



Profits of German investors in China – a first empirical stocktaking

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Executive Summary

Direct investment by German companies in China and by Chinese companies in Germany is a key pillar of economic relations between the two countries. In this analysis, the authors focused on German direct investment in China. To assess and evaluate the results, it should be emphasized that direct investment by German companies in China and the resulting profits represent only one aspect of the complex and close economic ties between Germany and China. Other important components – such as trade in goods and services, exchange in research and development, trade in intermediate inputs in the form of supplies and pre-processed raw materials, the effects of Chinese direct investment in Germany, or the linkages from Sino-German cooperation with third countries – are not the subject of this study. Neither were welfare effects from higher capacity utilization (e.g. in R&D departments of firms in Germany) or higher economies of scale from technological synergies examined here. The results are therefore just one of several indicators to assess whether and to what extent the German economy benefits from engagement with China or how strong critical dependencies are. The study, however, provides important new insights into the macroeconomic significance of profits generated from direct investment in China, which has been rather poorly researched to date:

- **China is an important investment destination:** China has become significantly more important as an investment and production location for German companies in the last decade. According to the Deutsche Bundesbank, German foreign direct investment (FDI) stocks in China have more than tripled, from 29 billion euros in 2010 to almost 90 billion euros in 2020.
- **Industry is the driver of investment:** Manufacturing is by far the most important industry for German investors in China. For the automotive industry, in particular, China is an outstanding investment location. It accounts for almost 30 percent of all German FDI stocks in China, and it is followed at a considerable distance by the chemical industry (with about 9 percent) and mechanical engineering (with about 7 percent).
- **No economic dependence on direct investment in China:** At 90 billion euros in 2020, China accounted for 6.8 percent of Germany's total FDI stock, which in total amounted to 1,325 billion euros. Compared to the EU (34 percent) and the US (27 percent), however, China's importance as an investment location for German companies is lower. The same applies to the key figures on the number of foreign subsidiaries in China as well as their employees and annual turnover. For the period from 2016 to 2020, the share of profits generated in China and remitted to Germany in the total annual profits generated by German firms (not only abroad, but also in Germany) on average does not show any distinctive dependency on China, either. The share can only be estimated on the basis of the present analysis and is likely to be below 4 percent on average. For individual sectors and firms, however, it is likely to be significantly higher.
- **FDI is the most important form of capital investment for German investors in China:** According to a special data analysis of Bundesbank data, they account for almost three-quarters of German foreign assets in China.

- **German companies predominantly invest directly in China:** Well over 90 percent of German FDI stock in 2020 is direct and thus not invested in China via other countries or regions (e.g. Hong Kong or Singapore).
- **Decent profits and returns from the investments:** The special data analysis of Bundesbank data on primary incomes also shows that German FDI in China generated annual profits of 11 to 15 billion euros between 2017 and 2021. Of these, 2 to 7 billion euros were reinvested in China. In addition, 7 to 11 billion euros, or between 53 and 80 percent of profits generated in China, flowed back to Germany between 2017 and 2021. That is 12 to 16 percent of all profits flowing to Germany from German FDI stock abroad.
- **The EU remains by far the largest source of profits from FDI, but the profit margin in China is particularly high:** Absolute profits from FDI in China are of a size similar to profits from FDI in the US, but they are significantly lower than the profits from FDI by German companies in the EU. However, FDI in China seems to be relatively lucrative.
- **FDI in China is financed using reinvested profits:** In a longer-term comparison, an increasing share of the FDI that flows from Germany to China additionally each year (FDI flows) is financed – albeit with significant fluctuations – using profits generated in China. From 2018 to 2021, even the total amount of FDI was financed using reinvested profits.
- **China's relevance to German investors could continue to increase:** This is supported by the results of a non-representative survey conducted for this study of around three dozen German companies. The results indicate an increasing localisation of economic activities of German subsidiaries in China.
- **Increasing political grip on the economy:** For Xi Jinping's third term in office, an even greater politicization of the economy in China is to be expected. The economic environment will be characterised even more by efforts to further strengthen China's resilience. This will further increase the expectations of the Beijing leadership for all companies present in China to contribute to strategic goals.
- **Deteriorating export prospects:** If German companies localise more in China, there is the risk that this will negatively impact German exports to China. German exports to the People's Republic could significantly decrease if the Chinese market was increasingly served by local production. In fact, the majority of the German firms surveyed increasingly want to replace exports from Germany with local production in the next few years and also use China as a production location for exports to Asia.
- **More research & development in China:** The vast majority of companies also plan to locate the latest technology and research and development more in China. Against the backdrop of a regulatory environment in China increasingly shaped by national security interests, this trend raises questions regarding access to data and innovations generated in China.

Recommendations

Foreign economic policy decisions are only one aspect of how Germany and the EU shape their relations with China. These decisions must be embedded in an overall China strategy of the EU and the German government. The most important foundation for future prosperity is Germany's and the EU's economic competitiveness and technological sovereignty. Measures to strengthen Germany's and the EU's own competitiveness should be at the centre of the economic policy agenda, but are not the subject of this study. With regard to the future handling of German direct investment in China as well as German and European external economic relations, the authors make the following six recommendations:

Safeguarding the overall interests of the German economy

The study shows that the macroeconomic significance of the profits generated by German companies in China is certainly relevant, but nevertheless remains limited. However, individual large companies are known to be much more dependent on China with their business activities and also profits. The increase in geopolitical risks puts these dependencies in a new light. It is in the overall interest of the German economy that affected large companies safeguard their own existence against geopolitical worst-case scenarios (e.g. an invasion of Taiwan by China).

In future, with a view to dealing with China, it should be examined more closely to what extent company interests could possibly diverge from interests of the overall economy – as is the case with all investment in production sites abroad. The survey conducted for this study indicates that a congruence of interests cannot always be assumed in

principle. Questions about overall interests of the German economy arise, for example, in the course of the increasing localisation of business activities in China. While exports from Germany to China have strong positive effects on the German economy (e.g. in the form of jobs), positive effects on the German economy from FDI by German companies in China are less direct and more dependent on company-specific decisions. Against this background, political decision-makers should formulate a new foreign economic policy for China on the basis of a differentiated consideration of the welfare effects on the German economy.

More transparency in handling risk

Publicly available annual company reports rarely include detailed information on China's relevance; often only data for the Asia region is reported. Companies have an interest in protecting competitively sensitive information. At the same time, there is a public interest in learning more about geopolitical cluster risks if existing state support instruments could be used by companies in the case of a geopolitical conflict.

Keeping national security interests in mind also for direct investments abroad

Germany should review existing instruments to promote investments in countries with high geopolitical risk profiles and develop new ones. Even if the steering options via investment guarantees are rather limited, these could be linked to various criteria, such as the geopolitical risk potential and the expected benefit for the German economy.

The adjustment of the investment guarantee scheme in November 2022 is a first step in this direction.

Particularly against the backdrop of Beijing's increased efforts to integrate military and civilian innovation systems more closely, the export control regimes of the German government and the EU should also continuously be examined for possible gaps and adjusted if necessary. In a related matter, it should be examined whether the instrument of export control sufficiently covers technology transfers in the context of direct investments.

Diversifying sales and procurement markets

Economic relations with China will remain important in the future. However, in order to reduce geopolitical cluster risks, Germany and the EU should create more incentives for companies to diversify, i.e. to invest more in and trade more with countries other than China. Asian countries are particularly in focus because of their size and economic dynamics as well as their partly favourable cost and economic structures. However, there are also sales markets and potential suppliers in other regions of the world that need to be tapped more in the future.

Free trade and investment agreements with these states are an important prerequisite for companies to broaden their investment activities, exports and imports. The EU's trade policy should more strongly be oriented towards diversification aspects. The breakthrough in the ratification of the EU's free trade agreement with Canada (CETA) by Germany is an important first step. There needs to be a prioritisation towards more geostrategic objectives so that agreements with the countries concerned are not only concluded but also ratified swiftly by the EU member states. The EU's Global Gateway Initiative is also an important building block for diversification and new strategic partnerships and should be implemented and expanded quickly.

Closing the transparency gap in value chains

The economies of China and Germany or the EU are closely intertwined in global value chains through trade and investment. It is not the resulting interdependencies

per se that are critical, as they are inevitable in the globalised economy. Instead, what is critical are unilateral dependencies. Greater efforts are needed in the EU to identify and, if necessary, reduce such dependencies in the value chain. They are known in the case of rare earths, but in other segments of the value chains of individual companies there is still no reliable picture of unilateral dependencies. This also makes it more difficult for companies to diversify the risks in their supply structures.

Strengthening coordination within the EU and with like-minded partners

The EU should take a consistent and coordinated stance towards China in all policy areas. Only if all member states pull together so that the EU can bring its entire economic weight to bear can it also meet China on an equal footing and position itself as an actor capable of acting, e.g. to preserve an open, rules-based world trade system. Therefore, the EU should continue to review its external economic policy instruments and, if necessary, introduce new ones in order to have answers to the increasing political instrumentalisation of economic dependencies. This applies both to the handling of FDI by EU companies in China and vice versa for Chinese FDI in the EU. Regarding the latter, the EU should in the medium to long term establish a unified investment screening at the EU level to prevent EU member states from being played off against each other, for example, when it comes to investments in infrastructure or "greenfield investment".

Corporate decisions on direct investments abroad are also based on the behaviour of competitors from other countries. Germany and the EU should therefore strive for improved coordination with important partner countries that also have an interest in diversifying their external economic relations. These include, in particular, the G7 countries, Australia and South Korea. In this way, it may be possible to create framework conditions and incentives for companies to invest more in like-minded countries, i.e. countries whose political system is based on similar values and whose economic system is based on the principles of a market economy.

1 Introduction: Background of and motivation behind the study

The EU and especially Germany, with its export-oriented economic model, have greatly benefited from China's economic rise. The gradual integration of what is now the world's second-largest economy into a rules-based international order, such as with China's admission to the WTO in 2001, has been an important part of this process. From a Western perspective, this initially seemed to validate the theory that economic ties are a key prerequisite for stable bilateral relations and, in keeping with the idea of "Wandel durch Handel" ("change through trade"), could perhaps even help lead to political reforms in the medium term. However, especially in the years after Xi Jinping took office in 2013, it has become increasingly clear that China's development will be heading in the opposite direction. Since then, the government leadership has become more centralised and authoritarian. Freedom of expression and human rights have been subject to major restrictions (Pei 2022).

This has prompted the issue of systemic rivalry to move into the focus of Europe's – and, more recently, also Germany's – policies towards China. The starting signal for this repositioning was provided by the China paper of the Federation of German Industries (BDI) of January 2019 with the leitmotif "system competition" and the EU communication "EU-China – A Strategic Outlook" with the much-cited triad "partner, competitor, rival". Germany's federal government only officially committed itself to "shaping [its] relations with China in the dimensions of partnership, competition and systemic

rivalry" when the "traffic light" coalition took office in December 2021 (BDI 2019; European Commission 2019; SPD, Bündnis 90/Die Grünen and FDP 2021). Russia's war on Ukraine has raised awareness once again and very clearly of the repercussions that systemic rivalry can have on economic relations. In addition to boosting prosperity, close economic ties with autocratic countries can create critical dependencies that may be politically exploited when conflicts arise. A painful example of this is Germany's dependence on Russian gas. Yet its dependencies on China are even greater and more diverse than those on Russia (cf. e.g. Fuest et al. 2022). This is also politically relevant because the systemic rivalry with China is likely to grow more intense with time. This was demonstrated in no small way by the 20th Party Congress in October 2022, which handed Xi Jinping a historic third term in office, thereby consolidating China's one-party rule and the more and more central role that the general secretary of the Chinese Communist Party (CCP) plays in it (Bush et al. 2022).

Another factor contributing to the increasing systemic rivalry is China's increasingly self-confident-to-aggressive conduct on the international level, combined with its ambition to export its own development model. This softening of the principle of non-interference, which was long the top priority of Chinese foreign policy, was already apparent under Xi's predecessor, Hu Jintao, but has been accelerated in particular by Xi (Shirk 2022). At the same time, China has been pursuing the long-term economic policy

goal of becoming the world's leading industrial and technology nation by 2049. To achieve this, Chinese dependencies on foreign technologies – and particularly Western ones – are to be reduced. This, in turn, is supposed to make the global economy more dependent on Chinese technology and China's domestic market. "Made in China 2025" and "dual circulation" are two key concepts of China's industrial policies in pursuit of these goals (cf. Wübbecke et al. 2016; Jungbluth 2018; Brown, Gunter and Zenglein 2021). Concrete measures and approaches for this include targeted acquisitions abroad and more indigenous innovation by Chinese companies, but also more local production and R&D by foreign companies in China. The latter is to be achieved using a mix of incentives, localisation requirements and political pressure (see Chapter 3). These developments pose several risks for foreign companies and their home countries. In addition, they raise the question of whether sales-oriented foreign investments by German companies will also continue to benefit the German economy:

1. For the companies in question, this could mean that they will foster, at least to a certain degree, their own replacements in the medium term. If they open up their technologies and know-how in China in accordance with political requirements, such as by shifting more R&D activities to China, they will help to nurture, so to speak, their Chinese competitors of tomorrow. Whether they will be able to benefit just as much from Chinese technologies in return and, if so, to bring the knowledge resulting from their research in China out of the country at all, is unclear due to the reciprocity that is still lacking in many areas (cf. Kratz and Oertel 2021). China's state-capitalist system, which plays by different rules than Western market economies, therefore leads to competitive distortions that individual companies have very few means to counter. A transfer of new technologies by German companies to China also has the potential to diminish

the competitiveness of companies based in Germany vis-à-vis their Chinese competitors.

2. Different and, in some cases, incompatible standards and framework conditions (e.g. for data and cloud applications) in China and the home country could make it more and more necessary for companies to set up completely dual structures. At some point in the future, this could lead to a decrease in permeability between the subsidiaries of German companies in China and the offices back in Germany – and therefore also of the ability to steer business activities in China. This kind of increasing decoupling of business in China and, with it, also investment activity by German companies in China could prove problematic from a macroeconomic perspective.
3. If the developments outlined in 2) were to occur on a larger scale and, in addition, more and more business activities were to be established (localised) in China, China as a market would increasingly be served via local investment and production and much less via exports, on which value creation and employment in Germany depend. According to an analysis by the German Economic Institute (IW), in 2018, around 2.7 percent of Germany's total economic value added and 2.4 percent of its total employment depended directly or indirectly on exports to China (Matthes 2022a) – whereas, by now, this figure is likely to be around 3 percent in both cases. In addition, China could become more and more of a hub for exports to third markets. Going forward, both of these factors could contribute to a decline in China's importance as a driver of growth for German exports.

4. For both the companies that have invested in China and policymakers in Germany, the question of susceptibility to political blackmail also arises against the backdrop of the strong dependencies of individual companies and, in the case of critical imported goods, in view of the intensifying systemic rivalry with China. For example, there is a risk that the Chinese side will use German FDI in China even more as an instrument of leverage to achieve foreign policy goals.

In light of these circumstances, one must ask to what extent the interests of individual German companies for whom China represents a large share of their overall business, on the one hand, and those of the German economy, on the other, will still overlap in the future. A congruence of interests would presumably still be ensured if high profits in China were to (continue to) secure jobs and earnings in Germany as well as to finance measures to achieve climate-related goals, or if product and technology development in China were also to have clearly positive spillover effects on the German economy.

For these reasons, the authors believe that German FDI in China should be more closely scrutinised in terms of its significance to the German economy as a whole so as to ensure that the interests of the overall economy – and not those of individual companies – are decisive in determining the orientation of German policies towards China. One important part of this will be to ascertain the importance of the profits generated in China through direct investment to both German companies and the German economy as well as which dependencies, if any, may arise in this context. Thus, generally speaking, the question is: Will Germany continue to benefit from the successful engagement of German companies in China via direct investments? This study aims to dive into this issue and analyse the following questions: Which profits arise from German FDI in China? What proportion of this flows back to Germany? And how is this then put to use?

The data used for this analysis have mainly been statistics of the Deutsche Bundesbank (BUBA), Germany's central bank, related to foreign direct investment (FDI), including a special data analysis of the balance of payments statistics on the primary income generated by direct investment, which was requested specifically for this study. Also employed were the results of a non-representative survey on China-related data and strategies among 36 large German companies – 15 of them from the DAX 40, an index of 40 major German blue chip companies – which the IW conducted for this study with considerable support from the BDI (see the Annex for the questionnaire). On the other hand, we have drawn on the annual financial statement statistics of the BUBA as well as publicly available data and statistics on dividend payout ratios and ownership statistics of listed German companies.

To assess and evaluate the results of the analysis, it should be emphasised that profits from direct investment represent only one aspect of the complex interrelationship between Germany and China. Other important components – such as trade in intermediate goods and services with China, the effects of Chinese direct investment in Germany, or the role of cross-border value chains – are not the subject of this study. The results should therefore be interpreted with a grain of salt and do not provide a complete picture of whether and to what extent the German economy benefits from its engagement with China and how strong critical dependencies are.

To begin with, in the following chapter, we will outline corporate strategies in China in the medium term (until 2030) on the basis of the company survey so as to give an impression of possible trends in German companies' business in China, also in light of the risks outlined above. Chapter 3 assesses foreign direct investment in China in the current economic policy context and details which framework conditions German companies are confronted with in the Chinese market and which political trends can be expected in China going forward. Chapter 4

uses Bundesbank data to provide an overview of the quantitative development of German FDI in China, also in comparison with the US and the EU. Chapter 5, as the core component of the analysis and with the help of the Bundesbank special data analysis, focuses on the profits generated in China by German FDI and their flow back to Germany. This analysis is supplemented by further quantitative results from the company survey, a macroeconomic assessment of profits based on the BUBA's annual financial statement statistics, and information on the dividend payout ratios and ownership statistics of listed German companies. Lastly, Chapter 6 summarises the key findings and conclusions.

2 Corporate strategies in China in the medium term

For this study, and with considerable support from the BDI, the IW conducted a non-representative survey of around 50 large German companies that collectively make up a major part of German industry's engagement with China. These included 15 companies listed in the DAX 40 index, large family-owned businesses and some companies from the SME sector (known in Germany as the *Mittelstand*). A total of 36 companies participated in the survey, which corresponds to a relatively high response rate of around 70 percent. However, the responses varied widely in terms of their completeness. It is also important to note that some of the DAX companies, such as large energy corporations, were not included in the survey because they have not invested in China and do not export goods or services to China to any significant extent. In addition, three expert interviews were conducted with representatives of the surveyed companies. With the additional information gathered from these interviews, the survey results can be supplemented with anecdotal evidence and thereby assessed even better.

On the one hand, the companies were asked about the importance of their business in China in a global context as well as about the profits generated in China and how they are used. These results are used in Chapter 5 to supplement the special analysis of the Bundesbank data.

On the other hand, the companies were asked how they view or intend to further develop important elements of their China strategy up to

2030. This concerned three topic areas, for each of which four questions were asked (see Annex for questionnaire):

1. How does the respective China strategy influence export and production prospects in Germany?
2. To what extent and in which fields are companies pursuing the goal of localising their activities in China more intensively?
3. How do companies view and respond to business conditions in China when it comes to dealing with the Chinese bureaucracy and regulations that present potential obstacles?

Almost all of the 36 companies provided nearly complete answers to these questions. Nevertheless, due to the limited number of participating companies, it is not possible to claim that their collective responses are representative. This is also reflected in what follows by the fact that the figures show the absolute number of responses to the respective answer options rather than shares expressed in percentage terms.

Topic Area 1) covers the **export and production prospects** for Germany, which can be positively or negatively impacted by the companies' China strategies, as mentioned in the introduction. More exports to China would tend to be beneficial to the German economy, as exports make a direct contribution to GDP and

employment and export-oriented companies tend to pay higher wages (cf. Egger et al. 2017). Over the last decade, China has become an important export destination for German companies with a relatively high average growth rate. The survey aimed to investigate whether this trend is likely to continue (Figures 2-1A to 2-1D):

1. When asked how the respective company's exports from Germany to China will develop up to 2030, the picture from a total of 33 responses was surprisingly mixed. Only two companies still expect to see a significant increase in exports, and 15 companies anticipate a slight increase in exports. In contrast, 16 companies expect exports to fall somewhat (12) or significantly (two) in the medium term. In the individual expert interviews, it became clear that the Chinese market is most likely to continue to be served with exports from Germany if the most modern variants of a company's own product are not (or cannot be) manufactured in China.
2. One important reason for the cautious assessment of export prospects is probably that the majority of companies want to replace German exports to China with local production. Among 36 responses that can be analysed, six companies responded with an unambiguous "yes" and 22 companies said "rather yes". The picture is similarly clear in the expert interviews.
3. This is likely to be helped by the fact that China will increasingly be used as an export platform to serve the Asian market. A large majority (23) of the 35 responding companies intend to pursue this strategy (with 16 answering "rather yes" and seven an unambiguous "yes").

4. For the German economy, it would be particularly problematic if German companies were to produce in China – possibly under subsidised conditions – and then export these goods to Germany. In doing so, they would possibly compete with less internationalised and non-subsidised German companies here at home, which would tend to pose a threat to existing production and employment in Germany. However, only a very small minority of the 34 responding companies plan to do so. The vast majority do not intend to do so, or at least not between now and 2030. This also became clear during the expert interviews with selected company representatives.

The picture that emerges from the responses of the companies surveyed indicates that the Chinese market will in fact be served more by local investment and production than by exports in the medium term, and that China could increasingly be used as a platform for exports to third countries, especially in Asia. If the survey does paint a representative picture, this could diminish the growth potential of German exports to China.

Topic Area 2) includes questions on the **localisation of business activities in China**, which could also tend to have a dampening effect on the prospects for German exports, especially in the case of local production in China. In addition, we investigate the extent to which innovation activities are also being increasingly localised in China, thereby making it not only a sales market and production location, but also more and more of a venue where German companies perform R&D. If research activities were to be relocated from Germany or not set up here in the first place, this could also be detrimental to the German economy. The survey shows the following trends for the period up until 2030 (Figures 2-2A to 2-2D):

1. The vast majority of the surveyed companies intend to localise a broader range of business activities and operational know-how in China by 2030. This was said by 26 out of 35 companies, with 13 expecting this to be likely (“rather yes”) and 13 expressing certainty that this will happen. The restrictions imposed during the coronavirus pandemic and the migration of expats while the “zero-covid” strategy was in place may have also contributed to this. The individual expert interviews paint a similar picture. In some cases, it was stated that “local for local” production is the central corporate strategy not only in China, but also in other regions, and that China also appears attractive as a business location because administrative and approval processes are handled more quickly there than in Germany.
2. An even clearer picture emerges regarding the planned localisation of supplier structures, with 29 out of 33 responses being positive and with these being relatively evenly split between the two “yes” categories. This trend also has the potential to weaken the prospects for German exports if intermediate inputs are no longer sourced from Germany or Europe, but increasingly from China.
3. The picture is also relatively clear when it comes to the question of localising R&D activities in China in the years ahead. In this case, as well, 26 out of 35 companies responded positively, with 10 of them agreeing without reservation.
4. The survey also asked whether the companies intend to bring their latest technology to China. Here, too, the finding was clear, with 26 out of 31 companies providing positive responses – although somewhat more of them (15) said that this was likely (“rather yes”) instead of certain. However, the individual expert interviews revealed sector-specific differences regarding this issue.

