



1

An introduction to industrial policy

Industrial policies – policies aimed at changing the sectoral composition of production in an economy – have seen a resurgence in recent years. While their track record has been mixed, their growing popularity has been shaped by domestic political economy considerations and rising geopolitical tensions. Increasingly, industrial policies are also being deployed in economies with less administrative and fiscal capacity to implement them. A typical policy pursues multiple objectives, with environmental and regional development goals becoming more common. Firm-specific policies are widespread, as are initiatives discriminating in favour of domestic companies, and use of subsidies is on the rise. At the same time, sunset clauses have become more common, perhaps reflecting past experience with addiction to subsidies.

Introduction

The origins of industrial policies – policies aimed at changing the sectoral composition of production in an economy¹ – can be traced back at least as far as the late 18th century. Indeed, one of the very first things that the US Congress did was to impose import duties on cotton, leather and various forms of clothing, with Alexander Hamilton, the country’s first Secretary of the Treasury, arguing that those measures were necessary in order to temporarily protect the country’s nascent industries.

While the definition of industrial policies is broad, not all government policies are industrial in nature. Many policies that seek to boost growth or employment – such as measures improving the business environment or the reduction of income tax or value added tax (VAT) rates – do not support one industry at the expense of another. Some “horizontal” policies – such as initiatives aimed at easing immigration requirements for highly skilled labour – nevertheless implicitly target a range of sectors and can thus be regarded as industrial policies. Many industrial policies target a narrow sector, such as the wind energy sector or the semiconductor sector, and these are often referred to as “vertical” policies.

Industrial policies were particularly popular in the aftermath of the Second World War, when government support for innovation and multilateral trade and finance arrangements were seen as the best way to speed up post-war reconstruction and raise living standards. At that point, industrial policies focused primarily on promoting sectors with significant spillovers to the rest of the economy. Industrial policies then fell out of favour in the 1970s and 1980s as new empirical evidence challenging their effectiveness emerged and the focus shifted to broader market-based strategies (see Box 1.1 for a brief overview of the history of industrial policies).

Industrial policies have recently become more popular again, partly because of a desire to address increasingly pressing market failures such as environmental degradation. The increased prominence of such measures reflects a realisation that markets and broad horizontal policies cannot always overcome important economic, social and environmental challenges, such as the need to speed up the transition to a green economy or ensure a guaranteed energy supply.

While industrial policies can be effective in overcoming coordination failures and promoting the creation and transfer of knowledge,² they can be associated with high explicit fiscal costs. They may also result in high implicit costs – for example, in terms of distorting the efficient allocation of labour and capital in the market. The risk of capture by special interests is also high. Such market distortion can suppress innovation and drive up the prices of goods and services.³ Industrial policy instruments that are less distortive typically require greater administrative capacity and the capacity to raise fiscal revenue.

Given their mixed track record, it may be that the popularity of industrial policies is being driven primarily by domestic political economy considerations and rising geopolitical tensions. A succession of economic crises and growing awareness of the need to address environmental challenges have led to a desire for the state to play a larger role in the economy. Meanwhile, voters have tended to show a strong preference for subsidies over taxes.⁴ While industrial policies are more commonly seen in higher-income economies, they are also being deployed with growing frequency in economies with lower levels of administrative and fiscal capacity.

Increasingly, industrial policies are tending to target multiple objectives with no clear prioritisation. While these policies have traditionally tended to target economic growth and productivity, green objectives have been gaining in prominence, particularly in advanced economies⁵ – often in combination with a strategic desire to ensure the supply of critical materials and technology. Recent examples of industrial policies with such objectives include (i) the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act and the Inflation Reduction Act (IRA) in the United States of America, (ii) the European Green Deal and the European Chips Act in the European Union (EU), and (iii) the Made in China 2025 plan (see Box 1.1). Regional development objectives have also become more important, particularly in the EBRD regions. Policymakers need to be mindful of these trends, articulating – publicly if possible, and in private at least – the key objective of each policy and building in evaluation mechanisms to ascertain whether a policy is on course to achieve its objectives or should be modified or abandoned.

¹ This definition is in line with Juhász et al. (2023a).

² See Cherif and Hasanov (2019), Millot and Rawdanowicz (2024) and Lashkaripour and Lugovskyy (2023).

³ See IMF (2024b).

⁴ See EBRD (2020).

⁵ All references to advanced economies and emerging market and developing economies (EMDEs) in this chapter are based on International Monetary Fund (IMF) classifications.

In order to minimise distortion, policies can include competitive selection elements and specific end dates. While the percentage of policies with sunset clauses has risen, perhaps reflecting past experience with addiction to subsidies, policies discriminating in favour of domestic firms are widespread and the use of subsidies has increased. Where administrative capacity is low, policymakers could phase in policies, prioritise projects which fall within the remit of a single ministry and set up specialist units to oversee policy initiatives.

This chapter starts by documenting the increases seen in the number and scope of industrial policies, before examining the reasons for those trends and the benefits of industrial policies. It then surveys the changes seen in policy objectives and targeted sectors, before discussing the explicit and implicit costs of industrial policies, various features of policy design and the choice of instruments. The concluding section offers broad recommendations for the design of industrial policies with a view to maximising their benefits while minimising the associated risks and distortions, focusing on scenarios where administrative and fiscal capacity is limited.

How common are industrial policies?

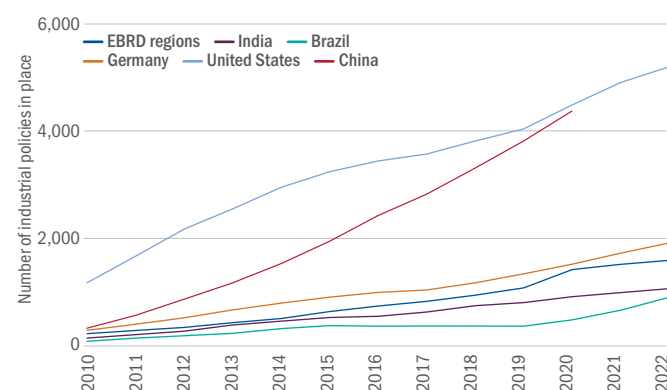
The analysis in this section is based on a novel database of industrial policies around the world. That new database draws on the dataset in Juhász et al. (2023a), which is based on textual analysis of the Global Trade Alert (GTA) database – a repository of information on state interventions affecting trade in goods and services, foreign investment and labour force migration.⁶ The coverage has been extended relative to Juhász et al. (2023a) using a finetuned prompt for ChatGPT which seeks to determine whether a given policy in the GTA repository is industrial in nature – that is to say, whether it seeks to support specific sectors at the expense of others. This extended analysis focuses on the EBRD regions and other emerging markets (see Box 1.2 for a more detailed discussion of the methodology).

This analysis is complemented by various other sources of data on industrial policies, including Evenett et al. (2024) (which also draws on the GTA database), the Quantifying Industrial Strategies (QuIS) database established by the Organisation for Economic Co-operation and Development (OECD) and the European Commission's State Aid Transparency Public Search tool.

The number of industrial policies has increased in recent years, particularly since 2019

Data from various sources point to a broad-based rise in the use of industrial policies in recent years, particularly since 2019. This has coincided with an increase in the prevalence of export restrictions on critical raw materials, as documented in the *Transition Report 2023-24*.⁷ Use of industrial policies is on the rise in advanced economies, across the EBRD regions and in other emerging markets, with increases being seen in both the number of new policies announced in a given year and the number of policies in place at any given point in time (see Chart 1.1). Around 30 per cent of all industrial policies implemented in the period 2020-22 made reference to Covid-19, the pandemic or a related term. Yet, even if such Covid-related policies are excluded, the upward trend in the total number of industrial policies remains pronounced.

CHART 1.1. The number of industrial policies in place has increased rapidly since 2019



Source: GTA, Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Selected comparator economies are shown. Consistent data on China are not available for the period 2021-22 owing to lags in reporting (see Box 1.2 for details).

⁶ See Evenett et al. (2024).

⁷ See EBRD (2023).

China and the United States have implemented the largest numbers of industrial policies in the period since 2010, followed by Germany, Brazil, India, Italy, Japan, Russia, Canada, Spain, the United Kingdom and France. In the EBRD regions, the geographical spread of industrial policies is equally broad: Türkiye and Poland have implemented the most policies, followed by Greece, Hungary, Romania, Egypt, Czechia, Kazakhstan, Croatia and the Slovak Republic. (In general, economies with larger populations have implemented more industrial policies.)

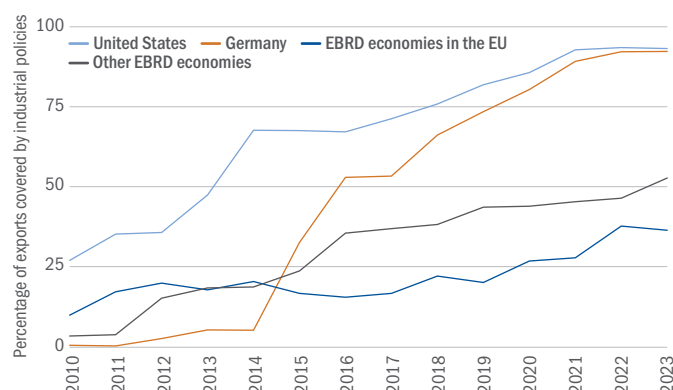
The products that are targeted by each policy can be matched to data on exports and imports to get a sense of the scope of the various policies (with the decision to focus on exports and imports – rather than domestic production – being dictated by the availability of data).

In the EBRD regions, the percentage of exports that are affected by industrial policies has increased from around 10 per cent in 2010 to around 45 per cent in 2022 (see Chart 1.2), with similar patterns being observed for imports. These estimates represent upper bounds, since product matching is carried out using the first two digits of the Harmonized System code (referred to as “HS2 codes”) – a level at which wines, spirits and vinegar are grouped together, for example. Nevertheless, they point to a clear upward trend in the scope of industrial policies. This trend can also be seen in various other countries around the world. In 2019, for example, the United States introduced localisation into public procurement as part of its “Buy American” policies (see Box 1.3 on localisation rules). And in 2015 Germany introduced trade finance support for a range of goods, including wind turbines and vessels. In China, such policies often target vehicles and machinery. Some economies have small numbers of industrial policies, but they affect a substantial share of the economy. This is true, for instance, of the subsidies supporting the oil industry in Azerbaijan or the agricultural subsidies in Tunisia.

Industrial policies affected

45%
of exports in the EBRD regions
in 2022, up from around
10%
in 2010

CHART 1.2. The percentage of exports that are covered by industrial policies has also increased



Source: GTA, Kóczán et al. (2024) Juhász et al. (2023a), UN Comtrade and authors’ calculations.

Note: The data for “EBRD economies in the EU” and “other EBRD economies” are simple averages and span 26 economies in total. Once they have been implemented, industrial policies are assumed to remain in place until 2023. A “same-year restriction” is applied (meaning that the chart includes only policies that were announced and included in the GTA database in the same calendar year; see Box 1.2 for details).

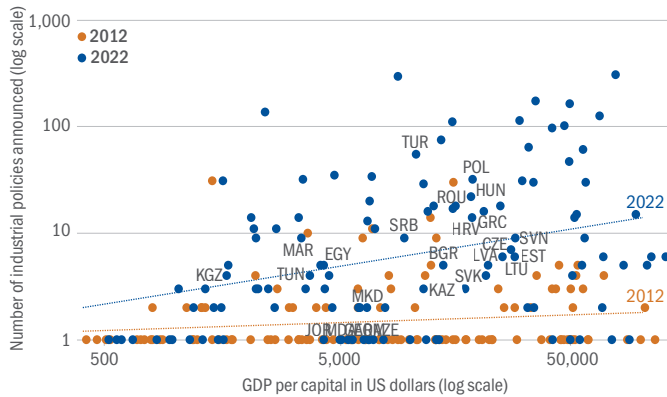
Public spending on policies is estimated to total between 1 and 5 per cent of gross domestic product (GDP)

The OECD estimates that public spending on industrial policies in Canada, Denmark, France, Ireland, Israel, Italy, the Netherlands, Sweden and the United Kingdom averaged 3.2 per cent of GDP in 2019-21 (with those estimates including grants, tax expenditure and financial instruments). Other studies reach similar conclusions.⁸ For instance, DiPippo et al. (2022) estimate that spending on industrial policies in Brazil, China, France, Germany, Japan, South Korea, Taipei China and the United States in 2019 totalled between 0.3 and 1.5 per cent of GDP. Meanwhile, SCCEI and CCA (2023) estimate that spending on industrial policies in China equates to between 1.7 and 5.0 per cent of GDP, with the higher estimates taking into account the cost of government procurement. Globally, government support for solar panels and aluminium production over the period 2005-19 is estimated at 2 to 3 per cent of total sales in those sectors, while support provided to the automobile, aerospace and defence, and chemical sectors is estimated at around 0.5 per cent of sales.⁹

⁸ See OECD (2023).

