Foreign Trade

Impact of the U.S. Inflation Reduction Act on the Bavarian Economy

Study
November 2024

A vbw study, prepared by the Institut der deutschen Wirtschaft Köln
(German Economic Institute, Cologne)

Bavarian Industry Association

Note

Foreword

The Inflation Reduction Act calls for a European response

The Inflation Reduction Act (IRA) initiated by U.S. President Joe Biden came into force in August 2022. Unlike its name suggests, the IRA is not so much aimed at combating inflation, but is first and foremost a multi-billion industrial policy program for climate protection projects for the economy of the United States.

The IRA has caused considerable unrest in Europe. Criticism has been sparked primarily by several protectionist elements of the Act. There are fears of competitive disadvantages for European companies and of companies relocating value creation to the USA.

It is evident from the IRA that the Biden administration is also pursuing an "America first" policy. To examine the concrete effects of the IRA on the Bavarian economy, the Bavarian Industry Association *vbw (Vereinigung der Bayerischen Wirtschaft e. V.*) commissioned the German Economic Institute (*Institut der deutschen Wirtschaft Köln)* with this study.

The paper indicates that the IRA may well result in competitive disadvantages for Bavarian companies, however, relocation activities due to this program alone are unlikely. Nevertheless, the Inflation Reduction Act has once again drawn greater attention to the USA as a business location and highlights the advantages it offers over Europe.

It goes without saying that the EU must press ahead with negotiations with the USA to alleviate disadvantages for our companies. Above all, however, both the European Commission and the German Federal Government are urgently called upon to improve framework conditions in Europe and in Germany in order to make us more competitive again. The IRA should also be seen as an incentive for optimizing Europe’s industrial policy and for making funding programs more straightforward and more pragmatic.

Bertram Brossardt
November 4, 2024

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1 Summary

The IRA draws attention to the advantages of the USA as a business location

The U.S. Inflation Reduction Act (IRA) is first and foremost an industrial policy program for climate projects, although some elements from the health sector are also included in the funding program. Moreover, the IRA aims to significantly increase government revenue in order to reduce the public budget deficit and thus inflation in the medium term. In terms of climate action and the green transformation, the IRA relies primarily on uncapped tax credits for promoting the Green-Tech sector and reducing the cost of renewable energies.

Some of the IRA's eligibility conditions have a protectionist effect, for instance the requirements to produce in the USA or to procure certain percentages and input components from the USA or North America. It is particularly these protectionist elements, as well as the impact on energy prices that have led to concerns in the European Union (EU) that European exporters will face disadvantages and that a considerable number of companies could relocate to the USA.

This study reveals, however, that while such concerns are not entirely unjustified, they are greatly exaggerated.

– The overall economic relevance and thus also the macroeconomic impact of the IRA are less than commonly believed.
– Since IRA funding is only relevant for a limited segment of the Bavarian economy, it is unlikely to trigger a surge of relocation activity. If anything, it will create a certain amount of momentum. The IRA has drawn more attention to the USA, where, in view of the significant location drawbacks in Germany, there are major advantages to be found in terms of bureaucracy and regulation, innovation-friendliness and energy costs. Furthermore, reducing the cost of renewable energies through IRA subsidies could further increase the appeal for energy-intensive industries to invest in the USA instead of Bavaria. Relative to the already existing energy cost advantages of the USA the impact of the IRA is, however, limited in the medium term.
– Criticism of the IRA should also be put into perspective with regard to potential exports from Bavaria. Here, opportunities outweigh risks for Bavarian exporters, as both automobile manufacturers and especially suppliers for Green-Tech industries (e.g. mechanical engineering) can, as equipment vendors, benefit from the investment boom in the USA in this sector. Initial indications in this respect are to be found in Bavarian export data.

It should be noted, however, that direct attribution to the IRA is often only possible to a limited extent, since further influencing factors, such as other fiscal stimulus programs simultaneously in effect and the macroeconomic environment, are also having an impact and are frequently of greater significance. This assessment is provisional, as the IRA has only been in force since August 2022.

2 Introduction

The IRA has thrown the European Union into industrial policy activism

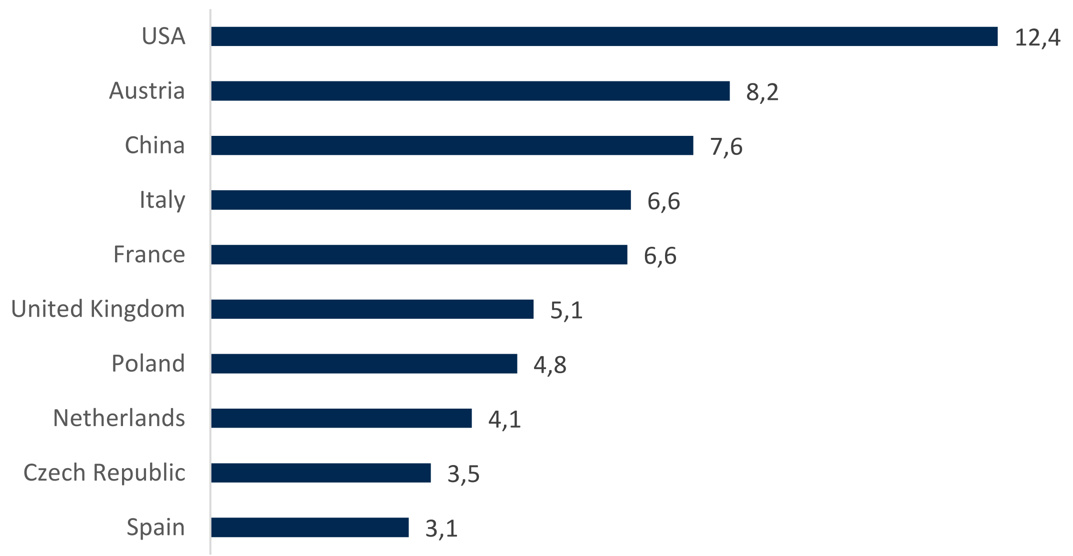
This study estimates the impact of the U.S. Inflation Reduction Act (IRA) on the Bavarian economy. The IRA is the subject of controversial debate in Germany and in the European Union (EU). As a core element, it contains for the first time extensive funding for climate action and the green transformation in the USA. However, it also has competition-distorting and protectionist elements. As a result, there have been accusations that, with the IRA, the Biden administration is pursuing protectionism in line with Trump's America First principle.

This would constitute a serious problem for Bavaria, as the United States is the most important export partner of the Bavarian industry by far (Fig. 1). Accounting for over twelve percent of goods exports, the U.S. share is more than half larger than the respective shares attributable to Austria or China, which are in second and third place in the export ranking.

Fig. 1

Bavaria's most important partners in the export of goods

Share of total German goods exports in 2023 in percent



Sources: German Federal Statistical Office (Statistisches Bundesamt): German Economic Institute (Institut der deutschen Wirtschaft)

The IRA has put the European Union on edge. There are concerns that it could jeopardize the successful implementation of the European Green Deal. Whereas the USA predominantly promotes climate action through subsidies, in the EU, in addition to extensive funding measures, cost increases are used to make climate-harmful action more expensive (for instance through the trading of CO_2 emission certificates or CO_2 taxes). When it comes to activities with a harmful climate impact, EU companies are therefore at a competitive disadvantage compared to their U.S. rivals. Furthermore, funding measures of the IRA may, at least initially, lead to Green-Tech investments being made in the USA rather than in the European Union.

In terms of volume, EU funding for the green transformation can definitely keep pace with that of the USA, as a range of studies show. Worth mentioning here are, in particular, the NextGeneration EU program (NGEU) and many funding programs of EU Member States to which the EU has awarded greater leeway by relaxing its state aid rules in the context of strategic autonomy for certain important goods, such as batteries and green hydrogen. However, unlike the IRA, the funds are capped. Moreover, the procedures for obtaining these funds are criticized as being highly bureaucratic and lengthy compared to those under the Inflation Reduction Act. Concern about the IRA has strengthened the position of those in the EU pushing for even more industrial policy support, in contrast to the traditional reluctance to pursue a large-scale subsidy policy. As a result, the European Union has temporarily relaxed its state aid rules for green transformation projects even further and has launched the Green Deal Industrial Plan and the Net Zero Industry Act (NZIA). It is, however, questionable whether this industrial policy activism can be justified by concerns regarding the IRA. The present study also aims to answer this question.

In this analysis: Chapter 2 gives an introduction to the Inflation Reduction Act with Chapter 3 briefly describing the macroeconomic impact on the USA. The focus is on Chapter 4, which examines the impact on various aspects of the Bavarian economy: on Bavarian exporters, on Bavarian companies with a presence in the USA and on possible relocation incentives to invest in the USA instead of Bavaria. Several approaches are pursued to this end: fundamental theoretical considerations, expert interviews, a survey among Bavarian companies and an analysis of foreign trade and direct investment data. An outlook is given in Chapter 6, and Chapter 7 concludes with a brief outline of political options.

3 Overview of the IRA

The Inflation Reduction Act is a major climate action program of the USA with a focus on uncapped tax credits.

The IRA is primarily considered a climate protection program. The name - Inflation Reduction – is due to the IRA being aimed at increasing government revenue more than government spending. By reducing the government budget deficit, the IRA reduces demand from the U.S. economy, which generally has the effect of lowering inflation.

