

The German Economy's Growing Dependence on China: A Critical Assessment

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Abstract: Against the background of the recent intensification of global geopolitical tensions and, in this framework, of the announcement made by the German authorities regarding a future “historic turning point” (Zeitenwende) in the country’s foreign policy, meant to contribute (among others) to the reduction of the economic dependence on countries with a totalitarian regime, our research aims at obtaining an in-depth image of the current status of the economic relations between Germany and China. Based on the quantitative measurement analyses performed, the article emphasises China’s role and importance for the German traditional export-centred development model, as well as the challenges resulting from the deepening of these interdependencies. At the same time, we emphasise, on the one hand, the strategic motivations underlying the orientation of Chinese investment flows towards the acquisition of German high technology and related know-how, as well as the factors that determine the accelerating trend of German investments on the Chinese market and, on the other hand, the risks that German companies face at present as a result of China’s increased assertiveness on the international stage.

Keywords: Germany, China, economic dependence, export, import, foreign direct investment (FDI), outward direct investment (ODI)

JEL classification: F21, F49, F59

1. Introduction

During the more than 50 years that have passed since the establishment of the economic relations between Germany and China (1972), the mutual interdependencies between the two countries gradually extended to increasingly varied fields, based on a cooperation model driven by converging interests that generated mutually advantageous benefits. Such benefits, up to a certain point, did not pay heed to the fundamental differences between the individual social systems and economic development levels of the two countries. Germany’s strongly export-oriented economy considerably benefited from China’s fulminant growth and from its integration into the rule-based international order, which mainly occurred once the country adhered to the World Trade Organisation (WTO) in 2001. From a German perspective, these evolutions seemed to confirm the liberal-like argument of the “change through trade,” in the sense that the establishment and consolidation of bilateral economic ties could lead to the achievement of political reforms that might determine a societal change in China. However, the experience of the period after Xi Jinping became president (2013) showed that China’s development direction seems to distance further and further from the conceptual premises of the rule of law and from the international principles related to the respect of human rights. In these conditions, beginning in 2019, a shift occurred in Germany’s foreign policy in relation to China, in the sense that, beyond the position as *partner and competitor*, this country has mainly become a *systemic rival*¹ for Germany. In the light of the geopolitical tensions and of the geo-economic disturbances generated by the military conflict started by the Russian Federation in Ukraine, German decision-makers understood both the consequences that this systemic rivalry may have on economic relations, and the fact that close relations developed with autocratic countries may lead not only to increased prosperity, but also to the creation of critical interdependencies that could be politically exploited.

This is why the German authorities recently announced their intention to recalibrate their economic and commercial interrelations with China and to find a functional balance that could enable the identification of

¹ Given that the Chinese state continues to play a particularly important role in allocating resources at national level, and that the intervention of government agencies on the market takes a variety of forms, contributing to and fuelling a systemic competition/rivalry between Germany and China.

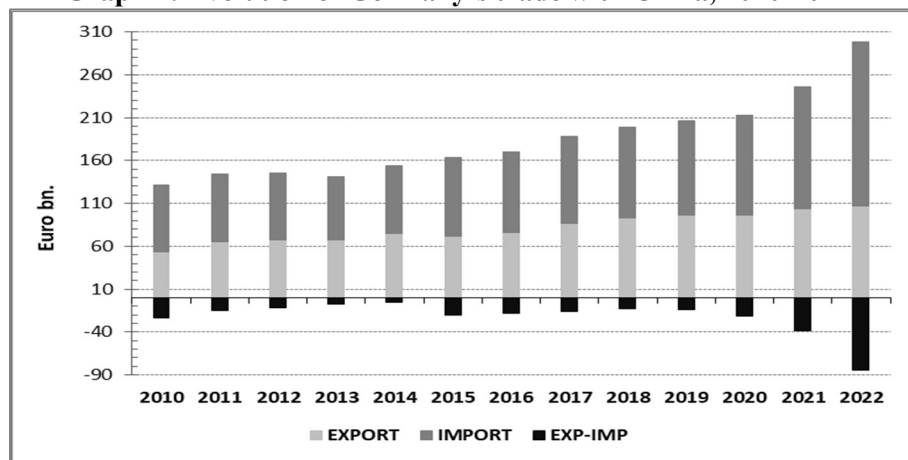
adequate response measures to the increasingly aggressive Chinese industrial policy, while at the same time avoiding the risk of applying an excessive state control. In other words, in order to align itself best to the contemporary geopolitical circumstances, Germany's strategic thinking towards China will attempt to simultaneously ensure: a) that the openness of the national economy is maintained (a fundamental characteristic of the liberal order); b) that the sales and purchases markets are diversified; c) that the internal market is effectively protected against the destabilising pressures that the presence of Chinese companies places on the competition environment and on the (neo)liberal order, however without sliding towards protectionism (like the U.S.).

2. The German-Chinese relations in recent years: between special partnership and systemic rivalry

2.1. The deepening of Germany's commercial dependence on China

Given Germany's traditional export-centred development model, China was always particularly important for the federal economy, not only because of its large market and the increased demand for the German products, but also because China is a significant supplier of raw materials and intermediary inputs for Germany's industrial sector. As a result, during 2016²-2022 (the last seven consecutive years), China was Germany's main commercial partner and the total value of their bilateral trade, which already exceeded the annual threshold of EUR 200 billion in 2019, amounted to around EUR 299 billion in 2022 [Graph 1] (Federal Statistical Office/Destatis, 2023a). Nevertheless, in 2022, in the hierarchy of the main countries of destination for German exports, China ranked fourth,³ surpassed by the U.S., France and The Netherlands, with figures higher than China's around 7% of the total German foreign sales (Graph 2). It can also be seen that the position as Germany's main commercial partner is based on the high volume of imports coming from the Chinese market which, in 2022, totalled around EUR 192 billion, corresponding to a share of approximately 13% of the total.⁴

Graph 1: Evolution of Germany's trade with China, 2010-2022*



Note: *For 2022, the data presented are based on preliminary results.

Source: Graphic representation by the author based on the data published by the Federal Statistical Office (Destatis, 2023b).

