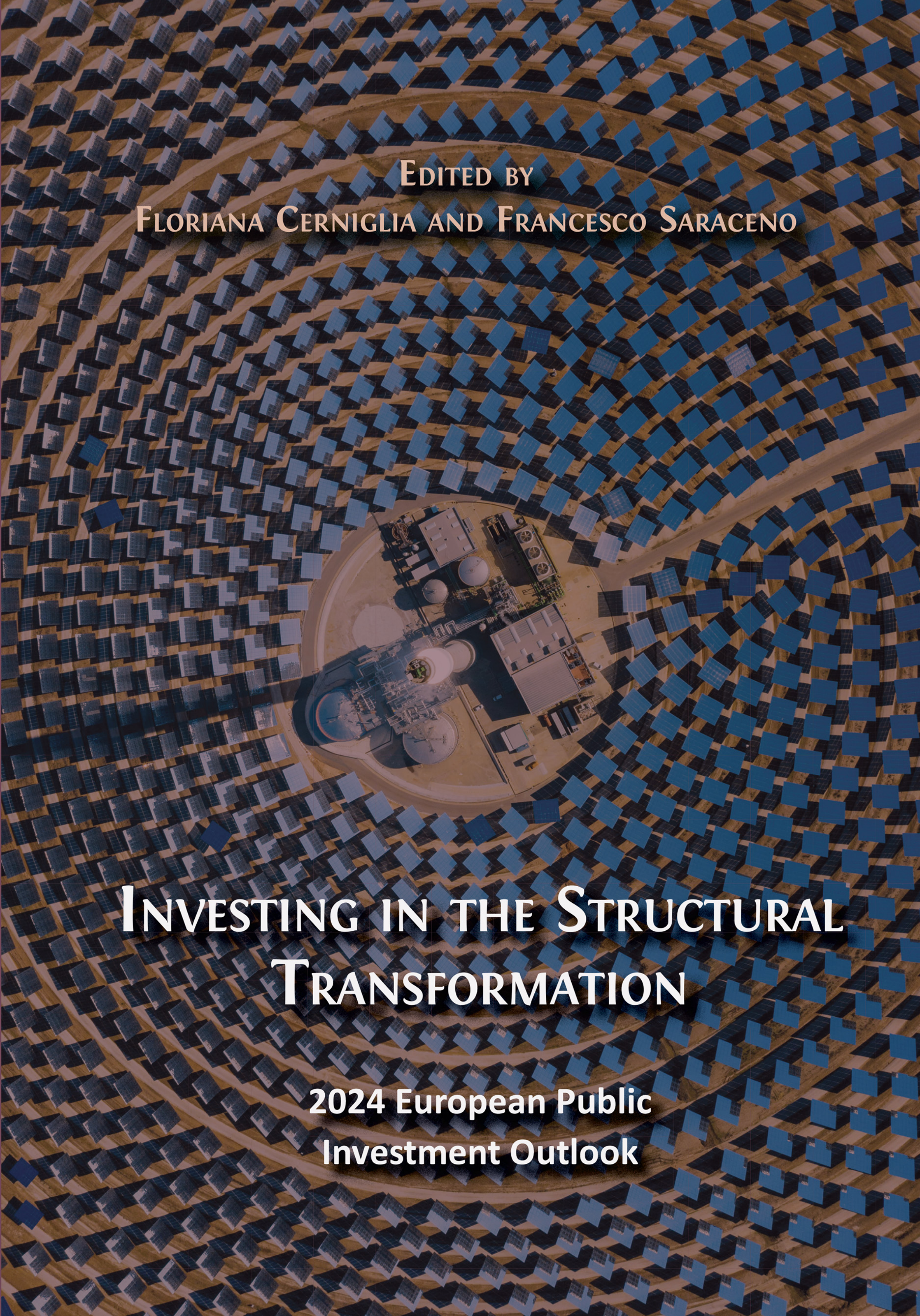

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6. A New Industrial Policy as the Key to the Green Transition

