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PROGRESSIVE FOUNDATIONS FOR MODERN EUROPEAN INDUSTRIAL POLICY

ABSTRACT

The return of the industrial policy creates an opportunity for a substantial revamp of the European economy and governance. The design of progressive industrial policy needs to start with a change of the narrative. In particular, we need to transform the image and role of the state from a slow bureaucracy to a lean entrepreneur. The old perceptions of industrial policy being inefficient also need to change, as the facts on the ground do not support these views.

A modern, progressive European industrial policy should be based on a developmental-state approach. It means a state shaping the vision of the industrial strategy and steering its implementation, but, at the same time, developing feedback loops and cooperative practices with businesses and a broader set of stakeholders.

In this policy brief, we suggest some elements of such modern, progressive European industrial policy: it should be mission driven; involve creating and shaping markets by the state; have continuous evaluation and feedback loops; and conditionality. It should involve an upskilling and good-jobs strategy, with broad public and stakeholder engagement. To be able to implement this strategy, the state needs to strengthen its capacity at all levels. This strategy needs a stronger European dimension, to be able to deliver regional development and territorial justice.

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Introduction: Why an industrial policy?

The return of the industrial policy creates an opportunity for a substantial revamp of the European economy and governance. The European single market was built on the premise of a limited role for the state in the economy, especially in the fields of trade and industrial policy. At the current juncture, this policy stance is no longer viable. Competition from China and the USA, which embrace strategic economic policy, have pushed the EU to become more strategic or lose its competitiveness in relation to global players. Moreover, as has become evident in the last several years, the overreliance on market forces has resulted in the emergence of substantial systemic vulnerabilities in supply chains and underinvestment.

Industrial policy is also key to advancing the triple (green-digital-social) transition. Indeed, the return of industrial policy was driven by the adoption of the **European Green Deal** (EGD). In a sense, the EGD has been the industrial policy of the last several years. Now it needs to be augmented and scaled up to become an "all-of-government" approach to development.

In the field of **digital infrastructure**, European society is overly dependent on platforms and hardware provided by US and, to a lesser extent, Chinese providers, leading to autonomy and security concerns. While the EU has developed a strong capacity in R&D, it failed to put it to a productive use, that is, deployment and mass consumption. The main culprit is the absence of strong industrial policy, on both the supply and demand side.

Industrial policy can also become a powerful tool to advance the **social agenda**: it can stimulate the creation of new jobs in the green sector, support weak regions, and offer learning and upskilling opportunities. Artificial intelligence and machine learning are going to impact the majority of jobs in Europe, and this transformation needs guardrails to protect workers. This will not happen automatically, however: industrial policy needs to contain conditionalities and instruments to ensure beneficial social effects.

This transition should be used as an opportunity to build an **economy for common good**, where all the economic processes are designed in a way that results in a fair and inclusive outcome. This way, the need for correction and redistribution would be reduced.

> *"Industrial policy can play the role of a framework for the ambitious revamping of the whole economy."*

To achieve all these goals, the EU and its member states should embark on an ambitious developmental agenda. Industrial policy can play the role of a framework for the ambitious revamping of the whole economy. For that, progressives need a vision of what kind of economic transformation is needed and how industrial policy can help. The revival of industrial policy also poses the question about the role of the state in the economy: how much and where should the state intervene? Should it be correcting market failures or shaping/creating markets? How can state-business collaboration be built?

In this policy brief, we outline what a progressive European industrial policy could look like. We start with a discussion of the role of the state in the economy and then propose several features of industrial policy that would help transform the economy to serve the objectives

outlined above. We also provide a preliminary analysis of how the existing European instruments correspond to this vision.

EU policies to date

Over the last 30 years, industrial policy was a taboo in the EU. Under the prevailing liberal paradigm, it was considered to be inefficient.[1] Instead, the EU practiced broad-based support for innovation and competition, following a so-called "horizontal approach" to industrial policy, aimed at improving the general business environment and supporting R&D.

A gradual return of industrial policy started in the wake of the financial crisis of 2008-09. The EU launched the **Important Projects of Common European Interest** (**IPCEI**) initiative in 2014, aiming to support cross-border innovation and infrastructure projects in strategic areas. IPCEI constitutes a significant shift in the EU's approach to economic policy making, as it gives the European Commission (EC), along with national governments, a role not just as market enablers but as market shapers. Hydrogen, battery and microelectronics value chains have become the main beneficiaries of this initiative. The most recent IPCEI also covers the sectors of cloud and edge computing technologies.

Seeing the growing investment gap, especially due to the austerity policy embraced by the EU after the 2008 financial crisis, the EC proposed a **Junker Plan** in 2014 to stimulate private investments in infrastructure and green projects. The EC provided a guarantee that was used by the European Investment Bank (EIB) to channel loans to investment projects. The plan was a partial success: it mobilised substantial investments (€315 billion); however, their additionality was questioned, as well as their regional distribution.

In the last several years, the revival of European industrial policy accelerated due to the needs of the green transition. The landmark initiative was the **Green Deal**, announced by the president of the EC, Ursula von der Leyen, in December 2019.[2] Although the Green Deal is not exactly about industrial policy, its implementation requires the extensive use and upgrading of the EU's industrial capacity.

European industrial policy as such has been developed around objectives of resilience and "open strategic autonomy". The EC proposed a **New Industrial Strategy for Europe** in March 2020, with the goal of managing the green and digital transitions while avoiding external dependencies.[3] The strategy was revised in 2021, after the outbreak of the Covid-19 pandemic exposed additional vulnerabilities. The EU's industrial strategy has identified 14 industrial ecosystems, and for each of them, a pathway for the green and digital transition – a transition pathway[4] – is being developed.