⁹ See Millot and Rawdanowicz (2024).

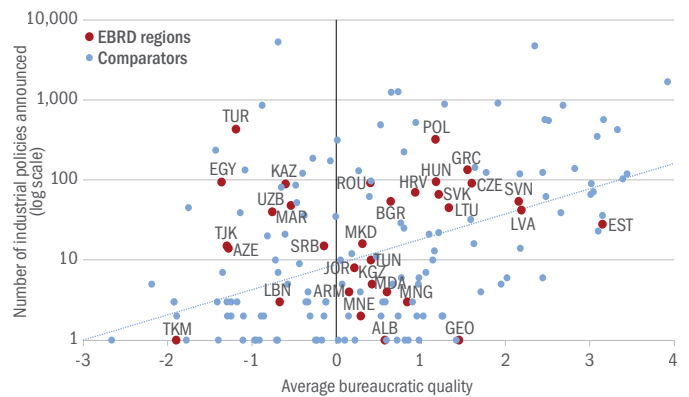
CHART 1.3. Industrial policies have become more common across the income spectrum since 2012



Source: Kóczán et al. (2024), Juhász et al. (2023a), World Bank and authors' calculations.

Note: The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates. The vertical axis shows, on a logarithmic scale, the number of industrial policies announced plus 1. Data are based on the year of announcement, with the same-year restriction applied.

CHART 1.4. Economies with greater administrative capacity tend to implement more industrial policies



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors' calculations.

Note: “Bureaucratic quality” refers to the V-Dem indicator assessing the rigour and impartiality of public administration, which is measured on a scale of -4 to 4, with higher values indicating higher levels of quality. The horizontal axis shows average bureaucratic quality over the period 2010-21. The vertical axis shows, on a logarithmic scale, the total number of industrial policies announced plus 1 over the period 2010-21.

The value of government support for solar panels and aluminium production is estimated at

2-3%
of total sales in those sectors

State aid for firms (including subsidies, grants and concessional finance) increased sharply during the Covid-19 crisis, rising from around 0.8 per cent of GDP to 1.5 per cent in EBRD economies in the EU and rising from 0.5 per cent to 2.2 per cent in Germany, Italy and the Netherlands, according to the European Commission’s State Aid Transparency Public Search tool. While state aid fell to 1.2 per cent of GDP in 2023 in those three advanced European economies, it averaged 1.6 per cent of GDP in EBRD economies in the EU.

While total spending on industrial policies may seem modest, it is comparable to government expenditure on education, which averaged 3.7 per cent of GDP globally in 2022 according to data from the United Nations Educational, Scientific and Cultural Organization (UNESCO).¹⁰ Meanwhile, the Marshall Plan payments which supported reconstruction in Europe after the Second World War were equivalent to approximately 2 per cent of US GDP and roughly the same share of the collective GDP of the recipient countries.¹¹

Growing use of industrial policies in lower-income economies

While the rise in the number of industrial policies over the last decade has, to a substantial extent, been driven by higher-income economies, industrial policies have also become more common in EMDEs (see Chart 1.3).

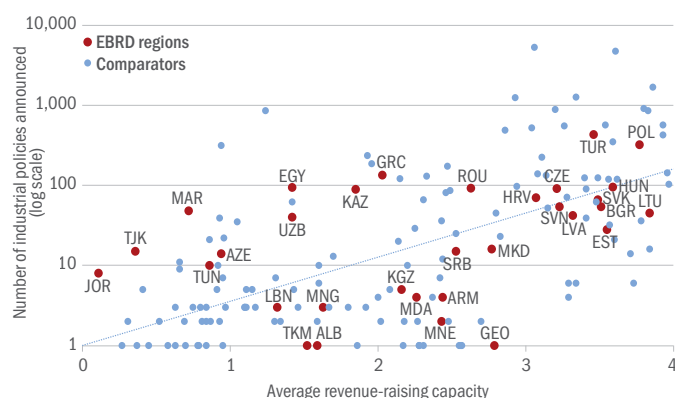
The fact that higher-income economies tend to have more industrial policies may reflect the demands that such policies impose on administrative and fiscal capacity. Industrial policies often require deep knowledge of markets and the technology used by firms, regular collection and analysis of data, and other forms of technical expertise.¹² Perhaps unsurprisingly, economies with higher levels of administrative capacity – as captured by the Varieties of Democracy (V-Dem) indicator assessing the rigour and impartiality of public administration – have implemented larger numbers of industrial policies (see Chart 1.4).

¹⁰ See <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS> (last accessed on 6 September 2024).

¹¹ See Eichengreen (2010).

¹² See Harrison and Rodríguez-Clare (2010).

CHART 1.5. Economies with greater fiscal capacity tend to implement more industrial policies



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors' calculations.

Note: “Revenue-raising capacity” refers to the V-Dem indicator assessing sources of fiscal revenue. The horizontal axis shows average revenue-raising capacity over the period 2010-21. The vertical axis shows, on a logarithmic scale, the total number of industrial policies announced plus 1 over the period 2010-21.

Industrial policies are also more common in economies with greater fiscal capacity, reflecting the high fiscal cost of those policies (see Chart 1.5). Here, fiscal capacity is measured using the V-Dem indicator assessing sources of fiscal revenue. This score is low for economies which are unable to raise revenue and reliant on external financing or ownership of assets (such as commodities), and higher for those where the state derives most of its revenue from the taxation of consumption, income/profits or capital. Even controlling for the logarithm of GDP per capita, economies with greater administrative and fiscal capacity tend to implement more industrial policies. These variables tend to have greater explanatory power than alternative measures of the quality of economic institutions, such as indicators capturing the rule of law or spending capacity.

Notwithstanding these correlations, industrial policies are also increasingly being implemented in environments where administrative and fiscal capacity constraints may be more binding.

What is driving the rise in industrial policies?

Correction of market failures

The use of industrial policies is typically justified by market failures – situations where the market allocation of goods and services is inefficient. Such market failures can include negative externalities such as environmental pollution, positive externalities such as spillovers from innovation, and coordination failures. For instance, while it may be optimal for high-tech firms and highly skilled workers to co-locate in a new area, it may be that neither firms nor workers are willing to make the first move, since firms need a pool of qualified labour and workers need a pool of employers. Firms can also affect the rest of the economy through downstream linkages (providing inputs for their customers) and upstream linkages (as a source of demand for their suppliers). Such spillovers have traditionally been regarded as justification for supporting sectors with strong supply chain linkages, such as the steel and automotive sectors.

While market failures call for some form of state intervention, interventions that do not involve using industrial policies may be less distortive or more efficient.¹³ For instance, environmental externalities could be addressed using carbon taxes, while coordination failures could be mitigated by bringing the various parties together, facilitating simultaneous investment commitments or introducing public guarantees. Indeed, industrial policies tend to be used more widely in economies with less financial depth, suggesting that access to market financing and government intervention may be substitutes.¹⁴ Various factors may have tilted the response to market failures in favour of industrial policy.

A large role for the state in the economy and large firms

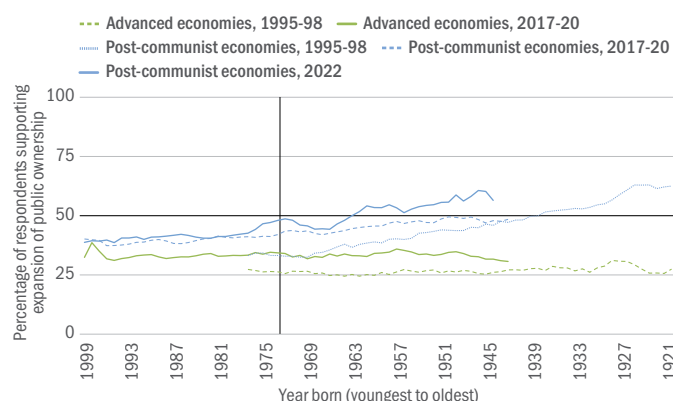
As discussed in the *Transition Report 2020-21*, the state has become larger in most economies, and popular support for a large state has grown. The fourth round of the Life in Transition Survey (LiTS IV), which was conducted in the EBRD regions and several comparator economies in 2022 and 2023, suggests that this trend has continued (see Chart 1.6). That representative household survey, which was carried out by the EBRD in collaboration with the World Bank, suggests that over half of all people born before 1980 now favour a further increase in public ownership. This could, in part, reflect the impact of repeated crises, which have increased demand for the state to step in and socialise risks.¹⁵

¹³ See also EBRD (2020).

¹⁴ See Evenett et al. (2024).

¹⁵ See Kóczán and Plekhanov (2024).

CHART 1.6. Demand for the state to play a larger role has grown



Source: EBRD (2020) (based on World Values Survey), LiTS IV and authors' calculations.

Note: This chart shows five-year moving averages across age cohorts, indicating the percentage of respondents who agree (defined as a score between 1 and 5 on a scale of 1 to 10, where 1 means "completely agree" and 10 means "completely disagree") that public ownership should be increased. The chart is based on the 45 economies that featured in both the 1995-98 and 2017-20 waves of the World Values Survey, 20 of which are in the EBRD regions. "Post-communist economies, 2022" is based on LiTS IV. Respondents to the right of the vertical line were adults when the transition process began.

OVER HALF of all people born before 1980 favour a further increase in public ownership

Political economy considerations are also increasing demand for industrial policy-type solutions. For instance, although well-designed taxes may be a more efficient means of addressing externalities, voters typically prefer subsidies to taxation, as the cost of subsidies in terms of future taxes is less salient. The results of the LiTS IV survey corroborate this.¹⁶ Indeed, studies suggest that industrial policies tend to be used more widely before elections and when economic conditions are weaker.¹⁷

Increasingly, that larger role for the state in the economy is co-existing with the presence of a handful of large and growing firms, both in emerging markets and in advanced economies.¹⁸ For instance, the combined revenue of the top 15 listed firms in emerging markets doubled as a share of GDP between 2005 and 2022, as discussed in Chapter 4. As many large firms in emerging markets share owners, the level of concentration may be far higher when ownership and personal connections are taken into account.¹⁹ At the same time, the 50 largest US firms accounted for 48 per cent of the total sales of the top 500 US firms in 2015, up from 41 per cent in 1999.²⁰

That combination of a large role for the state in the economy and the presence of a handful of large firms may lead to increases in both demand for and the supply of industrial policies. Governments may decide that focusing policy on a few firms that are becoming increasingly important for the overall economy is an attractive option. The size of those firms may, in turn, enable them to successfully lobby governments for various subsidies. Indeed, industrial policies appear to be more common in country-years where the 15 largest listed firms account for a larger share of GDP when controlling for the logarithm of GDP per capita, population and public-sector employment as a percentage of total employment in the preceding year (based on data from *Worldscope*; see also Chapter 4).

Geopolitical fragmentation

Industrial policies may also appear more attractive when other countries are supporting their own industries, especially in the presence of increasing geopolitical fragmentation. Growing strategic rivalry may give rise to a prisoner's dilemma equilibrium in the use of industrial policies: for an individual economy, lavishing subsidies on domestic producers may be a reasonable response to a rival economy subsidising production, even if such subsidies have a negative impact on the global economy as a result of production becoming more fragmented and inefficient relative to free cross-border trade in goods. However, no economy has an incentive to abandon such industrial policies without other economies doing so at the same time.

¹⁶ See EBRD (2024b).

¹⁷ See Evenett et al. (2024).

¹⁸ See Koltay et al. (2023).

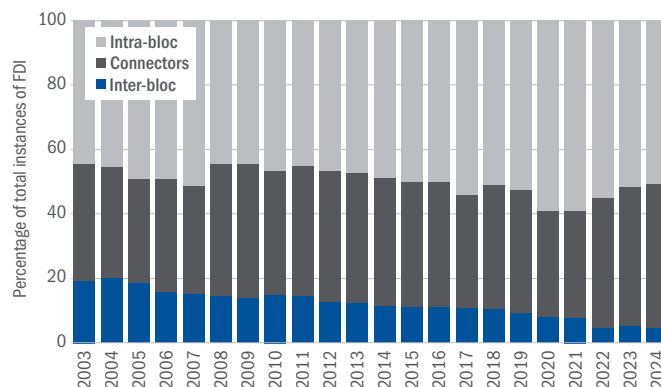
¹⁹ See Commander and Estrin (2022).

²⁰ See Autor et al. (2020).