In terms of innovation, the expert interviews make it clear that, generally speaking, no basic research is conducted in China and that the innovations which are made there tend to be customer- and application-oriented rather than of a fundamental nature. However, one company representative did state that the company did conduct a considerable amount of research in China and did benefit from Chinese state subsidies. Furthermore, another company stated that it was conducting battery research in China seeing that the country is one of the leading innovators in this field. In the individual expert interviews, China was described as being quite important when it comes to application-oriented innovations, but respondents did not state that this was of particular significance to the global corporate strategy of their company. One company representative spoke of China as being a “gym” for the company, as Chinese companies are highly competitive in the industry in question – however, in this case, it was more about intense competition as a general driver of efficiency and ideas and less about a fundamentally innovation-oriented strategy. A company from another industry, in which China lags very far behind the leading innovators, rated innovation activities as not being very significant in China.

These results demonstrate that localising production in China and boosting their R&D activities there are becoming more and more important to the vast majority of companies that participated in the survey. This strategy is certainly understandable from a business perspective, such as to adapt products and related services to Chinese demand, to benefit from Chinese subsidies for substantial research activities, or to participate in the creative and innovative environment in certain sectors. However, as described in the introduction, this can also entail longer-term risks for companies, for example, if they help their Chinese competitors to get ahead technologically and subsequently fall behind in the competitive environment in China, which is not always fair. In this case, there is a certain degree of conflict between short- and long-term profit interests.

What's more, the trend towards increased localisation in China also poses risks to the German economy. This raises the question of whether localising innovation activities in China comes at the expense of (existing or potentially additional) research in Germany or whether these activities are actually complementary. Furthermore, there is a need to better understand why German companies are boosting their investments in innovation-related activities in China. What locational advantages does China offer (and what disadvantages does Germany have), what role do subsidies play in this, and how much pressure is the Chinese government exerting to get R&D localised in their country (see Chapter 3)? In addition, more economic research needs to be done to determine the extent to which there is a danger that China, with the help of German companies, will gain access to the most advanced innovations through an explicit or implicit transfer of technology. This could jeopardise the German economy's ability to compete in the medium term, as it could lead to a loss of relative technological advantages. It is also possible that technological advances made in this way could help China to bolster its military capabilities. When it comes to these issues, the China-related interests of German companies could significantly diverge in the future from those of Germany as a whole.

Topic Area 3) focuses on **the relationship between German subsidiaries in China and the Chinese bureaucracy** (Figures 2-3A to 2-3D). The background here is the assumption that conducting business in China could be made more difficult in the future, either formally or informally, owing to administrative hurdles or disadvantages prompted, for example, by China's efforts to achieve self-sufficiency as part of its dual circulation strategy. To the extent that companies are anticipating this, the question is how they will react to it.

1. The first question asked was to what extent the German companies surveyed expect the Chinese bureaucracy to behave in a

constructive manner. Out of 35 companies, 27 expect this to happen, but most of them (17) only do so to a limited extent and responded "rather yes", while eight of them tended to be more sceptical. The selected expert interviews indicated that German companies with large investments in China, in particular, find administrative conditions there to be good.

2. In contrast, responses to the question of whether they faced a competitive disadvantages vis-à-vis their Chinese competitors were split between positive and negative answers, with the former being slightly more frequent. There is evidently a certain amount of uncertainty, as the "rather yes" and "rather no" answers were dominant. In the expert interviews, the awarding of public contracts was mentioned as an example of an area in which the authorities behave in a discriminatory manner.
3. The distribution of responses was very similar for the question of whether companies expect to become victims of sanctions in the event of trade disputes, although there were fewer responses (29) to this than to the other questions. In the individual expert interviews, one company in a very technology-intensive sector expressed concern that in the event of an escalation of geopolitical tensions with extraterritorial sanctions, it could be forced to choose between the two important sales markets of the US and China.
4. To mitigate possible hurdles and disadvantages while also ensuring constructive behaviour on the part of Chinese authorities, German subsidiaries could increasingly portray themselves as "Chinese" companies. Responses to questions regarding such behaviour were also mostly balanced between negative and positive. Out of 35 companies, 18 responded positively, with seven saying "yes" and 11 saying "rather yes". This is another indication that a significant

proportion of the German companies with a presence in China are very strongly focused on the Chinese market.

In the selected expert interviews, questions were also asked about possible diversification into sales markets apart from China. Even though the pool of company representatives was very small, their responses were very heterogeneous. Some of the companies even said that they would focus more on China because they are underrepresented there in terms of their regional production structure compared to China's share of the global market. Other companies said that they would also not scale back their business in China. One company representative said that there was no alternative to China because of the market's dynamic development, although there are also plans to expand the company's business in India. Yet another company is striving to boost its sales figures in other Asian markets more than in China, thereby at least gradually reducing China's relative importance.

However, all in all, the survey and the individual expert interviews show that larger German companies are increasingly concentrating on the Chinese market and – probably partially for offensive and partially for defensive reasons – a certain tendency to disengage from the German economy is becoming evident. Should this trend consolidate and spread, the decoupling of business activities in China from Germany mentioned in the introduction could become more and more of a reality. As a result, the theory that investments in China also simultaneously benefit the German economy would be at least partially undermined. The political framework conditions in China, which are promoting production in China in line with Chinese standards more strongly under Xi Jinping than before, are likely to significantly contribute to this.

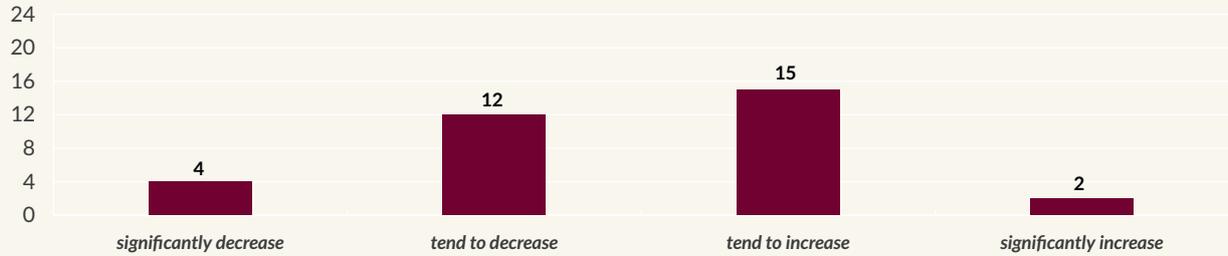
Given China's intensifying systemic rivalry with the US and the EU, this push is likely to become even more deeply anchored in the years ahead.

Against this background, the next chapter turns the spotlight onto investment conditions in China. The question asked is: To what extent will the economic and political framework conditions provide more or fewer incentives for German companies to invest even more in China going forward?

FIGURES 2-1A TO 2-1D Export strategies of selected German companies with regard to China

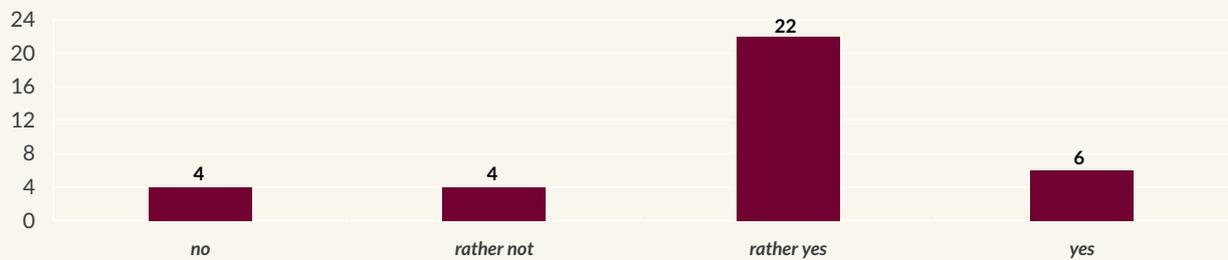
Our exports from Germany to China will develop as follows

Distribution of replies (n = 33)



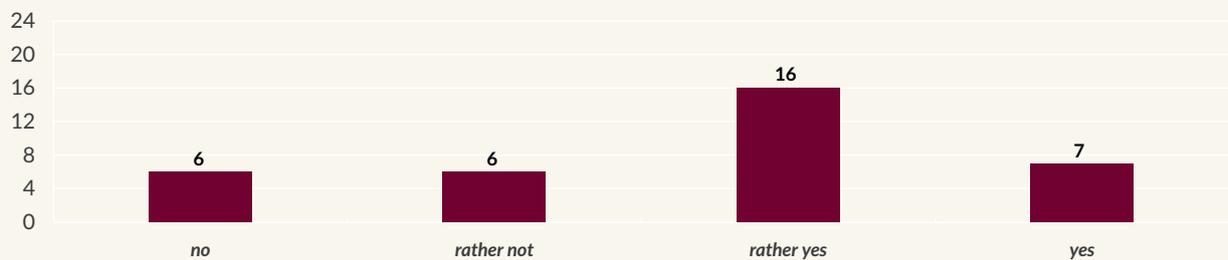
Our exports from Germany to China will increasingly be replaced by local production in China

Distribution of replies (n = 36)



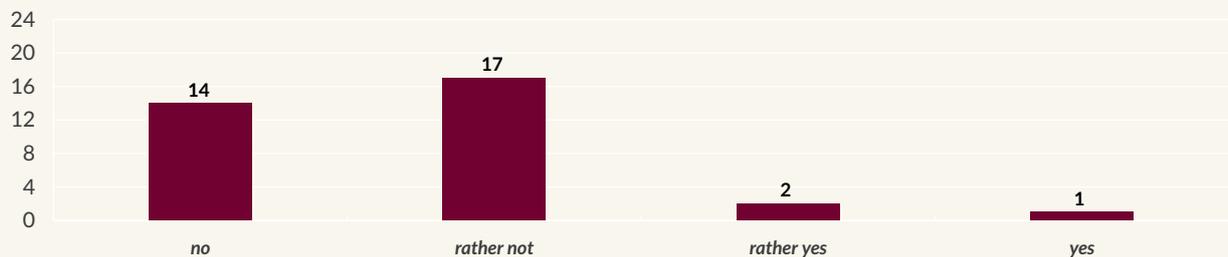
Our production in China will increasingly be exported to Asia

Distribution of replies (n = 35)



Our production in China will increasingly be exported to Germany

Distribution of replies (n = 34)



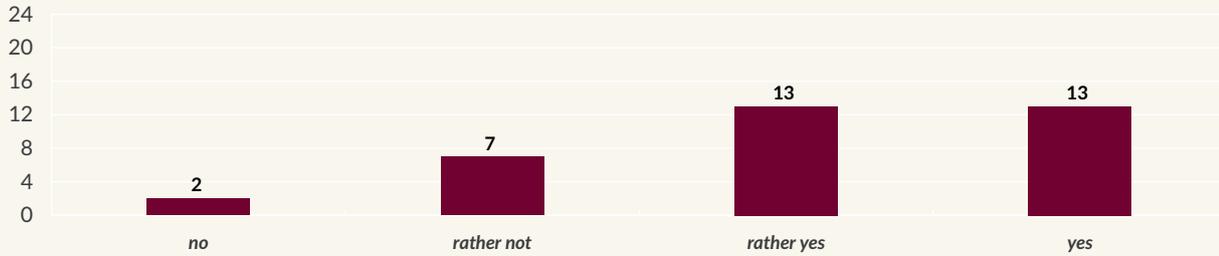
Source: Non-representative survey by BDI/IW of 36 selected German companies

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FIGURES 2-2A TO 2-2D Localisation strategies

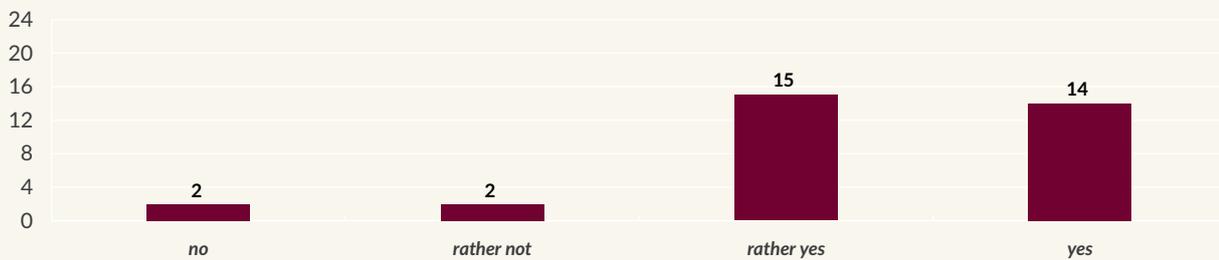
In China, we will localise a broader range of business activities and operational know-how

Distribution of replies (n = 35)



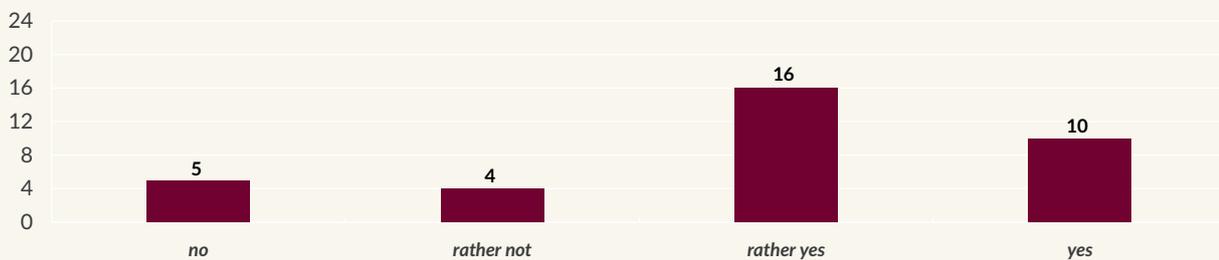
In China, we will localise more: supplier structures

Distribution of replies (n = 33)



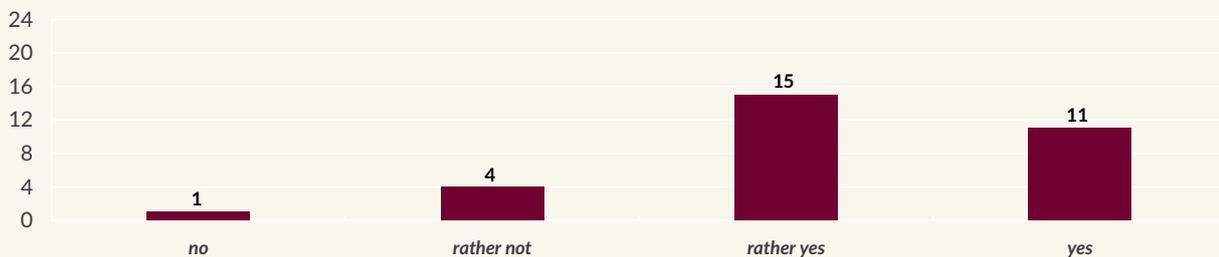
In China, we will localise more: R&D resources/activities

Distribution of replies (n = 35)



We intend to manufacture our latest technology in China

Distribution of replies (n = 31)

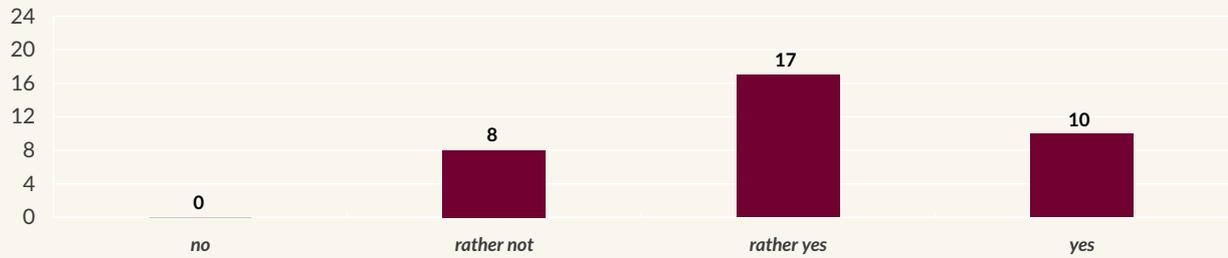


Source: Non-representative survey by BDI/IW of 36 selected German companies

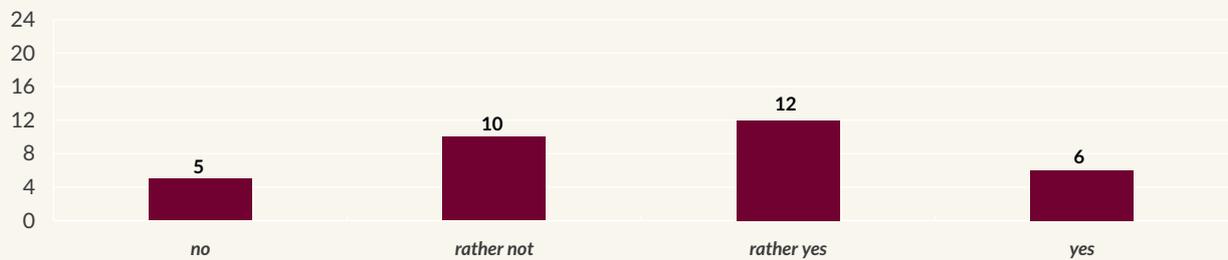
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FIGURES 2-3A TO 2-3D Relations with the bureaucracy in China

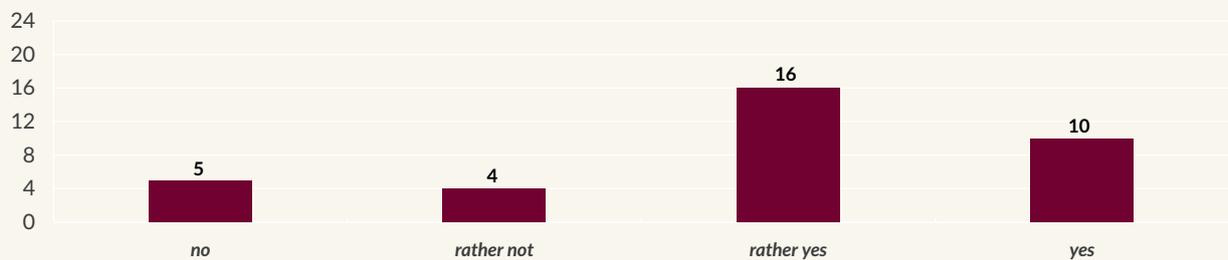
In our business activities in China, we expect the Chinese bureaucracy to behave in a constructive manner
Distribution of replies (n = 35)



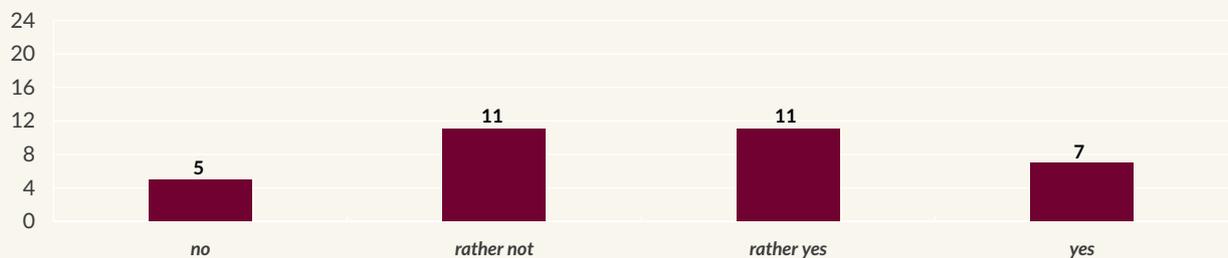
In our business activities in China, we are increasingly disadvantaged vis-à-vis our Chinese competitors
Distribution of replies (n = 33)



In our business activities in China, we expect to become victims of Chinese sanctions in trade conflicts
Distribution of replies (n = 29)



In our business activities in China, we want to be viewed more as a “Chinese” company in order to ensure that the Chinese bureaucracy behaves in a constructive manner
Distribution of replies (n = 35)



Source: BDI/IW survey of selected large German companies

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3 German direct investment in China: Assessment in the current context

Under Xi Jinping's continuing leadership, the policy framework for investment in China has undergone fundamental changes. Although economic growth remains an important yardstick for the government, at the centre of its agenda are centrally imposed and ideologically charged campaigns, such as Xi's pursuit of technological self-sufficiency and "shared prosperity". Despite occasional opening processes, the investment environment is increasingly dominated by a more restrictive political economy. During Xi's two terms in office, state control of the economy has increased at the expense of market reforms. In the context of growing tensions with both the US and the EU, national security has also become a central theme of Chinese economic policies. This increases their unpredictability, which in turn has a major impact on companies and sows uncertainty among them.

While shifting away from the primacy of economic growth, the government is also tolerating a decline in GDP growth through sometimes brutal interventions. In addition to the long adherence to the strict zero-covid policy, regulations in the technology, financial and real estate sectors have dramatically altered the market environment since 2019. The Chinese leadership is also increasingly confident in its dealings with international companies. The government is more frequently using economic means to achieve political goals and wants to make Chinese companies competitive on the global market. For example, Australia and Lithuania have been sanctioned because the

Chinese leadership believes that they crossed red lines. Foreign companies run the risk of being disadvantaged in a complex business environment. In addition, it is becoming harder and harder for them to be present in both China and other markets at the same time, as certain decisions (e.g. compliance with sanctions or selection of cotton producers) can be perceived as an affront on the Chinese or non-Chinese side. However, foreign companies are treated differently depending on their strategic relevance to China's development goals (cf. Adachi, Brown and Zenglein 2022).

3.1 China's economic priorities: Direct investments for technological independence

Under Xi Jinping's leadership, China has also revised its economic policy agenda. Having a strong economy is viewed as indispensable for China's national security and resilience. However, economic growth is no longer the only or even the most important indicator of good economic performance. Instead, the focus has shifted to the goal of becoming more innovative in economic fields considered to be of particular strategic relevance so as to establish a new growth model and make China less dependent on foreign technologies. In pursuit of this goal, China is adopting an increasingly assertive industrial policy in which targets are set centrally and realised locally. While doing so, China is progressively moving away from its previous

recipe for economic success and local policy experiments, even if these have not completely disappeared (United States-China Economic and Security Review Commission 2022).