Spurred by the disruptions to the supply of chips during the Covid-19 pandemic, the EC proposed a **Chips Act** in 2022 (it entered into force in July 2023)[5] in an effort to expand the European-based semiconductor industry. The Chips Act is a landmark in the new industrial policy approach, as it supports not only research and innovation but also production. The latter is a welcome feature, as the EU has been lagging behind in integrating the results of R&D into industrial production.[6]

The **Next Generation EU** program with its Recovery and Resilience Facility (RRF), passed in July 2020, could also be considered a tool for industrial policy. It was a big fiscal innovation, breaking the taboo against mutualised debt in the EU. The RRF attempts to steer the transition by introducing reform conditionality for financing, which is a very welcome innovation: making the financing dependent on the reform implementation is an effective tool for steering the needed transformation of the economy.

Another motivation for industrial policy came from the effects of the Russian war on Ukraine, as it exacerbated fears of possible weaponisation of critical materials supply, making strategic autonomy an even more pressing issue. Furthermore, the introduction of the US Inflation Reduction Act (IRA) in 2022 galvanised the need for a comprehensive industrial strategy for Europe. To address these challenges, the EC published two legislative proposals in March 2023: a **Net Zero Industry Act (NZIA)** and a **Critical Raw Materials Act**.[7] NZIA is intended as a response to the US IRA, but it is not certain that its limited scale and instruments will be capable of delivering big transformation.[8]

To fund the digital transition, the Multiannual Financial Framework of the EU for 2021-2027 contains the **Digital Europe Program (DIGITAL)**, with a planned overall budget of €7.5 billion. This program makes strategic choices to provide funding to projects in five key areas: supercomputing; artificial intelligence; cybersecurity; advanced digital skills; and ensuring the wide use of digital technologies across the economy and society, including through digital innovation hubs.

In addition to the internally oriented tools, the EU has also designed some **externally oriented tools** that use trade and investment mechanisms to pursue the EU's strategic goals. Here, the EU has also become more strategic, developing trade and investment mechanisms aimed at achieving new priorities:

- **Carbon Border Adjustment Mechanism (CBAM)**, which places tariffs on "dirty" imports, introduced in ways that exceed the carbon footprint allowed under the EU's green economy standards.
- **EU-US Critical Minerals Agreement.** In July 2023, the European Council adopted a decision that authorised the EC to start negotiations on a "Critical Minerals Agreement" with the USA.

European foreign trade and investment policy has become more politicised, with partner-country reliability or friendliness playing an increasing role. The new trade paradigm is not yet settled: as one recent study notes, based on interviews with EC officials, there is a significant clash between DG Trade pushing for more openness and the DG Internal Market pushing for more strategic use of world markets, with DG Competition caught in between.[9]

What is striking in the current debate on an industrial policy in Europe is its reactive nature. While earlier EU policies (Green Deal, IPCEI, CBAM) created an image of the EU as a leader of the green transition, more recent initiatives are reactions to the external events and actions of other players. Notably, the fear of losing out to the USA and China risks pulling the EU into an unproductive subsidy race. These fears are understandable, but we need to move towards a **vision-driven strategy** that would offer orientation for all stakeholders and initiatives.

Conceptual framing

The progressive concept of an industrial policy needs to start by refuting some stereotypes and frames imposed by the neo-liberal agenda. One of the claims made by neo-liberals against industrial policy is that it distorts markets. As a result of the successful promotion of this idea, the EU did not have an industrial policy for several decades.

The dichotomy between state and markets does not in fact exist. Markets exist only where the state creates and maintains conditions for their existence. This has long been a subject of discussion; the best known is probably that by Polanyi.[10] Polanyi criticised the theory of liberal market economists that first created fictitious commodities of "labour" and "land" from people and nature, and then assumed that these fictitious commodities operated in a

market economy outside of the social context. As McNamara states: "Markets are always and everywhere political constructions".[11] In liberal economies, governments play a central role by ensuring competition, organising education and training for the people, building infrastructure and creating conditions for innovation. Without this, markets would not be possible. Historically, the "free market" was created and supported by a fairly aggressive use of state power at the national and international levels to protect the interests of business and elites and shield them from democratic contestation.[12] We should not conflate "market" with "business" – market is an outcome of the government-business interaction. Therefore, the current policy shift should not be seen as bringing more state, but rather redirecting the efforts of the state away from the support of businesses in their profit-maximising activities and towards the achievement of other goals (sustainability, strategic autonomy etc.).

> *"The dichotomy between state and markets does not in fact exist. Markets exist only where the state creates and maintains conditions for their existence."*

The rebirth of industrial policy also brings forth the old philosophical debate on the role of the state in the economy. One stream of thought says that the state should confine itself to fixing market imperfections. Martin Wolf argues for this in his recent book.[13] He calls this approach "piecemeal social engineering", citing Karl Popper. Its essence is "fighting against the greatest and most urgent evils of society, rather than searching for, and fighting for, its greatest ultimate good".[14] This is the paradigm that has shaped government policies in the West since the 1980s.

Apart from problematic outcomes that this approach brought us, it is questionable on the conceptual ground. Fighting against "evils" is not possible without a vision of the good. Government policy becomes inherently reactive if it is only responding to the problems created by others. Consequently, it is not able to resolve the problems, but rather makes some palliative fixes, while the agenda is driven by someone else. Moreover, the "markets" are not abstract constructs; they are particular people and groups of people. The question is what are their driving motives? Are they aspiring to common good? Are we sure we want them to define the economic outcomes in our society?

The alternative stream is normative, arguing for a clear vision to which society should aspire and designing the government strategy and policies accordingly. Marianna Mazzucato's proposals have been the most vocal in this field recently, as detailed in her multiple works.[15] Mazzucato shows examples of mission-driven public policies: the Defense Advanced Research Projects Agency (DARPA) in the USA, which started the IT revolution and NASA, which put a man on the moon. She also provides particular advice on how to apply the mission approach in the EU to spur innovation-led growth in two reports for the EC.[16] The main idea of the **mission approach** is that providing subsidies and tax incentives for the private sector is not enough to catalyse an innovative revolution. The state needs to form a vision and be active in promoting it, through financial incentives, but also by building up needed governance structures, nurturing skills and knowledge, and changing people's behaviour through incentives and narratives.