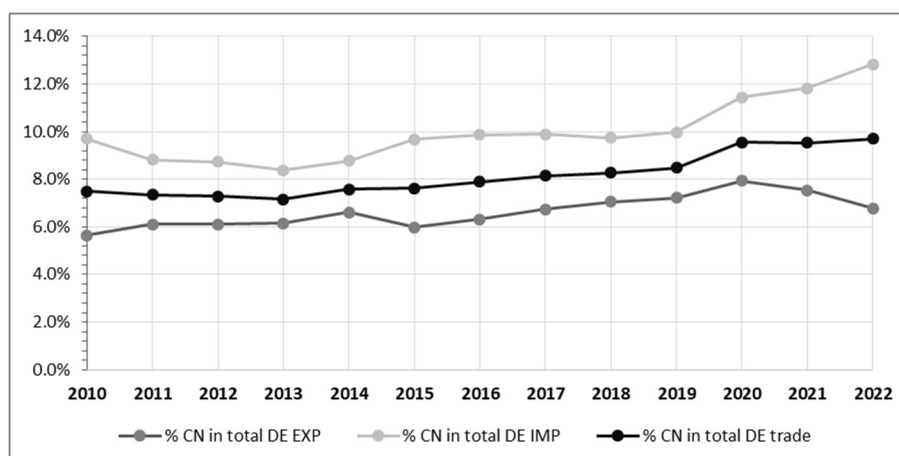
In fact, since 2015, the share of German imports from China was situated close to the 10% threshold of the annual total, until 2020, when this threshold was exceeded.

² The year in which China surpassed the U.S. in the hierarchy of Germany's main commercial partners, after it ranked fourth in this classification in 2015 and after it held a consistent third place in the previous years.

³ After the value of German exports to China exceeded in 2021 that of the sales to France or The Netherlands, two of the most important outlet markets for German goods.

⁴ In fact, throughout the analysed interval (2010-2022), China was the main source of origin of German imports, with the exception of the first semester of 2020 when, as a result of the onset of the COVID-19 pandemic, Germany applied measures at federal level seeking to temporarily discontinue production and to close the borders for the transports of goods.

Graph 2: China's share of Germany's total foreign trade, 2010-2022*



Note: *For 2022, the data presented are based on preliminary results.

Source: Calculations and graphic representation by the author based on the data published by the Federal Statistical Office (Destatis, 2022a,b).

The higher-paced increase of imports compared to exports, a trend that was valid throughout the analysed period (2010-2022), resulted in a permanent deficit of Germany's commercial balance with China which, with the exception of years 2013 and 2014, constantly recorded two-figure values (Graph 1). In 2022, the German-Chinese trade deficit recorded a historical "peak" of approximately EUR 85 billion, thus exceeding the maximum threshold recorded in the previous year (of approximately EUR 39 billion).

As regards the structure of German exports to China, according to the *Standard international trade classification* (SITC Rev. 4), in the analysed period of over a decade (2020-2022), they were dominated by the *machinery and transport equipment* group, with an average share of around 70% of the total value of German exports for this period, followed, at significantly lower shares, by *chemicals and related products* (approximately 10%) and by the *miscellaneous manufactured articles* group (9%).⁵ This trend, which actually reflects the country's industrial specialisation and the output of sectors in which Germany holds competitive advantages, was also maintained in 2022, when the predominant export group totalled around EUR 73 billion.

According to the same classification, the predominant structural group in the German imports originating from China was also the *machinery and transport equipment* group (which totalled a share of around 53% in the 2010-2022 interval), in particular *automotive and mechanical equipment*, and, in year 2022 exceeded the threshold value of EUR 100 billion (Federal Statistical Office/Destatis, 2023c). At a considerable distance, the following groups of goods that dominated German imports from China during the last 13 years were: *other processing industry goods* (with an aggregated average share of approximately 27%) and the *chemicals and related products* subdivision (around 10%).

As the deficit of the commercial balance with China deepened during the last few years, caused by the accelerated increase of imports associated with a weakening of exports – a trend that was also determined, as we will show further on in our analysis, by the gradual externalisation of the production of German companies on the Chinese market – the federal economy became increasingly dependent on China (Matthes, 2019), thus reversing the trend that had been valid until around three decades ago.⁶

Given the increased risks entailed by the German trade deficit in relation to China, in particular in the recent context of intensified geopolitical tensions,⁷ according to the official statements of German Minister for the Economy, Robert Habeck (who is also Germany's Vice-Chancellor), the German Government is at present in full process of preparing a new commercial policy in relation to China, which seeks, among others: a) to adopt measures to curb the dependence on the procurement of raw materials; b) to diversify procurement sources and

⁵ The data presented are based on the author's calculations using the data published by the Federal Statistical Office (Destatis, 2023c).

⁶ Towards the end of the 1980s, Germany had a major quasi-permanent surplus in the bilateral commercial balance, determined mainly by the massive increase of Chinese imports of goods incorporating German high technology.

⁷ Because, as a result of the escalation of the situation in Taiwan, which could trigger the application of international sanctions against China, German companies doing business with China would be particularly exposed to losses, leading even to bankruptcy.

to pursue other emerging Asian markets; c) to reduce the incentives granted to companies involved in commercial transactions with Chinese partners, etc. (Hallam, 2022; Meza, 2023).

2.2. Evolution of bilateral relations in the field of investments

The generation and use of scientific knowledge, materialised in the applicability of this knowledge in the technological sector, represents a key-resource for contemporary economies, a central element in creating and maintaining the countries' competitiveness, which is essentially reflected in their national economic performance. While technological development at international level was traditionally led by developed economies (in particular the U.S. and the Member States of the European Union, among which Germany held a leading position), as a result of China's affirmation as a new power centre in science, technology and innovation (S&T&I), we are currently witnessing a reconfiguration of global leadership in this field.

