan or South Korea.

6. Conclusion

In this respect, the paper echoes McNamara (2023) in arguing that IPCEIs constitute a qualitatively distinct mode of governance. They exemplify a form of industrial policy in which the European Commission effectively delegates implementation to member states and private actors involved in the projects. By strategically deploying the IPCEI designation, the Commission governs through its subjects rather than around them. This approach bears resemblance to the 'open method of coordination' (Kerber and Eckhardt 2007) and to various 'network governance' frameworks that

gained traction in the early 2000s (Sauter 1997). However, IPCEIs differ in a key respect: they do not aim to incrementally build new competences through managerial coordination but instead rely on the direct application of existing treaty provisions. Indeed, there are voices within the Commission advocating for an expanded coordinative role in IPCEI governance—precisely to introduce new governance practices without requiring formal treaty change (Draghi 2024, pp. 305, 307).

References

Alami, I., Alves, C., Bonizzi, B., Kaltenbrunner, A., Koddenbrock, K., Kvangraven, I. and Powell, J. (2023) 'International Financial Subordination: A Critical Research Agenda', Review of International Political Economy, 30, 1360–1386.

Amsden, A. H. (1989) Asia's next Giant: South Korea and Late Industrialization, New York, Oxford University Press.

Beck, K. I. and Larsen, M. (2024) 'Financialization and an Emerging "Green Investor State": Examining China's Use of State-backed Funds for Green Transition', Regulation & Governance, rego.12625.

Bernotat, W. H., de Prost, C., Eckstein, E., Georghiou, L., Luukkonen, T., Malcolm, B., Potier, D. and Sangiovanni-Vincentelli, A. (2010) First Interim Evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives, LU, Publications Office.

Bianchi, P. and Labory, S. (2020) 'European Industrial Policy: A Comparative Perspective'. In Oqubay, A., Cramer, C., Chang, H.-J., and Kozul-Wright, R. (eds) The Oxford Handbook of Industrial Policy, Oxford University Press, 593–620.

Block, F. (2008) 'Swimming Against the Current: The Rise of a Hidden Developmental State in the United States', Politics & Society, 36, 169–206.

Bora, S. I. (2023) '"A Sovereign Europe"? Strategic Use of Discourse at the Service of French Economic Interests in EU Politics (2017–2022)', JCMS: Journal of Common Market Studies, 61, 1281–1297.

Botta, M. (2016) 'Competition Policy: Safeguarding the Commission's Competences in State Aid Control', Journal of European Integration, 38, 265–278.

Brandão, A. P. and Camisão, I. (2022) 'Playing the Market Card: The Commission's Strategy to Shape EU Cybersecurity Policy', JCMS: Journal of Common Market Studies, 60, 1335–1355.

Braun, B. (2020) 'Central Banking and the Infrastructural Power of Finance: The Case of ECB Support for Repo and Securitization Markets', Socio-Economic Review, 18, 395–418.

Braun, B., Gabor, D. and Hübner, M. (2018) 'Governing through Financial Markets: Towards a Critical Political Economy of Capital Markets Union', Competition & Change, 22, 101–116.

Braun, B. and Hübner, M. (2018) 'Fiscal Fault, Financial Fix? Capital Markets Union and the Quest for Macroeconomic Stabilization in the Euro Area', Competition & Change, 22, 117–138.

Buch-Hansen, H. and Wigger, A. (2010) 'Revisiting 50 Years of Market-Making: The Neoliberal Transformation of European Competition Policy', Review of International Political Economy, 17, 20–44.

Bulfone, F. (2022) 'Industrial Policy and Comparative Political Economy: A Literature Review and Research Agenda', Competition & Change, 22-43.

Bulfone, F., Ergen, T. and Maggor, E. (2024) The Political Economy of Conditionality and the New Industrial Policy, Cologne, Max Planck Institute for the Study of Societies.

Canihac, H. (2021) 'Programming the Common Market: The Making and Failure of a "Dirigiste" Europe, 1957–1967', Contemporary European History, 30, 383–397.