A major line of liberal criticism of industrial policy involves doubts that a state has enough capacity to **pick winners**. Recent empirical

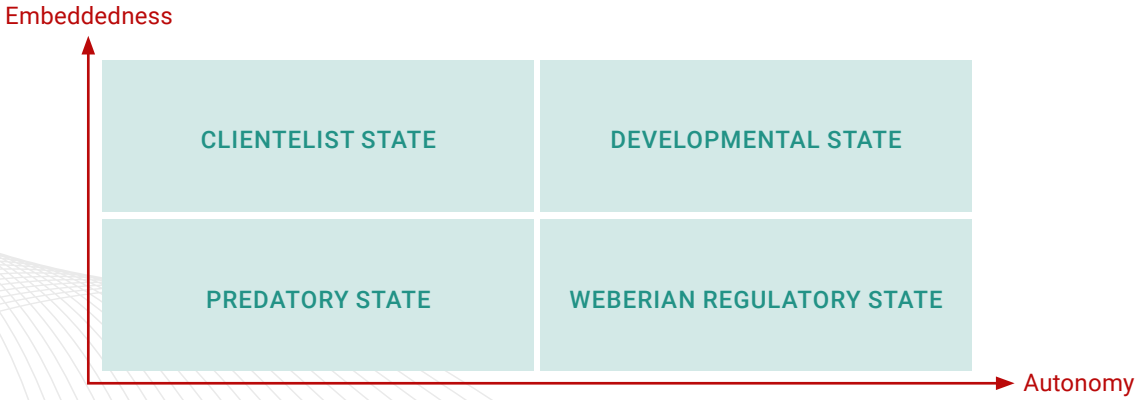
studies point to the fallacy of this proposition. Mainstream economists claim that industrial policy requires selecting winners, but due to limited information and uncertainty, the government cannot accomplish that efficiently (often some examples of failure would be picked up). Rodrick et al. refute this claim, saying that "the ultimate test is not whether governments can pick winners, but whether they have (or can develop) the ability to let losers go".[17] Under conditions of uncertainty, it is not always possible to make the right choices, but government should have institutional safeguards, benchmarks, monitoring tools and mechanisms for reversing course. This course reversal (or closure of declining industries), of course, should happen in a socially responsible way, to ensure that the workers and vulnerable groups and regions go through the transformation smoothly.

Another source of criticism of industrial policy is based on its perceived association with **protectionism**. Rodrick et al. show that the root of this association lies in the difficulty of measuring the effect of industrial policy due to its multiple instruments and effects.[18] Consequently, researchers often use data on tariffs and subsidies as the main indicators of industrial policy. Even though such policies were indeed in place in the past, modern industrial policy takes different forms, often promoting, rather than inhibiting, external economic activity. Rodrick et al. cite recent empirical studies that, using modern quantitative methods, show that the predominant majority of industrial policy measures (90%) are different forms of subsidies and export-related measures, and only 1.3% of interventions are tariffs.[19]

Framing the state

The idea of using industrial policy often stumbles against an image of the government as an autonomous state apparatus engaged in top-down regulation. In this picture, the government conceives a policy and then selects which industries or companies to apply it to, subsequently controlling the achievement of targets. The criticism of the state and its industrial policy is often directed against this image. In reality, this is just one of the possible options of economy governance, and many successful developmental/industrial policies were implemented through more flexible arrangements, including a high degree of cooperation with the business and other stakeholders. In the literature, this feature is called "embeddedness". Depending on the combination of autonomy and embeddedness, one can distinguish several types of a state (Figure 1).

Figure 1. Embeddedness versus autonomy.



Source: based on Rodrick et al. (2023).[20]

The traditional Western type is the Weberian state, which is an autonomous, competent state engaged in top-down regulation; it has a high level of autonomy but low embeddedness. It was predominant in the Fordist period (1950-70s), but gradually eroded in the direction of a clientelist state due to privatisation and limitations on state management of the economy. A clientelist state has low autonomy but high embeddedness (i.e., dominated by business interests). Currently, the EU is somewhere between a Weberian state and a clientelist state.

The version that is more often encountered in East Asia is the developmental state, which has both autonomy and embeddedness in social ties. The latter provides channels for exchanging intelligence and feedback, allowing for continual negotiation and renegotiation of goals and policies. The author of this concept, the sociologist Peter Evans,[21] called this model an "embedded autonomy" – the mode of regulation based on iterative collaboration between government and the business.

The **developmental state model** is not an exclusively East Asian phenomenon.[22] Some elements of developmentalism can be found elsewhere. For example, one of the most successful cases of innovations-driven industrial policy is the US DARPA. They used "active program management", employing intensive consultations with researchers and firms, applying continuous assessment of projects and having substantial flexibility to change projects and drop malfunctioning ones. Mazzucato reviews the DARPA experience in detail, showing how it became key to the development of breakthrough technologies – the Internet and GPS.[23] Apart from this well-known example, there are many others: Mazzucato and Rodrick bring up several case studies on the modes of industrial policy governance: Israel's successful R&D policies; Covid-19 vaccine development by Oxford/AstraZeneca; and several others.[24]

"The new approaches to industrial policy acknowledge the possibility of mistakes, given the fact that the best course of action is unknowable at the outset."

The new approaches to industrial policy acknowledge the possibility of mistakes, given the fact that the best course of action is unknowable at the outset. They encourage bottom-up initiative by creating incentives for actors with detailed knowledge of problems to innovate, and then use the solutions to create more general standards. Sabel and Victor call this "**experimental governance**" and show the benefits of this approach in the domain of green technologies.[25] In this approach, **government capabilities are not static**; they can develop over time through experience and cooperation with the private sector. Sabel and Victor bring up the example of the 1987 Montreal Protocol,[26] which has succeeded in curbing ozone-depleting substances, and compare it to the 1992 UN Framework Convention on Climate Change (UNFCCC), which was less successful. The authors argue that the main factor that made the difference was much stronger bottom-up participation of local actors and the private sector in the Montreal Protocol, while UNFCCC was confined mainly to high-level negotiations.