The acceleration of scientific and technological progress, which was visibly manifest during the last decades, as well as its organic integration in the national economy, represented primordial strategic "targets" of Chinese policies which, through a *top-down* approach, were permanently oriented towards finding the synergic optimum between the procurement of advanced technologies from abroad, and the development of the country's own technological base. As a result of the political measures adopted very early by the Chinese authorities⁸, correlated with the sustained efforts towards supporting and stimulating research, development and innovation activities (R&D&I) to create a knowledge-based economy, China gradually bridged the gap that was separating it from the technological frontier, and became one of the main competitors in the race for global technological supremacy.

Nevertheless, since the domestic technological capacity did not allow for the achievement of the central objective of the 2015 strategy entitled *Made in China 2025 (MIC 2025)*, namely world dominance in the field of "cutting-edge" technologies and the reduction of foreign dependence until 2049, the absorption of technology from developed countries became an indispensable condition for achieving the goals set, in particular in the knowledge-intensive industrial branches⁹.

As such, after 2015, China's industrial ambitions were accompanied by increasingly aggressive investment strategies meant to channel ODI and FDI flows towards the ten high-tech sectors of national interest covered by the *Made in China 2025* programme document. Therefore, by adopting specific measures, the Chinese authorities sought to guide capital movements to generate an inflow of advanced technologies. These measures include: a) increased support granted to national enterprises (usually SOEs), which, by externalising their activity (through ODI) procured technologies and then transferred it on a large scale to the internal market; b) the granting of incentives for directing FDI inflows towards priority industries and making FDI approval conditional on the existence of potential technological transfers; c) restrictions on the share of foreign interest in joint ventures in certain branches.

The accelerated increase of Chinese investment flows that looked for strategic assets and their predominant orientation towards the sectors referred to in the *MIC 2025* increased the fears of German decision-makers that such practices could lead to an "exodus" of key German technologies towards China, favouring the creation of national "champions" with global influence which could lead to the erosion of the global technological supremacy held by developed countries (Hanemann & Mikko, 2017; Jungbluth, Is China Systematically Buying Up Key Technologies? Chinese M&A transactions in Germany in the context of "Made in China 2025", 2018).

2.2.1 Chinese investments in Germany: trends and strategic motivations

As it can be seen, to fulfil the objectives established by the new development plans oriented towards quality and innovation, beginning mid-2010s, the policy for the internationalisation of Chinese enterprises entered a new phase, in which foreign investments were mainly channelled towards productive activities with a high added value so that, through a reverse transfer of technology, they could contribute to the modernisation of the related national industries. In essence, China's industrial strategy sought to use capital for the acquisition of technologies from developed economies which, after the takeover, absorption/indigenisation and perfecting processes were

⁸ Measures aimed at regulating and targeting foreign direct investment (FDI) in accordance with the country's own industrial modernisation strategies, followed by directing the outward direct investment (ODI) flows in accordance with the same national interests

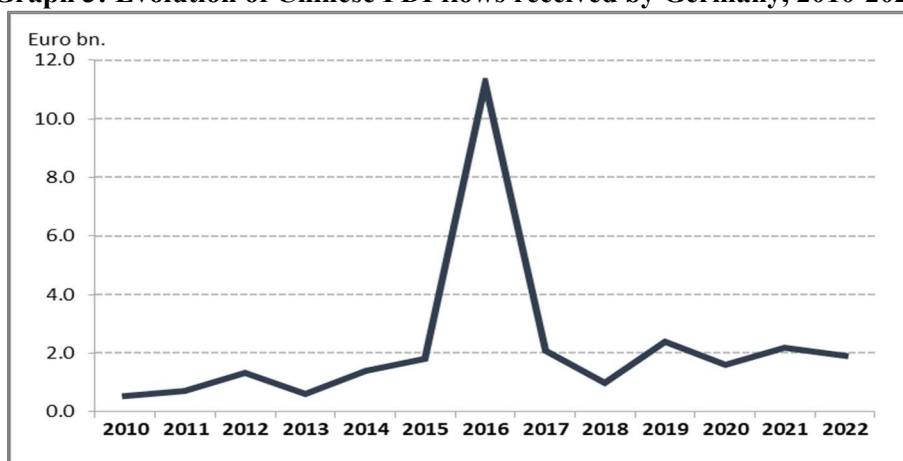
⁹ Sectors in which there were already huge gaps between the assumed political ambitions and the domestic technological capabilities (Wübbecke, Meissner, Zenglein, Ives, & Conard, *Made in China 2025: The making of a high-tech superpower and consequences for industrial countries*, 2016).

completed, were to be applied for obtaining advantages in the international competition with the origin countries (De La Bruyère & Picarsic, 2020)¹⁰.

Also, Chinese government authorities, which had aligned the strategic priorities of *MIC 2025* to those of the German “*Industry 4.0*” development plan, saw Germany as a main source for acquiring technologies and production methods that could aid China in taking a leap forward in terms of innovation, which would have helped bridge the gap in relation to the U.S., China’s main competitor in the race for technological leadership. This is why, given the first-line position held by Germany in the world hierarchy of industrial producers – on the same tier with the U.S. – as well as the solidity of the bilateral relations resting on a tradition of several decades, the German economy became the preferred European destination for Chinese ODI, with the main aim of repositioning China within the global value chains and taking it to a new stage of autonomous development, centred on internal innovation generated by national companies.

After 2016, the increased appetite of Chinese investors for the absorption of German technological know-how was reflected in the exponential growth of the ODI flow towards the German economy, which grew around six times compared to 2015, totalling a historical maximum of approximately EUR 11 billion (Graph 3). Evidently this trend was also observed at the level of the total balance of Chinese investments in Germany, which recorded a growth of approximately 60% compared to the previous year (Graph 4).