Based on an estimate of the Congressional Budget Office (CBO), the following table gives an overview of the cumulative fiscal impact of the IRA over ten years (Table 1). The IRA essentially consists of three quite heterogeneous elements, as it also contains a few social welfare components. The focus of the IRA is a funding program for climate projects, which is also the focus of this study.

Table 1

Overview of the main IRA expenditure and revenue items

Data estimated by the CBO in billions of U.S. dollars over a 10-year IRA period

IRA element	Amount
Energy and climate action	391
Health	108
Total expenditure (incl. tax benefits)	499
Savings on healthcare costs	281
Increase in tax revenue	457
Total savings and increase in revenue	738
Reduction of budget deficit	238

Source: CBO, 2022

There is a range of data and estimates available on the scope and structure of the funding provided by the IRA for the green transformation and the Green-Tech sector. This is mainly due to the number and complexity of the funding programs and the fact that some of the funding is not capped. Some studies therefore assume a significantly higher level of IRA spending than estimated by the CBO (see also Chapter 3).
The focus is also on tax incentives for climate action. One study estimates the scope of the tax incentives at around 260 billion U.S. dollars over the ten-year period under review,

which is about two thirds of the total volume of the IRA for the green transformation, amounting to some 390 billion U.S. dollars. The tax incentives are not capped and are straightforward and comparatively easy to access. This, however, also means that they represent a risk for the U.S. government budget. Moreover, applicants have to deal with administrative red tape, since there are different types of cumulative tax benefits depending on the respective funding program, each having different requirements. For most of the programs the following basic structure applies:

- Basic funding is granted for green infrastructure activities in the USA.
- In some programs, the basic funding rate can be increased fivefold if the taxpayer can prove that a minimum employment rate of trainees is observed and that "prevailing wages" are paid, also for subcontractors.
- An additional bonus of ten percent of the investment costs is available for certain programs if so-called "domestic content" requirements are met. A minimum share of the inputs for the subsidized investments must come from the USA. For manufactured products, this share will increase to 55 percent by 2027, and for iron and steel it will be 100 percent.
- Additional bonuses of ten percent are available if the project is located in an "energy community" or a "low income community".

The IRA is a complex set of rules with a wide range of specific funding programs. Table 2 gives a brief overview of the main funding programs that account for about 90 percent of the tax incentives for the green transformation and the Green-Tech sector (according to the CBO estimate).

The eligibility requirements under the "Clean Vehicle" tax credit (last row of Table 2) do not apply to commercially used vehicles, as there are virtually no eligibility restrictions applicable to them. If, on the other hand, electric vehicles (EVs) are purchased by consumers, they are eligible for the tax credit of up to USD 7,500 only if they comply with the following income, price, place of manufacture and component requirements:

- Buyers are to have a maximum gross annual income of 150,000 U.S. dollars for individuals or 300,000 U.S. dollars for couples.
- The vehicle:
  - final assembly must have taken place in North America and
  - must not cost more than 55,000 U.S. dollars for standard vehicles or 80,000 U.S. dollars for SUVs, vans or pick-ups (as specified by the manufacturer).

A funding is then possible to the amount of 3,750 U.S. dollars if at least 60 percent of the battery components (from 2029: 100 percent) for the vehicle have been manufactured or assembled in North America and no component originates from a country classified by the USA as a "foreign entity of concern" (e.g. China). Further 3,750 U.S. dollars can be granted when 50 percent (from 2027: 80 percent) of the critical minerals in the vehicle come from North America or a country with which the USA has a free trade agreement. As a matter of principle, none of the critical materials are allowed to come from a "foreign entity of concern".

Table 2
Overview of important IRA funding programs

Program	Spending volume* in billion U.S. dollars	Eligibility criterion			
		Domestic Content specification	Prevailing wages	Training rate	Direct Pay
Advanced Manufacturing Production Tax Credit	31	x	x	x	✓
Clean Electricity Investment Tax Credits	65	✓	✓	✓	✓
Clean-Electricity Production Tax Credits	62	✓	✓	✓	✓
Nuclear Power Production Tax Credit	30	x	✓	x	✓
Clean Hydrogen Production Tax Credit	8	x	✓	✓	✓
Residential Clean Energy Property Credit	22	x	x	x	x
Energy Efficient Home Improvement Credit	12	x	x	x	x
"Clean Vehicle" Tax Credit	12	✓	x	x	✓

*According to CBO, estimated reduction in tax revenue (in billions of U.S. dollars) due to tax credits.

Source: own presentation based on VDMA, 2023

In the public debate in Germany and Europe, the Biden administration has been heavily criticized for taking what is seen as a protectionist course with the IRA and for ultimately continuing Donald Trump's America First principle. This is misleading insofar as the Biden administration has adopted a much friendlier position towards the EU making it possible to de-escalate trade disputes in the steel sector and in civil aviation. Moreover, a Trade and Technology Council (TTC) has been established for regular and intensive exchange, even though the results achieved to date have not yet met the high expectations. It should also be noted that although the IRA rules restrict access to this additional funding program for Bavarian exporters, the rise in demand created by the IRA may actually increase export opportunities overall (as shown in Chapter 4). Donald Trump's protectionist policies, on the other hand, clearly hampered export opportunities of the Bavarian industry.

The following elements of the IRA can be seen as protectionist:

- IRA subsidies are usually only available for investments and production in the USA and hardly ever for foreign manufacturers, this having a distortive impact on competition. These competition-distorting elements could adversely affect Bavaria as a business location if exporting companies relocate their production in order to benefit from the IRA subsidies.
  - Subsidies that reduce ongoing production costs for an unlimited period are particularly distorting. Such funding of operational expenditures is also referred to as Opex funding. The IRA contains some of such competition-distorting unlimited production subsidies in the clean technology and clean electricity sector, for example for the production of solar modules, batteries and green hydrogen. The size of these subsidies is, however, limited to an estimated good tenth of the IRA volume.
  - Slightly less distortive is the non-recurring financial support for initial capital expenditures, referred to as Capex funding, which makes up the bulk of the IRA.
- Subsidies granted to consumers for EVs are a problem because, unlike in Germany, they are only available for EVs that are manufactured/assembled in the USA. The domestic content requirements for batteries and minerals, on the other hand, distort international competition to a limited extent only, since they constitute a similarly large challenge also for U.S. manufacturers. In response to pressing complaints from the European Union, the U.S. administration has enacted a significant change in the implementation of the IRA: If EVs are leased, they are considered to be commercial vehicles. This means that regulations regarding the place of manufacture and the domestic content of batteries and critical minerals no longer apply, nor do the price and income limits.
- Ultimately, the IRA funding should lead to significant cost reductions for renewable energies. The subsidies create artificial cost advantages, particularly for energy-intensive industries in the USA.
- Domestic content requirements also have a restrictive effect, especially for Bavarian exporting companies, however, their impact remains limited. Rough estimates indicate that more than half of IRA funding is unaffected by them.

4 Economic Impact on the USA

The IRA stimulates private climate-friendly investments,macroeconomic effects, however, remain small.

According to the U.S. government and the Council of Economic Advisors, under the Biden administration and by the summer 2024, private companies had announced investments in 21st century industries of some 900 billion U.S. dollars spread over several years. Of this sum, 177 billion dollars will be spent on the sector of EVs and batteries and 160 billion dollars on clean energy. However, some 400 billion U.S. dollars will go to the semiconductor and electronics sector and should therefore be allocated more to the CHIPS and Science Act. To put these sums in perspective: Total annual corporate investment in the USA amounted to around 3.7 trillion U.S. dollars in 2023. Furthermore, some investment plans appear to be delayed to a greater or lesser extent. This applies to about 40 percent of the capital spending announcements in the manufacturing sector - as documented by the Financial Times - for projects costing at least 100 million dollars each.

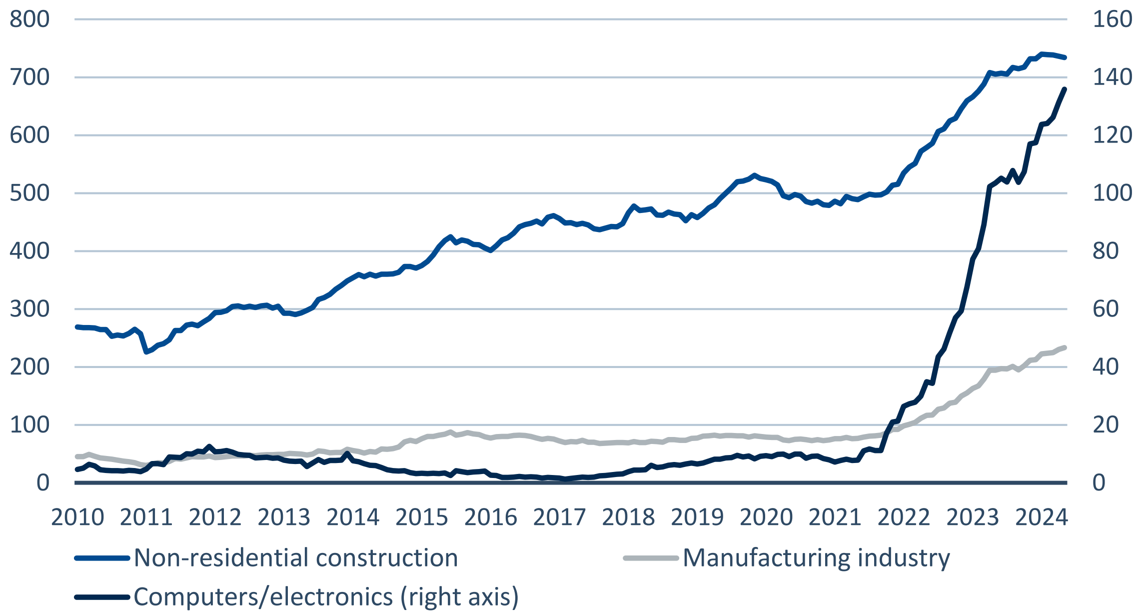
A newly launched Clean Investment Monitor (CIM) of the Rhodium Group and the Massachusetts Institute of Technology (MIT) tracks realized private and public investments in climate technologies in the United States that are eligible for IRA funding. According to CIM, new private and government investments amounting to 265 billion dollars were made in the USA in 2023 in the production and deployment of clean energy, electric vehicles, building electrification and carbon management technologies, a 39 percent increase over the previous year.