Geopolitical fragmentation has become increasingly visible in global patterns of trade and greenfield investment.²¹ Foreign direct investment (FDI) between economies that can be seen as geopolitical rivals has declined rapidly as a share of total instances of FDI, especially since 2022, with “connector economies” (which have navigated geopolitical rivalries and benefited from geoeconomic fragmentation) accounting for a growing share (see Chart 1.7).²²

Explicit responses to other economies’ industrial policies are common. In the course of 2022 and 2023, for instance, the European Commission published several legislative proposals in response to the United States’ CHIPS and Science Act and the IRA. The EU’s response to the IRA has mainly centred on the European Green Deal, which aims to support Europe’s green industries by simplifying the regulatory environment, increasing access to finance, improving skills and ensuring open trade. The EU has also responded directly to the IRA by relaxing state aid rules (extending the temporary loosening of state aid regulations that was adopted in response to Russia’s war on Ukraine). While the IRA is based primarily on tax relief, the EU’s approach relies on the direct disbursement of funds – which is, in turn, financed by an increase in debt. Similarly, in March 2023 Canada outlined a new industrial strategy called “A Made-in-Canada Plan”, aiming to attract new investment, create high quality jobs and support the green economy, seeking to match the incentives provided by the United States’ IRA. The Canadian government has indicated that this financial assistance will be revised if the incentives in the IRA are reduced or revoked.²³ Also in response to the IRA, South Korea implemented new measures in early 2023 to support various segments of the electric vehicle supply chain (adjusting its own consumer tax credits for electric vehicles and fostering investment in technology and plants), as well as supporting South Korean battery makers.²⁴

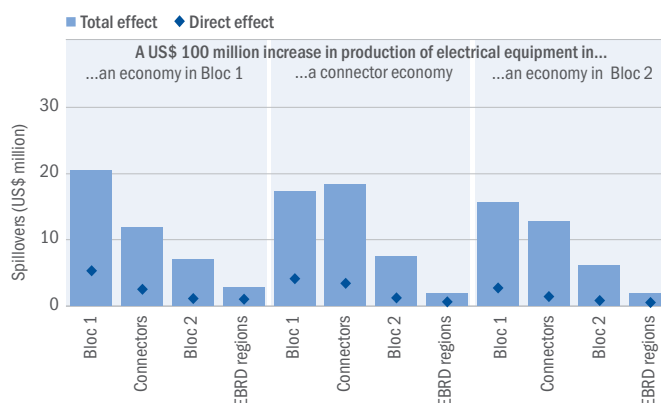
CHART 1.7. Inter-bloc FDI has declined as a percentage of total instances of FDI in recent years, with connector economies accounting for a growing share



Source: Cheng et al. (2024) (which is based on the FT fDi Markets database).

Note: This analysis looks at: (i) a “Bloc 1”, comprising countries that have imposed sanctions on Russia; (ii) a “Bloc 2”, defined on the basis of Gopinath et al. (2024), which consists of Belarus, China, Mali, Nicaragua, Russia and Syria; and (iii) other economies, which are described as “connectors”. “Intra-bloc” refers to FDI where the source economy and the destination economy are in the same bloc; “inter-bloc” refers to FDI where the source economy and the destination economy belong to different blocs; and “connectors” refers to scenarios where at least one of the two economies does not belong to either bloc.

CHART 1.8. Total cross-border spillovers from industrial policies can be significantly larger than direct spillovers to immediate suppliers



Source: World Input-Output Database 2014 and authors’ calculations.

Note: See the notes on Chart 1.7 for definitions of Bloc 1, Bloc 2 and connector economies. This chart models increases in the production of electrical equipment in (i) a representative economy in Bloc 1 (constructed as an average of Germany, Japan and the United States), (ii) a representative connector economy (constructed as an average of Brazil, India and Türkiye), and (iii) a representative economy in Bloc 2 (constructed as an average of China and Russia). The direct effect is taken from the World Input-Output Database; the total effect is estimated using a Leontief inversion.

²¹ See EBRD (2024a).

²² See Cheng et al. (2024), Gopinath et al. (2024) and IMF (2023).

²³ See Government of Canada (2023).

²⁴ See Bown (2023).

Complex cross-border spillovers from industrial policies

Cross-border spillovers from industrial policies are complex in nature, with such policies potentially boosting or weakening the availability and prices of technologies globally.²⁵ For example, an increase in the production of certain goods in one economy could increase demand for the production of inputs in other economies. Chart 1.8 illustrates the potential spillover effects of US\$ 100 million increases in the production of electrical equipment in various economies, differentiating between (i) direct linkages and (ii) indirect linkages (which take into account increases in demand for various inputs along the whole of the supply chain). The calculations are based on historical linkages as captured by the World Input-Output Database in 2014 and do not make assumptions about any future changes.

Total cross-border spillovers from industrial policies can significantly exceed the direct impact on immediate suppliers. For instance, a US\$ 100 million increase in the production of electrical equipment in Germany, the United States or Japan is estimated to directly boost global production of various inputs by US\$ 9 million, but increase production by US\$ 39 million when the entire supply chain is considered. While most of these spillovers accrue to economies within Bloc 1 (defined here as North America, the EU and other economies that imposed sanctions on Russia in 2022), that increase in the production of electrical equipment in Bloc 1 is reliant on significant inputs from Bloc 2 (with those Bloc 2 inputs accounting, in value terms, for 13 per cent of direct inputs and 18 per cent of total inputs across the entire supply chain), as highlighted in last year's *Transition Report*.²⁶ The same is true of efforts to scale up production of electrical equipment in China or Russia, where the estimated reliance on inputs from economies in Bloc 1 is, if anything, even greater. This shows that “de-risking” the entire supply chain in the context of rising geopolitical tensions – which is, increasingly, a stated objective of industrial policies, as discussed in the next section – is a complex endeavour and can potentially be very costly.

What are the objectives of industrial policies?

A policy may pursue several distinct objectives in support of a particular sector. In the example just given involving the production of electrical equipment, a policy may, for instance, target economic growth and an increase in exports. At the same time, there may also be a desire to ensure the supply of equipment and de-risk supply chains (even if this comes at a high cost). In addition, the policy may also seek to support specific disadvantaged regions by placing production there, or producing equipment that is critical for the green transition (parts of a smart grid, for instance). However, pursuing the above objectives may not create much employment – another common concern among policymakers.

Thus far, those differing objectives of industrial policies have received little attention in economic literature, beyond qualitative studies and research focusing on a few select economies. This section aims to fill that gap using a novel dataset. That dataset uses large language model (LLM) processing to codify the objectives of industrial policies on the basis of the descriptions available in the GTA database (see Box 1.2 for details).²⁷

In this exercise, the objectives of industrial policies are grouped together in five clusters:

- growth and productivity, which includes policies that target innovation (by supporting startups, for example), foster exports and investment, and support investment in human capital and infrastructure (with a focus on the intensive margin, as opposed to the creation of jobs)
- creation of employment, which includes policies supporting small and medium-sized enterprises (SMEs), which tend to target employment rather than productivity (as discussed in Chapter 4)
- security of supply (ensuring energy or food security, for example) and protection of strategic industries such as aerospace, defence and semiconductors
- protection of the environment, which includes policies supporting the green transition and encouraging greener practices across the economy (in organic agriculture, for instance)
- regional development, which includes policies aimed at reducing intra-country disparities and supporting disadvantaged regions (for instance, “levelling-up”; see also Chapter 3).

²⁵ See Goldberg et al. (2024) on the impact that government support has on the semiconductor industry. See also Chang (2011) on the question of how global rules and norms can constrain or facilitate the use of industrial policies.

²⁶ See EBRD (2023).

²⁷ The analysis that follows is based on Kóczán et al. (2024).

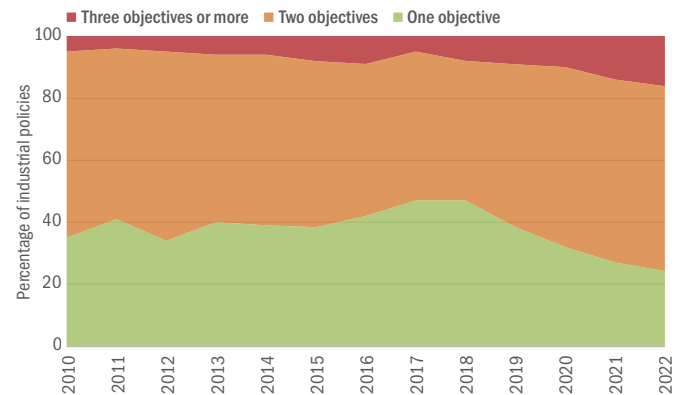
Pursuing multiple objectives may dilute the effectiveness of policies. These clusters of objectives are not mutually exclusive, but one objective does not necessarily support another, so there are likely to be trade-offs between different objectives supporting the same sector. For instance, maximising value added and spillovers to the rest of the economy (through support for high-tech sectors, for example) may be different from maximising employment (through support for labour-intensive sectors such as agribusiness or tourism or support for SMEs, for instance). The latter may be a higher priority in economies where labour forces are growing rapidly. Similarly, a policy that seeks to accelerate the transition to a green economy may prioritise cheaper imports of products such as solar panels or electric vehicles if protecting domestic firms or jobs in those sectors will result in higher prices and slower adoption of green technologies. “Buy American” or “buy European” clauses may achieve geopolitical objectives, but at the cost of reduced efficiency in the short to medium term. Similarly, tariffs on solar panels may help to maintain public support for the green transition, but reduce the speed of that transition owing to the far higher cost of imported panels.²⁸

In some cases, different policymakers target different objectives. In this kind of scenario, central coordination is necessary to prevent the objective of one ministry or region from conflicting with and working against the objective of another ministry or region.

Being more explicit about the aims of industrial policies – ideally focusing on a single objective, but at the very least acknowledging trade-offs between them and establishing a formal hierarchy of objectives – will make it easier for policymakers to acknowledge policies’ failures while taking credit for their successes.²⁹

Around
75%
of industrial policies in emerging markets have multiple objectives

CHART 1.9. Industrial policies are targeting increasing numbers of objectives



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors’ calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. Data are based on the year of announcement, with the same-year restriction applied.

Industrial policies often have multiple objectives

Despite the fact that different objectives may naturally nudge policies in different directions, industrial policies targeting a particular industry will often have two or more stated objectives, with no clear prioritisation. For instance, a government may target green sectors with a view to accelerating the transition to a green economy, while also hoping to ensure energy security and generate jobs.

In fact, in the period 2010-22, 60 per cent of industrial policies in advanced economies and around 75 per cent of industrial policies in the EBRD regions and other emerging markets had multiple objectives, and multiple-objective policies have increased in recent years as a percentage of total policies (see Chart 1.9). More than 10 per cent of policies have three objectives or more, with such policies accounting for a growing share of total policies. As a result, the figure for the average number of objectives associated with an industrial policy has increased from 1.7 in 2010 to almost 2 in 2022.

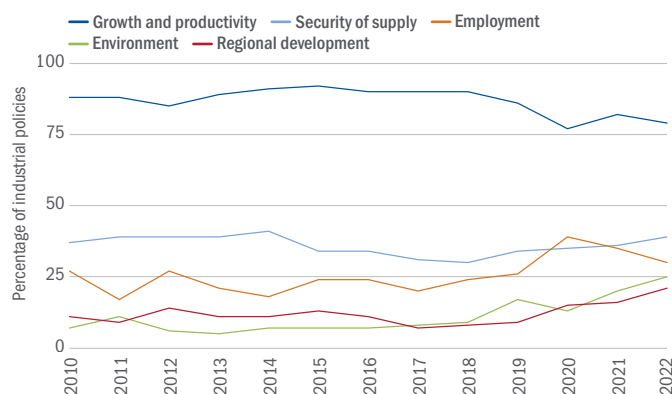
These results echo the findings of Meckling and Strecker (2022), who found that 65 per cent of green innovation policies had at least one additional objective besides tackling climate change.³⁰ As environmental policies often entail concentrated losses in the present and diffuse benefits in the future, governments often tie climate-related measures to job creation or other benefits as part of “green bargains”.

²⁸ See also McWilliams et al. (2024).

²⁹ See also Rodrik (2014).

³⁰ See OECD (2024).

CHART 1.10. The objectives of industrial policies have seen a shift from growth and productivity to the environment and regional development



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

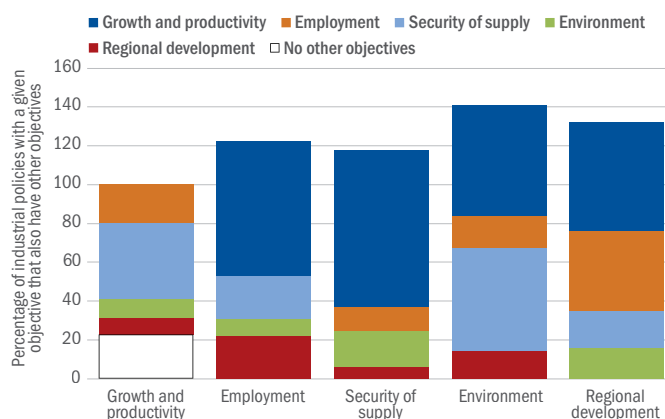
Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. The various figures can add up to more than 100 per cent, as individual industrial policies can have multiple objectives. Data are based on the year of announcement, with the same-year restriction applied.