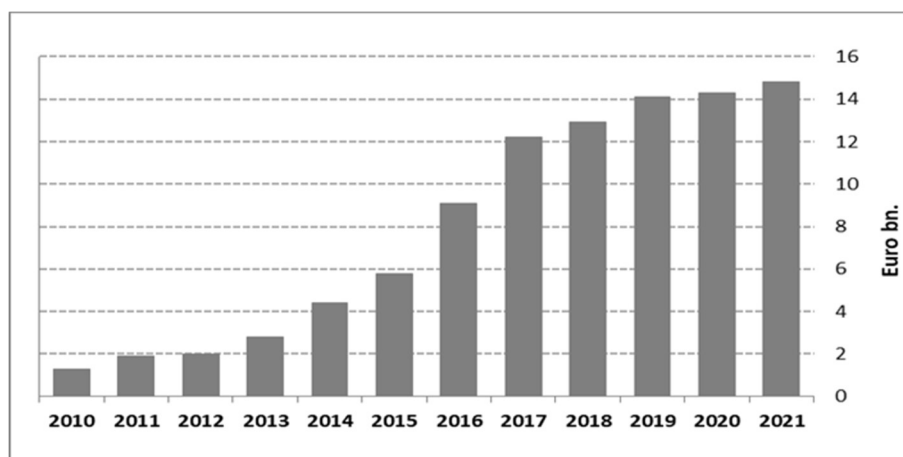
Graph 3: Evolution of Chinese FDI flows received by Germany, 2010-2022*



Note: *For year 2022, the data presented are based on preliminary results.

Source: Graphic representation by the author based on the data published by the Deutsche Bundesbank Eurosystem (2023a) and the Joint report of the Mercator Institute for China Studies (MERICS) and Rhodium Group (2023).

Graph 4: Value of Chinese FDI stocks in Germany, 2010-2021*



Note: The most recent statistical data available at the time the analysis was prepared.

¹⁰ In other words, China was aiming at developing its national innovation capacity by indirect means, namely by accessing the capacity already existent in developed countries and in which these countries had already invested.

Source: Graphic representation by the author based on the data published by Deutsche Bundesbank Eurosystem (2022b).

At the same time, another trend captured in premiere in 2016 in the investment relationship between the two countries was marked by the fact that inflows of Chinese investments in Germany were of a higher value than the capital movements taking place in opposite direction, namely from Germany to China (+55%). Despite the positive effects of capital inflows on the economic development of a receiving country and, in this regard, of the policy traditionally applied by Germany to attract Chinese investments, once the provisions of the plans to transform China from the world's workshop into its "research lab" were implemented, together with the investment strategies adopted as a consequence, German government authorities became increasingly concerned about the potential risks resulting from the acceleration of Chinese ODIs directed towards the German productive sectors that relied heavily on advanced technologies. One of the main challenges faced by the German economy after 2016 was the structural¹¹ and directional change of the investment inflow from China, which sought to favour both the access to "cutting-edge" technologies specific to the priority industries set out in the *MIC 2025*, and the rapid absorption of these technologies. As such, the increased interest of Chinese investors in the ten "intelligent" production fields listed on China's industrial reform agenda was materialised, beginning with 2016, in the increased share of ODI in the form of mergers and acquisitions in these (sub-)branches in which Germany had a significant competitive advantage.

Also, in the context of a higher investment volume, another concern of the German authorities was the political influence underlying the M&A projects, because given the opaque nature of ownership forms and the lack of transparency characterising the Chinese enterprises' financing networks, it was not always clear what role did the Beijing government actually have in the transaction and acquisition processes (Wübbecke, Meissner, Zenglein, Ives, & Conard, *Made in China 2025: The making of a high-tech superpower and consequences for industrial countries*, 2016; Jungbluth, 2018). As such, although in accordance with official data, of the total number of Chinese acquiring enterprises present on the German market in 2016, the share of state-owned enterprises was below 20%, the externalisation of the activity of private companies seeking the acquisition of technologies and related know-how from Germany and from other industrial states was often directly or indirectly supported from government sources, which determined a distortion of competition for the other companies active in the host country. Also, the acceleration of Chinese investments in search of strategic assets controlled by the state risked damaging Germany's leadership position in the development of frontier technologies, as it enabled China's access to a large range of knowledge resources which, after the takeover, could easily be reapplied. In fact, the acquisition by China of German industrial giants in the reference year (2016) – in particular the takeover of the leading robotics engineering group *Kuka* by the *Midea*¹² industrial group – brought to the foreground of political debates the risks Germany was exposed to as a result of the ensuing facilitation of the transfer of "cutting-edge" technology to a country for which the essential goal of obtaining new technological means is "to combine the appropriation of technology with the geopolitical expansion of power" (Sigmar Gabriel, German Ministry for the Economy during 2013-2017) [Gabriel S. *apud* Larres (2016), p. 1].

As "intelligent" production is largely based on the generation, transmission and storage of highly-sensitive commercial and production data, the accuracy and safety of which is essential for the proper functioning of manufacturing processes, German leaders saw another potential risk factor in the possible exposure of confidential business information to China, an action that could have endangered their security, in particular since Chinese legislation has very strict rules regarding cybersecurity governance.

Also, another problematic aspect identified by German decision-makers was the lack of reciprocity in terms of national regulations on the FDI regime, because while the access of Chinese enterprises on the German market was not facing significant restrictions, the Chinese government was deliberately protecting its internal strategic industries from the presence of foreign companies. As such, regulations on the entry on the Chinese market were usually pursuing the priority objectives of the industrial policy – first the state would encourage FDI inflows to facilitate the takeover of foreign technology, know-how, technological and managerial skills, and then, once

¹¹ Through the prevalence of *brownfield* investments, in particular mergers and acquisitions (M&A), which facilitated the more rapid takeover of new generation technologies sought after by China.