The development of non-residential construction spending (buildings for commercial or industrial purposes) also suggests that the IRA is having an impact (Fig. 2), even though a clear attribution is not possible. Construction investment in the manufacturing industry has risen particularly sharply, however, this increase already began in 2021. Any favorable impact of U.S. fiscal programs can therefore be attributed to the Infrastructure Investment and Jobs Act (IIJA) adopted in 2021 and the CHIPS and Science Act. Nevertheless, as of the end of 2022, the IRA may also have made a contribution. In the industrial sector, investment in computers and electronics is seeing particularly dynamic growth. Here, there has been a tremendous boom in construction spending that has increased from about eleven billion U.S. dollars at the end of 2021 to some 136 billion U.S. dollars now. A certain share of this increase could be attributable to plants for the production of renewable energy. But here again, the often very high investments for semiconductor factories are also likely to have played a role. All in all, the significant increase in non-residential construction spending contributed only 0.25 percentage points to the real GDP growth of 2.6 percent in 2023. The macroeconomic effects therefore remain rather limited, despite the sharp rise in investment in individual sectors.

Fig. 2

Development of private construction investment in the USA

Monthly private construction investment in billions of U.S. dollars (seasonally adjusted, annualized*)



*Monthly values extrapolated to annual values.

Source: U.S. Census Bureau

Table 3 gives an overview of the macroeconomic impact of the IRA as estimated by a number of different studies. Positive effects arise primarily from the stimulation of private investments. The reduction in energy prices also has a dampening effect on inflation, which in turn strengthens purchasing power. Another relevant impact channel is the reallocation of capital and labor towards more climate-friendly industries. Significant effects are to be expected in these areas.

As a result, the various estimates generally tend to attribute a rather small impact to the IRA. They do, however, differ significantly, in some cases even in the plus or minus sign. This is mainly because they are based on different assumptions regarding the utilization of the IRA: estimates for the fiscal volume vary from some 400 billion U.S. dollars to 1.2 trillion U.S. dollars (Table 3). Another major cause of discrepancies is the dampening effect on the economy from tax increases based on the IRA. Some of these increases are not even taken into account and their dampening effect is also assessed differently.

Table 3

Estimates of the macroeconomic impact of the IRA (overview of studies)

Studies	**Period**	**Volume**	**Effect on GDP**	**Budget balance**
Mulligan (2022)	2022-2031	USD 400 billion	-1.2 percent	Not specified
Zandi et al. (2022) (Moody's)	2022-2031	USD 450 billion	+0.2 percent	USD -300 billion
Huntley et al. (2022)	2022-2031	USD 455 billion	-0.1 percent	USD -264 billion
Foster et al. (2023)	2021-2030	USD 470 billion	USD +243 billion	USD -310 billion
Landais et al. (2023)	5 to 10 years	Not specified	-0.08 percent	Not specified
Della Vigna et al. (2023) (Goldman Sachs)	2023-2032	USD 1.2 trillion	+1 percent	Not specified
Bistline et al. (2023)	2022-2031	USD 900 billion to 1.2 trillion	Not specified	USD 780 billion
Voigts and Paret (2024) (IMF)	2021-2030	USD 700 billion	+0.25 percent	0.27 percent of U.S. GDP
Scope of the results	10 years	USD 400 billion to USD 1.2 trillion	Minus 1.2 to plus 1 percent	Minus USD 300 billion to plus USD 780 billion

The results of the studies cited here are briefly explained in the long version of this study.

Source: own presentation based on the studies cited

5 Impact on the Bavarian Economy

The IRA has limited impact on the Bavarian economy.

5.1 General Considerations

Chapter 2 has shown that the IRA contains competitive distortions, though their significance should not be overestimated. The following sections analyze the effect of these protectionist elements on Bavarian companies, differentiating between exports, operations of firms with U.S. production, and relocation incentives. This intersection of three dimensions with the four protectionist elements from Chapter 2 creates a matrix structure for the analysis (see Table 4). The long version of this study contains a systematic and in-depth analysis, while the key findings are presented here.

Table 4

Effects of IRA-Induced Competitive Distortions on Bavarian Companies

	Competitive Distortion			Domestic Content Rules
	Opex/Capex Support	**Electric Vehicle Subsidies**	**Energy Cost Subsidies**	
Exporters*	Relevant but only in the Green-Tech sector **	Relevant for non-leased EVs, though leasing is prevalent	Relevant for energy-intensive companies using renewable energy	Less relevant for suppliers
Companies with U.S. production	Limited relevance, possibly only for Green-Tech sector**	No distortion	No distortion	Unlikely or limited distortion
Relocation incentives	Limited incentive	Limited incentive	Moderate incentive	Limited incentive

* Considering import competition from U.S. firms in Bavaria.
** The Green-Tech sector has minor overall relevance in Bavaria.

Source: Own presentation

It can be concluded that distortion effects can certainly be relevant, but in many cases, they are relative or manageable. Additionally, it becomes clear that it is essential to consider different perspectives in many aspects, as the competition-distorting elements affect exporters and companies with U.S. production differently.

5.1.1 Bavarian Exports

Bavarian exporters generally cannot directly benefit from Opex and Capex funding under the IRA since they do not produce in the USA. However, the overall economic relevance of the subsidized Green-Tech sector remains limited.

In the important sector of electric vehicle (EV) exports leased in the US, tax benefits are available. The German Federal Ministry for Economic Affairs and Climate Action (BMWK) estimates that between 50 percent and 80 percent of German-produced EVs exported to the U.S. are leased there. A study suggests that, as of mid-2023, about two-thirds of EU-produced EVs exported to the U.S. were leased.

Subsidies for renewable energy are expected to significantly reduce energy costs in the USA. As a result, Bavarian exporters with energy-intensive production might face decreased export opportunities, with increased competition from U.S. imports. However, energy price differences between Bavaria and the U.S. have already widened due to the Russian invasion of Ukraine. The German Council of Economic Experts (SVR) suggests that the IRA will only marginally increase this disparity. According to their analysis, the electricity price reductions enabled by the IRA are projected to account for just 15 percent of the total expected price difference between Germany and the U.S. by 2030. Furthermore, transportation costs are likely to limit the impact of competitive distortions, particularly in energy-intensive industries such as steel and basic chemicals. Nevertheless, some energy-intensive Bavarian companies may feel the effects of subsidized renewable energy, either on the export side or through increased competition from U.S. imports.

In Bavaria, suppliers of components and capital goods, which are economically significant sectors, are likely to benefit indirectly, because the IRA is expected to boost demand from U.S. customers who receive subsidies. The domestic content requirements of the IRA are not expected to be highly restrictive. Apart from their limited relevance to the overall IRA program, these rules (except for steel and iron) allow a substantial share of foreign inputs (45 percent). In cases where the rules apply, they can be bypassed through exemptions if equivalent products are unavailable in the U.S. in terms of quality, type, or cost.

Overall, the U.S. demand for Bavarian exports is expected to increase rather than decline as a result of the IRA, a view shared by other experts.

5.1.2 Bavarian Companies with U.S. Production

The outlook is even more favorable for Bavarian companies with production facilities in the United States. These companies could benefit directly from Opex and Capex subsidies if they operate in the Green-Tech sector and meet the tiered requirements for IRA tax incentives.

This also applies to affordable, non-leased EVs, provided other conditions are met. However, strict regulations regarding batteries and critical materials pose significant hurdles.

Bavarian firms with a U.S. presence can also benefit from the reduced costs of subsidized renewable energies enabled by the IRA.

In most cases, the domestic content requirements are not expected to restrict access to these subsidies significantly.

- Direct Participation in the IRA's Green-Tech sector: The domestic content requirements could indeed be restrictive, but U.S. subsidiaries owned by German companies source around three-quarters of their inputs domestically within the US. If this average also applies to Bavarian subsidiaries with U.S. production, they could benefit directly from the IRA by meeting the 55 percent domestic content requirement for processed products. However, meeting the 100 percent requirement for steel and iron might require switching to U.S. suppliers unless exemptions to the domestic content rules apply.
- Indirect Participation as Suppliers: The difference from exporters lies in the fact that companies with U.S. production can sell their inputs to U.S. customers without restrictions, benefiting indirectly from the IRA.

5.1.3 Incentives for Bavarian Companies to Relocate

The public debate is dominated by concerns that the IRA could significantly increase the incentives to relocate investments or even production to the USA. Therefore, this topic will be examined in more detail.

In principle, the IRA can create incentives for relocation, as exporters have fewer opportunities than companies with US-based production to benefit from IRA funding. Relocation would negatively impact Bavaria's economic position, as it would result in the loss of value creation and jobs. This applies particularly if existing production is moved abroad, but also in the long term if expansion investments are made in the USA instead of in Bavaria. It would be even more problematic for the local economy if relocated production served not only the U.S. market but also the EU and global markets in future. In this scenario, Bavaria would not only lose production intended for exports to the U.S. but also for other markets worldwide.