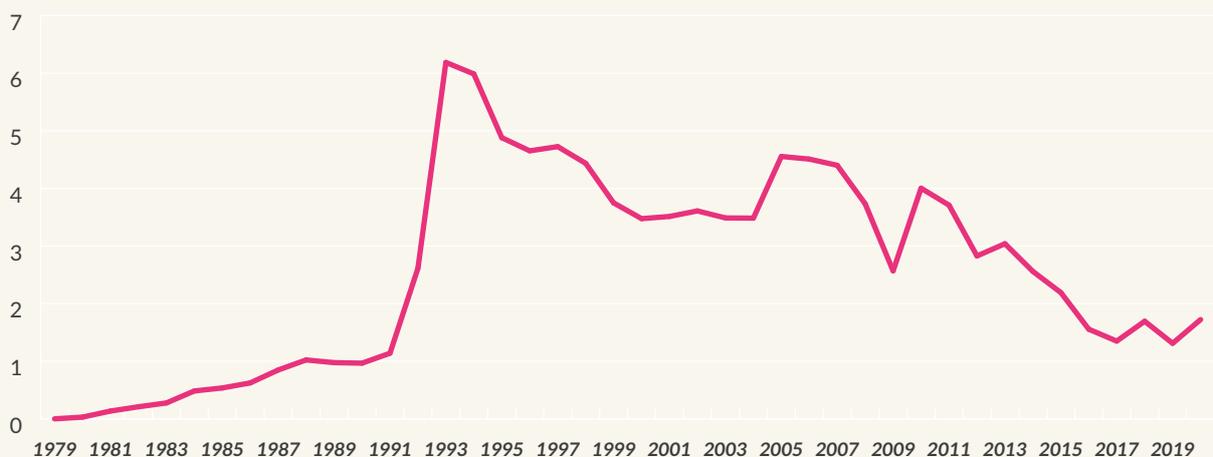
Although not new, China's techno-nationalist agenda has recently become more important in the face of growing geopolitical tensions. China has already been focusing on "strengthening innovation" since 2006 (with its Medium- to Long-term Plan for the Development of Science and Technology). The prominent placement of the catchphrase, which is a recurrent thread running through the economic chapters of the 14th Five-Year Plan (FYP), can be attributed to three factors:

- The CP considers innovation to be essential for **holding on to power and China's further development**.
- Innovations are to stimulate and upgrade China's **economic growth** in qualitative terms.
- Innovations are to make China **less dependent on foreign technologies**.

With the reprioritisation of economic goals, the role of foreign direct investment has also changed. While China continues to welcome investment from foreign companies, this is increasingly less for economic growth and the modernisation of production processes and more for how they can advance China's techno-nationalist agenda. This includes contributions to China's resilience and technological independence. But foreign companies also continue to play an important role in some sectors where China has already caught up technologically, especially as employers and taxpayers in structurally weak regions. Accordingly, China is mainly interested in investments that help it to achieve the following goals:

Fostering innovation: Foreign companies are encouraged to localise higher-value production processes and R&D activities in the country. By doing so, China hopes to concentrate a larger share of global value chains in its own country and to become more independent in technological terms. Foreign companies are to help China become less vulnerable to foreign sanctions.

FIGURE 3-1 **Foreign direct investment in China 1979 to 2019**
Net inflows (% of GDP)



Source: World Bank

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Upgrading strategically relevant manufacturing industries: Through their investments, foreign companies are to help China become an internationally competitive producer of high-quality industrial products. New investments are, among other things, to stimulate competition (e.g. in the commercial vehicle sector), technologically upgrade suppliers (e.g. in the automotive industry) or establish China as an export hub (e.g. with e-mobility).

Creating autonomous supply and technology chains: For China, foreign manufacturers of key technologies – such as semiconductor machinery or gas turbines – are an integral part of Beijing’s industrial policy. In order to gain more control over the production of such technologies and to increase the amount of manufacturing know-how in China, Beijing is trying to both incentivise and pressure German companies to invest in these fields.

Stimulating regional economies: For companies that are no longer technology leaders or for which there are enough alternative technology suppliers, China sometimes envisages a different role: as a stimulus in structurally weak regions, such as Northwest China. Investments in these regions are meant to bring in tax revenues and create jobs. Certain investments, such as in Xinjiang, could also help to legitimise China’s political goals. In other cases, certain regions are to assume pioneering roles in the adoption of foreign processes. German subsidiaries in Taicang are being encouraged to establish their training system there, as well.

3.2 German companies as attractive partners for achieving China’s goals

To achieve its economic goals, China needs foreign partners, especially suppliers of technology and resources. In this respect, German companies are particularly attractive. In many cases, in addition to being global technology

and market leaders in industries relevant to Beijing, they are also interested in continuing to operate in China’s market. Moreover, there are few alternatives that work as well for China. For example, while the US government talks about slowing down China’s innovation efforts (Macias and Tausche 2021) and severely restricts the export of semiconductors and related machinery to China, Japan recently passed an economic security law aimed at preventing critical technologies from entering China, among other things (Adachi 2022).

Accordingly, China is using various measures (Chapter 3.4) to try to induce German companies to boost their investments, especially in the R&D sector. China also hopes that in the course of localising production and research processes, management functions will also be transferred to the China-based business of German companies, making them more and more autonomous, if not “Chinese”.

For their part, many German companies continue to view China as a very large and attractive market. At the same time, they also see attractive development opportunities in the politically supported measures to modernise industrial policy. However, a change is also happening here. Since 2015 at the latest – with the publication of the “Made in China 2025” strategy paper – China’s industrial policy goals have run counter to the interests of German businesses and policymakers, as China is trying to compete internationally with German high-tech companies using instruments of industrial policy (Wübbecke et al. 2016). As mentioned at the start, the new German government increasingly views China sceptically – no longer mainly as a partner, but as a competitor and systemic rival.

The Chinese government is trying to ease these growing political tensions by forging closer ties with the German business community. In doing so, the Chinese Communist Party is relying on close contacts between key German companies and high-ranking officials while also

making concessions to companies in individual cases (e.g. by issuing investment permits or waiving coronavirus quarantine restrictions when important stakeholders from the German business community enter the country).

In some spheres, China's efforts seem to be paying off. Despite the changed framework conditions, almost three-quarters of German companies are planning to make additional investments in China (AHK 2022a). However, in recent months and years, investments have been concentrated in only a handful of sectors and a few large companies, especially in the automotive and chemical sectors (Kratz, Barkin and Dudley 2022). Increasingly, China is no longer a success story for every company. While Beijing continues to roll out the red carpet, to expand incentives and to remove import restrictions for some companies – in strategic sectors – China is becoming a harder and harder market for other companies, characterised by barriers to entry and state-sponsored competition.

3.3 Chinese red carpet: Beijing woos German companies in strategic sectors

In recent years, China's leadership has used the following measures to induce German companies to support China's economic policy goals:

1 Creating incentives for locating R&D activities in China

Increasing competitive pressure: Through industrial policy measures, the government is nurturing Chinese companies in strategic sectors, such as by fostering closer links between science and industry as well as with subsidies and state guidance. For example, even though it is a privately run company, BYD listed more than 2 billion Chinese yuan (CNY; approx. 283 million euros) in direct subsidies for battery and e-car projects in its 2021 annual report. These support measures are boosting the competitiveness of

Chinese companies, which in turn is increasing the pressure on German companies to invest more in R&D themselves. At present, 87 percent of German companies active in China believe it is necessary to increase their R&D investments in China in order to keep up with their Chinese competitors (AHK 2022b).

Direct promotion and subsidisation of foreign R&D activities: President Xi Jinping has proclaimed: “[The state] fully supports innovation regardless of its origin, as long as it can make a contribution to the country” (Xinhuanet 2021). Among the incentives that China gives companies to relocate R&D investments are generous tax deductions on R&D expenditures (most recently 100 percent for manufacturing companies). Incentives from local governments are even more concrete. By attracting foreign research centres, Shanghai is striving to become a world-class science and technology hub. Foreign R&D centres receive “start-up subsidies”, rent reductions and grants for patent applications. For R&D investments in key strategic sectors, there are additional financial incentives amounting to 10 to 30 percent of the total investment (Science and Technology Commission of Shanghai Municipality 2018).

Integration into China's attractive innovation and testing landscape: As part of China's stimulus measures in 2020, the Chinese leadership announced major investments in digital infrastructure and e-mobility. State media have projected investments amounting to 10 to 17.5 trillion Chinese yuan (CNY; about 1.4 to 2.5 trillion euros) by 2025 in fields such as 5G stations, charging infrastructure and cloud computing. At the end of 2021, 60 percent of the world's 5G base stations were located in China (CGTN 2022). In addition, sectoral industrial plans are targeting investments in digitally networked manufacturing. This is making China an attractive playing field for foreign companies to develop technology. New technologies can be tested and applied outside laboratories with state-of-the-art infrastructure.

On top of that, there are efforts by local governments to create ideal test conditions using pilot projects and development-friendly regulations. This is the case, for example, in the field of autonomous driving. The city government of Wuxi (Jiangsu province) has permitted the testing of autonomous driving on certain stretches of road since 2018. That same year, Audi announced that it would set up a new R&D and testing centre in the city. The German carmaker is now an integral part of Wuxi's technology ecosystem and is cooperating with state (Ministry of State Security, China Mobile) and private (Huawei, Horizon Robotics) actors to advance autonomous driving functions (Audi China 2019).

Data localisation creates pressure to localise R&D activities: Chinese data and cybersecurity regulations as well as global decoupling trends are increasing the pressure on German companies to invest even more in China in order to continue serving the market (Demary and Matthes 2021). In some sectors, companies are even being forced to set up stand-alone digital systems. This applies, for example, to artificial intelligence (AI), a field in which China is technologically advanced and is increasingly establishing its own standards and ethical principles (Brown and Sebastian 2022). International data flows are now largely regulated, complicated and, in the case of data relevant to China's national security, almost completely blocked. This forces German companies to invest in data and research centres in China in order to be able to store and process data locally.

Brake blocks remain in place: Despite China's intensified efforts to attract foreign R&D activities, weak property rights, regulations aimed at technology transfer, and the volatile geopolitical situation are sowing uncertainty among companies. Although China has done much in recent years to strengthen protections of intellectual property (e.g. by setting up specialised courts), enforcement remains intentionally weak in many sectors so as to

make foreign technologies available to Chinese companies. In addition, China's more robust and sometimes unpredictable export controls (Pan, Tan and Li 2022) are heightening the risks associated with conducting research in China for global markets, as innovations developed in China could get stranded in the country. These brake blocks are slowing down or deterring German R&D investment.

2 Opening up investment opportunities for German companies in key sectors

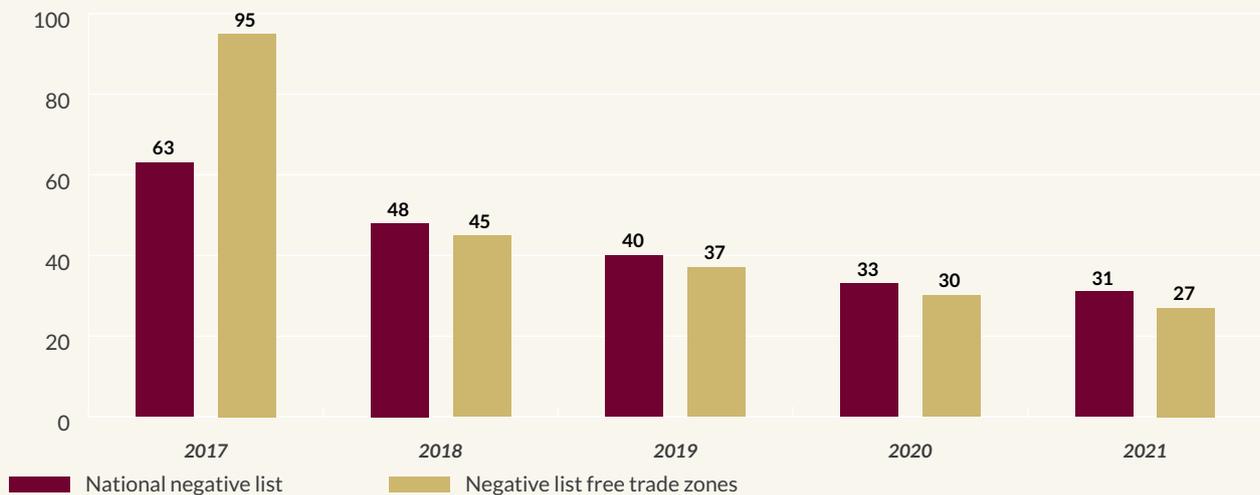
Strategic openings: Since 2017, Chinese law has put foreign companies on an equal footing with domestic companies, and only sectors on a "negative list" have remained shut or opened with restrictions to foreign companies, such as in the context of a joint venture. Since the list was introduced, China has more than halved the number of sectors, from 63 to 31 (Figure 3-2). These openings can ease pressure for direct technology transfer while offering companies greater decision-making autonomy and the prospect of higher profits.

Joint-venture rules recede into the background: The openings are also an admission that technology transfer in joint ventures has often been unsuccessful. Beijing is banking on a different strategy: Instead of forcing foreign companies to find a Chinese partner (and potentially cancel the investment altogether), Beijing hopes that foreign investment will help train Chinese suppliers and skilled workers. This indirect transfer of know-how would also benefit China's ability to compete.

But the reduction of sectors on the negative list does not automatically translate into better investment opportunities. Depending on the sector, this may involve:

- **Relevant openings:** There were noticeable changes for German companies in the automotive sector. For example, in early 2022, a German automotive company was able to

FIGURE 3-2 Number of sectors in China's economy that are prohibited or restricted for foreign investors



Source: NDRC 2022. The so-called negative list identifies certain industries in which foreign investment is prohibited or restricted (e.g. via joint venture requirements). For free trade zones (e.g. Shanghai or Tianjin), more liberal investment conditions apply in some cases.

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acquire an additional 25 percent stake in an existing joint venture with a Chinese partner. Other industries, such as the commercial vehicle sector, have also seen increased investment from foreign companies following the relaxation of joint-venture rules. The Chinese leadership calculates that domestic enterprises will already be competitive at the time of the opening and that foreign enterprises will facilitate the sector's development.

- **Pure gesturing:** Some openings have no relevance to German investors, such as that to produce Xuan paper, which was removed from the negative list. These kinds of openings allow the Chinese leadership to portray itself on the international stage as a champion of open markets (World Economic Forum 2017).
- **Formal opening, but expansion of informal barriers:** In other sectors, direct barriers to market access have been removed, but indirect restrictions have remained in place.

This has been the case, for example, with financial services. Since 2020, restrictions on insurance companies have been lifted. However, insurance providers can only apply for a licence for one province at a time, and it can take several months before a license is awarded. What's more, since Chinese insurance providers already dominate the market, German companies (e.g. Allianz) are only offered small openings in the market (Gunter 2021). AHK surveys also show that while only 5 percent of its members complain about direct barriers to market access, one-third complain about indirect barriers (AHK 2022a).

3 Cultivating a particularly attractive investment environment away from the metropolises

Service-oriented governance model: Taicang's government and local industrial parks have digitalised and de-bureaucratized official procedures and licensing. The government is also

committed to protecting the intellectual property of German companies (Invest Taicang n.d.).

Political pressure: In China, site selection is a political issue. Provinces and cities often compete for foreign investments and businesses. In certain cases, this can lead cities in structurally weak regions to make attractive offers to investors. However, in some cases, it cannot be ruled out that the central government will make the granting of licences or investment approvals contingent upon the selection of a specific location.

Tax breaks and subsidies: In structurally weak regions, which are less attractive than China's coastal provinces from a market perspective, the central government is using certain instruments to provide assistance. Foreign investors – especially in key industries – are receiving tax breaks and other subsidies in return for investing in certain provinces in the northern, western and central parts of China (NDRC 2022). In addition, German companies can hope to reap political benefits thanks to their important role as employers and taxpayers in structurally weak regions, such as BMW does in Shenyang.

4 Compulsion to localise

Beijing gives companies a choice: Localise your production, or run the risk of losing market access. China's informal barriers to market access as well as its "autonomous and controllable technology requirements" (i.e. having production and development of key technologies based in China in order to have better political control over supply chains) are having two impacts on German companies: Either the Chinese government is forcing companies out of the market completely – as, for example, in the case of high-speed trains – or companies are being forced to enter the Chinese market to an even greater extent through additional investments (EUCCC and MERICS 2021).

The focus on autonomous and controllable technologies and the compulsion to localise (cf. also Figure 3-3) are particularly striking in industries where the Chinese government dominates as the only or a very important buyer (Erixon et al. 2021). These include, among others, the railway, pharmaceutical, telecommunications, shipping and medical equipment sectors. In these sectors, the central or provincial governments are focusing on a "Buy China" approach and import substitution policies. Likewise, Chinese companies are facing political pressure to opt for local suppliers instead of imports.

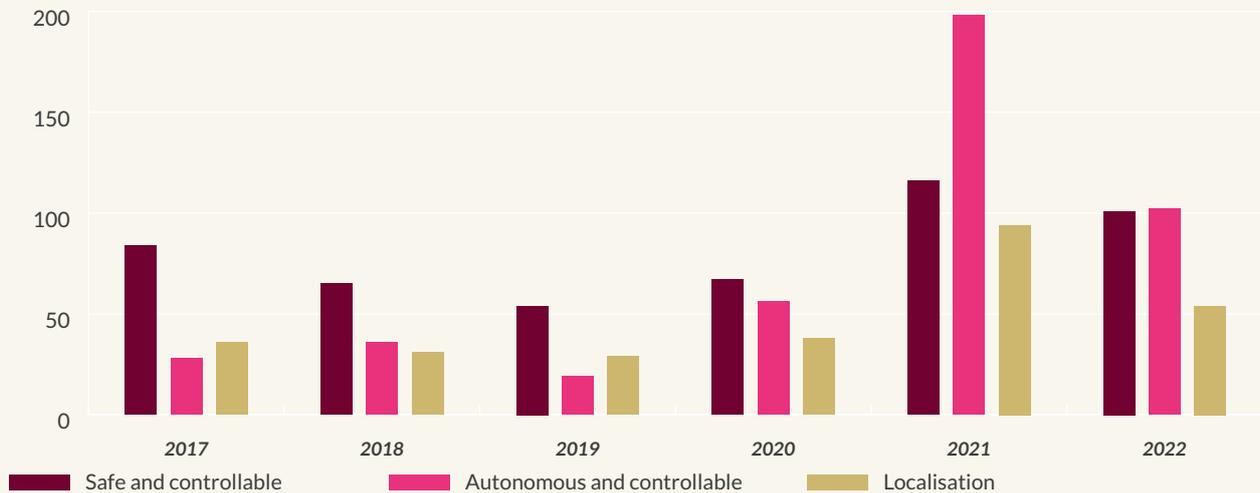
State-supported market: Companies that choose to localise gain access to one of the largest and fastest-growing markets. Especially when it comes to key technologies – such as the pharmaceutical industry, medical technology or smart manufacturing – China is facilitating localisation with fast-tracked licensing, state procurement or state-supported demand from private companies (cf. Lauermaun 2018; Otte 2021).

External factors: The pace of localisation of German companies is also picking up owing to external factors that are only partly within China's control. These especially include trade disputes, economic sanctions and supply chain disruptions. For example, in the future, BMW will not only manufacture its X5 model in the US, but also in Shenyang. At times, China had threatened to impose a 25 percent punitive tariff on car imports from the US (Tagesschau 2021).

Risks of localisation: Localisation can make it possible for companies to continue to operate in the Chinese market as well as minimise risks from external factors. However, localisation carries the risk of (forced) technology transfer and, ultimately, China is mainly interested in its own national champions.

FIGURE 3-3 **Frequencies of localisation-related terms in Chinese government documents**

Mentions of such terms in central and provincial policy documents



Note: "Autonomous and controllable" and "safe and controllable" are often used in the context of specific technologies and indicate that the technologies are to be localised, i.e. developed and produced locally. Policy documents of the central and provincial governments were analysed.

Source: MERICS Policy Tracker

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3.4 China will be a tough spot for companies in sectors that are not strategically relevant

Despite China's efforts to attract German investment in key sectors, the market environment in China is becoming more and more uncomfortable for many German companies. Since the publication of the "Made in China 2025" plan at the latest, it has been obvious that Beijing is mainly interested in the success of Chinese companies. What's more, China expects political concessions from all companies. This primarily relates to China's "red lines", which now include new topics (e.g. the origins of the coronavirus) in addition to traditional ones (e.g. Xinjiang or Tibet).

If foreign companies do not respect these red lines, Beijing uses threatening gestures and economic sanctions – not only against countries (e.g. Lithuania), but also companies (e.g. Adidas and the Korean retail giant Lotte). The situation

is becoming more complicated for foreign companies, as the pressure to take a political stance is also increasing in their home or third markets. This does not mean that companies simply have no option but to take a position. But the reaction on the Chinese side will vary depending on the specific sector and the specific company. The following trends can be identified:

- **Strategically important companies are not targeted:** Companies that bring key technologies or significant investments into the country are only rarely sanctioned.
- **Manufacturers of products for which China has alternatives are vulnerable:** Beijing avoids imposing sanctions on companies that manufacture products on which China is dependent. But the government is less squeamish about sanctioning manufacturers of consumer goods or agricultural products.

- **Strengthening local enterprises:** Ideally, the Chinese government also uses sanctions on foreign companies to bolster the domestic industry. As part of this, lobbying by Chinese companies can also influence the selection of targets for sanctions.
- **Empty threats to influence behaviour without incurring costs:** China often bluffs when red lines are crossed. Such threats can already be enough to lead companies to change their behaviour.

This environment, which is complex and increasingly difficult to navigate, is causing German companies to be more selective with their investments. The companies that do make new investments are particularly those with many years of experience in the market and which operate in strategically important sectors. But small companies in sectors of less strategic importance to Beijing are slowing their investments in China (Kratz, Barkin und Dudley 2022). Most importantly, companies need to become aware of their strategic position in the Chinese market, as this will determine how serious China's threatening gestures are for the business environment.

3.5 Investing in China: Regulatory trends

China continues to be an important investment location for German companies. Many still see China as a huge and attractive market that is gaining more and more relevance, including due to its innovation opportunities.

However, the framework conditions for German companies have changed considerably under Xi Jinping. The economic environment is being defined less by the sole indicator of GDP growth; instead, companies are increasingly having to take their cues from political signals, which is leading to greater volatility and uncertainty. During Xi's third term in office, an even greater

politicisation of the economy is to be expected. The economic environment will be even more characterised by efforts to make China even more resilient. This will heighten expectations that companies will help to advance China's strategic goals. On the whole, the observable trends can be summarised as follows:

- **The securitisation of everything:** Under Xi Jinping, the main priorities are resilience and security. This also means that economic growth is subordinated to other goals, such as technological independence. National security is considered a prerequisite for further economic growth (Drinhausen and Legarda 2022).
- **Companies have to take their cues from political signals:** Central and ideologically charged campaigns, such as the pursuit of technological self-sufficiency and "shared prosperity", are on the political agenda. It is becoming harder for companies to navigate the increasingly complex business environment in China.
- **Foreign companies in economy or business class:** Companies are treated differently (even more so than before) depending on their strategic relevance to China's key objectives. This is creating a dynamic and increasingly sector- and company-specific business environment.
- **In strategic sectors, China continues to be dependent on foreign companies:** The Chinese leadership is wooing foreign companies in strategic sectors and trying to get them to localise in China.
- **Prioritising Chinese companies:** Given China's techno-nationalist agenda, Chinese companies are increasingly being given preference. In some cases, this may be leading German companies to boost their investments so as to keep up with their Chinese competitors. In many sectors, as is

known from the rail sector, market access may be restricted as soon as Chinese companies are able to compete on the global market.

