Building Fortress Europe

Economic realism, China, and Europe's investment screening mechanisms

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Abstract:

This thesis deals with the construction of investment screening mechanisms across the major economic powers in Europe and at the supranational level during the post-2015 period. The core puzzle at the heart of this research is how, in a traditional bastion of economic liberalism such as Europe, could a protectionist tool such as investment screening be erected in such a rapid manner. Within a few years, Europe went from a position of being highly welcoming towards foreign investment to increasingly implementing controls on it, with the focus on China. How are we to understand this shift in Europe? I posit that Europe's increasingly protectionist shift on inward investment can be fruitfully understood using an economic realist approach, where the introduction of investment screening can be seen as part of a process of 'balancing' China's economic rise and reasserting European competitiveness. China has moved from being the 'workshop of the world' to becoming an innovation-driven economy at the global technological frontier. As China has become more competitive, Europe, still a global economic leader, broadly situated at the technological frontier, has begun to sense a threat to its position, especially in the context of the fourth industrial revolution. A 'balancing' process has been set in motion, in which Europe seeks to halt and even reverse the narrowing competitiveness gap between it and China. The introduction of investment screening measures is part of this process.

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List of Abbreviations & Acronyms

AI	**Artificial Intelligence**
ANSSI	**Agence nationale de la sécurité des systèmes d'information**
AWG	**Außenwirtschaftsgesetz**
AWV	**Außenwirtschaftsverordnung**
BAIC	**Beijing Automotive Industry Holding Company**
BDI	**Bundesverband der Deutschen Industrie**
BPI	**Banque publique d'investissement**
BRI	**Belt and Road Initiative**
CCP	**Chinese Communist Party**
CDU	**Christlich Demokratische Union**
CEA	**Commissariat à l'énergie atomique et aux énergies alternatives**
CFA	**Colonies françaises d'Afrique**
CFIUS	**Committee on Foreign Investment in the United States**
CISSE	**Commissaire à l'information stratégique et à la sécurité économique**
CNC	**Computer Numerical Control**
COPASIR	**Comitato parlamentare per la sicurezza della Repubblica**
CRRC	**China Railway and Rolling Stock Corporation**
CRT	**Cathode-ray tube**
CSSC	**China State Shipbuilding Corporation**
CSU	**Christlich-Soziale Union**
DARPA	**Defense Advanced Research Projects Agency**
DG	**Directorate General**
DRC	**Democratic Republic of Congo**
ECB	**European Central Bank**
EDF	**Électricité de France**
EIB	**European Investment Bank**
EIF	**European Investment Fund**
EU	**European Union**
FDI	**Foreign Direct Investment**
FIF	**Fédération des industries ferroviaires**
GDP	**Gross Domestic Product**
ICE	**Intercity Express**
ICT	**Information and Communications Technology**
IDDS	**Innovation-Driven Development Strategy**

IPCEI	**Important Projects of Common European Interest**
IPE	**International Political Economy**
IT	**Information Technology**
JV	**Joint Venture**
KfW	**Kreditanstalt für Wiederaufbau**
LCD	**Liquid Crystal Display**
MCF	**Military-Civilian Fusion**
MEDEF	**Mouvement des Entreprises de France**
MIC	**Made in China**
MLP	**Medium and Long-Term Plan for the Development of Science and Technology**
MOU	**Memorandum of Understanding**
PLA	**People's Liberation Army**
PSA	**Peugeot S.A**
RFID	**Radio-frequency identification**
RMB	**Renminbi**
SISSE	**Service de l'information stratégique et de la sécurité économiques**
SPD	**Sozialdemokratische Partei Deutschlands**
TEU	**Twenty-foot Equivalent Unit**
TGV	**Train à Grande Vitesse**
VDMA	**Verband Deutscher Maschinen- und Anlagenbau**
VW	**Volkswagen**
WTO	**World Trade Organization**

Chapter I
Introduction

Premise

Traditionally, Europe has been the most open economic region in the world to foreign direct investment (FDI), hosting over one third of the global FDI stock. FDI has been consistently regarded as an important source for economic growth and leading to better competitiveness for European economies.[1] Europe has been pro-globalisation, with openness to FDI constituting an integral element in this stance. It is seen as an important 'supplement to trade', which creates a 'source of extra capital, encourages efficient production, stimulates technology transfer and fosters the exchange of managerial know-how'. Thus, FDI could 'improve the productivity of business and make economies more competitive', as stated by the European Commission.[2]

Throughout the 1990s and 2000s, members of the European Union (EU) were intent on attracting as much FDI as possible, following the abolition of capital controls in the 1980s and tighter financial market integration in both Europe and the world at large.[3] During this period, Europe also became the largest outward investor globally, especially France and Germany, which ramped up foreign investment activities throughout the 2000s. Moreover, Europe expanded its trading markets, as European exports fared well throughout this period, which further underpinned international expansion and the desire to keep European markets open.[4]

One of the key overseas markets for Europe throughout the 2000s in terms of outbound investment and exports was China, seen consistently across the major capitals in Europe as an enormous economic opportunity that needed to be seized. With China's economy growing, producing a rising consumer class of substantial size, Europe needed to 'take

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[1] Central Intelligence Agency, "Country Comparison: Stock of direct foreign investment - at home," The World Factbook (2017); European Commission, "COM(2010)343 final: Towards a comprehensive European international investment policy," (2010).

[2] European Commission, "European Union foreign direct investment yearbook 2008," (2008).

[3] Pervez Ghauri and Lars Oxelheim, European Union and the race for foreign direct investment in Europe (Amsterdam: Elsevier, 2004).

[4] European Commission, "COM(2010)343 final: Towards a comprehensive European international investment policy."

advantage of the business opportunities' by fostering liberal economic relations with China.[5] Part of that meant granting greater access to China in its own markets, primarily through Chinese exports, to facilitate European advances in the Chinese market.[6] The liberal approach to China translated into FDI as well, which although insignificant throughout the 2000s, started to rise substantially following the Great Recession in 2008, when it was highly welcome in Europe. China emerged not only as a large demand source for European economies, but also increasingly as a source of capital during a time of European economic distress.[7] Europe's stance towards FDI remained liberal, which was especially visible vis-à-vis China.

Starting in around 2015, however, the situation started to change. Major states in Europe, especially Germany and France, became increasingly circumspect of Chinese investment. This set in motion a process that led to the implementation of investment controls across Europe's major economic powers and subsequently at the supranational level as well, with the 2019 introduction of the EU investment screening mechanism. The purpose of this thesis is to explain this relatively sudden shift in Europe's stance on foreign investment, particularly investment from China. Using an economic realist theoretical framework, I make the case that the implementation of investment controls in Europe can be interpreted as a central element in an economic 'balancing' process against China.

The growth of the Chinese economy during the 2000s, and early 2010s was not seen as a threat in Europe, but, as highlighted, rather as an opportunity, with the focus on the low production costs, exports and lucrative market openings. But, all the while, China's productive capacities continued to grow — it rapidly moved to become the 'workshop of the world'. Subsequently, Beijing aimed to become an innovation economy as China's next step. As China has moved towards becoming an 'innovation-driven' economy, however, closer to the 'technological frontier', the more it has come into direct competition with European economies.

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[5] *European Commission, "COM(94) 314: Towards a new Asian Strategy," (1994): p.2.*

[6] *See also: European Commission, "COM(98) 181: Building a Comprehensive Partnership with China," (1998); European Commission, "COM (2001) 469 final: Europe and Asia: A strategic framework for enhanced partnerships," (2001).*

[7] *The Irish Times, "Sarkozy to seek Chinese help on debt-crisis funding," (27 October, 2011); Tagesschau, "Merkel wirbt für Europa," (2 February, 2012); Sophie Meunier, "'Beggars can't be choosers': The European crisis and Chinese direct investment in the European Union," Journal of European Integration 36, no. 3 (2014).*

China's intentions of moving towards industrial leadership became clear in Europe in 2015 with the release of its Made in China (MIC) 2025 strategy. In content, it was not dissimilar to economic strategies that were circulating in the West at the time, but what made it significant was that it provided a clear indication that China was emerging as an economic rival, not just a dynamic developing economy. This was particularly relevant as China's emergence coincided with the onset of the 'fourth industrial revolution', which in Europe was seen as a vital confluence of new technologies that would fundamentally upend many vital industries, ranging from automobiles, logistics, energy to machinery and manufacturing.

During times of large-scale technological change, as was seen during the first industrial revolution, significant changes can occur in global economic leadership, as new technologies open up the possibility of 'leapfrogging' growth. China showed clear signs of consistently improving its competitiveness, as was progressively highlighted in European business circles. It increasingly targeted technologies and industries associated with the fourth industrial revolution, thereby further accelerating the competitive threat perceived in Europe. With this rising threat perception came the realisation that the growing Chinese investment in Europe was concentrated in areas serving China's industrial upgrading efforts, in the form of know-how and technology that China needed to master in order to secure global industrial leadership, with the focus on fourth industrial revolution technologies. This raised concerns in Europe that it could be helping China to eventually leapfrog it competitively.

These issues came to the fore throughout the post-2015 period, prompting the onset of a 'balancing' process in Europe. The introduction of investment controls in the major powers in Europe and their subsequent tightening, could restrict China's access to European technology. China's economic ascent could potentially be retarded and Europe could better protect its competitive advantages. As China was still lagging in technological development, not at the technological frontier in major industries, it would mean demand for European businesses could remain strong in China, but globally too.

Importantly, as part of the balancing process and the aim of reducing China's relative competitiveness, the introduction of investment screening could also function as a tool for further opening up the Chinese market. Chinese firms were gaining considerable scale advantages by being able to develop in a very large protected home market, which in turn

was leading to major leaps in competitiveness, to the detriment of European firms. Thus, beyond restricting access to technology, investment control, and the threat of it, could also serve as a strategy to get Beijing to open up its markets. European firms could thereby better compete with rapidly growing Chinese counterparts, while leaps in Chinese competitiveness could also be slowed down by limiting China's ability to nurture firms in its protected domestic market. Again, the intent was 'balancing', or ensuring Chinese competitiveness did not catch up with Europe's.

This process from seeing China as an 'opportunity' to an increasing competitive threat, in the context of the onset of the fourth industrial revolution, prompted the introduction of balancing measures in the form of investment screening, which is traced here across three case studies in Europe: Germany, France and the EU in Brussels. To begin, in this introductory chapter, I will briefly outline the economic realist theoretical apparatus and its application to the case studies, followed by a review of the relevant literature and an overview of the design of the study.

Theoretical framework

Economic realism, as an analytical framework of political economy, dates back to the 19th century, and traces its lineage mainly to the work of Friedrich List, a German businessman and economist, specifically to his *magnum opus* on the 'national system of political economy'.[8] In its more modern guise, it is found in the work of scholars such as Robert Gilpin, Ha-Joon Chang or Jonathan Kirshner, constituting a 'realist' approach to international political economy.[9] Going back to List, though, in contrast to the increasingly dominant liberal thought of the time, influenced heavily by the Smithian school, List made the case that although individuals are important — deemed central to the liberal view — one should not forget that the world is still constituted by nation states, with separate territories, cultures, languages and, of course, economies. In contrast to structural realist accounts of the international system, this division into nation states is not set in stone, as progress towards some of form of global union is entirely possible, but the point being that while that may be a laudable goal, in the meantime states are there, and each wants to acquire power. In realist terms, as states are faced with a situation of global anarchy — with no

[8] *Matthew Watson, "The nineteenth-century roots of theoretical traditions in Global Political Economy," in Global Political Economy, ed. John Ravenhill (Oxford: Oxford University Press, 2020).*

[9] *A full overview and discussion of the relevant literature is provided in the following chapter.*

global union as yet — with no arbiter above them, they will clearly want to pursue their specific interests in order to survive and thrive in this system of competition. States, then, are central to the world we live in and thus also merit centrality in any analysis of global affairs. And states, faced with a situation of anarchy and competition, want to accrue power.

This is where economic realism differs from structural realist frameworks — where the sources of this power come from. In the economic realist view, the emphasis is on wealth as the driving force of state power, in a similar vein to what the mercantilists had asserted in the 16th and 17th centuries, the difference being that it is much more the ability to produce wealth, rather than wealth itself, that underpins power. List referred to the ability to produce wealth as the *productive forces* of a nation, or its productive 'capacity'. This capacity is derived from three forms of capital: natural, material and intellectual. The first two are important, and can help provide strong foundations for growth, but the latter is fundamental: without this capital, the other two would not be useful over the long run. Intellectual capital is human know-how, knowledge and skill, all of which allows for the creation of technology that improves the productive capacity of the nation. Hence, the more intellectual capital a nation has, the closer it will be to the technological frontier and have highly competitive or even dominant industries.

In this view, behind every rising nation is its ability to master intellectual capital in order to move closer to economic leadership. This can be done in various ways, as economic history has shown: by fostering a strong education system or research and development, but also crucially by taking and absorbing intellectual capital from abroad — from those nations close to or at the technological frontier. As this effort starts to show signs of success, with the rising nation becoming more innovative and competitive, it starts to generate unease in the leading nations and leads to a rising threat perception of the rising economy. If the rising economy begins to compete in similar high technology/high value-added areas, the leading nations risk losing market share and their industries eroding. This, then, needs to be countered or 'balanced', in realist parlance.

The process generally starts with ensuring that any trading advantages the rising nation had are eliminated — these were previously tolerable given no perceived direct economic threat. There arises the need to 'level the playing field': for example, as the balance of payments with the rising nation turns negative, this usually leads to efforts to open up the rising nation's market further and quicker, while also putting pressure on its exporters by

introducing more protections. However, it also means taking measures that restrict the rising nation's ability to move towards the technological frontier. Throughout history, this has meant, for example, export controls or restrictions on certain types of labour leaving the leading country. But also increasing constraints on the rising country from investing in the leading one, so as to prevent leakage of intellectual capital to the rising nation that could further narrow the gap in competitiveness in favour of the latter.

It is against this process of economic balancing that the implementation of investment screening measures in Europe can be understood, with China as the rising nation, seeking its own position on the technological frontier. Europe's growing threat perception of China has triggered a process of balancing, in which investment screening plays a crucial role. The case studies presented in the following chapters evidence this theory.

Literature Review

European investment screening

The first relevant literature is the work done specifically on the advent of the European investment screening mechanisms. Although there are not many studies on the topic, Sophie Meunier and Zenobia Chan have offered a highly valuable insight into the construction of the screening mechanisms across the European Union.[10] Their work focuses on illustrating the 'national variations' of the individual member states and their preferences regarding an investment screening mechanism. As they highlight, there was a clear connection between rising Chinese investment into the EU and the subsequent introduction of the screening mechanism at EU level in 2019. The rising Chinese investment was especially a concern for what are described as 'technologically intensive' economies: the more technologically intensive the European economy, the more likely it was to support screening measures. By contrast, those countries that relied more on Chinese FDI to sustain their economies were more likely to reject the implementation of screening measures.

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[10] Zenobia Chan and Sophie Meunier, "Behind the screen: Understanding national support for a foreign investment screening mechanism in the European Union," The Review of International Organizations 17, no. 3 (2022). See also Meunier's other work regarding Chinese investment in Europe: Sophie Meunier, "Chinese direct investment in Europe: Economic opportunities and political challenges," in Handbook on the International Political Economy of China, ed. Ka Zeng (Cheltenham: Edward Elgar Publishing, 2019); Sophie Meunier, "A Faustian bargain or just a good bargain? Chinese foreign direct investment and politics in Europe," Asia Europe Journal 12, no. 1 (2014); Sophie Meunier, Brian Burgoon, and Wade Jacoby, "The politics of hosting Chinese investment in Europe — an introduction," ibid.

Although the above study is the first to introduce the central role of technology in the context of new investment controls in Europe, it does not present a framework that can determine when investment in technology leads to protection, and when it does not. States such as Germany and France have been high technology economies for arguably over a century, so why would investment in their countries pose a problem more recently, but not, say, 20 years ago? Additionally, the case studies are relatively short and general, covering the whole of the European Union in one article. Therefore, there is also need for more in-depth coverage of the key economies in the EU, such as France and Germany, as well as an examination of the French and German sources, as will be covered in this research.

Another contribution comes from Bas Hooijmaaijers, who illustrates that Chinese 'statecraft' has driven much of the investment spree.[11] This is now resulting in pushback, with pressure starting to be 'exerted by Germany, France and Italy' to institute a Europe-wide procedure that can effectively identify and block investment from outside the bloc if it is in 'strategic areas…that could be used to the detriment of the EU's technological edge'.[12] As an overview of the situation, it is useful, but it does not give us a sense as to why exactly this is happening now, why countries such as Germany have pushed for this after years of letting Chinese investment into the country. Again, the introduction of a broader framework for understanding these developments is needed, moving beyond more 'descriptive' accounts of the investment relationship.[13]

Other studies on the subject primarily take a legal perspective, although Stephan Schill's study is relevant for the political economy literature.[14] He argues that the screening mechanism at the EU level should not be understood as a form of 'protectionism', but rather as a key external 'liberalisation' tool. Schill suggests that increasing controls on inward FDI

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[11] Bas Hooijmaaijers, "Blackening skies for Chinese investment in the EU?," Journal of Chinese Political Science 24, no. 3 (2019).

[12] Ibid., p.465.

[13] There has also been useful policy-orientated scholarship in German, including: Jörn-Carsten Gottwald, Joachim Schild, and Dirk Schmidt, "Das Ende der Naivität gegenüber China? Die Reform des europäischen Investitionskontrollregimes," Integration 42, no. 2 (2019).

[14] Stephan Schill, "The European Union's foreign direct investment screening paradox: Tightening inward investment control to further external investment liberalization," Legal Issues of Economic Integration 46, no. 2 (2019). See also: Georgios Dimitropoulos, "National security: The role of investment screening mechanisms," in Handbook of international investment law and policy, ed. Julien Chaisse, Leïla Choukroune, and Sufian Jusoh (Singapore: Springer, 2020); Wolf Zwartkruis and Bas de Jong, "The EU regulation on screening of foreign direct investment: A game changer?," European Business Law Review 31, no. 3 (2020).

can function as a ‘bargaining chip’ for further opening up of the Chinese market. As will be highlighted in the case studies in the following pages, this argument has validity — there is an element of using investment screening as a ‘tool’ to ‘level the playing field’. Schill contends, however, that this presents a ‘paradox’: although the implementation of FDI screening is a ‘protectionist’ policy act, its actual purpose is to foster more global liberalisation in both international trade and investment. By implementing the screening mechanism, the EU was also following its ‘constitutional values’ by ‘shaping’ international investment according to the EU’s values on ‘democracy, the rule of law and human rights’.[15]

While very helpful in terms of highlighting the ‘external’ component to the screening mechanisms, there are some issues with the arguments advanced. If one accepts the logic that erecting ‘protectionist’ barriers and using one’s internal market as leverage is acting in the interests of global trade and investment liberalisation, then the same argument could be used for China. China has used the heft of its own market for years as a tool to garner greater market access abroad, thus it has also been a force for liberalisation by using ‘protectionism’. Additionally, as will be shown in the following chapters, the push for investment screening came from the two most powerful member states, Germany and France, and was directly related to their own economic interests, rather than the EU’s constitutional drive to liberalise global trade and investment flows in accordance with its values. In fact, in line with the economic realist ideas elucidated above, the screening mechanism is less of a ‘paradox’, but simply part of an economic balancing process versus China, which comes with different facets. One facet is the ‘defensive’ dimension: restricting China’s access to high technology and know-how and thereby slowing its industrial upgrading. Another facet is using screening as an instrument to break open Chinese markets even further, which is important as their large size means protected Chinese firms are gaining significant scale advantages over European firms, leading to large jumps in relative competitiveness. Again, it can be seen as part of a balancing process, without the need to see a paradox, as will be shown in the following chapters.

FDI control in general

Another area where the thesis can contribute is to the general literature on FDI. Several schools of thought explain the reasons behind a state’s looser or more restrictive FDI policy.

[15] *Schill, "The European Union’s foreign direct investment screening paradox: Tightening inward investment control to further external investment liberalization," p.4.*

One line of thinking, for example, connects democracy and FDI, stating that the more democratic a state becomes, the greater the influence labour has, and since workers have more to gain by liberalising FDI inflows, as it creates more jobs, they will generally be in favour of it and thus influence policy to this end.[16] Meanwhile, in less democratic societies, where 'elites' have the principal say in the policy direction of the state, there will tend to be more restrictive FDI policies. This is because corporate interests have largely captured the state, and these tend not to want incoming product competition from foreign firms, or higher labour costs resulting from elevated demand produced by inward investment.

Europe, however, can arguably be described as the most democratic region in the world, and has not become less democratic in recent years so as to explain the shift to a more restrictive investment policy. As we will see in the case of China in the following chapters, non-democracies have been keen advocates of inward FDI over the last 30 years, while democracies such as France, going back to the 1960s, have sought to control FDI.

A more specific form of the argument posits that it is left-leaning governments, in particular, that will push for FDI liberalisation while right-leaning governments will tend to restrict inward flows, again with the central factor being labour, and its interest in allowing inward investment.[17] Left-leaning governments champion the interests of labour, thus promoting a more liberal FDI policy, while right-leaning governments are more attuned to the interests of capital, and will tend to do the opposite. However, for the purposes of analysing the situation in Europe in the 2010s some issues arise with this framework. It was right-leaning governments that were supportive of inward FDI flows in both Germany and France in the 2000s and going into the 2010s, but 2014 then saw France implement new investment controls, with a left-leaning government in Paris. Furthermore, as has been demonstrated, there is very little evidence of labour's desire for foreign investment.[18] Nor is capital always

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[16] See for example: Sonal Pandya, "Political economy of foreign direct investment: Globalized production in the twenty-first century," Annual Review of Political Science 19, no. 1 (2016); Sonal Pandya, "Democratization and foreign direct investment liberalization, 1970–2000," International Studies Quarterly 58, no. 3 (2014).

[17] Pablo Pinto, Partisan investment in the global economy: Why the left loves foreign direct investment and FDI loves the left (Cambridge: Cambridge University Press, 2013); Pablo Pinto and Santiago Pinto, "The politics of investment partisanship and the sectoral allocation of foreign direct investment," Economics & Politics 20, no. 2 (2008).

[18] Sarah Bauerle Danzman, Merging interests: When domestic firms shape FDI policy (Cambridge: Cambridge University Press, 2019). Some have also highlighted that labour is often against FDI: Erica Owen, "The political power of organized labor and the politics of foreign direct investment in developed democracies," Comparative Political Studies 48, no. 13 (2015).

against FDI. If large corporations have large international businesses, for example, as is the case in Europe, then the promotion of domestic FDI restrictions could prove highly detrimental to their international operations, as foreign states will tend to retaliate.

While there may certainly be some correlation between liberal FDI policy and democratic states on the global aggregate level, it does not necessarily mean causation. Using the economic realist approach, policy on FDI, but also international trade, can be understood as a function of a given state's competitive position in the global economy. If a state, for example, has a highly competitive industry, which has consequently branched out around the world and established itself in most major global markets as a dominant industrial player, then there is simply no need to implement a restrictive FDI policy — in fact, it would just be counterproductive. Such successful industries might start to face market access issues abroad, which could lead to revenue and market share losses and thus a loss in productive capacity. This was the point made by List in relation to the United Kingdom (UK) at the outset of the 19th century: the reason the UK was advocating liberal trade policies around the world was not due to its inherent belief in free commerce, but rather that the interests of its dominant industries would be best served by doing so. The opposite is also true. If another state is seeking to build its productive forces, as it is lagging behind competitively, it is highly unlikely to be advocating or practicing liberal economic policy — it will want to foster and nurture the budding industries that it has, which means being careful in allowing market access and imports, with the risk that its young industries will be outcompeted and eventually wiped out. In fact, as has been documented in the developmental economics literature, not a single major economic power in history has pursued liberal policy during its ascendent phase, not least the United States.[19] It is only once a state becomes strong economically that liberal policy is advocated.

Thus, coming back to the connection between democracy and liberal FDI policy, the connection would only be indirect through the economic realist lens. Those nations that have been highly competitive, building high levels of intellectual capital over the past 200 years, also happen to be democratic. But it is not due to democracy they have generally favoured liberal FDI, but rather due to their dominant position in the global economy. Indeed, now some of these democratic states are favouring more restrictive FDI policy, as

[19] *Paul Bairoch, Economics and world history: Myths and paradoxes (Chicago: University of Chicago Press, 1995).*

in our case in Europe, but also in the US. We cannot plausibly explain this by stating they have become less democratic. Through the economic realist lens, though, we see that changes in their competitive position are driving policy changes. The threat of a new economic rival is likely rising, necessitating a more defensive economic posture.

Other studies that go beyond broad factor-based approaches, based on, say, 'labour' and 'capital', highlight the importance of domestic 'interest groups' in the formation of FDI policy, specifically large corporate interests driving FDI policy decision-making in a state.[20] Essentially, if large powerful firms favour an open FDI regime, for reasons such as access to financing, or a general liberal stance due to potential retaliation in overseas markets, then this will be reflected in policy outcomes as well. Under liberal assumptions, the state itself is given no agency, and is seen more as a 'stage' on which interest groups compete, with those with the most power seeing their interests reflected in policy. The concern, however, with this approach is that it cannot explain those cases where state policy does not accord with the wishes of powerful groups in a society. As we will see in the case of Germany, powerful business interests actually came out against investment screening, but the state pushed ahead nonetheless.

Within the economic realist framework, agency rests in the hands of the state, which can therefore act independently of societal 'interests', and also takes centrality in any analysis. Importantly, however, this does not mean that 'interest groups' are not considered — quite the contrary, they are still important, but the state is the ultimate arbiter and not just a 'contested stage' for interest groups. As we will see in detail in the following chapter, for the most part, the interests of large commercial groups in a country and those of the state overlap. Since the rise of industrial capitalism, states have realised that allowing private capital accumulation markedly enhances the productive forces of the state — to the extent that those states that have not adopted it have fallen behind considerably. Paradoxically, states have had to give up elements of control in order to enhance their own power. It means

[20] *Danzman, Merging interests: When domestic firms shape FDI policy; Özgür Kayalica and Sajal Lahiri, "Domestic lobbying and foreign direct investment. The role of policy instruments," The Journal of International Trade & Economic Development 16, no. 3 (2007); Hyeon-Young Ro, "Protection from FDI and economies of scale," SSRN (2022); Tore Ellingsen and Karl Wärneryd, "Foreign direct investment and the political economy of protection," International Economic Review 40, no. 2 (1999); Andreas Dür, "Why interest groups dominate the EU's foreign economic policies," in Key controversies in European integration, ed. Andreas Dür and Hubert Zimmermann (London: Palgrave Macmillan, 2012); Stephen Kobrin, "The determinants of liberalization of FDI policy in developing countries: a cross-sectional analysis, 1992-2001," Transnational Corporations 14, no. 1 (2005).*

states are to a significant degree reliant on major capitalist groups within their economy, and will naturally be inclined to look after and further their interests as well — they are, in effect, in symbiosis. Crucially, however, there will be times when these interests do not align entirely. Capitalist groups are concerned with achieving as much profit as possible, usually over a short time horizon. The state, however, is concerned with developing the productive forces of its unit of territory over the short *and* long run, which means frictions can arise between the state and the dominant capitalist groups in it. And when these do arise, the tendency will be for the policy outcome to be aligned with the interests of the state.

For example, let us say that State A is faced with a rapidly rising economic rival in State B, which is quickly building its competitiveness and moving closer to the technological frontier. Concurrently, capitalist groups in State A are profiting heavily from the growth in State B, with exports still surging. State A, however, realises that if State B continues on its trajectory, it may become more technologically advanced over the medium and long term. Meanwhile, individual capitalist groups will be more concerned with generating profits than thinking about the longer-term risks associated with exporting their technology. State A, in a bid to stem the rising competitiveness and technological advances in state B, implements export controls. This will tend to displease State A's capitalist groups, which would see a hit to their revenues. But what the state is effectively doing is looking after the long-term interests of these groups, for if the technological advances in state B continue to the extent that it overtakes State A, the latter's businesses will eventually be outcompeted. The state sees its task as enhancing and protecting the productive forces in its economy, which means taking actions that are sometimes against the short-term interests of the major capitalist groups. That is to say, theories based entirely on interest group analysis cannot explain the deviations that can occur between state policy and the interests of dominant groups in a given state, whereas economic realism can.

A further illuminating study analysing FDI controls in the political economy context is Lenihan's 'Balancing Power Without Weapons'. The study develops a realist theoretical apparatus for analysing state intervention in international M&A transactions and provides several highly useful case studies of instances of state intervention in FDI.[21] Nonetheless,

[21] *Ashley Thomas Lenihan, Balancing power without weapons: State intervention into cross-border mergers and acquisitions (Cambridge: Cambridge University Press, 2018).*

there are certain reservations regarding the specific form of realism employed in the study, which limit its applicability to this research.

The puzzle at the heart of 'Balancing Power Without Weapons' is why states, which are driven by the need to ensure their security, intervene against the processes of economic globalisation and increasing interdependence, given that such processes enhance stability and therefore security. It is a valid puzzle, and applies to this study as well: why would Europe, when it has benefitted significantly from its economic relationship with China, relatively suddenly begin to shift into a more confrontational and conflictual direction by targeting Chinese investment? In order to solve this type of conundrum, Lenihan draws on structural realism, specifically on Waltz's structural realism, which contends that economic interdependence can actually lead to more conflict, not less. The problem for Lenihan, however, in applying structural realism to her cases of FDI intervention is that structural realism's explanation of rising economic interdependence and conflict is 'both underspecified and vague'.[22] This observation is also largely justified. Structural realism generally devotes very little space to economic matters, especially in Waltz's theory of international politics, where the focus is on systemic factors in the international balance of power. But the fact that structural realism does not seek to explain economic conflict, does not mean no realism does. As we will see in the following chapter, there is a long line of realist ideas and paradigms going back to at least the 19th century that can explain and predict economic conflict. Therefore it is unclear why the ideas of realist political economy are not considered in her analysis, and the baseline for her work remains structural realism.

Lenihan's theory starts from structural realism, but as it – with its focus squarely on state security – 'cannot provide the full solution to the puzzle', it must be qualified with additional variables, such as 'economic nationalism', that explain state intervention in FDI, especially when states are in a 'security community'.[23] The concern, though, with the approach is that it calls into question the entire framework, as assumptions and variables have to be added and subtracted in order to fit the empirical evidence. This is a point made by Andrew Moravcsik and Jeffrey Legro, who caution that combining and synthesising previously

[22] *Ibid., p.24.*

[23] *Ibid., p.40.*

opposing theories, weakens realism's overall validity, and even moves significantly away from traditional realist analysis.[24]

In contrast, economic realism allows us to stay true to all core realist assumptions without having to solve certain puzzles in order to fit the empirical reality. States are not primarily driven by security concerns, but rather by 'positional' motivations, in particular the relative power between them. Power, in turn, is derived from wealth, which means that economic competition between states is highly important and will condition their behaviour. Even in a given security community, there can be positional rivalry and competition. France and the United States both strive to have the highest value-adding industries and sectors within their borders, and thus compete with one another, even if there is little to no chance they will go to war. Having control of these industries means a higher share of global income, conferring more wealth, power and influence on the state, lifting it above others.

What matters is not the need for security, but rather the impulse to improve a state's position relative to others. Once we take this as a core assumption, and move beyond the emphasis on state security, then economically conflictual behaviour between states where there is no military threat between them is explainable. If we focus on the drive for security as the core assumption, as Lenihan does, economically conflictual behaviour in security communities needs to be explained by certain 'aberrations', such as economic nationalism. Doing so, however, violates a key assumption in realist thought: that states operate under rationality. Lenihan assumes that increased economic interdependence is the rational course of action: it increases stability, enhances wealth and thus improves security. If states intervene in this positive process, then they must be engaging in protectionism and illogical economic reasoning. It follows that state elites must be being influenced by non-rational forces, such as nationalism.

Using economic realism, there is no need to violate the rationality assumption. States are always in competition with one another, always jostling for economic position, with any intervention that seeks to maintain and improve this position being entirely rational. If a theory relies on 'extensions' to explain such behaviour, it negates some of the theory's pure predictive power, and appear as band-aids to ensure the viability of the original security-based theory.

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[24] Jeffrey Legro and Andrew Moravcsik, "Is anybody still a realist?," International Security 24, no. 2 (1999); Jeffrey Legro and Andrew Moravcsik, "Faux realism," Foreign Policy (2001).

Europe-China economic relations

A final body of literature to which this thesis can contribute is the work done on the economic relations between Europe and China. Although the literature is growing, it is still relatively small compared to the work done on US-China economic relations. The bulk of it has followed the ebbs and flows of the economic relationship over the past 20 years. During and following the strong period of 'partnership' between Europe and China in the mid-2000s, the majority of the literature saw the positive aspects in the growing relationship and believed the partnership would grow long into the future. Key was the 'complementarity' in the economic relationship and the fact that trade between the two blocs was growing rapidly. In 'liberal interdependence' terms, the more China and Europe interacted economically, the tighter relations would become, as the relationship became increasingly 'institutionalised', meaning there was a 'common future', which could create a stable and prosperous 'multilateral order'.[25]

The advent of the Belt and Road Initiative (BRI) further underpinned the idea of a 'common future'. In this context, Chinese scholarship stressed that China and Europe are 'natural' allies that can form the dominant powers across the Eurasian 'heartland', meaning further integration would make sense not just economically, but also geopolitically. 'The two great civilisations of East and West were linked by the Silk Road earlier in history', and the ideal path would be for these two civilisations to reassert these links and become even more integrated. Europe, in this analysis, should take its rightful place at the centre of the Eurasian 'heartland' through its 'redeveloped connectivity', to be enabled by Beijing — 'the historical responsibility for making these dreams a reality falls on the shoulders of 21st-century China'. By signing up wholeheartedly to the BRI, Europe can 'rediscover its ties with China…. with a historic opportunity to return to the centre of the world'. The idea is that Europe, after its relative decline following the rise of the United States in the post WWII era, can, by pushing the boundaries of markets further east across Eurasia, reinvigorate its economy and take its rightful place at the centre of the 'world system'.[26]

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[25] See for example: Stanley Crossick and Etienne Reuter, China-EU: A common future (Singapore: World Scientific, 2007); David Shambaugh, "China and Europe: The emerging axis," Current History 103, no. 674 (2004); Franco Algieri, "EU economic relations with China: An institutionalist perspective," The China Quarterly, no. 169 (2002); Jing Men, "EU-China relations: From engagement to marriage?," EU Diplomacy Papers, no. 7 (2008).

[26] Yiwei Wang and Xuejun Liu, "Is the Belt and Road Initiative a Chinese geo-political strategy?," Asian Affairs 50, no. 2 (2019). Also: Zhao Minghao, "The Belt and Road Initiative and its implications for China-Europe relations," The International Spectator 51, no. 4 (2016). Yuan Li and Markus Taube, "The

These ideas are shared by other political economy scholarship, emphasising that the interests of major economic powers in Europe, especially Germany's, are furthered by a tightening economic relationship with China, and thus economic relations are set to improve in the future.[27] In this view, Germany is seen as an export-driven trading state, which explains a lot of its actions in recent years: from being an inflation hawk constantly seeking domestic price stability, to forcing adjustment in other countries following the debt crisis, and to incessant criticism of the European Central Bank (ECB). As Germany needs to feed its export machine, the vast and growing markets available in China are naturally very useful. Germany's '*Westbindung*' is no longer seen as relevant as it once was — it is now 'encircled by friends'. The increased reliance on foreign economic demand, beyond Europe and increasingly from China, has meant that it is reorienting its policies more towards the East. In terms of diverging on economic issues, the financial crisis also hollowed out the neo-liberalism practised in the Anglo-Saxon economies and reinforced a sense that a 'separate' German path was the way forward. The term 'post-Western' has even been termed to explain this trend — Kundnani, for example, quotes the former German ambassador to China as saying: 'I don't think there is such a thing as the West anymore'.[28] Germany has particularly large interests in China, which has become its largest export market, especially for the big automakers such as Volkswagen and Mercedes. Both have plenty in common, the argument goes. Both have resisted efforts by the US to address some of the major imbalances in the global economy, both have been critical of US quantitative easing and both have had large trading surpluses with the rest of the world, so it was logical that they would continue to integrate economically.

This research is certainly useful in highlighting that we cannot analyse Europe monolithically and that careful attention needs to be paid to the interests of individual states, particularly the most powerful economies in the region. Likewise, it draws attention to the issues being faced in Germany — there has been a growing reliance on external demand

implications of the 'Belt and Road Initiative'on globalization and inclusive growth for the Eurasian continent," Journal of Chinese Economic and Business Studies 16, no. 3 (2018).

[27] Hans Kundnani and Jonas Parello-Plesner, "China and Germany: Why the emerging special relationship matters for Europe," European Council on Foreign Relations Policy Briefs, no. 55 (2012); Hans Kundnani, "Germany as a geo-economic power," The Washington Quarterly 34, no. 3 (2011); Hans Kundnani, "Leaving the West behind: Germany looks East," Foreign Affairs 94, no. 1 (2015); Stephen Szabo, "Germany: From civilian power to a geo-economic shaping power," German Politics & Society 35, no. 3 (2017).

[28] Kundnani, "Leaving the West behind: Germany looks East," p.115.

and increasingly on Chinese growth to sustain Germany's economy. Nevertheless, despite this reliance and 'integration', Germany has become increasingly wary of China, as seen in the implementation of investment screening measures and various other balancing efforts. This needs to be explained, especially given the above-illustrated strong impulse for further integration, and it can be done using the framework set out here. The issue of China for Germany is certainly complicated, and Germany faces a balancing act. Were it not for the fact that Chinese competitiveness has been increasing so rapidly, and specifically in areas of German dominance, it is quite possible that Germany would have continued to 'turn to the East' and focus on building its presence in a growing Chinese market. But, as we will see, by the middle of the 2010s it became clear in Berlin that China was not simply attempting 'catch-up growth', but seeking to leapfrog as well. And if China does succeed in its industrial upgrading plans, then market opportunities for German firms would dry up in China, but also potentially in the rest of the world. The 'complementarity' of their economies was starting to erode, necessitating action in Berlin.

Lastly, there has also been a growing body of work, mainly from European think tanks, but also from scholars such as Johnathan Holslag, that take a heavily critical view of Chinese economic engagement in Europe.[29] It is argued that Europe is being taken advantage of by a nefarious China, which has sought to exploit European openness and bend it to its own interests, with its 'tentacles' spreading throughout the continent. European elites are said to be corrupted by China, with China having infiltrated important areas of decision-making through aggressive lobbying efforts, while strategically playing European states off against one another and continuing to acquire European assets with a rapacious appetite. These studies are helpful in showing and describing Chinese actions in Europe and mark a decided turn from the literature seeing increasing positives in the economic relationship. But they can also be interpreted as veering towards scaremongering territory, with some of the objectivity in analysis potentially being lost.

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[29] Philippe Le Corre and Alain Sepulchre, China's offensive in Europe (Washington, DC: Brookings Institution Press, 2016); Philip Le Corre, "A divided Europe's China challenge," Carnegie Endowment (2019); Jonathan Holslag, "How China's new silk road threatens European trade," The International Spectator 52, no. 1 (2017); Jonathan Holslag, The silk road trap: How China's trade ambitions challenge Europe (Cambridge: Polity Press, 2019); Thorsten Benner et al., "Authoritarian advance: Responding to China's growing influence in Europe," GPPI & MERICS (2018); Jost Wübbeke et al., "Made in China 2025," Mercator Institute for China Studies (2016); Stephan Scheuer, Der Masterplan: Chinas Weg zur Hightech-Weltherrschaft (Munich: Verlag Herder, 2021).

The key concern for many is likely the government in Beijing, which is viewed as autocratic and thus particularly dangerous for Europe. While there is a case to see the government in Beijing as objectionable, ideally this should not enter any reasoned analysis. From the economic realist perspective, where we put China's rise and aim to position itself at the technological frontier in the long historical context, there is nothing especially unique to what China has been trying to achieve over the past 40 years. Like other rising economies before it, such as Britain, Germany or the United States, it is aiming to develop its productive capacity, accrue intellectual capital and use global resources to this end, especially resources located in states at the technological frontier. One could potentially argue that the aggressiveness with which China has gone about this more recently can be related to the particular type of government it has, but the point still stands that every leading economy that has emerged since at least the industrial revolution has used similar methods, including industrial espionage, intellectual property rights infringements and various other forms of technology transfer. Thus, even if China were a democracy, it is very likely that the same issues would have arisen in recent years, as the fundamental problem is not whether China is authoritarian or not, but rather that it is a growing competitive economic threat, which needs to be balanced. Indeed, the fact that Japan was democratic going into the 1980s did not prevent a major threat perception arising in Washington and a balancing process against Japan being set in motion.

Meunier has also made the case that there is a 'uniqueness' to Chinese investment, which needs to be considered and can explain the friction being generated in Europe. She highlights, for example, the influence of China's 'unique political system', which causes problems for host countries of its outward investments.[30] However, there are some concerns regarding this line of argumentation. Firstly, all nation-states around the world have 'unique political systems', so it is somewhat difficult to discern it as an analytical category. Nonetheless, the point essentially is that as China has such a high degree of state involvement in its economy, it creates unease in Europe and the United States, as democracies 'have little experience' in dealing with state-directed capitalism.[31] Yet these same democracies have also welcomed large amounts of investment from the Middle East,

[30] *Sophie Meunier, "Beware of Chinese bearing gifts: Why China's direct investment poses political challenges in Europe and the United States," in China's international investment strategy: Bilateral, regional, and global law and policy, ed. Julien Chaisse (Oxford: Oxford University Press, 2019).*

[31] *Ibid., p.350.*

such as from Saudi Arabia or Qatar, where the relations between state and economy are similarly blurry, or even more so. However, such investment has not posed significant problems for state elites in Europe or the United States, and neither did the initial Chinese investment in Europe in the late 2000s, while the 'uniqueness' of the Chinese political system remained the same throughout. In the economic realist approach, the fact that China is an emerging economy, not a security ally or has a 'unique' political system makes very little difference in explaining a rising threat perception in the 'democracies'.