From a theoretical perspective, the IRA may create relocation incentives, particularly if:

- Exporters cannot access Opex or Capex funding in the Green Tech sector or consumer-oriented subsidies for electric vehicles due to a lack of US-based production.
- Domestic content rules restrict exporters from participating in IRA funding as suppliers of inputs.
- Energy-intensive industries increasingly rely on renewable energy supplies and want to benefit from the low energy prices in the US.

However, as shown in Table 4, the IRA's relocation incentives are generally considered limited. The fear that the IRA would trigger extensive production relocations or encourage a "U.S. for the world" strategy can be mitigated for several reasons since many factors influence relocation decisions.

5.1.3.1 Trade and Transaction Costs

Transportation costs, tariffs, and other trade barriers must be taken into account. The higher the trade costs, the more multinational companies are already inclined to serve large markets with local production instead of exports, even without the IRA. Since the IRA increases U.S. demand and partly raises trade barriers, the incentive to produce “behind the barriers” in the USA grows. However, if trade costs are already high, the IRA will have only a limited impact on relocation incentives, as production is often already near the market. This limitation is particularly relevant for industries like basic chemicals and steel, although relocations in these sectors cannot be entirely ruled out.

Conversely, high trade costs also make the "USA-for-the-world" strategy less profitable. For example, the EU’s 10 percent tariffs on cars reduce the incentive to relocate electric vehicle production from Bavaria to the USA solely because of the IRA. If Donald Trump were elected U.S. President in November and imposed a 10% tariff on all imports, as announced, this could lead to retaliatory measures from many countries, further undermining the profitability of a "USA-for-the-world" strategy.

Moreover, it is essential to consider the high transaction costs associated with relocation, especially for small and mid-sized companies. The IRA subsidies are also only valid for ten years, and it is uncertain whether they will remain fully intact given the high U.S. budget deficits and the potential for a Trump presidency.

5.1.3.2 Comparative Advantages

The sustainability of production in Bavaria and the EU depends largely on whether Bavarian manufacturers have comparative advantages in the relevant sector. For example, with technologies that are standardized and energy-intensive, like solar modules and electric vehicle batteries, these advantages are minimal or nonexistent. If these industries develop more strongly in the USA than in the EU, the IRA may not be the primary reason for such a shift.

In energy-intensive industries, the rising energy costs following the Russian invasion of Ukraine have eroded Germany's previous comparative advantages. While the IRA may not significantly lower the already low electricity prices in the USA by 2030, different energy costs still create incentives to relocate. However, the IRA’s additional effect on these incentives is limited.

Regarding green hydrogen production, the IRA will significantly reduce production costs, potentially diminishing the EU’s comparative advantages in this area. However, high transport costs for green hydrogen will likely offset much of the US's cost advantage, though a price edge may remain, making exports from the USA to the EU profitable. Since green hydrogen production is also promoted within the EU and may stimulate strong demand in the region, significant production capacities are likely to be built up in the EU. While the IRA could delay investments if financial resources are initially allocated to the USA, any general relocations are expected to be limited. Given that Germany will remain a net importer of green hydrogen, a competitive offering from the USA is generally welcome.

Based on these considerations and further explanations in the full version of this study, the relocation incentives created by the IRA subsidies for renewable energies are assessed as moderate (see Table 4).

5.1.3.3 Other Funding and Investment Programs

The IRA is just one of several major U.S. investment and funding initiatives. Notably, the Infrastructure Investment and Jobs Act (IJA) and the CHIPS and Science Act also play a significant role (see Chapter 3). In addition to these federal programs, some generous subsidies are also available at the state or municipal levels.

Numerous location factors are relevant as pull and push factors for investments: investment decisions depend not only on funding programs but also on many other factors. It is problematic that Germany has recently been slipping further down in international competitiveness rankings. High labor and energy costs, an uncompetitive corporate tax burden, increasing infrastructure deficits, and rising bureaucratic burdens due to lengthy approval processes are among the growing disadvantages as a business location.

The German American Chambers of Commerce (GACC) surveyed more than 220 German companies in the USA most recently in January 2024 to identify the location factors influencing their investment behavior. About 40 percent of these companies have production facilities in the United States. Funding programs (surveyed as government incentives) play only a minor role in the decision to invest in the U.S. rather than other markets (see Fig. 3). The top three reasons for investment, by a large margin, are market size and customer demand (89 percent), proximity to customers (60 percent), and market stability (29 percent).

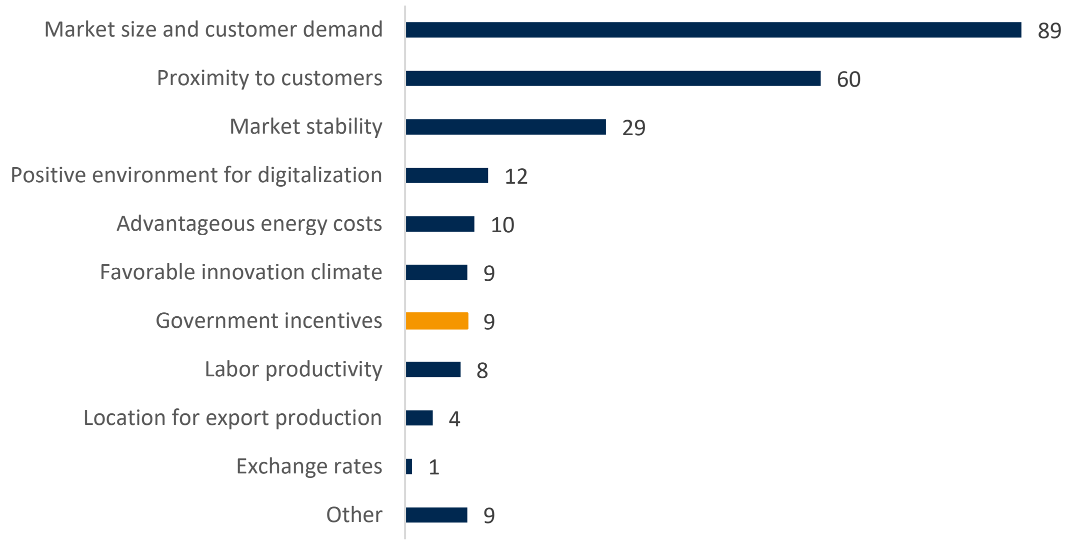
When asked whether specific types of government incentives would lead to more investments or the expansion of existing sites in the U.S., approximately 20 percent of the surveyed companies responded positively for the IRA, around 17 percent for the new Buy American regulations, and about 8 percent for the CHIPS Act. The varying results are likely due to the different contexts of the questions. The IRA seems to have a slightly stronger influence on the willingness of companies with a U.S. presence to invest and expand but has less impact on the USA’s attractiveness for investment relative to other locations.

Fig. 3

Location Factors for Investments in the U.S.

Question: What are the three most important reasons for your company group to invest in the U.S. rather than other global markets?

Response percentages



Survey among 220 German companies in the U.S. Multiple responses were possible.

Source: German American Chamber of Commerce, 2024

The theoretical assessments are compared in the following sections with the results from expert interviews (Chapter 4.2), a survey of Bavarian companies (Chapter 4.3), and developments in trade and direct investments (Chapter 4.4).

5.2 Expert Interviews

For this study, more than a dozen experts were interviewed regarding the impacts of the IRA. These included four representatives from companies that participated in the survey (Chapter 4.3). The other experts were U.S.-based business representatives, EU officials, an economic development advisor, a representative of the German Federal Ministry for Economic Affairs and Climate Action (BMWK), and Germany-based representatives of leading German industry associations (VCI, VDA, VDMA, ZVEI).

Since the direct impact of the IRA was generally difficult for the experts to assess, the discussions primarily focused on the general economic situation in the U.S. The prevailing view is that the programs of the Biden administration have increased the attractiveness of the U.S. both as an export market and an investment destination. However, when asked how German companies with a U.S. presence are benefiting from the IRA, the responses remained fairly general. It was frequently noted that there is still a lack of experience with the IRA, as many regulations are not yet clear in details or legally binding.

Regarding general export prospects to the USA, several experts emphasized that the U.S. market has developed favorably for German exporters in recent years. One representative referred to the GACC survey: according to it, the German companies surveyed in the U.S. reported that their positive performance there also boosted production at their home locations in Germany.

The IRA presents export opportunities, particularly for supplier industries such as mechanical engineering and the automotive or electrical industries. However, opinions are divided in the chemical industry. While firms in this sector could benefit from the expansion of renewable energy in the U.S. as suppliers, there are also concerns that the significantly lower costs for renewables under the IRA, combined with Germany's already high energy costs, could diminish export opportunities for particularly energy-intensive chemical products.

Most experts agreed that the IRA's domestic content rules do not appear to pose significant barriers to exports from Germany to the U.S. In recent times, there have been few concrete complaints from companies reported to industry associations or political bodies on this matter.

Regarding the impact of the IRA on incentives to relocate from Bavaria and Germany, some experts suggested that the intense public debate surrounding the IRA – much like an advertisement or image campaign – has heightened German companies' attention to the U.S. and its relatively favorable economic and investment conditions. As a result, some experts have noticed a significant increase in investment and settlement inquiries in the USA. However, it is generally difficult to attribute these developments specifically to the IRA, especially given the existence of other funding programs besides the IRA (see Chapter 4.1).