These changed priorities on the Chinese side are also having **some minor impacts on the German economy**. The relocation of production to China can mean that higher-value production and research steps are happening more frequently in China and strengthening it as a location for innovation. This may also have an influence on German FDI in China. And if this trend continues, it could lead to a situation in which profits made in China will be reinvested in China to a greater extent than in the past and flow back to Germany to a lesser extent.

4 German direct investment in China: Empirical stocktaking

This chapter provides an empirical overview of German companies' FDI in China (excluding Hong Kong) as part of a stocktaking.¹ To this end, the following analyses are carried out based on the data provided by the Deutsche Bundesbank (BUBA):

- Description of trends in foreign direct investment (FDI)
- Differentiation by sector
- Presentation of important key figures of German companies in China, such as the numbers of companies and their employees as well as their levels of turnover
- Comparison of German FDI engagement in China with those of the US and the EU

4.1 Overall picture of German direct investment in China

In the last decade, China has become a lot more important as a place for German companies to invest in and localise production. German FDI stocks have more than tripled in this period, from 29 billion euros in 2010 to almost 90 billion euros in 2020. Manufacturing is by far the most important sector for German investors in China. For the automotive industry, in particular, China is an outstanding place to invest. This sector

accounts for almost 30 percent of all German FDI in China. With a global share of just under 27 percent of German companies' total worldwide FDI in this sector, China is even more important to the automotive industry than the US (with a share of under 17 percent). However, on the whole and across all sectors, China's significance as an investment location, at 6.8 percent in 2020, still lags far behind that of the EU (34 percent) and the US (27 percent). This also holds true in terms of the number of companies and their employees as well as for the annual turnover generated. These figures are much lower in China than in the US and the EU.

Looking ahead, the question is whether China's importance will continue to grow. Although China's share of global German FDI did not grow any further between 2015 and 2020, a look at direct investment flows shows that German companies have once again been investing significantly more in China since 2020. Direct investment flows refer to increases in direct investment that also include reinvested profits from the business activities of subsidiaries of German companies in China. Based on information available at the end of January 2023, in 2021, German FDI in China grew by over 6 billion euros, and the figure even surpassed 10 billion euros in the first half of 2022 alone (Matthes 2022b). As a proportion of total FDI outflows from Germany, these direct investment flows to China accounted for just under 8 percent in 2021 and just over 10 percent in the first half of 2022. Thus, compared to China's previous

¹ On the "Hong Kong factor" and its role in FDI statistics relating to China, cf. Jungbluth 2016: 40.

share of direct investment stocks in 2020 (6.8 percent), there has been a somewhat stronger focus on China. Studies based on transaction data (i.e. a different dataset than the BUBA statistics) show that the importance of a few large companies has increased relative to that of more medium-sized companies in recent years (Kratz, Barkin and Dudley 2022).

This finding is somewhat surprising. After all, in the recent past, the public has come to view China much more critically. This applies in the cases of human rights, the Russia-Ukraine war, threats against Taiwan, the stifling of growth with extremely strict lockdowns in 2022, an ongoing real estate crisis, the tightening of political control over the large Chinese internet companies, and the Chinese government's efforts to become more independent of foreign countries. These issues have left significant scratches on China's lustre as an investment destination. In addition, a recent survey conducted by the European Union Chamber of Commerce in China shows that China has lost much of its attractiveness to EU companies (Lamby-Schmitt 2022). In June 2022, just under two-thirds of companies said that doing business in China had become harder in recent months. It is therefore possible that the significant increase in direct investment inflows to China could prove to be transient. On the other hand, some large companies intend to continue investing heavily in China for strategic reasons. The localisation trends shown in the survey conducted for this study (Chapter 2) also point in this direction – contrary to the more critical public debate.

4.2 German direct investment in China between 2010 and 2020

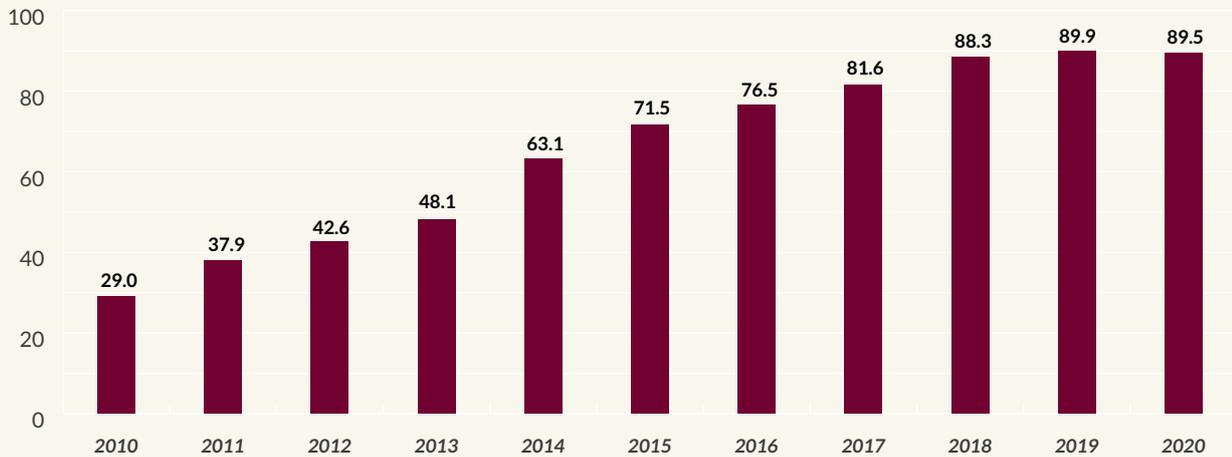
In what follows, we look at stocks of direct and indirect FDI (net) by German investors in China in the period between 2010 and 2020. Earlier data are not considered because, according to the Bundesbank, they are not directly comparable owing to changes in statistical classification.

The statistics on FDI stocks record greenfield projects and equity stakes in companies (>10 percent) of German firms abroad as well as the firms' foreign loans and bonds. Direct investment objects are taken into account if their balance sheet total has a value of (the equivalent of) more than 3 million euros (Deutsche Bundesbank 2022a: 125). Following a recommendation of the European Commission (2003), this also covers small enterprises (with a balance sheet total of <2 to 10 million euros), which means that the data depicted in the following offers a high degree of coverage of FDI by German companies. Indirect equity investments are included as long as the German company holds a majority of the respective capital shares or voting rights. FDI stocks are calculated from (proportional) equity capital (nominal capital, capital reserves, retained earnings, profit/loss carryforwards and annual results) as well as the credit relationships between German investors and affiliated companies. Direct investment stocks, which are based on corporate balance sheet data, are distinct from direct investment flows, which are recorded in the context of balance of payments statistics and represent annual changes.

4.2.1 Macroeconomic perspective

German FDI stocks in China increased between 2010 and 2020 from 29 billion euros to almost 90 billion euros (Figure 4-1). In other words, stocks more than tripled in just a decade. The sharpest growth was seen between 2010 and 2015. During this period alone, FDI increased by almost 150 percent, or nearly 42 billion euros. Although FDI has continued to grow since 2015, the rate of increase has significantly abated in both absolute and percentage terms. In the five subsequent years, German FDI in China increased overall by only about 25 percent. Since 2018, FDI stocks have stood at just under 90 billion euros, and they even remained stable in 2020 during the coronavirus crisis.

FIGURE 4-1 **German FDI in China**
Direct and indirect FDI stock (in billions of €)



Figures here and below on a net basis: consolidation of claims and liabilities (e.g. through loan portfolios).
Source: Deutsche Bundesbank 2022a

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The relative figures paint a similar picture. China's share of German companies' total FDI nearly doubled between 2010 and 2020, from 3.5 to 6.8 percent. In total, German FDI stocks in 2020 amounted to 1,325 billion euros. Although China's share was smaller than those of the US and the EU (see Chapter 4.3), the fact that its share grew demonstrates the country's high degree of and increased attractiveness to German investors over the past decade.

4.2.2 Key figures regarding German subsidiaries in China

This section presents the most important key figures of German companies' FDI in China in addition to indicating the number of subsidiaries as well as their turnover and number of employees on the Chinese market. According to the Bundesbank, in 2020, China was home to almost 2,400 subsidiaries of companies headquartered in Germany, which collectively employed roughly 750,000 people in China (Table 4-1). There, they generated a combined annual turnover of around 331 billion euros. In addition,

there are roughly the same number of very small subsidiaries in the Chinese market (mainly active in sales and service activities) with assets below the reporting threshold for FDI.

These key figures have grown sharply over the last decade. For example, in this period, the annual turnover of German subsidiaries in China almost tripled and the number of companies and their employees rose by more than 60 percent. In 2010, around 1,450 German subsidiaries were active in China, collectively employing some 463,000 people and generating combined annual turnover of just under 123 billion euros.

There are more than 40,000 foreign subsidiaries of German firms worldwide, together employing almost 8 million people abroad and generating almost 3.1 trillion euros in combined annual turnover. China's shares in this are relatively modest. China is home to less than 6 percent of all German foreign subsidiaries worldwide and less than 10 percent of their employees. In terms of annual turnover, German subsidiaries in China generate almost 11 percent of the total turnover of German subsidiaries worldwide.

TABLE 4-1 Key indicators regarding German subsidiaries in China

	2010	2015	2020
Number of subsidiaries	1,451	2,096	2,394
Employees in thousands	463	706	750
Annual turnover (in millions of €)	122,615	264,752	330,868
Source: Deutsche Bundesbank 2022a			BertelsmannStiftung

4.2.3 Focus on selected sectors

When surveying the various sectors, one sees that FDI in China is not equally distributed. In the following, we will look at FDI in China in the target industries (or what is technically called “investment objects”) but not at the FDI of the industries of origin. The reason for this is that the sector breakdown for the investment objects is more in-depth than for the industries of origin, where the pharmaceutical industry, for example, is not covered. However, in most sectors for which data are available in both views, the deviations between target and origin sector are moderate. The difference between the two views is only somewhat greater for the manufacturing sector – in other words, for industry (including the mechanical engineering, chemical and automotive industries; see Figure 4-2). In this case, investments by target sector are around 10 percent higher than by industry of origin.

Manufacturing is by far the most important sector in China for German investors. German FDI in this sector has increased from just under 20 billion euros in 2010 to just under 62 billion euros in 2020 (Table 4-2). As with total FDI in China, this also tripled in the period between 2010 and 2020. Thus, FDI in industry as a share of total FDI in all sectors in China was just under 69 percent in 2020 – just as it was in 2010. Annual fluctuations remained modest. Evidently, the Chinese economy is primarily of interest to German companies as a location to produce goods.

The remaining sectors combined account for less than a third of German FDI in China. In fact, there are only two other sectors with relatively high shares:

- In the sector comprising the wholesale and retail trade, maintenance and repair of motor vehicles, German FDI more than doubled in the period between 2010 and 2018, from 5.8 to 13.4 billion euros (data for 2019 and 2020 are not available). At the same time, their share of German companies’ total FDI in China fell slightly between 2010 and 2018, from 20 to 15.2 percent. However, a value in the order of around 17 percent will likely be reached again in 2020.
- In the provision of financial and insurance services, there was a fivefold increase in German FDI within a decade, from 2 to roughly 11 billion euros. Thus, FDI in this sector as a share of FDI in all sectors rose from 7 percent in 2010 to 12.4 percent in 2020.

The other sectors of the economy (including information and communication, real estate and housing, and other services) collectively accounted for only a marginal share of German FDI in China, or around 2 percent in total. Since the Bundesbank does not report any data on investments related to the energy supply in China, this sector is also omitted from the international comparison in Chapter 4.3.

TABLE 4-2 **German FDI in China by sector (absolute values)**

Direct and indirect FDI stock in target industries (in billions of €)

Top 3 industries	2010	2020
Manufacturing	19.9	61.7
Wholesale and retail trade; maintenance and repair of motor vehicles and motorcycles	5.8	13.4*
Financial and insurance activities	2.0	11.1
Other industries		
– Information and communication	0.1	0.4
– Real estate activities	0.4	0.2
– Activities of head offices; management consultancy activities (holding companies)	0.0	0.0
– Administrative and support services activities	0.3	0.5
– Electricity, gas steam and air-conditioning supply	n.s.	n.s.

*Most recent data available are for 2018.
Source: Deutsche Bundesbank 2022a

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As mentioned earlier, manufacturing plays by far the most important role as an investment object. Thus, it is worth taking a deeper look into the individual industrial sectors.

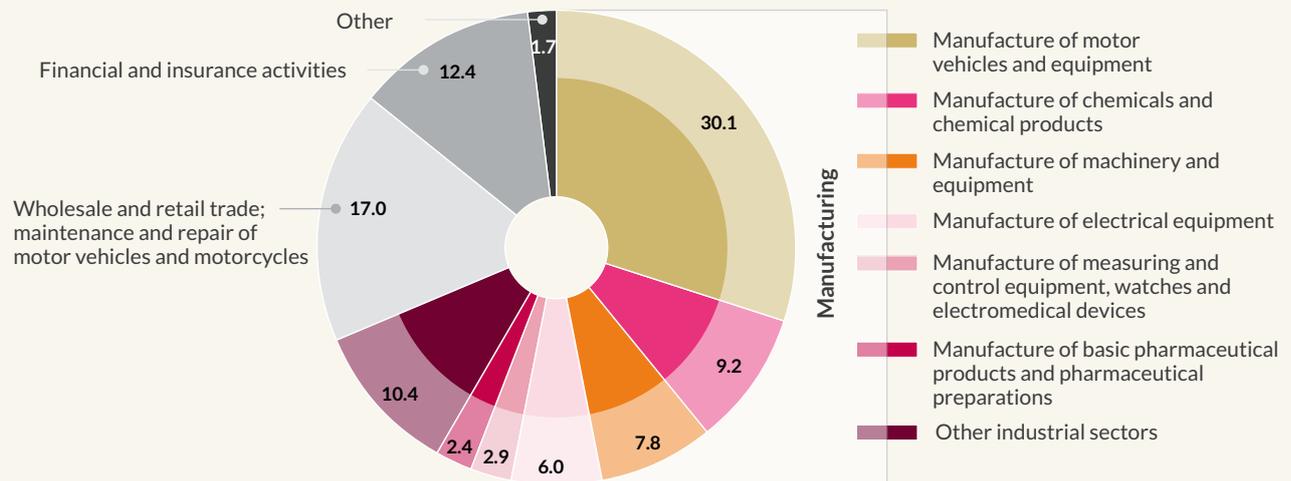
- On its own, the automotive industry accounts for a 30 percent share of all German FDI in China (Figure 4-2). This sector accounted for almost 27 billion euros in German FDI in 2020. In contrast, this figure was only around 6 billion euros in 2010. Owing to the markedly above-average increase, FDI in the automotive industry as a share of total German FDI in China rose from 21 to 30 percent.
- The chemical industry follows far behind, with a 9.2 percent share of total German FDI in China. China is the world's largest production location for the chemical industry (CHEManager 2019). The expansion of important customer sectors for chemicals in China (e.g. the automotive, electronics and electromobility industries) is fostering FDI in the chemical sector in China. FDI stocks

in this sector amounted to 8.2 billion euros in 2020, whereas this figure was 4.5 billion euros in 2010. While this represents a notable increase, the share of German FDI in the chemical industry in China fell from 15.5 percent to just over 9 percent.

- German FDI in mechanical engineering in China amounted to just under 7 billion euros in 2020, giving the industry a 7.8 percent share of total German FDI in China that year. Here, as well, the share decreased relative to 2010, when 3.3 billion euros were invested in the mechanical engineering sector in China, or 11.3 percent of the total. German mechanical engineering subsidiaries in China also benefit from the large size of the sales market. However, they are facing more and more serious competition from domestic companies in China that benefit from state support, such as within the framework of the "Made in China 2025" plan. The technological self-sufficiency in mechanical engineering sought by the Chinese government with this plan is increasingly leading to competitive

FIGURE 4-2 German FDI stock in China by sector (shares)

German FDI stock in selected sectors as a share of German FDI stock in all sectors in China in 2020 (in percent)



Estimates for "Other industrial sectors" and the "Wholesale and retail trade; maintenance and repair of motor vehicles and motorcycles" sector.

Source: Deutsche Bundesbank 2022a; own calculations

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disadvantages for foreign companies in China (VDMA 2021).

The electronics industry accounted for 6 percent of total German FDI in China in 2020 (with investments worth 5.4 billion euros). Manufacturing of measuring and control equipment, watches and electromedical equipment as well as manufacturing of pharmaceutical products each accounted for less than 3 percent of total German FDI in China (both with investments of less than 3 billion euros).

Clear differences also emerge when looking at the share of German FDI in China relative to German FDI invested globally in a sector in 2020. Once again, the automotive industry stands out in this respect. Figure 4-3 focuses on selected sectors with an emphasis on industrial sectors. Almost 27 percent of all German FDI in the automotive sector abroad is in China. This is well above average compared with the economy as a whole (share of 6.8 percent) and the

manufacturing sector (13.9 percent). Likewise, the shares of electrical equipment manufacturing (19.7 percent) and mechanical engineering (15.6 percent) are also well above the industry average. In contrast, in the remaining industrial sectors and among financial service providers, the focus is below average in an industry comparison.

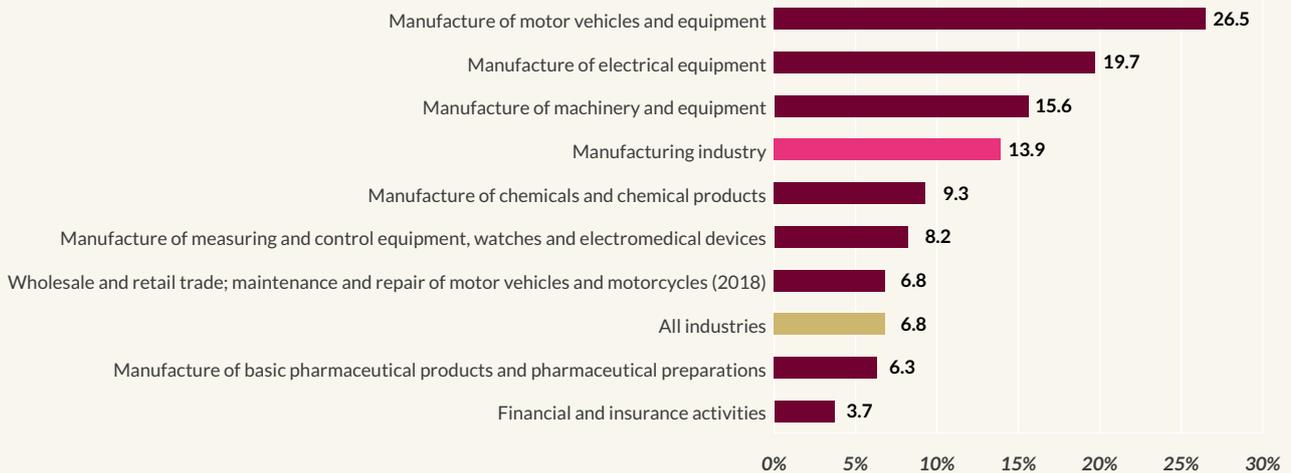
4.3 International comparison with German FDI in the US and the EU

4.3.1 Macroeconomic perspective

In 2020, Germany's direct and indirect direct investment stocks in foreign countries collectively amounted to 1,325 billion euros. When compared to German FDI in the US and the EU, which have long been the main destinations of German FDI, China only plays a minor role despite the significant increase in FDI since 2010.

FIGURE 4-3 **China's share of German FDI worldwide in selected sectors**

German FDI stock in selected economic sectors in China as a share of all German FDI stocks in these sectors worldwide in 2020 (in percent)



Estimate for the "Wholesale and retail trade; maintenance and repair of motor vehicles and motorcycles" sector.

Source: Deutsche Bundesbank 2022a; own calculations

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In 2020, German FDI amounted to around 350 billion euros in the US and around 445 billion euros in the EU as a whole. If the United Kingdom (UK) – as a former EU member state and still an important FDI destination for German companies – is added, the figure is 569 billion euros. That is considerably more than the nearly 90 billion euros of FDI in China. This results in 2020 FDI shares of global German FDI of about 27 percent for the US and of more than 43 percent for the EU-27+UK (of which about 9 percentage points was in the UK) – compared to a share of 6.8 percent for China (Figure 4-4).

The US and EU countries are clearly very attractive investment locations for German companies. Even though labour and production costs in China are relatively low compared to those in developed countries and growth there has been higher on average in recent years, the US and EU are very large and high-volume sales markets owing to their high levels of economic development. In addition, they feature a good business environment along with

innovative products and high quality standards. Furthermore, in the case of EU countries, geographical proximity also plays an important role.

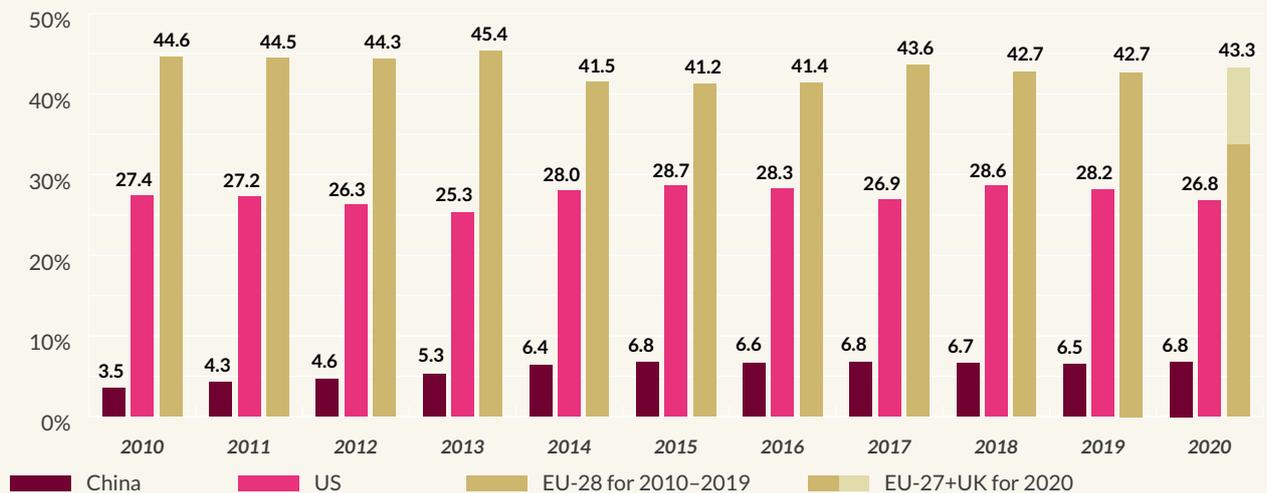
The US share of German FDI has been relatively stable over the past decade, fluctuating between just over 25 and just under 29 percent. At the end of 2020, the EU remained by far the most popular

Note regarding the United Kingdom (UK)

In the Bundesbank's FDI statistics, data on the UK was recorded together with that of the EU until 2019 and then separately since 2020, the year of "Brexit". Thus, graphics on FDI stocks that present a time series show data including the UK for the years 2010 to 2019. For the period beginning in 2020, the UK – as a former EU member state and important European country of origin for FDI – will be included in this study, but its share will be presented separately where possible. This allows for better comparability within the time series.