What is 'unique' about Chinese investment in recent years is that it is being done in the context of China greatly increasing its competitiveness and seeking to enter the upper echelons of the global economy. This is the crux of the matter. In a counterfactual sense, if China had continued to focus on lower-to-mid-range industries, and was content with a mid-table position in the global division of labour, then it is improbable that an upturn in Chinese investment would provoke a pronounced counterreaction in Europe or the United States. An interesting case in the coming decades will be India. If it succeeds, like China, in its development drive and push towards industrial leadership, will the 'uniqueness' of its political system pose a problem as well? India is a democracy, so it should not be an issue, meaning friction with Europe and the US would unlikely arise. Economic realism would predict otherwise.

Thesis contributions

Taking into account the above literature, the following research aims to make a contribution on three principal fronts. Firstly, it aims to investigate the specific erection of investment screening mechanisms across the major European states and at the European Union level. Although some work has already been done, primarily by Sophie Meunier, no larger study exists, which engages with primary material across Germany, France and the European Union. Also, while a connection between 'technological competition' and the implementation of the screening mechanisms has been made, it has not been explored in detail or demonstrated empirically using case studies. Meunier shows there is a connection between the 'technological intensity' of a European economy – defined in terms of its level of R&D spending – and its support for screening measures, but this is not shown in terms of an analysis of the key economic and political factors at work in the various European states. By contrast, the present research offers an in-depth examination of Germany, France and the dynamics in Brussels at the EU level as to why the investment screening

mechanisms were implemented, whereby the connection between 'technological competition' and the mechanisms is fully elaborated. This competition is placed in a wider context – using the logic of economic realism – providing more understanding of why this technological competition has recently started growing.

Secondly, examining several European cases using a consistent theoretical framework, the thesis can also contribute to the understanding of state intervention in FDI in a broader sense, which is timely given the global increase in intervention.[32] As previously noted, the literature attempts to explain intervention through levels of democracy or interest group analysis, which have largely proven to be analytically problematic. Few studies have examined the issue through a 'realist' perspective, with the exception of Lenihan. By applying the economic realist framework to the case studies presented here, a further contribution to a realist understanding of FDI intervention is presented. This can also add insight to the overarching theoretical discussion around the relationship between economic interdependence and conflict. A liberal approach, for example, would expect there to be less conflict as economic interdependence deepens, but in terms of Europe and China, this has not been the case: friction has grown alongside the more interdependent economic relationship. The approach taken here explains why it is the case.

Thirdly, by investigating the implementation of investment screening measures using an economic realist approach, which emphasises the broader economic context, a contribution to the growing literature on Europe-China economic relations can also be made. As explained earlier, this literature lacks systematic explanations of why the relationship has turned increasingly negative since the mid-2010s. While the following research concentrates on investment relations between Europe and China, it can help shed further light on the overall economic relationship. The rising threat perception of China and ensuing balancing measures are a multifaceted process, which impact a range of economic aspects of the relationship and, consequently, political relations. Therefore, it can enhance the broader understanding of the latest developments in the relationship as well.

[32] *UNCTAD, "The evolution of FDI screening measures: Key trends and features," Investment Policy Monitor (2023).*

Research design and structure

The case study method

As mentioned at the outset, the thesis uses a case study approach, with the focus on *explanation* as opposed to *description*, often referred to as a 'disciplined configurative' method, whereby an established theory is used to explicate a case or set of cases.[33] First, let us turn to why a case study method is employed, and subsequently why the particular 'disciplined configurative' method is the most appropriate.

A case study approach is prompted by the fact that we are seeking answers to a 'why' question and not 'who', 'what' or 'where' questions. The goal here is not simply to explore a certain facet of Europe-China economic relations, but rather to go deeper and explain them. To put it simply, if one wanted to find out what the results of the new investment screening measures had been, a survey or a statistical analysis of the investment data following their introduction would be appropriate. But we want to know why it occurred. Using a case study method allows us to follow the 'links' involved and not just outcomes, and these links are then also crucial to understanding the 'why'.[34] This allows us to get to the core of explaining the causes of the phenomenon under investigation.

Furthermore, case studies provide significantly more empirical detail than other methods. For instance, statistical analysis can be used to examine a correlation between the technological intensity of a European economy and the implementation of investment screening measures, but this only provides a superficial explanation of causation. It does not help in understanding why technological rivalry has become a concern, the form it takes, or the specific causal mechanisms leading to the intensification of rivalry. A lot of the substance would remain obscured without detailed case analysis. Case studies provide more 'empirical grounding' for a hypothesis than statistical analysis, as John Odell has pointed out.[35] They enable the researcher to gain more confidence in their propositions. Returning to the previous example, while large-N analysis can test the hypothesis that concerns around technological competition led to the construction of European investment screening

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[33] Harry Eckstein, "Case study and theory in Political Science," in Case study method, ed. Roger Gomm, Martyn Hammersley, and Peter Foster (London: Sage, 2000).

[34] Robert Yin, Case study research: Design and methods, vol. 5 (Thousand Oaks: Sage, 2009); Robert Yin, Applications of case study research (Thousand Oaks: Sage, 2011).

[35] John Odell, "Case study methods in International Political Economy," International Studies Perspectives 2, no. 2 (2003): p.170.

mechanisms, the confidence in the assertion cannot be as high compared to engaging with the individual cases and tracing the steps leading to concern around technological rivalry and the introduction of screening. Moreover, this type of large-scale statistical work cannot provide detailed insight into individual countries, i.e. why investment screening was introduced in Germany, France, Sweden or the Netherlands. A look inside these states is necessary to follow the relevant processes.

As John Odell has further posited, the case study method is particularly important in International Political Economy (IPE) research, as case studies – in forcing the analysts to follow the 'links' in investigating social change – are good at examining processes. Processes are constantly impacting the global economy, understood in terms of change in, for example, innovation, competitive dynamics, market sizes or government policy. Using other methods, such as large-N statistical analysis, shifts the focus away from examining processes towards looking at overarching 'structures', such as the state of the global trading, investment or monetary system, in the IPE context. These are clearly important too, but the focus on them can mean that change within these structures – and the processes that drive change – can remain underexplored.[36] Regarding the case studies in this thesis, we are interested not only in the structure of Europe-China investment relations, but crucially in the underlying processes – such as competition, innovation and government policy – and how they have led to the implementation of screening.

Turning to the 'disciplined configurative' case study method and its uses. We established that case studies are important in examining 'why' questions, given the empirical detail they provide and ability to follow processes. However, they can broadly be done in two ways: with the use of theory, or without. Case studies without theoretical grounding are done, for example, by historians or policy analysts, where a form of 'intuitive' logic is used to explain change, usually by providing as much empirical detail as possible. These types of studies clearly have a role: they provide large amounts of empirical information and facts, while can often be of explanatory value as well. An issue, however, with this form of case study is that the assumptions and potential biases become subsumed in the analysis. As all forms of analytical interpretation come with certain assumptions, it can prove problematic if not acknowledged. By contrast, as Harry Eckstein has averred, using the 'disciplined

[36] *Ibid., pp.169-70. On the benefits of understanding and analysing 'processes' using the case study method, see also: Andrew Bennett and Jeffrey Checkel, Process tracing (Cambridge: Cambridge University Press, 2015); David Collier, "Understanding process tracing," PS: Political Science & Politics 44, no. 4 (2011).*

configurative' method comes with a key advantage, in that it forces the analyst to be very clear about all the theoretical assumptions made.[37] Placing the use of theory in the foreground of analysis ensures that all assumptions and propositions are made explicit, and can thus be judged on their own merits, as opposed to being largely assumed. Importantly, placing the emphasis on explicit theory to examine change also aids in better understanding of the theory itself. It can help in explaining the phenomenon under investigation, but in addition it adds insight into the theory, as it is applied on new terrain and in a novel fashion. Doing so, therefore, allows this form of research to not only contribute to an understanding of why investment screening mechanisms were introduced across Europe, but also to the theoretical discussion around investment screening as such, as well as the larger discussions around realist political economy theory.

Design

The introduction of European investment controls requires a multiple case study as Europe is heterogenous. Examining multiple cases makes the result of the study more robust than just studying a single case. Additionally, by using multiple cases, a further contribution can be added to the existing literature as it will also point out differences/similarities between the cases. As for the technique, according to Yin, the most appropriate for a multiple case study is the replication method, which can be seen in much the same logical light as the experimental replication approach practiced in other sciences.[38] There, the logic goes that as one conducts an experiment and it proves successful, the next step is to replicate it to ensure it is robust. This can be exact replication — by other researchers for example — but also replication under different conditions. And this is what we can do in IPE/International Relations as well, by taking the same analytical process, the 'experiment', and testing it in different environments, i.e. different states.

With this in mind, I will examine the introduction of investment restrictions in Germany, France and the European Union as a bloc. Investigating the move towards investment screening in the two largest and central economies — France and Germany — is critical to understanding the overall European direction and eventual push on the European level. In line with the economic realist frameworks illustrated above, the initial focus must be on states and how their preferences are formed before we can understand what is happening on

[37] *Eckstein, "Case study and theory in Political Science," p.103.*

[38] *Yin, Case study research: Design and methods, 5, pp.54-6.*

the European level. Thus, the case study will follow three interconnected lines, based on investment screening analysis in Germany, in France and then on the European level. This allows us to start the investigation with the major economic actors in Europe, before engaging in analysis of the supranational level. The following is a summary of the case study design.

1. Research question: why have European states and the European Union implemented investment screening measures in the post-2015 period?

2. Proposition: major European economic powers have come under increasing competitive strain due to a rising China. This has led to a rising threat perception of China and a balancing process being set in train. Investment screening is part of this process.

3. Units of analysis: states.

4. Data sources: primary documentation, which includes government records, economic data and newspaper articles. Secondary sources are also included.

5. Logical links between findings and proposition: findings show an increasing competitive threat emanating from China, which is linked to a balancing process commencing, where investment screening forms an integral element.[39]

The main question this thesis seeks to answer is why major European states and the European Union have introduced investment screening mechanisms in the post-2015 period. The time period is chosen so as to understand the most recent tightening measures, which have led to the 2019 Europe-wide screening mechanism and the implementation of national screening measures concurrently. The analysis will not focus on the tightening measures that some European countries introduced in the years or decades before the most recent ones.

Regarding the second component, defining the theoretical framework and knowing the exact question of study enables propositions to be made, which help guide the research. Based on the economic realist framework, we understand what drives changes in states' behaviour in terms of international economic policy. As mentioned, this relates to a change in competitive

[39] *These 'components' of design are derived from Robert Yin: Robert Yin, "Designing case studies," in Qualitative research methods, ed. Laura Maruster (Los Angeles: Sage, 2012).*

position between economic powers — an increasingly competitive and assertive rising power is generating friction with economic leaders, prompting balancing behaviour in the leading nations. In this case, China is the rising economic power increasingly competing head-to-head with major European economies, such as Germany and France, leading to an increasingly defensive posture in Europe, of which investment screening is a part.

To clarify the units of analysis, we move to the third component. In line with economic realist thinking, the state is the key unit of analysis. The actors in charge of the state apparatus are defined as 'state elites', which encompasses the major actors responsible for the actions of the state, such as politicians, technocrats and bureaucrats.[40] While the state is central, large private economic actors are also important: their interests are a key concern for state elites, meaning large industry groups are also considered as part of the analysis, but are secondary to the state and its elites.

In terms of sources used, the focus is on documentation released from state sources, meaning reports, plans, strategies, laws, memorandums, letters and speeches.[41] Newspaper articles are also used as a form of 'soft' primary documentation. Secondary sources are used for industry information and data in order to understand certain state actions, primarily from global business consultancies, but also from industry bodies and experts in the particular area of study. The link between these sources and the proposition of this thesis is that they show an increasing economic competitive threat from China, which is generating a rising threat perception across major European economies. This rising threat perception is connected to a balancing process set in motion, through which the implementation of investment screening can be understood.

Structure

The thesis is divided into seven chapters, including this introduction, following an arc of three distinctive parts: framework construction and context, empirical analysis, and conclusions. Chapters 1, 2 and 3 are dedicated to building the framework and context; chapters 4 to 6 provide the empirical analysis by looking at three case studies — Germany,

[40] *This definition of the 'powerholders' in the state apparatus is taken from political sociologist Michael Mann. See: Michael Mann, "The autonomous power of the state: Its origins, mechanisms and results," European Journal of Sociology/Archives européennes de sociologie 25, no. 2 (1984). Technocrats are considered here to be a specialised form of bureaucrat, such as the decisionmakers at central banks.*

[41] *Quotations from foreign language sources are translated into English, but sources are interpreted in their original language.*

France and the EU — related to investment screening, while chapter 7 provides the conclusions.

Chapter 2 serves to build the theoretical foundation of the thesis, defining the exact assumptions behind the economic realist framework and applying them to analysis of the investment screening mechanisms in Europe. Chapter 3 provides the Chinese context to what is occurring in Europe. To understand Europe's actions using an economic realist framework, we need an understanding of what China's aims and actions are, helping to situate the empirical case work in Europe.

Chapter 4 begins the case studies. To test the propositions posited above, a three-part structure is used across the studies on Germany and France. First, the context is provided, illustrating how both the German and French economies entered the 2010s in relation to China. Second, the extent to which there was a rising threat perception of China in the post-2015 period is observed, taking into account perceived rising competitiveness and direct economic rivalry. Third, it is examined whether this rising threat perception was connected to a balancing process beginning against China, and whether investment screening was part of this process.

Chapter 6 analyses dynamics in Brussels surrounding the investment screening mechanism introduced across the EU starting in 2019, also using a three-part structure. The first highlights the context of Europe-China economic relations going into the mid-2010s, but from the perspective of the European Commission and how this was connected to what was happening in Berlin and Paris. Part two assesses whether there was a rising threat perception in Brussels of an advancing Chinese economy, and to what extent this can be related to a balancing process beginning in Brussels, incorporating investment screening. Third, in order to further account for the heterogeneity visible in Europe regarding investment screening, a series of mini-cases following the same logic set out above is presented across various representative member states in the Union. Finally, chapter 7 summarises the research and presents the implications in terms of theory and practice.

Chapter II
Theoretical Considerations

As highlighted in the introduction, this study employs the theoretical framework of 'economic realism', which is characterised by a wide range of assumptions and ideas that will be elaborated on in this chapter. The chapter is split into three broad sections, starting with an overview and illustration of the theory's core tenets, followed by examination of the investment policy context, and concluding with the forming of a hypothesis on Europe's decision to erect increasingly stringent investment barriers targeted at China.

Economic realism — core tenets

Anarchy and power

The ideas at the heart of economic realism — sometimes also referred to as 'economic nationalism'[42] — are most prominently found in the work of Friedrich List, the German political economist of the mid-19th century and one of the key figures in the development of realist political economy.[43] In opposition to the hegemonic liberal political economy of the time, List put the nation-state at the centre of analysis, as opposed to the 'individual'. While List argued that a 'cosmopolitical' world, as espoused by the liberals, would be possible, in which all peoples of the world live under one union, this state of affairs is still a long way away. Humans first came together as multiple families in tribes, leading to villages, towns, counties, and ultimately to the formation of larger states, so it is perfectly possible that humanity could one day reach the 'great union' — a global 'state of states',

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[42] *I use the term 'economic realism' instead of 'economic nationalism' to emphasise that it is a framework of analysis, not a form of ideology. As Robert Gilpin has clarified, there needs to be a sober distinction between 'nationalism' and 'realism', with the latter being purely an intellectual endeavour, while the former advocates certain forms of potentially aggressive state behaviour. See: Robert Gilpin, Global Political Economy: Understanding the international economic order (Princeton: Princeton University Press, 2011), pp.15-6.*

[43] *The bulk of List's ideas are found in his magnum opus, 'The National System of Political Economy': Friedrich List, The National System of Political Economy (New York: Cosimo Classics, 2014 [1841]). On List's influence on realist political economy: Robert O'Brien and Marc Williams, Global Political Economy, 3rd Edition: Evolution and dynamics (Basingstoke: Palgrave Macmillan, 2010), pp.18-9; Eric Helleiner, "Globalising the classical foundations of IPE thought," Contexto Internacional 37 (2015); Philip Deans and Ronen Palan, State strategies in the global political economy (London: Pinter, 1996); Robert Wade, "What strategies are viable for developing countries today? The World Trade Organization and the shrinking of 'development space'," Review of International Political Economy 10, no. 4 (2003); Robert Wade, "Catch-up and constraints in the twentieth and twenty-first centuries," in How nations learn: Technological learning, industrial policy, and catch-up, ed. Arkebe Oqubay and Kenichi Ohno (Oxford: Oxford University Press, 2019); Robert Gilpin, The political economy of international relations (Princeton: Princeton University Press, 2016), pp.31-4.*

the benefits of which would go 'to the whole human race'.[44] In the meantime, however, humanity still has to contend with the existence of individual states and not one great union.

Indeed, in the economic realist view — as in all forms of realism — the world is still split into territorial units, which are organised politically and display varying interests. In a world without a global union, each nation is faced with a situation of anarchy — there is no 'ultimate' arbiter above them, meaning each nation-state can only rely on itself to ensure it survives and thrives. As long as these nations continue to prioritise their interests before the interests of 'global humanity', conflict can ensue. Where economic realism and structural realism differ, though, is on the ultimate source of this conflict.[45] Structural realism places the emphasis on 'security': states are primarily concerned with ensuring their own survival, particularly in military terms, and this ultimately leads to tension in the international system.[46] In contrast to structural realism, economic realism holds that 'security' is not the sole underlying driver of state behaviour in this situation of anarchy. It posits a form of 'positional' realism, as elaborated by Randall Schweller.[47] States are not fundamentally and primarily concerned with security; instead, they are more concerned with their power position in relation to other states. This puts economic realism firmly in the classical realist tradition, as it focuses on analysing the state and competition between states, rather than solely on the acquisition and defence of security.[48]

Structural realism holds that power is important, but primarily as a means to an end, rather than an end in itself. In this view, power can facilitate more security by preventing domination by another state. Fear is the underlying driver of security concerns, and the pursuit of power is seen as a way to avoid such domination. Conversely, in the economic

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[44] *List, The National System of Political Economy, p.119-32..*

[45] *On these 'foundational' ideas of economic realism, see also: David Levi-Faur, "Friedrich List and the political economy of the nation-state," Review of International Political Economy 4, no. 1 (1997); Eric Helleiner, The Neomercantilists: A global intellectual history (Ithaca: Cornell University Press, 2021); Eric Helleiner, "Economic nationalism as a challenge to economic liberalism? Lessons from the 19th century," International Studies Quarterly 46, no. 3 (2002); Robert Gilpin, "The politics of transnational economic relations," International Organization 25, no. 3 (1971); Jonathan Kirshner, "Realist political economy: Traditional themes and contemporary challenges," in Routledge handbook of International Political Economy (IPE), ed. Mark Blyth (London: Routledge, 2009).*

[46] *Kenneth Waltz, Theory of international politics (Long Grove: Waveland Press, 2010).*

[47] *Randall Schweller, "Realism and the present great power system: Growth and positional conflict over scarce resources," in Unipolar politics: Realism and state strategies after the Cold War, ed. Ethan Kapstein and Michael Mastanduno (New York: Columbia University Press, 1999).*

[48] *David Goldfischer, "EH Carr: A 'historical realist'approach for the globalisation era," Review of International Studies 28, no. 4 (2002).*

realist understanding, the driving impulse is not 'defensive' – as defined in the security concepts – but rather offensive. States are propelled by a desire for 'profit', which manifests as a desire for access to scarce and in-demand resources. Since these resources usually cannot be divided, competition and conflict often arises. However, as Schweller suggests, security is a 'good' that can be divided, from which all states can benefit. There is no conflict between one state's desire for security and any other state's need for security. There is a common interest in security that does not exist for 'positional goods', such as control of the highest value-adding industries and sectors in the global economy.[49] By definition, if one state has greater access to these, other states have less, leading automatically to a conflictual position. The value of the good for states is only high, if other states cannot easily access it. As in our society, university degrees have value only to the extent that a small percentage of the population can attain them. If more people could, the value of the degree decreases.[50] What matters is the 'positional value', in that it allows individuals or states to be higher or better than others. 'Power' is the ultimate positional good, only truly useful if one has more of it than others. All states want it, and thus competition ensues.

Sources of power and defining the 'economic interest'

The state, then, is central to economic realist analysis and at its most basic level is concerned with the pursuit of power, especially in relation to other states. But what are the sources of power? Under economic realism, wealth is the fundamental underpinning of power. However, the concept of wealth should not be confused with older mercantilist notions, whereby wealth is seen simply as a function of amassing precious metals, or in the modern sense, foreign currency. Economic realists, much like liberals, assert that wealth is derived from the *ability to produce, not from the possession of wealth in itself*.[51] To illustrate this idea, List made the point that we should presuppose two men — one rich in wealth, but poor in productive capacity, and the other poor in wealth, but rich in productive capacity. As the rich man consumes more than he produces, he will become poor, while as the poor man produces more than he consumes, he eventually becomes rich.

[49] *Schweller, "Realism and the present great power system: Growth and positional conflict over scarce resources," pp.28-32.*

[50] *Ibid., pp.34-6.*

[51] *Jonathan Kirshner, An unwritten future: Realism and uncertainty in world politics (Princeton: Princeton University Press, 2022), pp.152-60.*

Thus, 'the power of producing wealth is…infinitely more important than wealth itself'.[52] While this idea holds true for individuals, it is 'still more the case for nations', as these cannot live off 'mere rentals', as a wealthy individual might. Productive capacity allows nation-states to build on the wealth that has already been generated, and crucially allows them to replace 'what has been lost'. Here, List draws attention to Germany, which 'has been devastated every century by pestilence, by famine, or by civil or foreign wars' but nevertheless 'always retained a 'great portion of her powers of production' and hence 'quickly reattained some degree of prosperity'.[53] Although List was referring to Germany in the 19th century, the argument becomes even stronger in the 20th, seen in Germany's remarkable ability to re-attain prosperity after immense hardship.

In the economic realist view, then, the source of power for a state lies in its productive capacity, or as List put it, *productive forces*. This implies that as states are concerned with their position of power relative to other states, given the anarchic nature of the state system, they will be highly concerned with the productive capacity of their 'unit' of territory. Neglecting it would mean diminishing power. There is a clear connection between economics — specifically industrialism — and power, which the state ignores at its peril.

"The great statesmen of all modern nations, almost without exception, have comprehended the great influence of manufactures and manufactories on the wealth, civilisation, and power of nations, and the necessity of protecting them."[54]

We take from this that the power of states is derived from its economic foundations, which was always to an extent true, but became increasingly evident as mankind entered the industrial age.[55] As Jonathan Kirshner asserts, this is also one of the central differences between economic realism and structural realism: the emphasis economic realism places on the importance of economics in explaining change in the international political system. Economic issues cannot be relegated to 'low politics' or 'bracketed out', to be studied separately from the core issues of international relations, leaving it mostly to the purview of

[52] *List, The National System of Political Economy, p.133.*

[53] *Ibid., pp.133-34.*

[54] *Ibid., p.148.*

[55] *On this intimate connection between wealth – economics – and power: Jonathan Kirshner, "Political economy in security studies after the Cold War," Review of International Political Economy 5, no. 1 (1998); Paul Kennedy, The rise and fall of the great powers (London: William Collins, 2017); Jacob Viner, "Power versus plenty as objectives of foreign policy in the seventeenth and eighteenth centuries," World Politics 1, no. 1 (1948).*

economists.[56] The pursuit of power and wealth are intimately connected and must therefore be studied together.[57]

The nation's 'productive forces'

If states are primarily concerned with accruing power, then it also follows that states must be highly concerned with the development of their economies within their territory — as this is the source of wealth — which is derived from productive capacity. What, however, constitutes productive capacity? Again, List's analysis is useful, as it provides deep insight into the wealth generation process through its detailed economic reasoning. This contrasts with the majority of work done in realist political economy, where the wealth generation process is largely assumed. Important parts of the picture can remain obscured, however. How wealth is generated has implications for the kind of economic strategies states pursue and what form economic competition takes, as will be shown below.[58]

Drawing on List's work, the concept of productive capacity can be broken down into three separate forms of 'capital': 'mental', 'natural' and 'material'.[59] Natural capital refers to access to natural resources, be that water, minerals, energy, metals etc, while material capital

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[56] The reasons for this separation are manifold, but the onset of the Cold War likely had a significant impact on the lack of integration of economics in international relations scholarship. Marxist analysis had long emphasised the tight interrelationship between politics and economics, but given the Cold War, and Marxism being used as an ideological tool by Moscow, it lost a lot of academic currency, especially in the United States, where anti-Communist sentiment was rife at the time, meaning this separation continued to grow. To a degree, this separation is growing today, though not due to a rejection of Marxism, but due to the rise and dominance of 'economism', which has largely taken over a lot of IPE academe. See: Kirshner, An unwritten future: Realism and uncertainty in world politics, pp.150-52. Also: Benjamin Cohen, "Are IPE journals becoming boring?," International Studies Quarterly 54, no. 3 (2010); Benjamin Cohen, "The transatlantic divide: Why are American and British IPE so different?," Review of International Political Economy 14, no. 2 (2007).

[57] There have been some limited attempts at reintroducing the 'economic' component in 'security studies', such as with the concept of 'mercantile realism'. Its use, however, has been confined to cases where structural realism lacks obvious explanatory power, as in the post WWII behaviour of Japan. It should also not be seen as a 'new' theory, as its proponents describe, if the wider literature of realist political economy is taken into consideration. See: Eric Heginbotham and Richard Samuels, "Mercantile realism and Japanese foreign policy," International Security 22, no. 4 (1998).

[58] Even in Robert Gilpin's War and Change, where the conflictual effects of uneven economic growth are highlighted, there is no understanding of how wealth is generated presented. Robert Gilpin, War and change in world politics (Cambridge: Cambridge University Press, 1981).

[59] On List's conception of different forms of 'capital', and on the central importance of 'mental capital' see: David Levi-Faur, "Economic Nationalism: From Friedrich List to Robert Reich," Review of International Studies 23, no. 3 (1997); Chris Freeman, "Technological infrastructure and international competitiveness," Industrial and Corporate Change 13, no. 3 (2004); Robert Locke, Appreciating mental capital (Bristol: World Economics Association, 2015); Arno Daastøl, Friedrich List's heart, wit and will: Mental capital as the productive force of progress (Erfurt: Universitätsbibliothek Erfurt, 2011); Bengt-Åke Lundvall, "National innovation systems—analytical concept and development tool," Industry and Innovation 14, no. 1 (2007).

is akin to ‘capital’ in the modern liberal economic sense, in the form of machinery and tools that facilitate production. Lastly, mental capital — better described as ‘intellectual capital’ — encompasses human ingenuity, skill, and the systems through which they can be deployed.

In the economic realist conception, not all capitals are equal. Primacy lies in intellectual capital, for the simple reason, as List noted, that it ensures the other two capitals are rendered useful. A nation with abundant natural and material capital may be wealthy and prosperous in the short term, but without high levels of intellectual capital, these gains will not be consolidated and improved upon, leading to stagnation in economic development.[60] In practical terms, this means countries at a lower stage of development should not only focus on acquiring foreign technology in the form of ‘material’ capital, but also on mastering and ultimately improving on the technology embedded in it, using ‘intellectual’ capital.[61]

A good example here is the Prussian mastery of British machine tool engineering. At the outset of the 19th century, British industrial firms were global leaders, particularly Henry Maudsley’s company, through which he would become one of the central pioneers of the machine age. His technology provided the foundation for all types of machinery used in industrial processes, cutting across all industries. The Prussians, meanwhile, had established the Industrial Institute, with the aim of acquiring leading industrial technologies and disseminating them throughout German industry, thereby, in an economic realist sense, increasing the productive capacity of the state.

This was achieved through various means, via for example outright industrial espionage, large-scale imports of British technology in order to reverse engineer, and the recruitment of British engineers. As we know, the effort proved to be extremely successful: the Prussian machine tool industry improved markedly in a short period of time, meaning that by the 1840s, Prussian industrial firms were capable of producing the machinery integral to steam engine locomotives, which emerged as a vital technology for the decades to come.[62]

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[60] List, The National System of Political Economy, pp.139-43.

[61] These concepts have increasingly been taken up by developmental economists, see for example: Chris Freeman, "New technology and catching up," The European Journal of Development Research 1, no. 1 (1989): pp.3-5.

[62] On this dynamic between Britain and Prussia/Germany: Chris Freeman, "The ‘National System of Innovation’ in historical perspective," Cambridge Journal of economics 19, no. 1 (1995); Ursula Klein, Technoscience in history: Prussia, 1750-1850 (Cambridge Massachusetts: MIT Press, 2020); Eric Hobsbawm, Industry and empire: From 1750 to the present day (London: Penguin, 1999); Charles

As List illustrated, it was easy for natural and material capital to be traded and traverse the globe. However, it was far less the case for intellectual capital, remaining more 'rooted' in the nation-state, and much more important to protect and foster, as List explained using the example of Britain and the US in the early 19th century. The US mainly exported agricultural goods to Britain, primarily cotton, while Britain exported manufactured goods to the US, in the form of all manner of capital goods. In the liberal understanding of exchange, each side is seen conforming to their 'comparative advantage', and focusing on areas where they were relatively most efficient. It was seen a fair exchange of natural and material capital, but what was not considered in these transactions was the impact on intellectual capital.

Once considered, the trade was not equal: the fact that Britain could concentrate on high technology manufacturing meant that it could consistently improve its intellectual capital, while the US on the other hand would be impeded in this endeavour by the continued focus on agricultural produce. It was like 'an individual who in his material production lacks one arm'.[63] As a result, although on the surface the exchange seemed equal, it actually engendered a growing power gap between the two states, as Britain continually built on its intellectual capital and thus enhanced its productive capacity significantly.

As List went on to note, 'the present state of the nations is the result of the accumulation of all discoveries, inventions, improvements, perfections and exertions of all generations which have lived before us; they form the mental capital of the present human race, and every separate nation is productive only in the proportion in which it has known how to appropriate these attainments of former generations, and to increase them by its own acquirements.'[64]

In other words, the assumption here is that the competitiveness of a nation ultimately depends on its ability to appropriate mankind's accumulated knowledge, and subsequently improve upon it. The less a nation is able to master already existing knowledge — intellectual capital — the lower its competitiveness will be and subsequently its potential as well. So, it is not the fact of owning or having access to technology that will have a lasting

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Kindleberger, Economic response: Comparative studies in trade, finance, and growth (Cambridge Massachusetts: Harvard University Press, 1978), pp.185-236. France took a similar approach to Prussia, see: John Raymond Harris, Industrial espionage and technology transfer: Britain and France in the eighteenth century (London: Routledge, 2017).

[63] *List, The National System of Political Economy, p.160.*

[64] *Ibid., p.140.*

impact on productive capacity, rather it is the ability to improve upon technology that ultimately leads to leaps in competitiveness.[65]

The state as an independent actor

The above suppositions lead also to the idea that the state is a distinct and key economic actor, which pursues its own interests. The state has the central role in the economic realist view. In contrast to the liberal conception of the state's economic role, under economic realism the state is central to the functioning of the economy, as opposed to being just an 'arbiter' or 'night watchman'. List made this very point in regard to Smith's famous illustration of the division of labour. While Smith illustrated with the help of the example of the pin factory how productive forces could be unleashed, via dividing the work of manufacturing pins into 10 steps, each with one person responsible, List made the fundamental point that for this system to function all ten individuals need to cooperate — 'the one who makes the heads of the pins must be certain of the cooperation of the one who makes the points if he does not want to run the risk of producing pin heads in vain'.[66] That is to say, for the process to work effectively, without throwing production into chaos, there needs to be coordination, leading to a clearly 'collective' nature of economic activity. Its collective nature, in turn, implies that it needs to be controlled and marshalled by a central authority. Once this activity takes on significant size, this marshalling comes in the form of the state.

For economic activity to function effectively, especially industrial capitalism in the 19th century, a good deal of force and 'marshalling' was needed. It involved forcing people off their land and into the factories, and subsequently keeping the overall social order intact through the power of the state. For the manufacturing industry to gain ascendancy, for example, it was necessary for the state to intervene and ensure the manufacturing industry became dominant in the major economies of the 19th century, given it came up against other powerful interests, such as agriculture, particularly in Germany.[67] But since the manufacturing sector provided the most benefit to economic development of the nation-state, it was incumbent upon the state to also champion its interests, ensuring it had an

[65] *A similar point is made by Gilpin and the concept of 'social capacity': Gilpin, Global Political Economy: Understanding the international economic order, p.142.*

[66] *List, The National System of Political Economy, pp.150-52. Also: Levi-Faur, "Friedrich List and the political economy of the nation-state."*

[67] *List, The National System of Political Economy, pp.235-58.*

adequate and docile supply of labour, an increasingly sophisticated educational system catering to its needs as well as open market opportunities for its wares. In fact, List effectively made the argument that the state was pivotal to the creation of modern industrial capitalism — the market system would not exist without the fundamental support of the state. It is not, as some liberals contend, an independent 'sphere', but rather a construct that has needed to be created and continuously supported by central institutions in the form of the state.[68]

Nonetheless, suggesting the state has a central role should not imply that states are entirely autonomous and 'separated' from society, as some liberal critics may contend, but simply that those managing the state apparatus — the state elites — will also pursue their own interests as representatives of the state.[69] The state will be inclined to push its own agenda, which can go against the interests of domestic interest groups. In contradistinction to the liberal approach, economic realism is a 'top-down' theory as opposed to 'bottom-up', with analysis starting with the interests of the state, not ending up with it. The state is not a 'representative body', constituted by the various interests within a given society[70], weighted by their relative power, but an independent actor that acts according to its own interests.

The economic realist view should also be contrasted to Marxian conceptions of the state, which see it as a manifestation of capitalistic class interests. To be sure, there is clearly merit to this thinking as well: capitalism is the dominant socio-economic system, and those that sit at the top of this system are likely to have a large say on how the state is run. But again, we cannot say that the state is just a simple reflection of this — that state elites and powerful capitalists are one and the same. There are plenty of instances historically where interests

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[68] On these ideas around the state's centrality to capitalism, see also: Karl Polanyi, The great transformation: The political and economic origins of our time (Boston: Beacon Press, 2014 [1944]).

[69] This is in line with economic realist and 'statist' ideas found in: Steven Krasner, Defending the national interest: Raw materials investments and US foreign policy (Princeton: Princeton University Press, 1978); Theda Skocpol et al., Bringing the state back in (Cambridge: Cambridge University Press, 1985); Gustav Von Schmoller, The mercantile system and its historical significance, illustrated chiefly from Prussian history (Charleston: BiblioLife, 2013 [1895]).

[70] A view held, for example, by Andrew Moravcsik: Andrew Moravcsik, "Taking preferences seriously: A liberal theory of international politics," International organization 51, no. 4 (1997); Andrew Moravcsik, Liberal international relations theory: A social scientific assessment (Cambridge Massachusetts: Harvard University Press, 2001).

diverged, such as through the introduction of welfare states, the decisions to go to war and the large range of decisions to restrict trade/commerce.[71]

Economic realism can also be further contrasted with other outwardly similar realist approaches, such as 'commercial realism'.[72] The underlying assumption of commercial realism is that it only applies to certain states, some of the time, and depends on the domestic circumstances in a given nation-state. According to the theory, if certain domestic commercial interest groups become highly powerful, they begin to impact the foreign economic policy of their home state, and economic matters begin to take precedence and become the 'state interest'. Economic matters begin to trump the promotion of 'human rights and democracy' in the case of Western states, as the state becomes essentially taken over by business and finance interests. However, the concern with this form of theorisation is that it also waters down its 'realist' core substantially. In fact, it can be referred to more accurately as a liberal approach, with its emphasis on domestic interest groups, their interaction, and power over the state apparatus. Realism, as understood here, assumes the centrality of the state, and its fixed preferences. In this form of 'commercial realism', these assumptions are loosened to such a degree that it is difficult to recognise the theory as 'realism' in any traditional sense.

In the economic realist conception, the state acts independently and has a certain amount of autonomy. This does not, though, imply that it acts completely separately from its socio-cultural-economic setting, as posited by structural realism. The 'domestic' context of the state is important and must be included in any analysis. The key point is that the state and its elites are seen as acting in 'conditioned' or 'relative' autonomy, where 'interest groups' have a role, but are not in the driver's seat. Economic realism is very much in the classical realist line of thinking in this regard, described as 'state-centric realism' by Gilpin. States are central, but they are not the '*only* important actor'.[73]

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[71] Some Marxian thinkers have also realised this, and have opted for a more 'structural' approach to class power. For example: Fred Block, "Beyond relative autonomy: State managers as historical subjects," New Political Science 2, no. 3 (1981); Fred Block, "The ruling class does not rule: Notes on the Marxist theory of the state," in The political economy: Readings in the politics and economics of American public policy, ed. Thomas Ferguson and Joel Rogers (New York: Routledge, 1984). Interestingly, taking a more 'structural' Marxist perspective makes it very difficult to separate it from an economic realist framework.

[72] For example: Stephen Szabo, "Germany's commercial realism and the Russia problem," Survival 56, no. 5 (2014).

[73] Gilpin, Global Political Economy: Understanding the international economic order, p.17.

Let us look at this idea of 'relative' autonomy in more detail. As we saw, in the economic realist conception, the state's interests are furthered by expanding and developing the productive capacity of the economy. Therefore, it stands to reason that the state, and its representatives in the form of state elites, would want to achieve this in the most efficient way possible. As the history of the late 18th and 19th century showed, the most successful way of rapidly building the productive capacity of a nation was through the adoption of industrial capitalism, which also meant the rise of free enterprise, notionally distant from the state.[74] So, in somewhat paradoxical terms, in order for the state to secure and enhance its power, especially vis-à-vis other states, it had to increasingly give up economic control. What arose was a growing 'structural' reliance on 'private' capital by the state.

There would be instances of private interests directly influencing the state, but generally, the influence is more 'structural', rather than direct. As certain parts of the private economy become large, dominant and successful global economic competitors, it means they also become increasingly central to the long-term power of the state — again in terms of maintaining and building its productive capacity. As Edward Luttwak highlights, what comes out of this is a symbiotic relationship between the state and the most powerful economic actors within it.[75] This is an important point, and further separates the economic realist conception from a Marxian or Liberal one, which would assert that the state is simply a manifestation of class interests or 'interest groups', and therefore cannot act autonomously.

Indeed, the state can act independently, but will be guided and constrained by the structural power of central economic actors, vital to the state's productive capacity. There is not a straight line between capitalist interests and state policy, but certainly these interests are taken into consideration. Again, as Luttwak illustrates, the relationship is aptly described as 'reciprocal manipulation', whereby the state needs private business interests to ensure

[74] See for example: Kennedy, The rise and fall of the great powers; Xavier Lafrance, "The transition to industrial capitalism in nineteenth-century France," in Case studies in the origins of capitalism, ed. Xavier Lafrance and Charles Post (Cham: Springer International, 2019); Eric Hobsbawm, Age of capital: 1848-1875 (London: Abacus, 2010).

[75] See: Edward Luttwak, Turbo-capitalism: Winners and losers in the global economy (New York: HarperCollins, 1999), pp.140-42.

economic growth, while private interests need the state to help them in their own endeavours to generate profits.[76]

That brings us to a further needed theoretical clarification: whether large, private businesses are bound to a territory, a state, or not. In the economic realist conception depicted here, the answer is yes. Even large, multinational firms are anchored in nation-states. While production and sales may be global, the locus of power of these organisations is in the 'home' state. A good way to understand this conception is with an analogy used by one of the heads of one of France's largest banks, explaining the relationship between business and state.[77] It can be seen as analogous to parents and children. When the children are in a good mood, they want to go out and play without being bothered by their parents. However, if the children while playing outside injure themselves or become involved in a major quarrel with other children, they run back home to their parents crying, pleading with them to sort out the situation. Much the same applies to businesses. While it is in their interests for the state to provide the shoes and clothes with which they go out and play, once they are competitive and successful in the international market place, they want the state to stay out of their affairs. But if they start becoming less competitive and or run into quarrels with other 'children' or 'parents', then having the home state supporting them becomes highly useful. Even the most multinational of firms are 'embedded' in their home states, as they are the product of the 'national' economy in which they were formed and will often draw on the help of the state.[78]

Although the interests of large commercial groups in a nation and the interests of the state often do overlap, there are important occasions when they do not. As the state is concerned with improving the productive capacity of the national economy as a whole, the interests of the state and large commercial, even important, groups can diverge. Certain commercial groups, for example, could find it advantageous to continue exporting their products (and technology) to another nation-state, as this would mean more revenues in the short run. The state, by contrast, could see this as a threat to its productive capacity, leading it to become

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[76] Edward Luttwak, "From geopolitics to geo-economics: Logic of conflict, grammar of commerce," The National Interest, no. 20 (1990): p.22.

[77] Comments made to the head of France's largest industry organisation: Geoffroy Roux de Bézieux, "Podcast : Souveraineté et compétitivité des entreprises : plus de temps à perdre !," 2020.