According to the experts, both pull and push factors drive the increased interest in investing in the U.S. Pull factors include market size and growth prospects, with funding programs playing only a minor role. Push factors are the disadvantages of Germany as a location mentioned in Chapter 4.1, particularly since the U.S. offers significantly better conditions in terms of bureaucracy, energy costs, and innovation-friendliness.

However, the experts also pointed out that the U.S. has its own location disadvantages. Labor and skilled worker shortages are among the most pressing challenges, which was also reflected in the GACC survey: 91 percent of the surveyed German companies in the U.S. reported difficulties in recruiting new employees, with 57 percent identifying the availability of skilled workers as the biggest challenge for their U.S. business (compared to 62 percent the previous year). Some experts also noted that applying for IRA benefits can be cumbersome, especially when qualifying for specific tax credit categories. However,

there are no known cases where applicants abandoned their plans due to bureaucratic hurdles.
Regarding the impact of the IRA, a nuanced view is required:
- Companies directly benefiting from the IRA: According to some experts, the incentives are generally not the deciding factor for investment decisions in favor of the USA. Instead, the tax credits are seen as a bonus.
- Suppliers: Some experts and one surveyed company mentioned a possible indirect effect of the IRA, suggesting that U.S. customers could pressure their German suppliers to establish operations in the U.S. However, the experts consider this plausible only in isolated cases.
- Concerns from the chemical industry: The representative from the chemical sector explicitly expressed concerns that the IRA's subsidies could prompt energy-intensive companies to relocate due to lower renewable energy costs, although no specific examples have been reported so far.

In summary, the experts agreed that the IRA plays only a minor role in the investment activities of German companies in the U.S. Relocations driven by the IRA appear to be rare and far less significant than initially suggested in the public debate. This assessment was also shared by representatives from German and European politics, who had initially feared much stronger impacts.

5.3 Survey Results

For this study, a computer-assisted telephone survey was conducted in March and April 2024 among more than 300 Bavarian companies from the industrial services sector in which 57 Bavarian companies with U.S. business participated. Among these, 45 companies export directly or indirectly, and 22 have a presence in the United States with some overlap between the two groups. Of these 22 companies, twelve operate a subsidiary in the U.S. that engages in production, while ten maintain a branch primarily for sales purposes. The response rate from companies with U.S. business was too low to be representative. Therefore, no percentages are provided below, only the distribution of the number of responding companies.

5.3.1 Impact on Bavaria

The companies were first asked about the impact of the Inflation Reduction Act (IRA) on their business activities in Bavaria or any effects they expect. Bavarian companies with U.S. business perceive the IRA as slightly more significant than all Bavarian companies overall. However, even for them, the IRA seems to have limited relevance.

5.3.1.1 All Companies

Around nine out of ten surveyed Bavarian companies saw no impact from the IRA on their business activities in Bavaria (Fig. 4). Only a few companies noted negative effects, which are illustrated in red and orange on the left side of the figure for clarity. A significant decline is reported or expected by only a very small proportion of the respondents. Similarly, potential positive effects appear negligible. Negative effects are slightly more pronounced than positive ones, but both remain at very low levels. One expert interview revealed that a company’s mildly negative assessment of the IRA's impact on its Bavarian business was more intuitive and influenced by the generally critical sentiment towards the IRA.

5.3.1.2 Companies with U.S. Business

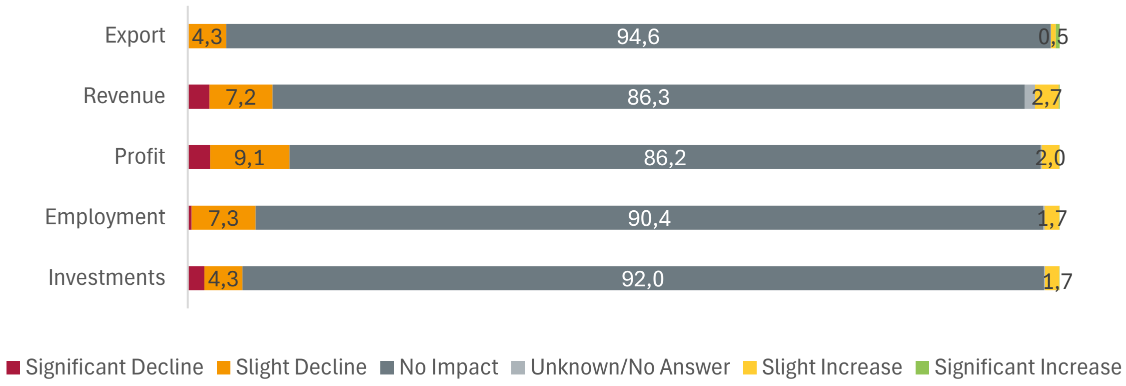
Of the 57 Bavarian companies with U.S. business, about 40 reported no impact of the IRA on exports, sales revenue, and profit in Bavaria, with even more stating no effect on employment and investment (Fig. 5). Approximately ten companies expect or observe negative effects, though very few predict a sharp decline in the mentioned indicators. A slightly smaller number see positive effects. For employment and investment, the gap between negative and positive assessments is narrower. In all indicators, no more than two Bavarian companies attribute significant positive or negative effects to the IRA.

Fig. 4

Impact of the IRA on Bavaria – All Companies

Question: Regarding the location Bavaria: What impact does the IRA have on your company's business activities, or what effects do you expect?

Response percentages (n = 307)



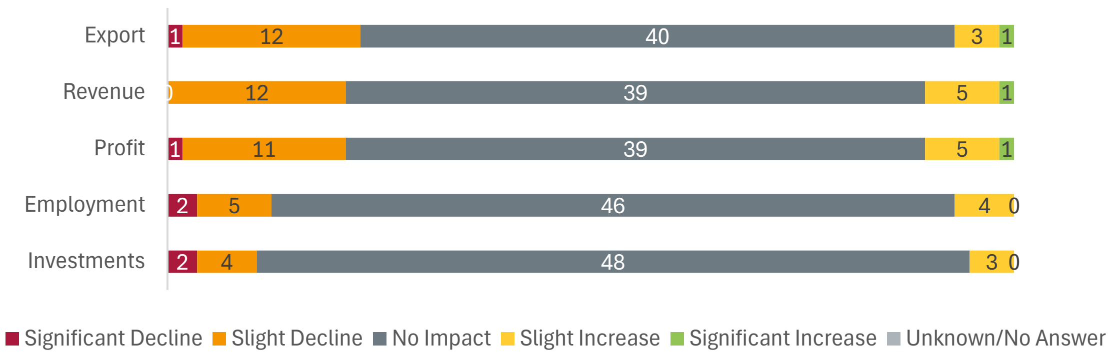
Source: Institut der deutschen Wirtschaft (German Economic Institute)

Fig. 5

Impact of the IRA on Bavaria – Companies with U.S. Business

Question: Regarding the location Bavaria: What impact does the IRA have on your company's business activities, or what effects do you expect?

Response percentages per option (n = 57)



Source: Institut der deutschen Wirtschaft (German Economic Institute)

5.3.2 Impact on U.S. Subsidiaries of Bavarian Companies

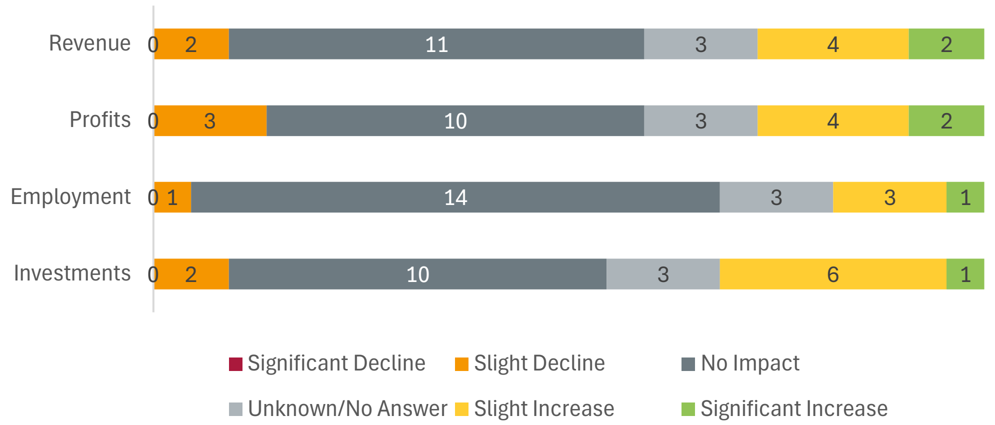
The impact of the IRA on U.S. subsidiaries or branches of Bavarian companies with a U.S. presence is somewhat more positive (Fig. 6). Depending on the indicator, between four and seven of the 22 companies with U.S. operations view the IRA positively for their business activities, though only one or two expect a significant increase. On the other hand, only very few companies foresee a slight decline in their business activities. However, 13 to 17 companies reported no impact or provided no assessment of the IRA's influence on their U.S. operations. Thus, the IRA does not appear to be a relevant factor even for the majority of Bavarian companies with a U.S. presence.

Fig. 6

Impact of the IRA on Bavarian Companies with U.S. Presence

Question: Regarding the location USA: What impact does the IRA have on your company's business activities, or what effects do you expect?