FIGURE 4-4 German FDI in China, the EU and the US

FDI stock in China, the EU+UK and the US as a share of all German FDI stock worldwide in 2020 (in percent)



EU+UK: total of the values for EU countries and for the United Kingdom.
 Source: Deutsche Bundesbank 2022a; own calculations

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destination for German direct investors. Over the last decade, the EU's share of total German FDI has fluctuated between a bit over 41 percent and more than 45 percent.

4.3.2 Comparison of important key figures of German subsidiaries

Figure 4-5 presents the key indicators of German subsidiaries in China, the US and the EU+UK in 2020. Compared to the US and the EU, the figures for China are significantly lower:

- The number of German subsidiaries in the US is more than twice as large as in China, and annual turnover in the US significantly exceeds that in China. While China's share of global direct investment stocks stood at 6.8 percent in 2020, German subsidiaries in China accounted for 5.8 percent of all German subsidiaries abroad. In contrast, China's share of employees and annual turnover was around 10 percent.
- This figure clearly shows once again how important the European market is for German FDI compared with China. Around 49 percent of all German subsidiaries abroad covered here were located in the EU+UK in 2020 (of which 3.6 percentage points are accounted for by the UK), representing a total of over 20,000 companies (of which nearly 1,500 were in the UK). Approximately 43 percent of all employees of all German subsidiaries abroad (more than 3.4 million employees) and a bit over 44 percent of their annual global turnover (around 1,325 billion euros) were generated in the EU+UK. The UK accounted for 3.2 percentage points of the German subsidiaries abroad and 5.6 percentage points of their global annual turnover.
- The US is also more important than China in all indicators, but the divergences are not as great as they are when comparing China and the EU. The differences in the number of subsidiaries and their annual turnovers are more pronounced than in the number of

FIGURE 4-5 **Key indicators of German subsidiaries in China, the EU and the US**

Shares of China, the EU+UK and the US in the key indicators of all German subsidiaries abroad in 2020 (in percent)



EU+UK: total of the values for EU countries and for the United Kingdom.
 Source: Deutsche Bundesbank 2022a; own calculations

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employees. This points to the relatively lower productivity in China, where much lower turnover is evidently generated per employee. Roughly 870,000 Americans work for some 5,600 German subsidiaries in the US, which collectively have 522 billion euros in annual turnover. This corresponds to around 11 percent of all jobs at all German subsidiaries abroad. In terms of the annual turnover of German subsidiaries abroad, the US even accounts for just under 17 percent.

4.3.3 Focus on selected sectors

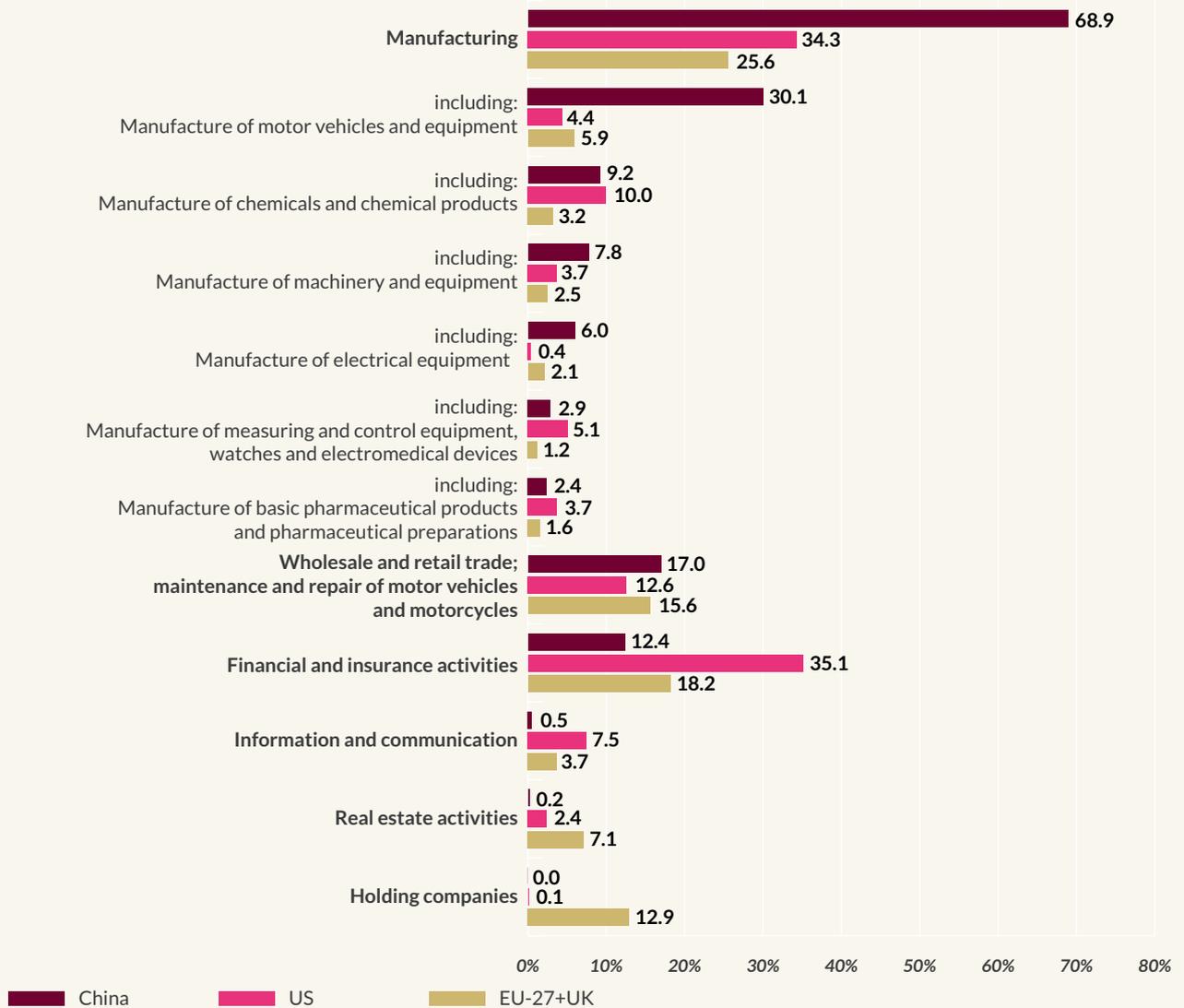
A glance at the relevance of the sectors in the countries being compared reveals clear differences (Figure 4-6). In China, German companies invest mainly in industrial sectors. This is much less the case in the US and the EU, where FDI shares flowing into manufacturing are only about half as large. The differences are particularly striking in the automotive industry. As a proportion of FDI in all sectors, FDI in

this industry in China was 30 percent, which is almost seven times as high as that in the US (at 4.4 percent) and more than five times as high as that in the EU+UK. Foreign investment in mechanical engineering and electrical equipment manufacturing is also more important in China than in the countries being compared to it, although the differences in these cases are much smaller. In the remaining industrial sectors, there are fewer differences. For example, FDI in the chemical industry in China and the US have a similar level of importance (of approximately one-tenth), but the share relating to the EU+UK is lower. However, owing to the major significance of the EU as well as a different structure of German FDI in the EU+UK (see next paragraph), the lower share of the chemical industry corresponds to a bit over 16.7 billion euros in absolute terms in the EU+UK, compared to 8.2 billion euros in China.

Manufacturing also plays the largest role in the EU+UK, but its percentage share is much lower compared to that of China, at 25.6 percent. In the

FIGURE 4-6 Comparison of the shares of German FDI in China, the EU and the US by sector

German FDI stocks in selected sectors in China, the US and the EU+UK as a share of German FDI stocks in the respective target countries in 2020 (in percent)



Estimate for the "Wholesale and retail trade; maintenance and repair of motor vehicles and motorcycles" sector. For the US, due to missing values for 2020, values for 2019 were used for the "Manufacture of electrical equipment" and the "Manufacture of motor vehicles and equipment" sectors. EU+UK: total of the values for EU countries and for the United Kingdom. Due to data gaps for the UK in 2020, the values for 2019 were used for the "Manufacture of chemicals and chemical products", "Manufacture of electrical equipment", and "Holding companies" sectors.

Source: Deutsche Bundesbank 2022a; own calculations

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US, investment in financial and insurance services is slightly higher than in the manufacturing sector, accounting for roughly 35 percent of all FDI in the US in 2020. In China, the figure is only 12.4 percent owing, among other things, to barriers to entry into the Chinese market. Conversely, in the EU+UK, investments in holding companies and in real estate and housing, among other sectors, are disproportionately important – as these sectors play hardly any role in China (or in the US).

Figure 4-7 presents the comparison of the sectors with each other, displaying the share of FDI in China, the US and the EU+UK within a sector as a share of all German FDI worldwide in this sector. The global shares for the total economy shown in Figure 4-4 are provided here again as reference figures.

As mentioned earlier, German FDI in manufacturing plays the largest role in the Chinese market, as China accounted for 14 percent of Germany's global FDI in the industry in 2020. In proportional terms, this is twice as large as for the economy as a whole. FDI in manufacturing in the US and the EU respectively accounted for about 27 and a bit over 30 percent of total worldwide German FDI in the industry, which is in line with the generally higher importance of the US and the EU+UK as foreign investment locations. However, unlike in China, these values deviate only slightly from the average for the economy as a whole.

China's high global shares in individual industrial sectors, as already shown in Figure 4-3, are also striking in international comparison.

- In 2020, German companies invested even more in the **automotive industry** and the **electrical equipment industry** in China than in the US. Of the automotive industry, China had a 26.5 percent share compared to an only 15.7 percent share for the US; and the divergence was even greater for electrical equipment manufacturing, with respective shares of 19.7 and 6 percent. In contrast, in terms of the FDI share of the automotive

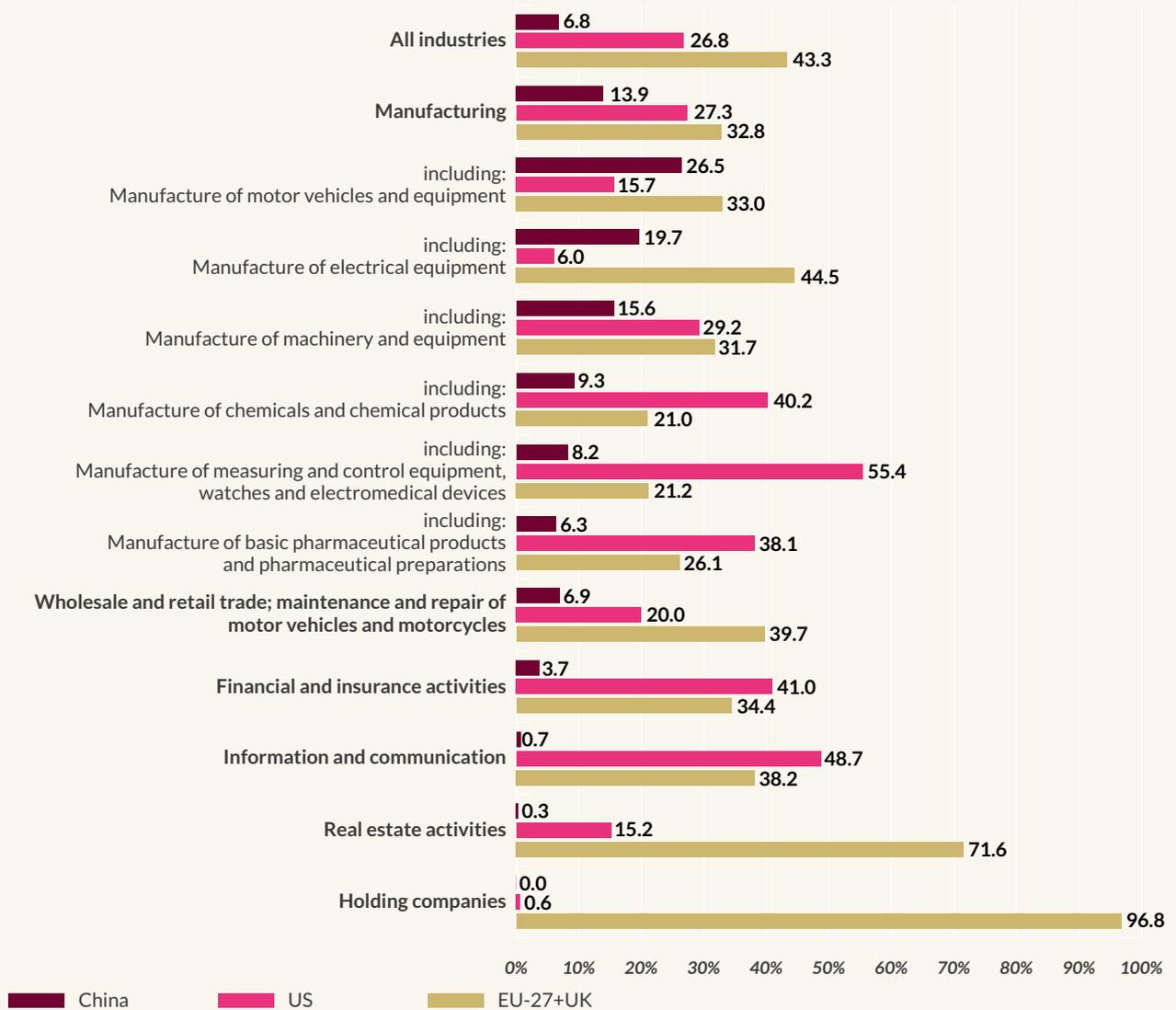
industry, China comes even close to the EU+UK (33 percent).

- In **mechanical engineering**, China also secured a high global share, with just under 16 percent. But the divergences are even larger in this case when compared to the shares of the US and the EU+UK (around 29 and 32 percent, respectively). However, unlike the case for China, the shares for the US and the EU+UK in this sector are not far above average in an overall economic comparison.
- In the other industrial sectors shown, China plays a rather subordinate role as an investment location in global comparison, and the values here deviate only slightly from the overall economic average. Particularly striking is the fact that the US plays a dominant role in these sectors and, unlike in the economy as a whole, also attracts more FDI than the EU+UK. This is especially true with respect to the **manufacture of measuring and control equipment, watches and electromedical devices** in the US, where more than half (55 percent) of Germany's global FDI in this industry is invested. The situation is similar, though not quite as pronounced, for the **chemical industry** and the **pharmaceutical industry**.

In the sectors apart from manufacturing, China hardly plays any role at all. While the US dominates as an investment location for German FDI in finance and insurance as well as in the information and communication sector, the EU is far ahead in the real estate and housing sector as well as in holding companies.

FIGURE 4-7 **Global share of German FDI in China, the EU and the US by sector**

German FDI stocks in China, the EU+UK and the US in select sectors as a share of all German FDI stocks worldwide in the respective sector in 2020 (in percent)



Estimate for the "Wholesale and retail trade; maintenance and repair of motor vehicles and motorcycles" sector. For the US, due to missing values for 2020, values for 2019 were used for the "Manufacture of electrical equipment" and the "Manufacture of motor vehicles and equipment" sectors. EU+UK: total of the values for EU countries and for the United Kingdom. Due to data gaps for the UK in 2020, the values for 2019 were used for the "Manufacture of chemicals and chemical products", "Manufacture of electrical equipment", and "Holding companies" sectors.
 Source: Deutsche Bundesbank 2022a; own calculations

5 Profits in China: How much does the German economy benefit?

5.1 Framework for analysis

One of the central analytical objectives of this study is to find out more about the amount and use of profits made by German subsidiaries in China, which are derived from the turnover achieved minus the costs incurred. In particular, the question is: To what extent do these profits flow back to Germany and strengthen the economic base here? Transparency regarding these issues is quite limited, as we do not know either the amount of profits generated in China nor which shares remain in China, flow to other countries, or make their way to Germany.

Overview 1 illustrates these complex interrelationships in simplified form. The focus is on a German parent company that has invested in a subsidiary in China (middle, in red). While the black arrows pointing up represent the investment direction, the arrows pointing down represent the profit flows from this investment. These arrows have different colours, depending on whether the profits flow into the German economy (green) or other countries (red) or whether this cannot be conclusively determined a priori (orange).

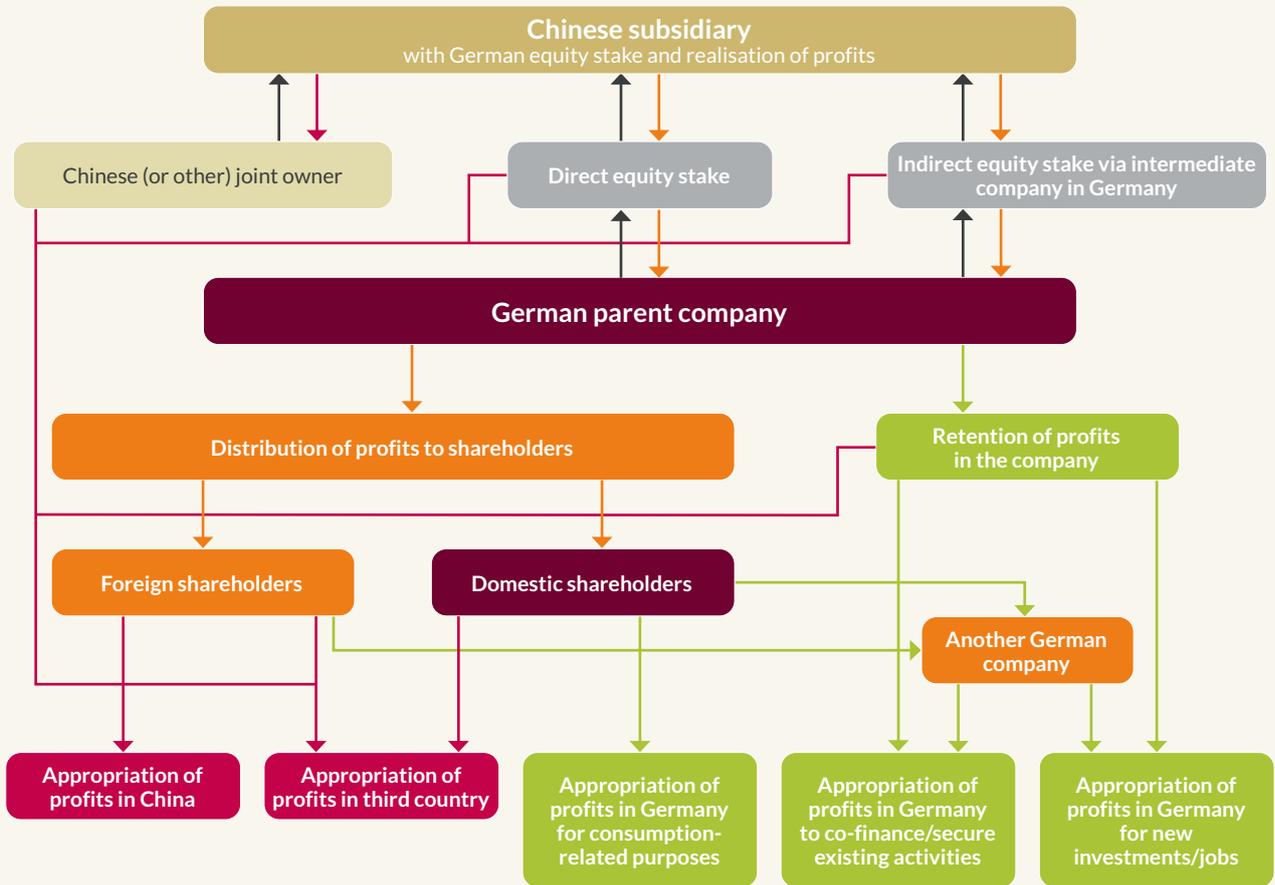
The investment relationship between the parent company and its subsidiary can be direct or indirect, such as via an intermediate company in a third country (e.g. Singapore), from where investments are then made in the subsidiary in China. In addition, there may also be one or more joint owners from China (or another country), which is typically the case with a joint venture.

The profits of the subsidiary presumably flow to the owners in proportions matching the shareholding structure. The portion that flows to owners from China or another country with a corresponding equity stake is (presumably) used abroad and therefore not in Germany (red arrow pointing down in the upper left-hand corner). If the profits flow to the German owner, this can be done via the direct channel or the indirect channel of the intermediate company. The intermediate company may reinvest this profit abroad (red arrow running to the left in the upper right-hand part of the overview) or transfer it to Germany (orange arrow pointing down). If the profits – be it directly or indirectly – remain abroad (red arrows and the two red boxes at the bottom left), then it is likely that the focus is on reinvestment in China. The three green boxes on the bottom right represent options for appropriating profits in Germany, which will become relevant later in this report.

If the focus is on a profit flow to the German parent company, it is necessary to make case distinctions. The first question is whether the profits are to be distributed or retained:

- If they are retained, they can conceivably be used in Germany to strengthen the company's balance sheet or for new domestic investments (green arrows from the middle green box to the two green boxes at the bottom right). Likewise, the profits can be used to strengthen the balance sheet or for new investments in the EU and elsewhere

OVERVIEW 1 Options for using the profits of a German subsidiary in China before the analysis



Source: own presentation 2022

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abroad (red arrow running from the middle green box to the left).

- If the profits are distributed, the first question that arises is the nationality of the owners:
 - _ If the profits flow to a German owner, it seems relatively likely that they will be used predominantly in Germany. This can be done for consumption- or investment-related purposes. In the case of consumption expenditure, this can go towards either domestic or foreign goods. If used for investments, the investor can invest the distributed profits in another

German company (green arrow running from lower red box to orange box on the right-hand side). For the sake of simplicity, it is assumed here that the company in question invests primarily in Germany (green arrows pointing down from orange box). The case that the funds are invested abroad is also possible, but this is only indicated here by the orange colouring of the box (Another German company).

- _ If the profits flow to a foreign (i.e. non-German) owner, it seems quite likely that they will be used outside of Germany. It is also possible to use the distributed profits

in Germany – for very different purposes. This is not presented here in detail, but only in the case of a reinvestment of the profits in another German company. For further use, the statements in the previous indented (dashed) section apply.

The overview presents in simplified form the main theoretically conceivable possibilities for the use of profits generated in China.