[78] See also: Gilpin, Global Political Economy: Understanding the international economic order, 297-300; Michael Porter, The competitive advantage of nations (New York: Free Press, 1998); Paul Doremus, The myth of the global corporation (Princeton: Princeton University Press, 1999).

increasingly less competitive vis-à-vis the nation to which the technology is exported. It would thus intervene to stop these exports, in the process making 'short-term economic sacrifice…for long term gains', as List put it.[79] In addition, the economic realist framework also emphasises the value of 'time management' for the development of an economy. It is necessary to take a long-term perspective on growth, particularly in industrial societies, where investments can take a long time to yield results. They involve an intricate assembly of natural, material and intellectual capital, again necessitating a coordinating, central actor to steer the process. 'Mere individuals do not concern themselves for the prosperity of the future generations — they deem it to be foolish'.[80] The state needs to take long-term, inter-generational interests into account as well when steering productive powers.

The competitiveness of nations

We have established that states are concerned with accruing power and thus developing their productive capacity, in the context of global competition. Let us advance this by further theorising the productive capacity concept, and bringing it together with the notion of the 'balance of power'.

A nation's competitive standing

The productive capacity of all nation states in the global political economy will differ according to their relative endowment and mastery of natural, material and especially intellectual capital, which determines their 'competitive' standing amongst all nation-states.[81] In broad terms, the better the productive capacity, the more competitive the given nation-state will be and the more relative power it will have. In turn, the position a nation has in this relative global game conditions its behaviour.

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[79] List, The National System of Political Economy, p.173. Kirshner makes much the same point: Kirshner, An unwritten future: Realism and uncertainty in world politics, pp.160-1.

[80] List, The National System of Political Economy, 173. Also: Jonathan Kirshner, "The political economy of realism," in Unipolar politics: Realism and state strategies after the Cold War ed. Ethan Kapstein (New York: Columbia University Press, 1999).

[81] The idea of 'intellectual capital', or similar concepts, has become increasingly important in the economic development field, seen as central in determining which countries develop and which ones do not: Moses Abramovitz, "Catching up, forging ahead, and falling behind," The Journal of Economic History 46, no. 2 (1986); Rolf Färe et al., "Productivity growth, technical progress, and efficiency change in industrialized countries," The American Economic Review 84, no. 1 (1994).

In understanding a nation-state's productive capacity and thereby its competitive standing, Michael Porter's framework proves highly useful.[82] In his conception, a nation's competitive position can be placed into one of four 'phases' of economic growth: factor-driven, investment-driven, innovation-driven and wealth-driven, with the last representing decline.

As the name suggests, the factor-driven stage is one where the reliance is on the basic factors of production, primarily 'natural' capital in the Listian sense. This includes easy access to certain commodities, often agricultural ones, in tandem with a cheap and deep labour pool. While nations at this stage can get a competitive advantage, the advantage will tend to be very narrow and concentrated. Competition will mainly be on price, as there is no ability to differentiate products, while the technology used tends not to be complex or generated domestically, but rather sourced from abroad. It tends to be a precarious stage: even if large amounts of 'natural' capital can provide high income for a period, resources can dwindle and are very dependent on demand conditions elsewhere. Additionally, it does not provide the best foundation for continued productivity growth. Most of the world's nation-states still remain in the stage, and it is where all states started at some point.

The next stage is 'investment-driven', by which Porter means a phase in which nations improve their competitiveness by investing heavily. In the productive capacity framework, this is marked by nations moving from a reliance on natural capital to increasingly building material capital, where the role of the state is crucial in guiding the process. Infrastructure is developed and large, modern facilities are built with the use of foreign imports, while foreign processes and product technology are also applied. Crucially, at this stage, foreign technology is not only used but also improved upon. Although the technology tends not to be highly complex, it is mastered and a foundation is built for further improvements, as companies in this phase absorb and then develop foreign technology and know-how. Productive capacity continues to upgrade during this phase: labour becomes increasingly skilled while still receiving relative low wages, allowing technology to be improved upon, in the process markedly improving the competitive position of the nation. There is an

[82] *The following sections are based on Porter's 'The competitive advantage of nations': Porter, The competitive advantage of nations, pp.545-64. See also the work done at the World Economic Forum, e.g.: Xavier Sala-i-Martin et al., "The global competitiveness index: Prioritizing the economic policy agenda," World Economic Forum Global Competitiveness Report (2008); Michael Porter et al., "Moving to a new global competitiveness index," ibid.; Ujjwala Bhand and Mridula Goel, "Understanding innovation by analyzing the pillars of the Global Competitiveness Index," International Journal of Law and Political Sciences 11, no. 8 (2017).*

increased focus on developing ‘intellectual capital’, with significant investment in university and general research, while risk-taking is also encouraged as part of this upgrading process. Nevertheless, the primary advantage in this phase is the nation’s ability to invest heavily — it will still not be directly competing with the leading nations, being still focused on fairly standardised, medium to low value-added industries. Foreign technology and know-how, while it can be incrementally improved upon, are still central. Domestic demand will tend not to be particularly sophisticated, as consumers have lower means.

Subsequently comes the ‘innovation-driven’ stage, which is where all the elements for a strong competitive position are in place. ‘Natural’ capital or factor endowments become less important, with competitive advantage moving away from just price, as products become increasingly sophisticated and unique. This stage is referred to as the innovation stage, since nations here no longer rely on the use of foreign technology and know-how, but instead produce their own, often becoming the global standard. Consumer demand grows significantly as wealth is generated, creating new and large markets for the country’s firms. Needs become increasingly intricate, leading to specialised suppliers and further growth in related industries, forming industry ‘clusters’ and continuing to upgrade the entire economy. We see growth in the number of competitive industries, as innovation tends to ‘spill over’. As the number of competitive firms increases, so does competition, further helping the innovation process. The increasing breadth of competitive industries also reduces risk, as the economy becomes more diversified, while it also tends to be less affected by macroeconomic shocks or currency movements, as its firms compete more in differentiated areas, where competition depends on their own technological content. In this phase, with the success of its economy evident, the state will tend to be more ‘hands-off’ relative to the investment stage, with the productive capacity of the nation best served by ‘clearing the way’ for its successful firms. We would expect the state to move away from being a protector and nourisher, to being more of a promotor. States with economies in innovation-driven growth tend to promote free trade and in general reduce economic barriers. As they are in a leading competitive position, this is of course to their advantage.

Finally, we reach the decline stage, where a nation’s ability to innovate begins to diminish. This can occur for various reasons. One cause is that leading firms, as a result of having achieved global leadership, transition from a position of aggressive innovation and expansion to one of preservation. Risk-taking declines and the large, previously highly

competitive firms will be increasingly staffed by 'stewards' as opposed to entrepreneurs and builders. Significantly higher levels of income often lead to 'higher ambitions' and a loss of motivation amongst workers. Both management and labour become highly concerned with preserving their positions, leading to a preference for the status quo and hence a further barrier to productivity-enhancing innovation. Furthermore, industries can also become stuck in technological 'paradigms', making it difficult to reinvigorate them and jolt the industries back into competitiveness. As innovation wanes, opportunities for growth dissipate, which further feeds into a sense of decline. New job and wage growth tends to stagnate, leading to social tensions, feeding into lower investment again. The breadth of competitive industries narrows, reducing productive potential across the economy. Productivity declines, as does the ability of the economy to support a rising standard of living. Some industries may remain highly competitive, but will be primarily those associated with accumulated wealth and investment, such as the investment industry, luxury industry, entertainment, aerospace and defence or educational services. The common denominator is that they are derived from the nation's past accomplishments and build-up of wealth. As the nation begins to decline, and other nations move into the investment and innovation stages, the competitive gap closes.

The distribution of economic growth

Broadly, every nation falls into one of these four phases that depict the health of the economy's productive capacity. While it is undeniable that economic interaction between states can lead to gains for all involved, as is highlighted in liberal theory, it is also the case that the distribution of these gains may not be equal. Relative gains are important.[83] Those nations with better productive capacity, and hence more competitiveness, will take an increasingly large share of the gains in global growth. And changes in the distribution in global economic growth will lead to consequences for states in terms of the perception of threats.

For instance, suppose the global economy had been growing for a decade, but during this time relative productive capacity dynamics changed: the once dominant nation slipped into the decline phase of growth, while an up-and-coming nation rapidly moved through the

[83] *See: Gilpin, War and change in world politics, 10-16; Robert Powell, "Absolute and relative gains in international relations theory," American Political Science Review 85, no. 4 (1991); Joseph Grieco, Cooperation among nations: Europe, America, and non-tariff barriers to trade (Ithaca: Cornell University Press, 1990); Michael Mastanduno, "Do relative gains matter? America's response to Japanese industrial policy," International Security 16, no. 1 (1991).*

phases to emerge as an innovation-driven economy at the technological frontier. Although in an absolute sense, everyone benefited — the global economy continued to grow — crucially, the relative power dynamics between these two nations changed drastically, in favour of the ascendent nation, provoking an increased sense of threat in the previously leading one.

This is also the point made clear by Gilpin's notion of the 'process of uneven economic growth'. As economic growth becomes increasingly dynamic in one nation compared to another, the locus of important industries and sectors begins to shift, leading to a 'change in the distribution of wealth and power among states in the system'.[84] Therefore, the more growth turns lopsided in favour of an ascending nation – in terms of control of the highest value-added parts of the global economy — the higher the potential for political conflict. All states want to control the most productive industries, with the highest technological sophistication and therefore with the most effective way to generate surplus. Thus when control is threatened by the rise of a challenger nation, conflict is likely to result. Rising states want and need to push into innovation-driven growth, lowering dependencies on leading nations and creating more direct rivalry.

As Gilpin likewise emphasises, the intensity of the competition also depends on the speed at which the challenger makes progress. The faster the progress, the more intense the competition and conflict will be.[85] The advent of industrial capitalism accelerates the process, as being at the top of the global value chain confers especially large competitive advantages, due to the large leaps in efficiency and profit-generation on offer. As uneven industrial development unfolds, Marx made a key point that 'the country that is more developed industrially only shows to the less developed the image of its own future'.[86] Less developed countries want what the developed have, and tend to emulate them. Since developed nations provide the 'future image' of economic success for developing nations, and with it, the success of specific types of industries, it will mean that more of the same will be replicated throughout the global economy. Again, this imitation contributes to rising tension and competition, as similar industries are fought over in global markets.

[84] *Gilpin, The political economy of international relations, pp.54-55.*

[85] *Ibid., p.112.*

[86] *Ibid.*

A further juxtaposition to structural realism is in order at this point. Like the economic realism depicted here, structural realism also contends that increased economic interdependence can lead to conflict, but there is a key difference on how it occurs. Broadly speaking, the structural realist view suggests that as economic interdependence between nations grows, so does their dependence on other states for resources needed for economic growth, such as energy and raw materials.[87] This leaves the state more vulnerable, and given its unceasing need for security, it will tend to seek ways to reduce this dependence, even if it means conflict or outright war with other states. In this view, the state will always be wary of creating dependencies by integrating economically with other nations, and will try to avoid it as much as possible.

While competition for resources has sometimes led to conflict, and even outright war, there are also times when states pursue greater economic integration, which this form of theorising cannot explain. The spread of economic growth to other nations can also come with significant benefits – there are times when creating economic interdependencies make sense. It creates potentially large new markets, which can be profited from, and used to further enhance a leading state's productive capacity.[88] In this regard, Gilpin's concept of 'core' and 'periphery' proves useful. In this conception, the global economy can, for a time at least, be stable and beneficial for all involved, as in the liberal hypothesis of international trade. The core is constituted by the leading economies, with the highest technological capabilities and sophisticated industries, while the periphery is made of economies primarily focused on the export of commodities or low-to-medium value industrial goods. Between the core and periphery, a symbiotic relationship can exist: the periphery needs the capital goods and investment capital available in the core to facilitate growth, while the periphery can offer growing markets, basic materials and workers, although it remains inferior to the core due to its reliance on it for knowledge and technology.[89]

An instability in this system arises once a peripheral economy seeks to gain core status by moving into the highest value-added segments in global industrial production. It is not growth in and of itself that poses a problem for 'core' states; rather, it is the type of growth

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[87] For instance: Dale Copeland, Economic interdependence and war (Princeton: Princeton University Press, 2015); Susan McMillan, "Interdependence and conflict," Mershon International Studies Review 41 (1997).

[88] Gilpin, The political economy of international relations, pp.114-15.

[89] Gilpin, Global Political Economy: Understanding the international economic order, pp.143-44.

that leads to threat perception and eventual balancing behaviour. Specifically, it is the periphery's push into innovation-driven growth that becomes threatening. India, for example, has been growing at a substantial pace for decades, but has not sought to compete globally in specialised, high margin, high technology industries with economic leaders in the US or Europe to any meaningful degree. Therefore, the fact that India is growing is not being perceived as a threat, while China's aim to move to the technological frontier in a broad swathe of industries *is* generating a rising threat perception. Compared to structural realism, it is not competition for resources that leads to conflict as a result of economic interdependence, but rather the specific type of growth pursued by rising nations. The end result may be competition for resources, but it is not the underlying driving factor.

Balancing competitor nations

This brings us to the question of how leading countries deal with rising competition, specifically with the countries that have rapidly improved their productive capacity and increasingly represent an economic threat.

In stylised terms, the challenger economy, be it historically the UK, Germany, the US, Japan or now China, starts its rise by implementing various policies and systems that enable the growth of its domestic industries, in the form of targeted protection and the accumulation of at least moderate amounts of intellectual capital. Once this has been established and is reasonably successful, the need arises to also make inroads onto global markets, to ensure its companies can build even more scale and, therefore, become even more competitive. As technological gaps begin to close, and with it the competitiveness gaps — in terms of the capture of global value creation — tensions and conflict begin to manifest, as the previous leader seeks to come to terms with an increasingly competitive environment. As the power of the rising economy increases, the relative power of the leading one begins to decline. At the same time, as the rising power increases its technological sophistication and industrial competitiveness, the high levels of profit previously being generated by the leader are eroded away, which begins to concern the latter in terms of its future economic viability, and potentially even the very fabric of the state. This is why these economic issues are often also framed using concepts such as 'national security' or 'public order'. The incumbent nation will subsequently want to counteract the rise in power of emerging economies – to

'balance' them – and for this, several logical options are available, which can broadly be divided into three categories, as evinced by Gilpin.[90]

The most primitive but most 'offensive' option would be to use military power to ensure that the economic threat is eliminated. Historically, this may have been viable to a degree, but with the level of military sophistication present today amongst the major powers, it is essentially a self-defeating option. Another 'offensive' strategy comes in the form of launching an industrial revival programme, with a focus on re-establishing a technological and competitive lead, thereby neutralising the threat by regaining economic dominance. The initiative involves stimulating and helping the domestic economy upgrade to regain clear leadership positions across crucial industries – those that are the most value generating in a given era. At its core, it means boosting the intellectual capital production of the nation, leading to more research and development spending, a focus on science and technology policies, educational overhaul or infrastructure renewal, alongside traditional macroeconomic tools such as higher fiscal spending or currency adjustments.[91] A pertinent example is the US in the 1980s: faced with intensifying competition with Japan, there was a major effort to reinvigorate US competitiveness, especially in high technology areas, with a range of projects and programmes. As Fred Block has shown, the US in the 1980s turned back into a veritable developmental state, with for example the Technology Transfer Act, the Manufacturing Extension Program, the Defensive Industrial and Technology Base Initiative, to name but a few of the offensive efforts initiated by Washington.[92]

The third strategy that can be used to counteract the rise of a threatening economy is through defensive measures, which involve setting up economic barriers, such as trade and investment restrictions to protect domestic industries but also weaken the rising economy. These measures can also have an 'external' component, as the rising economy is pressured to open its markets, reduce subsidies or eliminate its tariff system. The threatened power starts to closely examine the competitor nation's advantages and seeks to 'level the playing

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[90] *Gilpin, The political economy of international relations, p.115-16; Robert Gilpin, Technology, economic growth, and international competitiveness: A report prepared for the use of the Subcommittee on Economic Growth of the Joint Economic Committee, Congress of the United States (Washington, DC: U.S. Government Printing Office, 1975), pp.11-13.*

[91] *This strategy is essentially the ability of an economic leader 'to transform', as Kindleberger put it: Charles Kindleberger, Economic laws and economic history (Cambridge: Cambridge University Press, 1997), pp.19-20.*

[92] *See: Fred Block, "Swimming against the current: The rise of a hidden developmental state in the United States," Politics & society 36, no. 2 (2008).*

field', which often starts with demanding 'reciprocity'.[93] Beyond demands for 'reciprocity', 'unfair competition' is often alleged due to the high state activism in the rising power, with accusations of 'hidden' subsidies and general dirigiste policy that make it increasingly difficult for firms in the incumbent power to compete. Further, a central policy of leading nations seeking to defend their position is to prevent rising nations from gaining access to technology that could help them move towards the technological frontier. This response, as argued by Ha-Joon Chang, is akin to 'kicking away the ladder', whereby the most developed nations in a certain era seek to secure their leadership positions by restricting access to leading technologies.[94]

The process of 'technological defence' should be seen as the mirror image of the 'technological offence' described previously: ascending nations seeking to move towards the technological frontier will be keen on gaining access to technologies on the frontier by all means necessary — recruiting foreign labour, foreign acquisitions, industrial espionage, reverse engineering etc. — while the dominant nation, seeing its technological advantage starting to erode, will move towards preventing the process, and set up defensive measures.

This trend is seen time and again throughout history. For instance, the Dutch were the preeminent economic power of the 16th and early 17th century, positioned right at the technological frontier, with mastery of mechanisation technology offering competitive advantages in the important shipbuilding and textile industries. By the mid-18th century, however, it became clear that the technological gap with rival economic powers was narrowing, and subsequently Dutch state policy changed: introducing laws to prevent the emigration of skilled workers, as well as the export of products containing frontier

[93] See: Ha-Joon Chang, "Policy space in historical perspective with special reference to trade and industrial policies," Economic and Political Weekly 41, no. 7 (2006): pp.13-15. This type of rhetoric around 'levelling the playing field' and 'reciprocity' was, for example, very common in the 1980s, as the US was aiming to deal with a rapidly rising Japan. See: Pietro Nivola, "The new protectionism: US trade policy in historical perspective," Political Science Quarterly 101, no. 4 (1986); William Cline, Reciprocity: A new approach to world trade policy? (Boston: MIT Press, 1983); Laura D'Andrea Tyson, Who's bashing whom? Trade conflict in high-technology industries (Washington, DC: Institute for International Economics, 1993); Frank Langdon, "Japan–United States trade friction: The reciprocity issue," Asian Survey 23, no. 5 (1983).

[94] This point has arguably been made most forcefully by development economist and neo-Listian Ha Joon Chang: Ha-Joon Chang, Kicking away the ladder: Development strategy in historical perspective (London: Anthem Press, 2002); Ha-Joon Chang, The political economy of industrial policy (London: Macmillan, 1996). Also on this relationship between 'incumbent' and 'challenger': Charles Kindleberger, World economic primacy: 1500-1990 (Oxford: Oxford University Press, 1996).

technology.[95] Once industrialisation had progressed significantly by the mid-19th century, and technology grew in complexity, there was also a rise in the sophistication of protective measures. For example, concerns amongst leading nations around 'intellectual property' as well as 'trademarks' rose. In the late 19th century, when Britain's manufacturing pre-eminence was coming under threat from Germany, London took a keen interest in defending British trademarks, through for example the Merchandise Trade Act and banning 'commercial thievery', with the idea of keeping German goods off British markets.[96]

Usually, leading states that face a rising economic threat use some form of combination of these strategies, to ensure that catch-up nations do not join them at the technological frontier.[97] Under economic realism, balancing behaviour does not only happen in a security sense, as understood under structural realism, but also in the economic sphere, even against other states that do not pose a military threat. Control of central, high-value-adding sectors and industries in the global economy is critical, and if rising states seek to compete in these sectors, a balancing process against the newly competing state will be set in train. It also means that rivalries and balancing processes can occur between states geographically far removed from one another – such as China and the European states – where security concerns play less of a role. What matters are the states' relative position in terms of competitiveness in high-technology areas of the global economy.

Investment policy in the economic realist context

Moving beyond broad economic developments, how are we to understand investment policy specifically using the economic realist perspective? Where does investment fit into the picture exactly?

Sources of investment policy

Firstly, in those nations undergoing high growth, moving into the catch-up phases, such as through the investment stage, we would expect heavy state involvement in the regulation of

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[95] Chang, Kicking away the ladder: Development strategy in historical perspective, p.55. Also: Karel Davids, The rise and decline of Dutch technological leadership: Technology, economy and culture in the Netherlands, 1350-1800 (Leiden: Brill, 2008).

[96] Chang, Kicking away the ladder: Development strategy in historical perspective, p.57. On Britain's growing concern around 'trademarks' in the latter part of the 19th century, see also: David Higgins, "Trademarks and infringement in Britain, c.1875–c.1900," in Trademarks, brands, and competitiveness, ed. Teresa da Silva Lopes and Paul Duguid (London: Routledge, 2010); Kindleberger, Economic response: Comparative studies in trade, finance, and growth, pp.216-18.

[97] Gilpin, Global Political Economy: Understanding the international economic order, pp.146-47.

inward foreign investment. That is not to say the rising state will not want foreign investment, but that it will tend to be highly regulated.[98] Foreign capital is welcomed, but can only operate with significant strings attached; it has the underlying purpose of helping the catch-up nations close the technology gap with the leading economies. This explains why foreign investment in these countries is often conducted via the use of 'joint ventures', whereby the foreign investor can access the growing market, but is required to share expertise and technology with local firms.

For example, in Japan, during the rapid catch-up years of the 1950s and 1960s, foreign ownership in Japanese firms was restricted to 49%, the rest needing to be owned by a Japanese partner involved in the same line of business, with the underlying idea that the foreign investment should benefit the growth of Japanese productive capabilities. Throughout the 1960s, policies were loosened, but significant state intervention was still deemed necessary. Investment screening was introduced during this period, with the principle being that it provided another layer of protection as other inward investment restrictions were lifted. Foreigners could become full owners of Japanese firms, but the state reserved the right to 'screen' every inward investment, and would have to give the green light for it to go ahead.[99]

Once businesses in the rising nation have achieved a good level of competitiveness, and are able to compete on open global markets, investment restrictions tend to be lifted in those areas. Even if foreign firms gain a foothold in the domestic market, they constitute much less of a threat at this stage, as they will not have any significant competitive advantage, and could even be at a disadvantage at that point.

Again, using Japan as an example, this is exactly how the liberalisation of foreign investment proceeded, starting in those areas where Japanese firms had strong positions in their respective markets, such as in steel and cement, and which were of less 'strategic' importance, i.e. with relatively less intellectual capital content. In Korea too, foreign capital was treated in much the same way: welcomed, but with significant strings attached. The

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[98] Ha-Joon Chang, "Regulation of foreign investment in historical perspective," The European Journal of Development Research 16, no. 3 (2004).

[99] On this 'phase' in Japan's investment policy: Terutomo Ozawa, "Technology imports and direct foreign investment in Japan," Journal of World Trade 7, no. 6 (1973); Mark Mason, American multinationals and Japan: The political economy of Japanese capital controls, 1899-1980 (Cambridge Massachusetts: Harvard University Press, 1992), pp.151-95.

Korean state even fully explained its thinking in a 1980s White Paper, which illustrated that inward foreign investment could come with significant positives, such as allowing domestic industry to 'upgrade', but would need to be managed very carefully, so as not to damage fledgling Korean industries and their ability for technological advancement. The result was that although there was plenty of foreign investment in Korea, areas which Seoul deemed to be increasingly competitive high-technology were not available to foreign investors, while in other areas again the joint venture principle was favoured. In Korea too, investment screening was taking place, in an even more nuanced way than in Japan, whereby the foreign investors were screened for *their* technological capabilities, with investments from those closest to the technological frontier preferred.[100]

It is clear, then, that in this ascendant phase, state intervention in foreign investment will be intense, with the underlying purpose of building the nation's productive capabilities, especially in terms of producing intellectual capital and moving towards the technological frontier.

Investment defence

What, however, will happen to the foreign investment policies of the leading/dominant nations? As we saw, as nations increasingly attain global competitive advantages, economic policies will tend to become more liberal, in order to facilitate more opportunities for their competitive industries, and investment policies will be no different. As domestic industry becomes highly competitive, there is less of a need to regulate foreign capital as it has less of an impact on a nation's productive capabilities, while it also serves to ward off foreign criticism related to protectionism, making life easier for its competitive industries on global markets. This dynamic, however, will begin to change once it becomes clear to leading states that their lead is narrowing. Open investment regimes are increasingly called into question and reversed, as the lead is sought to be protected and enhanced once more. Indeed, what tends to happen within the state apparatus, once the competitiveness of a given nation begins to decline in the global marketplace, is a reassertion of interventionist principles,

[100] *On South Korea's shifting approach to investment policy: Chang, "Regulation of foreign investment in historical perspective," pp.702-05; Ha-Joon Chang, "Globalisation, transnational corporations, and economic development," in Globalisation and progressive economic policy, ed. Epstein Baker (Cambridge: Cambridge: Cambridge University Press, 1998), pp.101-07.*

with the state once again seeking to ‘correct course’, a process in which investment policy tends to play a key part.

Let us take the US reaction to a rapidly rising Japan in the late 20th century as another example.[101] The US economy, in stark contrast to Japan’s, was in a malaise in the late 1970s and early 1980s, which saw the unemployment rate jump to levels last seen during the Great Depression. US manufacturing was facing an especially hard time, with the auto industry seen as being in mortal decline, particularly when compared to the rapidly growing Japanese automakers. A symptom and symbol of this decline in competitiveness was the rapidly growing current account deficit in the US, the bulk of which was due to the trading relationship with Japan. Predictably, as was the case for the British when coming up against the Germans, or the Dutch coming up against the British, the competitive advantage Japan was building was not deemed ‘fair’. The Japanese were taking advantage of ‘wide open’ American markets, while strategically shielding and protecting their own economy, as well as making use of American technology. The Hitachi ‘spy case’ of 1982 exemplified this thinking in the US, seeming to verify the suspicions of large-scale Japanese industrial espionage efforts.[102]

Developments in FDI were not insulated from these trends. In the post-war period, there was relatively little foreign direct investment into the US, with the US investing far more abroad than it was hosting. Along with the factors noted above, however, this started to change in the late 1970s and throughout the 1980s, as the stock of foreign investment in the US grew more than fourfold in a decade with Japanese investors seeing the most growth during this period.[103] When considered together with the concerns around the US’s competitive position versus Japan, these investments began to cause substantial unease in Washington.[104] The concern, again, was around technology, and that allowing Japanese

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[101] Draws on the following: David Audretsch and Hideki Yamawaki, "R&D rivalry, industrial policy, and US-Japanese trade," The Review of Economics and Statistics 70, no. 3 (1988); Dennis Encarnation, Rivals beyond trade: America versus Japan in global competition (Ithaca: Cornell University Press, 1993); Mario Daniels, "Japanese industrial espionage, foreign direct investment, and the decline of the US industrial base in the 1980s," Bulletin of the German Historical Institute (2018).

[102] Japanese tech firm Hitachi was accused of stealing technical data from IBM, containing information on its most advanced computer: Sheridan Tatsuno, The technopolis strategy: Japan, high technology, and the control of the twenty-first century (New York: Prentice Hall Press, 1986), p.68.

[103] Michael Hodges, "The Japanese industrial presence in America: Same bed, different dreams," in The International Relations of Japan, ed. Kathleen Newland (London: Macmillan, 1990).

[104] See for example: National Research Council, "Japanese investment and technology transfer: An explanation of its impact," (1992); Susan MacKnight, "The debate over Japanese investment in the United States," Economic Survey 12 (1988); United States Department of Commerce, Foreign direct investment in

investors free reign in the US would enable Japan to avail itself of its intellectual capital, thereby putting the still-superior US position under serious threat. After 1985, Japanese investment in the US began to go into overdrive, which coincided with the fact that Japanese market share in integrated circuits equalled that of the United States, drawing further attention to the competitive pressures faced by the US semi-conductor industry.[105]

The threat perception in Washington came to a head in 1986 with the attempted takeover of Fairchild Semiconductors by Japanese firm Fujitsu, which epitomised the growing sense of economic menace from Japan. The furore was considerable, and since Japanese investors traditionally preferred to keep low-key profiles, the deal was abandoned. However, it prompted US state elites to start tightening the FDI regime, providing themselves more tools of control. The following months saw lengthy discussions in Congress, culminating in the Exon-Florio amendment, which was part of the Trade and Competitiveness Act of 1988. This amendment allowed the Committee on Foreign Investment in the United States (CFIUS), created in the 1970s but a largely dormant agency, to screen all incoming foreign direct investment and also to prohibit any investment it deemed contrary to US national interests, mostly seen as a measure to prevent technological outflow to Japan.[106]

The broad investment policy of states can be seen as a reflection of their relative standing in the global economic game, much like trade, regulatory, and innovation policy as well. There are myriad tools at the disposal of states to increase and ensure their economic competitiveness, of which investment policy is one. The erection of barriers to foreign investment is a defensive measure, but the type of defensiveness will depend on the competitive position of the nation. As we saw when nations such as Korea were in their ascendant phases, moving rapidly into investment and innovation-driven growth, this was

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the United States: A report submitted in response to Section 3(a) of the Foreign Direct Investment and International Financial Data Improvements Act of 1990: Review and analysis of current developments (Washington, DC: U.S. Department of Commerce, Economics and Statistics Administration, 1991). On this increasing need to 'balance' Japan in the economic sphere: Edward Graham and David Marchick, US national security and foreign direct investment (Washington, DC: Peterson Institute Press, 2006).

[105] *On the Japanese challenge to the US in this vital high-tech area: Tyson, Who's bashing whom? Trade conflict in high-technology industries; Richard Langlois and Edward Steinmueller, "Strategy and circumstance: The response of American firms to Japanese competition in semiconductors, 1980–1995," Strategic Management Journal 21, no. 10-11 (2000).*

[106] *For the background around the rise of CFIUS: Eliot Kang, "US politics and greater regulation of inward foreign direct investment," International organization 51, no. 2 (1997); Susan Liebeler and William Lash III, "Exon-Florio: Harbinger of economic nationalism," Regulation 16 (1993); William Long, "The US Japan semiconductor dispute: Implications for US trade policy," Maryland Journal of International Law 13, no. 1 (1988).*

done through considerable control over foreign investment, but with the underlying rationale that controlled foreign investment should allow domestic firms to build their own technological competence, i.e. it was done with the purpose of fostering domestic productive capacity. On the other hand, when leading nations — those already operating at the technological frontier — start erecting investment barriers, these are not necessarily meant to foster more technological capacity, but rather to protect what is already there. Not doing so could mean the ascendant nations reaching the technological frontier more rapidly, further eroding competitive advantages. Leading nations seeing a rising competitive threat implement policies with the aim of curtailing the rising nation's progress towards the technological frontier.

To be sure, concerns around 'intellectual capital' and 'technology' are not the sole concerns for states aiming to promote or defend their productive capacity. Access to resources is also an important factor to consider. A rising nation, much as it needs access to foreign technology, will also tend to need access to raw materials for its industrial progress. If these raw materials are located in the leading/incumbent nation, we would also expect friction to rise over time, with the leading nation increasingly seeking to restrict the rising nation's access to these resources, as a way to 'balance' the ascendent power. By contrast, if nations rely heavily on commodities/raw materials from abroad, as is the case with countries in Europe, these states will be highly sensitive to investments that potentially impact their access to these resources.[107] While the protection of 'intellectual' capital is still key, as the ultimate driver of expanding productive capacity, protection of and access to crucial natural resources must also be maintained.

Economic realism, globalisation and the fourth industrial revolution

How does globalisation fit into the economic realist framework? Does globalisation not mean a considerably less important role for the state?

In the economic realist conception, the era of globalisation, ushered in by technological progress — through the enormous increase in man's 'intellectual capital' in the Listian sense — has actually increased the importance of the state, contrary to the view that globalisation has diminished its role. Interestingly, this is widely recognised within the business

[107] This point is made, for example, by highlighting European states' concern with rising Russian investment in the European energy sector: Lenihan, Balancing power without weapons: State intervention into cross-border mergers and acquisitions, p.64.

community — those that actually participate in globalisation, as seen, for example, in the writing of Michael Porter.[108]

Given that technology, in the form of transportation and information, has allowed markets to become increasingly global in nature, it also implies that there is more to gain, and more to lose, for businesses in the major economic powers. There is simply more at stake. Being at a competitive advantage means that a vast potential customer base can be exploited, while being at a competitive disadvantage entails deeper potential market share losses. Being competitive is more important than ever for businesses, leading also to rising state concern with issues around 'competitiveness' and 'global competition'.[109]

Moreover, as capitalism has progressed throughout the 20th and 21st centuries and engendered increased technological sophistication, it has also led to an increased concentration of value added in 'know-how' components, i.e. in the 'intangibles'. The actual production of products contributes significantly less to the value added in a product, compared to, for example, the Fordist era, where much of the value added of the car lay in its production.[110] To put it another way, intellectual capital has become even more important in the modern era, meaning its cultivation, promotion and protection are more critical now than ever. Knowledge becomes the key to succeeding when competition moves into high technology areas. Over the modern period of globalisation, going back to around the 1970s, we thus also see more state involvement in 'innovation', which is abundantly described in the growing 'national systems of innovation' literature, where List's influence is also very clear.[111] With technological change accelerating, and with that the potential of major disruption in the global economy, being at the forefront of technological change and

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[108] Porter, The competitive advantage of nations, pp.617-82.

[109] Over the last 30 years, for example, the term 'competition state' has been increasingly frequently used, which can be best understood through an 'economic realist' lens. See: David Levi-Faur, "The competition state as a neomercantilist state: Understanding the restructuring of national and global telecommunications," The Journal of Socio-Economics 27, no. 6 (1998).

[110] On this important role of 'intangibles': Kevin Hassett and Robert Shapiro, "What ideas are worth: the value of intellectual capital and intangible assets in the American economy," Sonecon, LLC (2012); Patrizio Bianchi and Sandrine Labory, The economic importance of intangible assets (Aldershot: Ashgate, 2004); Carol Corrado, Charles Hulten, and Daniel Sichel, "Intangible capital and US economic growth," Review of Income and Wealth 55, no. 3 (2009); Johnathan Haskel and Stian Westlake, Capitalism without capital: The rise of the intangible economy (Princeton: Princeton University Press, 2018).

[111] See for example: Chris Freeman, Economics of industrial innovation (London: Routledge, 2013); Jeremy Howells, "Innovation and globalisation: A systems of innovation perspective," in The handbook of globalisation, ed. Jonathan Michie (Cheltenham: Edward Elgar Publishing, 2011); Bengt-Åke Lundvall et al., "National systems of production, innovation and competence building," Research Policy 31, no. 2 (2002).

possessing leading intellectual capital becomes absolutely central to a nation's economic success. This can be seen most vividly in the growing discussion around the 'fourth industrial revolution' and what it means for competition in the global political economy.

First, let us consider the concept of 'industrial revolution'. It refers to the emergence of a set of new technologies that fundamentally transform the structure of the economy and society in general. Large new markets are created, others are deeply disrupted, and those able to master and control these technological changes will be in a highly competitive position. During the first industrial revolution, steam power, along with other key technologies, such as machine tooling, iron making, chemicals, cement, glass production, led to the rise of critical industries such as textiles, mechanical engineering, construction, and mass transportation, among others. As we know, the UK was the leading nation in developing and harnessing these new technologies, propelling it to global hegemony.

Although there is some hyperbole surrounding the concept of the 'fourth industrial revolution', and claims it will be even more significant than the first industrial revolution may be overstated, we are witnessing the convergence of new technologies with the potential for deep and far-ranging economic impacts. Against the background of state elites seeking to enhance the productive capacity of their respective nation-states, within the economic realist framework, we can expect states to become intensely active in ensuring they become leaders in these new technologies. Those states able to master and harness them will gain a large competitive advantage, potentially leading to vast economic power.

What are the new technologies converging in this fourth industrial revolution?[112] One of the foundational technologies in this new wave of innovation is *artificial intelligence*, which can have all manner of ramifications for the global political economy. It refers to the ability of computers/machines to imitate and even improve upon human intelligence, thus being able to decipher patterns, analyse problems, and, crucially, also learn and thereby further improve themselves. The increasing amounts of data being generated mean these artificial intelligences can be trained and even train themselves, allowing them to get better and better at a given task. This was seen vividly, for example, in Google's AlphaGo being able to defeat a human world champion at Go, an extremely complicated strategic game, with an

[112] *For an overview of the 'fourth industrial revolution': Klaus Schwab, The fourth industrial revolution (London: Portfolio Penguin, 2017); Nicholas Davis, "What is the fourth industrial revolution?," World Economic Forum (2016).*

immense number of permutations of potential positions on the board, making it much more complex than chess.

The implications of artificial intelligence are enormous: not only are humans capable of producing intellectual capital, but potentially machines can do so as well, maybe even exponentially so. Naturally, for those nation-states with control of the leading artificial intelligences, the competitive advantages could be staggering, meaning this is set to be one of the key fields of competition in the coming years.[113]

Other related technologies are driverless cars, which present an enormous market opportunity for those able to master them, along with 3D printing and nanotechnology, which will revolutionise supply chains and allow for full customisation of products. In tandem, the Internet of Things is set to allow for large-scale productivity enhancements throughout factories and has applications in healthcare, energy provision and entertainment — again a vast market opportunity for those who attain leadership in this space.

With all of these technologies arriving on a similar time horizon, and with technological change speeding up, competition in these realms of high technology is likely to become fiercer, given the large 'spoils' potentially on offer. From an economic realist perspective, it means we are moving into an era where even more state intervention is likely: the technological frontier is being pushed out, and current leading nations will continue to want to be at the forefront, while catch-up nations would like to 'leapfrog' and take their own position at the frontier.

The European Union and economic realism

Given the European dimension to this study, we also need a conception of how the European Union works. So, how is the European Union to be understood from an economic realist perspective?

The first important aspect to note is that in the economic realist conception, such as found in List, the nation-state is highly important and central to analysis, but it is not seen as part of the 'end phase' of human development. As List made clear, broadly speaking, throughout history, humanity has tended to group into distinct units that have tended to get larger as

[113] *On new technologies' impact on the global political economy, see: Glenn Diesen, Great power politics in the fourth industrial revolution: The geoeconomics of technological sovereignty (London: Bloomsbury Publishing, 2021).*

time has gone on — going from tribes to villages, towns, counties and so on. While the nation-state is the current 'unit' humanity has decided to group itself into, this does not mean the process is at an end. As technology continues to improve, economic development tends to equalise between nations, cultures become increasingly enmeshed and scarcity is increasingly eliminated, it is conceivable that a 'world union' will one day be created. If humanity has seen the benefits of moving towards a union based on often large nation-states, it stands to reason that this process can continue and one day encompass the entire human race under one political unit.[114]

The roots of this process of forming 'units' has its origins in likely primordial tribal human instincts, but the form this 'unification' takes is not set in stone, with larger and larger voluntary union eminently possible. It is within this grand historical picture that we can look at the European Union, as a start to a process of unit-building beyond the nation-state. However, it should be stressed that this does not mean the European Union has superseded the nation-state, as is clear even in the recent empirical record. Rather, it contains the seeds of a new political form that, much like the process towards more holistic units throughout history, will take centuries to find its final expression. In the meantime, we still have to contend with the reality of nation-states, which continue to operate within this nascent structure.

In concrete terms, it means that while certain elements of interstate relations, such as competition and rivalry, have been attenuated through political union, they have not been eliminated. Nations in the European Union are certainly not likely to go to war with one another, but this does not mean that they are not economic rivals. We see this, for example, in the 'geo-economics' literature, which highlights that although territorial competition is essentially non-existent, economic rivalry is alive and well, also within the Union.[115] To be sure, the rivalry is not likely to be as fierce as compared to nation-states outside of the Union, but it is clear that nation-states do continue to pursue their own national economic interests.

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[114] List, The National System of Political Economy, pp.124-26. On the Listian connection with the European Union: Emmanuel Roussakis, Friedrich List, the Zollverein and the uniting of Europe (Louvain: UCL, 1968); Emmanuel Roussakis, "The Common Market and the Zollverein: Experiences in integration," Recherches Économiques de Louvain/Louvain Economic Review 35, no. 3 (1969).

[115] Hans Kundnani, "Germany's liberal geo-economics: Using markets for strategic objectives," in Geo-economics and power politics in the 21st century, ed. Mikael Wigell, Sören Scholvin, and Mika Aaltola (London: Routledge, 2018); Thomas Sattich and Tor Håkon Jackson Inderberg, "EU geoeconomics: A framework for analyzing bilateral relations in the European Union," JCMS: Journal of Common Market Studies 57, no. 3 (2019).

All of this, in turn, has several implications for understanding policy developments at the Union level. For one, given the continued importance of the nation-state, the autonomy with which the supranational bodies act will be constricted. This is not to say that actors in Brussels, at the European Commission, do not have any scope for independent action — their role should not be neglected — but rather that any action will be bounded by the interests of the constituent nation-states. Secondly, how do the various interests of the constituent states find their expression at the European Union level? As nation-states will want to impose their interests, and larger nation-states, with large populations and economies, have more power, the interests of the more powerful nation-states will tend to be the ones that find the most expression and representation at the Union level. Nevertheless, as the European Union is a heterogenous construct, constituted by nation-states at differing stages of economic development and with often differing economic interests, there can be significant variability in the desired policy direction at the Union level.