Chiapello, È. (2017) ‘La Financiarisation Des Politiques Publiques’, Mondes en développement, n° 178, 23–40.
Cini, M. and McGowan, L. (2009) Competition Policy in the European Union, Basingstoke [England] ; New York, Palgrave Macmillan.
Commission of the European Communities, European Atomic Energy Community, European Communities, and European Coal and Steel Community. (1978) Seventh Report on Competition Policy: Published in Conjunction with the ‘Eleventh General Report on the Activities of the European Communities’, Luxembourg, Office for Official Publications of the European Communities.
Cooiman, F. (2023) ‘The Limits of Derisking. (Un)Conditionality in the European Green Transformation’, Competition & Change.
Dewey, M. and Di Carlo, D. (2022) ‘Governing through Non-enforcement: Regulatory Forbearance as Industrial Policy in Advanced Economies’, Regulation & Governance, 16, 930–950.
Di Carlo, D. and Schmitz, L. (2023) ‘Europe First? The Rise of EU Industrial Policy Promoting and Protecting the Single Market’, Journal of European Public Policy, 30, 2063–2096.
Draghi, M. (2024) The Future of European Competitiveness—In-Depth Analysis and Recommendations, Brussels, European Commission.
Eisl, A. (2022) ‘Important Projects of Common European Interest (IPCEIs) as a New Form of Differentiation: An Analysis of Their Challenges for the European Single Market’.
Ergas, H. (1986) ‘Does Technology Policy Matter?’, SSRN Electronic Journal.
‘Europe 1992 and Its Effects on U.S. Science, Technology, and Competitiveness’ (1989).
European Commission (1992) Research after Maastricht: An Assessment, a Strategy, Bulletin of the European Communities Supplement, Series 2-92, 1-49, Luxembourg, Office for Official Publications of the European Communities.
European Commission (2004) SEC(2004) 1453, Community Rules on State Aid for Innovation: Vade Mecum, Brussels.
European Commission (2005) COM(2005) 107 final, State Aid Action Plan: Less and Better Targeted State Aid: A Roadmap for State Aid Reform 2005–2009, Communication, Brussels.
European Commission (2006) COM(2006) 323/01, Community Framework for State Aid for Research and Development and Innovation, Brussels.
European Commission (2020) COM(2020) 102 final, A New Industrial Strategy for Europe, Brussels.
European Commission (2021) COM(2021) 528/02, Criteria for the Analysis of the Compatibility with the Internal Market of State Aid to Promote the Execution of Important Projects of Common European Interest, Communication, Brussels.
European Commission (2023) ‘DG COMP Code of Good Practices for a Transparent, Inclusive, Faster Design and Assessment of IPCEIs’.
European Commission (n.d.) ‘Approved IPCEIs in the Microelectronics Value Chain’, DG Competition—State aid, accessed at https://competition-policy.ec.europa.eu/state-aid/ipcei/approved-ipceis/microelectronics-value-chain_en on March 19, 2025.
European Commission (2025) ‘Participating in an Important Project of Common European Interest: Technical Guidance on Conditions and Process’.
European Council (2002) Presidency Conclusions: Barcelona European Council 15 and 16 March 2002.
European Council (2003a) Presidency Conclusions of 20 and 21 March 2003, Council conclusions, Brussels, Council of the European Union.
European Council (2003b) Brussels European Council 12 and 13 December 2003, Presidency Conclusions.

Ferguson, J. A. (2024) 'Death, Taxes, and Clean Energy: How the Inflation Reduction Act Harnesses Tax Law to Revitalize American Clean Energy', The Journal of Business, Entrepreneurship and the Law, 17, 91-123.
Gabor, D. (2023) The (European) Derisking State, preprint, SocArXiv.
Gabor, D. and Braun, B. (2025) 'Green Macrofinancial Regimes', Review of International Political Economy, 32, 542–568.
Government of Sweden (2021) 'Comments from Sweden on the 2021 IPCEI communication revision'.
Guter-Sandu, A., Haas, A. and Murau, S. (2024) 'Green Macro-Financial Governance in the European Monetary Architecture: Assessing the Capacity to Finance the Net-Zero Transition', Competition & Change.
Jacquin, J.-B. (2014) 'STMicroelectronics entrevoit le bout du tunnel', Le Monde (28 January 2014).
JESSI Board and JESSI Committee (1993) 'JESSI-0024: Joint Meetings Board/Committee'.
JESSI Coordination Group (1995) 'JESSI-0029: Assessment of JESSI Programme'.
JESSI Government Action Team and JESSI Board Support Group (1993) 'JESSI-0026: Joint Meetings Government Action Team (GAT)/Board Support Group (BSG)'.
Kedward, K., Gabor, D. and Ryan-Collins, J. (2024) 'Carrots with(out) Sticks: Credit Policy and the Limits of Green Central Banking', Review of International Political Economy, 31, 1593–1617.
Kerber, W. and Eckardt, M. (2007) 'Policy Learning in Europe: The Open Method of Co-Ordination and Laboratory Federalism', Journal of European Public Policy, 14, 227–247.
Kroes, N. (2005a) 'Reforming Europe's State Aid Regime: An Action Plan for Change', European Commission - European Commission, accessed at https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_05_347 on March 10, 2025.
Kroes, N. (2005b) 'Innovation from a Business Perspective: The State Aid Aspects', European Commission - European Commission, accessed at https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_05_703 on March 10, 2025.
Kroes, N. (2006) 'State Aid Reform: The Case for Research and Innovation', paper presented at the European Business Summit, Brussels, March 17, 2006.
Kroes, N. (2012) 'Electronics for Europe', paper presented at the IMEC Technology forum, Brussels, May 24, 2012.
Lavery, S. and Lopes-Valença, H. (2025) 'Reinforcing Europe's Core: The EU's New Industrial Policy and the Case of Semiconductors', Competition & Change.
Lepont, U. and Thiemann, M. (2024) 'The European Investor State: Its Characteristics, Genesis, and Effects', Competition & Change, 28(3-4), 381-396.
Li, X. and Ban, C. (2025) 'Financing Technological Innovation in China'. In GCI Working Papers, Boston University Global Development Policy Center.
Lichbach, M. (2005) 'How To Organize Your Mechanisms: Research Programs, Stylized Facts, and Historical Narratives'. In Davenport, C., Johnston, H., and Mueller, C. M. (eds) Repression and mobilization, Minneapolis, University of Minnesota press.
Manners, D. (2013a) 'First Funding Calls for €10bn EU Initiative by End of 2013', Electronics Weekly.
Manners, D. (2013b) 'Restore European Manufacturing and Co-Ordinate R&D, Says van Den Hove', Electronics Weekly.
Manners, D. (2013c) 'Neelie Saves Europe From The Brink', Electronics Weekly.
Manners, D. (2013d) 'EC And Chip Industry Differ On Future', Electronics Weekly.
Manners, D. (2013e) 'Group Formed To Execute Neelie Kroes' Chip Plan', Electronics Weekly.