The distinctive feature of the green transition is the very innovative nature of the transformation we need to make. This means a **high degree of uncertainty**. The traditional dirigiste state is unlikely to cope with such a task. In the experimental governance approach, the government strategy is to start out with ambitious goals but acknowledge the deep uncertainty around their attainment. The state should set the vision but then incentivise the actors with the most detailed

and accurate knowledge of the issue at hand – typically firms – to look for and deliver solutions.

The problem of regulating the green transition and related innovations is that the regulator does not know what targets are feasible. In this case, an iterative process of feedback with private companies-implementors of the change become key to success. Indeed, as the experience of the RRF shows, even in situations with low or moderate levels of innovation, it is quite difficult to steer project implementation based on some predetermined targets. A recent FEPS study shows evidence of the difficulties of monitoring an investment program under the RRF based on ex-ante goals.[27]

Sabel and Victor[28] and Sabel et al.[29] show examples where credible regulatory requirements were combined with iterative consultations between the government and the business (with a possibility to adjust the regulatory requirement), providing an effective solution for regulation under uncertainty. They bring up the example of the Irish dairy sector, which became the frontrunner of climate protection using the collaboration between farmers' cooperatives and regulatory bodies.

The EC has also been actively adopting developmental instruments for industrial policy. According to analysis by Di Carlo and Schmitz,[30] through its R&D programs and emerging industrial policies, the EU already accomplishes the functions of the developmental state, such as targeted resourcing, brokering, facilitation and protection. For example, industrial alliances (in batteries, hydrogen, ICT, semiconductors and others) are an example of the EC playing the role of a broker among different actors to facilitate their collaboration.[31] IPCEI are also following a developmental model, moving away from a dirigiste industrial policy and instead facilitating cross-national collaborative projects promoting common European interests. However, the scope and size of the EC's influence is limited: national governments still retain the major powers in what concerns implementation and financing of industrial policy (and in some countries, these capacities are quite limited).

To summarise, the modernisation of industrial policy means strengthening of the role of the state in shaping the vision of the industrial strategy (top-down capacity) and, at the same time, developing feedback loops and cooperative practices (bottom-up capacity) to facilitate its effective implementation.

Designing modern industrial policy

> *Good industrial policy is about economic development, not just maximising the production of bits of technology.*

European industrial policy is a work in progress at the moment. In this section, we put forward several elements that would help design European industrial policy in the spirit of the developmental state, such that it can help transform the whole economy. Good industrial policy is about economic development, not just maximising the production of bits of technology. It can and should become an **economy-wide economic development strategy**. For that, government needs to set clear goals. It should shape/create markets. It also needs to use conditionality, so that industrial policy becomes the

catalyst of a wide economic transformation, and its benefits are shared by all. The government's capacity should be strengthened, so that it can devise transformative policies and evaluate their implementation, but can also act as an effective partner in cooperation with business.

We suggest that, as a minimum, the modern/progressive industrial policy should include the following key ingredients:

- mission-driven policy;
- creating and shaping markets;
- conditionality;
- upskilling and good jobs strategy;
- strengthening government capacity;
- territorial cohesion and capacity building;
- competition;
- public-private collaboration; and
- public and stakeholder engagement.

Mission-driven policy

The transformative agenda requires the state to create a vision/mission. To cite Mazzucato: "Missions […] are an admission that growth has not only a rate but also a direction – and that direction should have purpose".[32] It is not enough to create favourable conditions for investments in general ("horizontal approach"). And it is not enough just to follow the "comparative advantage", that is, to specialise in the sectors and tasks the country is presently relatively better at doing. It means creating sectors from scratch or developing them from a low base.

The **experience of the East Asian** countries[33] is very instructive on this. Based on strategic foresight, East Asian governments devised long-term plans on developing capabilities in new sectors, where they did not have capacity. South Korea, for example, was very successful in in its exports-promotion strategy that it launched in the 1960s, although with some problematic side effects (the creation of huge conglomerates with an influence on politics and benefiting from an uneven playing field).[34] East Asian strategies were also adaptive, as Zavarská et al. note: "East Asian policymakers were particularly skilled at evaluating the potential failings of their policies and were willing to shift gears when they found them to be inappropriate".[35]

> *"Missions are an admission that growth has not only a rate but also a direction – and that direction should have purpose."*

Mazzucato stresses that missions should have a **problem focus and not a sectoral focus**.[36] This way, a problem in the area of sustainability would involve, for example, renewable energy, but could also involve transport and new digital solutions. Through such a cross-disciplinary approach, mission-oriented innovation has the possibility of leading to system-wide transformation. Focusing on problems instead of sectors would also help counter rent-seeking – the most pervasive problem associated with traditional industrial policies, where governments were selecting the sectors and the companies.

Another option of getting away from promoting particular sectors is to **focus on technologies**, departing from the dichotomy of horizontal versus vertical industrial policy. This way, many sectors around particular technologies can benefit. The EU has used it in developing 5G/6G technology and other general purpose technologies.

The EC has actually applied a missions-oriented approach for quite a while in its Framework Programme for Research and Technological Development, which goes back to 1984. The current program – **Horizon Europe** – has a substantial budget (€95.5 billion for seven years) and focuses on five missions: research, innovation, digitalisation, security and defence. It also aims to stimulate the creation of innovative industrial ecosystems and cross-national innovation networks – all in line with an entrepreneurial state approach.

At the same time, the European instrument with much stronger financial firepower – the **RRF** – is not as mission-driven. It was intended more as a fiscal tool to help countries recover from the Covid-induced recession. Even though it has green and digital priorities (it sets a target of at least 20% investments in digital and 37% in green projects), there is no long-term planning behind it, also due to the limited time horizon of the program (until 2026).