The issue of 'national security'

A final question arises in regard to our study: should we separate economic and national security concerns, i.e. define them as two separate spheres of analysis? On the surface, it would make sense, especially given the record over the last 40 years of governments intervening economically based on 'national security' interests. But, in the economic realist framework, it is less obvious to do so. As Jonathan Kirshner makes clear, under the economic realist conception there is a 'harmony between the national pursuit of wealth and power'.[116]

To clarify, this means national security interests are intimately tied to economic interests, as these are the foundation of military power. If a nation does not have significant productive capacity, its military power will also be negligible. In other words, national security interests are economic interests. For example, if a nation wants to go to war, its industry must be competitive in order to produce the machines/weapons needed for the war effort in at least the same capacity as its enemies, or it will otherwise be at a severe disadvantage. Therefore, economic power is foundational in this sense, as the driving force behind military power as well, meaning that all aspects of economic power, be that growth, infrastructure, technology etc., are intimately tied up with national security interests. These can only be pursued if they

[116] *Kirshner, "Political economy in security studies after the Cold War," p.66. Also: Viner, "Power versus plenty as objectives of foreign policy in the seventeenth and eighteenth centuries."*

are economically sustainable, which the fall of the Soviet Union exemplified. It did not disintegrate due to its military becoming weak, but rather due to its economic base not proving sustainable, leading to major losses in competitiveness and relative backwardness in terms of intellectual capital and therefore technology.

So, as both Kirshner and Krasner illustrate, it tends be very hard to analytically differentiate between 'security' and 'economic' objectives of nation-states, given their tight interlinkage.[117] It likely explains the often nebulous language used by states when invoking 'national security', which is often left as vague as possible. Thus, 'economic' and 'security' elements can often be treated as two sides of the same coin. This does not imply, though, that 'security' concerns cannot be a driving factor behind a new economic policy direction, but that they tend to have an economic foundation. There are certainly instances where economic policies have exclusively 'defensive' or 'security' considerations, such as US sanctions on North Korea, but these cases tend to be relatively rare. Nevertheless, they should be controlled for in any empirical analysis of economic policy change.

Understanding Europe-China investment relations

Using this framework, what does it tell us about Europe-China investment relations, and what would we expect from it? In the economic realist approach illustrated here, we situate Europe-China investment relations in the broader context of economic competition between nation-states, and in doing so can infer the shape investment relations are going to take.

As noted above, nation-states are seeking to enhance and foster their productive capacity, with the primary focus on intellectual capital. The more a nation-state has, the more innovative it can be, and the higher its competitive advantages in the global economic arena. It will tend to produce higher value-added products and services, ensuring higher living standards, a stronger technological base and subsequently more power for that particular state.

In the race to develop their productive capacities, Europe and China have been at different 'stages'. Europe's major nation-states have contained highly competitive industries for the last 200 years, having been some of the early champions of industrial capitalism. Many European states can be seen as having entered innovation-driven growth several generations

[117] *Krasner, Defending the national interest: Raw materials investments and US foreign policy; Kirshner, "Political economy in security studies after the Cold War."*

ago, and in many areas have operated at or close to the technological frontier. Major European states, such as Germany and France, have been leading economic/industrial powers.

China, by contrast, has emerged from relative backwardness, having endured what it describes as a 'century of humiliation', whereby, through lack of economic dynamism — weak productive capacity — and therefore major technological deficiencies versus the West, it saw itself dominated. Over the last generation, however, China has embarked on a major 'catch-up' process — in the space of just a couple of decades moving rapidly from factor-based growth to investment-driven development.

As we saw, nations in this 'catch-up' phase of growth will tend to be hungry for material capital — machines, tools, factories etc. — but also increasingly intellectual capital, as this is the ultimate driver of the productive powers of a nation and the key to unlocking innovation-driven growth. To this end, China has used the global economy as a source of both: much like South Korea did, it has sought to attract foreign investors with superior intellectual capital in order to set in train a process of industrial upgrading in targeted industries, a process in which Europe has been central. Access to higher-level intellectual capital/technology, however, has not just been gained through the attraction of foreign capital to China. Like other ascendent economic powers throughout history, more aggressive and 'offensive' measures have been taken to further turbo-charge the upgrading process. It involves industrial espionage in Europe, but also targeted investments in European firms, with the aim of gaining access to more intellectual capital.

For nations that have reached the innovation-stage of growth, such as the major European nation-states, the sharing of technology with foreign states is not *per se* an issue. For instance, Germany and France have shared technology and know-how with China for decades, as it came with large economic benefits, such as access to new markets and ability for its firms to scale. The issue, however, for incumbent powers comes when the rising power starts to go into the upper echelons of investment-driven growth and begins to touch on innovation-driven growth, as this means the competitive gap will eventually close. China is in the midst of this process, which is starting to generate friction. As China gains the capacity to innovate domestically, it also wants to start competing in the highest value-added areas in the global economy, as it has the capability to do so. This potentially pushes China closer to the technological frontier, especially in new and emerging technologies related to

the fourth industrial revolution, where newcomers have an advantage. In turn, it generates concern in the incumbent states, in this case in Europe.

As a result, policy in the leading nations begins to shift, in the direction of protecting and re-enhancing their competitive advantages. It leads to both 'offensive' measures, such as new industrial policy programmes, aimed at fostering new types of intellectual capital, and 'defensive' measures, with the aim of constricting the ability of the rising nation to 'upgrade' its competitiveness. Examples of these measures include fully opening the rising nation's markets and 'levelling the playing field'. Firms in the 'leading' nations can thereby start to take away market share from firms in the rising nation, which have been able to grow significantly after being nurtured. And it will take the form of restricting access to intellectual capital through the establishment of investment barriers, so as to 'shield' valuable intellectual capital from the rising nation.

To form a hypothesis as to why Europe has started to erect investment barriers in the form of investment screening measures: it is because there is an increased sense in policymaking circles in the major European powers that China is rapidly enhancing its innovation capacity and thereby its competitive advantages, which are beginning to threaten Europe's. As part of a wider effort of aiming to ensure and enhance Europe's competitive position, state elites want to increasingly contain China's economic ascent by initiating a process of balancing. This involves curtailing China's access to European intellectual capital and dismantling of its perceived 'developmental advantages', such as protected home markets. A central part of this process is the construction of increasingly stringent investment barriers.

To test these hypotheses, case studies are conducted across Germany, France and the European Union, along the following dimensions: global economic competitive position, threat perception of China and investment policy as a 'rebalancing' tool. We start by examining Europe's major economies' competitive profile in the context of a rising China. If the theory holds, we would expect to see that as China closes the competitive 'gap' the threat perception amongst European states increases significantly, especially around key areas of competitive advantage, such as new technologies. We would then expect to see increased industrial policy aimed at addressing and shoring up competitiveness, but also protective policies such as investment screening. As the key elements of competitive advantage are found in high technology, we would expect the 'protection' in the form of investment screening to focus on these areas. Thus, if China is increasingly considered an

economic ‘rival’ in Europe, we should see a process of balancing taking place, which we can trace through to investment screening as well.

Chapter III
China's Motivations

Overview

The following chapter provides an overview of China's economic aims and objectives, to help understand its investment intentions in Europe, and the subsequent reactions to them.

China, much like other rising economic powers before it, has been engaging in 'catch-up' growth, with high state involvement in the economy, as it seeks to push towards higher stages of development. Its efforts have proven highly successful, but have also led to important imbalances in the Chinese economy, which Beijing must overcome. The key is to move China rapidly towards the technological frontier with innovation-driven growth, enabling a continued rise in productivity and hence living standards, thereby reducing imbalances and underpinning the legitimacy of the Chinese Communist Party (CCP).

As highlighted in chapter II, intellectual capital is crucial for enhancing a nation's productive forces. While China has not mastered and harnessed the world's intellectual capital, it has absorbed low-to-mid-range technology and know-how to build an innovation base. With this foundation in place, Beijing, driven by the need to shift towards innovation-driven growth, has set in train a process to speed up China's innovation potential and upgrade its industry by seeking increased access to technology and know-how. It is within this context that we should understand China's outward investment drive, which accelerated in the 2010s.

The need to absorb increasing amounts of technology and know-how leads to various strategies to engage foreign technology-leaders in targeted areas to ensure technology transfer. During China's initial catch-up phases, FDI into China was central. However, as China moves up in the global value chain, and technology becomes more complex, a more active strategy is needed. As a result, we increasingly see a 'going out' strategy in Chinese firms, with the acquisition of foreign firms being a crucial pillar to facilitate the transfer of knowledge and know-how, thereby supporting Beijing's industrial upgrading process. Europe is home to some of the world's leading innovation nations and has been a central target in China's 'going out' strategy to accrue foreign leading know-how, resulting in an acceleration of acquisitions of European firms during the 2010s.

The chapter begins by tracing China's modern economic development, providing the broader context for China's subsequent economic strategies. It then examines the major modern economic strategies and plans designed in Beijing, highlighting their connection to outward investment. It looks at the overall advances in China's competitiveness, comparing it to the leading/established nations. Finally, it summarises how these strategies have impacted Europe, setting the stage for the case studies on foreign investment screening to follow.

Overcoming the 'century of humiliation'

Throughout history, the Chinese economy has been one of, if not the most, innovative, competitive and technologically advanced in the world. Historians still debate why after the 14th/15th century China's economy began to falter, and eventually declined precipitously relative to the West, a decline laid bare during the Western age of imperialism.[118] This period is often referred to as the 'century of humiliation' in China, encapsulated by the Opium Wars in the mid-19th century, following which it became clear that China was no longer a leading power. The latter part of the 20th century has seen a renewal process, with the intention of catching up to the West and eventually supplanting it as the foremost economy in the world, boasting the highest innovation and technological potential.

In the decades following WWII, it was not entirely clear that capitalism provided the best route for building the productive potential of a nation, given the relative success of the Soviet Union and its rapid drive towards industrialisation. While there were some economic successes in Communist China under Mao, it became clear by the latter part of the 1970s that market capitalism was needed to enhance the productive potential of the Chinese economy and thereby secure and enhance the power of the state.[119] China embarked on a process of 'opening' up economically, which proved remarkably successful. In just four decades, China has transformed from an agrarian backwater into the second largest economy in the world, with a large industrial base and the world's largest manufacturing economy.

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[118] See for example: Justin Yifu Lin, "The Needham puzzle: Why the industrial revolution did not originate in China," Economic development and cultural change 43, no. 2 (1995); David Landes, "Why Europe and the West? Why not China?," Journal of Economic Perspectives 20, no. 2 (2006).

[119] On this move towards capitalism: Ronald Coase and Ning Wang, How China became capitalist (Basingstoke: Palgrave Macmillan, 2013); Jean-François Huchet, "The emergence of capitalism in China: An historical perspective and its impact on the political system," Social Research: An International Quarterly 73, no. 1 (2006).

Using an economic realist lens, the process of 'catching-up' has been driven by the Chinese state, with concrete policies to ensure that China experienced efficient factor-driven growth and moved up into investment-driven growth in a matter of decades. While there is no need to delineate the entire history of this process, the sections below trace China's economic development to provide the broader context for its eventual outward investment policy.

A rapid move through the growth stages

The economic liberalisation started by Deng Xiaoping in the late 1970s entailed the unleashing of factor-driven growth, as a large contingent of surplus labour was created through various reforms. Labour could leave the agrarian sector and was available for an infant industrial sector, clustered in 'free trade' zones established by Beijing. This industry was rudimentary in nature, and depended on this access to cheap labour for success. With markedly low costs, manufacturers could be competitive on global markets, relying only on basic technology that was widely available globally. The value-added in these new, export-orientated industries was low, but margins were sufficient to ensure China's national income could increase significantly in the following years, which is also seen in the very high savings rates generated in China during the 1980s. The emphasis on light industry, made competitive due to favourable factor endowments – deep labour pools — set in train the process of technological catch-up to the West.[120]

As productivity-enhancing technology could not be produced inside China, the initial step towards competitive exports ensured that China could earn the hard currency needed to acquire foreign technology, specifically in the form of capital equipment. There was a realisation, however, during the early stages of the take-off for factor-driven growth, that the simple acquisition of foreign capital goods would not be sufficient to enable a continuous process of industrial upgrading. Therefore, as in South Korea and Japan, FDI was welcomed, with the aim of facilitating technology transfer. This particular strategy was referred to as 'trading markets for technology', whereby China sought to attract FDI in return for access to its market.[121]

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[120] *This initial phase of China's 'capitalist' development is sketched in: Barry Naughton, Growing out of the plan: Chinese economic reform, 1978-1993 (Cambridge: Cambridge University Press, 1996), pp.80-88; Barry Naughton, The Chinese economy: Transitions and growth (Cambridge Massachusetts: MIT Press, 2007); Lauren Brandt and Thomas Rawski, China's great economic transformation (Cambridge: Cambridge University Press, 2008), pp.1-26.*

[121] *William Lazonick and Yin Li, "China's path to indigenous innovation," Cambridge: Sase Conference Paper (2012); Xiaolan Fu, Bruce McKern, and Jin Chen, The Oxford handbook of China innovation*

As part of the FDI, however, China required that foreign firms engage in 'joint ventures' with Chinese firms, thereby facilitating the flow of technology and know-how to domestic Chinese companies and into the wider economy. It would allow China to better absorb and use more advanced foreign processes and technology, compared to just importing them. Starting in the mid-1980s, joint ventures became a hallmark of the Chinese economy, accounting for the vast majority of FDI going into China.[122] The first joint venture was called Shanghai Bell, which was a venture between Belgian telecoms firm Bell Telephony and a state-owned enterprise based in Shanghai. The underlying objective was clear: to allow China to improve its technology and know-how in the telecommunications field. As a feasibility study of the project evinced at the time: 'our strategy is to carry out exchange in the market for technologies. We should import, assimilate and absorb high technologies from our foreign partners. The aim is to promote our design capability and manufacturing capacity…cooperative efforts are the goal. Chinese and foreign experts should design and build each department of the joint venture together…Assimilation, absorption and re-innovation should be preserved continuously based on the imported technologies'.[123] With the use of JVs, the idea, then, much like in Prussia in the 19th century and its establishment of 'technical institutes', was to ensure a wider diffusion of know-how from the joint venture, whereby, for example, engineers from other, adjacent fields were also invited to the joint venture to receive training, the knowledge acquired subsequently to be used in domestic Chinese firms.[124]

These early efforts in the 1980s ensured that China's industrial base could grow, and the increasing ability of China to use and deploy foreign technology meant the sophistication of its industry began to rise as well. The upgrading and rise in national income, derived from the international competitiveness of its export-orientated manufacturing, allowed China to move into investment-driven growth by the 1990s. Although it was still competing in

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(Oxford: Oxford University Press, 2021), pp.135-40; Yu Zhou, William Lazonick, and Yifei Sun, China as an Innovation Nation (Oxford: Oxford University Press, 2016), pp.45-67.

[122] On this use of joint ventures: Keun Lee, China's technological leapfrogging and economic catch-up: A Schumpeterian perspective (Oxford: Oxford University Press, 2022), pp.42-47; Qing Mu and Keun Lee, "Knowledge diffusion, market segmentation and technological catch-up: The case of the telecommunication industry in China," Research policy 34, no. 6 (2005); Michael Enright, Developing China: The remarkable impact of foreign direct investment (New York: Routledge, 2017), pp.32-45.

[123] Quoted in: Kaidong Feng, Innovation and industrial development in China: A Schumpeterian perspective on China's economic transformation (London: Routledge, 2019), p.213.

[124] Mu and Lee, "Knowledge diffusion, market segmentation and technological catch-up: The case of the telecommunication industry in China."

standardised/commoditised markets mainly on price, Chinese production capability rapidly advanced, with new factories and industrial clusters being built across the east coast, using foreign technology. Labour remained cheap, so consumption, although growing in absolute terms, remained constrained relative to the overall economy and the savings rate grew even further. It enabled Beijing to make further large investments in infrastructure, city construction, transportation, and housing, boosting China's rising competitive advantages even further. The combination of low labour costs and developed infrastructure ensured that China's exports became even more competitive, and China moved towards becoming the 'workshop of the world' as it stepped up investment-driven growth.[125]

Thinking beyond 'workshop of the world'

China had emerged as a manufacturing powerhouse, and was well on its way towards the overall upgrading of its productive capacity. It had shifted from producing basic consumer goods like textiles in the 1980s to being capable of manufacturing automobiles, ships, a wide range of electronics, and machine tools by the 2000s.[126] Nevertheless, Chinese state elites became concerned because although China had become the 'workshop of the world', it did not have strategic control over large parts of the production complex, which remained in foreign hands.[127]

China excelled at manufacturing and assembly, but a considerable part of the value-added in products produced in China was created elsewhere. For example, the auto industry developed through the joint venture concept, with the entrance of most Western automakers, including Volkswagen and General Motors. These ventures were a success gauged by production volume and return on capital, greatly aided by the increasingly efficient Chinese production complex. A couple of the largest automobile joint ventures became so big that they even entered the Fortune 500 in the early 2000s. However, the concern was that despite their size, the success was dependent on the technology and know-how of the Western

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[125] On these large steps towards competitiveness China made in the 1990s/early 2000s: Barry Naughton and Nicholas Lardy, "China's emergence and prospects as a trading nation," Brookings Papers on Economic Activity 1996, no. 2 (1996). Alexandra Harney, The China price: The true cost of Chinese competitive advantage (London: Penguin, 2008); Kevin Zhang, China as the World Factory (London: Routledge, 2006).

[126] Arthur Kroeber, China's economy: What everyone needs to know (New York: Oxford University Press, 2020), pp.88-89.

[127] On this lack of strategic control: Zhou, Lazonick, and Sun, China as an Innovation Nation, pp.6-27. Also: William Lazonick, "Indigenous innovation and economic development: Lessons from China's leap into the information age," Industry and Innovation 11, no. 4 (2004); Peter Nolan, "China and the global business revolution," Cambridge Journal of Economics 26, no. 1 (2002).

partner. None of the joint ventures had shown innovation capacity on their own, in terms of designing and engineering new vehicles. Instead, innovation was confined to improving production processes. If China was to continue upgrading its industrial base, China's state elites believed that strategic control of large, successful industries must fall into Chinese hands.[128]

It is within this context that we see the push towards 'indigenous innovation' in the early 2000s, which effectively signalled China's intent to move towards innovation-driven growth, recognising the eventual limits of an investment-driven model. At their core, both factor-driven and investment-driven growth rely on the mass mobilisation of resources, which in China's case involved capital and labour. As we saw earlier, labour was mobilised from the agrarian sector and made available for deployment in industry. The capital stock was deepened through major investment and adaptation of foreign processes and technology, while infrastructure was also emphasised to improve overall efficiency. China underwent a process of building the foundations for an advanced economy, including getting the right basic technology in place, implementing manufacturing know-how, constructing energy and communication networks to serve manufacturing, forging a more integrated market through mass transportation projects, such as airports, trains and motorways, as well as pushing city development and housing for the growing working class.

These efforts proved adept at generating high growth rates for a long period, but state elites came to realise that these growth drivers would not be sufficient to sustain elevated overall growth rates. There is only so much labour that can be mobilised, so much capital stock that can be amassed and only so much infrastructure that can be built. At a certain point, this process of building the 'inputs' needed for growth comes to an end. As the capital stock is increased to a level commensurate with leading economies, each additional unit of capital added to the existing stock has a diminishing impact on overall output.[129] The growth benefit of constructing an efficient transportation system, consisting of fast access to ports and road networks between the major Chinese economic zones, has already been achieved, and

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[128] Yin Li, China's drive for the technology frontier: Indigenous innovation in the high-tech industry (London: Routledge, 2022), pp.21-28; Lazonick and Li, "China's path to indigenous innovation," pp.17-18.

[129] On this declining efficiency of investment spending: Michael Pettis, The great rebalancing (Princeton: Princeton University Press, 2014); Michael Pettis, "Winners and losers in China's next decade," McKinsey Quarterly, no. 3 (2013); Shahid Yusuf, "From technological catch-up to innovation: The future of China's GDP growth," The World Bank (2012); World Bank, "Innovative China: New drivers of growth," (2020): pp.11-17.

cannot be repeated. Thus, the marginal utility of more capital being pumped into an economy at this stage starts to decrease. To ensure growth remains robust, the focus needs to shift towards ensuring that all the inputs put in place to drive an advanced economy are used more efficiently. Therefore, what needed to be done was to set in train a process whereby the resources mobilised for economic growth in China could become more productive through significantly more innovation, if high growth was to be maintained.

It is in this context that we should understand Chinese state elites' increasing concern with the so-called 'middle-income trap', which essentially states that if China does not succeed in moving into innovation-driven growth, it will languish inside the trap, destined to remain a middling economic power.[130] The middle-income trap concept holds that the majority of countries that attain middle income status begin to stagnate and do not manage to continue their development towards high income status. Essentially, as reservoirs of cheap labour begin to dwindle, wages start to rise, eating into profit margins, making industry overall less competitive.

The trap means being stuck between investment- and innovation-driven growth. The economy finds it increasingly difficult to compete with low-income economies, due to its basic production structure and higher costs. It also cannot compete with the high-income economies, due its lagging productive capabilities. Thus, in order to avoid potentially endless stagnation, a change in strategy is required. State elites can take action by drastically reducing wages through directed policy, thereby improving competitiveness, though at the expense of general living standards. This would tend to be extremely unpopular politically and essentially unfeasible. Alternatively, they can choose to manage the 'turning point' by competing in higher value-added production, which can sustain higher wages.[131] As time progressed, the thinking around the middle-income trap and China's potential fall into it due to rising wages added to the urgency amongst state elites to ensure industrial upgrading.

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[130] *See for example: Juzhong Zhuang, Paul Vandenberg, and Yiping Huang, Growing beyond the low-cost advantage: How the People's Republic of China can avoid the middle-income trap (Manila: Asian Development Bank, 2012); Yiping Huang, "Can China escape the middle-income trap?," China Economic Journal 9, no. 1 (2016); Fang Cai, "Demographic transition, demographic dividend, and Lewis turning point in China," ibid.3, no. 2 (2010).*

[131] *Explaining these policy 'options' regarding the middle-income trap: Juzhong Zhuang, Paul Vandenberg, and Yiping Huang, Managing the middle-income transition: Challenges facing the People's Republic of China (Cheltenham: Edward Elgar Publishing, 2015); Eva Paus, "Escaping the middle-income trap: Innovate or perish," ADBI Working Papers, no. 685 (2017).*

Upgrading initiatives become more active

By the early 2000s, the limits of investment-driven growth had become more apparent, and Chinese state elites began to make a concerted effort to push the country towards innovation-driven growth. The effort arguably started with China's Medium- and Long-Term Plan for Science & Technology Development (MLP) in 2006. Under the plan, then-premier Wen Jiabao prioritised 'innovation' as the national focus to accelerate the catching-up process.[132] The limits of factor- and investment-driven growth had become obvious, with the plan stating that growth should principally come from 'technological progress' and less from the mobilisation of capital and labour.[133] At the same time, while the 'markets for technology' strategy had helped China move into the investment stage of growth and become a production powerhouse, it was not capable of providing a further competitive advantage for China, in terms of stimulating continuous industrial upgrading and capturing more value-added in global supply chains.

So, what China needed was more 'indigenous innovation', as it was becoming clear that China's industrial upgrading efforts were running into the problem of insufficient innovation capacity.[134] As highlighted in the plan, 'despite the size of our economy, our country is not an economic power, primarily because of our weak innovative capacity'.[135] State elites decided to make a firm push towards 'science and technology', with Hu Jintao contending at the launch of the plan that: 'In the face of international scientific development and increasing international competition, by seeing the development of science and technology as a central thread in the development strategy and actively committing to its progress, China can seize the opportunity for development'.[136] In so doing, China could thereby 'become a science and technology power by the middle of the 21st Century'. This connection between science and technology and the drive towards productivity growth is

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[132] *Wen Jiabao, "Science and China's modernization," Science 322, no. 5902 (2008).*

[133] *State Council of the People's Republic of China, "The National Medium- and Long-Term Program for Science and Technology Development (2006-2020): An outline," (2006): Section I. See also: Shulin Gu et al., "China's system and vision of innovation: Analysis of the national medium-and long-term science and technology development plan (2006-2020)," (2008): pp.18-30.*

[134] *On this upsurge in systematic 'industrial policy': Sebastian Heilmann and Lea Shih, "The rise of industrial policy in China, 1978–2012," Harvard-Yenching Institute Working Paper Series 17, no. 7 (2013): pp.12-14.*

[135] *State Council of the People's Republic of China, "The National Medium- and Long-Term Program for Science and Technology Development (2006-2020): An outline," Section 1.*

[136] *Quoted in: James McGregor, "China's drive for 'indigenous innovation': A web of industrial policies," Global Intellectual Property Center (2010): p.13.*

made even clearer in the plan: 'we need to depend even more heavily on S&T (Science and Technology) progress and innovation in order to achieve substantial gains in productivity and advance the overall economic and social development in a coordinated and sustainable manner... As the premier productive forces, science and technology are a concentrated reflection and a major hallmark of advanced productivity'.[137]

Gauging by this plan, there can be no doubt that the way China sees its path towards catch-up can be understood in the economic realist sense, in the form of being able to increasingly generate intellectual capital and thereby move up the ranks in the global economy. The plan observed that: 'major S&T accomplishments…have greatly enhanced the nation's comprehensive national strength, uplifted its international position, and inspired the whole nation', but 'compared with developed nations, China's overall S&T level still has a fairly big gap to close'.[138]

Noteworthy as well is that the plan shows that Chinese state elites had started to think about the concept of 'leapfrogging', meaning the ability of an economy to not only 'catch-up' to global leaders but also jump ahead. China saw such an opportunity starting to present itself with the onset of the fourth industrial revolution. As the plan stated: 'exciting breakthroughs in basic research fields will create whole new horizons for science and technology development and economic growth. S&T achievements are being applied and transferred at an ever faster pace, thus creating new opportunities for catching up and leapfrogging'.[139]

In the plan's 'guiding principles', 'leapfrogging in priority fields' is highlighted as key for China's continued ascendance.[140] Further down the document, we can see exactly which areas Chinese state elites were targeting, as indicated in a list of 'frontier technologies' where China could move towards leadership positions. These areas were chosen for 'being conducive to industrial technology upgrading and for realising the leapfrogging development'.[141] One area deemed a priority, for example, was 'advanced manufacturing technology', where China saw an opportunity in robotics, but also 'extreme manufacturing', which means production at very small scales as well as very large. Other areas included

[137] *State Council of the People's Republic of China, "The National Medium- and Long-Term Program for Science and Technology Development (2006-2020): An outline," Section 1.*

[138] *Ibid.*

[139] *Ibid.*

[140] *Ibid., Section II, Part I.*

[141] *Ibid., Section V.*

'virtual reality', 'intelligent sensing technology' or 'industrial biotechnology', with the underlying premise being that as the technologies are not mature and established, the market for them is also unstable, leaving a substantial opportunity for new technology 'entrants' such as China.

China's strategies for moving to the top

Targeting leaders

This brings us to a deeper examination of the various fundamental strategies China can use to move towards establishing itself as a high-income, highly competitive, technology-driven economy. There are various ways, but one of the central strategies for state elites in high-income-striving countries is 'target emulation'. As the development literature highlights, a tried and tested route for moving up the global production value chain is targeting industries in high-income countries of the day. Ideally, they have a similar endowment structure, while also not being too far ahead. Some, for example, highlight that the threshold should be not less than 20%, i.e. the developing country's income levels should not be less than 20% of the target country's, as this has tended to be too ambitious and prone to failure.[142] Looking at the historical record, this type of strategy towards specialisation has proved to be highly effective. The UK targeted the Dutch industries in the 17th century; Germany targeted the UK's industries in the latter part of the 19th century; Meiji Japan went after the Prussian/German industries and pursued US industries in the 1960s. In the modern era, a good example is the Asian tiger economies targeting Japanese industries to move up the value chain, which proved to be highly successful. China, meanwhile, has been targeting a range of countries, such as Germany, Japan as well as the United States, within industries such as automobiles and telecommunications.[143]

While target emulation is a valid strategy, and has clearly been part of China's ambitions, a modern approach needs more nuance, given the increased rapidity of technological change, and the importance placed on 'leapfrogging' by Chinese state elites. Here, the concept of

[142] *See: Vandana Chandra, Justin Yifu Lin, and Yan Wang, "Leading dragon phenomenon: New opportunities for catch-up in low-income countries," Asian Development Review 30, no. 1 (2013); Justin Yifu Lin, From flying geese to leading dragons: New opportunities and strategies for structural transformation in developing countries (Washington, DC: The World Bank, 2011).*

[143] *Regarding this type of catch-up strategy: Mu and Lee, "Knowledge diffusion, market segmentation and technological catch-up: The case of the telecommunication industry in China."*

'cycle time' of technology is important.[144] It means technology can broadly be placed into two categories: long-cycle and short-cycle. Long-cycle technologies are those where the importance is placed on established knowledge, often decades old. For a developing country to become established in these, the learning needed is considerable. By contrast, short-cycle technology refers to technologies where knowledge changes rapidly, which means developing 'newcomers' are at less of a disadvantage compared to high-income/high technology countries.

Short-cycle technologies tend to rely less on established technological systems, meaning the knowledge in these industries can be 'localised' more rapidly. In brief, the barriers to entry are less burdensome, and there can be a first-mover advantage when it comes to short-cycle technology adoption and development. Such advantages may also apply to 'long-cycle' technologies, but where the cycle is just beginning, allowing the newcomer to enter at the ground floor, instead of seeking to build a ladder to jump in on the 10th floor, with all the hazards and instability entailed.[145] The rising economy potentially no longer needs to operate within the incumbents' technological paradigm and can forge its own, moving to the technological frontier ahead of its competitors. Moreover, during technological 'revolutions', rising economies could even have an advantage over incumbents, as they are less burdened by the legacy of existing technologies, which can be harder to break out of and lead to inertia. By applying 'leapfrogging' development China can potentially move straight to the global technology frontier and become dominant in several leading industries, explaining the major importance placed on it.

This process of 'catch-up' can be broken down into specific phases.[146] At the outset, the incumbent firm has a technological/managerial advantage and garners the bulk of global market share. In the first phase, the 'catch-up' firm enters the market and seeks to establish

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[144] The concept is developed in: Keun Lee, Schumpeterian analysis of economic catch-up: Knowledge, path-creation, and the middle-income trap (Cambridge: Cambridge University Press, 2013).

[145] See: Keun Lee, The art of economic catch-up: Barriers, detours and leapfrogging in innovation systems (Cambridge: Cambridge University Press, 2019); Keun Lee, "Economics of technological leapfrogging," in The challenges of technology and economic catch-up in emerging economies, ed. Chŏng-dong Yi et al. (Oxford: Oxford University Press, 2021).

[146] For this stylised view of how 'catch-up' development takes place: Keun Lee, "Capability failure and industrial policy to move beyond the middle-income trap: from trade-based to technology-based specialization," in The industrial policy revolution, ed. Joseph Stiglitz and Justin Yifu Lin (London: Palgrave Macmillan, 2013); Keun Lee and Franco Malerba, "Catch-up cycles and changes in industrial leadership: Windows of opportunity and responses of firms and countries in the evolution of sectoral systems," Research Policy 46, no. 2 (2017).

itself, primarily through developing a cost advantage, mostly owing to low labour costs, but also via, for example, suppressed exchange rates. Additionally, there are benefits of diffusion at this stage, as the lower-cost production system in the country will attract foreign investment and know-how, allowing for the assimilation of technology. Surpluses are generated and the country experiences further investment in these technologies and a catch-up phase will have begun, usually in the lower end of the product market, such as in commodity production. The state in this phase plays a coordinating and supporting role. For example, it guides the financial system to develop these nascent industries through favourable loans and pushes foreign investors into partnerships with domestic firms to help create the conditions for knowledge spill-over.

Although these initial advantages of lower costs, export-orientated exchange rates, and interventionist governmental policy can help spur the country in this initial phase of catch-up, they do not at all guarantee the newcomer will surpass the incumbents. Far from it: there are plenty of example of countries that become 'stuck' at this phase, as we saw earlier. To progress to the next stage of catch-up, a nation must build domestic innovation capacity, as China is currently doing. At this stage, state economic policy must become more nuanced and focus on developing human capital, high-quality education, leading research centres, and more targeted 'nurturing' of promising industries. Crucially, as we will see, it also means creating greater and deeper access to leading technology from around the world.

Once companies in the country have built a domestic innovation 'engine' and have accumulated enough knowledge, technology and experience to produce higher quality products, with a cost advantage, then the stage is set for an attempt at global leadership. For this to occur, a 'window of opportunity' must be exploited. As development economists Lee and Malerba highlight, these windows of opportunities come in three forms: a technological window, whereby the newcomer can exploit a new and emerging technology faster than incumbent countries can; a business cycle window, whereby business conditions in incumbent countries deteriorate to such an extent that incumbent firms experience a prolonged phase of weakness that can be exploited; and finally, an 'institutional' window, through which newcomer countries radically intervene and seek to boost the domestic

innovation/learning capacity, in order to force the move up the value chain.[147] All three of these windows have arguably opened up for China since around 2010.

Enter the Great Recession

First, however, China had to deal with the 2008 financial crisis as its drive towards 'indigenous innovation' was just beginning. Although the Chinese financial system was not directly affected, being essentially a 'closed' system, the effect on China came through exports, which rapidly plummeted by over 15%, as demand in the West shrivelled with the US and Europe entering a deep recession.[148] The combination of cheap labour costs, advanced infrastructure, and access to global markets through accession to the WTO (World Trade Organisation) meant that China's exports had soared in the previous years. As a result, elevated Chinese growth also became increasingly dependent on external demand. Thus, the fact that external demand fell precipitously during the 2008-09 recession had large repercussions for the Chinese export-orientated manufacturing sector, with unemployment spiking rapidly.[149]

If left unchecked, the global recession would have had major implications for the legitimacy of the CCP. The imperative amongst Chinese state elites was to maintain high growth rates at all costs, resulting in a major stimulus programme of 4 trillion RMB, which was likely much higher in reality.[150] On the face of it, the stimulus was successful, enabling the maintenance of a growth rate of 10%, while the rest of the world fell into a prolonged recession. But the effect of the stimulus programme was to reaccelerate investment spending, as a result of the drop-off in external demand. As Arthur Kroeber points out, this also coincided with Chinese state elites realising that using external demand as the central growth driver for such a large economy as China would not be sustainable going forward, with a current account surplus of 10% of GDP.[151] In the future, more of the demand for

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[147] *Lee and Malerba, "Catch-up cycles and changes in industrial leadership: Windows of opportunity and responses of firms and countries in the evolution of sectoral systems."*

[148] *Linyue Li, Thomas Willett, and Nan Zhang, "The effects of the global financial crisis on China's financial market and macroeconomy," Economics Research International 2012 (2012): pp.2-3.*

[149] *Fang Cai and Kam Wing Chan, "The global economic crisis and unemployment in China," Eurasian Geography and Economics 50, no. 5 (2009).*

[150] *See: Barry Naughton, "China and the two crises: From 1997 to 2009," in Two crises, different outcomes: East Asia and global finance, ed. T. J. Pempel and Keiichi Tsunekawa (Ithaca: Cornell University Press, 2015), pp.118-19.*

[151] *Kroeber, China's economy: What everyone needs to know, pp.275-82.*

Chinese manufacturing industry should come from domestic sources, and the prime lever that Beijing could pull was investment demand, already in place and a proven growth driver.

Hence, as a result of the financial crisis, China was faced with a major issue: either continue to rely heavily on external demand, making the economy more susceptible to the vagaries of the global economy, or increase investment-driven growth even further, which could worsen the growing imbalances in the economy. Chinese state elites found themselves in a difficult spot, but the strategic direction was towards more investment spending to prop up aggregate demand. Of course, investment demand is not the only domestic demand source that Beijing could lean on, but the situation was acute, and it was unrealistic to move towards consumption demand in the short term as it would take years to fully mature and take over as the central growth driver.[152] Consequently, the only available option was to stimulate investment demand. Investment spending as a percentage of GDP increased even further in the post-crisis period, reaching 45%, much higher than the levels reached by other economies that had rapidly gone through investment-driven growth, such as South Korea and Japan.[153]

In the immediate years following the financial crisis, Chinese state elites focused on ensuring growth remained high, while recognising that relying increasingly on investment-driven growth was deepening imbalances. The initiatives aimed at diminishing the role of external demand for China's economy were effective in the post-crisis period, leading to a stark drop in China's current account surplus to 2% of GDP by 2012. However, the downside was that China became even more reliant on investment spending to drive growth. In the last years of the Hu government, large amounts of debt were used to finance growing investment spending, which proved increasingly inefficient. The return on capital in China declined steadily in the post-crisis period, in parallel with shrinking productivity growth. By 2012, the share of productivity in the economy's growth dipped below 20% for the first time in 30 years. China's overall debt burden also continued to grow, indicating that the extra financing used to fund more investment spending was being directed to unproductive

[152] *Ibid., p.276. See also: Nicholas Lardy, "China: Toward a consumption-driven growth path," in Seeking changes: The economic development in contemporary China, ed. Yanhui Zhou (Singapore: World Scientific, 2016).*

[153] *Michael Pettis, Avoiding the fall: China's economic restructuring (Washington, DC: Brookings Institution Press, 2013); Pettis, "Winners and losers in China's next decade."*

uses. All of these factors upped the pressure to manage and drive the transition to innovation-driven growth.[154]

Even during this investment-led stimulus, the focus on industrial upgrading was maintained and intensified, as evidenced by the 2010 'Accelerating the Cultivation and Development of Strategic Emerging Industry Plan'. The plan built on the notions put forward in the 2006 long-term industrial upgrading plan, especially on the concept of leapfrogging, which was given even greater importance in the wake of the crisis.[155] There arose a belief among Chinese state elites, especially premier Wen Jiabao, that after major economic crises, such as the one the global economy had entered into after 2008, technological innovation tends to accelerate.[156] It was thought that the countries able to fully master the new technological paradigms arising from the post-crisis recovery would also emerge as the future dominant economic powers, i.e. the aforementioned 'window of opportunity' was opening up for China. Thus, it was even more important for China to increasingly 'seize this opportunity', to not let slip a potentially rapid ascent towards technological leadership, like, as Jiabao claimed, it did back in 18th century, subsequently leading it into the century of humiliation. Through focusing on and succeeding in strategic 'emerging industries', China could 'occupy rapidly the commanding heights of economy', meaning it could 'skip' intermediate stages of development and move straight to the technological frontier. As the State Council contended:

'Accelerating the cultivation and development of strategic emerging industries is an urgent need to build new advantages in international competition and to grasp the initiative in development. At present, the global economic competition pattern is undergoing profound changes. The development of science and technology is giving birth to new revolutionary breakthroughs. In order to occupy a favourable position in the future international competition, the country must accelerate the cultivation and development of strategic

[154] See: Pettis, The great rebalancing, pp.69-97; Yukon Huang and Canyon Bosler, China's debt dilemma: Deleveraging while generating growth (Washington, DC: Carnegie Endowment for International Peace 2014).

[155] State Council of the People's Republic of China, "Accelerating the cultivation and development of the Strategic Emerging Industry Plan," (2010).

[156] Barry Naughton, The rise of China's industrial policy, 1978 to 2020 (Mexico City: Universidad Nacional Autónoma de México, 2021), pp.62-63.

emerging industries, master key core technologies and related intellectual property rights, and enhance independent development capabilities'.[157]

The result was a new roadmap, which built on the framework of the MLP, consisting of seven key industries in which China could seize the opportunity to leapfrog, including new energy, new-energy vehicles (essentially electric cars), energy technology, biotechnology, next generation IT, high-end manufacturing equipment, and new materials. The plan also outlined various ways success in these key industries could be achieved, including, for example, strengthening the research base via investment in university and research centres, while pushing economic actors to invest significantly more in research and development, establishing a 'mechanism for the flow of innovative talents from scientific research institutions and universities to enterprises', and building 'industrial conglomeration areas', essentially industrial clusters aimed at fostering innovation.[158]

With the urgency of pushing the transition towards innovation-driven growth, amid the perception of a window of opportunity opening, the stage was set for a further intensification of planning efforts in Beijing, to ensure industrial upgrading was successful. As far as state elites were concerned, this was imperative, both to secure the long-term power of the Chinese state and to seize the potential of a new technological cycle beginning.

Xi Jinping and Made in China 2025

It is within this context that Xi Jinping came to power in late 2012 and began a process of recentralising state control over the economy, with the underlying aim of managing the process of avoiding the middle-income trap, addressing the imbalances and moving the Chinese economy towards innovation-driven growth. The third plenum plan of 2013 provided the first concrete idea of how the Xi government would keep China's economic ascent on track. It was conceived with Xi's direct involvement and came with a sense of urgency that had not been seen in Chinese policy plans since the 1980s.[159] The most visible part of this process, though, came with the MIC 2025 plan, released in 2015, through which China was to 'realise the transformation from Made in China to Created in China', geared

[157] *State Council of the People's Republic of China, "Accelerating the cultivation and development of the Strategic Emerging Industry Plan," Section I, Part III.*

[158] *Ibid., Section IV, Part II.*

[159] *Naughton, The rise of China's industrial policy, 1978 to 2020, pp.69-74. Also: Barry Naughton, "Is there a Xi Jinping model of economic reform?," in The impacts of China's rise on the Pacific and the world, ed. Huizhong Zhou (Kalamazoo, Michigan: Upjohn Institute for Employment Research, 2018).*

towards the manufacturing sector specifically, whereby the 'strategic task' was turning 'China's manufacturing industry from big to strong'.[160]

In the preamble to the document, and in line with the economic realist conception of the world, a direct connection is made between the productive forces and power of the state, which had become even stronger as mankind entered the industrial age: 'Since the beginning of industrial civilisation in the middle of the 18th century, the history of the rise and fall of world powers and the history of the Chinese nation has repeatedly proved that without a strong manufacturing industry, there will be no country and nation'.[161] Accordingly, MIC 2025 goes on to contend that 'building an internationally competitive manufacturing industry is the only way for the country to enhance its comprehensive national strength, ensure national security, and build a world power'. It was imperative, then, for China to mobilise to ensure that it can continue its path towards industrial upgrading. While a lot of progress had been made in the 30 years prior, there 'is still a big gap compared to other industrialised countries'. In particular, 'the key core technologies and high-end equipment are highly dependent on foreign countries', while industry too was insufficiently digitised, leading to overall inferior products.