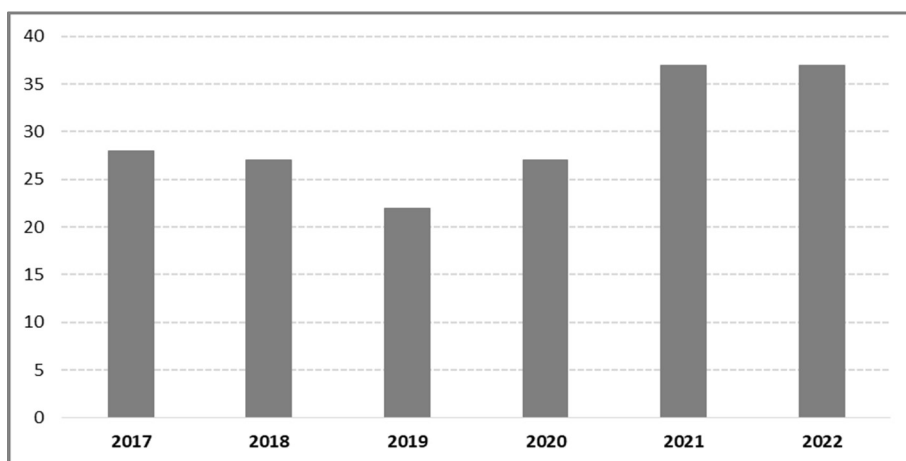
¹² This acquisition has a significant symbolical value, resulting from the fact that it raised awareness among German decision-makers that Chinese investments – pursuing the achievement of the *MIC 2025* strategy objectives – had become predominantly oriented towards the absorption of key German technologies, knowledge and know-how (Bălgăr & Pencea, 2022).

national companies bridged the initial technological gaps, it would apply measures to protect local industries by erecting barriers to limit the access of foreign companies.

All these circumstances – and especially the Kuka acquisition case – generated a profound dilemma within the German political environment, in the sense that Germany, a country with an export-centred development model and a fervent supporter of maintaining an economy opened to foreign investors – was faced with the need to tighten its investment legislation to counteract the uncertainties and risks created by the massive flow of Chinese ODI in certain sectors of national strategic importance.

As a result, in 2017, with the amendment of the *Foreign Trade and Payments Ordinance*, the German executive decided to tighten the legislation on the review of investments, by granting more power in this regard to the German Ministry of Economic Affairs and Energy, which it delegated to closely monitor transactions in the form of mergers and acquisitions by foreign (non-European) companies in fields related to the critical national infrastructure, if they exceeded the threshold of 25% of the subscribed share capital of the resident enterprise (Federal Ministry for Economic Affairs and Climate Action, 2023a). However, because this high ceiling permitted some of the acquiring companies to circumvent the verification mechanism, in 2018, German authorities adjusted the rules for the review of investments from non-EU countries so as to enable the examination of any acquisition exceeding a share of 10% of the capital of a national company operating in a series of sectors, such as defence, critical infrastructure and technologies, mass-media, etc. As such, following the review of any form of direct purchase of shares or of takeover of the control of enterprises/assets in the fields considered relevant, the Federal Ministry of Economy could reject a transaction if it deemed it represented an increased risk for national security (Graph 5; Box 1).

Graph 5: The number of acquisition bids originating from China that were monitored by the German authorities, 2017-2022*



Note: * Cases of monitoring required in accordance with the German legislation, distinct from those required by European regulations.

Source: Graphic representation by the author based on the data published by the Federal Ministry for Economic Affairs and Climate Action (2023b).

Box 1: Chinese investment projects rejected by the German authorities, 2018-2022

Investing company (China)	Target company (Germany)	Business sector	Final status of the transaction/motivation for blocking/rejecting the authorisation
Yantai Taihai	Leinfield Metal Spinning AG	Manufacture of advanced technology machinery and equipment	Abandonment by the investing company (2018): following the analysis carried out, the German Ministry of Economic Affairs and Energy (BMWi) made the decision to block the transaction, invoking concerns related to national security, given that the Chinese investing company was involved in the nuclear sector. Although this was the first time the BMWi exercised its veto right to reject a takeover of assets by a foreign company, the Chinese bidder withdrew its bid before the official resolution was

Investing company (China)	Target company (Germany)	Business sector	Final status of the transaction/motivation for blocking/rejecting the authorisation
			issued, to avoid receiving a public objection from the federal government (Bian, 2021).
State Grid Corporation of China	50Hertz Transmission GmbH	Energy	Rejected (2018): according to government statements, the transaction was not approved because of political reasons related to the protection of the national energy infrastructure. At the same time, the Belgian majority shareholder, the company Elia Transmission, exercised its pre-emption right concerning the transaction;
China Aerospace Science and Industry Corporation (CASIC), through its subsidiary Add sino	IMST GmbH	Industrial engineering, radio systems and microelectronics	Rejected (2020): BMWi decided that the acquisition would endanger national security and economic sovereignty, given that IMST GmbH was one of the most important natural producers of satellite communication systems, radars and radio technology;
Zhejiang Shuanghuan Transmission Machinery	Schmiedetechnik Plettenberg GmbH & Co. KG	Automotive industry	Abandonment of the investing company (2020): in the absence of a consensus with BMWi on the revision of certain aspects that did not comply with the national foreign investment regime in force (Kratz, Zenglein, & Sebastian, 2022a);
Vital Materials Co.	PPM Pure Metals GmbH (part of the French group Recyclex)	Metallurgy	Rejected (2020): the German government opposed the acquisition by veto, in the conditions in which the company was one of the main German suppliers of metals for the manufacture of semiconductors and infrared detectors used in military technology (Heinrich & Kuhn, 2020);
Aeonmed Group	Heyer Medical AG	Pharmaceuticals, biotechnology, health	Rejected (2022): following an examination process that lasted around two years, ¹³ BMWK decided that the transaction could affect national security as far as the supply of medical products essential to the health sector was concerned and, at the same time, would enable a political insinuation of the Chinese government in a key technological branch (Von Bieberstein, 2022).

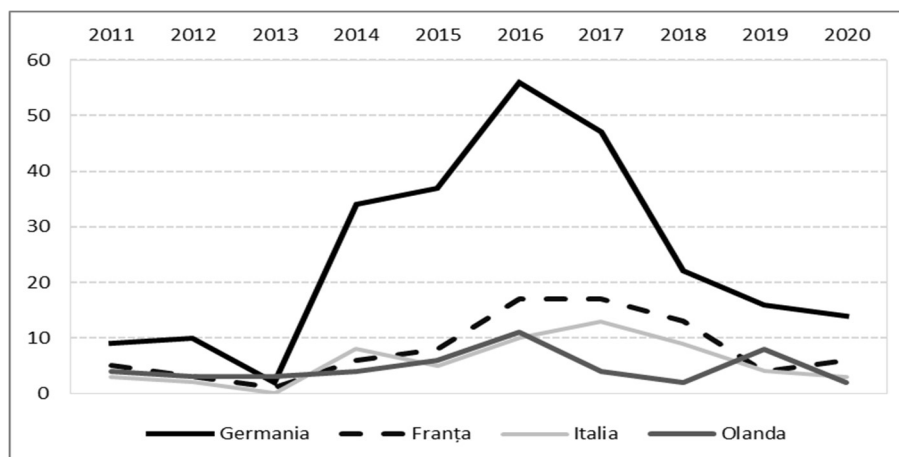
Source: Synthesis by the author, based on the bibliography cited in the box.