The first and probably the easiest place where the missions-oriented approach should be applied is **state-owned enterprises**. **Public procurement** and **state aid** should also become instruments for steering economic activity towards strategic objectives.

The development of missions can build on the work with 14 **European industrial ecosystems** that were created as part of the European Industrial Strategy 2020/2021. The EC has been facilitating stakeholder consultations and elaboration of transition pathways for each ecosystem. It is expected that a co-implementation process with stakeholders would start to deliver on the actions identified.[37]

An example of a mission for the digital sector would be the creation of a European digital space sufficiently independent of foreign platforms. In the digital domain, the lack of indigenous innovation and domestic investment in Europe is most acute. The EU finds itself in the position of a technology taker, mostly from US-based firms, which is a big challenge for the industry and society as a whole. The conclusion of a recent FEPS study is that rule making will not be a viable strategy in the future and that the EU will be able to retain a leading role only if it develops a coalition-building strategy and a self-standing, semi-open technology stack.[38] Another FEPS study makes the case for **public digital infrastructure** and argues that the EU's digital policy, in its current shape, risks remaining too fragmented to effectively reduce Europe's dependency on a few foreign firms and misses a powerful opportunity to spur the development of an ecosystem of value-led alternatives.[39] Both policy brief recommendations mean going beyond the regulatory rule-making and actively setting the vision and pursuing it.

Creating and shaping markets

The EU has been quite successful at the promotion of R&D, but it is lagging behind the USA and other rivals in putting the results of research into practical solutions and mass products. The proposals for a transformational innovation policy have been around since the 1980s.[40] They emphasised the central role of learning and producer-consumer interactions in fostering innovation. Lundvall argues that innovation involves not only science-based knowledge, but also **experience-based knowledge**.[41] The latter happens at the level of enterprise through learning by doing and interacting. In most sectors, innovation success requires different combinations of the two modes, that is, scientific and experience based.

The EU has been quite successful in fostering science-based innovation but less so experience-based innovation. The main reason for this has been the absence of active industrial policy. Now with the return of industrial policy,

there is a chance to develop a fully-fledged innovation system in Europe. For this, the EU would need to complement supply-side industrial policy (establishing technological niches and fostering experimentation) with **demand-side action** (promoting the diffusion and use of specific technologies that are ready to go). One of Lundvall's proposals to this end is to establish flexible but demanding standards for an interaction between users and producers that would facilitate the creation of markets for green products and to strategically employ public procurement policies.[42]

Strategic public procurement can become a powerful demand-side lever to stimulate innovation and investment. This means moving away from the lowest-cost focus and attaching conditionality to state purchases, thus enhancing demand for products and services that help accomplish strategic industrial missions. Public procurement can also be used to stimulate innovation and to give scaling-up opportunities for SMEs and new entrants. The innovation paradigm in public procurement means that the commissioning of goods and works should be based not on specific product specifications, but instead on **desired functions and outcomes**. This way, the procurement can help create markets for new products and help newcomers invest in innovation and achieve scale.

Public authorities in the EU spend around 14% of GDP annually (around €2 trillion per year) on the purchase of goods, services and works.[43] These are big sums of money that can make a difference. Yet, the main criterion in public procurement is cost, while service quality, working conditions or environmental impact are rarely considered.[44]

Standard setting, the traditional pillar of European policy making – is also a powerful instrument for shaping markets. In February 2022, the EC presented its new standardisation strategy that was more assertive and included a "standardisation booster" to facilitate a stronger ecosystem between research and innovation and standards.[45]

IPCEI has been a major innovation in EU policy in that it does apply a "market-creating" approach through facilitation of the development of European capacities in particular industries. As of the end of 2023, €26.7 billion of state aid was approved for the IPCEI, with an expectation that €50 billion of private investments would come on top.[46] This instrument has many desired qualities: mission-oriented approach; cross-border cooperation. However, the fact that it does not have EU funding and is instead funded by member states puts some limitations on the developmental function of such projects, as bigger and richer states have more capacity to fund and run them. Arranging IPCEI financing at the EU level would allow the movement away from national projects towards European ones, and therefore, would turn IPCEI into a truly European instrument. On top of this, IPCEI should involve not only the directly relevant industry, but also the whole supply chain or industrial ecosystem – this would help bring spillovers to multiple sectors and regions.

Conditionality

Conditionality is necessary to steer the economy and to avoid the unproductive use of public money. Without conditions, industrial policy might result in subsidies and guarantees for incumbent firms. Conditionality could be ex ante, specifying certain eligibility criteria, or ex post, demanding behavioural changes, such as undertaking specific investment. The second option is obviously more ambitious and transformative. Conditionality can help promote social and other important goals when implementing investments. Yet, the current EU industrial legislation and proposals are not using it enough. For example, the EU's Green Deal Industrial Plan

does not have conditions on social policy or the use of profits. NZIA sets targets for domestic production in specific sectors, but does not have social conditionality, nor does it contain conditionality for businesses that would shape their practices. The EC mentions the strengthening of education and training in the NZIA but does not link the disbursement of investments and subsidies to good-work/good-pay conditions. Here, the US IRA does much better, as it makes good pay and unionisation preconditions for receiving state support under IRA.[47]

> *"Without conditions, the public money flowing into industrial strategies may dissipate into company and shareholder profits with marginal public gain."*

The Strategic Technologies for Europe Platform (STEP) does not include serious social and environmental conditionalities either. It contains only non-binding recital, encouraging apprenticeships and jobs for young, disadvantaged persons. Moreover, the climate and environmental mainstreaming criteria proposed in STEP are too broad for ensuring that the investment support genuinely contributes to positive climate, biodiversity, resource reduction and circular economy outcomes.[48] Without conditions, the public money flowing into industrial strategies may dissipate into company and shareholder profits with marginal public gain.[49]

Conditionality also needs to be applied to **public procurement** and **state aid**.