To address the deficiencies, the plan called for a major push towards 'intelligent manufacturing', whereby China would accelerate the 'integration and development of a new generation of information and manufacturing technology'. In contrast to previous 'upgrading' plans, MIC 2025 set out concrete and aggressive goals in the form of a 'three-step process'. By 2020, 'industrialisation will be basically achieved', the level of 'manufacturing digitalisation will be greatly improved', and mastery of a 'number of key core technologies in key areas' will be achieved. By 2025, the plan states that the 'overall quality of the manufacturing industry will be greatly improved and the innovation capability will be significantly enhanced', while the 'integration of the two industries (manufacturing and IT) will reach a new level'.[162] By then 'a group of multinational companies and industrial clusters with strong international competitiveness will be formed, and their status in the global industrial division of labour and the value chain will be significantly

[160] *State Council of the People's Republic of China, "Made in China 2025," (2015): Section I, Part I. For an insightful overview of the plan: Wübbeke et al., "Made in China 2025."*

[161] *State Council of the People's Republic of China, "Made in China 2025," Preamble.*

[162] *Ibid., Section II, Part III.*

improved'. Here we see China's clear intention to capture more of the value added in global value chains through competitiveness gains.

In the second step of this process, by 2035, the country's 'manufacturing industry as a whole will reach the middle level of the world's manufacturing power camp', with significantly improved 'innovation capability', through 'major breakthroughs' in 'key areas' and by the fact that various industries will display 'global innovation leadership capabilities'. In other words, China should be close to innovation-driven growth by this stage, and in some areas even at the technological frontier. Finally, in the last stage, in 2049, when the 'New China is 100 years old' — referring to the CCP's ascent to power in 1949 — the 'comprehensive strength' of Chinese manufacturing will enter the 'forefront of the world's manufacturing powers', with the 'main fields of the manufacturing industry' having the 'ability to lead innovation with obvious competitive advantages, and build world-leading technology systems and industrial systems'.[163]

Although the content of previous plans was similar, MIC 2025 is considerably more assertive, containing the concrete goal that by the middle of the century China should be the leading innovation nation in the world. As to how this should be achieved, the need for creating an 'innovation system' is stressed, meaning for example more research and development spending, better integration of universities and business, and the creation of 'innovation centres' — essentially a continuation and deepening of the policies advocated by the previous plans for fostering 'indigenous innovation'. Other measures were to 'strengthen the industrial base capacity', referring to the need to ensure that more of the basic components needed for Chinese manufacturing are also produced in China. China should also engage in 'brand building', which would help in generating greater international competitiveness. And importantly, we also see a clear continuation of the focus on 'strategic industries', with the report stating the need to 'vigorously promote breakthroughs in key areas', which support more 'rapid development' of these 'advantageous and strategic industries', with a new list of 10 areas that should be targeted to enhance the competitiveness of Chinese industry.[164]

These 'strategic priorities' revolved around, for example, developing a 'new generation of the information technology industry', meaning the design and production of integrated

[163] *Ibid.*

[164] *Ibid., Part III, Section VI.*

circuits, information communication equipment related to 5G, and 'core routing and switching technology', along with the promotion of quantum computing as well as industrial software. A push into machine tools and robotics is also evident, with the plan stating the need to 'accelerate the research and development of cutting-edge technologies and equipment such as high-end CNC (Computer Numerical Control) machine tools and additive manufacturing', with a focus on 'on industrial robots and special robots', along with applications across industries, such as 'automobiles, machinery, electronics, dangerous goods manufacturing, national defence and military industry, chemical and light industry'. Another push towards aerospace is also apparent, which had consistently failed in the past. There is also increased emphasis on 'advanced rail transit equipment', building on success that had already been achieved in rail, but also on 'energy equipment' with even more focus on nuclear power generation and hydropower along with general 'new energy and renewable energy equipment'.[165]

In this context, as a way to bring these innovations together, a 'high-end equipment innovation project' was to be launched to 'organise and implement a batch of innovations' across aircraft, 'intelligent green trains', nuclear power equipment, smart grids and machine tools, which in turn will allow China to seize the 'commanding heights of competition' across these fields. By 2025, the 'market share of high-end equipment with independent intellectual property rights will be increased' and as result 'the external dependence of core technologies will be significantly reduced', so that these areas will 'reach the international leading level'.[166]

The purpose and rationales behind MIC 2025 can be seen most vividly through the example of 'new energy vehicles', a key priority area for development that Beijing considers highly promising, as echoed throughout the Chinese electrical vehicle industry.[167] The head of BAIC (Beijing Automotive Industry Holding Company), for instance, noted that 'the field of traditional vehicles has a century of development history abroad, and it is too difficult to overtake', referring to the decades-long advantage major European and US incumbents have had in combustion-engine vehicle design and production, making it harder to catch up. But he went on to state that 'in the field of new energy vehicles, everyone started 5 years ago,

[165] *Ibid.*

[166] *Ibid.*

[167] *See: Guo Yujing and Yang Yishen, "How to see the rise of Chinese manufacturing from the perspective of new energy vehicles," Xinhua News Agency (23 June, 2015).*

especially pure electric technology. The route completely abandons the dependence on the soft underbelly of the country's industry, so it has the most opportunity to overtake on the curve'.[168]

Simply put, 'new energy vehicles' provide an opportunity to 'leapfrog' incumbents, with the help of a concerted effort embodied in the MIC 2025 plan. The key issues are possession and mastery of the 'core technologies', which Chinese planners and experts, as cited by Xinhua, consider to be battery, electronic and motor technology. China is already highly competitive in battery technology, benefiting from high economies of scale and significant innovation capacity. However, for 'control modules', such as those for electric motors, and advanced integrated circuits, which have even more importance in electric vehicles than in traditional cars, China was still mainly reliant on foreign imports. Additionally, manufacturing of these vehicles also needs to become more efficient and 'smarter', as China still lags heavily when it comes to 'intelligent manufacturing' of vehicles compared to global leaders. MIC 2025 aimed to close these gaps.

Upgrading into overdrive

During this period, from 2015 to 2017, we also get a renewed emphasis from Beijing on 'emerging' technologies, but on a much larger scale than previous efforts. As Barry Naughton has detailed, Chinese state elites experienced a 'Sputnik moment' in 2015 when Google's Alpha Go beat the best players in the world at the game Go, which is considered especially complex in China.[169] Their attention was drawn to the potential technological ramifications of artificial intelligence, subsequently leading to the Innovation-Driven Development Strategy (IDDS) in 2016. The plan succeeded the emerging industries plan from 2010 and can be seen as a 'masterplan' bringing various different approaches from previous years together, with a focus on an 'emerging technological revolution', showing a resolute intent to upgrade via leapfrogging.[170]

The majority of the upgrading initiatives up until 2015 were of the 'traditional' latecomer variety, seeking to catch-up with incumbents through replication of their current industries, i.e. through emulation and eventual absorption. Yet, as we saw regarding the strategic

[168] *Ibid.*

[169] *Naughton, The rise of China's industrial policy, 1978 to 2020, p.70. Also: Dan Wang, "China's Sputnik moment?," Foreign Affairs (2021).*

[170] *On IDDS, see also: Fu, McKern, and Chen, The Oxford handbook of China innovation, pp. 121-23.*

emerging industries initiative, a growing notion amongst Chinese state elites was that China could use technological paradigm shifts to overtake the current leading nations. Back in 2010, however, the industries targeted as part of this plan appear to have been fairly haphazard, with little underlying common rationale, ranging from electric cars to marine technology. What stands out with the launch of MIC 2025 and the IDDS, though, is the intention of capturing the fourth industrial revolution in a much more strategic and targeted way.

As highlighted by the IDDS, the world is undergoing a 'new round of technological revolution', where 'disruptive technologies continue to emerge, which are reshaping world competition and changing the balance of national power'.[171] China now faced 'the rare historical opportunity of catching up and surpassing', so it was an immensely important task to seize this new industrial revolution because an 'important reason for China's modern backwardness and beatings is that it missed the previous scientific and technological revolutions'.[172] The 'moment is now' for China to move towards exploiting these new, emerging 'general purpose' technologies.

Technologies targeted as part of this initiative generally relate to networks, data and artificial intelligence, which can help China in leapfrogging in, for example, large-scale machine manufacturing, including developing 'smart factories'. These involve interconnected and intelligent industrial robots, with the ability to improve efficiency themselves and improve the individualisation of the production process. This will thereby enable China to benefit from the same scale as standardised production, but with the benefit as well of added complexity and individualisation. In conjunction came also the move towards 'smart cities', whereby city transport networks are to become automatised, with the eventual arrival of driverless cars as well.

It was no surprise that China launched another major initiative in 2017, this time focused on AI. A new circular by the State Council explained that the 'rapid development of artificial intelligence will profoundly change human social life and the world'. This paradigm shift presented 'major strategic opportunities' for China that must be 'seized' through building

[171] *State Council of the People's Republic of China, "Outline of the National Innovation-Driven Development Strategy," (2016): Part I.*

[172] *Ibid.*

'first mover advantages'.[173] The plan recognised that 'artificial intelligence is a strategic technology leading to the future' and a 'major strategy to enhance national competitiveness'.[174] The problem for China, however, as the report highlights, was the continuing 'gap between the overall development level of artificial intelligence in the country and developed countries', ranging from a relative lack of theoretical foundations, algorithms and 'key equipment', as well as 'major products and systems' and materials. The gap, therefore, needed to be closed in order to 'firmly grasp the major historical opportunities for the development of artificial intelligence'.[175]

Outward investment in China's innovation drive

The 'going out' strategy

We have seen that China, beginning around the mid-2000s, has sought to move towards innovation-driven growth, due to investment-driven growth reaching its limits with the increasingly acute risk of China falling into the middle-income trap. Furthermore, Chinese state elites saw a generational 'opportunity' to leapfrog. To achieve the transition, China needed to 'upgrade' its economy, entailing a mastery of complex technologies, as illustrated by the various plans highlighted above. Now, let us look more in detail at how outward Chinese investment fits exactly into this picture, and how it is intimately connected to these efforts of transitioning to innovation-driven growth.

First, though, let us start with an overview of how the process of technological upgrading can be best achieved. McKinsey note that four factors are needed to facilitate the process: (1) investment capacity, (2) large markets, (3) a system promoting innovation, and lastly (4) 'channels' through which technology and know-how can be acquired.[176] It is clear, as McKinsey also mentions, that China easily fulfils elements 1 and 2, with an abundance of investment capital available for research and development spending, while it also has a very large domestic market and access to global markets. The focus for China, therefore, should be on stimulating a vibrant domestic innovation environment, marked by 'healthy competition' amongst Chinese firms and with international companies as well, along with

[173] *State Council of the People's Republic of China, "The new generation Artificial Intelligence Development Plan," (2017): Preamble.*

[174] *Ibid., Part I.*

[175] *Ibid.*

[176] *Jonathan Woetzel et al., "China and the world: Inside the dynamics of a changing relationship," McKinsey Global Institute (2019): pp.68-73.*

innovation-driving policies in education and research. An essential element, therefore, as also seen throughout the various plans examined above, is to create a 'national system of innovation', able to absorb technology and eventually innovate on it.

Beyond that, a central focus should also be on establishing 'channels' for technology and know-how acquisition, which can enhance China's 'indigenous innovation' capacity. It is critical to note here is that 'indigenous innovation' does not refer to China cutting itself off from the rest of the world, akin to, for example, some of the growth strategies pursued in Latin America throughout the 20th century. Brazil, for instance, pursued an import-substitution model, through the use of high tariff barriers and a range of subsidies that aimed to cut out foreign businesses in order to stimulate domestic production. In China, by contrast, indigenous innovation appears to refer to the drive to become innovation leaders, whereby innovation is chiefly driven by Chinese firms instead of foreign ones. To succeed, an isolationist strategy focused solely on promoting domestic companies is not the answer. In order to move closer to the technological frontier, access to foreign technology and know-how at the edge of the frontier is needed. Building certain competences in a purely indigenous way would take considerably longer, while the chances of success are lower as well. Chinese state elites are highly likely to be aware of this.

As we saw, although the 'markets for technology' approach with large amounts of FDI was successful to an extent in aiding the Chinese industrial base to reach an adequate, moderately competitive standard, more aggressive measures were needed for China's upgrading to continue and for it to move towards the innovation/technology frontier. While the FDI model ensured there was large-scale technological transfer over a long period, the innovation capacity of the joint ventures illustrated that leading know-how and technology was not transferred as part of the process. Some estimates, for example, show that the flow of technology during the most intense period of FDI in China was likely generations behind the leaders.[177] Indeed, why would a leading automobile manufacturer willingly hand over market-leading know-how and technology to a joint venture it does not fully control, thereby potentially creating a peer competitor right on its doorstep? Therefore, what generally

[177] *See for example: Bruce McKern, George Yip, and Dominique Jolly, "Introduction: China's journey to Innovation," in The Oxford handbook of China innovation, ed. Bruce McKern, George Yip, and Dominique Jolly (New York: Oxford University Press, 2021); Wang Xing Ming and Zhou Xing, "A new strategy of technology transfer to China," International Journal of Operations & Production Management 19, no. 5/6 (1999); David Bennett et al., "Technology transfer to China: A study of strategy in 20 EU industrial companies," International Journal of Technology Management 21, no. 1-2 (2001).*

happened since the 1980s was that Western automakers transferred lagging technologies to China, enough to gain access to the market, but not more. There was little 'co-development' of products enabling faster and more efficient learning for the Chinese partner, with the strategic control of the venture still very much in the hands of the more sophisticated developed partner.[178] Hence, by the early 2000s, it became clear to Chinese state elites that more 'direct' measures of technology acquisition were needed. If China was to move up technologically and improve its know-how, it would have to do it itself, meaning Chinese companies needed to improve their inhouse innovation capabilities. The next question, though, is how to do this in the most efficient, effective and timely manner possible.

One way was to tighten FDI and market access requirements to more effectively force technology transfer. This turned out to be more viable than previously, given that by 2003/04, the Chinese economy was in a boom phase, making it an even more attractive market for foreign multinationals, particularly for businesses involved in infrastructure/transportation industries. The high-speed rail industry serves as case in point. In the late 1990s, China had attempted to build a high-speed rail industry by reverse-engineering trains imported from manufacturers in Europe, in deals where European producers would supply trains for important railway lines. The effort, however, proved unsuccessful, and the project was abandoned after just a few years, leading the Chinese Ministry of Rail to further engage leading foreign producers starting in 2004, in order to acquire the requisite technology and know-how. At this stage, Chinese state elites were already taking more concrete steps to ensure that technology transfer was more 'complete' with FDI in the rail industry.[179] As the State Council made clear at the time, a new approach of engaging foreign producers should enable the introduction of 'advanced technology through...joint design and manufacturing (with the underlying goal)…being to build a

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[178] *Keun Lee, Xudong Gao, and Xibao Li, "Industrial catch-up in China: A sectoral systems of innovation perspective," Cambridge Journal of Regions, Economy and Society 10, no. 1 (2017): pp.8-10; Kelly Sims Gallagher, "Foreign technology in China's automobile industry: Implications for energy, economic development, and environment," China Environment Series, no. 6 (2003); Keun Lee, "Making a technological catch-up: Barriers and opportunities," Asian Journal of Technology Innovation 13, no. 2 (2005).*

[179] *On high-speed rail and Chinese and more 'direct' efforts of technology transfer: Zhenhua Chen and Kingsley Haynes, "A short history of technology transfer and capture: High speed rail in China," SSRN (2016); Yatang Lin, Yu Qin, and Zhuan Xie, "International technology transfer and domestic innovation: evidence from the high-speed rail sector in China," CEP Discussion Paper (2015); Gerald Chan, "From laggard to superpower: Explaining China's high-speed rail 'miracle'," The Japan Institute of International Affairs, no. 661 (2017).*

Chinese brand'.[180] We start to see a shift towards seeking more strategic control of the joint ventures, entailing less imports of foreign inputs, meaning equipment, parts, etc., and considerably more development and construction in China itself — more 'localisation'. The high-speed rail projects, through the use of FDI, were completed in 3 years, and allowed a thorough upgrading of the Chinese railway industry. This ultimately led to the creation of the national champion CRRC (China Railway and Rolling Stock Corporation), which eventually also became globally competitive, and gradually squeezed out the foreign firms that had sought access to China through FDI.

Another obvious way to attain leading foreign technologies and have ultimate strategic control was simply through mergers and acquisitions of leading foreign firms in those fields where China wanted to gain competences, with numerous success stories in this regard starting in the 2000s. Taking the liquid crystal display (LCD) industry as an example, China went, in the space of around a decade, from being a clear laggard to a leading player, with key help through strategic acquisitions of foreign firms with important technology.[181]

Going into the 2000s, China did have competences in TV production/displays, but these were principally based on cathode ray tube technology (CRT). However, it was during this period that cathode CRT technology started to be overtaken at the technological frontier for displays with the development of LCD displays, enabling what came to be known as 'flat screens', compared to the bulky screens using CRT technology. Moreover, images generated using LCD technology did not flicker as much and devices based on it consumed less power, while it also lent itself to the growing mobile phone and laptop markets, where flat screens were a necessity.

The leader in television and display manufacturing in China at the time was a company called Beijing Orient Electronics Group, referred to as BOE, a successor group of the Beijing Tube Manufacturing Company, which as the name suggests was a specialist in cathode ray tube products. As the market was moving towards LCD displays, given all of the clear advantages noted above, BOE needed to catch up quickly in order not to be

[180] *Quoted in: Nigel Cory, "Heading off track: The impact of China's mercantilist policies on global high-speed rail innovation," Information Technology and Innovation Foundation (2021).*

[181] *Derived from: Chun Yang, "State-led technological innovation of domestic firms in Shenzhen, China: Evidence from liquid crystal display (LCD) industry," Cities 38 (2014); Xielin Liu, "Can international acquisition be an effective way to boost innovation in developing countries? Evidences from China's TFT-LCD industry," Journal of Science and Technology Policy in China 1, no. 2 (2010).*

overwhelmed by rising competition. While it must have been an option to innovate entirely inhouse, it would likely have proven highly costly and would have taken many years to complete. So, BOE, with the backing of Beijing, looked abroad, specifically at the leading countries in the LCD market, especially South Korea, which had developed frontier LCD technology in the space of a decade, driven chiefly by the firm Hydis, a unit of the Hyundai conglomerate. The firm was positioned at the innovation frontier, having the technology needed for BOE's upgrading efforts, so subsequently became an acquisition target. Due to the Asian financial crisis of the late 90s and early 2000s, which had severely affected South Korea's economy, and especially some of its larger groups such as Hyundai, BOE found a willing seller. The acquisition went through in 2003 and consisted of all of Hydis' assets, such as technology, equipment, factories, key technical personnel and its marketing channels. And the result was a resounding success, with BOE emerging as one of the key global market leaders in the field, in the process ensuring that a major, important cluster of LCD panel manufacturing was developed in China. China was increasingly able to capture most elements of the technology supply chain for the industry, and positioned itself at the technological frontier. It acquired significant innovation capacity as well through this acquisition, thus ensuring that R&D in China became self-sustaining and no longer needed foreign input, which would have lowered margins.[182]

With a more assertive approach to creating technology 'channels', it became clear that foreign acquisitions could be a valid strategy for gaining access to the technology required for moving closer to the frontier, especially considering that the Chinese innovation system — and thereby the absorptive capacity for technology — had also improved considerably by the mid-2000s. As a result, it is unsurprising to see a connection made in Chinese policy documents between the need for innovation and outward investment.

In the mid-2000s, coinciding with the policy drive towards 'indigenous innovation', there was also greater push towards outbound Chinese investment. The Overseas Investment Industrial Guiding Policy was promulgated in 2006 with the aim of better 'systematising' Chinese outward foreign investment to accord more formally with Beijing's aims of

[182] *Similar experiences were made across other industries, notably in computing, with Lenovo's takeover of IBM's PC business. See: Huaichuan Rui and George Yip, "Foreign acquisitions by Chinese firms: A strategic intent perspective," Journal of World Business 43, no. 2 (2008); Ping Deng, "Why do Chinese firms tend to acquire strategic assets in international expansion?," ibid.44, no. 1 (2009).*

industrial upgrading to increase economic competitiveness.[183] The policy guidelines emphasised access to raw materials and resources, but also foreign investments 'able to clearly enhance China's technology research and development capacity, including an ability to use international leading technology'. The catalogue attached to the policy guidance listed a range of high-technology industries, with a focus on areas where China still had clear weaknesses in terms of technological capability, such as in advanced engines and in the 'manufacturing of chemical products that cannot obtain advanced technology in China'. 'High-tech' is also noted along with 'product research' and 'software development and application services', but overall the outward investment catalogue was still more geared toward simpler 'resource-seeking' investment and toward mid-range technology and know-how — cement manufacturing, sanitary mechanics, copper smelting etc. — commensurate with China's investment-driven stage of development.[184] Although a 'going out' strategy had been mentioned by Chinese state elites, through various speeches and policy documents, since 2002, as a way for Chinese businesses to gain more international experience in the global economy, it was with the policies of 'indigenous innovation' that the 'going out' strategy becomes systematised and integrated with Beijing's efforts to upgrade the economy.

In 2010, at the same time as the 'emerging strategic industries plan', another plan for technology transfer was released with the aim of 'encouraging the digestion, absorption and re-innovation of imported technologies', allowing for 'speeding up of the adjustment of the economic structure, to promote the upgrading of the domestic industry structure and the transformation of the development mode'.[185] It should 'improve the independent innovation ability and technological competitiveness of enterprises'. The plan's purpose was to push Chinese firms towards new technologies and master them, subsequently making them available to the wider economy once they had been 'digested'. Foreign firms should also be encouraged to move more R&D operations to China and enter into 'academic exchanges' with domestic universities, again with the intention of guiding Chinese industry towards higher technology. Importantly, as noted in article 12 of the document, 'enterprises shall be supported to establish or acquire overseas research and development institutions...and banks

[183] *Chinese National Development and Reform Commission, "Guiding policies for overseas investment industries," (2006).*

[184] *Ibid., Appendix.*

[185] *China Department of Commerce, "Guiding opinions on encouraging the digestion, absorption and re-innovation of imported technologies," (2010): Preamble.*

are encouraged to carry out loan business for overseas establishment and mergers and acquisitions of enterprises within the business scope approved by the regulatory authorities'[186] — in other words geared towards the 'strategic' industries as defined by Beijing. Additionally, the 'venture capital mechanism' needed to improve as well, with 'social funds' to go to 'support enterprises…to introduce foreign cutting-edge technological achievements into domestic industrialisation', the idea being that investment in foreign start-ups operating at the technological frontier would help 'enterprises master the latest foreign technological achievements and core technologies'.[187]

Furthermore, the emerging industries plan itself attached great importance to the international environment, seen as a 'source of innovation'. According to the State Council: 'Through deepening international cooperation, it is necessary to master key core technologies as soon as possible, and enhance China's independent development capability and core competitiveness'.[188] To achieve this goal, the plan encourages interaction with the global economy to gain further access to know-how and technology. Foreign firms should be encouraged to set up R&D operations in China itself, to facilitate learning, by 'cooperating with domestic-funded enterprises and research institutions' and Chinese enterprises to engage in R&D abroad using local talents.

Importantly, success in these emerging industries would also mean 'expanding the autonomy of enterprises in overseas investment', by cutting red tape for Chinese outward FDI, increasing Chinese firms' access to foreign exchange reserves, and formulating a 'national industry-orientated catalogue to provide guidance for enterprises to carry out cross-border investment'.[189] There should be 'vigorous support for the multinational operation of enterprises', involving 'active support' across 'products, technologies…in strategic emerging industries'.[190] We can thus see a direct link between an increasingly active industrial 'upgrading' process and a strategy of using overseas investment as a means to facilitate this process. State elites started to take a much more active stance towards upgrading, moving away from relying heavily on inward FDI and hoping for technology

[186] *Ibid., Article 12.*

[187] *Ibid., Article 14.*

[188] *State Council of the People's Republic of China, "Accelerating the cultivation and development of the Strategic Emerging Industry Plan," Part XI.*

[189] *Ibid., Part XI, Section II.*

[190] *Ibid.*

transfer. The focus had firmly shifted towards China more actively engaging with the global economy and absorbing the requisite technology and know-how to accelerate its industrial development.

The connection between outward investment and goals of MIC 2025 is also evident and even more explicit. MIC 2025 emphasised the need to 'improve the level of international development of the manufacturing industry' and 'make overall use of two resources and two markets', referring to the domestic and global markets.[191] Chinese multinationals should be fostered and supported in their international strategies, as they can 'accelerate the enhancement of core competitiveness through global resource utilisation'. The plan encourages Chinese enterprises to carry out 'mergers and acquisitions, equity investment and venture capital overseas' as well as setting up R&D centres overseas. The underlying rationale was that this would further facilitate know-how and technology transfer and thus support the industrial upgrading process.[192]

The overseas FDI push from China during this period can be understood in the context of China's goal to become the leading industrial powerhouse in the coming decades, as outlined in MIC 2025. The Chinese outward FDI investment patterns during this period overlap with the 'strategic' industries targeted in the MIC 2025 plan, especially in high-tech manufacturing and information technology. For example, investment in foreign semi-conductor assets increased from never more than $1 billion a year prior to 2014 to over $35 billion in 2015, with investment in both the US and Europe picking up significantly. By 2016, Chinese outward investment amounted to $200bn.[193]

This link between the drive towards technological upgrading and foreign investment is made further evident in a range of other policy documents. For instance, a notice written by the State Council regarding 'several policies for further encouraging the development of the software industry and integrated circuit industry' emphasises that businesses involved in software and chipmaking should be supported in their efforts towards 'going global' and

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[191] *State Council of the People's Republic of China, "Made in China 2025," Part III, Section IX.*

[192] *Ibid.*

[193] *John VerWey, "Chinese semiconductor industrial policy: Past and present," Journal of International Commerce and Economics (2019); Thilo Hanemann and Mikko Huotari, "Record flows and growing imbalances: Chinese Investment in Europe in 2016," MERICS Papers on China (2016); Office of the United States Trade Representative, "Findings of the investigation into China's acts, policies and practices related to technology transfer, intellectual property, and innovation under section 301 of the trade act of 1974," Executive Office of the President (2018): pp.102-03.*

utilising foreign investments.[194] The 2017 'guiding opinions on the direction of overseas investment' also reconfirms and reemphasises the need for Chinese outward investment as part of the 'go global' concept, tied to promoting the 'transformation and development of the domestic economy' with 'overseas investment that drives the export of advantageous production capacity, high-quality equipment and technical standards'.[195] The AI plan from 2017 also has this 'international' dimension to it.[196] Chinese firms should 'cooperate with leading international AI universities, research institutes, and teams', while the state should provide added 'convenience and services for powerful artificial intelligence enterprises to carry out overseas mergers and acquisitions, equity investment, venture capital, and the establishment of overseas R&D centres'.[197] Therefore, what we have here is one of the key technological areas where China is seeking leapfrogging growth, but in order to do so it needs additional know-how and technology, which it can attain through overseas investment, once again highlighting the relationship between outward FDI and China's catch-up and leapfrogging efforts.[198]

The connection between outward FDI and industrial upgrading can also be seen with the significant ramping up of outward Chinese investment from 2010 to 2017 in the context of the major initiatives outlined above. It can be assumed that both are connected, especially as they have been openly written and talked about in the same context by Chinese state elites. Looking at the types of foreign investments as well, there appears to be a significant overlap between the stated aims and goals of Beijing moving closer to technological frontier and the actual investments made during this time.[199] A pertinent example in this regard is again the semi-conductor industry. It has been a prime target of the 'indigenisation' process desired by Beijing, with consistent statements in this regard throughout the last 20 years,

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[194] State Council of the People's Republic of China, "Circular of the State Council on printing and distributing several policies for further encouraging the development of software industry and integrated circuit industry " (2011): Part IV, Section XXI.

[195] State Council of the People's Republic of China, "Guiding opinions on the direction of overseas investment," (2017): Preamble.

[196] State Council of the People's Republic of China, "The new generation Artificial Intelligence Development Plan."

[197] Ibid., Part IV, Section III.

[198] See also: Jeffrey Ding, "Deciphering China's AI dream," Future of Humanity Institute Technical Report (2018).

[199] Cora Jungbluth, "Is China systematically buying up key technologies? Chinese M&A transactions in Germany in the context of "Made in China 2025," Bertelsmann Stiftung (2018). Michael Brown and Pavneet Singh, "China's technology transfer strategy," Defense Innovation Unit Experimental Report (2018).

with an acceleration in this drive from 2014 onwards, when state policy becomes more active in regard to enhancing the Chinese semi-conductor industry, in turn leading to a very large increase in foreign acquisitions in the sector, primarily in the US and Europe.[200]

While the semi-conductor industry in China has been able to grow, and become a major global producer, it has remained highly reliant on overseas technology, and continues to lag two to three years behind global leaders. Semi-conductor design and production is highly complex, involving thousands of steps in a production process and hence major know-how requirements, which also appear to be cumulative, giving incumbents an advantage.[201] Thus, as most management consulting firms would suggest, organic growth will likely not prove especially effective in building a fully stocked and thriving industry of this complexity. Access to foreign technology is needed to advance the upgrading process, which can come through 'partnerships', R&D institutes with Chinese participation or inward FDI, but also through outward investment, where expertise can be bought directly, arguably making the entire process easier and more efficient from a technology transfer perspective.[202]

The correlation between Chinese state elites' advocacy for more outward M&A activity and the need to upgrade industries such as semiconductors can be seen in the 2016 Industrial Technology Innovation Capability Development Plan. The plan stresses the importance of 'international technical cooperation' for firms to continue upgrading, and encourages businesses to carry out 'international technology exchange activities…by adopting various methods such as scientific and technological cooperation, technology transfer, mergers and acquisitions, joint development', etc, all of which is particularly important in semi-conductors, across all parts of the semi-conductor value chain.[203] As a result, a foreign acquisitions 'spree' was started, with major deals in the US in 2014/15, including the acquisitions of Omnivision, Memory Logic, IISI, and Mattson, but also in Europe, most famously with the attempted takeover of German semi-conductor firm Aixtron.

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[200] *Lee, China's technological leapfrogging and economic catch-up: A Schumpeterian perspective, pp.147-50.*

[201] *Ibid.*

[202] *See for example: Kevin Meehan et al., "China chases chip leadership," Bain and Company (2016): p.8.*

[203] *Chinese Ministry of Industry and Information Technology, "Industrial Technology Innovation Capability Development Plan (2016-2020)," (2016): Part V, Section V.*

Other drivers of outward Chinese investment

While seeking access to strategic assets, primarily in high technology, is a central motivation, other motivating factors are also present behind outward Chinese investment. Access to resources, for example, has been important for several investment projects, such as those in Africa. However, in Europe — but also the US — market access has also been a contributory motivation.[204] This type of investment is seen, for example, in the focus on transportation and logistics infrastructure, as a way to reduce costs and facilitate exports for Chinese firms. Moreover, to further enhance Chinese business presence and facilitate more exports, there has been an emphasis on investing in trade-related services, such as logistics and financial services, as well as on promoting wider commercial hubs to serve as a central point for Chinese business interests entering Europe. This type of investment can be understood as part of managing the transition towards innovation-driven growth. With a continued reliance on investment-driven growth, foreign markets must continue to be cultivated in order to maintain demand for Chinese capital goods. Once China becomes a true technological leader, with all the requisite competitive advantages, access to overseas markets would also allow for the full realisation of its advantages.

It is in this context that the BRI should be seen. It is a form of market access investment on a grand scale.[205] The BRI is an ambitious project that seeks to interconnect and integrate the Eurasian landmass within a large economic zone, in which China will play a central role. As Europe is China's largest export market, it is critical for the success of the project. Investments in the Mediterranean ramped up in the 2010s, with Piraeus becoming the largest container port in the Mediterranean and fourth largest in Europe, a major leap from the earliest stages of investment in 2011.[206] The port is capable of accommodating the largest

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[204] *On these different types of outward investment 'needs': Muhammad Abdul Kamal et al., "Natural resource or market seeking motive of China's FDI in asia? New evidence at income and sub-regional level," Economic Research 32, no. 1 (2019); Ficawoyi Donou-Adonsou and Sokchea Lim, "On the importance of Chinese investment in Africa," Review of Development Finance 8, no. 1 (2018); Kavita Wadhwa and Sudhakara Reddy, "Foreign direct investment into developing Asian countries: The role of market seeking, resource seeking and efficiency seeking factors," International Journal of Business and Management 6, no. 11 (2011).*

[205] *See also: Saleh Shahriar, Sokvibol Kea, and Lu Qian, "Determinants of China's outward foreign direct investment in the Belt & Road economies: A gravity model approach," International Journal of Emerging Markets 15, no. 3 (2020).*

[206] *Thanasis Karlis and Dionysios Polemis, "Chinese outward FDI in the terminal concession of the port of Piraeus," Case Studies on Transport Policy 6, no. 1 (2018); Wang Bo, Pelagia Karpathiotaki, and Dai Changzheng, "The central role of the Mediterranean Sea in the BRI and the importance of Piraeus Port," Journal of WTO & China 8, no. 4 (2018).*

shipping vessels, with the Chinese Cosco Shipping 'Taurus' vessels often docked there. Piraeus has served as an entry hub for a range of Chinese products, but with a central focus on the European operations of Huawei and ZTE. In 2019, a memorandum of understanding between Italy and China allowed for further Chinese investment into the ports of Trieste and Genoa.[207] Trieste is relatively small, with just under 800k TEUs (Twenty-foot Equivalent Unit), but does have railway links with central and eastern Europe, making it attractive to Chinese investment, allowing for the further expansion of export market infrastructure.

In addition to market access, China's foreign investments likely have a military dimension. As discussed in chapter II, a state's 'security' or military interests are often closely linked with its economic and industrial interests. Therefore, the process of technological 'upgrading' naturally extends to the country's military-industrial complex. China, for instance, has declared its goal of transforming the PLA (People's Liberation Army) into a 'world class' power by 2049, which coincides with its ambition to become an industrial leader as well.[208] In essence, China's industrial upgrading towards an innovative economy is symbiotic with its efforts to enhance its military power.

An important development in this regard is the Military-Civilian Fusion (MCF) strategy, which aims to fuse the military-technology complex with the civilian-technology complex, thereby creating a cross-fertilising technology base that facilitates the integration and assimilation of technology by the Chinese military.[209] From the military's perspective, China's focus on 'dual-use' technologies is crucial, as they not only enhance the productive capacity/base of the country but also significantly strengthen its military capabilities.

The result is that civilian and military development have become connected, to serve the purpose of 'national rejuvenation'. Advancements in one domain are expected to be easily transferable to the other, with civilian and military innovation building upon each other. For instance, the development of leading technology applications in the economic domain are

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[207] EUObserver, "Italy takes China's new Silk Road to the heart of Europe," EUObserver.com (2019).

[208] See: William Hannas, James Mulvenon, and Anna Puglisi, Chinese industrial espionage: Technology acquisition and military modernisation (London: Routledge, 2013); Satoru Mori, "US technological competition with China: The military, industrial and digital network dimensions," Asia-Pacific Review 26, no. 1 (2019).

[209] Lorand Laskai, "Civil-military fusion and the PLA's pursuit of dominance in emerging technologies," China Brief 18, no. 6 (2018); Richard Bitzinger, "China's shift from Civil-Military Integration to Military-Civil Fusion," Asia Policy 28, no. 1 (2021).

likely to find their way directly into military applications. This fusion of military objectives with civilian ones means that Chinese investment activities are likely to have both military and economic development objectives. It is not difficult to identify an overlap between commercial and military interests.

The MIC 2025 plan, as shown above, clearly shows that many of the proposed areas being targeted for development have a 'dual use' nature, meaning they would benefit both Beijing's commercial and military objectives. China's attainment of 'indigenous' innovation capacity would help to create a cluster of national champions able to compete and dominate commercially at the global level, while also enabling the military to be upgraded in parallel, as the new technologies being developed would be proprietary to China.

An example of this approach is the establishment of the 'AI Champions' concept in 2017, whereby a handful of Chinese technology companies, including Baidu, Alibaba and Huawei have been identified by Beijing as leaders in the field.[210] This recognition allows them to influence the relevant policy direction pursued in the area and increase collaboration with the defence/security complex. In some cases, this collaboration with the security establishment is even mandated by law, as the 2017 National Intelligence Law requires Huawei and ZTE to collaborate with Chinese intelligence agencies, regardless of where their operations are located.[211]

The new industrial policies have numerous military applications. By enhancing innovation capacity in computing and semi-conductor technology, China can improve its cyber-warfare capabilities, facilitate the design of weapons systems, and speed up military research and development processes. Similarly, advancements in AI and robotics offer various possibilities, with potential improvements in unmanned vehicles and surveillance. Biotechnology also has military applications, such as the potential to enhance human/machine interfaces, while the push into New Energy can also improve the powering of armies and weapons systems.[212]

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[210] *Gregory Allen, "Understanding China's AI strategy: Clues to Chinese strategic thinking on artificial intelligence and national security," Center for a New American Security (2019).*

[211] *Ibid., p.21.*

[212] *On these various technological applications to military uses: Johnathan Ray et al., "China's industrial and military robotics development," Center for Intelligence Research and Analysis (2016); Brown and Singh, "China's technology transfer strategy."*

It is crucial to note, however, as demonstrated in chapter II, that we should not view Chinese 'security' interests taking priority here; rather, they are entirely part of Beijing's technological/industrial upgrading efforts. As China moves up technologically and its economy becomes increasingly competitive, this naturally affects its military power as well — but the critical factor is still building the technological-economic foundation, without which significant growth in Chinese military power would be difficult to achieve.

China's competitive position in the global economy

Having major industrial policy programmes in place is one thing, but achieving success in global markets and establishing competitiveness is another. However, from the early 2000s to the 2015-16 period, China made substantial strides in its competitiveness in several areas. One simple way of measuring this increasing competitiveness is China's share in global exports in major industries, where significant gains can be observed in several categories.

For instance, China has rapidly established itself as a global competitor in communications equipment, largely through Huawei, with large export share gains. In the 1990s there were no Chinese firms capable of producing advanced telecommunications equipment, but by the 2010s Chinese firms had emerged as global leaders, with Huawei surpassing Eriksson in terms of revenues in the early 2010s.[213] The relatively short cycle of telecommunications technology aided China in this regard, allowing newcomers to the industry to exploit their advantages, if at least a certain amount of know-how is present. And this is what occurred specifically with the transition from 3G to 4G, which Huawei was able to use to its advantage, moving quicker, with more resources and lower costs. Prior to this, however, studies show that the quality and quantity of its patents improved markedly and overtook Eriksson's before the latter's eventual dethroning.[214]

Electronics too has seen major gains during this period, in particular consumer electronics and household consumer goods, where firms such as Haier made inroads starting from around 2007, increasing global market share each year.[215] Construction machinery too has seen significant growth, along with electrical equipment and general industrial machinery,

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[213] *Si Hyung Joo, Chul Oh, and Keun Lee, "Catch-up strategy of an emerging firm in an emerging country: Analyzing the case of Huawei vs. Ericsson with patent data," International Journal of Technology Management 72, no. 1-3 (2016).*

[214] *Ibid., pp.13-18.*

[215] *Ke Zhang et al., "The evolution mechanism of latecomer firms value network in disruptive innovation context: A case study of Haier Group," Technology Analysis & Strategic Management 31, no. 12 (2019).*

where all the firms operating in these areas have benefited from the strong investment-driven growth seen in China during this period, with a large focus on capital equipment.[216]

Another industry-specific success, as we saw, is the rail industry, which as McKinsey argues 'exemplifies the "digest and innovate" approach to learning', whereby Chinese rail firms, under state tutelage, adopted an approach of not just spending on technology but focusing on the actual implementation and mastery of it. As a result, the know-how build-up following 2008 was rapid, underpinned by major rail investment in China, enabling Chinese engineers to focus on innovation geared towards the Chinese market, such as trains for challenging terrains and inclement weather.[217]

Wind power as well has been a major success, with China accounting for over one-third of the growth in the industry since 2003. Initially, Chinese production focused on the manufacturing of foreign designs, but through R&D agreements with European firms, Chinese companies were able to learn increasingly quickly and managed to rapidly close the technological gap, as seen in power output per turbine. Chinese firms came to dominate the global market, with several of its firms coming to operate at the technological frontier.[218]

Significant gains in competitiveness were also observed in nuclear power, where research and development collaboration with Western firms and the large market in China again played a crucial role. China General Nuclear Power, for example, reached a stage where it could design and build its own version of the latest third-generation reactors, following only France, Russia and the US. These reactors have since been rolled out across China and are enjoying rising success in export markets.[219]

Between 2010 and 2015, Alibaba rose to prominence to become the largest e-commerce firm globally, while mobile phone maker Xiaomi, known for good designs and cheap prices,

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[216] Yingying Lu, "China's electrical equipment manufacturing in the global value chain: A GVC income analysis based on World Input-Output Database (WIOD)," International Review of Economics & Finance 52 (2017); Ralf Moldenhauer et al., "Gauging the Chinese threat to european machinery makers," BCG Perspectives (2014).

[217] Erik Roth, Jeongmin Seong, and Jonathan Woetzel, "Gauging the strength of Chinese innovation," McKinsey Global Institute (2015): p.83.

[218] Ibid., pp.83-84. Also: Ben Backwell, Wind power: The struggle for control of a new global industry (New York: Routledge, 2018), pp.41-64.