At the same time, in 2019, a EU regulation was adopted establishing a uniform framework for examining foreign direct investment originating from outside the Union, meant to offer Member States the means necessary to approach the potential risks for national security or national order in a comprehensive manner, while at the same time maintaining the flexibility required for monitoring them in accordance with the particularities specific for each individual state.

Although, after the launch and consolidation of the federal investment monitoring mechanism (2017/2018), the Chinese flows of capital directed towards Germany decreased dramatically compared to the level of 2016 – as can be seen from the data presented in Graph 1 – the federal economy still continued to represent the preferred European destination for acquisitions originating in China (Graph 6).

¹³ Making it necessary to extend the examination period, because the standard time interval for reviewing a transaction is of six month.

Graph 6: Main countries of destination for Chinese M&A projects, 2011-2020



Source: Graphic representation by the author based on FDI Intelligence (2022); Datenna (2022).

Also, as regards sectoral orientation, Chinese ODI followed a diversification trend after 2018, which shows both China's more recent objective to extend its coverage of production networks in order to integrate them in the global value chains, and the increased orientation towards the takeover of certain important brand names, so as to favour the more efficient use of assets obtained from acquisitions (Bastian, 2020). As such, in addition to the strategically important fields outlined by the MIC 2025 industrial development programme, Chinese companies began paying attention to other areas relevant for the German corporate ecosystem, such as financial services, the hotel industry, etc.

Therefore, although during the last years transactions decreased in volume, as a result of the measures adopted at national and EU level to tighten the regulations regarding the inflows of foreign investments from non-EU countries, and because of the Covid-19 pandemic, Germany continued to attract Chinese ODI, which shows that China maintained its interest in the technological innovation that was strongly concentrated at the level of the large German companies.

2.2.2 German investments in China: opportunities and challenges. Case study: the automotive industry

As China advanced within its new development cycle and in deepening its reform processes, the need to absorb foreign investments was growing stronger at national level, both in terms of financial capital, and in terms of advanced technologies, managerial expertise and quality production, as it could facilitate the industrial development process and support the transition towards an innovation-intensive and consumption-dominated economy.

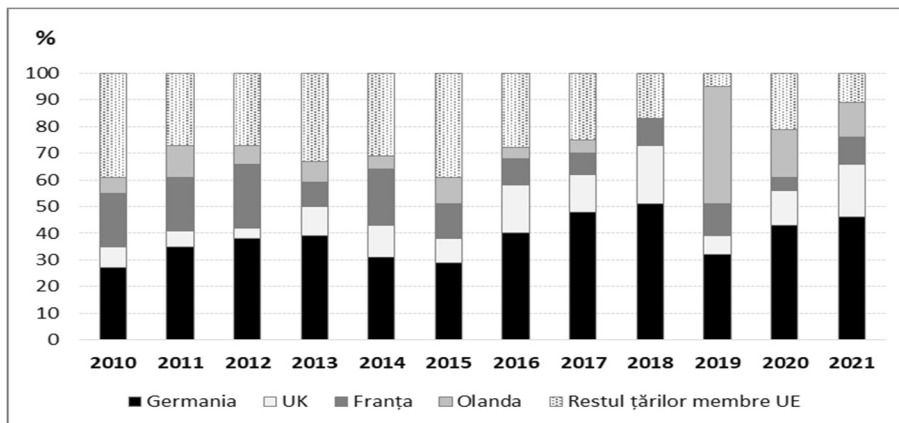
Given the awareness of the need for foreign entrepreneurial capital to achieve all these objectives, when the 13th Five-Year Plan (2016-2020) was launched, the Chinese government proposed to prepare and initiate new policies that could contribute to the "full opening" of the national economy and the stimulation of FDI inflows, by facilitating the access thereof to new economic sectors and by relaxing the limiting barriers existing on the market (NDRC, 2016). As such, beginning in 2018, a change of paradigm occurred in China's approach of the FDI policy, materialised in the gradual evolution of the national legislation regarding investment inflows, from more restrictive rules to rules that promoted the active selection and encouragement of received flows, and the financing supported by foreign investors became both a major vector supporting China's technological and industrial modernisation, and a favourable factor for maintaining a dynamic competitive environment.

Despite the progressive liberalisation of the foreign investment regime implemented during the last years, China still continues to maintain a detailed FDI monitoring, control and administration system, in which the *Catalogue for the Guidance of Foreign Investment Industries*¹⁴ plays a central role. Nevertheless, given its immense market potential, the relatively low cost of labour and the increasingly ample policy encouraging the inflow of foreign investments applied by the national authorities during the last years, China represented one of the preferred destinations for German capital flows during the last decade. In fact, during this decade, from among the EU Member States, Germany constantly appeared as main investor – except for 2019, when it was surpassed

¹⁴ Depending on the potential receiving industries, the Catalogue divides FDI into three groups (encouraged, restricted and prohibited), a classification that determines both different degrees of examination for approval, and distinct levels of conditionality or of regulation for those investments.

by The Netherlands – with an aggregate average share of around 40% of total European FDI directed to China (Graph 7).