Response percentages per option (n = 22)



Source: Institut der deutschen Wirtschaft (German Economic Institute)

5.3.3 Relevance of Protectionist Elements in the IRA

The 45 Bavarian companies that export directly or indirectly to the USA were asked about the impact of the protectionist elements on their U.S. exports. Additionally, the 22 companies with a U.S. presence were questioned about the effects on their product sales in the USA. A significant portion of these companies believe they cannot benefit from the subsidies (27 out of 45 for exports; 8 out of 22 for U.S. sales). A smaller group sees their participation as limited. However, a notable degree of uncertainty remains, with eight companies in each group unable to provide an assessment. This uncertainty may stem not only from the complexity of the IRA's known requirements but also from the fact that some key regulations are still not finalized.

5.3.4 IRA as an Incentive to Relocate?

The surveyed Bavarian companies were also asked whether the IRA influences their decisions to invest in the USA instead of Bavaria or Germany, or to relocate production from Bavaria/Germany to the USA to benefit from the program.

5.3.4.1 All Companies

For about nine out of ten companies surveyed, the IRA plays no role as a relocation incentive (Fig. 7). Only around 10 percent of Bavarian companies consider the U.S. program relevant for the relocation of investments or production. Among this group, the majority - around 6 to 8 percent - assign only minor importance to the IRA.

Only a very small percentage attributes a significant or decisive role to the IRA. The share is slightly higher for production relocation (almost 5 percent) than for investment relocation (just under 2 percent).

5.3.4.2 Companies with U.S. Business

Companies with operations in the U.S. might be more inclined to relocate since they already have experience in the U.S. market. This tendency is somewhat reflected in the survey results, albeit to a limited extent (Fig. 8).

Among the 57 Bavarian firms with U.S. business, 16 see the IRA as more or less an incentive to relocate investments, and 11 see it as an incentive for production relocation. However, most of these companies only attribute minor importance to the IRA (11 out of 16 for investments; 6 out of 11 for production). Only a few companies see the IRA playing a significant role, and only one company views it as decisive. For the majority of Bavarian firms with U.S. business, the IRA does not serve as an incentive for relocation of investments or production.

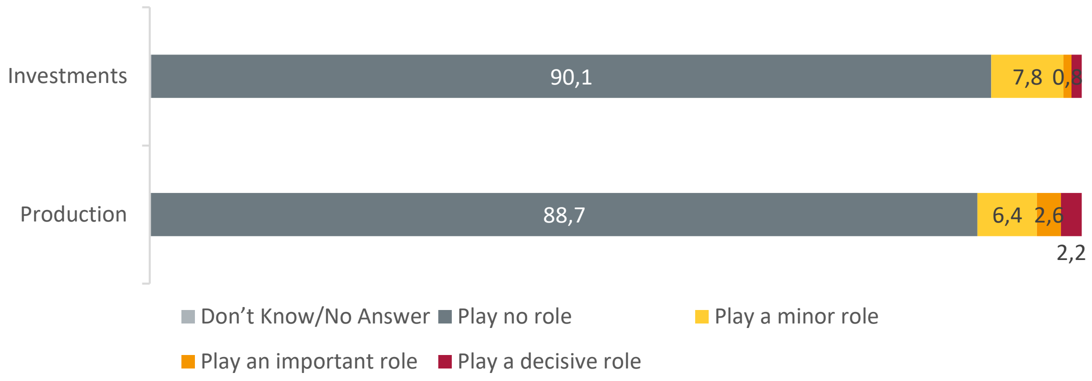
Interviews with some companies (Chapter 4.2) provided further nuance. In three cases, firms that had initially indicated in the survey that the IRA plays a significant or decisive role for investment or production relocations revised their opinions during follow-up conversations, giving more cautious and less concrete assessments.

This suggests that some companies may tend to overestimate the negative effects of the IRA concerning relocation risks. This could be influenced by the often-critical media coverage of the IRA.

Fig. 7

Relocation from Bavaria to the USA – All Companies

Question: How do you assess the IRA in terms of investing in the USA instead of Bavaria/Germany or relocating production from Bavaria/Germany to the USA to benefit from the subsidies?
Response percentages (n = 307)

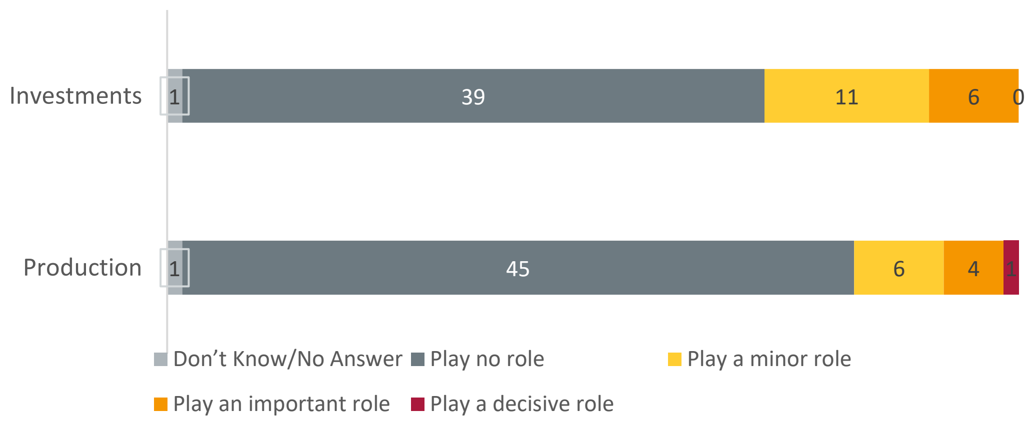


Source: Institut der deutschen Wirtschaft (German Economic Institute)

Fig. 8

Relocation from Bavaria to the USA – Companies with U.S. Business

Question: How do you assess the IRA in terms of investing in the USA instead of Bavaria/Germany or relocating production from Bavaria/Germany to the USA to benefit from the subsidies?
Response percentages per option (n = 57)



Source: Institut der deutschen Wirtschaft (German Economic Institute)

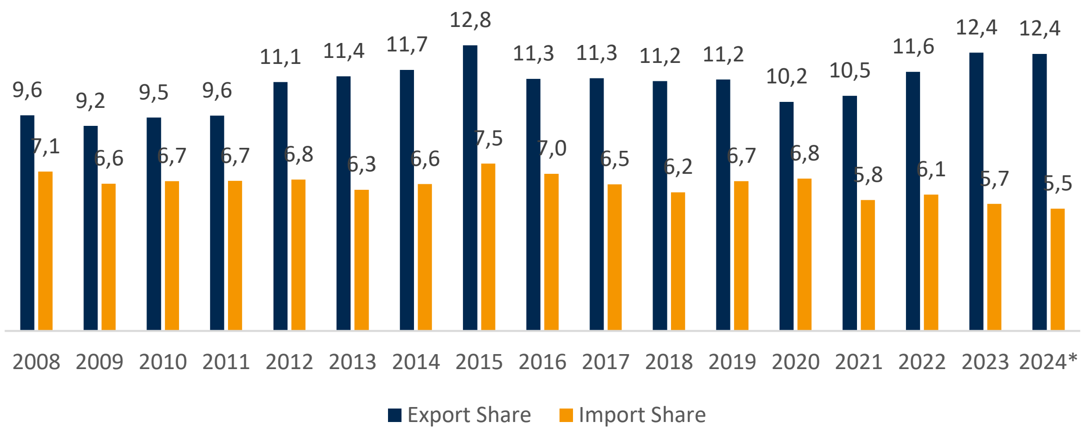
5.4 Foreign Trade and Direct Investments

An analysis of foreign trade and direct investment data offers another way to assess the impact of the IRA. However, the time frame is relatively short, as the IRA was only introduced in August 2022 and its effects are unfolding gradually. Furthermore, it is challenging to attribute observed effects solely to the IRA. Therefore, the following data analysis can only provide initial insights.

5.4.1 Foreign Trade

Looking at Bavarian exports to the USA, the question arises whether the overall impact of the IRA is positive, with the additional U.S. demand in the Green-Tech sector offsetting any negative effects from restricted market access. Current data suggests that this might be the case. The importance of the USA as an export partner has increased significantly in recent years (Fig. 9). The U.S. share of Bavarian goods exports has reached 12.4 percent, almost returning to the 2015 level. Bavaria thus exports a higher share to the USA than Germany as a whole, where the U.S. share recently stood at around 10 percent. On the import side, no clear trend is apparent. So far, the potential competitive pressure from U.S. imports—especially for energy-intensive products benefiting from subsidized renewable energy—has not significantly increased, including for energy-intensive product groups imported into Bavaria.

Fig. 9
U.S. Share in Bavarian Goods Trade over Time
Share of the USA in total Bavarian exports and imports in percent



2024*: January to May.