[219] On China's growing competitiveness in nuclear: Laura Gil, "How China has become the world's fastest expanding nuclear power producer," IAEA Bulletin 58-4 (2017); Jost Wübbeke, "China's nuclear industry goes global," The Diplomat (11 February, 2016); Mark Ho et al., "A review on the development of nuclear power reactors," Energy Procedia 160 (2019).

supported by high operational efficiency, expanded into global markets as well, reaching a valuation of $46bn at the end of 2014.[220] Meanwhile, internet service firms such as Tencent too saw startling growth during this period, developing innovative business models to monetise online games and social media and successfully venturing into a digital payments platform.

More broadly, illustrating China's already substantial push towards innovation-driven growth, R&D spending in China increased significantly during the period, exceeding 2.2% of GDP by 2015, surpassing that of the European Union and not far behind the United States. Additionally, China's share of global patents also saw a major increase.[221] Looking at major 'innovation indexes', such as the Global Innovation Index, we can observe China's steady progress: by 2017, China was considered the 22nd most innovative nation in the world, ahead of Australia, Italy and Belgium and seemingly with room to move towards the innovation levels of Germany and France. Since 2010, China has firmly broken away from developing countries in terms of its base innovation capacity and competitiveness, and has started to position itself amongst the Western industrialised nations.[222]

Summary and implications for Europe

With the move towards market capitalism in the late 1970s, China has achieved rapid catch-up growth, utilising a large labour market to move quickly through factor-driven growth to investment-driven development. However, as we saw, since the early 2000s, Chinese state elites have increasingly recognised the need to move towards innovation-driven growth as the large productivity gains of capital mobilisation came to an end. The Great Financial Crisis further accelerated the process as China could no longer rely as heavily on overseas markets, making even more investment spending necessary to support aggregate demand in the Chinese economy, with increasingly inefficient results. With most of the easier productivity-enhancing investment already made, a pressing need arose in Beijing to move towards innovation-driven growth. It could advance the Chinese economy beyond reliance on the mobilisation of labour and capital, towards making these inputs more efficient,

[220] *Hong Shen, Alibaba: Infrastructuring global China (London: Routledge, 2021); Alberto Gabriele, Enterprises, industry and innovation in the People's Republic of China (Singapore: Springer, 2020), pp.235-42.*

[221] *Dennis Normile, "China narrows US lead in R&D spending," Science 362, no. 6412 (2018).*

[222] *Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent, "The global innovation index 2017," World Intellectual Property Organisation (2019).*

making productivity a principal growth driver. At the same time, Chinese state elites were highly concerned about falling into the middle-income trap.

Throughout China's development stages, access to foreign technology and know-how has been central to its success, ensuring competitive production processes, factory set-ups and infrastructure were in place to make China the 'workshop of the world'. Beijing employed various strategies to ensure access to this technology, with the 'markets for FDI' being one of the most common throughout the 1990s and early 2000s. Although significant successes are attributable to this strategy, Chinese state elites realised that if China wanted to move further towards the technology frontier and innovation-driven growth, more 'active' measures were needed. It is in this context that we see the increased usage of what Beijing describes as a 'going out' strategy, involving a host of other measures designed to gain access to leading technology and know-how, with foreign outward investment being an important component, noted in every major strategic economic plan since 2006.

In addition to the increased economic necessity of moving towards innovation-based growth, the post-financial crisis period was also seen as a crucial strategic opportunity for China, enabling it to achieve 'leapfrogging' growth and rapidly establish itself as a leading industrial power. As the fourth industrial revolution unfolds, and the global economy enters new technological paradigms, a window of opportunity presents itself to industrial latecomers to move straight towards the frontier in unestablished technologies and capture most of the value-added in associated industries. This is also why we see increased reference to 'strategic emerging industries' in Beijing and added urgency around progress in these areas — as the window of opportunity will not last forever, because other economic powers will also seek to establish themselves and dominate the fourth industrial revolution.

So, we have a confluence of factors at work in China. Not only were the limits of investment-driven growth becoming evident, but the concurrent rise of new technological paradigms also presented China with a unique opportunity, so it needed to act immediately in order to seize the emerging technological window. It is at this stage that we see an increasingly aggressive move towards acquiring technology, particularly in what Beijing considers preferred strategic areas, meaning areas especially suited for leapfrogging growth.

It is at this point as well that the dynamic in Europe and China's economic relationship begins to change. As China entered factor-driven and subsequently investment-driven growth, Europe and China's economies were largely complementary. China provided a low-

cost manufacturing base for European firms, a large market where European firms were highly competitive — being market leaders across numerous industry segments — with China still lagging considerably technologically and in terms of innovation. For China, going into investment-driven growth required access to European capital goods, while access to European export markets also allowed it to support its growing export-manufacturing sector geared towards low- to mid-end market segments.

The issue, however, is that as China pushes further towards innovation-driven growth and thereby into higher-value added market segments, it comes into direct competition with the major European economies situated at the technological frontier. With China intent not just on 'catch-up' growth, but also 'leapfrogging', there has been a clear rise in the threat perception across European capitals. Chinese growth is no longer seen as complementary to Europe's economic future, but rather as a challenge that must be confronted. Europe begins to balance China, and, as we will see, the implementation of investment screening mechanisms is part of this rebalancing. If China is seeking to overtake Europe in terms of industrial capabilities, then, as expected through the economic realist lens, Europe, as the 'incumbent' economy, will start to erect barriers to slow the Chinese upgrading process.

Chapter IV

Germany

We begin our case studies with Germany, which emerged as one of the leading advocates in Europe for investment screening throughout the latter 2010s. As we will see, Germany is particularly affected by Chinese industrial upgrading efforts, with China seeking domination in several areas of traditional German strength. This has resulted in economic relations between the two economies going from synergistic to increasingly antagonistic, and has led to pushback in Germany, in which investment restrictions form an important element.

The chapter is divided into three broad sections, built around the economic realist logic elucidated in chapter II. First, the context of the German economy is provided, specifically the context for Germany–China economic relations. Second, it is shown how China has emerged increasingly as a competitive threat to the German economy, and that this has steadily led to a rising threat perception amongst German state elites, but also German business. And third, it makes the connection between this rising threat perception, a process of 'balancing' China taking place in Germany, and the resultant introduction of investment screening measures.

The Context

Germany's export success and embrace of China

Germany's economy has consistently proved itself one of the strongest in the world throughout the last centuries, establishing itself as a premier industrial nation at the turn of the 20th century at the technological frontier. Taking the Porterian approach, Germany should be seen as an innovation-driven economy, underpinned by a strong foundation in intellectual capital, explaining the country's rapid re-emergence after WWII. Although the country's infrastructure and industrial base were decimated after the war, by the 1950s, Germany's economy returned to rapid growth, building on the competitive advantages established at the beginning of the century, primarily in chemicals, machine manufacturing, transportation equipment and optical products.[223] And Germany has proved to be consistently successful at upgrading these various industries and maintaining its competitive

[223] *On these traditional areas of German strength: Harald Legler, Georg Licht, and Alfred Spielkamp, Germany's technological performance (Heidelberg: Physica-Verlag, 2012), pp.55-75.*

advantages, supported by a strong educational system geared towards industry, as well as world-leading commercial research organisations.[224]

Certainly, few states in the world place such emphasis on economic prowess as Germany, which routinely describes itself as '*Exportweltmeister'*.[225] Following the Hartz IV reforms under the Schröder government in the early 2000s, Germany's trade surplus has grown to extraordinary highs, reaching the highest level in the world. For a country of only 83 million inhabitants its international success is remarkable, with exports in absolute amounts only being eclipsed by the much larger economies of the US and China.[226] Industrial activity, meanwhile, constitutes over a quarter of the economy, making it much more reliant on manufacturing compared to other Western states, with a clear willingness to keep industrial activity inside Germany, compared to the manufacturing strategies of comparable industrialised economies.[227]

Judging by the numbers, Germany's economic relationship with China over the past 20 years has proved to be a resounding success, exceeding expectations of the early 2000s and of China's accession to the WTO.[228] The driving force behind the increased economic integration was, of course, the rapid growth witnessed in China during this period, but also the fact that the Chinese and German economies were 'symbiotic', whereby both countries needed each other economically. This increased connection to China in Germany arose during the early 2000s, amid the structural reforms enacted by the Schröder government. Following the introduction of the euro a few years earlier and under the weight of reunification, German state elites saw the need for a competitiveness overhaul, culminating

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[224] On the German innovation system: Richard Nelson, National innovation systems: A comparative analysis (Oxford: Oxford University Press, 1993), pp.115-36; Hariolf Grupp and Iciar Dominguez Lacasa, "The national German innovation system - its development," in Economics, evolution and the state: The governance of complexity, ed. Kurt Dopfer (Cheltenham: Edward Elgar, 2005); H. Grupp et al., Das deutsche Innovationssystem seit der Reichsgründung (Heidelberg: Physica-Verlag, 2013).

[225] For example: Der Spiegel, "Deutschland feiert Exportweltmeister-Titel " Spiegel Wirtschaft (8 February, 2008).

[226] World Economic Forum, "These are the world's biggest exporters," Trade and Investment (2018).

[227] See: Bob Hancké and Steve Coulter, "The German manufacturing sector unpacked: Institutions, policies and future trajectories," UK Government Office for Science Future of Manufacturing Project, no. 13 (2013); Federico Foders and Manuel Molina Vogelsang, "Why is Germany's manufacturing industry so competitive?," Kiel Policy Brief (2014).

[228] On the growing economic partnership: Matthias Von Hein, "40 years of Sino-German relations," Deutsche Welle (October 11, 2012); Margot Schüller, "Chinas Aufstieg zum wichtigsten deutschen Wirtschaftspartner in Asien," Comité d'Études des Relations Franco-Allemandes, no. 71 (2010).

in the introduction of major labour market reforms, which brought down labour costs significantly.[229]

The result of these actions was twofold. Firstly, Germany did become more competitive, seeing exports surge. The boom in exports started with increasing sales to other European countries, especially the southern European economies, but was followed by rapidly growing exports to China as well. The fact that German exports became more competitive certainly validated the export model, but domestic wage restraint engendered lacklustre demand growth in Germany itself. Simply put, Germany became increasingly reliant on exports, and China became an integral part of this model. Both economies could be seen as perfectly compatible: the German export machine produced the exact products needed in China, such as capital goods and automobiles, fulfilling the needs of a growing China hungry for investment capital and an increasingly affluent middle class. At the same time, being relatively underdeveloped, China needed access to technology that would allow its industrial base to upgrade to moderate levels. Germany, in turn, granted access to such technology in return for being able to sell into the large and growing Chinese market.

Within this framework of symbiosis, the emphasis was understandably always on collaboration, which was also evident in the political arena.[230] During the 2000s, the mantra amongst German state elites was '*Wandel durch Handel'*, whereby, much like the idea in the United States at the time, China could be 'bound' into the Western-dominated international economic system, much like other Asian economies before it.[231] Under this thinking, confrontation with China was not an option, as it was deemed to be counterproductive. The notion was that China should be further encouraged along the path it was on, not least because it meant major growth opportunities for German firms. Germany's economy became progressively intertwined with China's, with Germany's large multinationals in particular having a significant stake in China, having fared extremely well during China's rise. The head of Volkswagen (VW) in the 1990s/early 2000s, Ferdinand Piëch, pointedly asked 'do we want to keep the Chinese on their bicycles? That does not

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[229] Jeremy Leaman, The political economy of Germany under Chancellors Kohl and Schröder: Decline of the German model? (New York: Berghahn Books, 2009), pp.157-80.

[230] On this 'special relationship' between Germany and China: Kundnani and Parello-Plesner, "China and Germany: Why the emerging special relationship matters for Europe."

[231] Ying Huang, Die Chinapolitik der Bundesrepublik Deutschland nach der Wiedervereinigung: Ein Balanceakt zwischen Werten und Interessen (Wiesbaden: Springer Fachmedie, 2019), pp.107-09.

work at all'. VW should get the Chinese into small-engine cars, and then work up from there. As a strategy, it clearly worked.[232]

During these years of increasing economic interaction, German business and state elites saw little, if any threat from China. It still represented a relatively backward economic nation, but with significant growth potential. At this stage, the focus in Germany was purely on China's market potential, rather than China as a competitor. The emphasis was squarely on gaining access to a burgeoning market, as well as the 'workshop of the world', which could yield major cost reductions for German business. As one German business paper described the situation in the mid-2000s, Germany Inc. found itself in the 'land of dreamlike growth', which was supported and encouraged by the Schröder government. Schröder himself became 'a great friend of the Chinese people', as Chinese prime minister Hu described him.[233]

Up until around 2014, the 'synergistic' view in Germany regarding the Chinese economy was still in full evidence. State elites were riding high on the rapid growth in exports to China in the preceding 10 years, with the underlying sense being that China needed the German economy to a large degree, given its high technological sophistication across important industries critical for China's investment-led growth. For example, Sigmar Gabriel — minister of the economy at the time — noted that 'Germany is a leader in renewable energy and energy efficiency', and so it was no surprise that 'exactly here China was looking for collaboration with Germany'. China was seen as a 'strategic partner' with 'enormous potential' for German business. It continued to need 'dynamic economic growth' with a growing population, which needed to be steered in an environmentally sustainable direction. This could happen with the help of 'German know-how', especially in environmental technology, but also in transportation, health care and construction. Essentially, the view was that although China was rapidly growing, it still lacked know-how in critical areas that Germany could provide and profit from.[234]

The result was that China emerged as a major economic partner, contributing substantially to the growth of the German economy. It became a partnership with 'substantial common

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[232] Quoted in: Dirk Maxeiner, "Piëch ein Weltverbesserer?," Focus (31 October, 2019).

[233] See: Manager Magazin, "Deutschland AG im Land des traumhaften Wachstums," (3 December, 2003). Also: Gerhard Schroeder, "Deutschland und China," Die Zeit (17 July, 2008).

[234] See: Sigmar Gabriel, "Schlaglichter der Wirtschaftspolitik: Monatsbericht Mai 2014," BMWi (2014).

interests', whereby both states 'rejected trade and investment protectionism in all forms'. The process of economic rebalancing started in China, meaning the effort to further stimulate the consumption share of the economy, was highly welcomed in Germany, presenting 'important opportunities for even closer collaboration between German and Chinese firms', i.e. it would mean even greater revenues for German companies.[235] There were even 'strategic partnerships' in specific areas, such as electro-mobility, again though with the underlying German perception being that China wanted more environmentally sustainable economic growth, entailing the need for German technology and know-how. As one memorandum of understanding on this 'partnership' noted, both 'sides possess their own strengths in technology, production and markets', implying large synergies on offer. While we do not get an explicit overview of which strengths lie where, from the German perspective, the implications are obvious. China brought large markets to the table, along with mass-production potential, while Germany brought high technology, and thus could capture a large share of the value added. China would still stand to gain significantly, and thus collaboration made a lot of sense, 'serving the interests of both countries and people'.[236]

Turning to the investment relations at the time, although investment was usually done by German firms in China, this picture began to change during the early 2010s, especially following the Great Recession, with a rise in Chinese investment in Germany. During these initial stages of rising Chinese investment, this capital was largely welcome, with, for example, the minister of the economy at the time, Philipp Rösler, declaring that Chinese investors were wanted and that it 'was time to do away with preconceptions', while there was 'plenty of room for growth'. He made the point that as Germany was highly dependent on exports, markets had to remain free around the world, so 'Germany needed to provide a good example' and allow unrestricted access to Chinese investors.[237] Major industry bodies too, such as the BDI (Bundesverband der Deutschen Industrie), as well as the major German businesses were all in favour of welcoming Chinese investment. It was even actively sought by German state elites in the years following the Great Recession, as a way to create more

[235] *Die Bundesregierung, "Deutsch-Chinesisches Gemeinsames Kommuniqué zur umfassenden Förderung der Strategischen Partnerschaft," (2010).*

[236] *Bundesministerium für Wirtschaft und Energie, "Deutsch-Chinesische Gemeinsame Erklärung zur Errichtung einer strategischen Partnerschaft für Elektromobilität " (2011).*

[237] *Die Welt, "Rösler und Löscher werben um chinesische Investoren," (12 June, 2012).*

jobs and potentially even raise productivity in some areas.[238] Restrictive investment policy vis-à-vis China, then, was not at all on the agenda in Berlin.

Germany gears up for the fourth industrial revolution

While the German economy has been a relative success story since the early 2000s, not least due to the booming Chinese economy, we see a push in the early 2010s by state elites to ensure Germany remained at the forefront of industrial innovation — to consolidate German economic leadership as the world entered the fourth industrial revolution. At this point, Chinese competition was not yet a concern; rather, the issue was more about keeping Germany ahead of the curve. This initiative came in the form of a new 'High-Tech' Strategy, and more specifically with the launch of the *Industrie 4.0* concept, which would play an important role in Germany–China relations going forward.

Much like the MIC 2025 plan, the High-Tech Strategy of 2014 was a call to arms for German industry to make a concerted push towards industrial upgrading, and, interestingly, in content, was not dissimilar to the Chinese plan that followed in 2015.[239] It was about boosting the German innovation system, akin to the 'indigenous innovation' concept pursued in China, in which economic, academic and political actors come together to build stronger innovation foundations, with the aim of making Germany the innovation leader worldwide. The German government proposed a five-point strategy, a major, wide-ranging economic upgrading programme, with the aim of building on Germany's position as one of the world's leading innovation nations. To ensure this, 'competitiveness should be strengthened', 'collaboration should be promoted', 'innovation potential should be strengthened and value creation heightened', the 'basis for creativity innovation potential' should be built, and 'future orientation should be strengthened'.[240]

The High-Tech Strategy can be seen as a broad approach to solidifying Germany's economic leadership through bolstering its innovation system. In terms of a targeted and

[238] *For example: Bundesministerium für Wirtschaft und Energie, "Gemeinsame Erklärung des Bundesministeriums für Wirtschaft und Technologie der Bundesrepublik Deutschland und des Ministeriums für Handel der Volksrepublik China über die weitere Intensivierung der wechselseitigen Investitionen " (2012); Bundesverband der Deutschen Industrie, "Ausländische Direktinvestitionen in Deutschland Investitionsfreiheit fördern und öffentliche Akzeptanz schaffen," (2013).*

[239] *Die Bundesregierung, "Die neue Hightech-Strategie: Innovationen für Deutschland," (2014).*

[240] *Ibid., pp10-12.*

specific strategy, that is where *Industrie 4.0* comes in.[241] The plan is intimately connected to the notion that we are entering the fourth industrial revolution, with major technological innovations set to disrupt the global economy — the same notions that we explored in the Chinese context in the previous chapter. *Industrie 4.0* is Germany's answer to the onset of the fourth industrial revolution. As the ministry of the economy put it: while these technological changes come with a wealth of opportunities, they also 'put business models, which drive German competitiveness and wealth under pressure'. Moreover, 'new players are entering the arena and with their agility and power of innovation are forcing established firms to act'.[242]

With *Industrie 4.0,* Germany aimed to face these technological changes head-on, master them, and thereby maintain its leading industrial position. *Industrie 4.0* was to become the value creation machine for the German economy going forward and become the next '*Exportschlager'*, with 'massive potential'.[243] One report by the ministry of economy in 2015 estimated that by 2030, Germany would have added over 1.3 trillion euros to its economy due to the success of *Industrie 4.0* and would gain significant market shares globally. Thus, the concept was to be understood as a 'major opportunity' for Germany, but one where 'urgency' was needed and where failure could mean a 'significant danger to Germany as an industrial economy'.[244]

Germany's ultimate success would depend on key advancements in five 'central future areas': sensors, robotics, innovative production systems, logistics and information technology. Without success in these areas, the market potential for *Industrie 4.0* would not be reached. Robotics, in particular, was seen as especially critical for Germany to master, with demand for industrial robots expected to rise significantly as global investment in

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[241] See: Bundesministerium für Wirtschaft und Energie, "Industrie 4.0 und Digitale Wirtschaft: Impulse für Wachstum, Beschäftigung und Innovation," (2015). Also: Wolfgang Schroeder, "Die deutsche Industrie 4.0-Strategie: Rheinischer Kapitalismus im Zeitalter der Digitalisierung," Kasseler Diskussionspapiere (2016).

[242] Bundesministerium für Wirtschaft und Energie, "Industrie 4.0 und Digitale Wirtschaft: Impulse für Wachstum, Beschäftigung und Innovation," pp.6-7.

[243] Sigmar Gabriel, "Industrie 4.0 - Made in Germany," Handelsblatt (13 March, 2015). Also: Sigmar Gabriel, "Die nächste Revolution," Handelsblatt (23 September, 2016); Sigmar Gabriel, "Deutschland soll bis 2025 zum Leitanbieter und -anwender von Industrie 4.0 werden," Handelsblatt (21 October, 2016).

[244] Bundesministerium für Wirtschaft und Energie, "Industrie 4.0: Volks- und betriebswirtschaftliche Faktoren für den Standort Deutschland," (2015): p.20. On this push into Industrie 4.0, see also: Bundesministerium für Wirtschaft und Energie, "Memorandum der Plattform Industrie 4.0," (2015); Bundesministerium für Wirtschaft und Energie, "Industrie 4.0 und Digitale Wirtschaft: Impulse für Wachstum, Beschäftigung und Innovation."

automation grew. While Germany was well placed as the third largest market globally for industrial robots, after the US and Japan, and also a 'leading supplier', there were concerns about potential competition. It was noted that 'given investment plans of other countries, competition in the area of industrial robots and new service robots will intensify significantly'.[245]

What we start to see, then, in the 2013-2015 period is a renewed effort to solidify German competitiveness, with a focus on 'research and innovation' in the context of the shift to the fourth industrial revolution. Notably, there was no sense of imminent threat to Germany's industrial leadership position, and no 'defensive' measures were mentioned. The focus was firmly on building on existing technological/competitive leads. One of the 'central risks' related to the implementation of *Industrie 4.0*, though, was that 'other countries could achieve it faster', meaning the 'competitiveness of the German economy would suffer'.[246]

Rising Threat Perception

China steps on Germany's toes

As Germany aimed to solidify its industrial leadership position, notably with the launch of the *Industrie 4.0* initiative, China, as we illustrated, continued its rapid economic ascent, with Chinese state elites aiming to launch their economy into innovation-driven growth. And as we saw, several initiatives were launched as part of this push into innovation-driven growth, the most comprehensive being the MIC 2025 strategy, which also entailed substantial foreign investment in order to gain access to leading technology, with Germany a key target destination for Chinese investment.

Looking at the investments made by Beijing in Germany prior to the tightening of investment screening measures, there is a significant overlap with the industrial upgrading objectives listed in the MIC 2025 plan. In fact, the bulk of Chinese investment in Germany during the period around the release of MIC 2025 was in automobiles, robotics and digital manufacturing, along with healthcare-related industries. Cora Jungbluth makes the important point that this, in itself, should not be seen as particularly remarkable, as these are also simply the economic areas where Germany is internationally successful, meaning any

[245] *Bundesministerium für Wirtschaft und Energie, "Industrie 4.0: Volks- und betriebswirtschaftliche Faktoren für den Standort Deutschland," p.23.*

[246] *Ibid., p.28.*

external investment would logically be concentrated there. What is remarkable, however, is the clear step-change that was evident in Chinese investment in Germany following 2015 and the announcement of the MIC 2025 plan. Investment following this point was less diversified and clearly more concentrated in purely MIC 2025 priority areas. As a result, it also overlapped with areas targeted in Germany's own industrial programme — *Industrie 4.0*.[247] Conflicts of interest were beginning to emerge.

Indeed, what appears to have been especially vexing for German state elites is that MIC 2025 seemingly drew heavy inspiration from Germany's own *Industrie 4.0* initiative, meaning China was seen as stepping right into one of Germany's key domains — mechanical engineering and high-end machinery, with the stated intent of overtaking it at the technological frontier in these areas. Meanwhile, the material reality also continued to change rapidly going into 2016, with China emerging as the largest market for industrial robotics and experiencing rapidly growing markets for sensors as well as integrated software for industrial processes — all key areas for *Industrie 4.0*.[248] This would not be a problem if China were content with continuing to import German technology to fulfil its demand, but as the MIC 2025 strategy demonstrated, China aimed to be not only a lead market for these industries, but also the primary supplier.

China's clear and obvious success in rapidly transitioning from factor-driven to investment-driven growth was already an indication of Beijing's ability to succeed in industrial upgrading, along with its significant successes in new industries such as solar. Therefore, the threat from China needed to be taken increasingly seriously.[249] We see the perception growing that investment in Germany was a means for China to gain access to German technology related to *Industrie 4.0*, so as to use it in China's own endeavours of industrial upgrading. If China succeeds in digitising its industry through the concepts derived from

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[247] See: Jungbluth, "Is China systematically buying up key technologies? Chinese M&A transactions in Germany in the context of "Made in China 2025." Also: Cora Jungbluth, Going global (Baden-Baden: Nomos Verlagsgesellschaft, 2015).

[248] International Federation of Robotics, "World Robotics Report 2016," (2016); Ray et al., "China's industrial and military robotics development."

[249] Evidence of China's ability to rapidly upgrade was already evident with its move into high-speed rail, as depicted in the previous chapter — a process that involved German firms. Solar too was a major success story for China during the early 2010s, whereby the Chinese industry was able to essentially wipe out German competition in the space of just a few years. See: Anselm Waldermann, "Chinesen überschwemmen Deutschland mit Solarzellen," Der Spiegel (28 March, 2008); Marlies Uken, "Chinesische Solarfirmen auf Shoppingtour in Deutschland," Die Zeit (7 August, 2012); Dirk Volkmann, "Solarindustrie: Warum sie in Deutschland kaum Zukunft hat," WirtschaftsWoche (4 January, 2013).

Industrie 4.0, then German industry would face major competitive pressure, even in high-end segments. Hence, a growing sceptical view emerged in Germany around the economic embrace of China, as it could lead to Germany helping Chinese industrial upgrading, paving the way for its eventual leapfrogging.

As the economic history illustrated in chapter II shows, the process of 'rebalancing' by an incumbent power should be seen as a longer-term process and cannot necessarily be attributed to single events. Nevertheless, single events can serve as triggers, which can crystallise concerns in incumbent nations regarding competitive pressures and the acute need for action. In Germany, such a trigger was the acquisition of German robotics firm Kuka by Midea. Being a robotics firm, specialising in industrial robotics no less, Kuka was seen as one of the flagship companies leading Germany's push into the fourth industrial revolution.[250] As we have seen, robotics is one of the areas where China aims to achieve dominance, and this takeover marked the first time that China's ambitions were made explicit and, in a sense, 'official'.

At this point, German state elites attempted to intervene to prevent the Chinese takeover of Kuka. Although their tools were limited, the idea was floated that there should be a rival European offer, with the aim of forming a larger European robotics firm. But given that the offer by the Midea group was already significantly above market prices, other offers and interest across Germany and Europe were limited, and the deal eventually went through. Even though the ministry of the economy had aimed to stop the deal on the grounds that it posed a potential national security risk, which was possible under German law, the deal needed to threaten Germany's water supplies or its telecommunications network, which was not the case.[251] In the end, the deal could not be prevented, but it drew attention to China's ambitions and rising competitive threat.

The realisation dawned that the German and Chinese economies were no longer as 'complementary' as previously thought, and that there were overlaps in the kind of industries and technologies both economies produce and promote. There was already some

[250] *On this importance of Kuka for Industrie 4.0 in Germany: Arvid Kaiser, "Roboterfirma Kuka: In der Revolutionszentrale der Industrie 4.0," Manager Magazin (2 February, 2015).*

[251] *For the details on the Kuka 'case': Elisabeth Dostert, "Regierung kämpft um Roboterbauer Kuka," Süddeutsche Zeitung (1 June, 2016); Jörg Von Rohland, "Kuka-Übernahme: Gabriel macht den Deckel drauf," Bayernkurier (17 August, 2016); Deutsche Welle, "Germany may head off Chinese takeover of robotics firm Kuka," (1 June, 2016).*

evidence that China's rapid ascent since WTO accession, and concomitant large export market share gains, had a deleterious impact on low technology industry in Germany, leading to structural unemployment in certain sectors.[252] But this could still be dismissed, given large market opportunities and Germany's still sizeable technological lead. Yet, in the post 2015/16 context, the fear arose that this process already seen in lower technology industries could happen to important strategic sectors in Germany's economy. Major questions around whether Germany could master the challenge began to be asked. It was no longer just basic industries and jobs at threat, but also important sectors central to the future viability of the German economy.[253] Concerns were further heightened by the perception there was little reciprocity in China, meaning German firms and investors faced much tougher restrictions than Chinese investors did in Germany. There was the sense that if Kuka were a Chinese firm, there would have been no way for German investors to acquire it.[254]

By the end of 2016 and following the Kuka debacle, we see growing outright criticism of China and increasing reference to Germany no longer wanting to be 'naïve'. The minister of the economy at the time, Sigmar Gabriel, clearly acknowledged the challenge from China, and observed that although Germany had been very successful in the era of globalisation, 'other countries show large ambition and are catching up', with 'China no longer the extended workbench of the world, where only trainers are stitched and smart phones are assembled'. With an emphasis on innovation and high technology China had now managed to manoeuvre its way towards the top of global value chains, moving from 'Made in China' to 'Create in China'.[255]

Competitive pressures rise

By the 2010s, increasing overlaps between both economies became more apparent, resulting in competition in similar areas. This was evident not only globally, but also in Germany's 'home market' in the EU, where Chinese market shares had grown substantially in the

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[252] For example: Werner Eichhorst, "Wandel der Beschäftigung Polarisierungstendenzen auf dem deutschen Arbeitsmarkt," Bertelsmannstiftung (2015).

[253] These ideas began to circulate increasingly in the German think tank community. See for example: Jost Wübbeke, "Industrie 4.0: Deutsche Technologie für Chinas industrielle Aufholjagd?," Mercator Institute for China Studies (2015); Nils Zimmermann, "German-Chinese Industry 4.0 cooperation entails risks," Deutsche Welle (15 July, 2015).

[254] See: Manager Magazin, "Von Öffnung keine Spur: Probleme deutscher Firmen in China nehmen zu," (31 October, 2016).

[255] Sigmar Gabriel, "Weltoffen, aber nicht naiv," Die Welt (30 October, 2016).

previous 20 years — from under 3% in 2000 to 7.4% in 2015, with growth even higher in areas of traditional German strength.[256] Jürgen Matthes highlights that in areas such as chemicals, metal products, electrical equipment, machinery, motor vehicles and parts, optical products and pharmaceuticals — all of which are Germany's largest exports to the EU — Chinese inroads into the European market had been even more pronounced. In these industries, China had a European market share of 2.5% in 2000, which rose to over 10% by the late 2010s, meaning a higher market share in these specialised areas of German dominance than overall product market shares. China's share in European imports from these higher-end industrial sectors went from around 50% in 2000 to over 68% in 2018, indicating that Chinese exports to the EU had moved up in value, moving towards those more specialised areas previously dominated by Germany.[257]

By contrast, Germany's share in EU imports in these highly important sectors, while still high, started to show signs of decline from 2010, especially in metal products and electrical equipment. The decline was evident across all of these sectors, though to a more limited extent. Even machinery production saw a slight loss in market share in the 2010s. Interestingly, as Matthes also illustrates, China's market share gains in Europe were made despite the yuan appreciating considerably versus the euro in this period, meaning Chinese competitiveness gains were even more noteworthy, being achieved against the background of an increase in relative prices versus European manufacturers. It also became evident after 2010 that an increased proportion of value-added in Chinese exports to the EU were attributable to value creation in China, as opposed to just the 'processing' of goods engineered and designed elsewhere. First signs were evident in the 1990s and early 2000s, as we saw in chapter III with China beginning its investment-driven growth phase. But this has changed considerably since then, especially across those specific product categories relevant for Germany, with a range of between 70-85% of domestic content in China's exports by 2016.[258] So, while China used to be more of a 'workshop' for manufacturing

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[256] Jürgen Matthes, "Konkurrenzdruck durch China auf dem EU-Markt," Institut der deutschen Wirtschaft (2021): pp.6-10.

[257] Ibid. See also the study from Germany Trade and Invest, which makes the point that the quality 'insignia' of 'Made in Germany' is coming under threat through Chinese competition. Germany Trade and Invest, ""Made in Germany" auf dem Prüfstand," (2018). In addition: Dana Heide, "China auf Weltniveau – Firmen aus Fernost immer öfter Hauptkonkurrent deutscher Unternehmen," Handelsblatt (10 August, 2018); Germany Trade and Invest, "China: Zunehmend schwieriger Markt," (2019).

[258] Matthes, "Konkurrenzdruck durch China auf dem EU-Markt," pp.11-12.

businesses in industrialised countries, this also started to change considerably over the last decade, with more value creation inside China.

The erosion of the 'complementarity' between the German and Chinese economies can also be observed through the correlations between market share gains in the 2010s. As previously mentioned, German state elites and business managers widely believed that although China was rapidly industrialising, it was specialising in lower complexity products that did not compete directly with Germany. Therefore, as China gained more market share, it would impact economies at the lower and middle end of global value chains, not Germany's. Since 2010, however, a negative correlation has started to emerge between Germany's and China's market shares in the EU amongst the top 25 industrial imports. If the economies were truly synergetic, one would expect any market share gains made by China not to be related to a downward trend in market shares for Germany.[259] But since 2010, the opposite has been true. There has been a negative correlation between market share gains made by China and the decreases registered by Germany, indicating that China has been making market share gains in Europe at the expense of Germany in major industrial categories.

The 'catching up' by China can also be seen in the trade unit values over recent years, which function as a measure of quality in exports, seen as the value of the product relative to its weight — the higher this value is, the higher the quality of the export tends to be. Using this measure, we can see that in certain categories, such as in pharmaceuticals, China still clearly lags behind Germany. However, in industrial categories, such as in automobiles and engines, the gap has been closing. In terms of electronic equipment, China has even overtaken Germany.[260] Overall, it has become increasingly obvious that China has been able to catch up to Germany, and in some cases even surpass it, negating the idea of a 'synergistic' relationship between both economies.[261]

The concern around Germany coming under threat from Chinese economic competition in traditional areas of German strength was even clearer at the VDMA (Verband Deutscher Maschinen- und Anlagenbau or The German Association of Mechanical and Plant

[259] *Ibid., pp.13-15.*

[260] *Ibid., pp.15-19.*

[261] *For further discussion of these rising competitive pressures: Thomas Duesterberg, "Chinas Herausforderung in Wirtschaft und Handel an den Westen: Aussichten und Perspektiven aus amerikanisch – deutscher Sicht," Konrad Adenauer Stiftung (2018); Jürgen Matthes, "Wettbewerbsverzerrungen durch China," Institut der deutschen Wirtschaft (2021).*

Engineering).[262] A VDMA-supported study argued that Germany and China were 'turning away from the "win-win" situation': as China moves up the value chain in mechanical and plant engineering, it is coming into direct competition with Germany, which is likely to lead to market share losses for German firms in the coming years.[263] While the Chinese market continues to be a large growth driver for the time being, the continued success of China's upgrading strategy is likely to wipe out all this growth in 10 years. It is estimated that at the end of the 2010s Chinese machine and plant manufacturers used 50% domestic/Chinese technological content. This means there continues to be a large demand for technology in China, beyond what is supplied domestically, and hence imports are high and rising. Those from Germany are particularly important in the sector, as it provides imports of high-technology machines.

With the growth rate of the Chinese mechanical engineering sector being 3% per year, and with domestic technological content being 50%, this still leaves plenty of scope for German firms to grow. The problem emerges when domestic technological content rises. In the VDMA's future 'base scenario', it rises to 70%, assuming the base-line growth rate of 3%. This means German exports will begin to stagnate by the middle of this decade, as the demand for German technology wanes. If the upgrading plan is highly successful and the domestic technology content moves to 75 to 80%, then German firms will face a 'collapse' in demand in China, especially if the overall growth of the sector slows as well, which is not an unreasonable assumption.[264]

In the 'negative scenario' for Germany, it is anticipated that China will achieve all of its MIC 2025 objectives and become a global leader in technology, for the most part technologically independent. This will result in the current leading economies becoming dependent on China, as it becomes a technological 'core' economy. As German firms continue to push for access to the vast Chinese market, cooperation arrangements with Chinese production sites lead to increased dependence on China for German businesses by 2030, as the Chinese market becomes indispensable. Subsequently, supply chains will increasingly be located in China, from raw materials to components, and the global

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[262] See statements in: Carsten Dierig, "China bedroht Übermacht der deutschen Industrie," Die Welt (18 February, 2014).

[263] Verband Deutscher Maschinen- und Anlagenbau, "Was Chinas Industriepolitik für die deutsche Wirtschaft bedeutet: Szenarien für „Made in China 2025" am Beispiel des deutschen Maschinenbaus," BertelsmannStiftung (2019): p.6.

[264] Ibid., pp.15-17.

dominance of such a large market, where major business scale is possible, will become more apparent. As China becomes the technological leader, with its state-directed development infrastructure for high technology and with its vast market, more of the 'value-added' will be transferred to China. This trend can already be seen in German businesses establishing competence centres and R&D facilities in China. Competition in third markets would also rise significantly.[265]

As regards what the VDMA thinks Germany should be doing strategically, looking at the 'best case for Germany' proves enlightening. In this scenario, although it continues to benefit from current initiatives related to MIC 2025 for the coming few years, the middle of the decade sees another structural transformation, whereby China's domestic technological content in machine construction begins to stagnate. The reason for this is that German and European businesses and governments become aware of their dependence on Chinese exports and imports, leading to a new urgency and need for a 'concentrated China strategy', resulting in 'several important measures being taken'. Among these measures is ensuring that 'several technologies…important for plant and machinery construction' are increasingly kept out of Chinese hands by, for example, classifying them for 'military use'. The result is 'significant changes' to the global trade and supply chain system, to the detriment of China.

Supply chains are increasingly brought back to Europe, and China's growth begins to soften substantially. Production in China becomes difficult with a lack of access to technology, amplifying the tendency of businesses to pull out of China. Research and development expertise and transfer are also halted, meaning that the Chinese technological content of Chinese production remains relatively low. In this environment, German plant and machinery firms will continue to find demand in China, which will slow however given that technological isolation will mean slower growth. At least export demand will stabilise and there are no concerns around major market share losses, both in China and in third countries, which German firms can continue to develop, without unwanted Chinese competition.[266] This scenario would prove ideal for Germany, according to the VDMA.

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[265] *Ibid., p.32.*

[266] *Ibid., pp.34-37. For this growing view of China as a threat, see also other papers from the VDMA, such as: Verband Deutscher Maschinen- und Anlagenbau, "Wettbewerber China – Handelspolitische Instrumente neu ausrichten," (2020).*

Even the large German industrial businesses started to raise alarms, as seen from the increasingly critical stance of the BDI towards China. In a BDI report titled 'China — Partner and Competitor', the BDI made it clear that it feels German businesses are being disadvantaged in the Chinese market in several ways.[267] It notes that there is not a 'level playing field', stating that German firms do not have the same access to the Chinese market as Chinese firms in Europe. Additionally, investment hurdles remain in many industries, tariffs remain elevated, and German firms are often neglected in public tenders, to name the most salient concerns. The report also highlighted the 'active state industrial policy' in China, with the aim of achieving technological supremacy, as a concern: 'state intervention in China is increasing, rather than decreasing', contrary to what was expected just a few years ago. The Chinese state, it argues, has been moving swiftly toward its aim of achieving technological supremacy through heavy state-subsidised high-risk investment in technology, forced technology transfer as well as '*strategic takeovers of foreign high technology firms*'.[268]

To be sure, much of the BDI's rhetoric is couched in liberal terms — as one would expect from a large exporter-dominated body — but the calls for German state action amidst rising 'systematic' competition from China are obvious. The BDI calls, for example, for a 'modern, technologically open, cross-border industrial policy' to be devised, whereby R&D initiatives can be fostered and new technology can be promoted. At the same time, governments should increasingly allow major 'European champions', much like China has been creating over recent years, using the size of the European market, even if it means the growth of monopoly power, instead of focusing on 'fair competition' in the European market. A more assertive German state was also needed, with the desire and the will to 'dream big', with less emphasis on the '*Klein-Klein'* of day-to-day business, but rather bigger-picture, holistic and strategic thinking, much like the approach of the CCP.[269] Only by doing so can Germany remain a technological leader in the future as well, according to the BDI.

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[267] Bundesverband der deutschen Industrie, "China – Partner und systemischer Wettbewerber," (2019). For discussion around the release of this report: Noah Barkin, "German firms urged to cut dependence on China," Reuters (31 October, 2018).

[268] Bundesverband der deutschen Industrie, "China – Partner und systemischer Wettbewerber," p.3. Emphasis added.

[269] Ibid., p.9.

There was also a call for increased collaboration between private capital and the military-defence sector, which could unleash synergies in research and development, much like in the US. The idea was that state/taxpayer capital can be used to fund risky and expensive research that can then be utilised by the private sector. These are just a few of the proposed initiatives, but what is clear is that German businesses want a more active German state. Although they couch it in terms of being within the 'framework' of a pure market-based economy, what these initiatives amount to is clearly a push for a more active industrial policy and a more active state. Of course, German firms do not want the state to infringe on their business too much, but at the same time, they are clearly calling for more action and for the state to use more economic tools to increase competitiveness vis-à-vis China.

Indeed, the call for help from the BDI comes in the context of large German exporters taking the Chinese threat increasingly seriously, even while relying on the Chinese market for growth. The German automobile industry exemplifies this challenge facing big business in Germany in relation to China. With the structural changes related to the fourth industrial revolution having a particularly marked impact on the German auto industry, concern around rising Chinese competition has grown. Given the continued importance of the Chinese auto market for German carmakers, the concern has not been widely voiced. But it is clear that China intends to use the combined shift towards electric and eventually autonomous vehicles as a chance to potentially leapfrog Germany, or at the very least catch up.