Karl Aiginger[1]

The world is changing quickly. The former Soviet Union is gone and its successor, Russia, is seeking to reclaim parts of Soviet territory using military force. The United States (US) as a sole remaining superpower cannot take the lead, due to populism, failed democracy, and a lack of resilience. China is on the rise, but autocratic, longing for resources and facing a declining population. Europe is less dynamic and innovative, not yet seen as unified with common goals. New middle powers are gaining shares in production, but are themselves very different. The problems the world faces are changing: peace is no longer guaranteed, global warming is accelerating, poverty is on the decline but re-emerging in other ways, and migration policy is becoming more and more important. The green transition may be an engine of change and new dynamics, but there are also many backlashes. In this situation, a new industrial policy is needed—one very different from that of the past. We begin by describing the past policy as an isolated policy, along with the questions of whether such a policy is needed in a capitalistic economy and whether it should focus on "important sectors" (the sectoral or French approach) or "important activities" (the horizonal or German approach). We then turn to the increasing importance of international exports/ investments and the necessity for a green transition, but also new forms of protectionism and backlashes. This chapter builds on Aiginger and Rodrik (2020) with respect to "industrial policy for the 21st century", as well as on Aiginger and Ketels (2024) for its "reloading" after the most recent changes in the policy environment.

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6.1 The New World Order

The profile of the global economy is fundamentally changing, affecting policy priorities and the potential impact of policy actions.

The geographic footprint and responsibility for global GDP growth is changing. Today, developing countries produce half of the world's output, and they provide a rising share of trade and investment flows. The BRICS countries (Brazil, Russia, India, China, and South Africa) have invited six new members to join their ranks (BRICS Plus). Together they will account for roughly 30% of global GDP, challenging the dominance of the G7 countries (Canada, France, Germany, Italy, Japan, the UK, and the US). China, in particular, has enjoyed fast growth in the past. But it is now experiencing old and new problems, such as a decreasing population and macroeconomic imbalances with an ailing real estate market. There has been a decline in productivity dynamics, reducing its ability to drive global GDP growth in the future. Global trend growth is falling in China as well as in the advanced economies (Kose and Ohnsorge 2023).

Demographic trends are changing policy priorities. Many advanced economies, as well as that of China, are facing a rapid ageing of their populations. Japan has shown that this trend effects technical progress. Other regions, however, are facing a doubling of their population: Africa's population will rise from 1.4 billion to 2.5 billion people by the middle of the century, and then to 3 billion by the end of the century. India will continue to see its labour force grow for several decades, overtaking that of China. Ageing societies will experience demographics as a limiting factor for growth. While unemployment may become less of a challenge, skill shortages will increase. These countries would benefit from inward migration, but rising populism could prevent this from happening. Societies still experiencing population growth could give the global economy access to a growing labour force. But these are countries that have struggled to provide jobs for labour market entrants in the past; they face the threat of rising unemployment, poverty, and political tensions.

New technologies are changing the patterns of sector-specific opportunities for growth and job creation. Industry in the sense of manufacturing or infrastructure investment remains an important part of economic activities and global trade in particular. But production activities are made more valuable by services and new digital tools. And they provide less direct job creation opportunities than in the past, with productivity growth outpacing demand. New digital technologies like generative Artificial Intelligence (AI) will create further disruptions, providing opportunities for productivity growth but also threatening many existing jobs. Raw materials are still important, but growth is shifting to new materials like cobalt, copper, lithium, or nickel, which are important for the development of new technologies and decarbonization. Access to sources of renewable energy will become a critical asset; in the transition period, access to low-cost oil and gas resources will remain important, especially if conflicts threaten traditional sources, and policy fatigue could prevent innovations and change.