Sources: Statistisches Bundesamt; Institut der deutschen Wirtschaft (German Federal Statistical Office; German Economic Institute)

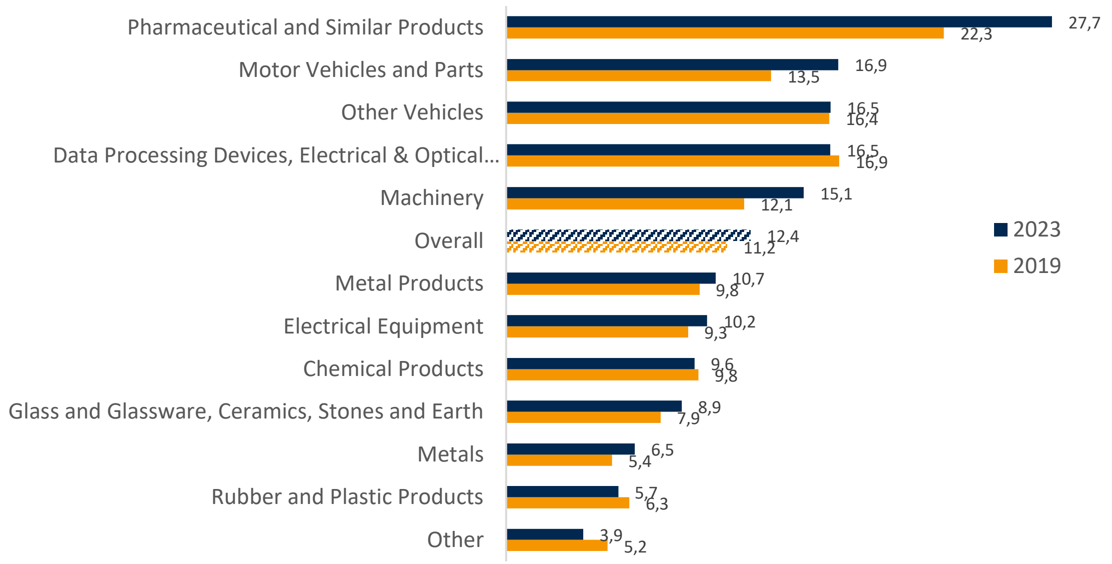
Among Bavarian exports to the USA, several industrial product groups dominate. The top five alone account for over 80 percent of Bavaria's exports to the US. Motor vehicles and vehicle parts rank first, comprising nearly 33 percent of the total. Machinery follows as the second most significant product group, representing 21.7 percent of Bavarian exports to the USA, while data processing equipment, electronics, and optical products account for 12.6 percent. Slightly less prominent are electrical equipment (7.8 percent) and pharmaceutical products (5.8 percent).

Since the IRA focuses on sectors of the green transition—primarily the automotive industry—and is likely to generate additional demand for component suppliers (particularly in mechanical engineering), the hypothesis is that if exports in these areas develop better than overall exports, this could indicate the IRA's impact. First, the development of the U.S. share in Bavarian exports to all countries is analyzed (Fig. 10). If the IRA were boosting U.S. exports, the U.S. share of total exports in the relevant product groups should increase.

Fig. 10

Share of the USA in Total Bavarian Exports by Selected Industrial Product Groups

(Percent)



Source: Statistisches Bundesamt; Institut der deutschen Wirtschaft (German Federal Statistical Office; German Economic Institute)

The USA stands out as the largest export market for pharmaceutical (and similar) products, with a share of nearly 28 percent—up significantly from 22 percent in 2019. The U.S. market is also crucial for other export goods: motor vehicles and vehicle parts (16.9 percent), other vehicles (16.5 percent), data processing equipment, electronic and optical products

(16.5 percent), and machinery (15.1 percent). However, several product groups show a below-average U.S. market share compared to Bavaria's overall exports (12.4 percent).

Looking at the increase in shares, besides pharmaceuticals, motor vehicles and vehicle parts (+3.4 percentage points) and machinery (+3 percentage points) stand out among the product groups. These increases could serve as early indicators that the IRA incentives may positively impact Bavarian exports to the U.S. in these sectors.

Figure 11 attempts to narrow down the IRA's influence further. It compares the percentage change in Bavarian exports to the U.S. between 2022 and 2023 with the average annual change between 2010 and 2019. The year 2023 represents the first full year following the IRA's implementation, while 2010–2019 is used as a baseline to avoid distortions caused by the COVID-19 crisis, thus reflecting a more typical Bavarian exports trend.

Key Findings:

- The growth in total Bavarian goods exports in 2023 is around 12 percent, significantly higher than the 5 percent average from 2010 to 2019.
- However, growth varies considerably across product groups:
  - Pharmaceutical (and similar) products show the largest increase.
  - Motor vehicles and vehicle parts, with almost 24 percent growth, and machinery, with nearly 20 percent growth, demonstrate a strong increase in 2023 compared to both total exports and the 2010–2019 period. Similar, though smaller, trends are seen in other vehicles and to a lesser extent in electrical products.
  - In contrast, most other product groups show negative growth rates in 2023, which are not only well below the average for total Bavarian exports to the USA but also significantly lower than in the 2010–2019 period.

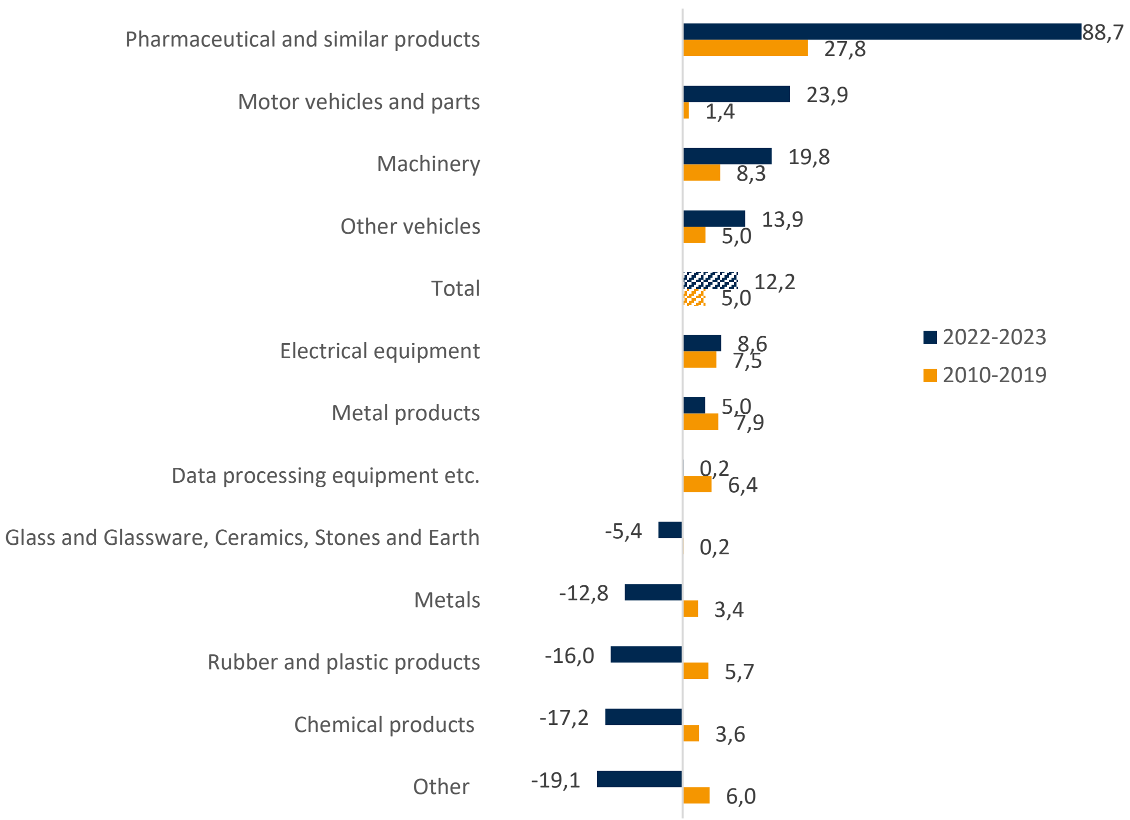
These results reveal substantial differences between product groups. While the particularly dynamic growth in the pharmaceutical sector is likely unrelated to the IRA, the relatively high increases in automotive and machinery exports could potentially be linked to it. However, a definitive causal attribution cannot be made. Without the strong growth in these product groups, the increase in total Bavarian exports in 2023 would have been significantly lower.

German exports of electric vehicles to the U.S. (Bavaria-specific data unavailable) have increased sharply in recent years, more than quintupling between 2020 and 2023. However, German electric vehicle exports worldwide have grown by a similar factor over the same period, resulting in no increase in the U.S. share of total German exports. Thus, no clear indication of the IRA's influence is evident here.

Fig. 11

Change in Bavarian Exports to the USA in 2023 by Selected Industrial Product Groups – A Time Comparison

Change between 2022 and 2023 and annual average change between 2010 and 2019 in percent



Note: "Other" groups include aggregated economic sectors (01-19 & 31-89), excluding industry (20-30); "Total" reflects the average across all sectors.