Top management at VW has voiced concerns around rising Chinese competition, with reports that in Wolfsburg, there has been longstanding talk of a 'horror scenario' in a few years, whereby not only does VW start to lose market share in China due to the rising quality and competitiveness of local producers, but eventually could also start to lose market share in its home market as Chinese manufacturers move to the technological frontier in electric vehicles.[270] By the latter part of the 2010s, China emerged as the leading market for electric vehicles in the world, with one in two of all electric vehicles sold globally being sold in

[270] *See for example the following reporting in the German press: Simon Hage, "Chinas Self-made-Milliardäre attackieren die westliche Autowelt," Der Spiegel (1 May, 2022); Focus Online, "Pro und Contra: Ist die deutsche Autoindustrie noch zu retten?," (8 April, 2019); Helmut Becker, "Vorsprung durch Technik? China lacht über die deutsche Autoindustrie," nTV (30 July, 2018).*

China.[271] The fact that the political leadership in Beijing has also made electric vehicle adoption a priority through its various plans emphasises that as the world pivots towards electric vehicles, China will be the central market going forward for manufacturers of these vehicles.[272]

This alarm around China's increasing influence was laid bare by the large stake taken in Daimler by Chinese auto billionaire Li Shufu — the owner of Geely — who rapidly acquired a 10% stake in the company. Subsequently, his marketing team published images including the Mercedes-Benz star in the Geely product portfolio. He also stated that although he would like to work together with Daimler, it was not a necessity, implying that Daimler could eventually just be subsumed by Geely, which was widely seen in Germany as a threat.[273] As the Spiegel observed, it was also the moment the auto industry realised that it was not just Elon Musk's Tesla emerging as a threat to German carmakers, but also the Chinese.[274] A case in point was the relative success of Geely's acquisition of Volvo, which has given rise to a luxury car brand in Polestar, also with notable success so far. Volvo announced in 2017 that it would only be producing electric or hybrid vehicles going forward, in stark contrast to German manufacturers' position at the time, leading to important first mover advantages. What is also evident in Germany is that in contrast to China, there are no major technology firms able to aid in upcoming mobility transitions, such as in terms of AI related to autonomous driving. Geely, by contrast, has moved towards collaborations with large technology firms, such as Baidu, meaning that overall, the technological content in Chinese vehicles has been increasing rapidly. Looking at the technological capacity of electric vehicles, for example, some industry reports already claim that Chinese vehicles are better in terms of range, security and reliability.[275]

By 2018, outright warnings from the Bundesbank around the potential threat from Chinese competition for Germany's economy had emerged. According to the Bundesbank, China's

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[271] Patrick Hertzke, Nicolai Müller, and Stephanie Schenk, "China's electric vehicle market plugs in," McKinsey Quarterly (2017); Patrick Hertzke et al., "Expanding electric-vehicle adoption despite early growing pains," McKinsey (2019).

[272] Luca Pizzuto et al., "How China will help fuel the revolution in autonomous vehicles," ibid.

[273] Hage, "Chinas Self-made-Milliardäre attackieren die westliche Autowelt.". See also: Guy Chazan, "Backlash grows over Chinese deals for Germany's corporate jewels," Financial Times (12 March, 2018).

[274] Hage, "Chinas Self-made-Milliardäre attackieren die westliche Autowelt."

[275] See for example: Jordyn Dahl, "Why China's electric-car industry is leaving Detroit, Japan, and Germany in the dust," MIT Technology Review (2018).

move into innovation-driven growth meant it would begin to confront German industries at eye level, as Beijing succeeds in industrial upgrading.[276] China's process of technological upgrading had, as the Bundesbank described, accelerated rapidly in previous years, given, for example, the rapid increase in quality of Chinese patents throughout the 2010s, and the fact it had successfully established footholds in complex product areas, such as smartphones. There was also an acknowledgement of the plans being pursued in Beijing to turn China into the global technological leader by the middle of the century. China had emerged as a 'supplier and competitor', and the latter could be particularly an issue for Germany, as the focus of Chinese industrial upgrading efforts overlap with German competence areas.[277]

By 2019, polls by the German chamber of commerce in China showed that almost half of German firms operating in China saw their Chinese competitors becoming innovation leaders in their field in the next five years.[278] Underlining these concerns was also that although Germany is an innovation-driven economy, the type of innovation has typically been incremental. Once major sectors and industries are formed, Germany has been able to adopt and master these, and subsequently innovate on them, as evidenced by the steam engine in the 19th century and subsequently the combustion engine. While Germany was able to eventually capture significant value from such technologies by being an innovative adopter, it was not the initial pioneer, which could prove to be an issue if the technologies are particularly 'game-changing'. Thus a more intense focus on radical innovation breakthroughs was needed, as Dietmar Harhoff, head of the Max Planck Institute for Innovation and Competition, argued.[279]

Coinciding with the rising fears around economic competition from China, there was also an increase in concerns around national security and defence. Throughout the 2010s, there was a concerted effort to redefine defence and security strategy, as seen in the flurry of

[276] *Deutsche Bundesbank, "Die Neuausrichtung der chinesischen Wirtschaft und ihre internationalen Folgen," Monatsbericht (2018).*

[277] *Ibid., pp.57-58.*

[278] *German Chamber of Commerce in China, "German business in China: Business confidence survey," (2019): p.46.*

[279] *See: Deutschlandfunk, "Mehr radikale Innovation, weniger Bürokratie: Dietmar Harhoff im Gespräch mit Michael Böddeker," (3 September, 2018).*

strategy whitepapers released regarding the security and defence industry.[280] A more recent defence and security strategy paper explained that 'the fundamental tasks of a state include ensuring internal and external peace, and the security of its citizens. A key requirement for fulfilling this task is providing the civil security agencies, the Bundeswehr and its allies with the best possible equipment'.[281] Here we see the increased concern around the German technological base, which is expected from the economic realist perspective — technology, economic competitiveness and military strength are all intimately connected. As the paper continued: 'the key technologies required for this purpose should be procured from manufacturers that are trustworthy in the long-term, and without becoming dependent on third states outside of the EU'. The push is for an 'independent' security industry in Germany, which develops technology for itself and its allies, with the idea that there should be no involvement of external actors, such as China. Several 'national key technologies' are highlighted, which again point to a large overlap with many of the civilian-industrial key development areas, including for example AI, sensors, network technology and chips.[282]

Of note is that these focal areas do not align with 'traditional' geopolitical competition, where the emphasis would be on materiel and weapons. Instead, they relate to digital technology, representing a more 'indirect' form of conflict technology. It is also noteworthy that the ministry of the economy is the author of this security sector strategy paper, highlighting the major overlaps between the digital technologies being developed for the civilian and defence sectors. Nevertheless, there is clearly concern that as Germany moves towards a more direct adversarial relationship with China, national security/defence concerns can become more salient, in the context of rising economic competition. As previously noted, economic realists consider 'security' and 'economic' concerns as two sides of the same coin.

The threat perception of China thus escalated significantly in the post-2016 period, coinciding with its improved competitiveness versus Germany not only in traditional areas but also in emerging technologies related to the fourth industrial revolution. The issue in Germany regarding China is that, as the Spiegel put it, it had 'reached adulthood much more

[280] *For example: Die Bundesregierung, "Strategiepapier der Bundesregierung zur Stärkung der Verteidigungsindustrie in Deutschland," (2015); Die Bundesregierung, "Strategiepapier der Bundesregierung zur Stärkung der Verteidigungsindustrie in Deutschland," (2016).*

[281] *Die Bundesregierung, "Strategy Paper on Strengthening the Security and Defence Industry " (2019): p.2.*

[282] *Ibid., p.3.*

quickly than expected', with a growing sense that China had managed to increasingly emulate Germany and shown its potential to surpass it.[283] China's move into innovation-driven growth provoked a clear change of thinking in Germany, not only among state elites but also in the wider business community. China's growth is no longer as complementary to Germany's as previously assumed, and competition will be head-to-head as China pushes towards the technological frontier, with the possibility that Germany could be 'leapfrogged' in the process. There is still recognition of the importance of the Chinese market for Germany's export industries, but there is also a growing realisation that, given China's stated goals, opportunities for German exporters could dry up significantly in the decades ahead. As a result, action needs to be taken. A process of balancing China has consequently begun to unfold, in which investment screening is an important element.

The Balancing Process

Germany's pushback begins

Indeed, the process of balancing China began with the move towards tightening inward FDI in Germany following the Kuka case illustrated above. A mechanism for controlling foreign investment in Germany beyond just purely military assets had already been in place since 2009, within the framework of the Foreign Trade and Payments Act (*Aussenwirtschaftsgesetz or* AWG), but had never resulted in prohibition of an investment.[284] Following the Kuka deal, however, it became evident that German state elites sought to resolutely tighten their remit in the matter, enabling them to prevent Chinese investors from acquiring German high technology firms. According to Gabriel, China had been going 'on a shopping tour' of Germany 'with a long list of interesting firms' to buy, with the 'discernible intention' of buying key 'strategic technologies'. This was unacceptable and Germany needed to act with a much firmer hand, not least because in China 'scaredy cats do not enjoy any respect'. [285]

Gabriel encapsulated this growing need to act in an open letter called 'Victim of Open Markets', noting that 'economies with state-heavy involvement can exploit our liberal

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[283] Der Spiegel International, "Chinese expansion has Germany on the defensive," (24 May, 2018).

[284] See: Fabian Christoph, "Deutsche Rechtsvorschriften bzgl. chinesischer M&A-Aktivitäten in Deutschland," in Deutschland und China, ed. Graewe Daniel (Berlin, Boston: De Gruyter Oldenbourg, 2021), pp.140-41; Dirk Uwer, Vera Jungkind, and Jan Bonhage, "Reform of foreign investment control in Germany," HengelerMueller (2017).

[285] Gabriel, "Weltoffen, aber nicht naiv."

markets'. More technological autonomy was called for and stronger tools with which to enforce this — 'Europe needs to build defences'. Gabriel argued Germany was not ready to 'sacrifice jobs and companies on the altar of open markets', making the case that open markets for FDI should not be exploited to buy European companies through unfair advantages, citing the large-scale involvement of the Chinese state in the Chinese economy. Aware that this new initiative could be seen as protectionist, Gabriel framed the erection of 'defences' as a means to protect free markets, not to restrict them. The abuses of free markets were happening on the Chinese side, and Germany was only seeking to defend itself. As he put it, this was about 'the protection of free markets from state intervention and unfair competition'.[286]

China was deemed not to be achieving its ascent towards the technological frontier in a fair manner — there was no 'level playing field', and German businesses were suffering as a result. As we saw in chapter II, this tends to be a typical reaction amongst state elites of leading economic nations that come under pressure — the rising nation is deemed not to be playing by the rules, and hence the incumbent needs to take action. Germany needed to be open 'but not naïve'.[287] The joint venture obligation in China was deemed unfair, although it had been in place since the 1980s. It was becoming unfair because China was starting to compete more directly with Germany. Complaints were also levelled about public procurement, tariff levels and bureaucratic hindrances. Given China had all of these 'unilateral hurdles' in place, it was time Germany also started erecting some. And this is where we get the first direct mention of the push towards investment screening, with Gabriel noting that given the unfairness on the part of China, 'it should be clear that Germany would in the future build instruments to protect security-relevant technologies'.[288] In late 2016, reports emerged of the ministry of the economy taking steps to heighten the protection of German industrial technology by proposing a plan to start reviewing and monitoring inward investments from third countries more strictly.[289]

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[286] *Sigmar Gabriel, "Opfer offener Märkte," WirtschaftsWoche (9 June, 2016).*

[287] *Gabriel, "Weltoffen, aber nicht naiv."*

[288] *Ibid.*

[289] *Der Spiegel, "China kauft Deutschland AG," (27 December, 2016); Thorston Knuf, "Sigmar Gabriel: Wirtschaftsministerium plant Reform des Außenwirtschaftsrechts," Mitteldeutsche Zeitung (27 November, 2016).*

The links between China's industrial catch-up, German balancing behaviour and investment screening were further revealed by the German ambassador to China. He argued at the end of 2016, when asked about Berlin's intent in beginning to screen Chinese investment, that 'precisely because China has been successfully catching up, calls for reciprocity have become more urgent…companies are growing restless'. An 'imbalance' in the relationship has emerged, with especially problematic developments in 'key areas of our future cooperation', such as electric vehicles, where China, as we saw, was starting to dominate its domestic market. Seen in the context of Chinese state elites aiming for 90% domestic market share in new energy vehicles by 2030, naturally the sense in Germany was that they could eventually be displaced. By ensuring market access and 'fair' treatment, the process of being marginalised in the world's largest market could at least be dampened.[290] Hence, part of Germany's move towards investment screening was also related to issues of 'reciprocity'. Germany aimed to balance China by making it clear that its investment would be increasingly scrutinised, serving as a bargaining tool to improve market access and competitiveness in China for its firms.[291]

By 2017, Germany's defensive balancing had begun. New domestic regulation on investment screening was introduced through an update of the Foreign Trade and Payments Ordinance (*Außenwirtschaftsverordnung* or AWV).[292] Investment screening in Germany operates through two regimes: sector-specific and cross-sectoral investment review. The former refers to control of investment specifically in the defence sector, and the latter refers to investment in all other sectors, but where 'public order or security' are impacted. Both were tightened in 2017.

Regarding cross-sectoral screening, the concept of 'public order and security' was broadened to include 'critical infrastructure', bringing significant portions of the German economy under the screening remit, including the energy and utility sectors, as well as health care and transport. Information technology and communications were also broadly

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[290] *Wendy Wu, "Foreign investment in China is 'not a level playing field, but a one-way street': Interview with German Ambassador Michael Clauss," South China Morning post (28 October, 2016).*

[291] *On this connection: Mikko Huotari, "Germany's changing take on Chinese direct investment: Balancing openness with greater scrutiny," in Chinese investment in Europe: A country-level approach, ed. John Seaman and Mikko Huotari (Paris: French Institute of International Relations, 2017); Jan Dams, "Jetzt legt sich Deutschland mit China an," Die Welt (24 October, 2016).*

[292] *Foreign direct investment in Germany is regulated by both the Foreign Trade and Payments Act and the Foreign Trade and Payments Ordinance.*

included in terms of critical infrastructure, but further specified by the inclusion of software relevant to critical infrastructure. Cloud-computing services were also added, as well as specific IT-security areas and telematics. For the sector-specific screening, the scope was also broadened to include areas such as sensors, robotics, imaging and lasers, all of which could be deemed relevant for German defence, and thus included in the screening remit. The ministry of the economy also gained more time for its screening procedures. The time limit for sector-specific investigations was extended from one to three months. For the sectoral-regime, if the ministry determined investigation proceedings needed to take place, the time limit was increased from two to four months for the screening to occur. Furthermore, if the ministry chose to prohibit a transaction that had already been finalised, and it turned out that the ministry was not previously aware of the deal, then it was also legally clarified that the foreign investor would bear the cost of unwinding the deal. The pressure on foreign investors to notify the ministry was thereby stepped up. If the intended investment fell under the stipulations above and was for 25% or more of a company's capital, then foreign investors were required to report it to the ministry.[293]

Defensive mechanisms against China began to be established, and throughout 2017 Berlin sought to bring these protections to the European level in collaboration with both Paris and Rome.[294] In a letter sent together with the ministries of the economy of France and Italy, worries around the 'sell out of expertise' and 'lack of reciprocity' were expressed, along with the urgent need to act to build 'additional protection' across Europe.[295] The German ministry then sent another letter to the European Commission in mid-2017 seeking more progress in investment screening measures at the European level, which further stressed the link between increased defensive measures and Chinese technological competition. The letter specifically mentioned Chinese investors and highlighted the rapid increase in Chinese investment in Germany, particularly in 2016, with the volume being more in 'that year than all of the last 10 years together'. It also emphasised that Germany saw the rapidly rising Chinese investment concentrated in 'industrial high and key technology companies', with

[293] *Die Bundesregierung, "Neunte Verordnung zur Änderung der Außenwirtschaftsverordnung," (2017). Also: Volker Gattringer and Daniel Erd, "German national security review of M&A transactions," K&L Gates (2017).*

[294] *Explored in more detail in chapter VI.*

[295] *Bundesministerium für Wirtschaft und Energie, Ministère de l'Économie et des Finances, and Ministero dello Sviluppo Economico, "Letter to Commissioner Cecilia Malmstrom," (2017).*

obvious ties to the MIC 2025 strategy and China's attempts at industrial upgrading, as 'unfair competition'. [296]

As Merkel emphasised, Germany could no longer consider China a developing nation, Instead, it should be seen as a serious competitor, and a serious competitor could not be afforded any undue 'advantages'.[297] Concerning inward investment from China, it was simply no longer prudent for Germany to 'leave its barndoor wide open', as one official at the ministry of the economy put it.[298] The barndoor needed to be closed. Moving into 2018, it did not take long for further measures to appear. More legislation was passed just a year later in 2018 after the first tightening measures, following the attempted investment by the State Grid Corporation of China in 50hertz, a German grid company. Although it came under the purview of the new screening surveillance mechanism because the investment was in 'critical infrastructure', the amount of the investment would have entailed less than 25% ownership, which meant Berlin would not have a direct veto. Instead, another method was found. The state-sponsored KfW (Kreditanstalt für Wiederaufbau) took a position in the firm instead, and the incumbent owner — a Belgian energy firm — further increased its position.[299] Following this experience, the AWV was renewed once again. The investment threshold of 25% was cut to 10%, allowing for greater room for manoeuvre for the ministry in blocking foreign investors.[300]

Further Chinese investments followed amidst this beginning of a balancing process in Germany and rising threat perception, exacerbating the situation. For example, the Chinese HNA Group took a 9.7% stake in Deutsche Bank, and the following year Chinese carmaker Geely acquired a sizeable stake in Daimler, as highlighted above. Geely had managed to secure the position via the use of derivatives, and so was able to circumvent the usual disclosure rules, meaning when the announcement came, it came as a shock to both Daimler and state elites. Brigitte Zypries, the minister of the economy in 2018, underlined that

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[296] Bundesministerium für Wirtschaft und Energie, "Schreiben von Bundesministerin Zypries an den Präsident der Europäischen Kommission Jean-Claude Juncker," (2017).

[297] For this reference to China: Die Bundesregierung, "Rede von Bundeskanzlerin Dr. Angela Merkel beim 9. Deutsch-Chinesischen Forum für wirtschaftliche und technologische Zusammenarbeit " (2018).

[298] Quoted in: Georg Fahrion and Thomas Steinmann, "China und der Westen: Die neue Mauer," Capital (15 July, 2019).

[299] Dana Heide, "Bundesregierung vereitelt Einstieg der Chinesen beim Netzbetreiber 50Hertz," Handelsblatt (27 July, 2018); Der Spiegel, "Stromnetzbetreiber 50Hertz: Einstieg der Chinesen abgewehrt," (27 July, 2018).

[300] Die Bundesregierung, "Zwölfte Verordnung zur Änderung der Außenwirtschaftsverordnung," (2018).

Germany could not be ‘exploited for its openness’ and that Geely needed to be monitored with ‘an especially watchful eye’, with the fear being that Geely’s acquisition could allow it to access R&D at Daimler, relating primarily to autonomous driving and battery technology.[301] One German newspaper’s headline read: ‘Geely: from rice farmer to Daimler-Bogeyman’, exemplifying the increasing need to act.[302]

A few months after, towards the end of 2018, the ministry of the economy prohibited the sale of Leifeld Metal Spinning, a mechanical engineering firm, to the Chinese group Yantai Taihai, on national security grounds. Given the firm was a key supplier to the aerospace industry in Germany and Europe, the ministry could easily exert its authority based on sector-specific screening.[303] As a technological leader in high-strength materials, though, it also provided wide-ranging industrial applications. It was the first time the new screening and prohibition process was used by Berlin, and once again proved to be a further sign of tightening measures to come.[304]

Also in 2018, amid rising concerns around emerging technologies and German competitiveness and the potential to be leapfrogged, we see the release of the German AI plan, as a form of ‘offensive’ balancing, coinciding with the Chinese efforts described in chapter III. The emphasis on AI is unsurprising, given its integral position in the fourth industrial revolution. Its importance can be seen by the fact that the plan comes from the central government itself, regarding it as a key economic strategy for the coming years.[305] As illustrated in the supporting documentation and various statements around the launch of the AI plan, China was considered a central competitor. A report from the ministry of the economy indicated, for example, that the Chinese ‘government recognises AI as a key technology to force the development of the country’. It also became clear that German state

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[301] Michael Nienaber, "China's Geely raid on Daimler reignites German know-how fears," Reuters (25 February, 2018); Der Tagesspiegel, "Neuer Großaktionär: Geely-Einstieg bei Daimler wirft Fragen auf," (26 February, 2018); Die Welt, "Zypries will Geely-Einstieg bei Daimler "aufmerksam betrachten"," (26 February, 2018).

[302] Felix Lee, "Vom Reisbauern zum Daimler-Schreck," Die Zeit (26 February, 2018).

[303] Der Spiegel, "Bundesregierung untersagt Firmenverkauf an Chinesen," (1 August, 2018); Stephan Scheuer and Thomas Sigmund, "Berlin bremst Peking aus – chinesische Investoren scheitern erneut an Übernahme deutscher Firmen," Handelsblatt (1 August, 2018).

[304] Franz Schaefer and Martina Ortner, "Vom zahnlosen Tiger zum angriffslustigen Raubtier? Die Auswirkungen der Investitionskontrolle nach der neuen Außenwirtschaftsverordnung - ein Überblick," K&L Gates (2018); Deutscher Bundestag, "Sachstand: Aspekte der nationalen Sicherheit bei ausländischen Investitionen in Deutschland " (2018).

[305] See: Die Bundesregierung, "Strategie Künstliche Intelligenz der Bundesregierung," (2018).

elites were beginning to realise and acknowledge the 'overlap with the topics and issues addressed in Germany'. China aimed to use AI for many of the same purposes as Germany, such as in industrial settings. This sense was further underpinned by the strength of many of China's IT firms, with firms such as Alibaba, Tencent and Huawei being mentioned.

While the report posited it was 'not yet possible to say whether China through these large-scale measures in pushing AI can be successful in becoming the leading AI state in the world', it had to be noted that 'the current developments very much point to [the fact] that China can bridge the still-existing gap to leading industrial nations'. It also mentioned China pursuing a 'leapfrogging strategy', with AI being used especially as a way to bridge competitiveness gaps in industrial robotics, in order to eventually emerge as a leading industrial robotics manufacturer.[306] Thus, Germany needed an answer, in the form of technological offence and building competence in AI.

Balancing gathers momentum

The threat perception and consequent balancing efforts amongst German state elites eventually culminated in a new industrial strategy released in 2019, the '*Nationale Industriestrategie 2030*', which is infused with a sense of competitive threat hanging over Germany, with references to China throughout. It can be read as a summary of German state elites' efforts to launch a major balancing process, and thus merits closer examination.[307]

In the preamble, the document starts with one 'of the most important questions of our era': 'How can we sustain our high level of private and public prosperity in the long term and expand it — under the conditions of increasing globalisation, enormously accelerated innovation processes and the expansionary or protectionist economic policies of other countries?'. To answer the question, the strategy paper invokes Ludwig Erhard and suggests that the German state should once again become more active to strengthen German competitiveness. This increased activism needed to proceed urgently given the global economy 'finds itself in a process of rapid and deep change' whereby global economic 'cards are being newly dealt', driven by rapidly accelerating innovation. The central question for Germany was how it should 'react and deal with these new developments and

[306] *See: Bundesministerium für Wirtschaft und Energie, "Potenziale der Künstlichen Intelligenz im produzierenden Gewerbe," (2018): pp.45-50.*

[307] *There were two iterations of the industrial strategy released in 2019. The following paragraphs refer to the first. See: Bundesministerium für Wirtschaft und Energie, "Nationale Industriestrategie 2030," (2019).*

structural changes'. As a global leading industrial nation, the strategy claimed, Germany must have the ambition to want to 'actively and successfully' shape these changes in the global economy, instead of just passively letting them happen. This was because 'one thing is clear: the competition is not asleep and there is a lot to play for'.[308] The state needed to step up, with a competitive 'overhaul' needed.

If Germany were to lose key technological competences, its position in the global economy would be severely damaged, resulting in 'dramatic consequences', such as for the 'state's ability to act and for its ability to shape almost all areas of politics'. The focus was on high technology, with the message being clear: 'we want to promote innovative technologies more and protect strategically important areas' in order to maintain and build on Germany's intellectual capital and thereby secure its productive forces for the future.[309]

Consistent with economic realist theory, the new strategy acknowledges that although private actors are highly important to the success of German industry, they alone cannot safeguard the future of the German economy. It points out that 'we have seen' that in 'some instances' the 'sum of all of the individual decisions taken by the businesses of a country' is 'not sufficient to compensate for or prevent global shifts in power and wealth: for a company has its own future in mind, not that of the whole country'.[310] This is an example of the relative autonomy concept explained in chapter II. Although the importance of German private businesses is stressed, the strategy posits that in some instances, the interests of German businesses and the German state may not fully align. In these instances it is incumbent on the state to step up — when the 'market forces within a country's economy' are unable to maintain their innovative capability and competitiveness, then the productive forces of the entire nation are threatened.[311]

The list of challenges presented in the strategy highlight two broad areas of concern that also intersect. Firstly, since the 1970s, Germany has fallen behind in terms of broad information technology, leading to a lack of competitiveness in electronics and software. This has implications for important fourth industrial revolution technologies such as artificial intelligence, and has led to a lack in competitive companies involved in highly

[308] *Ibid., pp.1-2.*

[309] *Ibid., p.2.*

[310] *Ibid.*

[311] *Ibid.*

scalable activities, such as internet platforms, where the US and China are seen as firmly in the lead. As the report mentions, these deficiencies in IT have to a large extent been compensated for by strength in 'traditional' manufacturing, such as in automobiles, where German competitiveness has expanded further in recent decades. However, there are question marks around the ability to compensate going forward.[312]

The other major concern, important for our purposes here, is the further acknowledgement that the technological gap between Germany and 'important emerging markets', meaning China, has narrowed significantly. Previously, although wages were low in China, this advantage was countered by 'the major lead by Germany in terms of technology and quality'. Now, though, these advantages have started to 'melt away', as China has developed 'technological know-how' through systematic means, including joint ventures and takeovers in Europe, all of which is leading Chinese industries to 'catch up and expand their capabilities'.[313]

As the strategy asserts, China represents an increasing threat, as it wants to position itself in 'key technologies' and move towards the technological frontier. It notes, for example, that China is pursuing 'a particularly successful industrial policy', with explicit mention of its MIC 2025 programme, which overlaps with areas of German focus. It also mentions China's drive towards artificial intelligence competitiveness as well as the BRI. All of this amounts to a strategy that 'has already borne great fruits', with China having given rise to 'globally significant businesses'. Moreover, 'whole industries could in the coming years become a technological monopoly' dominated by these large Chinese businesses, with the result being that potentially in the future 'global competition could no longer be possible'.[314]

In line with the broader discourse on the fourth industrial revolution, the concept of 'base innovations' also features, described as innovations 'with profound effects on important, or all areas, of the economy and the value chains within it'. Such innovations pose 'enormous challenges for every industrial nation', as they can cause geographical shifts in the global economy and have disruptive impacts on 'incumbent market leaders' in a 'very short period of time'.[315] The report concludes that 'only those that have these new technologies and

[312] *Ibid., p.5.*

[313] *Ibid.*

[314] *Ibid., p.8.*

[315] *Ibid., pp.9-10.*

master them can build and maintain their global competitive position permanently'. Even more emphasis was put on AI, described further as being the 'largest base innovation since the steam engine' due to its extensive impact across most sectors and industries. One crucial area of importance for Germany is the transition towards autonomous driving, which is dependent on advancements in AI. Failure to design and control the artificial intelligence used for autonomous driving in Germany could result in a loss of more than 50% of the value chain in automobiles.[316] With accelerating 'radical innovation', current leaders, such as Germany, run the risk of turning from 'rule-maker to rule-taker'. Germany risks just 'becoming an extended workbench' for those nations that 'acted on time'.[317] Therefore, a well-defined strategy was needed as to how Germany could maintain its leading position.

An updated version of the industrial strategy released later in 2019 provided this concrete plan for how Germany could bolster its competitiveness in the face of growing threats, particularly from China.[318] The overhaul package consists of three 'pillars': 'improving the policy environment', 'strengthening new technologies' and 'maintaining technological sovereignty'. The first two are 'offensive' measures, designed to enhance Germany's competitiveness, while the third is 'defensive', intended to 'protect' what it already has and what it intends to build. Investment screening is part of the latter defensive measures, but before delving into this aspect, it is important to contextualise it within the broader interventionist effort aimed at strengthening German competitiveness.

The first part of the strategy involves implementing straightforward industry-friendly policy changes to provide German industrial firms 'the necessary scope to unleash their creativity and initiative', aimed at both the large manufacturing firms and the *Mittelstand*. This includes introducing tax breaks to improve competitiveness and a 'tax monitoring' system to ensure that Germany does not deviate significantly to the upside in terms of international corporate taxation. Other measures, which are standard competitiveness enhancement tools, include further flexibilisation of the labour force, continued training and a move towards 'life-long learning', allowing the German labour force to become more adaptable. Improving infrastructure is also a key priority, involving the development of transport and digital infrastructure, with the creation of the Digital Infrastructure Fund focused on

[316] *Ibid., p.10.*

[317] *Ibid., pp.10-11.*

[318] *Bundesministerium für Wirtschaft und Energie, "Industriestrategie 2030 Leitlinien für eine deutsche und europäische Industriepolitik, November 2019," (2019).*

building mobile broadband networks, making Germany a 'leading market for 5G'. Measures to reduce bureaucracy were also required, with the introduction of the 'Third Cutting Bureaucracy Act' to minimise paperwork and speed up planning and approval procedures. Lastly, changes to competition law would facilitate the formation of larger German companies better equipped to handle 'massive international competition' by allowing more mergers across German businesses.[319]

In fact, this represented an ongoing and growing concern amongst state elites that German firms simply do not have the size to compete with equivalent Chinese firms. Consequently, there has been a concerted effort at developing national and European 'champions' — firms with substantial scale that can compete favourably on the global stage.[320] Without companies of a sufficient size and 'without the ability to be successful against international competition', Germany may be excluded from large parts of global markets. It was concerning that Germany had not produced new major champion companies for decades, while some previous major global champions such as AEG and Grundig had lost leadership positions.[321]

Moving on to the second pillar, the focus shifts from 'standard' competitiveness measures based on economic policy adjustments to more targeted efforts aimed at fostering industrial upgrading. These bring together the various initiatives from preceding months and years, with a particular emphasis on remaining competitive in the fourth industrial revolution. The result is a raft of measures to boost German innovation in these new technology areas, for example building on the High-Tech Strategy 2025 or the so-called 'transfer initiative', which aims to support German firms in 'turning ideas into marketable products'. We also see the creation of an 'Agency for Breakthrough Innovations', which defines itself as 'a home for people with radical new ideas', with the explicit goal of creating 'new disruptive innovation for Germany'. It is reminiscent of the DARPA (Defense Advanced Research Projects Agency) initiative in the US, and directly involved Chancellor Merkel, who helped kickstart the initiative in 2017 and was a major proponent.[322] Other initiatives included

[319] *Ibid., pp.13-19.*

[320] *See also: Bundesministerium für Wirtschaft und Energie, "Rede von Bundesminister Altmaier anlässlich des Festakts "100 Jahre Wirtschaftsministerium"," (2019); Hendrik Ankenbrand, "Warum Europa chinesische Züge fürchtet," Frankfurter Allgemeine (27 September, 2017).*

[321] *Bundesministerium für Wirtschaft und Energie, "Nationale Industriestrategie 2030," p.11.*

[322] *Frankfurter Allgemeine, "Neue Agentur soll Deutschland innovativer machen," (29 August, 2018); nTV, "Für mehr Innovation Merkel: Militär- und Zivilforschung vereinen," (19 May, 2021).*

efforts to stimulate venture capital, to ensure that technology start-ups are kept in Germany, going so far as direct support and investment by the ministry of the economy. *Industrie 4.0* was also not forgotten; although Germany had made good progress and was 'well positioned', more work needed to be done to ensure its position could be maintained and further expanded.[323]

In terms of the specific technologies where Germany needed to make progress two broad groups can be identified: core technologies and general-purpose technologies.[324] Core technologies refer broadly to technologies where Germany is seeking specific competitive advantages, while general-purpose technologies are applicable across most industries, but where mastery needs to be present to not fall behind competitively.

Regarding core technologies, unsurprisingly, electromobility is a priority, which also entails battery design and production, as central to the value creation of electric vehicles. Also, Germany aims to develop 'sustainable' industrial technology, with an emphasis on hydrogen technology for mass industry and CO2 capturing technology for industrial processes such as low-carbon steelmaking. In other sustainable technologies, 'smart grids' should be developed, allowing for the optimisation of energy consumption. Energy storage, beyond batteries, is also important: with alternative energy sources being relatively irregular in terms of their energy production, new forms of energy storage are needed, such as power to liquid. As part of the *Industrie 4.0* umbrella of innovation, robotics continues to be a focal point, along with 3D printing, Big Data, the Internet of Things and Cloud Computing. 'Lightweight construction' should also become a cornerstone of German industry, meaning the development of new materials, both lighter and stronger than existing ones, enabling major cost reductions in production processes as well as quality gains. They refer to both lightweight metals and polymer composites, such as carbon-fibre, and find applications across all major industrial categories, but are especially relevant for the auto industry. Advances in communications technology are also considered as essential to ongoing digitalisation efforts. Therefore, 5G technology should be developed, with a subsequent emphasis on becoming a leading technology provider of 6G communications.[325]

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[323] *Bundesministerium für Wirtschaft und Energie, "Industriestrategie 2030 Leitlinien für eine deutsche und europäische Industriepolitik, November 2019," p.22.*

[324] *Ibid., p.20.*

[325] *Ibid., pp.20-25. Also: Die Bundesregierung, "Die Hightech-Strategie 2025," (2018); Bundesministerium für Wirtschaft und Energie, "Leitbild 2030 für Industrie 4.0: Digitale Ökosysteme global gestalten," (2019);*

For general-purpose technologies, significant importance is placed on microelectronics, seen as a key technological domain, central to the previously mentioned technologies, considered the 'life-blood' of a modern industrial economy. Specifically, this refers to microchip design and production. Without competence in and control of significant parts of the microchip industry, the value creation in *Industrie 4.0*, for instance, would rely on other leaders in microelectronics, meaning mastery here too is critical. Sensors are also important in this context, as they serve as the sensory nervous system of intelligent machines and systems, and will therefore be included in all industrial production systems in the future. Part of microelectronics is also the development of nanotechnology, which in itself also has a vast application potential, from healthcare, such as through micro diagnostic instruments, to transistors, in continuation of Moore's Law. As seen throughout the previous sections, AI is also deemed a key technology, with cross-sectoral impacts across German industry, related to, for example, autonomous vehicles and *Industrie 4.0* through automated quality control in factories. Lastly, and even more forward-looking, there is an increased focus on quantum computing technology, which comes with major economic implications. Through higher processing speeds, it enables much more complex simulations to be produced, relevant for the control of smart grids, for instance, or the creation of new pharmaceutical products and medicines, where heavy modelling is required.[326]

In pillar three, we see the use of 'technological sovereignty' as a concept, which has increasingly entered the vocabulary of German state elites.[327] The overall intention of the concept is to ensure that Germany maintains and develops control over the key technologies central to its competitiveness, as listed above. It also appears to be the way German state elites have sought to justify increased intervention, again implying that technology is a 'sovereign' matter. Thus, the ministry of the economy notes that it follows 'liberal policy', but can deviate from this policy when matters of 'technological sovereignty' are at stake. This was especially important as recently 'companies from third states… pursue strategies

Bundesministerium für Wirtschaft und Energie, "Leichtbaustrategie für den Industriestandort Deutschland," (2021).

[326] Bundesministerium für Wirtschaft und Energie, "Industriestrategie 2030 Leitlinien für eine deutsche und europäische Industriepolitik, November 2019," p.8. Also: Die Bundesregierung, "Bericht der Bundesregierung zur Hightech-Strategie 2025," (2021): pp.30-32; Bundesministerium für Bildung und Forschung, "Mikroelektronik: Vertrauenswürdig und nachhaltig. Für Deutschland und Europa," (2021); Bundesministerium für Bildung und Forschung, "Forschungsprogramm Quantensysteme: Spitzentechnologie entwickeln. Zukunft gestalten.," (2022).

[327] Bundesministerium für Wirtschaft und Energie, "Industriestrategie 2030 Leitlinien für eine deutsche und europäische Industriepolitik, November 2019," p.27.

that…could endanger Germany's technological sovereignty', in a non-too-veiled reference to the Chinese acquisitions in Germany in the run-up to 2019.

To combat these threats and safeguard Germany's technological sovereignty, the ministry of the economy could make use of a multifaceted toolkit. The toolkit comprises several strategies. Export controls could be used to prevent technological outflow. 'White knights' could also be deployed, whereby the German government mobilises private German capital to acquire German firms that have been targeted by foreign businesses. And the German government itself could take a position in a German firm targeted by third-country investors as a 'national fallback option', via the use of the KfW.

The key tool, however, used to prevent technological outflow, was the investment screening mechanism, which needed to undergo significant updates. The AWG and the AWV would be adapted to the new EU regulation, giving the ministry of the economy significantly more room for manoeuvre to better protect German industrial technology.[328] From this we can take that screening was part of a multifaceted balancing process encompassing offensive and defensive elements, with screening fitting into the latter.

Mid-2020 saw the renewal of the AWG, with the aim of aligning German law with the new EU screening regulation, of which Germany was a key architect, as will be further examined in chapter VI. Interestingly, state elites attributed the impetus behind this latest tightening of screening measures to the EU. Peter Altmaier, minister of the economy in 2020, declared that the European Commission had 'taken up the issue' and was calling on EU member states to set-up robust investment screening mechanisms, and so this was 'why we have tackled the problem'.[329] As we will see, however, Berlin was a pivotal architect of the new investment screening policy, together with Paris, pushing the issue onto the EU level. It is likely that Altmaier, and other German state elites, used the fact that Brussels was pursuing the regulation of foreign investment to enhance their own position on the issue and underpin a more stringent screening law.

With the new AWG, the screening scope was significantly expanded. Previously, an intervention could only be initiated when a particular investment posed an 'actual and serious risk' to German interests. The new law changed this to an investment having a

[328] *Ibid., pp.27-8.*

[329] *Deutscher Bundestag, "Stenografischer Bericht: 166. Sitzung," Plenarprotokoll 19/166 (2020): p.20676.*

'likely adverse effect'. It provided the ministry of the economy with greater leeway for action, with even hypothetical threats in the future being taken into account, making the screening mechanism more forward-looking and preventative. Screening could also be conducted if the German government identified a potential threat not only to Germany but to other EU member states, as well as EU-related industrial/technological projects, further enlarging the scope for screening. Loopholes, where the outflow of know-how and technology could occur during the initial stages of a takeover process, were closed. A takeover could only be initiated once the ministry of the economy had fully concluded its screening and had provided the green light. This would prevent predatory investors from establishing a 'fait accompli', without the state being able to act beforehand, thereby 'undermining the objectives of the investment screening'. During the review period, the acquiring party would not be allowed to exercise voting rights, receive dividends, or have access to sensitive information in the acquired company that affects German public order and security. If these stipulations were violated, persons involved in the acquiring party could face up to 5 years imprisonment. Crucially, the new law, with its basis in EU regulation, also stipulated that the types of industries liable for intensified scrutiny could also be expanded, under the criterion of 'critical technology'.[330]

Subsequently, the AWV was renewed again later in 2020 and in 2021, this time to include significantly more 'case groups', expanded to account for critical technology.[331] As it happened, the case groups were expanded to exactly those areas that were being targeted for enhancing Germany's competitiveness in its offensive balancing initiative, and which were integral to facing rising Chinese competition. The areas that came under closer inspection grew to include: robotics, integrated circuits and semiconductors, autonomous flying and driving vehicles, 3D printing, network technologies, smart meters, artificial intelligence, new materials and quantum computing . These are all areas that Germany has defined as fundamental for its ability to succeed in heightened global competition. Overall, including the previous screening case groups, the number of industries subject to higher screening scrutiny was expanded to 27.[332]

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[330] Die Bundesregierung, "Erstes Gesetz zur Änderung des Außenwirtschaftsgesetzes und anderer Gesetze," (2020).

[331] See: Die Bundesregierung, "Sechzehnte Verordnung zur Änderung der Außenwirtschaftsverordnung," (2020); Die Bundesregierung, "Siebzehnte Verordnung zur Änderung der Außenwirtschaftsverordnung," (2021).

[332] Die Bundesregierung, "Siebzehnte Verordnung zur Änderung der Außenwirtschaftsverordnung," p.20.