5.2 Statistics and special data analysis of the Deutsche Bundesbank

In accordance with a government-mandated reporting obligation, German companies with subsidiaries abroad must report relevant data confidentially to the Bundesbank. The BUBA uses these data in compiling not only its statistics on foreign direct investment stocks (Chapter 4), but also the balance of payments statistics and the international investment position statistics.

5.2.1 Limited scope of available statistics

The BUBA data can provide a certain degree of insight into the importance of profits resulting from FDI in China and how they are used. The data is based on company reports that must be submitted to the BUBA in keeping with reporting obligations. However, owing to their lack of in-depth detail, the officially available statistics of the BUBA are of only limited informational value when investigating this study's questions. In what follows, this will be briefly explained with reference to balance of payments statistics and the international investment position statistics, while the remarks directly below will also supply brief explanations of key terms and concepts.

According to the BUBA, the **balance of payments (BOP) statistics** capture all economic transactions between residents and non-

FIGURE 5-1 **Balance of payments structure**

Balance of payments
Current account
Trade in goods and services
Primary income (mainly employment and investment income)
Secondary income (e.g. development assistance)
Financial account
Direct investment flows (equity capital, reinvested profits and credit transactions)
Portfolio investment
Other capital flows

Source: Deutsche Bundesbank 2023; own simplified presentation | BertelsmannStiftung

residents (of Germany) within a certain period of time and thereby reveal the multi-layered external economic interconnections of an economy with the rest of the world. Thus, rather than being a statistic of asset stocks (like the FDI stock statistics in Chapter 4) for a given date, the BOP statistics are a flow account for a given period. The BOP statistics are essentially divided into the current account and the financial account, both of which are ultimately two sides of the same coin (Figure 5-1):

- The current account comprises trade in goods and services as well as primary and secondary income.
 - Primary income includes income from employment and investment income (as well as taxes on production levies, import duties, subsidies and rents). Profits earned in China count as investment income. Thus, the primary income part of the BOP statistics is a key data source for the analysis in this study.
 - Secondary income refers to current unilateral transfers, such as transfers within the framework of international cooperations and remittances from migrant workers.

- The financial account shows the financial transactions (capital flows) between residents and non-residents. It is broken down into foreign direct investments, portfolio investment and other components, such as financial transactions by banks, companies, the state and the Bundesbank; financial derivatives; employee stock options; and reserve assets.

– Direct investment flows include direct equity capital and reinvested earnings of subsidiaries abroad as well as their credit transactions with the parent company. The reinvested profits are of particular interest in this study since they are part of the profits generated in China. The accumulated FDI flows over time are used to calculate the FDI stocks (Chapter 4), with changes in the value of the stocks also being relevant.

The officially reported BUBA data on balance of payments statistics are not detailed enough for the purpose of this study for the following reasons:

- They only show the total **primary income** flowing from China to Germany. In 2021, this collectively amounted to around 15.6 billion euros in revenue from the German perspective. However, it does not show how high investment income from foreign direct investment in China is because the data on primary income by region is not further broken down by subcategory. In addition to FDI, portfolio investment, bank earnings and employee compensation may also make a significant contribution to the total amount of primary income from China.
- In 2021, the **reinvested profits** in China from direct investments amounted to around 7 billion euros. However, total profits are not shown and cannot be calculated using the given values.

It is important to note that the balance of payments statistics only reflect direct bilateral

cross-border transactions. Any profits generated in China that flow to a third country (and from there possibly indirectly to Germany) are not recorded. This may be the case if, as shown in Overview 1, the direct investment in China is not made directly by the parent company but indirectly through an intermediate company in another country. In this case, the profit flows would not be captured by the bilateral balance of payments. In assessing whether this is a problem pertinent to this study, the data on FDI stocks (Chapter 4) are helpful. For example, the BUBA distinguishes between direct cross-border equity investments and indirect equity investments. The latter represent the phenomenon that has so far been referred to here as intermediate holding in another state. If a company in Germany has an equity investment (more than 10 percent) in a second company in another country and this second company in turn has a majority equity investment (possibly through additional intermediaries) in a company in China, the BUBA classifies this under indirect investments. As indicated in Chapter 4, in 2020, the sum of direct and indirect German FDI in China amounted to 89.5 billion euros. However, the direct FDI – collectively worth 83.0 billion euros – is also reported. It can be concluded from this that **indirect FDI** by German companies in China only plays a subordinate role, with a value of 6.5 billion euros (roughly a 7 percent share).

In principle, the BUBA's **international investment position statistics** could also be helpful. In contrast to the balance of payments statistics, these are also stock statistics. However, the available official data on Germany's **international investment position** do not go far enough because the BUBA only provides data for the aggregate of all partner countries. Admittedly, these are subdivided according to various capital categories, such as FDI, portfolio investments, loans and reserve assets. However, the relevance of these various categories for German international investments in China is not specified separately.

A brief **interim conclusion** can be drawn: The data available from the BUBA provide some initial relevant insights, but they are too undifferentiated to provide satisfactory answers to the questions investigated by this study. Relevant sources – such as international investment position statistics, FDI stock statistics, and balance of payments statistics (that include the primary incomes) – do not provide sufficiently in-depth insights. Most importantly, there is a lack of data on the role of FDI in China relative to other investments (e.g. bank loans or portfolio investments), on the amount of profits generated in China from FDI, and on the flows of these profits back to Germany (investment income from FDI).

5.2.2 Special data analysis of the Deutsche Bundesbank

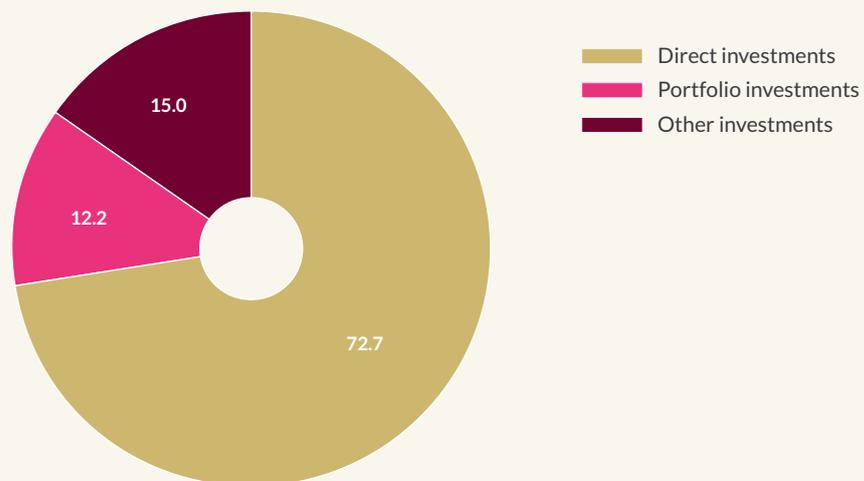
Since this information is available in the BUBA's internal database owing to the companies' reporting obligation, special data analyses on the breakdown of primary income for China, the world, the EU and the US as well as on

Germany's international investment position with regard to China were requested from the BUBA specifically for this study. Work on the contents was completed in January 2023. Hence, any subsequent revisions of the data have not been taken into account.

5.2.2.1 International investment position

First, we will look at German international investments (assets) in China in order to gauge which share of them is accounted for by FDI with data up to 2021. Here, it can be seen that the share of FDI at the end of 2021 was nearly 73 percent (Figure 5-2). Portfolio investments (equity shares, investment fund shares and debt securities) accounted for only about 12 percent, and other investments (mainly loans and trade credits as well as currency and deposits) for about 15 percent. These data are relevant for profit flows, as investment income can be drawn from all categories of international investments. The high share of FDI suggests that investment income from FDI is likely to predominate here, too, over investment income from the other types of capital.

FIGURE 5-2 **Distribution of German investment assets in China**
Shares of German investment assets in China in the fourth quarter of 2020 (in percent)



Source: Deutsche Bundesbank 2022b; own presentation

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In 2010, FDI stocks as a share of international investment assets was still lower, at around 62 percent, while it stood at around 75 percent in 2015 and was slightly higher in 2021, at 73 percent. Within the last decade, there has been a certain shift towards FDI.

It should also be briefly mentioned that the data on FDI stocks in China in Germany's international investment position statistics differ slightly from the FDI stock statistics (90.0 versus 89.5 billion euros in 2020) because there are certain differences in how the two statistics are recorded. This is the case, for example, in the recording of FDI values (stock exchange values for listed companies in the international investment position versus balance sheet values in the stock statistics) and FDI loans.

5.2.2.2 Primary income

The data in the BUBA's special data analysis on the balance of payments make it possible to provide an in-depth breakdown of the various types of primary income flowing from China to Germany. In particular, this also includes the profits from FDI. These data therefore constitute the core of the empirical part of this study.

Some remarks on methodology are needed to properly understand the data presented in what follows:

- The profit or loss for the year after tax is recorded as profit.
- Income in the sense of primary income in the balance of payments statistics arises abroad when it becomes the property of the German subsidiary reporting it. This means that there need not have been a cross-border transfer of income. This is particularly relevant for reinvested profits, which are thus part of investment income from FDI but remain in China.
- In the case of a joint venture, the German investor is only attributed the portion of the profits accruing in the cooperative enterprise that corresponds to his or her share of the equity investment.
- Investment income from FDI is slightly underestimated here because, as mentioned earlier, part of the direct investment reaches China from Germany via third countries. The primary income flowing via this route cannot be attributed using the bilateral concept of the balance of payments. However, since the share of indirect FDI, as shown, is only small (at around 7 percent), this problem only plays a limited role.
- The data on primary incomes in China have a few gaps for confidentiality-related reasons. These mainly concern less relevant items and can be estimated at least roughly by drawing on the data of previous years.
- For this reason, as well, the data presented below should not be interpreted as being precise. But they do still give a very good sense of the approximate scale of the profits from German FDI in China.
- An analysis of primary and investment income by sector is not possible. Due to the insufficiently detailed data recorded in the balance of payments statistics, it is therefore not possible to show, for example, what profits the automotive industry or the mechanical engineering sector make from their FDI in China. In any case, it still can be assumed that the industries that receive a high share of FDI also generate a correspondingly high share of profits. However, it is possible to take a macroeconomic view of FDI as a whole. In what follows, the subcategories of primary income are briefly presented in their hierarchical breakdown for this purpose (Figure 5-3).

FIGURE 5-3 Breakdown of the categories of primary income

In total
Employee compensation/income from employment
Investment income
• Direct investments
Equity capital
– Dividends and other distributed profits ¹⁾
– Reinvested profits
– Other investments ²⁾
Interest on loans
• Portfolio investments (dividends, income from investment fund shares, and debt securities)
• Other investment income (including from banks, the state and private individuals)
Other primary income³⁾
1) Other distributed profits: Distributions/withdrawals from the profits of (quasi-)public corporations. 2) Includes rent and lease income from real estate and income from long-term construction sites. 3) Includes, among other things, rents, taxes on production and imports to the EU, and EU subsidies. Source: Deutsche Bundesbank 2022c

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- Primary income consists of employee compensation, investment income and other primary income.

- Investment income is comprised of income from FDI, portfolio investments and other investment income. This mirrors the structure of the international investment position statistics mentioned above.

- Income from FDI consists of income from equity capital and interest on loans between the parent company and the subsidiary.

- Income from equity capital comprises the dividends and other distributed profits that flow from the subsidiary in China to the parent company in Germany according to the company reports. In addition, the reinvested profits of the subsidiary that remain in the target country are also part of income from equity capital. Income from other investments plays only a very minor role in quantitative terms. The two variables of dividends/distributed profits

and reinvested profits are the focus of the analytical interest of this study.

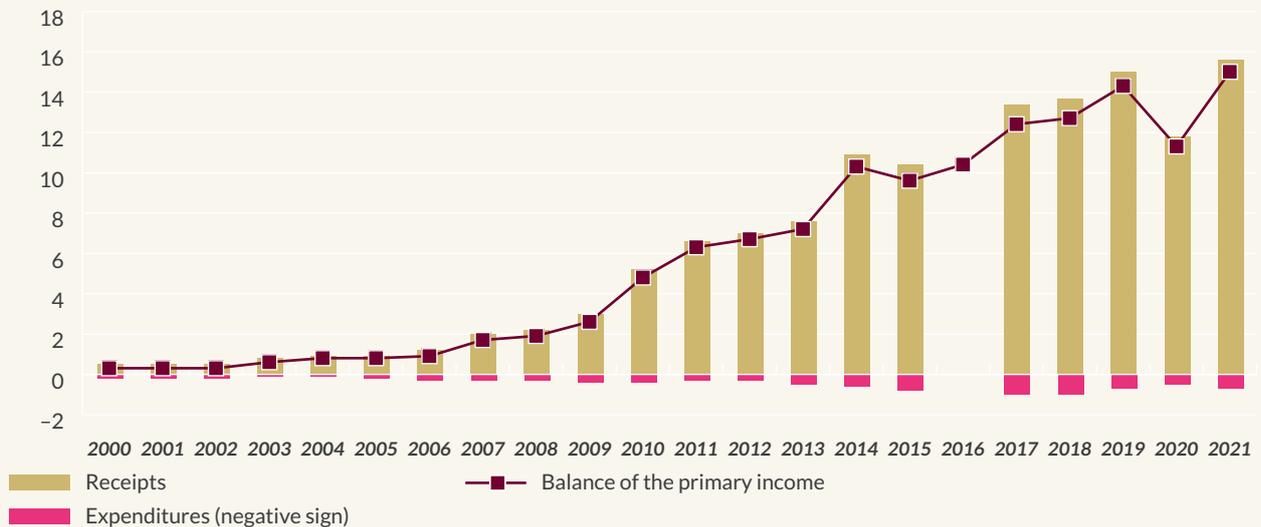
In what follows, the data of the BUBA's special data analysis are presented in detail following the structure seen in Figure 5-3. First, we will look at both sides of the aggregate of primary income statistics due to economic exchanges with China from the German perspective (Figure 5-4). In this case, income flowing from China to Germany is much greater than income flowing in the other direction, which results in a high primary income balance in favour of Germany. This has a lot to do with the fact that Germany is more engaged in China in terms of investment assets than vice versa.

Structure of primary income: relevance of direct investment

The structure of German primary income receipts in China is very strongly dominated by investment income (99.9 percent; Figure 5-5) and, below that, by income from FDI and particularly from equity capital (with each accounting for around 96 percent of total primary

FIGURE 5-4 Primary income flows between Germany and China

Figures in billions of €



Data for 2016 not available for confidentiality-related reasons.
Source: Deutsche Bundesbank 2022c

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FIGURE 5-5 Structure of German primary income receipts: China in international comparison

Receipt categories as shares of total primary income receipts at the end of 2021 (in percent)

	China*	World	USA	EU-27
Employee compensation	0.1	7.3	2.9	6.0
Investment income	99.9	90.5	97.1	90.5
• Direct investments	96.4	53.4	42.6	53.2
Equity capital	96.0	51.0	38.5	50.9
- Dividends and other distributed profits ¹⁾	51.2	25.2	20.8	23.5
- Reinvested profits	44.1	23.6	15.9	24.7
- Other investments ²⁾	0.7	2.2	1.8	2.7
Interest on loans	0.4	2.3	4.1	2.3
• Portfolio investments	2.2	24.5	38.6	24.6
• Other investment income	1.3	12.7	16.0	12.7
Other primary income³⁾	0.0	2.2	0.0	3.5

* Data for China for "Employee compensation", "Other investments" and "Other primary income" estimated using data from previous years.

1) Other distributed profits: distributions/withdrawals from the profits of (quasi-)public corporations.

2) Includes rent and lease income from real estate and income from long-term construction sites.

3) Includes, among other things, rents, taxes on production and imports to the EU, and EU subsidies.

Source: Deutsche Bundesbank 2022c; own calculations

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income receipts). Employee compensation is negligible, and portfolio investments and other investment income also account for only marginal shares. This strong concentration is noteworthy, given that direct investment in China as a share of international investment assets is much smaller in 2020 and 2021, at just under three-quarters. In 2020, German FDI stocks in China totalled around 90 billion euros (cf. Chapter 4).

If one compares the structure of primary income receipts on the global level, China stands out (Figure 5-5). Although investment income also accounts for the lion's share of Germany's primary income receipts from the world as a whole, employee compensation also accounts for a 7.3 percent share. The structure of investment income is also different. Income from FDI only accounts for a bit more than half (53.4 percent), while income from portfolio investments (24.5 percent) and other investment income (12.7 percent) account for much higher shares than in China. At 38.6 percent, income from portfolio investments in the US is particularly high in international comparison, but employee

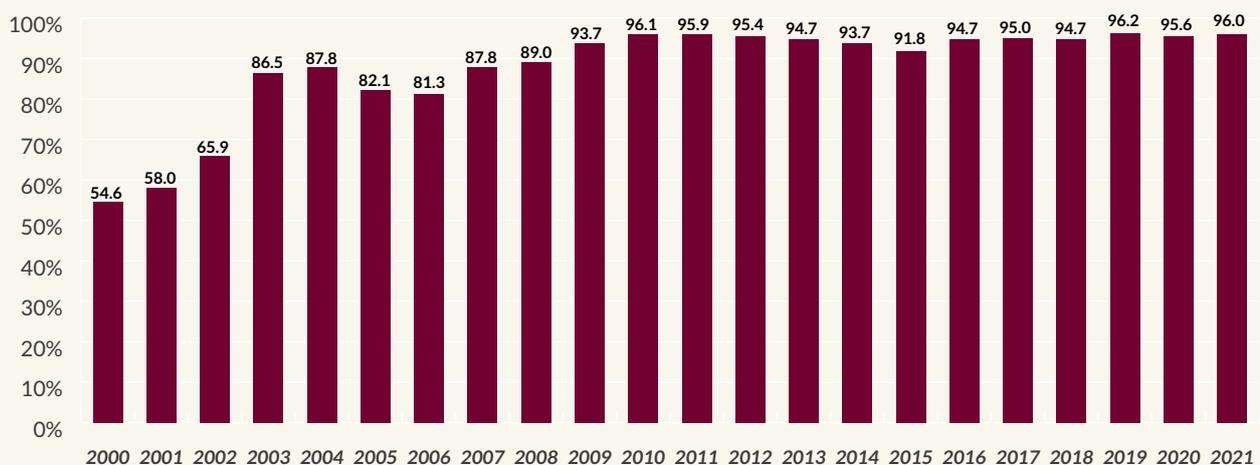
compensation is also relatively low. The picture for the EU+UK is similar to the global picture owing to the major importance of the EU+UK as a German investment target.

Earnings from equity capital

Income from equity capital is one of the central variables at issue in this analysis. It represents the profits generated in China from FDI by German companies.

The highly disproportionate importance of income from equity capital in China already emerged in the 2000s (Figure 5-6). Whereas the share was only 55 percent in 2000, it had already climbed to a bit over 96 percent by 2010. The first half of the 2010s saw the share slightly drop in 2015, to roughly 92 percent, but it quickly climbed back up thereafter. Consequently, the relative importance of income from interest on loans was and has remained low. However, this sub-category of FDI is only of minor importance in general, with the global average being only 2.3 percent (Figure 5-5).

FIGURE 5-6 **Development of the relative importance of receipts from equity capital in China**
Receipts from equity capital as a share of receipts from primary income (in percent)



Values estimated for 2016 and 2018.
Source: Deutsche Bundesbank 2022c; own calculations

Dividends and other distributed profits to the parent company in Germany accounted for around 8 billion euros in 2021 (Figure 5-8). Profits generated in China of this size flowed to Germany that year. Since 2000, there has been a clear upward trend with only minor fluctuations. A peak, at just under 11 billion euros, was reached in 2019. Since then, flows back to Germany have significantly declined. It is noteworthy that there was not a rebound in 2021, as was the case with gains from equity capital as a whole.

The other major component of profits earned in China is reinvested earnings (Figure 5-9). Here, as expected, an upward trend is also visible in the long-term comparison, although there are also fluctuations. The highest level was reached in 2014, at 6.7 billion euros. After that, there was a downward trend to only 2.2 billion euros by 2020. However, in 2021, reinvested earnings abruptly rose to a new high of an estimated 6.9 billion euros.

It should be noted in a longer-term comparison that the additional German annual FDI flows to China have been fuelled by a rising share of profits generated and reinvested in China – albeit with significant fluctuations. In fact, between 2018 and 2021, FDI flows from Germany to China were completely financed from reinvested earnings.

The same data as from Figures 5-7 to 5-9 are presented at a glance in Figure 5-10. This makes it possible to see how the profits from equity capital are divided between distributions to Germany and reinvested profits. In addition, income from other investments is also included as an additional sub-group of equity capital. They have only played a very marginal role in the recent past, whereby the value for 2021 has been estimated using the average of the years 2016 to 2020 owing to a data gap. Looking at Figure 5-10, it is clear that the way in which profits earned in China have been used varies quite considerably over time.

Figure 5-11 illustrates this by showing profits distributed to Germany as a share of the total profits generated by equity capital in China. Here, one can see quite strong fluctuations, which are primarily due to the varying development of reinvested profits (Figure 5-9). With a few outliers, the share of profits distributed to Germany was usually around half until 2008. However, there was a phase between 2009 and 2014 in which a much lower share flowed to Germany and, in some years, it was less than a quarter. Thus, a larger share of the profits generated in China were reinvested there during this period. Starting in 2015, the share of profits distributed to Germany rose significantly, to as much as four-fifths in 2020. However, in 2021, there was once again a significant drop in the share, to a just over half.

Looking at the development in 2021, the question arises as to whether this is a temporary special effect or whether a new trend is emerging here. It is possible that profits will again be used to a much greater extent for reinvestment, as was the case in the phase after 2009. In any case, it is known that German companies are currently localising more in China (AHK 2022a). But since this hypothesis cannot be tested using the BUBA's data, it will remain just a conjecture for the time being.

International comparison

The results presented above require an assessment, as the question arises: Just how relevant are profits of around 15 billion euros generated in China and around 8 billion euros of flows back to Germany in 2021? A direct comparison of these figures to total profits earned in Germany is possible only to a very limited extent owing to a different definition and coverage of the respective statistics (cf. Chapter 5.4). A direct comparison based on the same definition can be made by looking at the profits that German investors generated through FDI on the global level as well as in other major target regions, such as the US and the EU.