Sources: Statistisches Bundesamt; Institut der deutschen Wirtschaft (German Federal Statistical Office; German Economic Institute)

5.4.2 Direct Investments in the USA

As explained in section 4.1.3, there are concerns that the IRA could lead to the relocation of investments from Bavaria to the USA. This hypothesis can be assessed using the data available from the Deutsche Bundesbank on direct investments in the USA. However, detailed information on direct investment stocks is available for Bavaria (and Germany) only up to and including 2022. Since the IRA only came into effect in August 2022, this data covers too short a period. Data on direct investment flows to the USA is available only for

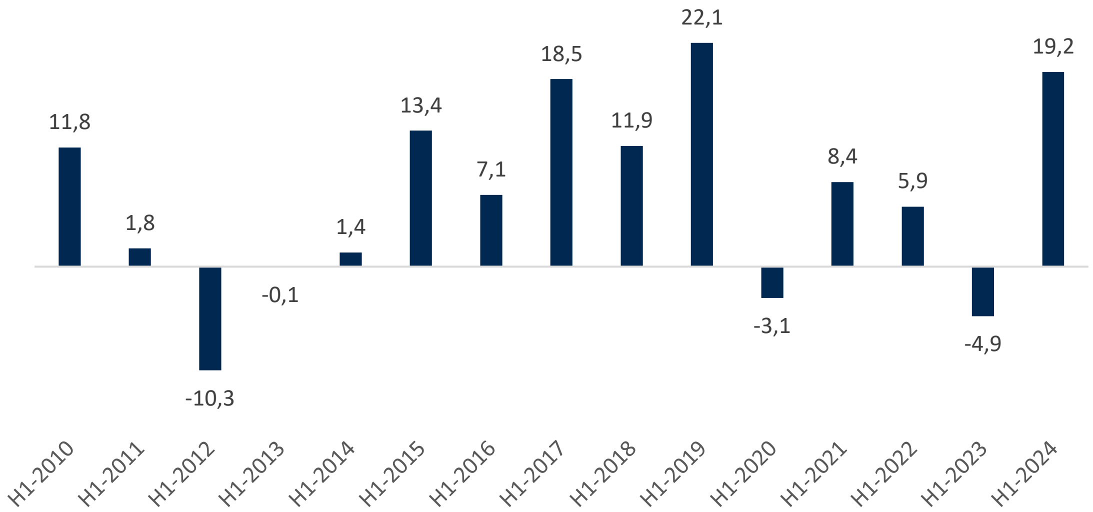
Germany as a whole. Direct investment flows—also known as direct investment transactions—refer to new investments abroad. These flows are recorded by the Deutsche Bundesbank as part of the balance of payments statistics but do not account for indirect corporate linkages, which make up around one-fifth of the total direct investment stock of the German economy in the USA. As a result, the transactions captured represent the majority of Germany's direct investment flows to the USA.

Figure 12 illustrates German direct investment transactions in the USA for the first half of each year from 2010 to 2024. Compared to this longer-term trend, the values for the first half of 2024 appear relatively high but not exceptionally so compared to pre-pandemic levels. However, there is a noticeable increase compared to the years 2020 to 2023. So far, there is no evidence of an unusually large shift in investments to the USA in response to the IRA.

Fig. 12

Development of German Direct Investment Transactions in the USA – Half-Year Values over the Long Term

Half-year data (first half) in billions of euros



Sources: Deutsche Bundesbank; Institut der deutschen Wirtschaft (German Economic Institute)

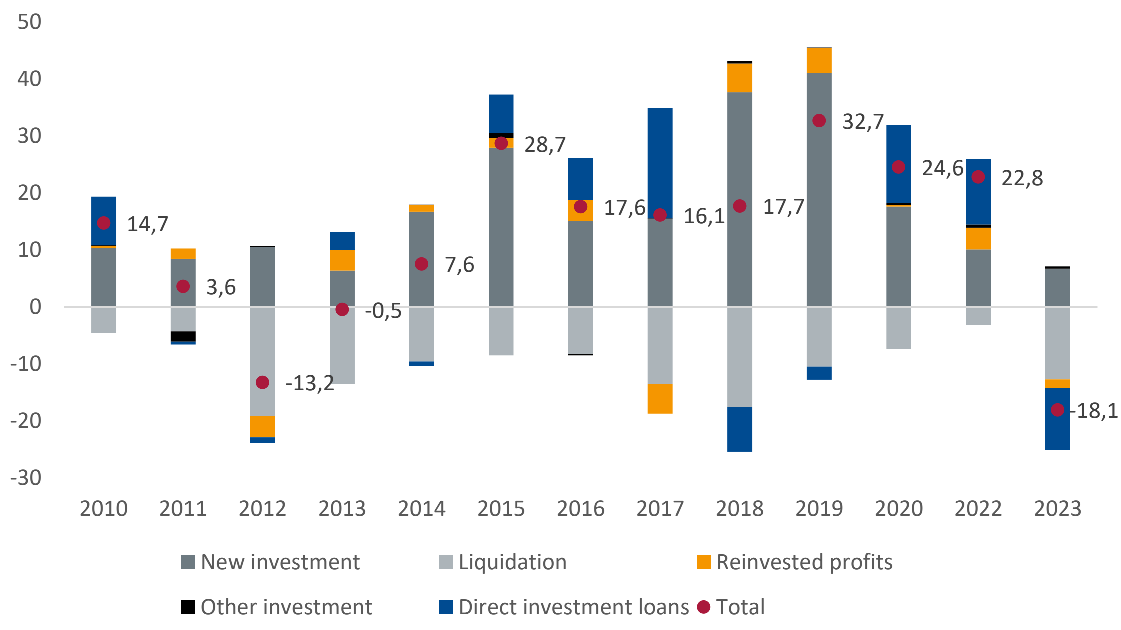
A noteworthy question is how to explain the negative values recorded in 2023, as these findings contradict the notion of a strong shift of investments to the USA. A breakdown of the individual components of German direct investment flows to the USA provides some insight, though it is only available as annual data and not yet for 2024 (see Figure 13). For 2023, the total decline amounted to 18.1 billion euros (marked as a red dot in the stacked bar). A significant portion of this decline is due to the withdrawal of direct investment loans totaling around 10 billion euros.

However, even without these loan transactions, the developments in equity investments—divided into new investments and liquidations—do not indicate any increase in 2023, where one would expect to see the effects of investment shifts. Instead, there were relatively high liquidations of equity investments amounting to approximately 13 billion euros. In contrast, new equity investments reached only 6.7 billion euros last year, which is relatively low—the second-lowest value since 2010.

Fig. 13

Development of German Direct Investment Transactions in the USA – Total and by Components

Annual values in billions of euros



Note: Due to data availability, a breakdown of the total value of German direct investment transactions in the USA is not available for 2021 and is therefore not shown here.

Sources: Deutsche Bundesbank; Institut der deutschen Wirtschaft (German Economic Institute)

A comparison between data from the Deutsche Bundesbank and the U.S. Bureau of Economic Analysis (BEA) reveals significant discrepancies. For 2023, the BEA reports a strongly positive transaction volume (around 52 billion USD or approximately 48 billion euros). Such differences in the recording of direct investments by various national authorities are common. Experts from the Deutsche Bundesbank attribute these discrepancies mainly to differing data collection methods, reporting errors, and methodological differences in analysis. While the data from the Deutsche Bundesbank is considered more reliable in this comparison, it is also based on current estimates and may be revised later.

In summary, there is no indication so far of a significant shift in investments from Germany to the USA. However, this finding may change if the increase observed in the first half of 2024 continues. It is also important to note that the IRA has been in effect for only a short time, whereas investment relocation decisions tend to be made over the longer term.

6 Outlook

A Trump administration could curtail the IRA, but a complete repeal seems unlikely.

Presidential elections will be held in the U.S. in November, with Joe Biden not running for re-election. Thus, more or less significant changes in U.S. economic and trade policy are expected, which may also affect the IRA. At this point, however, any speculation remains premature.

A Harris administration would likely be more cooperative toward the EU and Germany. This is especially relevant as Donald Trump has already threatened a 10 percent tariff on all imports, which would also affect EU exports. There is unlikely to be much change in the increasingly critical stance of U.S. trade and technology policy toward China, regardless of the election outcome. In both scenarios, further tightening can be expected, which will have both positive and negative repercussions on the EU, Germany, and Bavaria through trade diversion effects. Positive effects will occur if the U.S. largely excludes certain Chinese goods from its market, giving local companies better opportunities in the USA with less competitive pressure from China. Negative effects could arise if Chinese products, no longer sold in the U.S., enter the European market in greater volume, intensifying competitive pressure.

Regarding the IRA, the outlook is also unclear. Donald Trump would likely scale back or undermine U.S. climate protection ambitions. In his campaign speeches, he has even mentioned abolishing the IRA altogether and prioritizing fossil fuels over renewable energy. However, a complete repeal seems unlikely since Republican states also benefit significantly from the IRA. A Trump administration could, however, end the leasing scheme for electric vehicles, which would severely impact export opportunities in that sector. This presents a potential and real threat.

Even under a Harris administration, some restrictions on the IRA may become necessary if revenue increases fail to sufficiently reduce the growing U.S. budget deficit. Whether further improvements to the conditions for utilizing IRA tax credits for electric vehicles will occur under Harris remains uncertain. This primarily concerns a critical raw materials agreement between the U.S. and the EU, which could be recognized as a free trade agreement (see Chapter 2). Even with the Biden administration, despite some progress, such an agreement had not yet materialized.

7 Political Options

Since the IRA has had fewer negative impacts than feared, caution is advised against overreacting with industrial policy.

The EU has responded to the IRA with an industrial policy offensive, viewing the U.S. subsidy program as a severe threat to the European Green Deal (see Chapter 1). However, as this study shows, the IRA's impact appears to be overstated. Furthermore, the EU itself allocates substantial funds for green transformation under the Next Generation EU program (NGEU). Therefore, excessive industrial policy measures in the EU should be avoided.

Subsidies are costly and strain already tight public budgets. They also distort the internal market and risk creating inefficient structures. Thus, they should only be a measure of last resort. A systematic evaluation is required to determine if state financial support is truly indispensable. If subsidies prove to be justified under such strict scrutiny, they should be disbursed more swiftly and with less bureaucracy than has been the case so far.

Rather than focusing on selective support for specific industries and companies, it is more important to pursue sound general economic policies to improve location quality and business competitiveness. This includes a rigorous reduction of bureaucracy, corporate tax cuts, increased investment in education, research, and infrastructure, strengthening the internal market, and a more reliable energy policy that increases security of supply and reduces energy costs.

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