6.2 Past Industrial Policy

The starting point of the discussion was the question of whether an industrial policy is needed in a free-market economy dominated by the policy of the Washington Consensus. This approach is typical for US economists and the multinational institutions dominated by the US. In France, industrial policy is the successor of the "planification" model still reflected in the powerful state, in which sectors were selected as important to France and dominated by public support (sectoral industrial policy). Germany opposed this and focused on supporting activities important to all sectors, such as research and education (horizontal approach). The economic policy of the European Community initially focused on the horizontal approach, but soon incorporated some important sectors; this became known as the matrix approach in Aiginger and Sieber (2006). This led to a matrix, with industries as rows and policies as columns, and meant that, for example, the automotive industry required other policies than that of apparel.

6.2.1 The Green Transition and Its Backlashes

- The pandemic and its aftermath exposed both the fragility and the importance of global value chains. It drew attention to governments' abilities to provide medical products, basic health care, and other services to their populations. Resilience became a more important policy objective, and active government policy efforts a more important and accepted tool.
- Climate change is increasingly visible, with rising implications for prosperity, especially for those in poverty who suffer more from heatwaves and other weather extremes. The green transition is becoming a major policy objective across the world, with the need to manage that transition in ways that distribute the costs and opportunities of that transition across countries and parts of societies in balanced ways.
- Rising geopolitical tensions and active wars in Ukraine and Gaza are challenging the foundations of the global institutional structure that has sustained the last phase of globalization. They are also eroding the ability to mobilize global collective action to address climate change and other global challenges (Acemoglu 2023; Autor et al. 2021).

6.2.2 New Horizons

Recent changes have affected the debate and practices surrounding industrial policy. The following observations from the literature (drawn from Aiginger and Ketels 2024) stand out.

First, the focus of the industrial policy debate has increasingly shifted to "how to be successful in practice", and is no longer primarily about "whether to be justified in theory". Criscuolo (2012) and Juhász et al. (2023) outline new approaches for classifying and measuring industrial policy. This is seen as a critical step towards understanding what works and what doesn't, moving beyond the use of individual failures or successes to understanding broader patterns of impact. Industrial policy is much more successful in Asia than in other parts of the world. Export orientation appears to be a critical element of the "Asian miracle" (Birdsall et al. 1993) and thus a key characteristic of successful industrial policies.

Second, especially in advanced economies, there is a distinct shift in the objective function of industrial policy towards broader societal goals rather than a narrowing down to job creation or growth. This shift has also led to a significantly higher willingness to use policies that just a few years ago were considered distortive. Elisabeth Reynolds (2024) dissects the range of ambitious new policy initiatives launched by the Biden administration in the US. These policies combine the ambition to rebuild the industrial base in the US, especially in locations overwhelmed by rising Chinese imports over the past few decades (Autor et al. 2021), with a focus on creating high-quality jobs with social benefits, accelerating the green transition and strengthening the resilience and self-sufficiency of the US economy in key sectors. Reinhilde Veugelers, Simone Tagliapietra, and Cecilia Trasi (2024) contrast this approach with the efforts of the European Union to introduce a new green industrial policy. There are similarities with the US regarding broader ambitions related to the green transition and also the overall resources used. However, there are significant differences in the types of instruments used, and in Europe there are now clear concerns as to whether this difference in approach might also lead to a difference in impact.

Third, these changes in the policy posture of advanced economies have significant implications for emerging and developing economies. On the one hand, the change in the policy dialogue provides more justification for less advanced economies to set active policies that help accelerate their structural transformation (Lin and Monga 2017). On the other hand, these economies are facing increased rivalry from advanced economies with much deeper pockets, have weaker institutional structures to implement policies effectively, and are confronted with an economic context in which the export-driven growth of manufacturing is less feasible (Rodrik 2015). Deepak Nayyar and Gaurav Nayyar's (2024) article on India provides a concrete perspective on these challenges. India has moved beyond many of the ideological roadblocks that had held it back historically. But it is now facing the task of implementing ambitious policies to drive industrial development with institutional structures that are not fit for purpose. And it is facing a global market environment that is much less conducive to the types of export-oriented industrial policies that Fuad Hasanov and Reda Cherif documented as being historically more effective (Ketels et al. 2022).