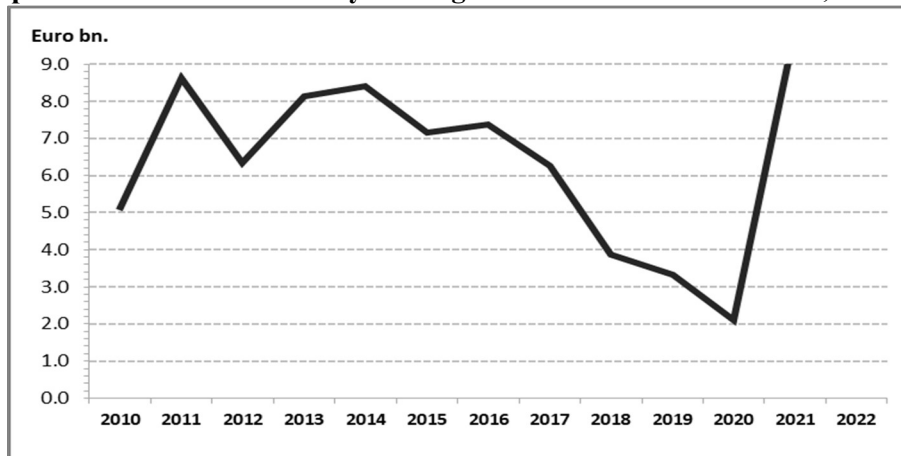
Graph 7: Germany – main European country investing in China, 2010-2021



Source: Graphic representation by the author based on the data published by Rhodium Group (Rhg, 2022).

This trend is based, on the one hand, on the fact that German companies accessed the Chinese market early on (given the long-standing bilateral partnership established between the two countries as early as 1972) and, on the other hand, on the fact that they are usually operating in capital-intensive productive industries, which implicitly require higher investments, related to sectors which, during the last decades, saw a strong growth in China. As such, despite the oscillating trend of German FDI flows towards China in the period 2018-2021 (Graph 8) – an interval marked by the occurrence of the Covid-19 pandemic which had an increased negative impact on international capital movements, leading to a postponement of investment plans or even to divestitures – several large German companies were among the top European investors totalling an average share of around 34% of all EU investments directed towards the Chinese market (Kratz, Barkin, & Dudley, 2022b) [Table 1].

Graph 8: Evolution of Germany’s foreign direct investment in China, 2010-2021



Source: Representation by the author based on the data published by Deutsche Bundesbank Eurosystem (2023c).

Table 1: Position held by German companies in the hierarchy of the top five companies investing in China in the period 2018-2021*

Rank	2018	2019	2020	2021
1.	Volkswagen AG (DE)	Heineken NV (NL)	Girfols SA (ES)	Volkswagen AG (DE)
2.	Diageo PLC (UK)	Volkswagen AG (DE)	Volkswagen AG (DE)	BASF SE (DE)
3.	Allianz SE (DE)	IKEA BV (SE)	BASF SE (DE)	BMW AG (DE)
4.	Daimler AG** (DE)	Daimler AG (DE)	Daimler AG (DE)	Veolia SA (FR)
5.	Vailog SRL (IT)	AXA SA (FR)	Permira PLC (UK)	CrystecPharma (UK)

Note: *As percentage of the total value of annual transaction

Source: Kratz, Barkin, & Dudley (2022b), Rhodium Group.

The fact that during the last ten years or more, China became one of the preferred destinations for investments and, implicitly, for the manufacturing activity of German companies is reflected in the German ODI stocks which tripled in value between 2010 and 2020 (from EUR 29 billion to approximately EUR 90 billion). However, by 2020, China’s position in the preferences of German investors was lower than that held at EU level or in the U.S., in the conditions in which China’s share in the total German ODI stocks amounted to around 7%, compared to 34% (in the EU), and 27% in the U.S., respectively (Jungbluth, et al., 2023).

As regards sectoral distribution, the Chinese automotive industry accounted for the largest share of the total German investments in 2020, i.e., 41% of the annual FDI balance, in the conditions in which the value of stocks in this sector increased by around 65% compared to 2015, reaching a figure of approximately EUR 33.6 billion. In fact, as we stated in the previous sub-sections, the federal government permanently used foreign policy instruments to encourage this trend. Although government authorities revised their position against the background of increased concerns related to: a) China’s growing assertiveness; b) the German economy’s deepened dependence on China; and c) the loss of industrial competitiveness in recent years,¹⁵ the three main manufacturers of the German automotive industry – i.e., BMW AG, Mercedes Benz and Volkswagen AG – continue to massively invest in China.

The main reasons that determined the acceleration of investments in China made by the most important German automotive manufacturers include: a) the reduced competitive pressure exercised by local manufacturers; b) the use of the Chinese innovation ecosystem, namely, the localisation advantages offered by this market (Box 2).

Box 2: Reasons for the decision to invest on the Chinese market in the case of the German automotive companies

<p>Aspects related to the competition on the Chinese market</p>	<p>☑ Once China reached a share of 55% of the world production of electric vehicles (EVs) and, implicitly, obtained the global leadership position in the field, Chinese government authorities decided that local manufacturers are ready to tap into the advantages offered by international competition and, as such, relaxed the regime of foreign direct investments in this sector, thus permitting German automotive manufacturers to increase the share capital or interest held in joint ventures created in partnership with Chinese companies.</p> <p>☑ On the other hand, the three major German companies in the automotive sector – BMW AG, Mercedes Benz and Volkswagen AG, which developed their electric vehicle production segment relatively recently and which, as a consequence, were facing the risk of a reduced market share in China, given the increased EV demand, saw the Chinese policy change as an opportunity for:</p> <p>✓ <i>The increase of profit margins and of the decision-making power within joint ventures set up in China.</i> For instance: a) the BMW group invested EUR 3.7 billion to increase its participation interest in the joint venture set up with Brilliance Automotive from 50 to 75 % (2021); b) Volkswagen AG concluded a partnership with JAC Motor, a Chinese company specialising in the production and development of electric vehicles (2020);</p> <p>✓ <i>The changing of the investment model, by channelling capital flows towards local research and development hubs.</i> If, to avoid the transfer of technology to China, the R&D processes used to be carried out only nationally – in specialised units located in Munich, Stuttgart or Wolfsburg – now, against the background of the increased competitive pressure exercised by Chinese competitors, the large German automotive manufacturers relocated the largest part of their R&D activity to this market, by creating multiple partnerships with national companies in the field, based on the pooling of German hardware know-how with Chinese software technology expertise.</p>
<p>Advantages offered by the Chinese technological ecosystem</p>	<p>☑ The determining factors of the integration of German automotive manufacturers on the Chinese market, by creating partnerships with local companies involved in R&D, are:</p> <p>⇒ <i>The Chinese dominance of the entire global electric vehicle manufacturing chain</i>, as a result of the industrial policy applied during the last years by the Chinese government and of the sustained financing directed to this sector;</p> <p>⇒ <i>The increased capacity for innovation of Chinese companies and the acceleration of the R&D activity</i>, in the context in which China was the first country to adopt a policy for</p>

¹⁵ For example, in May 2022, the German government refused the request mad by Volkswagen AG for an extension of the guarantee on the investments made in China – as security against economic and political risks – invoking as argument the violation of human rights by the Chinese authorities (Sebastian, 2022).