Here are some key requirements that the EU should consider attaching to its financial incentives for companies:

1) Achieving the **goals that promote the whole strategy** (e.g., requiring businesses to reduce their use of material resources and transform their business towards a circular model).
2) Conditionality on **working conditions, trade union rights and decent pay**. As we have seen, social conditionality is absent from key industrial acts of the EU.[50]
3) **Affordable pricing**: products and services receiving public funding should be priced fairly, by restricting the rates of profitability and returns to shareholders.[51]
4) Publicly funded R&D results should be available for public use.
5) **Sharing** a proportion of royalties, equity or intellectual property with the government.
6) **Financial conditionality**: governments can prompt companies to channel their own investments into productive activities, for example, prohibit share buybacks, and instead reinvest profits in R&D and workforce training. For example, the US IRA introduced 1% excise tax on publicly traded US corporations that repurchased corporate stock. The US CHIPS Act, which aims to boost the domestic semiconductor industry, prohibits funds from being used for share buybacks. Other conditions could include restrictions on dividend payments and executive pay.
7) **Strategic autonomy**: setting conditions on the development of capacity and capabilities within EU-based companies, and thus, for example, preventing the leakage of funding to foreign Big Tech firms.

Upskilling and good-jobs strategy

The current wave of industrialisation requires substantial upskilling. The technologies that are driving the green industrial transition require high levels of innovation, but also a large scale of deployment of high-skilled labour. Studies show that knowledge and skills are the main drivers of productivity and growth in modern economies, more than capital investment.[52]

> *Knowledge and skills are the main drivers of productivity and growth in modern economies, more than capital investment.*

In the EU, the main obstacles to manufacturing production and investment tend to be **skills** and **access to funding**.[53] The EC estimates that hitting the goal of up to 45% of the EU's energy coming from renewables will require the creation of more than 3.5 million jobs by 2030. Moreover, the green transition itself is going to cause shifts in the labour markets, both positive and negative. While technological change offers an opportunity for upskilling and better jobs, it will cause job losses in non-green sectors and could encourage brain and youth drain from weaker regions.

Current EU industrial strategy treats good jobs as a secondary objective or relegates it to the social policy domain, rather than seeing it as an integral part of industrial policy. For example, the EU's Industrial Strategy Package of 2020 makes references to high-quality jobs and employment, but its main focus is on digital innovation and green technologies.[54] The EGD incorporates employment more specifically. Its main social component is a Just Transition Mechanism that is intended to provide compensation to regions that will lose out in the green transition. The Mechanism targets €55 billion for 2021-2027. The NZIA mentions the skills agenda, but without implementation details, limiting itself to coordinating initiatives, such as Net Zero Industry Academies. For comparison, the US IRA does include requirements for firms receiving tax credits to hire apprentices to do at least 15% of the work.

We also need to answer the question of what kind of jobs we want to create. The industrial upgrade and digitalisation will create high-skilled jobs, which will become an opportunity for upward mobility. But not all people will be able to access those high-skilled jobs. To make sure that the industrial transition benefits society as a whole, industrial policy needs to target sectors that generate high levels of employment. Rodrick suggests that, instead of fixating on competition with China and promoting high-tech jobs in manufacturing, advanced economies should target services more, and **incentivise worker-friendly technologies** – those that augment rather than replace labour.[55] To increase productivity in services, Rodrick suggests using an approach analogous to Japanese automakers' pioneering method of deploying new innovations in manufacturing: investing in workers' skills; giving them a greater voice, discretion and autonomy, as well as more responsibility for the quality of the service.[56]

Importantly, technology choices have **distributional implications** – not only between sectors within the economy, but also between labour and capital. Therefore, these choices need to be acceptable for the whole of society. Here, the **balance of power** between employers and employees becomes critical. When employees have a say in the workplace, the management

is more likely to adopt worker-friendly technologies. A guiding indicator for project selection could be the labour share of value added or a "prospective employment test".[57]

Strengthening government capacity

To be able to steer the economy, governments must develop their own capabilities, tools and institutions. To begin with, the government should reduce its reliance on the outsourcing of strategic work to consultants. Outsourcing undermines government capacity to understand the subject and to create purposeful strategies and public value over time. Outsourcing does not necessarily mean superior expertise or better solutions.[58] At the extremes, governments with low capabilities and expertise can become captured by vested interests.

> *"Outsourcing undermines government capacity to understand the subject and to create purposeful strategies and public value over time."*

Institutional capacity needs to be strengthened at the EU level. This requires dedicated institutional structures, many more staff, as well as substantially improved data availability to inform decisions (e.g., data on investments in EU countries or manufacturing capacity).[59] To execute many of the Horizon Europe programmes, like the Next Generation Internet programme, the EC relied on external organisations to distribute the grants and provide support and guidance to grantees. With such outsourcing, there can be no talk of strategic steering.

The demands of industrial policy are big; there is a need for a **dedicated body** to manage it, as well as strengthened capacities for steering and monitoring at all levels of government. For example, the US Chips Program Office now has more than 130 staff, drawn from top figures in the industry.[60] Lack of capacity is even a bigger problem at the local level in Europe, as we discuss in the next section.

Territorial cohesion and capacity building

The EU needs to find a way to have a common industrial policy, implemented according to **European, rather than national, logic**. Otherwise, there is a danger of widening divergence between countries and regions. This is also a call by Letta in his recent report on the EU single market: "To alleviate the tension between new industrial approaches and the Single Market framework, the EU's industrial strategy must adopt a more European approach".[61]

Over the years, EU cohesion was characterised by a narrowing of disparities *across* EU countries and regions, while regional disparities *within* countries tended to increase. Empirical assessments show that the twin green-digital transition is likely to increase regional disparities even further.[62] In the FEPS Recovery Watch project, we found that investments from the RRF made in the field of digitalisation did not lead to structural reforms, but rather reinforced the digital divide between frontrunner member states and those lacking digitalisation.[63]

In the absence of a meaningful common industrial policy, national subsidies would become the main instrument for financing industrial development, and we already see how uneven

the result can be: as of the end of 2023, 47.2% of the €760 billion of state aid approved under the Temporary Crisis and Transition Framework was for Germany; 22.6% for France; and 7.7% for Italy.[64]

The major obstacle to developing a strong European dimension of the industrial policy is a **lack of EU financial resources**. NZIA, for example, does not involve EU financing and relies on national policies and subsidies. Moreover, it focuses almost exclusively on projects at the national level. Common EU resources are needed to make targeted investments in the regions with lower capacity.