Manners, D. (2013f) ‘Silence on European Leaders Group Report on Kroes’ 20% IC Market Share Target’, Electronics Weekly.
Manners, D. (2014a) ‘Kroes’ 20% European IC Market Share Plan Under Threat’, Electronics Weekly.
Manners, D. (2014b) ‘ELG Produces Kroes’ 20% Implementation Plan’, Electronics Weekly.
Mazzucato, M. (2014) The Entrepreneurial State: Debunking Public vs. Private Sector Myths, London ; New York, Anthem Press.
McNamara, K. R. (2023) ‘The Politics of European Industrial Policy: How a Post-Neoliberal Shift Is Transforming the European Union’.
Mertens, D. and Thiemann, M. (2018) ‘Market-Based but State-Led: The Role of Public Development Banks in Shaping Market-Based Finance in the European Union’, Competition & Change, 22, 184–204.
Mertens, D. and Thiemann, M. (2019) ‘Building a Hidden Investment State? The European Investment Bank, National Development Banks and European Economic Governance’, Journal of European Public Policy, 26, 23–43.
‘Opinion of Mr Advocate General Lenz in Exécutif Régional Wallon v Commission’ (1988), ECR.
Prontera, A. and Quitzow, R. (2022) ‘The EU as Catalytic State? Rethinking European Climate and Energy Governance’, New Political Economy, 27, 517–531.
Sauter, W. (1997) Competition Law and Industrial Policy in the EU, Oxford : New York, Clarendon Press ; Oxford University Press.
Seidl, T. and Schmitz, L. (2023) ‘Moving on to Not Fall behind? Technological Sovereignty and the “Geo-Dirigiste” Turn in EU Industrial Policy’, Journal of European Public Policy, 1–28.
[Sharp, M.] Europe 1992 and its effects on U.S. science, technology, and competitiveness : hearings before the Committee on Science, Space, and Technology, U.S. House of Representatives, One Hundred First Congress, first session, May 16, 17, 1989, 322-385. Accessible at: https://babel.hathitrust.org/cgi/pt?id=pst.000015453143&seq=1
Sharp, M. (1994) ‘The Policy Agenda: Challenges for the New Europe’, European Review, 2, 47–63.
Sharp, M. and Pavitt, K. (1993) ‘Technology Policy in the 1990s: Old Trends and New Realities’, JCMS: Journal of Common Market Studies, 31, 129–152.
Sutherland, P. (1987) ‘PSP-245 State Aids Article 92.3 (b): State Aids for R&D’.
Thurbon, E. (2016) Developmental Mindset: Revival of Financial Activism in South Korea, Ithaca, Cornell University Press.
Wang, Y. (2015) ‘The Rise of the “Shareholding State”: Financialization of Economic Management in China’, Socio-Economic Review, 13, 603–625.

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