	<p>subsidising the purchase of electric vehicles, in order to stimulate national innovation in the field;</p> <p>⇒ <i>The dynamic nature of the internal market</i>: China is the world leader in terms of number of models of electric vehicles developed – around 300;</p> <p>⇒ <i>The acceleration of development cycles, through the involvement in this sector of the major Chinese technological groups Baidu and Xiaomi</i>, which implemented digital solutions that helped reduce the time interval for the creation of new prototypes, from 4-5 years in the past to 2-3 years in the present.</p>
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Source: Synthesis by the author based on Sebastian (2022).

However, notwithstanding the opportunities arising from the externalisation of manufacturing and R&D activities on the Chinese market, German automotive manufacturers face a series of significant challenges and risks that could even endanger their global performances:

- a) *The fact that R&D results are kept in China*, given that the automotive sector is of central concern for Chinese regulatory authorities in relation to the management of cross-border data transfers;
- b) *The endowment of Chinese competitors with cutting-edge technology*: although during the last years China improved its national regime for the protection of intellectual property rights (IPR), this regime continues to have major flaws, in particular in the field of know-how and business practices. As a result, the conclusion of cooperation agreements with the Chinese manufacturers of technology for the automotive industry entails an increased risk of leaks of technological information to China;
- c) *The increased vulnerability of investing companies, in a global context marked by geopolitical tensions*: through an increased volume of investments in China, German companies deepen their dependence on this market and, at the same time, favour the expansion of the control leverage held by the Chinese government authorities;
- d) *The involuntary and indirect involvement in human rights infringements, which are sanctioned by the international community*: for example, the company DJI Sciences & Technologies Ltd., a partner of Volkswagen AG, is currently the subject of international debates regarding the application of sanctions, given its alleged involvement in the drone monitoring of the Uigur population in the Xinjiang province. The development of such partnerships is obviously likely to generate negative reactions on the part of consumers outside China.
- e) Also, through the gradual externalisation of R&D activities in China – determined, as we have shown, by the attempt to maintain the acquired market share – German automotive companies could cause an *erosion of Germany's production and innovation capacity* under the conditions in which, on the one hand, it is not very clear whether they will continue to be able to transfer the technologies thus developed to the market of origin, and, on the other hand, the benefits of such technologies will be first felt in China.

3. Conclusions

Strongly rooted in the policy that defined the configuration of Germany's international position during the Cold War era – *Ostpolitik* – the development model governed by the axiomatic principle of the “change through trade,” which propelled the evolution of the German economy during the last five decades or so, seems not only to have lost its viability, but also to exercise now a boomerang effect with deep destabilising effects on its future development. After approximately four decades of reform and openness, the Chinese economic system now has a hybrid structure that combines elements specific to the centralised economy, and elements of the market economy. Multiple (direct and indirect) forms of state intervention in the economy create numerous obstacles for the German companies, preventing them from competing on an equal footing with the Chinese companies on the Chinese market.

Although, against the background of the current geopolitical tensions, the stringent priority for German actions is to ensure energy security and to find optimum alternatives to enable the safe decoupling from the imports of natural gas from the Russian Federation, the federal authorities do not forget that the true test for the “new era” of national foreign policy has not started yet, and that it will depend to a large extent on the direction of the future evolution of the relations with China.

Despite the positive results that the German economy obtained from the decades-long expansion of its commercial and investment relations with China, a series of concerns have become increasingly poignant regarding: a) the challenges posed by the deepening of the German dependence on the trade with China; b) the Chinese practices of acquiring German technologies by using bilateral cooperation and by prevalently guiding capital movements towards high-tech sectors that are set out in the national strategic plans; c) the unfair

competition exercised on the German and European market by Chinese companies subsidised by the state; d) the unequal treatment of German companies operating in China (asymmetrical openness, to the detriment of Germany); and, last but not least, e) the increase of China's political assertiveness after Xi Jinping became the country's leader.

However, due to the deep interdependencies built over time – which, among others, result from the fact that during the last seven years China was Germany's main trade partner and an important external production market for the large national groups (in particular those in the automotive industry) – the decoupling (even gradually) will not be an easy process. In the context in which many German companies hold important shares on the Chinese market, they will not be able (nor want to) transfer their production units located in China. But, because the intensification of political differences existent at bilateral level and/or the escalation of geopolitical risks related to the situation in Taiwan could force this decision, the federal government has already taken a series of steps, with the support and participation of the European Commission, that could lead to an increased cooperation with other emerging countries in the Indo-Pacific region.

With the onset of the Russian Federation's military aggression in Ukraine, the latent concerns of German decision-makers related to the risks that arise from the deepening of economic dependencies on countries governed by totalitarian regimes reached a climax, determining a “historic turning point” in German diplomacy. If in the case of the Russian Federation this new political paradigm translates in the decoupling from the purchase of energy raw materials (in particular natural gas), in China's case it will be materialised in an effort to lessen the interdependencies consolidated over time, by diversifying commercial partnerships and the production locations of national companies. As such, once Germany understood the failure of cooperating with countries with divergent political interests, the “golden age” of German-Chinese relations seems to have come to an end, although it is unlikely at present that a sudden or irreconcilable break-up could occur between the two powers. Therefore, our main conclusion is that in the current geopolitical and geo-economic context, marked by deep disturbances, the development of a new German policy on China is in itself a test for democracy, aimed at reducing the interdependency relations with states dominated by totalitarian regimes.

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