6.3 Upcoming Trends

Industrial policy is here to stay. There is a rising demand for industrial policy, understood broadly as policies that aim to enhance the performance and profile of the economy using tools that move beyond sector-neutral and general 'rules of the game' policy actions. This demand is fuelled by new policy challenges and objectives, including achieving the green transition, driving shared prosperity growth, and enhancing resilience in a risky and fragmented geopolitical context. There is also a sense in the policy community that traditional policies to enhance overall framework conditions are insufficient on their own as a response. Thus, we observe less of a conceptual repudiation of the policies promoted since the 1990s than a reaction to changes in actual circumstances and needs.

The policy approach of the previous era, which focused on liberalization and improving framework conditions, was effective in many respects (see Irwin 2020 for the global perspective and Gil and Raiser 2012 for the European experience). However, the situation is different now, in part also as a direct consequence of the economic dynamics that the policy approach of the last few decades has created. This has shifted the balance of political opinion even in countries traditionally sceptical towards industrial policy, such as Germany and the US. And, as the memory of past industrial policy failures has faded somewhat, there is much less resistance to at least attempting new industrial policy measures. This could, however, change relatively quickly if the new industrial policies fail to deliver.

While still diffuse, elements of a new policy framework are emerging. New approaches, such as mission orientation, are considered promising, and may help identify critical dimensions of a new framework (Mazzucato 2021). Directionality in terms of aligning market signals with societal goals cannot be taken for granted, but needs to be embedded in policies, and policy action needs to mobilize a broader set of tools and actors to be effective. Yet, so far, actual initiatives in this vein have remained vague and have yet to show their potential in practice (Tõnurist 2023; Kelsey 2023). Old approaches towards industrial policy that worked, such as export orientation, may not be as effective in the new context (Rodrik 2015).

There is an emerging consensus that a policy approach that simply focuses on affecting the allocation of capital to new sectors is not enough. It also requires upgrading the fundamentals that drive productivity and innovation, along with their impact on resources. Boundaries with respect to innovation, trade, and infrastructure policies are becoming blurred—all of these are critical to the success of individual industries. Many of these fundamentals are, in fact, sector-specific, requiring policies to move beyond sector-neutral efforts. There is also an emerging consensus that success is driven by the alignment and coherence of policy actions, not simply by the features of any individual policy program. Such alignment and coherence require strategy, roadmaps, and collaboration—both between the public and private sectors, and within the public sector. Location-specific factors also play a role, as many actions and results are highly localized (Austin et al. 2018; Ketels and Duch 2022).

A new architecture will be needed to anchor national industrial policies in a stable global context. The past policy consensus was anchored in a set of global institutions and rules, and within Europe in the acquis governing the single market. It relied on collective action to sustain a cooperative equilibrium that was seen as benefitting everyone over time. But the willingness to behave cooperatively has eroded. Organization for Economic Cooperation and Development (OECD) economies feel that others, and China in particular, have not followed the spirit of the past consensus and have reduced their approach to "friend-shoring" (Yellen 2022) and "de-risking" their global economic relations (Ivanov 2023). Emerging economies, not only that of China, are at the same time concerned about steps taken by advanced economies that can erode the opportunities for catch-up via exports, which the past system promised. A combination of trade barriers, whether these are motivated by the green transition or geopolitical concerns, and more robust industrial policies by countries with deep resources is seen as disadvantaging emerging and developing countries (echoing an earlier argument made by Chang 2002).