FIGURE 5-7 Primary income receipts from equity capital (profits from FDI)
 Figures for German receipts from equity capital in China (in billions of €)

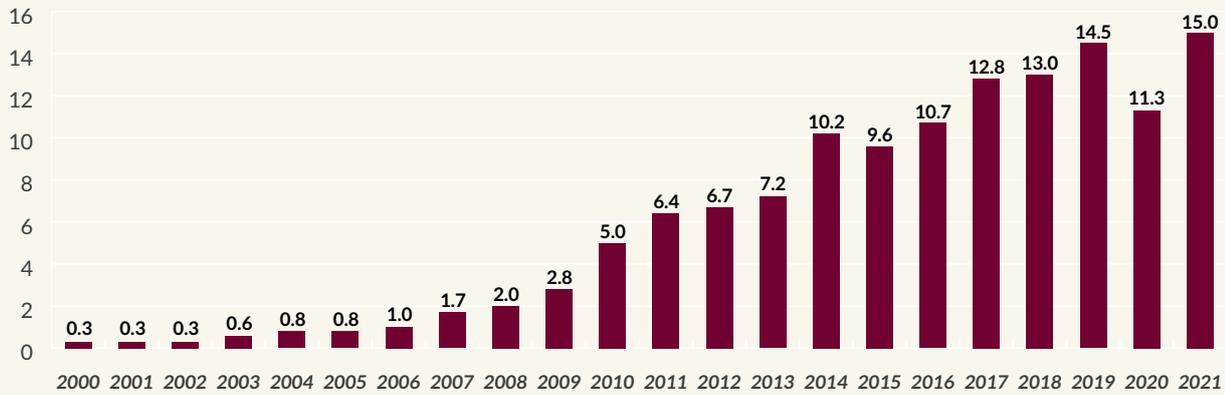


FIGURE 5-8 Primary income receipts from dividends and other distributed profits
 Figures for German receipts from dividends from equity stakes and other sources in China (in billions of €)

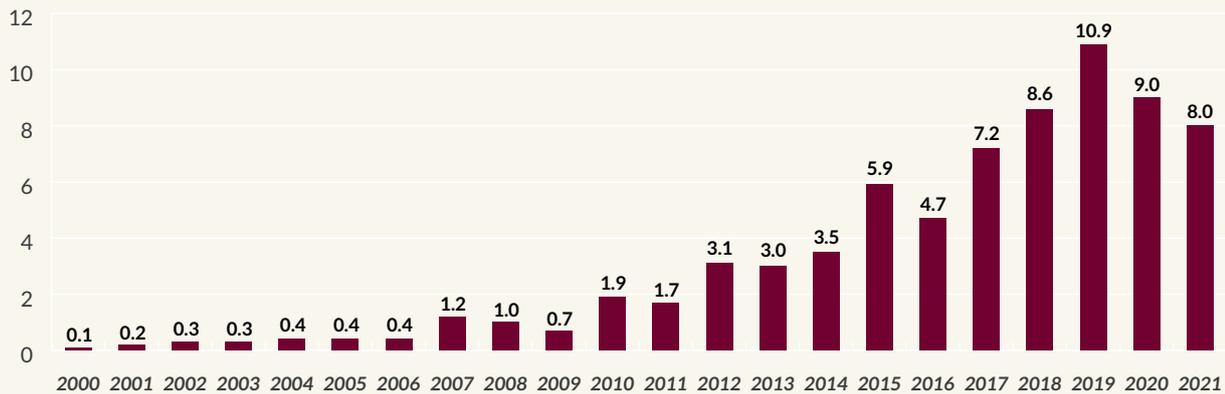
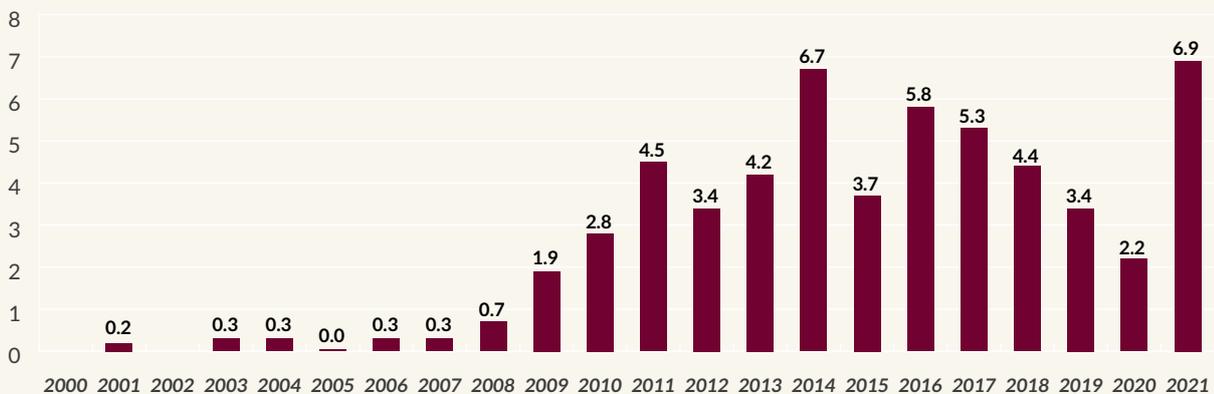


FIGURE 5-9 Primary income receipts from reinvested earnings
 Figures for German receipts from reinvested earnings from equity stakes in China (in billions of €)

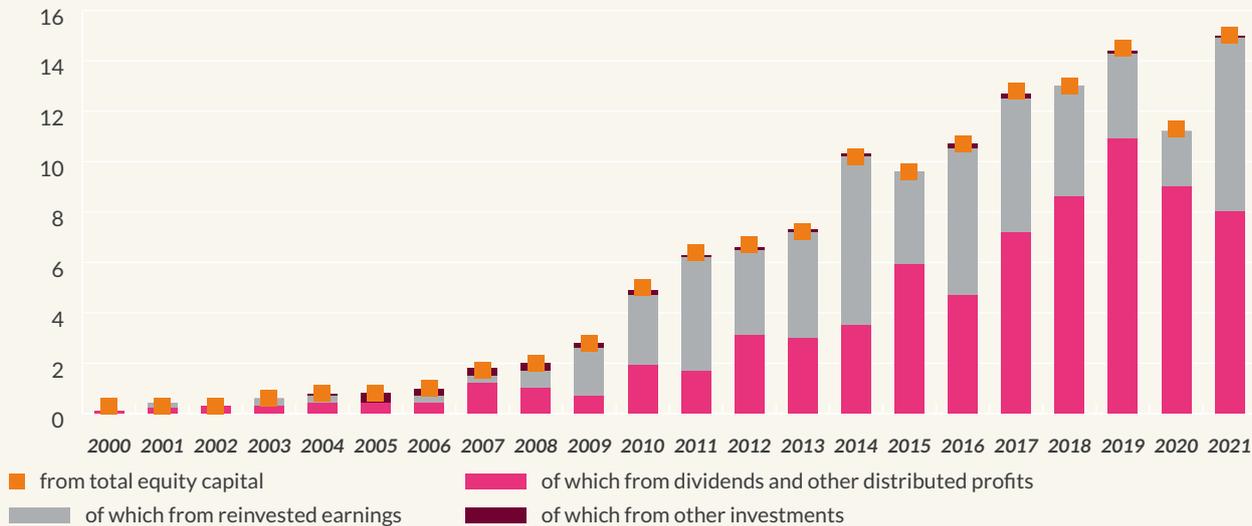


Equity capital: value for 2018 estimated; for reinvested earnings, no values for 2000 and 2002, and the value for 2021 has been estimated.

Source for Figures 5-7 to 5-9: Deutsche Bundesbank 2022c

FIGURE 5-10 Breakdown of primary income receipts from equity capital

Figures for German receipts in China (in billions of €)



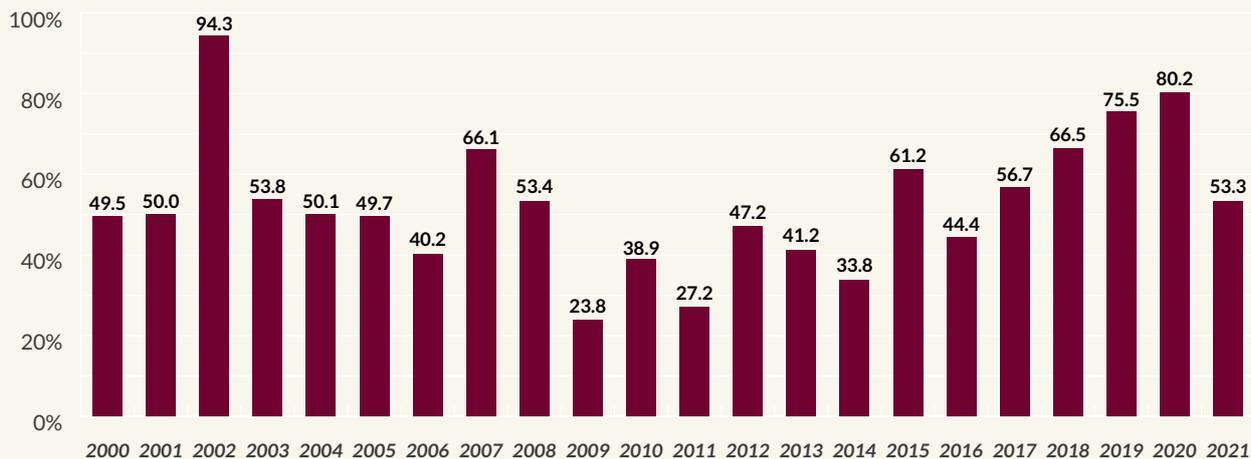
For total equity capital: value for 2018 estimated; for reinvested earnings, no values for 2000 and 2002, and the value for 2021 has been estimated; for other investments: value estimated for 2021.

Source: Deutsche Bundesbank 2022c

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FIGURE 5-11 Profits distributed to Germany as a share of total profits in China

German receipts from dividends and other distributions as a share of German receipts from equity capital (in percent)



For total equity capital: value estimated for 2018.

Source: Deutsche Bundesbank 2022c; own calculations

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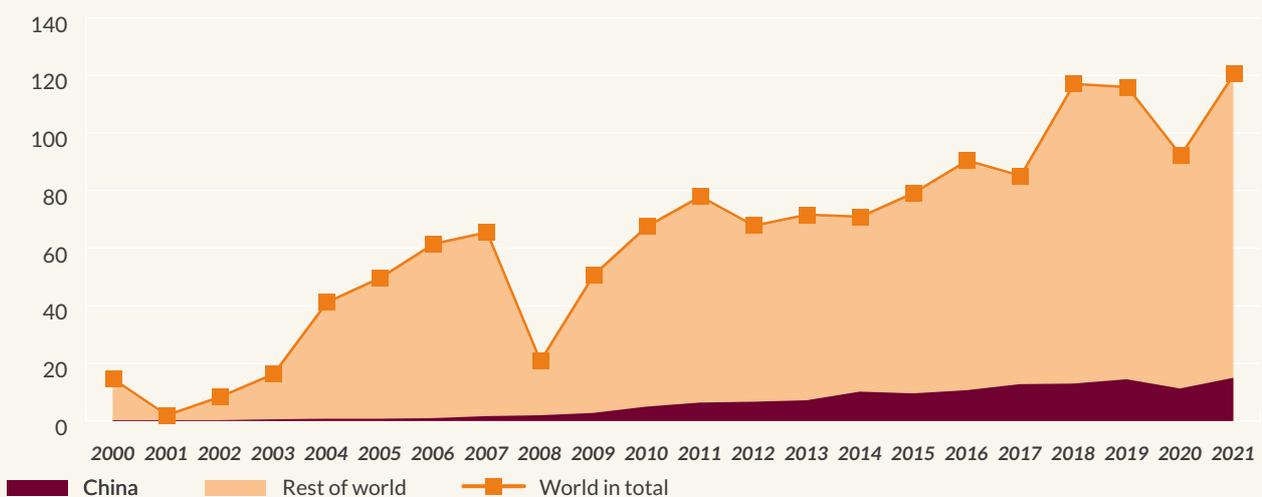
Figures 5-12 to 5-16 show important aspects of this comparison – for profits from equity capital in China as a whole, on the one hand, and for profits distributed to Germany, on the other. In addition, each illustrates how China compares to the rest of the world and how it compares to the US and the EU+UK. From this, it becomes clear that the profits from FDI generated in China or distributed to Germany have grown to a relevant size compared to the world as a whole, but the significance should not be overvalued (Figures 5-12 and 5-14). The comparison with the US and the EU+UK shows that China plays a similar – and recently also somewhat larger – role than the US in terms of generating profits and distributions to Germany (Figures 5-13 and 5-15). However, at present, profits generated in China only play a clearly subordinate role compared to profits generated from German FDI in the EU+UK.

Figure 5-16 shows the global shares (excluding Germany) that China accounted for in terms of profits generated from FDI in China and distributions to Germany. In the past five years, China’s global share in profits from equity capital

have fluctuated between around 11 percent and a bit over 15 percent. This is a relatively high share when it is compared to China’s global share of German FDI stocks, which is just under 7 percent (Chapter 4). China’s shares of reinvested earnings are of a generally similar size. They are not shown here because, in some cases, negative values result in years in which negative reinvested earnings were recorded in the data for the (foreign) world (excluding Germany), for example, because retained earnings from previous years were released and distributed. However, this phenomenon was not present in China.

With regard to the Covid-19 pandemic, it is remarkable that no significant increase in profits generated in China is evident here, as public reporting has given the impression that the rapid recovery of the Chinese market after the spring of 2020 contributed significantly to the stabilisation of the profit situation of German companies. As the data presented here indicate, there was also a drop in profits in China, and China’s global shares in 2020 do not show any conspicuous features.

FIGURE 5-12 **Primary income receipts from equity capital: China and the world**
 Figures for German receipts in China and the world (in billions of €)



Source: Deutsche Bundesbank 2022c

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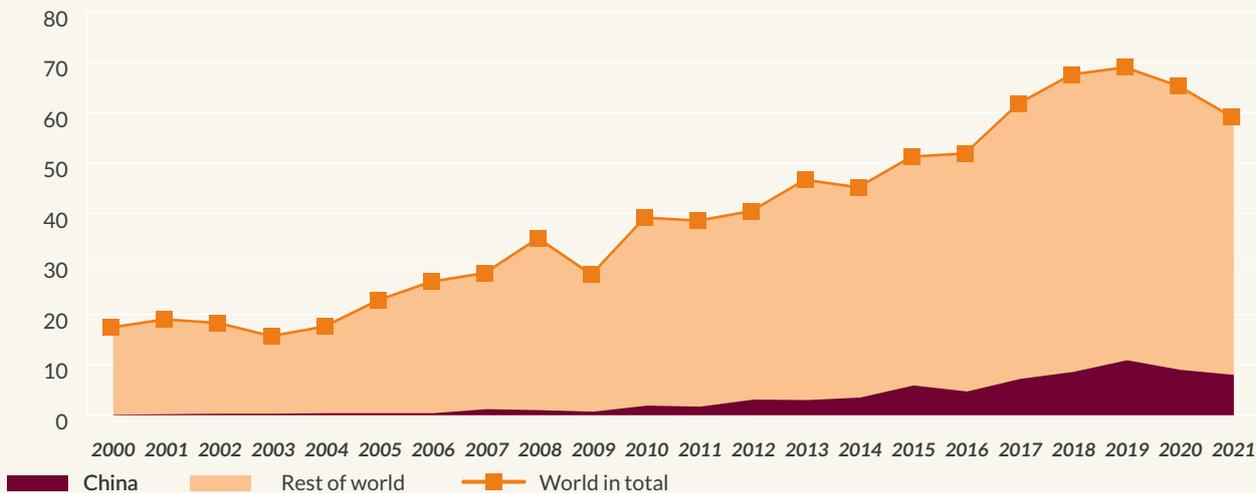
FIGURE 5-13 Primary income receipts from equity capital: China, the US and the EU
 Figures for German receipts in China, the US and the EU+UK (in billions of €)



Source: Deutsche Bundesbank 2022c

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FIGURE 5-14 Primary income receipts from dividends/distributions: China and the world
 Figures for German receipts in China and the world (in billions of €)

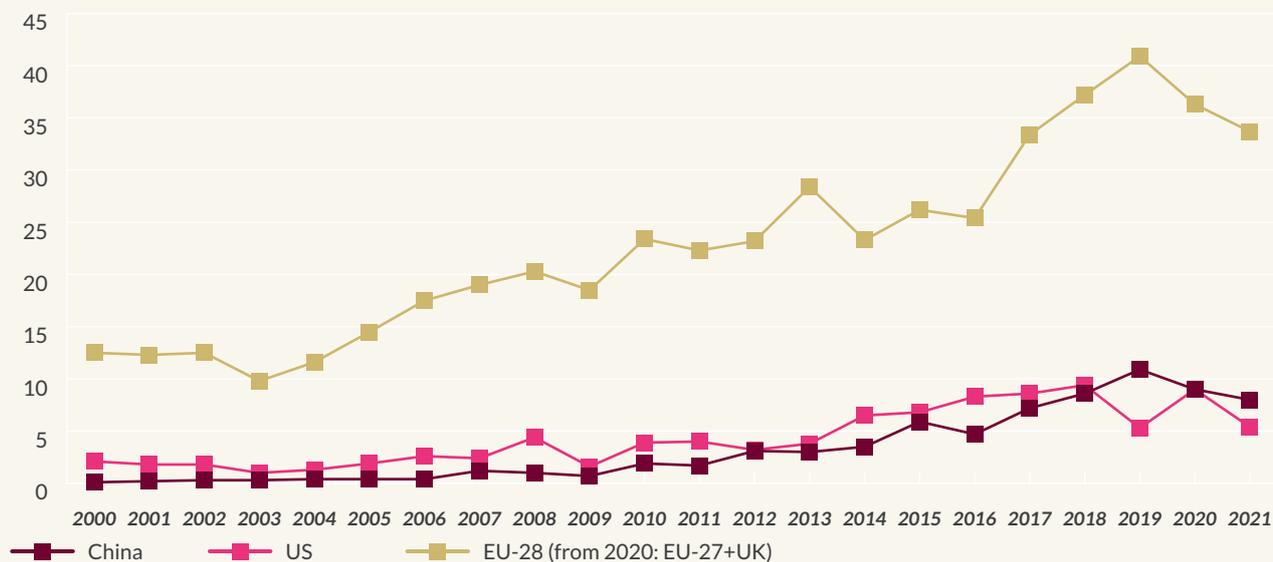


Source: Deutsche Bundesbank 2022c

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FIGURE 5-15 Primary income receipts from dividends/distributions: China, the US and the EU

Figures for German receipts in China, the US and the EU+UK (in billions of €)

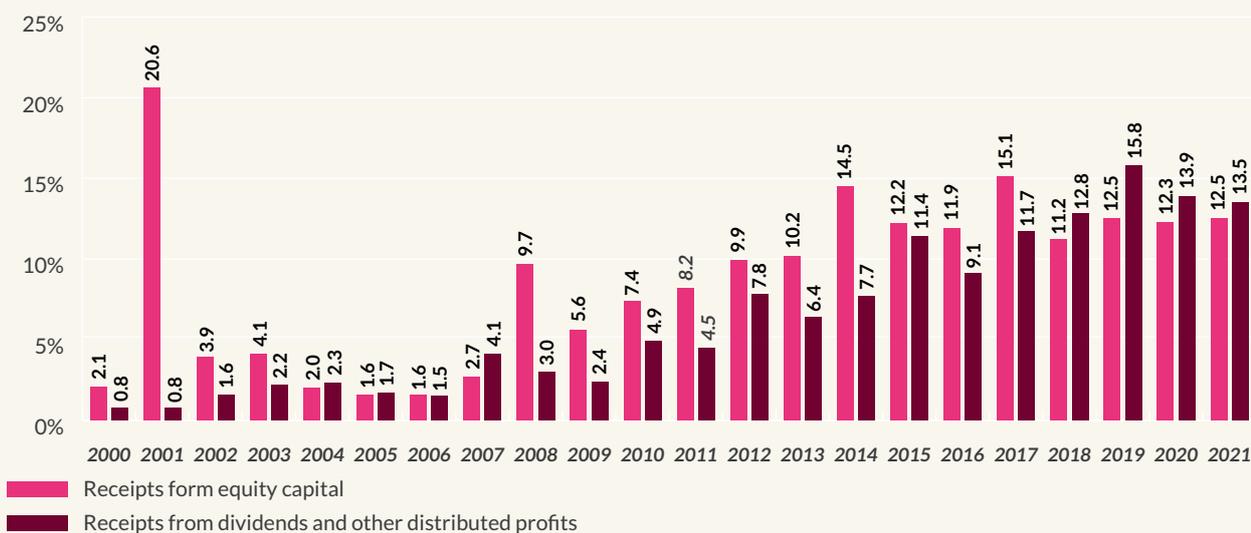


Source: Deutsche Bundesbank 2022c

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FIGURE 5-16 Primary income receipts: China as a share of the world

German receipts in China as a share of global German receipts (in percent)



Source: Deutsche Bundesbank 2022c; own calculations

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5.3 Business survey and macroeconomic assessment

In what follows, as a supplement to the Bundesbank's special data analysis, we look at the results of the data query from the survey of companies described in Chapter 2 in order to assess the significance of the profits generated in China for the overall profits of German companies.

The survey of companies was conducted by the German Economic Institute (IW) with significant support from the BDI. The information provided by the 36 companies (with sufficiently evaluable data on the share of business done in China) differs with regard to the available data. Absolute figures for both global and China-related values were consistently complete for employee numbers and almost complete for turnover data (32), but much scarcer for profits due to the sensitivity of this question. In this case, we only have about 20 evaluable statements, which also display slight differences in terms of their company-specific characteristics. In particular, it sometimes happened that global profits were reported but no specific information on China was provided. Due to these limitations and because we promised to keep responses confidential, only rough aggregated data can be shown for the profit-related data, yet they still provide an important degree of qualitative guidance.

On this basis, the following aggregated shares can be shown as an arithmetic mean, always based on the information available in each case. On average, a bit more than 7 percent of the global workforce of the 36 companies in question are employed in China, and the median of the values is also of the same general size. China's share of global turnover is slightly higher, at over 10 percent, and the arithmetic mean is slightly higher in this case than the median. The average aggregate share of global profits (mean and median) attributable to China is also in the range of around 10 to roughly 12 percent, based on the

limited amount of available feedback. Weighted averages reach somewhat higher shares for turnover and profit shares, as larger companies evidently tend to be more active in China than smaller ones. These average figures should be interpreted with caution, as there is a high degree of variance in China's global shares of employees, turnover and profits.

The figures shown here are roughly in line with other estimates of the turnover and profit shares of DAX companies in China. For example, based on business analyst estimates, Deutsche Bank Research (2022) calculates that China accounts for 11 percent of the global revenues of DAX companies and a profit share of around 15 percent of their global EBIT. For companies in the Euro Stoxx 50, a stock market index including eurozone blue-chip companies considered leaders in their respective sectors, these shares are around 8 and 11 percent. Another study with data for up until 2019 also confirms the size of the turnover shares for 25 large listed EU companies (Zenglein 2020).

The survey contains only about a dozen reports on the development of absolute profits in China since 2015, some of which are incomplete. These do not show any uniform development over time, and the profit levels display a high degree of variation in some cases. What's more, the information on the use of profits generated in China (and especially on the flows back to Germany) is too thin and incomplete to draw any reliable conclusions. The scant data that is available reveals significant differences: While there are companies that tend to reinvest most of their profits in China, there are others that (according to their statements) distribute most of their profits to Germany. The individual expert interviews also point to considerable differences regarding how important profits in China are for the company as a whole and to what extent profits made there flow back to Germany or are reinvested in China.