Most industrial policies target growth, alongside other objectives

Historically, most industrial policies have tended to target growth and productivity (see Chart 1.10), albeit often alongside other objectives, such as a desire to establish a secure supply of strategically important goods or boost employment (see Chart 1.11). Around 23 per cent of industrial policies have growth as their sole objective, and growth is the only objective that is targeted on its own. In the EBRD regions, industrial policies targeting growth and productivity typically involve the promotion of investment and exports, as well as economic diversification through the creation of industrial parks and special economic zones (see Chapter 3). Examples of targeted sectors include the Hungarian and Moroccan automotive industries and Romania's information technology (IT) sector (see also Chapter 2).

Security of supply considerations and support for strategic sectors have played a key role in recent years, being the second most common objective on average in the period 2010-22.

CHART 1.11. The majority of industrial policies target growth, but often alongside other objectives



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators, covering the period 2010-22. The various figures can add up to more than 100 per cent, as individual industrial policies can have multiple objectives.

Shift from growth to support for the green economy and regional development

Over time, there has been an increase in the percentage of policies that support the green economy and regional development, while growth-focused policies have declined as a percentage of total policies (see Chart 1.10). At the same time, green objectives continue to be more common in advanced economies than in emerging markets. For instance, the EU's Net-Zero Industry Act (NZIA) seeks to scale up manufacturing capacity relating to solar photovoltaic and solar thermal technologies, onshore and offshore wind, battery and energy storage, and carbon capture and storage, with a goal of meeting 40 per cent of the EU's manufacturing needs for these technologies domestically by 2030 (a strategic autonomy objective).

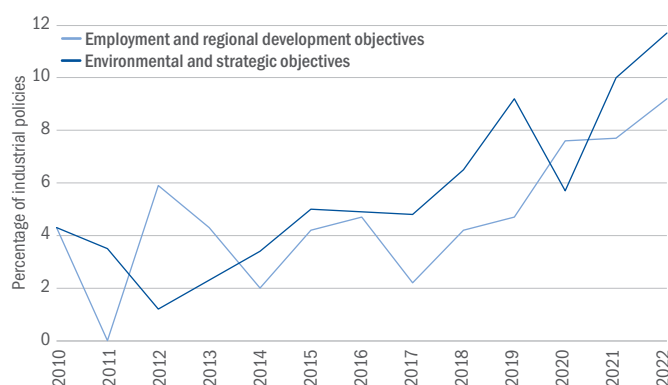
Industrial policies targeting regional development are more common in the EBRD regions than in advanced economies. Many of those policies support agribusiness, and they often target employment creation as well (see Box 1.4). Others (in Estonia, for instance) aim to promote FDI and the upgrading of value chains in the localities that have been most affected by the transition away from mining and carbon-intensive manufacturing.

Around
12%
of industrial policies
combine environmental
objectives with security
of supply in strategic
industries

Industrial policies targeting employment and SMEs saw a strong temporary increase during the Covid 19 crisis, with many governments implementing massive support programmes to stabilise the economy and reduce the social costs of unemployment and underemployment. Some of these policies also included measures seeking to address climate change.

Consistent with the examples above, industrial policies combining environmental objectives with a desire to ensure security of supply in strategic industries have gained in prominence in recent years, as have policies combining employment and regional development objectives (see Chart 1.12).

CHART 1.12. Industrial policies with environmental and strategic objectives and policies targeting employment and regional development have become more common in recent years



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. Data are based on the year of announcement, with the same-year restriction applied.

Evaluating objectives

The existence of multiple objectives makes it more difficult to ascertain whether a policy is working. This makes it all the more important that policymakers define – in private, at least – the main objective associated with each policy instrument.

Where possible, policies should build in mechanisms allowing the evaluation of their success, based on the main objective of each policy. Such evaluations could enable policymakers to modify or abandon policies that fail to live up to expectations at an early stage. Building in policy evaluations upfront may help to alleviate the challenge of exiting unsuccessful policies. Indeed, past experience with industrial policies suggests that letting losers go may, in fact, be more difficult than picking winners.³¹

While discarding unsuccessful initiatives should, in principle, be a less demanding task than picking winners, political economy considerations may result in governments persisting with ineffective policies. For instance, support for infant industries may be maintained for longer than is necessary, with firms lobbying for the continuation of support rather than focusing on improvements in productivity. Human psychology may also lead to a reluctance to dispense with poorly performing policies, as people tend to be particularly averse to losing what they have and admitting failure.³² Recent research finds similar patterns for professional asset managers: they outperform the market considerably when picking stocks to invest in, but they perform poorly when it comes to exiting (performing worse than if they had chosen their exit points at random).³³

³¹ See, for instance, Juhász et al. (2023b).

³² See also Kahneman et al. (1991).

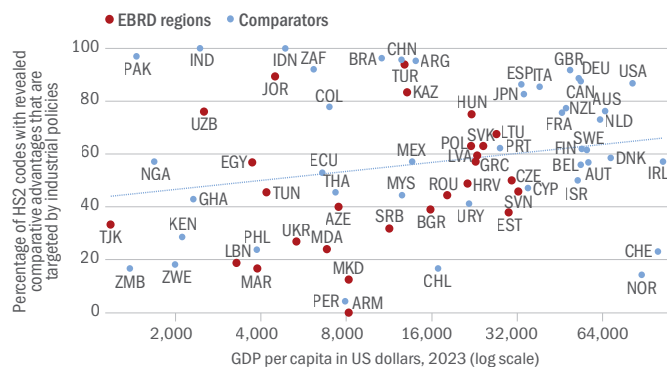
³³ See Akepanidtavorn et al. (2021).

Higher-income economies are more likely to target sectors where they have existing comparative advantages

Industrial policies also differ in terms of their technological ambition. Some target goods where the country already has a revealed comparative advantage in the global market (that is to say, goods whose share of the country's exports is larger than their share of global trade). In contrast, the “moonshot” approach envisages radical changes to the structure of production, targeting new technologies outside a country's established sources of comparative advantage.³⁴

Empirically, industrial policies appear to target a mixture of goods – both with and without comparative advantages (see Chart 1.13). Higher-income economies tend to focus more on existing advantages, perhaps because their more diverse skill base makes it easier to shift to producing and exporting similar products (with those economies being said to have a dense product space).³⁵ For instance, the UK Innovation Strategy prioritises seven key technology families where the United Kingdom already has globally competitive research and development (R&D). In contrast, lower-income economies are more likely to target “aspirational” sectors.

CHART 1.13. Countries target a mixture of goods, both with and without comparative advantages, but higher-income economies tend to focus more on existing advantages



Source: Kóczán et al. (2024), Juhász et al. (2023a), UN Comtrade, IMF and authors' calculations.

Note: This chart is based on HS2 codes with a revealed comparative advantage greater than 1 according to 2022 data. The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates. Only economies with at least 10 industrial policies are shown. The line is fitted to all economies shown in the chart. Some of that correlation may reflect the success of earlier industrial policies.

How are industrial policies implemented?

Government procurement restrictions are common when pursuing employment and regional development objectives

The choice of instruments for industrial policies is influenced by policy objectives. For instance, industrial policies with growth objectives rely more heavily on export-related measures (reflecting the importance of commercial tests and international spillovers), although the prevalence of export-related measures has declined (see Chart 1.14). In contrast, policies with employment objectives often involve measures seeking to promote greenfield FDI – an effective, and highly visible, way to create jobs. Government procurement restrictions are more common for industrial policies targeting employment creation or regional development and are becoming increasingly common in environmental policies. Industrial policies with strategic objectives such as a desire to ensure security of supply are more likely to rely on tariff and non-tariff barriers to trade. Subsidies are commonly used in conjunction with all objectives and have become more common over time.

Grants are most useful at earlier stages of the innovation lifecycle, being used to target younger firms and sectors with significant social returns to investment. In contrast, tax incentives may be better suited to supporting more mature firms with larger tax liabilities and established accounting practices.³⁶

CHART 1.14. Government procurement restrictions are common for industrial policies targeting employment or regional development



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Data are based on 29 economies in the EBRD regions and 119 comparators.

³⁴ See, for instance, Reed (2024). See also Cherif and Hasanov (2019) on the experience of the “Asian Tigers” and Mazzucato (2015) on the “mission-oriented” approach.

³⁵ See Hausmann and Klinger (2006). See also Kee and Tang (2016) on comparative advantages developing through the value chain.

³⁶ See IMF (2024b).

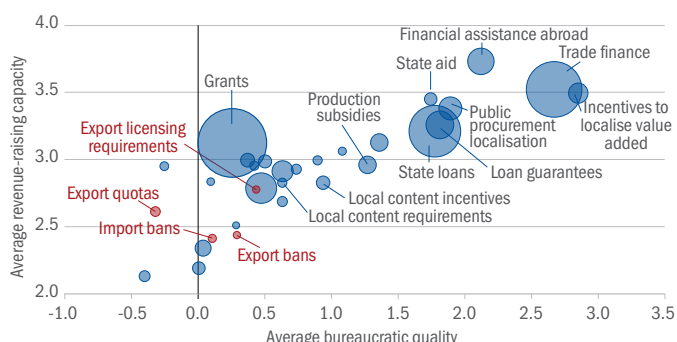
Policy instruments vary in terms of their explicit and implicit costs

An industrial policy with a given objective and target sector can be implemented using a wide range of different instruments (see Chart 1.15, where the size of each bubble is proportionate to the number of industrial policies that use the relevant instrument). Globally, grants (supporting innovation or IT startups, for example), export finance, import tariffs, and loans and loan guarantees provided by the state (often on concessional terms) are the most common instruments, accounting for 67 per cent of industrial policies. Other commonly used instruments include public procurement requirements favouring certain producers, incentives for localising value added in production chains, financial assistance abroad and production subsidies.

The choice of instrument depends on the sector, the objective of the policy and the structure of the market, as well as the government’s administrative and fiscal capacity to deploy the instrument while minimising associated risks and distortions. Many of these instruments may implicitly or explicitly involve picking winners – firms or sectors that receive government largesse. This has direct fiscal costs (in terms of the current or future taxation that is needed to pay for the subsidies) and may, in turn, starve other firms of labour and capital. If subsidised firms have a lower return on labour and capital, this introduces significant distortions into the economy, negatively affecting the dynamism of business and productivity growth.

Some industrial policy instruments are particularly distortionary by nature. For instance, schemes involving government handouts – whether explicit (in the case of subsidies) or implicit (in the case of preferential treatment for procurement or export/import licensing) – are prone to capture by special interests, particularly when economic institutions are weaker. Economic distortion is greater when innovation grants are pocketed in the form of shareholder profits with little or no innovation taking place, and it is smaller (or absent entirely) when firms use those grants to achieve the maximum returns on capital. Even if corruption is not a concern, picking winners wisely still requires strong administrative capacity on the part of governments.

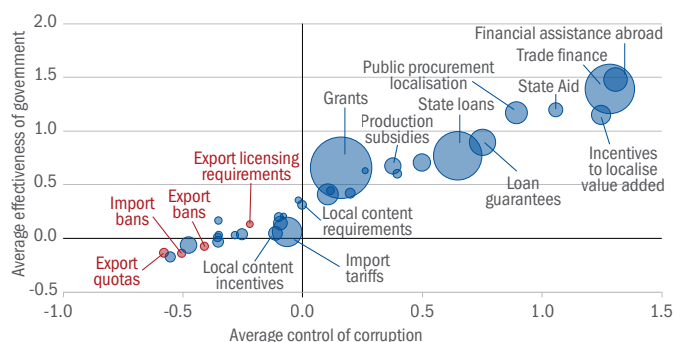
CHART 1.15. Less-distortive instruments require higher bureaucratic quality and greater revenue-raising capacity



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors’ calculations.

Note: The size of each bubble is proportionate to the number of industrial policies that use the relevant instrument globally. Data are based on 29 economies in the EBRD regions and 118 comparators. “Bureaucratic quality” refers to the V-Dem indicator assessing the rigour and impartiality of public administration, while “revenue-raising capacity” refers to the V-Dem indicator assessing sources of fiscal revenue (as featured in Charts 1.4 and 1.5). Figures for bureaucratic quality and revenue-raising capacity are averages over the period 2010-21 for economies that implement industrial policies using the relevant instrument. The chart only shows instruments that are used to implement at least 75 policies globally, with selected instruments being labelled. Instruments that are considered highly distortive in IMF (2024a) are labelled in red.

CHART 1.16. Instruments such as trade finance and financial assistance abroad have less risk of capture and distortion than export/import bans, quotas and licensing requirements



Source: Kóczán et al. (2024), Juhász et al. (2023a), the World Bank’s Worldwide Governance Indicators (WGIs) and authors’ calculations.

Note: The size of each bubble is proportionate to the number of industrial policies that use the relevant instrument globally. Data are based on 29 economies in the EBRD regions and 118 comparators. Figures for control of corruption and the effectiveness of government are averages over the period 2010-21 for economies that implement industrial policies using the relevant instrument, with both measures ranging from -2.5 to 2.5. The chart only shows instruments that are used to implement at least 75 policies globally, with selected instruments being labelled. Instruments that are considered highly distortive in IMF (2024a) are labelled in red.