Europe's role in the new world order is still to be designed. Draghi (2024) mentions three trends. First, Europe is no longer catching up with US productivity, and the gap in per capita productivity is widening, reflecting a growing innovation gap. Second, a joint plan for decarbonization and competitiveness is essential, as electricity and natural gas prices are significantly higher in Europe. Over the medium term, decarbonization will help to shift energy reliance towards more secure and low-cost sources. Third, increasing security and reducing dependencies on critical raw materials, as well as chips and digital technology, is crucial—a strategy we can refer to as "foreign economic policy" aimed at ensuring physical security. Investing in the future requires correcting for past nationalism and the overly timid use of international financing. The US has much higher debt yet pays lower interest rates. Finally, Europe must recognize its pivotal role in a new world order, where the countries from the Global South (see The Economist 2024) seek partners for equitable relationships. Europe can offer peace and innovation, and can spend on education and innovation.

Backlashes can already be seen. Although climate change has become ever more visible and well-documented by scientists and multinational organizations, social networks and fake news have continued to stoke the opinion that it does not exist. And if these tactics do not work, there is the argument that others have forced the problem on society or that environmental policy will only reduce competitiveness. The Green Deal elaborated by the EU has reduced the ability of parties in the centre to win elections and is not considered a powerful plan with which to increase well-being for all.

There is a clear danger that the more muscular use of industrial policies will lead to increasing tensions in the global international system. Competition could become more focused on capturing rents rather than creating value. This would have significant costs, even beyond those which a more limited erection of trade barriers would create (Javorcik et al. 2023; Aiyar et al. 2023). Yet, even if capturing rents is not the intention, a new balance will need to be found between market access, on the one hand, and the freedom to drive new industrial policies, on the other. In Europe, this became apparent when Germany launched large programs to support its companies during the pandemic and then during the energy crisis that followed Russia's invasion of Ukraine: other EU countries lacked the resources to match these programs and became concerned about their companies being at a competitive disadvantage on the EU single market as a consequence.

In 2024, industrial policy has not only been "reborn", but also "reloaded" (Aiginger and Ketels 2024). There is a large willingness of policy makers to engage in industrial policies, with unprecedented funding made available. We are experiencing industrial policy "at scale" (Rodrik and Stiglitz 2024): "In countries that are already rich, the state, after decades of free-market rhetoric, is back in a big way. Governments are spending hundreds of billions on handouts for industries they deem to be strategically important" (The Economist 2024).

New forms of protectionism occur. The US and, to a lesser extent, Europe is trying to reduce imports (such as electric cars) from China. China has reacted by preventing the exportation of rare earth minerals needed for many modern products in the US and Europe.

The shift is only partially a result of changes in conceptual thinking or the evidence surrounding industrial policy. Rather, it is primarily driven by changes in the political context, influenced by public demands on governments. This is particularly a concern, given the key elections scheduled this year (in the US, EU, and India), as well as the resulting pressures on an increasingly fragmented geopolitical system. It is also driven by new needs, in particular the green transition and rising concerns about shared prosperity. The past policy consensus is perceived as having been insufficient to provide policy makers with the necessary tools to address these challenges.

6.4 The Green Transition as an Engine of Change

Let us close with the following ten remarks:

1. The slogan that "no industrial policy is the best policy" is definitely wrong and is far from dominant even in the US today.
2. Industrial policy is no longer just about manufacturing; it also encompasses the boundaries of services and resources.
3. It is a matrix policy with different policy priorities for different sectors and columns.
4. Industrial policy can be different for advanced countries and emerging ones, for rich Asian countries, for poor provinces in the US, or for Europe.

5. It must follow new societal needs—it should be resilient, global, and social—and it should not be defined by GDP as a main goal, but rather by SDGs and healthy life expectancy.
6. It must take into account demographic trends, such as high ageing and a rapid decrease in the share of native populations in some countries, alongside the continued population growth in regions such as Africa.
7. Industrial policy will be different in regions, but all versions should be based on the need for better and more inclusive education, which provides the basis for the green transition.
8. While populism and "my country first" movements are on the rise, resorting to open or covert protectionism and imposing tariffs to limit imports from certain regions are misguided; instead, globalization must evolve.
9. A new industrial policy should not be national but rather international, and it should be driven by societal goals and the need for transition.
10. Backlashes will occur and must be countered by policy as well as civil society, using arguments and best practices.

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