To achieve a balanced regional development, the distribution of financial resources is not enough, however. No less important is regional **capacity building**. Regional disparities in the EU are not just a matter of different financial capacity, but probably more significantly of limitations in institutional and technological capability. The experience with cohesion policy and the RRF highlights capacity limitations as the main obstacles to development. For example, Greece is receiving substantial amounts of EU money, but it is not enough to spur the technological transformation. Capacity deficiency also manifests in a **lack of good investment projects**. For example, Spain receives large amounts within the RRF, but finds it difficult to find companies that are capable of implementing the projects.

Government capacity limitations are another constraint, especially at the local level. Local administrations do not have enough expertise and people to design smart policies and steer their implementation. Therefore, **technical assistance** should be a necessary and substantial element of European industrial policy.

The building up of industrial capacity should be accompanied by creation/upgrade of **infrastructure and provision of social services**. The presence of infrastructure enables things to happen; therefore, industrial development programs need to include infrastructure development. This includes digital (public) infrastructure that is needed for the cutting-edge technology that supports modern industries. The same concerns social services – they are a precondition for people to move into particular regions.

Another task that the EU should help with is **analytical support** of the industrial policy. At the moment, support to particular sectors is lacking a systematic approach. Before supporting any sector, an analysis should be done to understand why we need to support a particular sector: is it social objectives and jobs; economic security; or climate transition needs? Any single country is unlikely to have enough capacity for such analysis – here, there is room for the EU to step in.

Competition

Normally, when one starts talking about industrial policy, a question about competition arises, so how can we reconcile the two? One of the main arguments for the abandonment of an active industrial policy in the past was an alleged contradiction between industrial policy and competition, namely, that support of particular industries and enterprises distorted competition. While true in theory, in practice, the validity of this argument depends on the kind of industrial policy that the state is conducting. In particular, in the case of the industrial policy we are suggesting here, there is no contradiction with competition.

The distortion happens when the state selects winners, normally incumbent companies, and channels public funds to them without conditionalities. Instead, if the state sets the goals (missions) and invites everyone willing to help achieve them to participate in state-sponsored programs, the competition is not distorted – everyone can participate. Moreover, such policy design opens up opportunities for newcomers

and helps emerging companies to scale up. Furthermore, augmenting the efficiency (price) considerations with social and green criteria for the assessment of projects will encourage competition on the things we want to promote: greener and more socially friendly products and technologies.

Indeed, competition should be underpinning all industrial policy instruments. Caffarra and Lane argue for a prominent role of antimonopoly thinking in the industrial policy toolbox: "there is clear recognition among industrial policy scholars that where strategic investments are made, markets must remain 'oxygenated' – not favour dominant players; and that the more successful industrial policies are those which have supported competition".[65]

In the current policy debate on industrial policy, there are some worrying narratives about the need for advancement of scale to promote European competitiveness. The argument is that the EU needs to promote its own champions, who, by acquiring scale, will be able to compete with US and Chinese rivals. For example, in his report, Enrico Letta argues for consolidation and growth in scale in some key sectors – telecoms, energy and transport.[66] There are definitely benefits from enhancing the integration of the European single market, but using it as a tool to help big companies become even bigger is a questionable proposition.[67]

Public-private collaboration

A sustainable and inclusive economy – economy for common good – requires a renewed social contract. In this framework, the goal for public-private collaboration would be to maximise public value. Conditionality is a powerful tool towards that end. There are other instruments to serve that aim.

The stereotypical image of an industrial policy is of government selecting specific sectors and defining conditionality for receiving grants or subsidies. Yet, as we have shown earlier in this policy brief, what proved to be successful in many cases was an iterative flexible approach, centred on **strategic collaboration** between government agencies and firms, where learning and policy adjustment was part of the process. "This kind of industrial policy is likely to work much better than open-ended subsidies or tax incentives", according to Rodrick.[68] Instead of focusing on tax incentives, Rodrick suggests that the government should **prioritise public services** needed by firms, such as customised business services, zoning or infrastructure policies, local amenities, and skills training.[69] A good example is collaboration between academia and firms and the creation of clusters of innovation.[70] Strong public research universities are one of the resources that the EU has at its disposal to strengthen its industrial strategy.

The operation of the missions-oriented approach depends on the ability of government and its agencies to establish effective **monitoring, feedback and adjustment mechanisms** (changing course, letting the losers go etc.). The RRF governance structure is a major step forward in terms of setting goals and applying the continuous monitoring of progress. It is a major improvement compared with cohesion funds that are not conditional on the achievement of targets. In the RRF, the EC continuously adjusts and improves the processes in its interaction with member states. However, as the experience with the RRF implementation has shown, the major challenge for performance-based assessment is the difficulty of measuring the performance against ex-ante goals: when the performance is affected by some exogenous factors, ex-ante goals become obsolete.[71]

A similar conclusion was made by the European Court of Auditors, who concluded that the RRF's overall performance cannot be adequately measured, as it is difficult to say how well the fund's goals are being achieved.[72]

The missions-based approach should not face such difficulties, as the goals in this framework are not defined as precise products or services, but as solutions to problems. The governance system of the new industrial policy would be based on **broad goals (solutions to problems)**, in contrast to the old system of defining ex-ante numerical goals. This would be accompanied by a governance framework that would include regular joint reviews of progress, procedures for deciding whether to proceed with the project and mechanisms for resolving disagreements.[73]

The collaborative approach to the state-business interaction would also help alleviate the information asymmetry problem. In the old system, business tries to withhold information from the government to create a picture of the achievement of targets, while government tries to find the information to obtain the true picture, so a lot of effort is wasted on dealing with imperfect information. The new approach would help build trust and mutual reliance in the process.