Less-distortive instruments require greater administrative capacity

Policy instruments differ vastly in terms of the average administrative capacity of the economies that implement them (see horizontal axis of Chart 1.15), as well as the average capacity to raise fiscal revenue (see vertical axis).

In general, bans (such as import/export bans), quotas and licensing requirements tend to be the most distortive (see IMF, 2024b), as they affect firms across the board with little room for adjustment by the affected firms. Perhaps reflecting this, as well as past experience with such policies, those instruments are used fairly infrequently (see Chart 1.15, where the respective bubbles are relatively small). However, those instruments are relatively easy to implement and have low direct fiscal costs. As a result, they tend to be used by economies with lower levels of bureaucratic quality and revenue-raising capacity.

In contrast, instruments such as trade finance, incentives to localise value added and localisation requirements in public procurement are associated with relatively high levels of administrative capacity. Accordingly, they are more common in advanced economies than in the EBRD regions (and tend, more generally, to be used more frequently in richer economies). Grants, meanwhile, are commonly implemented in economies with lower bureaucratic quality but tend to require relatively high levels of revenue-raising capacity – the most notable deviation from the diagonal in Chart 1.15, where the average administrative and revenue-raising capacities that are associated with policy instruments are otherwise broadly aligned.

In order to further examine the question of which instruments tend to be used most often in which economies, Chart 1.16 calculates, for each instrument, average control of corruption and government effectiveness scores on the basis of the World Bank's Worldwide Governance Indicators (WGIs) for all countries that implement policies using the instrument in question. Control of corruption scores capture perceptions of the extent to which public power is exercised for private gain, while government effectiveness scores capture perceptions regarding the quality of public services, the quality of the civil service (and the extent of its independence from political pressure), the quality of the formulation and implementation of policies, and the credibility of the government's commitment to such policies.³⁷

Instruments such as trade finance and financial assistance abroad are typically used by economies with high scores for control of corruption and government effectiveness. Local content requirements and incentives, however, are typically used by economies with lower scores.

The instruments that are widely considered to be the most distortive tend to be used in economies with very low scores for the effectiveness of government and control of corruption (see the bottom left corner of Chart 1.16), where government policies in general tend to be distortive and prone to capture.

Competitive elements help to minimise distortion

When political capture, distortion and a poor track record of picking winners are major concerns, industrial policies can generally respond by building more competitive elements into the choice of instruments. Grants can, for instance, be awarded on a competitive basis, private-sector participation can be sought in the case of state loans or state venture capital investment, and firms can be subjected to international competition by not discriminating against foreign firms or encouraging recipients of state support to seek expansion in export markets. Indeed, two of the instruments in the top right corner of Charts 1.15 and 1.16, trade finance and financial assistance abroad, have international competition elements built in by design. Policies incorporating competitive elements are, in general, associated with higher levels of administrative capacity and high scores for control of corruption and government effectiveness; however, policymakers can seek to establish “pockets of excellence” even in weak institutional environments.³⁸

Market competition tests can improve accountability and leverage technology spillovers from integration.³⁹ Investment promotion policies that seek to leverage FDI can be inexpensive, non-distortive and effective⁴⁰ in facilitating knowledge transfer and re-shaping countries' comparative advantages and export structures,⁴¹ including by boosting the complexity of exported products.⁴²

³⁷ See Kaufmann et al. (2009).

³⁸ See also previous discussions of this issue in EBRD (2012, 2013, 2019).

³⁹ See also IMF (2024b).

⁴⁰ See Harding and Javorcik (2011).

⁴¹ See Harding et al. (2019).

⁴² See Javorcik et al. (2018) and Javorcik (2004).

Most recent industrial policies have discriminated against foreign entities

At the same time, most recent industrial policies have been “closed” – that is to say, they have discriminated against foreign interests (for instance, by establishing import barriers or subsidising domestic producers). At the same time, some provisions restrict outward foreign investment or exports. For instance, recipients of funding and tax credits in the United States under the CHIPS and Science Act are prohibited from expanding semiconductor manufacturing in countries that pose a threat to national security for 10 years.⁴³

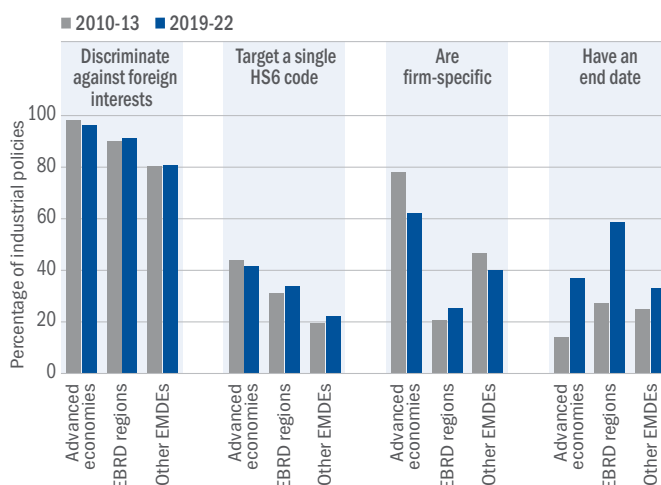
Closed policies account for over 90 per cent of all industrial policies implemented between 2010 and 2022 (see Chart 1.17).⁴⁴ The closed nature of most industrial policies increases the importance of strengthening competitive elements in the allocation of funding at domestic level – which, in turn, makes the implementation of those policies more challenging in terms of the administrative capacity that is required to maximise their benefits while limiting distortion.

Industrial policies in the EBRD regions are broader in scope than their equivalents in advanced economies

A given policy instrument, such as subsidies or import tariffs, can be used to target a narrowly defined sector (such as the electrical energy sector, which has the HS6 code 271600) or it can apply more broadly across multiple sectors (such as the group of sectors with HS2 code 27, which relate to mineral fuels). Narrower policies can be easier to define and implement. At the same time, however, the effectiveness of policies favouring specific firms may be undermined by rent-seeking behaviour, since the small number of agents that benefit from such policies will have strong incentives to try to influence decision-makers.⁴⁵ Increased scrutiny around the utilisation of funds (such as grants or subsidies) may alleviate such concerns somewhat, but the associated red tape may reduce the uptake of funds, especially for smaller firms.

Industrial policies in the EBRD regions and other emerging market economies tend to be broader in scope than their equivalents in advanced economies (see Chart 1.18). In the EBRD regions, 30 per cent of industrial policies target a single HS6 code, compared with around 40 per cent in advanced economies. Similarly, in the EBRD regions, over 10 per cent of industrial policies are very broad, targeting six HS2 codes or more, compared with less than 5 per cent of industrial policies in advanced economies.

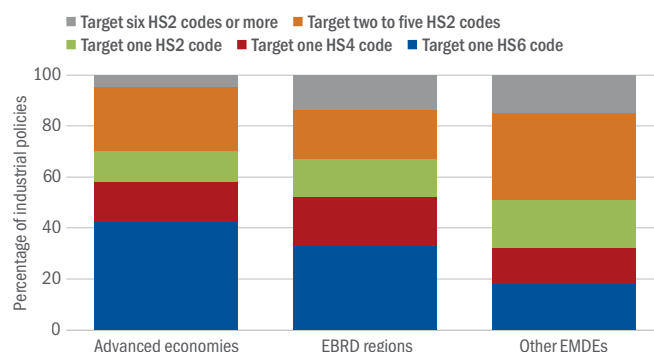
CHART 1.17. Industrial policies are now more likely to have an end date



Source: GTA, Kóczán et al. (2024), Juhász et al. (2023a) and authors’ calculations.

Note: Data are based on 28 economies in the EBRD regions, 30 advanced economies and 81 EMDE comparators. Figures for firm-specific policies are based on the GTA classification.

CHART 1.18. Industrial policies tend to be broader in scope in the EBRD regions and other emerging market economies than in advanced economies



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors’ calculations.

Note: Data are based on 28 economies in the EBRD regions, 30 advanced economies and 81 other EMDEs over the period 2010-22.

Policies that discriminate against foreign interests account for over

90%
of all industrial policies implemented between 2010 and 2022

⁴³ See Millot and Rawdanowicz (2024).

⁴⁴ Based on Evenett et al. (2024) and the GTA database.

⁴⁵ See Fernández-Arias et al. (2014).

Firm-specific policies are common

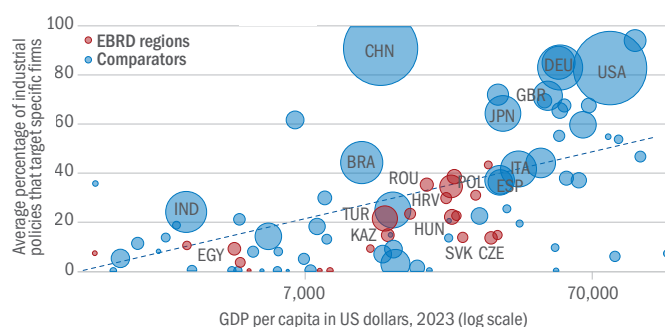
Industrial policies in higher-income economies are also more likely to target specific firms (see Chart 1.19; see also Chapter 4 for a discussion of the instruments used and examples of firm-specific policies). For instance, around 25 per cent of industrial policies in India target individual firms, as do 35 per cent of policies in Poland and Romania. In contrast, over 80 per cent of industrial policies in Canada and the United States target specific firms (through export-import loans, for instance). China stands out as having a high percentage of firm-specific policies for its level of development, with its policies typically targeting large enterprises in the manufacturing sector (which are often state owned).⁴⁶ In contrast, in Peru and Romania, for example, up to a quarter of industrial policies are aimed specifically at SMEs, often with an employment objective (see also Chapter 4).

The fact that firm-specific policies make up a larger percentage of total industrial policies in higher income economies is, in part, a reflection of the choice of instruments. Policy instruments such as trade finance, financial assistance in foreign markets and incentives to localise value added are more likely to target specific firms, and those instruments are more commonly used in advanced economies. Indeed, at a global level, more than 80 per cent of all industrial policies that use such instruments are firm-specific. At the same time, when using those particular instruments, higher income economies are also more likely to target specific firms than lower-income economies.

Higher incidence of firm-specific policies in a particular economy might also reflect a focus on global competition between economies, rather than competition within the economy in question.⁴⁷ In many economies, a small number of “superstar” firms are now shaping their countries’ trade patterns and comparative advantages. For instance, Krka, a pharmaceutical company in Slovenia, accounts for around 3 per cent of the country’s exports and GDP. Similarly, at Nokia’s peak in the mid-2000s the firm accounted for 25 per cent of Finland’s total exports and 4 per cent of Finnish GDP.⁴⁸ While firm specific policies are still used less widely in the EBRD regions than in advanced economies, they have become more common over time (see Chart 1.17).

Firm-specific policies in emerging markets often cite security of supply objectives (with such goals accounting for over 90 per cent of firm-specific policies in China and 60 per cent in Türkiye, for instance). In contrast, non-firm-specific industrial policies are more likely to have employment objectives, a trend that can be observed in advanced economies and emerging markets alike.

CHART 1.19. In higher-income economies, industrial policies are more likely to target specific firms



Source: GTA, IMF, Kóczán et al. (2024), Juhász et al. (2023a) and authors’ calculations.

Note: The size of each bubble is proportionate to the total number of industrial policies announced in the relevant economy over the period 2010-22. Figures for firm-specific policies are based on the GTA classification. Data on firm-specific policies are averages covering the period 2010-22. Only economies with at least 10 industrial policies are shown. The line is fitted to all economies shown in the chart, with selected economies labelled. The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates.

“Soft” industrial policies

At the opposite end of the spectrum from policies awarding subsidies and grants to specific firms are “soft” industrial policies – policies that institutionalise information sharing and collaboration between the government and industry and help to identify key bottlenecks obstructing development. Peru’s *Mesas Ejecutivas* are a good example of this kind of initiative. These working groups, which bring together private and public actors with an interest in a particular sector or factor of production, seek to identify and remove constraints affecting the productivity of the sector or factor in question. They help to identify market and coordination failures, and can, importantly, evaluate and expedite solutions across different areas of the country’s public administration. They are most successful as dynamic processes that involve joint learning. In some cases, their impact has extended far beyond their initial objectives and programmes and resulted in long-term collaboration. This experience suggests that durable industrial policy bodies can be established even in lower-capacity environments.⁴⁹

⁴⁶ See Lardy (2019) and Branstetter et al. (2022).

⁴⁷ See Gaubert and Itskhoki (2021).

⁴⁸ See Freund and Pierola (2015).

⁴⁹ See Fernández-Arias et al. (2014, 2017).