On the whole, despite the limitations, the data-related survey results provide important indications. The companies surveyed are clearly more focused on China than the broad group of companies covered by the BUBA. The shares of employees, turnover and profits generally appear to be of a size similar to those for the direct investment stocks (Chapter 4) and in the BUBA's special data analysis of profits (Chapter 5.2.2) – but only at first glance. In fact, a key difference becomes apparent at second glance: This is because the population of the survey shares presented in this chapter is the world including Germany, whereas, in the BUBA's data, only the values for the entire world excluding Germany are in the denominator – in other words, shares for all of the world minus Germany and not for the entire world are shown. Consequently, if the shares of China in the world including Germany in the survey data are about the same as the Chinese shares in all of the world minus Germany that are found in the BUBA's data, China is clearly more important for the larger firms questioned for the survey.

5.4 Annual financial statement statistics for the macroeconomic assessment

It also makes sense to try to link the BUBA's data on profits earned via FDI in China and distributed to Germany with profits also earned in Germany. Doing so would make it possible to assess the profits made in China in a macroeconomic context. Unfortunately, there are no directly comparable national statistics. At best, it is only possible to make a rough estimate by using BUBA data extrapolated from the German annual financial statement statistics (Deutsche Bundesbank 2022d). In principle, all profits generated by the companies covered worldwide are reported in this publication. However, not all German companies are covered here, as the sample drawn by the BUBA only includes non-financial companies – meaning that, in particular, no banks or insurance companies are included –

which renders the coverage of the total reported profits that all German firms generate worldwide incomplete. Thus, if one compares the profits generated in China and distributed to Germany as reported in the BUBA's special data analysis with the profits reported in the annual financial statement statistics, China's share is overestimated. It is essential to take this into account when considering the following data.

The data for the annual financial statement statistics are only available until 2020. For the five years between 2016 and 2020, the BUBA estimates a total extrapolated annual result (after tax) of between 210 and 249 billion euros for the non-financial companies covered in Germany. According to the BUBA's special data analysis, the profits generated in China and then distributed to Germany in the period from 2016 to 2020 amounted to between just under 5 and just under 11 billion euros (Chapter 5.2.2). On an annual basis, this means that profits distributed from China accounted for a share of between 2.2 and 5.0 percent of the total global profits of German non-financial companies. The average share for the years 2016 to 2020 would thus be 3.7 percent. This result indicates that – unlike for individual companies – from a macroeconomic perspective, there is not much dependence on profits generated in China and flowing back to Germany. If one looks at all profits generated by FDI in China (including those reinvested in China) in the numerator, the average share of total profits over this period amounts to 5.6 percent. As explained above, these shares are overestimated owing to the fact that financial companies were not included.

5.5 Information on payout ratios to shareholders of listed German companies

It is not possible to precisely state which share of the profits generated in China is distributed to shareholders and which is retained, as the profits of a company – like tax revenues – flow

into a large “profit pot”, so to speak. However, it is possible to roughly quantify the share that distributed profits make up of the profit pot as a whole for larger German companies.

According to a study of the information portal DividendenAdel (DividendenAdel et al. 2022), the payout ratios for the average of listed stock corporations in the DAX, MDAX and SDAX ranged between 37 and 45 percent between 2003 and 2022 (preliminary figures), with the annual average being 42 percent. Thus, it appears likely that listed companies usually also distribute a considerable portion of the profits they generate in China to their shareholders in order to remain attractive to financial market investors.

5.6 Statistics on the ownership of listed German companies

Chapter 5.2 has provided empirically robust data on the profits generated by German FDI in China and how much of them is flowing back to Germany. In addition, Chapter 5.4 has provided a rough macroeconomic assessment of these profits and Chapter 5.5 has supplied an estimate of how much of this is likely to be distributed (under the implicit assumption that the same applies to profits generated in China as to other profits). Furthermore, the question arises as to whether these distributed profits go to German or foreign shareholders.

In this respect, empirical data on shareholdings in German stock corporations can be used to narrow things down to some extent. Various sources are available that record and estimate the ownership structure of German listed companies in aggregate form. Domestic and foreign shareholdings are also shown, which is of crucial relevance here. However, it is not clear how strong the engagement of the respective group of companies covered in the various sources is in China. Thus, the following can only provide a rough guess.

The available studies mostly focus on the DAX and therefore on 40 (previously 30) of the largest German companies. Particularly worth mentioning here are publications by the auditing and consulting firm EY and the German Investor Relations Association (DIRK) together with S&P Global Market Intelligence (formerly IHS Markit). Since the two studies use different methodological approaches, they arrive at results that vary significantly. The reason behind this is the fact that official statistics do not exist on the nationality of the shareholders of listed companies. Such data must be researched at great expense in annual reports (if available) or requested from companies or investors. It is easier to capture the shares in free float and especially those held by institutional investors (e.g. investment or pension funds). However, there are also strategic investors who hold shares for the long term, in which case these shares are usually not being traded. These include, for example, foundations, private owners (e.g. owner families) and strategic investors (e.g. sovereign wealth funds). There is a crucial difference here between the two sources mentioned:

- EY attempts to comprehensively estimate share ownership, including strategic and long-term investors. As a result, not all shareholders can be clearly assigned to a country, whether the home country or a foreign country.
- In contrast, DIRK and S&P Global Market Intelligence only focus on shares in institutional free float. Consequently, although they can provide a clear breakdown between domestic and foreign ownership, the limited database prevents them from being able to provide a complete picture. For this reason, EY’s analysis will be given priority in what follows.

At the end of September 2022, EY (2022) published an analysis for the DAX 40 companies, whereas the previous study (from 2019) had still covered the DAX 30 companies. In 2021, on

average, more than half (at least 53.4 percent) of the total shareholdings (ordinary and preference shares) of the DAX 40 companies could be ascribed to foreign (i.e. non-German) shareholders. Around 24 percent of the total portfolio was held by European shareholders, and around 22 percent by North American shareholders. On the other hand, German shareholders collectively only have an average share of less than 30 percent (29.7 percent). This is also a lower limit, as an average of almost 17 percent of the shareholdings could not be attributed owing to a lack of information. A comparison over time, which is only possible for 35 DAX companies due to a lack of data, shows a fairly high degree of stability in these shares when comparing 2010, 2015, 2020 and 2021, with the minimum Germany-owned share falling slightly (by 1.5 percentage points) on average. The minimum foreign-owned share varies considerably among the individual DAX 40 companies, ranging from 86 percent for Vonovia to 10 percent for Siemens Healthineers.

In the more narrowly defined data from DIRK and S&P Global Market Intelligence (2022), the institutional free float is estimated to have accounted for around 60 percent of shareholdings for the DAX 40 companies at the end of 2021. According to the authors, well over 90 percent of this – or, in other words, a total of around 55 percent of the total shareholdings of the DAX 40 companies – can be clearly attributed to individual institutional investors. In relation to this population, German investors only have a share of around 12.5 percent of the institutional free float, meaning that more than 87 percent of it is in foreign hands. The underlying reason for this is that institutional share ownership is obviously even more internationalised than total ownership. Inversely, it would appear that German investors hold more of the shares which are not in free float. The comparison with previous years is slightly limited because DAX 30 companies were examined prior to 2021. However, on a uniform basis, a fairly clear trend emerges between 2015 and 2020: The share

of German investors decreased slightly during this period, from 16.4 to 13.3 percent. It should be kept in mind, however, that the country allocation of institutional investors may not indicate German and foreign share ownership in a completely separable, clear-cut manner. For example, an investment fund in Luxembourg or London may also manage investments of German investors. The reverse may also apply if a fund in Frankfurt also invests money of non-Germans. In addition, since direct and indirect share ownership in Germany is considered to be relatively low, this distortion should not be overly significant.

Apart from the DAX 40 (formerly the DAX 30), there are also other listed German companies in the MDAX, SDAX or TecDAX indexes. These are the so-called publicly listed SMEs (Mittelstand). Analyses of domestic and foreign shareholdings are only available in a study by cometis AG and Ipreo Ltd (2017), which uses an older dataset from 2016. This focuses on the shares in free float, defined as all shares of a listed company available for trading on a stock exchange. In 2016, the free float share in the MDAX amounted to 66 percent of total shareholdings, in the SDAX to 61 percent, and in the TecDAX to 71 percent. The result shows that the German shareholding is slightly higher than is indicated in the data from DIRK and S&P Global Market Intelligence (2022) for the DAX 40 companies in institutional free float. In 2016, the share of the free float (defined in this way) held by German investors was 19 percent for the MDAX, 28 percent for the SDAX, and 29 percent for the TecDAX. Compared to 2013, shares in the MDAX and TecDAX are largely stable, while those in the SDAX are slightly rising.

Since the share of foreign investors is somewhat higher on average among the large DAX companies, it can be assumed that a larger share of the higher profit shares generated in China (cf. Chapter 5.3) will flow to non-German investors when distributed to shareholders.

As far as the authors are aware, no publicly available aggregated data exists on the ownership structure of other unlisted companies. This applies, for example, to owner-managed companies and unlisted stock corporations. It is not possible to determine how relevant this group of unrecorded firms is among direct investors in China.

5.7 Comparison with the analysis scheme

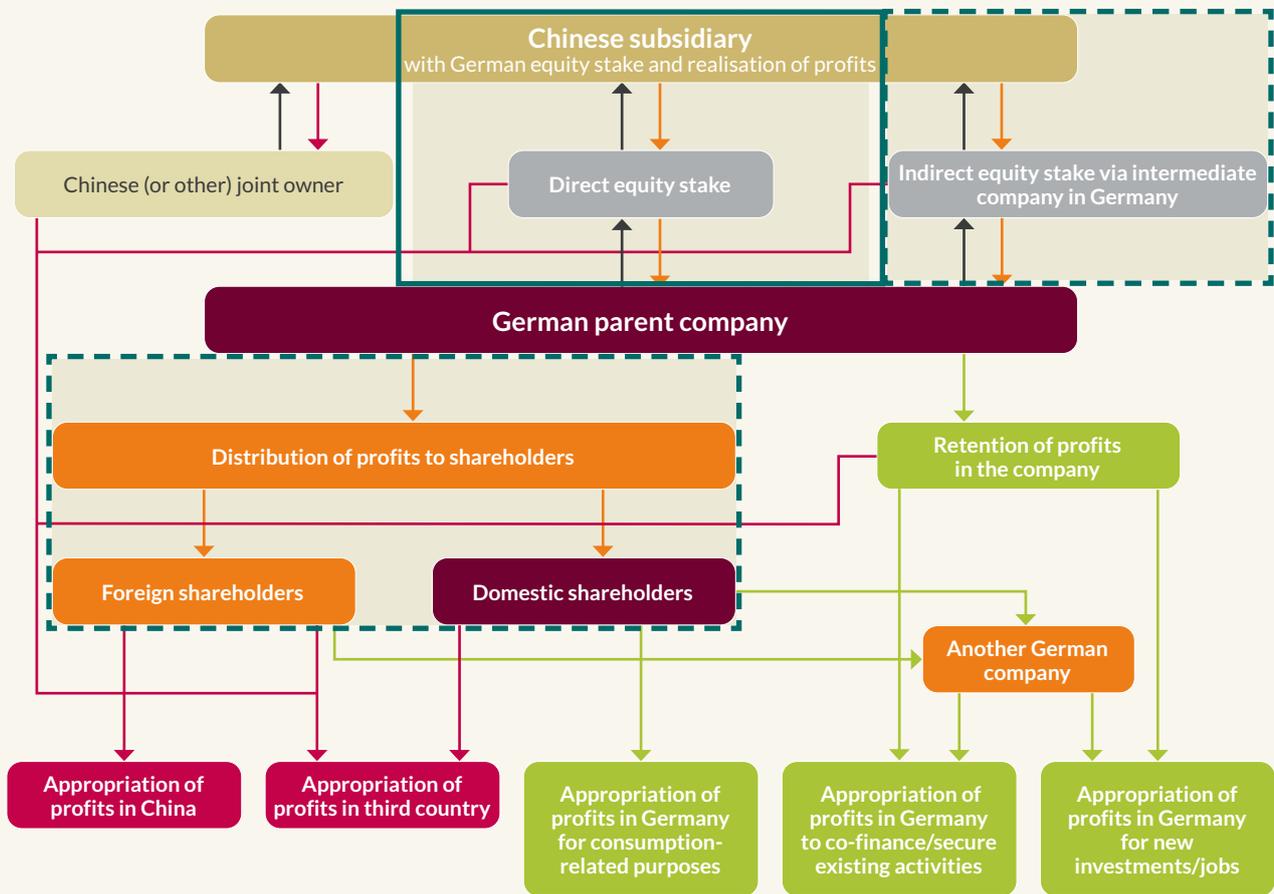
Chapter 5.2 has provided new and empirically robust data on the profits generated by German FDI in China and on how much of this is flowing back to Germany. Chapters 5.3 to 5.6 have provided a rough estimate of the significance of profits generated in China for the total profits of German companies, the approximate profit distribution ratios, and the share of foreign and German investors in listed companies and therefore presumably in distributed profits. This has allowed us to shine light on the upper part of the analysis scheme – albeit at different levels of brightness:

- German companies mainly invest directly in China. In 2020, well over 90 percent of German FDI was invested directly in China and therefore not via other countries or regions (e.g. Hong Kong). More detailed information on the small share not recorded and the associated profit flows cannot be obtained from the available data. For this reason, the green box in the upper right-hand corner of Overview 2 has a dashed border.
- A Bundesbank special data analysis of the balance of payments statistics on primary income generated in China provides empirically reliable data on what profits are generated by German FDI in China and how much of this flows back to Germany. With this, it is possible to shine light on the upper middle part of Overview 2, which is surrounded by a box with a solid green line. Due to annual

fluctuations, the following information refers to the five-year period from 2017 to 2021:

- During this period, German FDI in China generated annual profits of 11 to 15 billion euros. Of this, 2 to 7 billion euros were reinvested in China, and 7 and 11 billion euros (between 53 and 80 percent) flowed back to Germany. The latter represents 12 to 16 percent of all profits generated by German FDI abroad and distributed to Germany. Profits generated in Germany have not been taken into account here.
- In an international comparison, profits generated in China are generally of a size similar to profits from FDI in the US, but they are much lower than the profits generated by German subsidiaries in the EU+UK.
- It is possible to roughly quantify the share that profits distributed to shareholders make up of the overall profit pot of larger German firms. According to DividendenAdel et al. (2022), the payout ratios for the average of listed stock corporations in the DAX, MDAX and SDAX ranged between 37 and 45 percent between 2003 and 2022 (preliminary figures), with the annual average being 42 percent.
- In addition, it is possible to roughly quantify the average distribution of shareholdings between German and non-German investors for the DAX 40 companies. This breakdown provides an indication of where distributed profits tend to flow. According to EY (2022), at least 53 percent of the DAX was in foreign hands in 2021. This also allows us to shine some light onto the middle-left part of Overview 2, where there is another box with a green dashed border. This means that part of the profits flowing back from China to Germany will probably also be distributed there and part of this will flow abroad.

OVERVIEW 2 Options for using the profits of a German subsidiary in China after the analysis



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At this point, we are lacking the robust empirical basis that would enable us to shine more light on the black box. The following two aspects, in particular, are playing a limiting role:

1. Among other things, the Bundesbank data do not provide information on whether profits generated in China flow out to other countries or on how profits flowing back to Germany are used here, which is the central question of this study.
2. What happens to retained profits remains unclear. Are they used to cross-subsidise and thereby sustain activities in Germany that are under threat or loss-making? Are they used for new investments and thereby for jobs in Germany? Or are they possibly merely invested in the financial market and possibly even abroad?

6 Concluding remarks

As far as sales are concerned, Germany has long benefited from its economic ties with China. However, in the future, the prospects for exports to China could become bleaker. Contributing to this is the fact that China will reportedly be served by German investors there by means of local production rather than exports. There are also clear trends towards localisation in both supplier structures and R&D activities. Furthermore, China is increasingly viewed as an export platform to Asia. Evidence of these trends has been provided by a non-representative survey of around three dozen large German companies, which was conducted for this study. This raises the question of how much the German economy will continue to directly profit from the Chinese sales market through exports and thereby through value creation and jobs. It is therefore all the more important to determine what profits are generated by German foreign investments in China as well as to what extent they flow back to Germany and strengthen the country's economy. This question stood at the centre of this study.

Its results show that, in the last decade, China has become a lot more important as an investment and production site for German companies. According to Bundesbank data, German FDI stocks in China have more than tripled in this period, from 29 billion euros in 2010 to almost 90 billion euros in 2020. Nevertheless, China only accounted for just under 7 percent of total German FDI stocks in 2020. Thus, compared to the EU+UK (34 percent) and the US (27 percent),

China's importance as an investment location for German companies is significantly lower.

With a share of more than two-thirds of all industries, manufacturing is by far the most important sector for German investors in China. For the automotive industry, in particular, China is an outstanding place to invest. This sector accounts for almost 30 percent of all German FDI in China. And just under 27 percent of the world's direct investment stocks in the automotive industry are invested in China. Electrical equipment manufacturing and mechanical engineering also have above-average shares compared to manufacturing as a whole (around 14 percent).

An illustrated analysis scheme was developed to answer the question of how the relationship between parent companies in Germany and subsidiaries in China is related to the generation of profits in China and the appropriation of profits from this investment relationship. Many parts of this analysis have proven to be a black box – and one that can only be illuminated to a certain extent, if at all, using the empirical data available (cf. Overviews 1 and 2).

With the help of Bundesbank data, it was possible to determine that well over 90 percent of German FDI in 2020 was invested directly in China, meaning not via other countries. At the same time, the analysis was not able to cover a bit over 7 percent of these investments and the profit flows related to them.

In the five-year period from 2017 to 2021, German FDI in China generated annual profits of between 11 and 15 billion euros. Of this, 2 to 7 billion euros were reinvested in China, and 7 and 11 billion euros (between 53 and 80 percent) flowed back to Germany. The latter represents 12 to 16 percent of all profits generated by German FDI abroad and distributed to Germany. In an international comparison, profits generated in China are generally of a size similar to profits from FDI in the US, but they are much lower than the profits generated by German subsidiaries in the EU+UK.

Since the BUBA statistics on foreign direct investments do not include profits earned in Germany, a rough estimate was made here using the Bundesbank's annual financial statement statistics. This shows that the share which China accounts for in the total profits of German companies is in the low single digits. The average was about 4 percent for the period between 2016 and 2020 (more recent data is not available).

In addition, it is possible to roughly quantify the share that distributed profits make up of the profit pot as a whole. According to DividendenAdel et al. (2022), the payout ratios for the average of listed stock corporations in the DAX, MDAX and SDAX ranged between 37 and 45 percent between 2003 and 2022 (preliminary figures), with the annual average being 42 percent. This means that a considerable portion of the profits generated in China are also likely to be distributed and to therefore not directly contribute to strengthening the value-added and employment bases here in Germany.

Provided that profits are distributed from China, the question arises as to whether these remain with the German owners or flow to other countries. In this case, empirical data on shareholdings in large German stock corporations can be used to roughly narrow things down. According to this data, it is mainly foreign (i.e. non-German) investors who benefit from the distributions, and an EY study (2022) calculates

that these investors held significantly more than 53 percent of the shares of DAX 40 companies in 2021.

As demonstrated, light can only be shone on the black box at various points. Hence, there is a need for research particularly focused on the questions of how important the profits generated in China are for individual German companies and for the German economy as a whole. For example, it would be important to better understand whether and to what extent profits in China serve to cross-subsidise and thereby sustain activities in Germany that are under threat but otherwise loss-making or are used for new investments and thereby jobs in Germany.

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List of Abbreviations

AHK	German Chambers of Commerce Abroad
BDI	Federation of German Industries
BUBA	Deutsche Bundesbank (central bank of Germany)
BYD	Build Your Dream
CETA	Comprehensive Economic and Trade Agreement (Free trade agreement between the EU and Canada)
CNY	Chinese yuan
CCP	Chinese Communist party
CRRC	China Railway Rolling Stock Corporation
CTGN	China Global Television Network
DAX	Deutscher Aktienindex (blue-chip stock market index)
EBIT	Earnings before interest and taxes
EU	European Union
EUCC	European Chamber of Commerce in China
FDI	Foreign direct investment
FYP	Five-year plan
GDP	Gross domestic product
IW	German Economic Institute
MERICs	Mercator Institute for China Studies
NDRC	National Development and Reform Commission
R&D	Research and development
VDMA	German Engineering Federation
WTO	World Trade Organization

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Annex

1. Data query from companies

Survey group: DAX 40 + 20 large family-owned companies

Confidentiality: Your data will be handled confidentially. Only two individuals will have access to the data during its processing: Jürgen Matthes from the IW and Friedolin Strack from the BDI. Following aggregation, all company-related data will be deleted.

Transfer into Excel for easier processing.

Questions: Answers should only concern...

- ...a group or holding of the company...
- ...in the PRC including Hong Kong.

Importance of China to the company

(Figures for the last completed financial year in millions of €)

	worldwide (in millions of €)	PRC (in millions of €)	China as a share of the world (in %)
China as a share of the world (in %)			
Foreign investments			
Turnover			
Production			
Employees			
Profits			

Profits in the PRC and their use

Figures in millions of €

	Profits in the PRC	Of which reinvested in the PRC	Of which transferred to Germany	Of which transferred to third countries
2015				
2016				
2017				
2018				
2019				
2020				
2021				

Note: In the case of joint ventures, please indicate profits for the entire company and allocate the profit share of the Chinese partner to the category "reinvested in the PRC".

2. Qualitative trend survey (separate from data query)

Target survey group: DAX 40 + 20 large family-owned companies

Aim: To obtain additional information about the business and its environment in China

Transfer into Excel for easier processing.

Questions: Answers should only concern...

- ...a group or holding of the company...
- ...in the PRC including Hong Kong.

Please indicate the current proportion of the ownership structure in %

	Proportion
German investors	
Foreign investors	
Of which Chinese investors	

Please give a statement describing tendencies with regard to the following statements:

Information for the current decade (until 2030)

	No	Rather not	Rather yes	Yes	Don't know
Our exports from Germany to China...					
• ...will significantly increase.					
• ...will significantly decrease.					
• ...are increasingly being replaced by local production in China.					
Our production in China is increasingly exported...					
• ...to Asia.					
• ...to Germany.					
In China , we will localise...					
• ...a broader range of business activities and operational know-how.					
• ...more R&D resources/activities.					
• ...more supplier structures.					
We will bring our latest technology to China.					
With our business activities in China, we...					
• ...expect the Chinese bureaucracy to behave in a constructive manner.					
• ...want to be viewed more as a “Chinese” company in order to ensure that the Chinese bureaucracy behaves in a constructive manner.					
• ...are increasingly disadvantaged vis-à-vis our Chinese competitors.					
• ...expect to become victims of Chinese sanctions in trade conflicts.					

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