Another effective method to steer businesses would be for the state to take shares in the companies that it supports, that is, to make **equity investments**. This would allow state agencies to better monitor and steer business activities, and would also bring a fairer economic outcome, as the public sector would not only take the risks of the investments, but also reap potential benefits.

Public and stakeholder engagement

Cooperative arrangements should extend to a broader set of stakeholders, beyond businesses. The decisions on industrial policy are not just about business; they are highly political, as they have a major impact on outcomes for the national economic trajectory, for employment, environmental and wellbeing outcomes. Industrial policy of the past has often been accused of engendering rent seeking. To prevent this, the modern industrial policy should be decided by a wide range of stakeholders: academia; civil society; and regional and local authorities. In particular, the EC should involve regions more actively in policy design, as opposed to a common practice of setting the rules and asking the regions to deliver. One could think of creating **independent commissions of stakeholders**. Barry Eichengreen brings up the experience of US military-base-closure commissions.[74]

> *"The decisions on industrial policy are not just about business; they are highly political, as they have a major impact on outcomes for the national economic trajectory, for employment, environmental and wellbeing outcomes."*

Portugal offers a good example of stakeholder involvement in industrial policy design. The Portuguese digitalisation strategy relied on a bottom-up approach, engaging with industry and scientific and education stakeholders. The work on the national strategy Industry 4.0 Programme involved consultation with about 120 stakeholders, including companies, academics, associations and national authorities, through interviews, workshops and hearings.[75]

The EC has also been developing mechanisms for broad stakeholder engagement in industrial policy implementation: for example, as a part of the Industrial Strategy, it created an Industrial Forum[76] as an inclusive and open mechanism for co-designing solutions with stakeholders. The forum's key tasks are to assist the EC to track the implementation of the March 2020 industrial strategy.

To bring the broader public on board, public sector leaders should make the industrial **policy missions engaging and ambitious**. It should be clear how an ambitious, bold action at the European level will have an impact on people's daily lives. This would encourage the engagement of citizens in policy design and implementation.

Financing

Lack of financing is one of the main obstacles to the triple transition. The design of industrial policy is also very much dependent on financial capacity: with limited central fiscal capacity at the EU level, the EU lacks leverage over the policies of member states. When financing of industrial policies is carried out predominantly at the national level, like it is now, the EU cannot impose conditionality. Under such circumstances, many EU instruments end up being rather toothless.

The new fiscal rules, proposed by the EC in November 2022, had a good original intention, but the subsequent introduction of numerical targets made the final version quite restrictive without much room for investments. But more critically, the political approach adopted for the upgrade of economic governance is flawed in its basis: it deals only with one side of the equation – fiscal rules for member states – but completely misses its counterpart ingredient – fiscal capacity at the EU level. This is the principle adopted elsewhere (USA, Germany), where stringent rules for states are accompanied by strong central fiscal capacity to redistribute resources. Otherwise, stringent fiscal rules alone are a way to underinvestment and stagnation in many regions. The upcoming revision of the EU's multiannual financial framework will be a chance to enhance the investment capacity at the EU level.

The three broad types of financing of the industrial policy are public, private and private with public leverage. On all three fronts, there are multiple opportunities. In the case of public money, there are many ways to generate more resources at the EU level, such as wealth taxation, single market tax, taxes on pollution and the use of natural resources. Eventually, a sovereign fund will need to be created. The European Central Bank can also be more involved, in particular, in buying green bonds. EIB's leverage capacity could be increased and its mandate updated to make it less risk averse and more ambitious in its investments. National promotional banks need to step up their role. Fossil fuel subsidies could be redirected to financing green projects.

> *"Policymakers should be asking not "How much money we can afford to spend?" but "What does the economy need and how we can shape our fiscal policy and finances to achieve that?"*

There are many ways to find the money. Policymakers should be asking not "How much money we can afford to spend?" but "What does the economy need and how we can shape our fiscal policy and finances to achieve that?"

Conclusions

The shocks of the last several years have brought industrial policy back to the policy agenda. This is the situation when a big challenge also contains big opportunities. To seize these opportunities, the EU needs to upgrade its ambition and embark on an ambitious developmental agenda. Industrial policy is a powerful tool to achieve an economy-wide transformation.

The design of progressive industrial policy needs to start with a change of the narrative. In particular, we need to transform the image and role of the state from a slow bureaucracy to a lean entrepreneur. We should not conflate "market" with "business" – market is an outcome of the government-business interaction. The policy shift needed is not about getting more state and less market, rather it is about redirecting the efforts of the state towards the achievement of new goals.

The image of industrial policy itself needs to be corrected. The widely held perceptions of the inefficient and protectionist character of industrial policy are based on a particular (dirigiste) model of industrial policy that is not universal but is just one of the options. Moreover, modern studies based on better numerical techniques refute earlier findings and show that the overwhelming majority of industrial policies are not protectionist.

In this policy brief, we suggest that modern, progressive European industrial policy should be based on a developmental-state approach. It should contain the following elements: be mission driven; involve creating and shaping markets by the state; have continuous evaluation and feedback loops; and conditionality. It should involve an upskilling and good-jobs strategy, with broad public and stakeholder engagement. To be able to implement this strategy, the state needs to strengthen its capacity at all levels.

This strategy needs a stronger European dimension, to be able to deliver regional development and territorial justice.

The EU is moving on many of these dimensions, but so far with limited success. Notably, the social conditionality in the currently proposed instruments is rather weak. Furthermore, the lack of EU funding means a reliance of the policy on the funding and policies of the member states, which risks exacerbating regional disparities and EU cohesion. There is a clear need for enhancing state capacities at EU, member state and local levels.

We hope this policy brief provides some food for thought and ideas for developing the vision and elements of the transformative industrial policy for Europe, and we are looking forward to further discussions.

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