In the EBRD regions, Lithuania, Montenegro, Serbia and Slovenia all have programmes promoting collaboration between universities and the private sector in support of innovation, while Armenia and Mongolia have programmes focusing on marketing and branding.⁵⁰ The EBRD's Investment Councils – platforms for public-private dialogue where businesses and policymakers can come together to tackle investment climate-related challenges – can also be regarded as an example of “soft” policies. This type of approach can be particularly advantageous in situations where administrative capacity is low and the risk of capture by special interests is high.⁵¹

Sunset clauses have become more common

Industrial policies tend to be easier to introduce than abandon. Subsidies given to specific firms or narrowly defined industries can result in addiction and calls for that promotional policy to be extended indefinitely, regardless of its benefits.⁵² Indeed, infant industry policies are often continued well beyond those industries' childhood years.⁵³ This issue of “dynamic inconsistency” also applies to policies facilitating the winding-down of “sunset industries” (such as policies phasing out coal mines).

In addition to the establishment of built-in evaluation mechanisms to monitor progress towards policy objectives, incorporating sunset clauses (that is to say, automatic end dates) in policies at the outset may make it easier to phase policies out. Globally, around one-third of all industrial policies have an end date – one that has been announced publicly – according to information in the GTA database. End dates tend to be more common for (i) policies with a higher fiscal cost, such as financial grants and state aid, and (ii) policies targeting regional development (with 45 per cent of regional development policies having sunset clauses).

The incorporation of end dates has become more common in recent years, both in the EBRD regions and in advanced economies (see Chart 1.17). This development, which has coincided with the rise in more addictive instruments such as subsidies, is welcome and may, to some extent, indicate that countries are learning from decades of past experience with industrial policies. Nonetheless, the risk of policies being rolled over irrespective of their merits remains, even if the default option is for those policies to expire.

Conclusion and policy implications

The externalities and market failures that industrial policies seek to address – such as environmental degradation – are very real and becoming increasingly pressing. Industrial policies are one option available to policymakers in terms of responding to such market failures. While their track record has been mixed (see Box 1.5), the decision to opt for that approach may be dictated by domestic political economy considerations and rising geopolitical tensions. This appears to be resulting in a situation where industrial policies are increasingly being deployed by economies with less administrative and fiscal capacity to implement them.

There are a number of intrinsic trade-offs in the design and implementation of industrial policies. Those policies may pursue multiple objectives – such as a desire to speed up the green transition while ensuring a secure domestic supply of green technologies; or a desire to encourage innovation while increasing job creation – which may not necessarily be aligned with each other. Industrial policies can produce substantial benefits in terms of spillovers to the rest of the economy, as well as to neighbouring economies, but they can also be associated with high explicit fiscal costs and significant implicit costs in terms of distorting the market-based allocation of capital and labour in the economy. Policies that have lower fiscal costs and require less administrative capacity for their implementation may be particularly distortive. Policies that are narrower in scope may be easier and less expensive to implement, but they can lead to addiction and be prone to political capture. At the same time, attempts to alleviate concerns about the misuse of funds may increase red tape and hinder the uptake of incentives, particularly for small, young innovative firms. “Moonshot” approaches and coordinated policy packages targeting capabilities that are not currently present in the economy promise large benefits, but entail far greater risks than incremental approaches based on economies' existing comparative advantages.⁵⁴

Globally, around
**ONE-THIRD OF
INDUSTRIAL POLICIES**
have an explicit end date

⁵⁰ See Fernández-Arias et al. (2014).

⁵¹ See Harrison and Rodríguez-Clare (2010) and Juhász and Lane (2024).

⁵² See Fernández-Arias et al. (2014).

⁵³ See Juhász and Lane (2024).

⁵⁴ See World Bank (2024).

Past experience with industrial policies suggests that there are a number of general principles which can help to maximise social returns on policy measures while minimising distortion:

- The main objectives of each policy measure should be articulated – in private at least, and publicly if possible – with clear prioritisation in the event of multiple objectives.⁵⁵ Being more explicit about industrial policies’ objectives – ideally focusing on a single objective, but at the very least acknowledging trade-offs between them and establishing a formal hierarchy of objectives – will make it easier for policymakers to acknowledge policies’ failures while taking credit for their successes. Central coordination can help to prevent policies from counteracting each other.
- If the objective is clear, evaluations should be built in to assess whether policies are on track. In this context, letting losers go is more important than picking winners. Evaluation should be seen as an iterative process resulting in “learning by doing” and modifications to policy instruments and objectives.⁵⁶
- Where feasible, policies should build in competitive pressures and market tests, including through outward orientation and incentives for knowledge transfer.⁵⁷
- The choice of policy instruments should be appropriate given the policy’s objectives, the available fiscal space and the administrative capacity to design and implement the policy.
- Policy choices should address the question of how policies can eventually be phased out. Addictive policies should be avoided by including institutional safeguards (such as clear benchmarks), close monitoring and explicit mechanisms for ending support.⁵⁸
- As the ability to implement industrial policies is crucial, they should be accompanied by continuous investment in administrative capacity and bureaucratic quality.⁵⁹

Where the administrative capacity to design and implement policies is fairly limited, there are a number of important additional considerations for policymakers:

- Narrow sectors should be targeted, depending on the constraints in terms of fiscal space.
- It is important to start with “quick wins” to increase trust in policies and create momentum.⁶⁰
- If collaboration within the public sector is difficult, it is better to focus on projects falling within the remit of a single ministry.⁶¹
- Setting up specialist units with superior skills and pay outside civil service structures makes it easier to hire, fire or reassign experts.⁶²
- Supplementing traditional policy instruments with “soft” industrial policies institutionalising information sharing and collaboration between the public and private sectors is a low-cost approach which can be implemented even in the context of weak overall institutions.⁶³
- In less technologically advanced countries, policymakers should focus on promoting the diffusion of technologies developed elsewhere, leveraging foreign investment, while at the same time continuing to invest in human capital, infrastructure and institutions as the key ingredients for growth and development.
- Policymakers should prioritise instruments with competitive selection elements, particularly if they are targeting large individual firms, with selection ideally delegated to expert bodies with a well-established reputation and the capacity to undertake technical evaluations.⁶⁴

⁵⁵ See Harrison et al. (2017) and Terzi et al. (2022).

⁵⁶ See Fernández-Arias et al. (2014) and Rodrik (2004).

⁵⁷ See Harrison and Rodríguez-Clare (2010).

⁵⁸ See Millot and Rawdanowicz (2024).

⁵⁹ See Fernández-Arias et al. (2014) and Juhász and Lane (2024).

⁶⁰ See Utterwulghe and Ghezzi (2017).

⁶¹ See Fernández-Arias et al. (2014) and Utterwulghe and Ghezzi (2017).

⁶² See Fernández-Arias et al. (2014).

⁶³ See Harrison and Rodríguez-Clare (2010).

⁶⁴ See Millot and Rawdanowicz (2024) and Juhász and Lane (2024). See also Box 4.3 on the role that a new state agency is playing in the former East Germany in the area of privatisation.

BOX 1.1.**A brief history of industrial policies**

The origins of industrial policies can be traced back at least as far as the late 18th century. In 1791 Alexander Hamilton laid the foundations for US industrial policy with his *Report on the Subject of Manufactures*, in which he advocated (i) high tariffs to protect emerging US industries from foreign competition, (ii) subsidies to support small domestic firms, (iii) import restrictions to create a more favourable market for US producers, (iv) tax exemptions for strategic sectors, (v) an export ban on new technologies to safeguard US innovations and (vi) significant investment in infrastructure, with the objective of establishing industrial self-sufficiency and reducing reliance on imports.⁶⁵

In the 19th century, governments increasingly prioritised infrastructure. The United Kingdom invested heavily in the expansion of railways and steamships and began liberalising trade, while the United States constructed railways, canals and telegraph networks.

In the late 19th century and the early 20th century, industrial policies evolved in order to strike a balance between state intervention and reliance on market forces. The United States, for example, implemented antitrust laws such as the Sherman and Clayton Acts to prevent monopolies and ensure competition, while the United Kingdom supported SMEs using tariffs, subsidies and tax breaks in order to promote economic growth. France, meanwhile, nationalised key industries and supported selected strategic sectors (including aviation), and Latin American countries such as Argentina, Brazil and Mexico used import substitution industrialisation (ISI) to reduce their dependence on foreign goods, deploying quotas, tariffs and subsidies in order to support their domestic industries.⁶⁶

Industrial policies became particularly popular in the aftermath of the Second World War. At that time, there was a broad consensus that the provision of public goods and services, government support for innovation, and multilateral trade and finance arrangements were the key to speeding up post-war reconstruction and raising living standards.⁶⁷ This policy consensus, which lasted around three decades, was also endorsed by developing economies, with notable examples including the success

of industrial policies in the “miracle countries” of East Asia and the failure of import substitution in Latin America. Prominent examples of policies in East Asia and Latin America included support for the South Korean steel company POSCO and the Brazilian aircraft manufacturer Embraer.⁶⁸ Emphasis was often placed on addressing coordination failures and promoting sectors that could supply essential inputs to other industries, thereby fostering complementary demand across the economy.⁶⁹

In the 1970s, industrial policies started to lose their appeal, with mainstream economics stressing the distortion that arose from state intervention and documenting the failures of governments that had sought to rectify market failures. In 1986 US President Ronald Reagan famously remarked that the nine most terrifying words in the English language were “I’m from the government and I’m here to help”. Nevertheless, many countries continued to use industrial policy instruments, albeit often in a lower-key fashion.⁷⁰

The late 1990s and early 2000s witnessed a resurgence in state intervention. Industrial policy evolved to address growing concerns about market failures (including in the area of environmental protection), reflecting broader recognition of the state’s role in fostering innovation and economic development.⁷¹ The succession of major economic crises over the last 15 years, coupled with increased awareness of environmental challenges and perceptions of rising inequality within economies, have further increased demands for state intervention.⁷²

Rising geopolitical tensions have brought strategic industries and security of supply considerations into the spotlight.⁷³ In the United States, the CHIPS and Science Act, which was adopted in 2022, aims to strengthen competitiveness, innovation and national security in the semiconductor sector and increase the numbers of people working in science, technology, engineering and maths (STEM) sectors by using tax credits to support investment in manufacturing, sectoral R&D funding and funding for education and skills.⁷⁴ Meanwhile, the IRA aims to reshape the power sector by fostering the decarbonisation of the electricity generation and electric vehicle industries using production and investment tax credits for clean electricity and energy storage.⁷⁵

⁶⁵ See Nester (1998).

⁶⁶ See Tafunell (2007).

⁶⁷ See Salazar-Xirinachs et al. (2014).

⁶⁸ See, for instance, Cherif and Hasanov (2019).

⁶⁹ See Hirschman (1958).

⁷⁰ See Wade (2012).

⁷¹ See Aiginger and Rodrik (2020).

⁷² See EBRD (2020).

⁷³ See Millot and Rawdanowicz (2024).

⁷⁴ See Cooper (2022).

⁷⁵ See Bistline et al. (2023).

In the European Union, major industrial policies adopted in recent years include (i) the New Industrial Strategy for Europe, which aims to support the green and digital transitions and reduce strategic dependence on imports, (ii) the European Chips Act, which is aimed at supporting semiconductor production in the European Union and reducing dependence on external producers, and (iii) the European Green Deal, which aims to make the EU climate-neutral by 2050 through initiatives that support renewable energy use, energy efficiency and sustainable agriculture, foster significant investment in clean technologies and create green jobs, while ensuring a “just transition” for all regions and industries.

The Made in China 2025 plan was the centrepiece of the industrial strategy that China launched in 2015, which sought to shift the economy towards innovation-driven production of higher-value products and services and reduce dependence on foreign suppliers in those sectors. That programme targeted 10 industries, including next-generation IT, high-end digital control machine tools and robotics, and electric power equipment.⁷⁶

⁷⁶ See Branstetter and Li (2022).

BOX 1.2.**Identifying industrial policies and their objectives**

This box provides further details on the methodology behind the novel database of industrial policies – an expanded version of the database in Juhász et al. (2023a) – which forms the basis for most of the analysis presented in this chapter.

Juhász et al. (2023a) used a text-based approach to measure the number of industrial policies at a global level over time. Their algorithm categorised policies recorded in the GTA database over the period 2009-22 using supervised machine learning. By zooming in on the objectives of policies, the algorithm was able to categorise commercial policies as “industrial” or “non-industrial”.⁷⁷ In the absence of information that unambiguously identified a policy as industrial, the policy in question was left unclassified. Thus, the number of policies classified as “industrial” by the algorithm is likely to constitute a lower-bound estimate of the total number of industrial policies.

Unclassified policies accounted for 43 per cent of all policies globally and 69 per cent of policies in emerging market economies (with figures as high as 100 per cent being recorded in some economies in Central Asia and the Caucasus). In Estonia, Germany, Latvia, the United Kingdom and the United States, by contrast, less than 20 per cent of policies were unclassified.

In order to examine industrial policies in the EBRD regions and other emerging markets, the Juhász et al. (2023a) dataset was expanded using ChatGPT and a finetuned prompt. In order to develop the prompt, stratified random samples of policies at the instrument-country-year level were coded manually for the United States and Kazakhstan. This manual coding was then compared with ChatGPT classifications obtained using a minimal prompt. It became apparent that the minimal prompt had resulted in ChatGPT repeatedly excluding certain types of policy, including policies in the transport, infrastructure and agriculture sectors, as well as policies used by various government agencies to support firms (such as guaranteed loans issued by the Export-Import Bank of the United States to support Boeing’s exports). The prompt was then adjusted to account for those discrepancies, resulting in the following prompt:

“You are an expert in industrial policy. You are very familiar with such policies, including but not limited to infrastructure, transportation, agriculture, manufacturing, etc. Specifically, if a policy clearly aims to support a domestic company’s export behaviour by granting loans to a foreign company (such as policies used by the Export-Import Bank of the United States to support US companies, and other similar policies used by similar government agencies in different countries), this policy should also be considered an industrial policy. Given the below policy text, is it an industrial policy? Please think step by step. Your answer should start with ‘Yes’ or ‘No’, and then the next paragraph should provide a concise explanation.”

As a result of this adjustment to the prompt, around 55 per cent of the policies that had previously been unclassified were coded as industrial policies. Thus, the ChatGPT classification now matched the manual coding for 94 per cent of the US policies and 85 per cent of the Kazakh policies. More generally, when looking at trends in terms of numbers of policies and distributions by instrument and by product targeted, the patterns in the expanded dataset were very similar to those in the Juhász et al. (2023a) dataset for advanced economies.

A number of entries were identical in terms of the policy instruments listed and concerned the same country and year, but had slight differences in their descriptions as regards the level of detail on objectives. In the Juhász et al. (2023a) dataset, those differences could result in policies being placed in different categories, but the same was not true of the ChatGPT classification. For example, there were two very similar descriptions of policies in the same country and year: “a ban on fuel exports” and “a ban on fuel exports, *with the objective of protecting domestic producers*”. In the Juhász et al. (2023a) dataset, the former was unclassified, but the latter (which included additional information on the objective of the policy) was classified as an industrial policy. In the expanded dataset, ChatGPT classified both as industrial policies.

⁷⁷ For more details on the classification process, see Juhász et al. (2023a).

The GTA database, which was the basis for the Juhász et al. (2023a) dataset, the expanded dataset used in this chapter and the dataset used by Evenett et al. (2024), is updated on a rolling basis when new information becomes available. Some policies are added when they are announced, while others are backfilled. Backfilling can mean that data for more recent years are less complete. For instance, at the time of writing, in 2024, authorities have only had two years to report policies that were implemented in 2022, but they have had 10 years to document state intervention that took place in 2014.⁷⁸ The amount of backfilling varies by country. It is particularly common with China, reflecting the decentralised implementation of many policies.⁷⁹ In order to make the flows of industrial policies comparable over time, analysis in this chapter generally follows the approach adopted in Juhász et al. (2023a) by applying a “same-year restriction” – that is to say, it only considers policies that are announced and included in the GTA database in the same calendar year.⁸⁰

The expanded dataset also used ChatGPT to code the objectives of industrial policies on the basis of their descriptions in the GTA database. First, manual analysis of the descriptions of 65 industrial policies in various economies yielded 11 commonly used objectives.⁸¹ These were then grouped together in five main clusters: “growth and productivity” (which included measures to enhance competitiveness, investment promotion, export promotion and trade facilitation, infrastructure development, human capital development, and R&D and innovation), “employment” (which included employment creation and support for SMEs), “security of supply and strategic industries”, “environment” and “regional development”. ChatGPT was then asked to identify whether each policy pursued one of the 11 disaggregated objectives and provide a justification for its answer.

⁷⁸ See Evenett (2019).

⁷⁹ See Goldberg et al. (2024).

⁸⁰ See Juhász et al. (2023a).

⁸¹ There was considerable overlap between these objectives and those identified in UNCTAD (2018), for instance.

BOX 1.3.**Localisation rules**

Localisation rules – policies that require firms to use a certain percentage of domestically produced inputs – have a long history and are a popular way of supporting domestic industries. They are often a feature of public procurement policies. Variants of such rules may require foreign investors to share technology with domestic joint venture partners or store all data locally.

Localisation rules accounted for 15 per cent of all industrial policies in 2022, up from 9 per cent in 2010. Around 41 per cent of those rules relate to localisation in public procurement, 32 per cent provide incentives to localise value added, while 16 per cent are local content incentives. They are used in a wide variety of countries, from India to the United Kingdom and from Brazil to Germany, and cover a broad range of sectors. Examples include local sourcing requirements attached to grants for developing local broadband infrastructure in the United States, export rebates encouraging the use of local components in textiles and manufacturing in Egypt, local content requirements for subsoil operations in Kazakhstan and local operations requirements for the installation of 5G networks in Türkiye.

Like many other non-tariff measures, localisation rules are motivated by infant industry arguments asserting that less-established local producers in various value chains require state intervention in order to grow. They are more likely to target employment creation than other industrial policies (with 53 per cent of localisation policies having that as a stated objective, compared with 24 per cent for industrial policies in general). In turn, security of supply objectives are less common with localisation policies than with industrial policies in general (with those objectives being observed for only 31 per cent of localisation policies, compared with 42 per cent for industrial policies in general).

Localisation rules can help to deepen supply chains and upgrade technology. Such requirements may incentivise companies to reach out to existing or new local suppliers – and those suppliers, in turn, may be in a position to adopt the latest technologies, leveraging the scale of the new market open to them and benefiting from training provided by large off-takers. That was the case in Norway, for example, following the discovery of offshore oil and gas.⁸³

However, such requirements can also increase the cost of domestic production and impose higher prices on consumers by shielding domestic producers from competition.⁸⁴ If the right skills and incentives are not

present, such requirements may create excess profits for firms supplying substandard products at inflated prices and limit imports of the latest technologies, thus undermining the development of the very industries that the local content requirements were intended to support.⁸⁵ This can result in the multiplication of production facilities (which is not economically rational and entails higher production costs), the loss of jobs elsewhere in the economy, and lags in the introduction of new technologies and practices.

Localisation rules are likely to be less distortive where (i) domestic markets are large, allowing local producers to scale up quickly and subsequently expand abroad using knowledge they have acquired domestically, (ii) the goods and services that are sourced locally are produced competitively (so would probably be used even in the absence of such requirements), and (iii) goods and services are non-tradeable.

In order to minimise the distortion associated with local content requirements, it is important to provide an unambiguous definition of what constitutes local content and ensure that policy ambitions match the economy's technical potential and resource capacity.⁸⁶ As with other policies, it is important to monitor whether these rules are on course to achieve their stated objectives (in terms of boosting employment or increasing value added, for instance). Policy accountability could be further enhanced by creating a dedicated independent government authority responsible for monitoring local content and ensuring that eligible firms have equal opportunities to apply and compete for contracts with local content rules.

Calibrating such requirements and gradually phasing them out as local producers become internationally competitive relies on industry regulators being highly independent and highly professional. Thus, governments with significant administrative capacity have far more policy options than those with more limited capacity.⁸⁷

Notable alternatives to conventional local content instruments include joint ventures with foreign firms, programmes supporting vocational training, and measures incentivising R&D.⁸⁸

⁸² See Deringer et al. (2018).

⁸³ See EBRD (2020).

⁸⁴ See Veloso (2006) and Hufbauer et al. (2013) for a review.

⁸⁵ See EBRD (2020).

⁸⁶ See Klueh et al. (2007, 2009).

⁸⁷ See EBRD (2020).

⁸⁸ See Klueh et al. (2007).

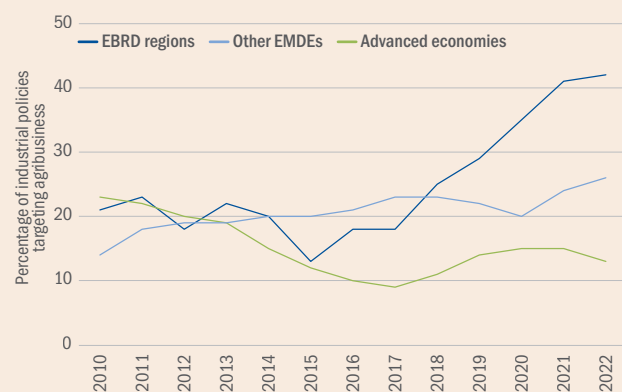
BOX 1.4.**Industrial policies targeting agribusiness**

While industrial policies are often associated with manufacturing, high-tech sectors and the generation of energy, a large number of those policies are aimed at the agricultural sector. In fact, policies targeting agriculture have become far more common in the EBRD regions in recent years (see Chart 1.4.1).

Industrial policies targeting agribusiness are more likely to have regional development objectives and employment objectives than industrial policies in general (with those objectives being observed for 46 per cent and 27 per cent of industrial policies targeting agribusiness respectively). The recent rise in industrial policies targeting agribusiness in the EBRD regions and other EMDEs has been driven by policies with environmental and regional development objectives (primarily relating to sustainable agriculture), while food security objectives have declined in prominence.

In the EBRD regions, industrial policies targeting agribusiness typically involve financial grants, subsidies, import tariffs and mechanisms aimed at stabilising the prices of agricultural commodities. In advanced economies, by contrast, trade finance, production subsidies and state loans are common features of such policies, while price stabilisation mechanisms are rare.

CHART 1.4.1. The percentage of industrial policies targeting agribusiness has increased in the EBRD regions



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 27 economies in the EBRD regions, 28 advanced economies and 70 EMDE comparators. It indicates the percentage of industrial policies that target at least one HS section within the agribusiness sector and is normalised such that shares across all sectors sum to 100 per cent. Agribusiness includes vegetable products, live animals and animal products, prepared foodstuffs and tobacco, and fats, oils and waxes. Figures represent three-year moving averages. Data are based on the year of announcement, with the same-year restriction applied.

BOX 1.5.**The broader effects of industrial policies: selected case studies**

Despite the renewed interest in industrial policies, empirical evidence on their benefits and costs remains scarce. According to a number of recent studies, industrial policies often deliver on their narrowly defined objectives, but the direct and indirect costs of such interventions can be high.⁸⁹ As a result, it can often be difficult to determine whether the benefits of specific policies have outweighed their costs after the fact, let alone predict the success or failure of policies in advance.

For instance, “Buy American” provisions introduced for purchases of final goods in the United States are estimated to have created up to 100,000 jobs, at an estimated cost of between US\$ 111,000 and US\$ 238,000 per job, with the cost per job rising over time.⁹⁰ Under these policies – the origins of which date all the way back to 1933 – goods purchased by the US federal government must be manufactured in the United States, with local US content totalling at least 50 per cent, unless specific waiver conditions are met.

In contrast, the United Kingdom’s Regional Selective Assistance business support scheme, which offers investment subsidies to firms in depressed areas on the condition that they create or protect jobs, can be regarded as a relatively low-cost intervention, creating jobs at an estimated cost of US\$ 6,300 per job.⁹¹ Increases in manufacturing employment under that scheme have been observed primarily for smaller firms with fewer than 150 employees and have been associated with lower levels of local unemployment.

Meanwhile, China’s support for its shipbuilding industry over the period 2016-23 (including both direct fiscal outlays and forgone revenue) is estimated to have totalled CNY 550 billion (equivalent to 1 per cent of its 2013

GDP). Entry subsidies (such as the option to purchase land at a discounted price) and production subsidies attracted many firms and increased China’s global market share by 40 per cent. Three-quarters of that increase is estimated to have come at the expense of producers in other countries, with the remaining quarter adding to the global supply of vessels. As a result of that support, the net profits of domestic producers rose by CNY 145 billion and consumers worldwide saved CNY 230 billion on their purchases of ships (relative to the amounts they had been willing to pay). The combination of those two effects fell short of the total value of subsidies, and industry profits failed to increase in the long run.⁹² Entry subsidies, which accounted for 60 per cent of total spending, attracted large numbers of inefficient producers and resulted in excess capacity.

Industrial policies can also create significant distortions in other industries, whether in upstream sectors that are supplying the target industry or in downstream sectors that are using its products. For instance, many economies have implemented industrial policies with the aim of boosting their steel industries, with examples including production subsidies in Argentina in the 1970s, government equity injections in Belgium from 1979 onwards, special export tax rebates in Brazil between 1977 and 1996, and debt forgiveness for steel producers in Germany in the 1990s. Quotas and high import tariffs are common across the board. While they are in place, such policies typically support local production of steel and associated employment; however, a study of such policies spanning 21 economies documents a sharp drop in the export competitiveness of local industries that use steel as a major production input, with larger adverse effects found in lower-income economies.⁹³

⁸⁹ See Warwick and Nolan (2014), Lane (2020) and Juhász et al. (2023b).

⁹⁰ See Bombardini et al. (2024).

⁹¹ See Criscuolo et al. (2012).

⁹² See Barwick et al. (2019).

⁹³ See Blonigen (2016).

References

K. Aiginger and D. Rodrik (2020)

“Rebirth of industrial policy and an agenda for the twenty-first century”, *Journal of Industry, Competition and Trade*, Vol. 20, No. 2, pp. 189-207.

K. Akepanidaworn, R. Di Mascio, A. Imas and L.D.W. Schmidt (2023)

“Selling Fast and Buying Slow: Heuristics and Trading Performance of Institutional Investors”, *The Journal of Finance*, Vol. 78, No. 6, pp. 3055-3098.

D. Autor, D. Dorn, L.F. Katz,

C. Patterson and J. Van Reenen (2020)

“The fall of the labor share and the rise of superstar firms”, *The Quarterly Journal of Economics*, Vol. 135, No. 2, pp. 645-709.

P.J. Barwick, M. Kalouptsidi and N. Bin Zahur (2019)

“China’s Industrial Policy: An Empirical Evaluation”, NBER Working Paper No. 26075.

J. Bistline, N. Mehrotra and

C. Wolfram (2023)

“Economic implications of the climate provisions of the Inflation Reduction Act”, NBER Working Paper No. 31267.

B.A. Blonigen (2016)

“Industrial policy and downstream export performance”, *The Economic Journal*, Vol. 126, No. 595, pp. 1635-1659.

M. Bombardini, A. González-Lira, B. Li and C. Motta (2024)

“The increasing cost of buying American”, NBER Working Paper No. 32953.

C.P. Bown (2023)

“How the United States solved South Korea’s problems with electric vehicle subsidies under the Inflation Reduction Act”, Peterson Institute for International Economics Working Paper No. 23-6.

L.G. Branstetter and G. Li (2022)

“Does ‘Made in China 2025’ work for China? Evidence from Chinese listed firms”, NBER Working Paper No. 30676.

L.G. Branstetter, G. Li and M. Ren (2022)

“Picking winners? Government subsidies and firm productivity in China”, NBER Working Paper No. 30699.

H.-J. Chang (2011)

“Industrial policy: Can we go beyond an unproductive confrontation?”, in J.Y. Lin and B. Pleskovič (eds.), *Lessons from East Asia and the Global Financial Crisis: Annual World Bank Conference on Development Economics – Global, 2010*, pp. 83-109.

C.-H. Cheng, B. Javorcik and A. Plekhanov (2024)

“Geopolitical fragmentation and foreign direct investment”, EBRD working paper, forthcoming.

R. Cherif and F. Hasanov (2019)

“The return of the policy that shall not be named: Principles of industrial policy”, IMF Working Paper No. WP/19/74.

S. Commander and S. Estrin (2022)

The Connections World: The Future of Asian Capitalism, Cambridge University Press.

V. Cooper (2022)

“Explainer: The CHIPS and Science Act 2022”, United States Studies Centre.

C. Criscuolo, R. Martin, H. Overman and J. Van Reenen (2012)

“The causal effects of an industrial policy”, NBER Working Paper No. 17842.

H. Deringer, F. Erixon, P. Lamprecht and E. van der Marel (2018)

“The economic impact of local content requirements: A case study of heavy vehicles”, ECIPE Occasional Paper No. 1/2018.

G. DiPippo, I. Mazzocco and S. Kennedy (2022)

“Red Ink: Estimating Chinese Industrial Policy Spending in Comparative Perspective”, joint report by the CSIS Economics Program and the CSIS Trustee Chair in Chinese Business and Economics.

EBRD (2012)

Diversifying Russia – Harnessing regional diversity, London.

EBRD (2013)

Transition Report 2013 – Stuck in Transition?, London.

EBRD (2019)

Transition Report 2019-20 – Better Governance, Better Economies, London.

EBRD (2020)

Transition Report 2020-21 – The State Strikes Back, London.

EBRD (2023)

Transition Report 2023-24 – Transitions Big and Small, London.

EBRD (2024a)

May 2024 Regional Economic Prospects – Taming inflation, London.

EBRD (2024b)

Life in Transition IV – Household resilience in a turbulent world, London.

B. Eichengreen (2010)

“Lessons from the Marshall Plan”, background case note for the 2011 *World Development Report*, World Bank.

S. Evenett (2019)

“Protectionism, state discrimination, and international business since the onset of the Global Financial Crisis”, *Journal of International Business Policy*, Vol. 2, No. 1, pp. 9-36.

S. Evenett, A. Jakubik, F. Martin and M. Ruta (2024)

“The return of industrial policy in data”, IMF Working Paper No. WP/24/1.

E. Fernández-Arias, C.F. Sabel, E.H. Stein and A. Trejos (2014)

“Overview: Public-Private Collaboration on Productive Development Policies”, input for *Development in the Americas: Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation*, Inter American Development Bank.

E. Fernández-Arias, C.F. Sabel, E.H. Stein and A. Trejos (2017)

“Two to tango: Public-private collaboration for productive development policies”, IDB Working Paper No. IDB-WP-855.

C. Freund and M.D. Pierola (2015)

“Export superstars”, *The Review of Economics and Statistics*, Vol. 97, No. 5, pp. 1023-1032.

C. Gaubert and O. Itskhoki (2021)

“Granular comparative advantage”, *Journal of Political Economy*, Vol. 129, No. 3, pp. 871-939.

P.K. Goldberg, R. Juhász, N.J. Lane, G. Lo Forte and J. Thurk (2024)

“Industrial policy in the global semiconductor sector”, NBER Working Paper No. 32651.

G. Gopinath, P.-O. Gourinchas, A.F. Presbitero and P. Topalova (2024)
“Changing global linkages: A new Cold War?”, IMF Working Paper No. WP/24/76.

Government of Canada (2023)
“Budget 2023: A Made-in-Canada-Plan”, Ottawa.

T. Harding and B. Javorcik (2011)
“Roll Out the Red Carpet and They Will Come: Investment Promotion and FDI Inflows”, *The Economic Journal*, Vol. 121, No. 557, pp. 1445-1476.

T. Harding, B. Javorcik and D. Maggioni (2019)
“FDI promotion and comparative advantage”, mimeo.

A. Harrison, L.A. Martin and S. Nataraj (2017)
“Green industrial policy in emerging markets”, *Annual Review of Resource Economics*, Vol. 9, pp. 253-274.

A. Harrison and A. Rodríguez-Clare (2010)
“Trade, foreign investment, and industrial policy for developing countries”, *Handbook of Development Economics*, Vol. 5, pp. 4039-4214.

R. Hausmann and B. Klinger (2006)
“Structural Transformation and Patterns of Comparative Advantage in the Product Space”, KSG Working Paper No. RWPO6-041.

A.O. Hirschman (1958)
The Strategy of Economic Development, Yale University Press.

G.C. Hufbauer, J.J. Schott, C. Cimino-Isaacs, M. Vieira and E. Wada (2013)
“Local content requirements: A global problem”, Peterson Institute for International Economics.

IMF (2023)
World Economic Outlook, October, Washington, DC.

IMF (2024a)
“Industrial policy coverage in IMF surveillance: Broad considerations”, Policy Paper No. 2024/008, Washington, DC.

IMF (2024b)
“Expanding frontiers: Fiscal policies for innovation and technology diffusion”, *Fiscal Monitor*, April, Washington, DC.

B. Javorcik (2004)
“Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages”, *The American Economic Review*, Vol. 94, No. 3, pp. 605-627.

B. Javorcik, A. Lo Turco and D. Maggioni (2018)
“New and improved: Does FDI boost production complexity in host countries?”, *The Economic Journal*, Vol. 128, No. 614, pp. 2507-2537.

R. Juhász and N. Lane (2024)
“The political economy of industrial policy”, CESifo Working Paper No. 11143.

R. Juhász, N. Lane, E. Oehlsen and V.C. Pérez (2023a)
“The who, what, when, and how of industrial policy: A text-based approach”, STEG Working Paper No. WPO50.

R. Juhász, N. Lane and D. Rodrik (2023b)
“The new economics of industrial policy”, *Annual Review of Economics*, Vol. 16.

D. Kahneman, J.L. Knetsch and R.H. Thaler (1991)
“Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias”, *The Journal of Economic Perspectives*, Vol. 5, No. 1, pp. 193-206.

D. Kaufmann, A. Kraay and M. Mastruzzi (2009)
“Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008”, World Bank Policy Research Working Paper No. 4978.

H.L. Kee and H. Tang (2016)
“Domestic value added in exports: Theory and firm evidence from China”, *The American Economic Review*, Vol. 106, No. 6, pp. 1402-1436.

U.H. Klueh, G. Pastor and A. Segura (2009)
“Policies to improve the local impact from hydrocarbon extraction: Observations on West Africa and possible lessons for Central Asia”, *Energy Policy*, Vol. 37, No. 3, pp. 1128-1144.

U.H. Klueh, G. Pastor, A. Segura and W. Zarate (2007)
“Inter-sectoral linkages and local content in extractive industries and beyond – The case of São Tomé and Príncipe”, IMF Working Paper No. WP/07/213.

Zs. Kóczán and A. Plekhanov (2024)
“Scarred for life? Recession experiences, beliefs and the state”, *International Tax and Public Finance*, Vol. 31, No. 4, pp. 1074-1111.

Zs. Kóczán, A. Plekhanov and V. Marino (2024)
“Moving the goalposts: The changing objectives of industrial policies”, EBRD working paper, forthcoming.

G. Koltay, S. Lorincz and T. Valletti (2023)
“Concentration and competition: Evidence from Europe and implications for policy”, *Journal of Competition Law & Economics*, Vol. 19, No. 3, pp. 466-501.

N. Lane (2020)
“The New Empirics of Industrial Policy”, *Journal of Industry, Competition and Trade*, Vol. 20, pp. 209-234.

N.R. Lardy (2019)
The State Strikes Back: The End of Economic Reform in China?, Peterson Institute Press.

A. Lashkaripour and V. Lugovskyy (2023)
“Profits, scale economies, and the gains from trade and industrial policy”, *The American Economic Review*, Vol. 113, No. 10, pp. 2759-2808.

M. Mazzucato (2015)
The Entrepreneurial State: Debunking Public vs. Private Sector Myths, Public Affairs.

B. McWilliams, S. Tagliapietra and C. Trasi (2024)
“Smarter European Union industrial policy for solar panels”, Bruegel policy brief, 8 February.

J. Meckling and J. Strecker (2022)
“Green bargains: Leveraging public investment to advance climate regulation”, *Climate Policy*, Vol. 23, No. 4, pp. 418-429.

V. Millot and L. Rawdanowicz (2024)
“The return of industrial policies: Policy considerations in the current context”, OECD Economic Policy Paper No. 34.

W.R. Nester (1998)

“Introduction: The Industrial Policy Debate – Jefferson versus Hamilton”, *A Short History of American Industrial Policies*, Palgrave Macmillan, pp. 1-14.

OECD (2023)

“Quantifying industrial strategies across nine OECD countries”, OECD Science, Technology and Industry Policy Paper, No. 150.

OECD (2024)

“Mission-oriented innovation policy for net-zero”, Paris, forthcoming.

T. Reed (2024)

“Productivity as a guide for industrial policies”, *World Bank Blogs*, 14 February.

D. Rodrik (2004)

“Industrial Policy for the Twenty-First Century”, John F. Kennedy School of Government, Harvard University.

D. Rodrik (2014)

“Green industrial policy”, *Oxford Review of Economic Policy*, Vol. 30, No. 3, pp. 469-491.

J.M. Salazar-Xirinachs, I. Nübler and R. Kozul-Wright (2014)

“Transforming economies: Making industrial policy work for growth, jobs and development”, International Labour Organization.

SCCEI and CCA (2023)

“China’s industrial policy”, roundtable summary report, Stanford Center on China’s Economy and Institutions and Asia Society Policy Institute’s Center for China Analysis.

X. Tafunell (2007)

“On the origins of ISI: the Latin American cement industry, 1900-30”, *Journal of Latin American Studies*, Vol. 39, No. 2, pp. 299-328.

A. Terzi, A. Singh and M. Sherwood (2022)

“Industrial Policy for the 21st Century: Lessons from the Past”, European Economy Discussion Paper No. 157, European Commission.

UNCTAD (2018)

World Investment Report 2018 – Investment and New Industrial Policies, Geneva.

S. Utterwulghe and P. Ghezzi (2017)

“From policy dialogue to implementation: How to solve public-private coordination failures?”, *World Bank Blogs*, 3 October.

F.M. Veloso (2006)

“Understanding local content decisions: Economic analysis and an application to the automotive industry”, *Journal of Regional Science*, Vol. 46, No. 4, pp. 747-772.

R.H. Wade (2012)

“Return of industrial policy?”, *International Review of Applied Economics*, Vol. 26, No. 2, pp. 223-239.

K. Warwick and A. Nolan (2014)

“Evaluation of Industrial Policy: Methodological Issues and Policy Lessons”, OECD Science, Technology and Industry Policy Paper No. 16.

World Bank (2024)

“The magic of investment accelerations”, *Global Economic Prospects*, January, pp. 97-148, Washington, DC.