To reiterate the connection between rising Chinese competition, a growing threat perception, a balancing process and the implementation of investment screening, the discussion around the new AWG in the *Bundestag* proves instructive. Altmaier opened the discussion by asserting that 'German technological leadership, German industrial competences, and our Hidden Champions are attractive to others'. The problem was in recent years, certain investors – specifically referring to the Chinese – had taken advantage of German openness, making it necessary to shield German firms.[333] As another parliamentarian claimed: 'nobody likes grasshoppers', and what was happening in Germany was akin to locusts of Chinese investors swarming over the country, picking off what was valuable, so the time had come for the state to step up its intervention. No-one should be able to 'fish away' German know-how 'and nobody should steal intellectual property'. The state, she exhorted, needed to intensify its balancing process against China, show them 'we are not scared', through a combination of increasing investments – thereby boosting innovation potential in key technological areas – and protection, thus shielding highly valuable German firms, especially those in the *Mittelstand*.[334] As Altmaier explained, this was about 'no less than our standard of living and the development opportunities of future generations. For them, we want to ensure that competitive and efficient companies continue to have their headquarters and centre of operations in Germany'.[335]

A member of the committee on economics and energy summed up the German position cogently by highlighting a juxtaposition. Germany is 'export world champion', and with its economic structure it could not be successful economically without strong exports, which means Germany needs open markets and easily accessible global supply chains. That was 'one side'. The other side is that the world economy is increasingly rife with competition, centred around new technologies and intensifying market share battles. The central challenge for Germany was to balance these two sides: keeping markets free to ensure continued export success, but only to the extent that it does not impact Germany's competitive standing. This was essentially what the new screening law was about. Germany's fundamental instinct is to promote global economic liberalism, as it is in its interests as an 'export champion'. However, the situation had begun to change dramatically,

[333] *Deutscher Bundestag, "Stenografischer Bericht: 166. Sitzung," p.20676.*

[334] *Ibid., pp.20685-6.*

[335] *Ibid., pp.20676-7.*

specifically with the rise of China, and Germany could no longer promote liberalism at all costs. Exceptions, as with the AWG, needed to be made.[336]

Summary

Germany has been a leading economy since at least the turn of the 20th century, with a strong focus on industry and manufacturing, situated at the technological frontier in many of these activities. This position of strength has historically meant that German state elites have championed open markets and liberal economic policy, not least for its highly competitive exporters. Given a position of strength, the opening of the Chinese economy since the 1980s, but especially since the early 2000s, was highly welcomed, presenting obvious large opportunities for German business. During these early days of China's opening, German state elites considered economic relations with China as a 'win-win' situation, much like the Chinese side did.

The German economy maintained its competitive advantages, providing high technology industrial goods to a rapidly growing China, which had entered investment-led growth. China could concentrate on improving in lower technology areas, which were not in direct competition with German industry. German firms remained in high demand, as China did not possess their capabilities and know-how at the time, allowing them to generate high sales for a prolonged period. Although German firms faced restrictions, such as in investment, due to China's ambitions to upgrade its economy, they could be tolerated given the revenue-generating opportunities on offer and the overall competitive superiority of German industry. At the same time, Chinese investment in Germany was also positively received, especially following the Great Recession, as China was considered not just a growing market but also an important supplier of capital.

As we entered the 2010s, however, these dynamics began to shift. Firstly, German state elites became increasingly aware of the fourth industrial revolution and the potential of 'game-changing' technologies that could rapidly transform competitive structures in the global economy, potentially harming Germany's position. Therefore, Germany needed to stay ahead of emerging technologies associated with the fourth industrial revolution, especially in the industrial sphere — the traditional area of German dominance. Consequently, new policy measures were launched, such as the *Industrie 4.0* initiative,

[336] *Ibid., p.20683.*

aimed at ensuring that Germany maintained its competitive advantages in the face of technological change. As this process unfolded, China's ascent continued unabated, and as we saw, there was a concerted effort in Beijing to launch China into innovation-driven growth.

This effort in Beijing was encapsulated by the MIC 2025 initiative, which came under heavy scrutiny in Germany, especially considering that it had many of the hallmarks of its own *Industrie 4.0* concept, and even targeted several areas of importance to Germany. Matters came to a head with the Chinese acquisition of German robotics firm Kuka. Robotics was considered a seminal area for the success of *Industrie 4.0* by German state elites. With China seeking to muscle its way in, the threat perception of China by German state elites rose. Not only was there increasing evidence that China was catching up in traditional areas of German strength, such as mechanical engineering, but it also became clear that China was seeking to leapfrog Germany by becoming the leader in emerging industrial technologies.

As expected under an economic realist framework, this rising competitiveness of China vis-à-vis Germany increased the threat perception amongst German state elites, but also business. As a result, Germany began a process of balancing China, which it did through both 'offensive' and 'defensive' measures — an initiative that arguably found its full expression in the industrial strategy presented in 2019. The strategy made it clear that state elites wanted Germany to be both more assertive and more protective. Germany should strengthen its innovation capacity, especially in new technologies, but should also defend what it already had and what it was in the process of building. It is within this defensive pillar of the strategy that the introduction and deepening of investment screening should principally be seen: as a way to protect Germany's 'technological sovereignty' in the face of China's challenge to Germany's position at the technological frontier. The screening mechanisms were subsequently further deepened and enlarged to take into account these new competitive pressures.

Thus, using the economic realist framework, the introduction and development of FDI restrictions in Germany can be understood as part of a balancing process. As China seeks to enter innovation-driven growth, this is generating friction in Germany, especially as China is engaging in industrial upgrading in areas of German strength. Protective barriers have gone up in Germany, as part of the aim to ensure Germany reasserts a competitive gap vis-à-vis China.

Chapter V

France

We turn our attention to France, which, alongside Germany, emerged as the leading advocate of investment screening measures in Europe, with significant tightening in the post-2015 period. The chapter is also divided into three broad sections, following the logic of the economic realist theoretical apparatus. First, it examines the context, looking at the pre-2015 period, analysing France's economic position at the time and its economic relations with China. Second, a rising threat perception of China is considered, related to its increasing industrial competitiveness and ability to rival France. And thirdly, the connection is examined between this rising threat perception, increased balancing measures and the introduction of investment screening instruments.

As highlighted below, although France can be seen as an innovation-driven economy, signs of it entering a decline phase emerged following the Great Recession, meaning the competitiveness pressures felt by French state elites came earlier, were more acute and broader than for their German counterparts. Going into the 2010s, state elites had already perceived an industrial decline, which was not directly related to China. Nevertheless, as will be illustrated, this starting position of weakness in France only served to heighten the threat perception of China starting around 2015, and prompted a major balancing process, in which investment screening played an integral role.

The Context

China in the 2000s: a 'trove' of opportunities for France

France, like Germany and other Western nations, can be considered to have an innovation-driven economy, remaining amongst the leading industrial nations since the 19th century and operating at the technological frontier across myriad industries, with historical success in, for example, automobiles, aeronautics, photography and chemicals. Besides Britain, France was the leading industrial nation throughout the early 19th century. Having seen Britain's success, it rapidly moved to capture the economic advantages of the first industrial revolution. This success carried over into the 20th century, with France remaining one of the leading industrial nations. Notably, following WWII, France underwent a substantial rebuilding effort, upgrading its industrial structures significantly. It developed leading positions in the energy industry, particularly in its advanced nuclear sector, in

transportation, seen most vividly with its high-speed train industry, as well as in pharmaceuticals, producing several world-leading firms at the technological frontier as France entered the 21st century.[337] It is from this position of strength that France's stance on China developed throughout the latter's opening up period.

Like in Germany, the initial view in France on China during the halcyon days following WTO accession was that it presented a major opportunity, with both economies having a synergistic relationship. A parliamentary report in 2005 declared that China 'represents a veritable trove of opportunities' for French business, as demand grew strongly in exactly those areas where France had 'expertise', a 'strong specialisation' and 'know-how'. The report further noted that the 'strong points of the French economy coincide with the growth needs of the Chinese economy', referring to the rising demand in energy and transportation. If in Germany it was the automobile sector that benefited heavily from China's rise, in France it was the nuclear sector. China needed to double its electricity production within 5 years and had to turn to nuclear energy production, a domain in which France was a 'global leader'. Furthermore, France had 'a strong hand to play' in both the infrastructure and transport sectors, where China was looking to hugely increase its air fleet and railway coverage, with Airbus deemed a clear winner. Although there would need to be some technological transfer to ensure market success in China, the potential to sell well over 1000 aircraft over the following 15 years made it more of an inconvenience than a show-stopper for doing business.[338]

Public transport was another major area where France could profit from China, with high-speed rail being a particularly important opportunity. It would mean going into competition with both the Japanese bullet trains and the German ICE (Intercity Express), but the French TGV (Train à Grande Vitesse) stood good chances, while Alstom as well could benefit from the rise of commercial rail with the production of freight locomotives. It was patently obvious what should be done: engage even more with China commercially, with the state playing a very active role in this process. As noted: 'It is now up to French companies, with the help of public authorities, to overcome their fears and take full advantage of the

[337] For an overview of France's industrial/technological success: Denis Woronoff, Histoire de l'industrie en France: du XVIe siècle à nos jours (Paris: Editions du Seuil, 1998); Jacques Marseille, Puissance et faiblesses de la France industrielle: XIXe-XXe siècle (Paris: Editions du Seuil, 1997).

[338] Assemblée Nationale, "Rapport d'information : les échanges commerciaux entre la Chine et la France," (2005): pp.65-67.

opportunities offered by Chinese economic development', leading to many initiatives by the French state to promote business ties. French business should 'launch itself into the Chinese adventure' and seek to 'penetrate' the Chinese market. The only problem, though, was the growing competition in this vast market from other countries, which meant that French business should take an aggressive approach, also when it came to technology transfers, where France should 'respond' to 'requests of technology transfer' 'as much as possible'. The economic relationship between the two countries should be strengthened and developed, as their increased commercial interaction was simply a 'win-win game'.[339]

While this report was arguably on the fervent side of the need and support for Chinese growth in France, it does encapsulate state elite thinking of the time.[340] China was seen more as a battlefield on which economic war was fought, not as a participant; China was not seen as an economic threat. As China pushed into investment-driven growth France continued to benefit, providing machinery and turnkey solutions to China's rising infrastructure and investment capital needs. French Presidential visits during the 1990s and 2000s routinely culminated in deals for China to buy French capital goods in areas such as aerospace, transportation, thermal power stations, dams, water treatment plants, as well as electrical power stations — all areas of French expertise, where it was situated at the technological frontier.[341] As noted by the French ambassador to China, 'although the presence of our firms in China is only recent…it is considerable', with the 'rhythm of growth rapid', meaning that 'our businesses, large and small, harbour very ambitious plans'. The mantra appeared to be 'full speed ahead' in terms of economic engagement with China.[342]

Following the Great Recession and the ensuing Eurozone crisis, state elites and the business community continued to view China as a large growth driver for exports, but also

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[339] *Ibid., pp.68-73.*

[340] *See for example also: Sénat de la République française, "Rapport d'information : l'émergence pacifique de la Chine dans le monde," (2006); Sénat de la République française, "Rapport d'information : la nouvelle révolution chinoise," (2006). Jacques Chirac was particularly keen on fostering closer economic ties to China and became known as an 'old friend' in China: Sebastien Falletti, "La Chine pleure «l'ami» Chirac," Le Figaro (2019). Paul Poudade, Dans l'ombre du Président - Par le chef du protocole de Jacques Chirac (Paris: Michel Lafon, 2014), pp.42-46. Le Monde, "Le président Chirac invite la Chine à la coopération technologique," (11 October, 2004).*

[341] *L'Obs, "Chine : Chirac loue une visite "positive," (27 October, 2006); Le Monde, "Commandes pour Airbus et Alstom en Chine, sur fond de visite présidentielle," (26 October, 2006); Tim Hepher, "Chirac mixes business and diplomacy in China," Reuters (18 January, 2007). Présidence de la République, "Communiqué conjoint franco-chinois, en date du 26 octobre 2006, sur les relations politiques, économiques et culturelles franco-chinoises.," Vie Publique (2006).*

[342] *Chambre de Commerce Française en Chine, "Le défi des investissements français en Chine," (2007): p.1.*

increasingly as a source of capital. French business profited from 'lush deals' with a burgeoning Chinese market, ranging across all important sectors of the French economy. Under the Sarkozy presidency, France sought increasingly strong ties with Beijing, and Sarkozy himself stated in 2010 that 'China should not be seen as a risk but an opportunity'. During his tenure, over 14 billion euros worth of new deals were signed with companies such as Airbus, Total and nuclear energy firm Areva.[343] While the US criticised China for an artificially low yuan and human rights, Sarkozy explained that 'it's not by reproaching people for things that you make progress', while literally rolling out the red carpet for China's premier Hu for a visit.[344] In the same period, the prime minister also made a forceful case for more Chinese investment in France, wanting to 'create the best possible conditions' for Chinese companies choosing France to invest. Agreements were signed between French banks and the China development bank to facilitate and finance further Chinese investment in France.[345]

The subsequent government under François Hollande consistently emphasised the 'strategic partnership' between France and China, established 1997, with the main focus on securing further French business opportunities in China. This focus even intensified in the post Eurozone-crisis period, as China began to rebalance its economy towards more consumption, which was viewed in Paris as an opportunity for French businesses to provide more upmarket consumer goods to an increasingly affluent Chinese middle class. This was more in tune with the French export structure, as Hollande himself noted.[346]

Another report posited a continued 'win-win' situation, with 'value added for France' and the 'needs of China' being fulfilled.[347] There were ample opportunities for France in China's economic transition, including the expanding health sector, with 'urgent needs' in areas such as hospital construction, medication, medical devices and vaccines. France's expertise in sanitation and water treatment could also be of value to China's 'sustainable cities', as it

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[343] Quoted in: BBC News, "China and France sign deals as Hu Jintao visits Paris," (4 November, 2010).

[344] See also: Présidence de la République, "Déclaration de M. Nicolas Sarkozy, Président de la République, sur les relations franco-chinoises et franco-asiatiques, à Paris le 16 février 2010.," Vie Publique (2010).

[345] François Fillon, "Point presse de M. François Fillon, Premier ministre, sur le développement des investissements chinois en France," (2009).

[346] See: Julien Ponthus, "François Hollande à la conquête du marché chinois," Reuters (24 April, 2013); L'Obs, "Hollande à Pékin, à la conquête du marché chinois," (25 April, 2013).

[347] Sénat de la République française, "Rapport d'information : Chine : saisir les opportunités de la nouvelle croissance," (2014): p.28.

continued to urbanise. Moreover, France could offer expertise in digital security, including cybersecurity and anti-counterfeiting technologies. The ecological transition that China was beginning was an area where France could be particularly helpful, as it 'has the best companies in this field, so together we can succeed in multiplying the opportunities'.

Part of this partnership would also involve the 'acceptance of Chinese investment in France', with notable positive cases highlighted by ZTE, Huawei and Lenovo all choosing Paris to base their European headquarters. These were just the start, and the encouragement of further Chinese investment would provide a 'chance for the economy and the creation of jobs', especially considering that the Chinese tend to 'deploy a long-term strategy' to their businesses and do not invest to 'simply capture technologies'.[348]

The notion in Paris was that China continued to need France, due to its technological lead, therefore providing major revenue prospects for French firms in China for years to come. It is within this context that France and China were referred to as friends that 'can do a lot together', with the 'friendship nourished by the value of the years'. France and China, as the prime minister stated in 2014, 'are two partners determined to work side by side. Two allies loyal to each other', which was expressed by the 'vitality of our economic exchanges', in which French companies have accompanied China's ascendence and adapted to the 'needs of Chinese society', by providing key 'expertise and savoir-faire'. For all of China's 'current challenges, 'French companies can contribute their know-how and develop profitable cooperation'. To be sure, there was some disquiet around the rising trade deficit versus China, but this was supposed to be handled as 'friends', with the focus on further expanding French sales in China, as 'our relations can be intensified'. Additionally, it was once again evident that Chinese investment in France was very welcome, with France even 'facilitating' the investment, the intention being for France to aid in the internationalisation of the renminbi, with an eye to making Paris a renminbi hub. The French government even launched a renminbi bond at this stage. France being 'a leading economic power' also meant that 'we have many assets to meet the expectations of the Chinese economic investors', helped by the fact it is 'in the heart of Europe and offers a gateway to Africa'. It was time 'to build a future together'.[349]

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[348] *Ibid., p.30-32.*

[349] *See the statements made by Manuel Valls, Prime Minister during the Hollande presidency: Manuel Valls, "Déclaration de M. Manuel Valls, Premier ministre, sur le renforcement et le rééquilibrage du partenariat économique entre la France et la Chine, à Pékin le 30 janvier 2015," Vie Publique (2015). See also the*

Overall, then, going into the mid-2010s, it can be said that France's view on China was positive, with continued economic integration sought, not least in terms of Chinese investment in France.

France's industrial stagnation becomes increasingly visible

Nevertheless, although the view on China remained positive, major concerns regarding France's general industrial competitiveness began to appear in the early 2010s, following the Great Recession and onset of the Eurozone crisis. One important example of rising concern was the 'Gallois report', released in 2012.[350] Despite the hope that the rise of China and the attendant market opportunities would bring gains for French business, overall exports had faltered over the preceding decade. France's global market share had decreased, and its current account balance also significantly deteriorated. By contrast, Germany's market share losses over this period had only been minimal compared to the declines seen in France. While there were areas of strength, such as aerospace and luxury goods, the overall perception amongst state elites was that France had a competitiveness problem, especially in its industrial/manufacturing sectors.[351] This became a major issue because, as Louis Gallois pointed out 'one cannot have a strong economy without strong industry'. Therefore, it was necessary to give French industry a 'new elan' and put French industry 'back in its rightful place, amongst the top-tier of global industrial excellence'.[352] The state needed to jolt the economy back onto the right path.

Using Porter's model of stages of competitive development, it can be argued that France has slipped into the decline phase, where growth becomes significantly less dynamic and more reliant on previously accumulated wealth. The economy, in becoming less dynamic, finds it increasingly difficult to consistently upgrade competitive advantages and begins to stagnate, marked by growth driven increasingly by 'wealth that has already been achieved'. The increasing inability to generate new wealth has been evident in France's very low corporate investment rate, but also in the lack of risk-taking and entrepreneurialism across

further statements by Hollande: François Hollande, "Déclaration de M. François Hollande, Président de la République, sur les relations économiques entre la France et la Chine," ibid.

[350] Louis Gallois, "Pacte pour la compétitivité de l'industrie française," (2012).

[351] See also: Éric Dor, "La compétitivité de l'industrie française en question," Outre-Terre 33-34, no. 3 (2012).

[352] Gallois, "Pacte pour la compétitivité de l'industrie française," p.1.

French industry and the economy as a whole.[353] France has also experienced a large uptick in its mergers and acquisitions markets, indicating a tendency in the economy to favour less competition, which in turn damages innovation potential further.[354] Productivity has declined, putting pressure on income distribution, as profits fall and the 'growth pie' shrinks.[355] As a result, there has been an increase in distributional conflict, as economic actors seek to protect themselves from any distributional losses. For instance, tensions between labour and capital have increased in important industries, with labour unwilling to forego accumulated privileges, while capital seeks to ensure profits remain high by capturing more of national income.[356] These tensions can further negatively impact productivity, exacerbating the situation.

In contrast, then, to what occurred in Germany during the early 2010s, in France the idea emerged that it must reclaim its former industrial glory, rather than strive to maintain its already strong competitiveness. Not surprisingly, state elites identified insufficient state involvement in French industry as one of the main causes for the industrial decline. The Gallois report, which reflected economic realist notions on the importance of the state, emphasised that 'industry does not evolve in a vacuum…it depends on the ecosystem built by public policy, on the functioning of public services, as well as the grand infrastructure, such as public education and the R&D system'. Therefore, 'all new legislative and regulatory efforts pursued by the state' need to have the issue of French industrial competitiveness in mind.[357]

To turn around the fortunes of French industry, the French state needed to focus on restoring 'confidence' in the French economy for French capital. This required simplifying regulation, with the French state once again becoming a 'visionary strategist' for the economy. The French state's 'visibility of action' was critical for business, so it was also necessary to build a more 'strategic profile' for the state, which was done through the

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[353] See for example: Association des Centraliens, 8 priorités pour dynamiser l'innovation en France (Paris: Armand Colin, 2011).

[354] Olivier Meier and Guillaume Schier, Fusions Acquisitions - 6e éd (Paris: Dunod, 2019), p.32-33.

[355] Ministère du Travail, "Document d'études: La tertiarisation de l'économie française et le ralentissement de la productivité entre 1978 et 2008," DARES, no. 161 (2011): pp.11-18.

[356] For an elaboration of these tensions in French industrial relations: Udo Rehfeldt, "Industrial relations in France: From the underdevelopment of collective bargaining to the failure of neocorporatist concertation," Employee Relations 40, no. 4 (2018).

[357] Gallois, "Pacte pour la compétitivité de l'industrie française," pp.5-7.

creation of the *Commissariat à la Prospective*. It would essentially become the economic strategy think tank/council for the French state, while the National Industry Council was also established as a specialist body to bridge the state and French industrial capital.[358]

After the release of the Gallois report in 2012, the government introduced a series of new industrial policy initiatives, with Hollande himself stating that the 'French government decided to put to an end to the country's drastic loss in competitiveness', comprising a combination of offensive and defensive measures.[359] Among the offensive elements, the most visible was the 'New Industrial France' plan. As in Germany and China, the fourth industrial revolution was considered crucial for enhancing France's competitiveness. To succeed in the revolution, France needed to make significant strides in developing cutting edge technologies, to 'remain at the technological frontier', and ensure the widespread diffusion of these technologies throughout the French 'industrial fabric'. This was crucial because the technologies associated with the fourth industrial revolution 'open an infinite field of possibilities for industrial production' in France, allowing French industry to move up the global value chain.[360]

At the time, it was claimed that French industry was increasingly undifferentiated compared to competitors, and was primarily competing on price. In sharp contrast, Germany had achieved and maintained a considerably less price-sensitive position in high value-added industries. Therefore, a primary focus for France should be to 'move up in quality', which necessitated a 'revolution' in innovation and productivity. France needed to become more specialised, reducing the need to compete on price. To achieve this, higher investment was required, which the state should undertake, along with 'structuring the industrial fabric of the country in a more dynamic way'. As part of the 'metamorphosis' of French industry, and in a bid to take its 'place among the major industrial powers', the ministry of the economy under Arnaud Montebourg led a wide-ranging sectoral programme for developing French competitiveness and innovation, culminating in the 34-sector project. The programme revolved around three axes: a focus on major structural growth areas in the global economy, establishing a connection to the French technological base, and

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[358] Ibid., pp.21-24. See also: Yannick Moreau et al., "Pour un commissariat général à la stratégie et à la prospective," Vie Publique (2012). L'Express, "Un Conseil national de l'industrie: pour quoi faire ?," (5 February, 2013).

[359] Gouvernement de la République française, "Nouvelle France industrielle," (2013): p.5.

[360] Ibid., pp.13-17.

concentrating on areas where France already had competitive advantages, be that through major firms active in the area or research and development expertise. In its role as central economic strategist, the state was to 'focus economic and industrial stakeholders around common goals…and align government means more effectively' to achieve these goals, with the ultimate aim of building a new 'competitive French industrial offering that is able to win market share in France and internationally'.[361]

Regarding the targeted sectors of this new industrial offensive, France focused on similar areas as Germany. Robotics was key for France as well, with the aim of creating infrastructure for the 'mass production of French robotic solutions', allowing it to become a 'major player'. 'France's stellar expertise in mathematics' would also enable it to make major inroads in developing 'supercomputers', which would prove especially useful in industrial simulation and computer-aided-design, making the R&D process much more efficient and effective. Mastery in these fields could make entire French industries more competitive and could boost GDP by 2 to 3 %. The 'factories of the future' also featured in the strategy, following the same lines as the *Industrie 4.0* initiative in Berlin. The call was to build 'smart factories' using 'increasing sophisticated production methods', such as embedding of Internet of Things (IoT) technology in the factory setting, producing an environment of 'corporate hyperconnectivity'. Driverless cars were also included, with the aim of making 'the French automotive sector a pioneer in vehicle automation', opening markets worth 'several billions of euros' in the years to come. The medical domain also gained attention, with 'medical biotechnologies' being a sector through which France could build on its achievement of decoding the human genome and 'usher in a new era' of genetic therapies, having 'everything it takes to carve out a leading position' in the global market place. Other significant domains included 'green energy', 'smart grids', 'green materials', 'Big Data' and 'Cloud Computing' — all major trends and technologies associated with the fourth industrial revolution.[362]

In addition, besides these 'offensive' elements for re-establishing and maintaining French competitive advantages, important 'defensive' elements were also introduced, most notably in the form of tighter investment screening measures. It was deemed necessary to 'control

[361] *Ministère du redressement productif, "La Nouvelle France Industrielle," (2013): pp.1-7.*

[362] *Ibid., pp.7-73. See also: Arnaud Montebourg, La Bataille du Made in France (Paris: Flammarion, 2013); Michel Bouvet, "L'État français et le soutien à l'innovation (ou le mantra de l'innovation)," Geoeconomie 80, no. 3 (2016).*

foreign investment, in order to prevent the sale of technological flagships', leading to the enactment of the 'Montebourg decree' in 2014. It is important to note that although the tightening of investment screening measures in France happened in the context of an industrial competitiveness overhaul, it was not specifically linked to Chinese competition, which, as previously mentioned, was not considered a major concern. The catalyst was, in fact, the potential takeover of Alstom Power, a French energy company, by General Electric, the US utility giant.[363] As Montebourg averred, the risk in this situation was that Alstom could disappear, given that General Electric was much bigger than Alstom, so it could have easily absorbed it, with any expertise or technology shifting to the US and leaving a lesser presence in France. Therefore, it was necessary for the state to intervene. While the deal would eventually go through, it led to the implementation of controls in new sectors, increasing the surveillance of foreign investment in France. As Montebourg further highlighted, this marked the 'end of laissez-faire' and was part of a process of 'regaining our power' and 'protecting our strategic interests'.[364] Controls had to go beyond the 'national security' definitions, with the scope widened to include 'fundamental interests of the country', leading to monitoring of sectors such as health, water, energy, transport and telecommunications.

With the tightening of screening measures, there was also a need to 'readjust the balance of power between the interests of multinationals and those of the state', recognising that they were 'not always aligned'. The economic realist idea that the interests of the state and business are not always in sync was evident, with the state needing to ensure the productive forces of its unit of territory, whereas the corporate entity wants to maximise capital accumulation, even if outside of France. Only through state elites gaining more powers and tools could a new equilibrium be struck in which the state could defend its interests. At this stage, it is interesting to note how open the discussion was in France, significantly more so

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[363] In fact, France has shown a long history of being concerned by economic competition with the United States, especially in the post-war years, where there were major concerns around France turning into just a 'satellite' economy for the US, given its large strides in relative competitiveness following the war. This is also what led to the first foreign investment restrictions being implemented in France in the 1960s. See: Pascal Dupeyrat, Sécurité économique et souverainetés industrielles (Paris: Presses Universitaires de France, 2020), pp.52-53; William Adams, Restructuring the French economy: Government and the rise of market competition since World War II (Washington, DC: Brookings Institution Press, 2010), pp.352-55; Władysław Kulski, De Gaulle and the world: The foreign policy of the Fifth French Republic (New York: Syracuse University Press, 1966), pp.255-60.

[364] Quoted in: David Revaut d'Allonnes, "Arnaud Montebourg : « Le décret sur les entreprises, c'est la fin du laisser-faire »," Le Monde (15 May, 2014). On this decree: Le Monde, "Au fait, c'est quoi ce décret sur les « investissements stratégiques » ?," (16 May, 2014).

than in Germany. Montebourg, for example, asserted that France was in a 'global economic war', in which it was essential that France was 'armed', with both offensive and defensive weapons.[365] French state elites perceived a widespread threat, in contrast to the German situation where the discussion was mainly around sustaining German advantages in its central industries.

In summary, the French state had been 'activated' by the decline in French global economic competitiveness, made more obvious by the crises of the late 2000s and early 2010s. This led to introspection amongst French state elites, resulting in various reports on the decline in competitiveness and subsequently on 'offensive' and 'defensive' action to address the situation. France needed to upgrade its industry, as seen in the Industry for the Future plan and the opportunities provided by the fourth industrial revolution. However, it was also necessary to 'protect' its technology, leading to the Montebourg decree. It should be noted, however, that China was not the driving impulse behind these new protective measures implemented in 2014, but, as we will see, it did prove an important factor in the subsequent tightening of investment controls.

Rising Threat Perception

Up until the 2010s China was still considered a developing economy in France, albeit a fast-growing and dynamic one, judged to be more of an opportunity than a threat. Nevertheless, although the focus remained on the positives, the French intelligence services did voice concerns around 'industrial espionage' beginning in the early 2010s. One colourful report described, for example, how a Chinese business executive, invited to a French chemical plant, dipped his tie into one of the vats of liquid to take samples back home with him, while another would wear shoes with glue/sticking tape on the soles in order to pick up residue from the factory for analysis. Meanwhile, married French executives were allegedly plied with prostitutes, leaving them open to blackmail, and hence to divulging industrial secrets.[366] Thus, it is not accurate to assume that there were no concerns at all in France concerning China's economic ambitions, but they were limited and did not lead to concrete policy action. Indeed, for industrial espionage and technological theft to be a tangible problem for France, the party engaged in it must also be able to use it and show clear signs

[365] *Revaut d'Allonnes, "Arnaud Montebourg : « Le décret sur les entreprises, c'est la fin du laisser-faire »."*

[366] *See: Le Parisien, "Des agents secrets déguisés en stagiaires d'entreprises," (11 February, 2011). Also: Antoine Izambard, France-Chine, les liaisons dangereuses : espionnage, business: révélations sur une guerre secrète (Paris: Stock, 2019), pp.83-106.*

of industrial upgrading to emerge as an important industrial rival. That is precisely what started to occur by the mid-2010s in several important French industries, and China began to emerge as a significant threat just as an industrial overhaul had begun in France.

No longer just an Eldorado for French business

The transport industry, for example, starting in 2016, began to express major concerns about rising Chinese competition. It called on the government to 'put in place a strategy for the defence of the sector', as China was 'seeking to appropriate technology in five industries, of which transport was one of them'. Jean-Pierre Audoux, the head of the Federation of Railway Industries (FIF), warned that China was looking to acquire French companies to use their technology and produce their own transportation goods by 2025. While China had previously been 'seen as an Eldorado' by European state elites, this turned out to be seriously misguided, especially for the French transportation industry. China was expanding globally in the space, while French transportation firms faced rising margin pressure due to the heightened competition. The French transportation industry, in conjunction with French state elites, was deemed 'to have played with fire in terms of the transfer of technology', which was coming back to haunt them.[367]

France was experiencing significant merger and acquisitions (M&A) activity in the transportation sector, which was a 'source of concern' as it could result in French transportation know-how spreading to China. With Chinese competitiveness having risen substantially, the fear in Europe was becoming reality that large portions of the transport infrastructure and networks could be acquired by Chinese entities, meaning 'the big question' had now become 'how to protect Europe from Chinese predators who would come and acquire an industrial champion to become European'.[368] This was particularly relevant in the railway industry, where, as previously noted, China had made extensive inroads in the 2010s, not least with the aid of French technology. Like in Germany, the primary concern in France was the size of its companies, which were likely too small to adequately compete against large Chinese firms such as the China Railway Rolling Stock Corporation (CRRC). In 2017, the minister of the economy, Bruno Le Maire, forcefully argued for the formation of larger 'national' and 'European' champions capable of competing with the

[367] *Jean-Pierre Audoux, "La révolution ferroviaire est en marche," BTP Rail (2016); Jean-Pierre Audoux, "Comment sauver l'industrie ferroviaire face à la concurrence chinoise," Mobilcities (2016).*

[368] *Alain Bullot, SNCF executive, quoted in: Ville Rail & Transport, "L'industrie ferroviaire après le veto européen " (2019).*

rapidly expanding Chinese firms, such as CRRC. According to Le Maire, forming larger companies was not 'just about competing today' in the railway industry, but also about the fact that in a few years China could 'create giants in all sectors', including central French sectors, such as aerospace, electric cars and artificial intelligence. Chinese competition was a real threat, and it was high time to wake up in France and Europe because as Le Maire cautioned, 'if we don't want to see the world as it is, we may find ourselves at a loss in a few years'. Therefore, there was a major push for Alstom to merge with a German counterpart, as the 'only way to resist in face of Chinese competition'.[369]

The nuclear industry likewise emerged as a key area of concern, as it faced increasing competition from China, despite being a long-standing 'national champion' for France. A Senate report, for instance, illustrated how China was 'working to master the nuclear industry from start to finish'. It was rapidly constructing nuclear power sites, with a goal of adding eight new reactors a year, increasingly with Chinese technological input, in order for Beijing have complete control over the entire value chain in nuclear energy production. As this became more of a reality, the threat was that the French nuclear industry, then a global leader, would become a relatively minor global player. The report emphasised that China's ambition is to achieve complete technological independence, primarily by mastering critical control systems necessary for the functioning of its reactors, and in the process would 'free itself entirely from French…suppliers'. Furthermore, as China's nuclear industry matures and becomes more competitive, it opens up vast export markets. China has already constructed two reactors in Pakistan, with dozens of other countries also announced as 'nuclear partners', including Argentina, South Africa and Romania. Even more of a concern was Beijing's desire to rapidly transition to thorium-based nuclear energy, which it intended to achieve by 2030. If this occurs, 'the future of nuclear energy could be fundamentally changed'.[370]

The French automobile industry also felt the impact of rising competition from China, much more so than German automakers, as it concentrated on lower- and mid-range segments that

[369] *Bruno Le Maire, "Interview de M. Bruno Le Maire, ministre de l'économie et des finances, à France 2 le 6 février 2019, sur le projet de fusion Alstom-Siemens," Vie Publique (2019). See in addition: Frédéric Schaeffer, "CRRC, le géant chinois qui fait peur à Alstom et Siemens," Les Echos (6 February, 2019).*

[370] *Commission des affaires étrangères, "La France peut-elle contribuer au réveil européen dans un XXIe siècle chinois ?," (2021): pp.145-47; Le Monde, "Nucléaire : les ambitions chinoises," (28 June, 2019); Tania Serova, "La Chine se rêve en leader mondial du nucléaire," Libération (16 July, 2020); Institut Montaigne, "Nucléaire : l'heure des choix," (2016).*

were vulnerable to price competition. Renault, for example, experienced heavy declines in its Chinese business in the latter half of the 2010s and ultimately had to almost entirely withdraw from the Chinese market. PSA (Peugeot S.A.) similarly suffered large market share losses in China throughout the 2010s, with unit sales dropping from 750k in 2014 to 100k in 2019. Its launch of the mid-range 301 sedan ended up competing directly with Chinese brands and flopped as a result. The concerns that had preoccupied German carmakers had actually materialised for their French counterparts, with their Chinese operations being outcompeted. The same could happen in Europe when China launches its electric vehicle offensive, as evidenced by the entry of the MG EHS into the European market, which competes directly with Peugeot's electric mid-range offering. Further production losses for the auto sector in France could be the result, adding to the declines since the mid-2000s. The continued struggles of the auto industry were particularly painful, emblematic of French industrial decline in the preceding years.[371]

Another French national business icon, Michelin, similarly came under pressure from Chinese competition throughout the 2010s, eventually leading to major closures of French production sites. Chinese rivals, which numbered in their hundreds, reduced Michelin's market share, ultimately taking 30% of the European market by 2019, compared to 5% at the outset of the decade. A further issue was that Michelin's strategy had been to dominate the premium segment by offering higher quality tires, but China had markedly increased the quality of its tires while also keeping costs 30% lower, especially in the important trucking segment, where Michelin lost the most market share.[372]

The solar industry, which was to be a key pillar of French competitiveness going forward as the world transitions to renewable energy, was also plagued by fierce Chinese competition. It led to a 'weakened industrial fabric', and if the 'situation persists' — with France not having important players in key areas of the solar cell value chain — 'France will hardly be able to take advantage of the industrial opportunities linked to the marketing of millions of modules in the next ten years'. A significant effort was needed to reinvigorate

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[371] Kar-Gupta Sudip, "Renault quits its main China venture after weak sales," Reuters (14 April, 2020); Alain-Gabriel Verdevoye, "Pourquoi PSA et Renault n'arrivent pas à percer en Chine," Challenges (12 January, 2017); Alain-Gabriel Verdevoye, "PSA acte l'échec des DS en Chine," Challenges (29 November, 2019); Alain-Gabriel Verdevoye, "MG, fer de lance de l'offensive auto électrique chinoise favorisée par Bruxelles," Challenges (4 April, 2022).

[372] You Martial, "Michelin : comment le Bibendum a été dévoré par la concurrence chinoise," RTL (11 October, 2019); Alain-Gabriel Verdevoye, "Pneus : Bridgestone, Michelin ou Goodyear doivent affronter la concurrence chinoise sauvage," Challenges (18 September, 2020).

the industry if it was to have such success, after having been largely decimated by the price war engendered by the Chinese competition. France only captured '4% of the value added' of solar cell manufacturing globally, with the 'wealth being mainly created abroad', and only a few French companies in niche areas could mount 'resistance'. Cell production was stated to be 'extremely capital intensive', and it was this that gave the Chinese the key 'comparative advantage'.[373]

Even in areas of recent French dominance, such as utility management, the rise of Chinese competition started to bite. Paris, for example, was keen on a merger between Veolia and Suez to create a 'champion' able to compete with rapidly catching-up Chinese firms. The head of Veolia remarked 'that one day we will certainly see emerge a global Chinese actor', which they need to be prepared for. France is the global leader in utility management, with historical competitive advantages that allowed it to conquer the Chinese market in environmental management services, with initially very limited competition, given the lack of know-how/technology in China. But with the MIC 2025 plan and the ensuing drive to complete an ecological transition in China, the importance of 'sovereignty' in utility management was heightened, leading to support for Chinese firms in the industry. As a result, key competitors for Veolia and Suez have emerged in China in the form of Beijing Capital, Beijing Enterprise Water and China Everbright, which by the latter 2010s were still significantly smaller than the French behemoths, but were rapidly catching up and displaying international expansion ambitions. Beijing Capital Group, for example, has built a substantial presence in New Zealand and Poland. As one French industrialist put it: there 'is a gradual rise in the number of Chinese players who are acquiring technical knowledge, have significant financial power and are committed to the long term, which is an essential element of our sector'.[374] While there was still an important dependence on French knowledge and expertise in China, it was evident that the gap was closing and that Chinese competitors were 'entering the dance', as *Libération* put it.[375]

The aerospace industry, an area of strength for France symbolised by Airbus' headquarters in Toulouse, was facing rapidly gaining Chinese competition as well. China's aerospace firm, Comac, entered the aircraft manufacturing industry in the mid-2010s, and set its sights

[373] *Ministère de la Transition écologique, "Le photovoltaïque : choix technologiques, enjeux matières et opportunités industrielles," (2019).*

[374] *Frédéric Schaeffer, "Veolia agite le spectre de la concurrence chinoise," Les Echos (31 August, 2020).*

[375] *Raphaël Balenieri, "Chine : pour Suez et Veolia, le toxique, c'est mirifique," Libération (17 April, 2017).*

on commercialisation by the mid-2020s, with an initial focus on domestic carriers in China, where the demand is likely to be high. Given China already had the largest aircraft market in the world, it could provide Comac all the scale advantages it needs. The concern was that Airbus's market share would first come under pressure in China, and then, eventually globally as well.[376]

Rising competition from China in the industry has been recognised as a critical issue, featuring in several reports in the latter 2010s and early 2020s, with the fact that China has entered into aircraft manufacturing 'having consequence for French actors'. It necessitated 'increased caution' in cooperating with China on matters related to intellectual property and supply chains, given the 'assertive Chinese strategy' with large increases in R&D spending. It was, therefore, imperative for France to keep vigilant and agile and be able to 'maintain our technological lead by anticipating the themes of the future', so that China would remain dependent on French intellectual capital, and hence remain a lucrative market. The problem was if China succeeded in going 'upmarket', this would have 'direct implications for the economic opportunities' on offer in China, as Chinese demand would shift heavily towards domestic producers.[377]

Meanwhile, French telecoms too came under pressure, having also been previously championed by the French state. The fall of Alcatel-Lucent led to much lamentation by French state elites, with Huawei being a particular source of ire, which, as we will see, would play an important role in France's shift towards a more confrontational stance on China. Alcatel was already struggling due to several strategic blunders, but the aggressive competition from Huawei dealt a final blow, demonstrated when British Telecom chose Huawei over Alcatel to refurbish its network. Alcatel executives were dismayed and decided to examine the Huawei equipment more closely, finding that the source code was exactly the same as in Alcatel's infrastructure equipment, leading to accusation of intellectual property theft. However, the charges did not go very far, as Beijing made it very clear that

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[376] Capital, "Comac, un nouveau concurrent de taille pour Airbus et Boeing," (3 May, 2017); Frédéric Schaeffer, "Le premier concurrent « made in China » d'Airbus et de Boeing a fait son premier vol," Les Echos (5 May, 2017).

[377] Assemblée Nationale, "Rapport d'information : sur la stratégie de la France et de l'Europe à l'égard de la Chine," (2021): pp.91-93. Also: Sénat de la République française, "Rapport d'information : au nom de la mission d'information sur Alstom et la stratégie industrielle du pays," (2018): p.327. Lois Larges, "Nouvelle concurrence pour Airbus et Boeing avec l'arrivée des Chinois !," Capital (1 July, 2022).

continued action against Huawei would result in Alcatel being shut out of the Chinese market, which would have been even more disastrous.[378]

A 2018 parliamentary report noted that competition in the global telecoms market was highly distorted. European telecom firms had to operate 'under the rules of transparency', while the Chinese could play 'by different rules', with the result that 'the actors in difficulty are European, while those growing strongly are Chinese'. Huawei used every means possible to gain 'know-how and market share' and used the fact that the Chinese market was still proving to be an 'Eldorado' for French firms as pressure. Huawei employed a 'simple strategy' of using explicit and implicit subsidies to produce telecoms equipment cheaply, then attacking major telecom equipment markets to gain market share, with the intention of raising prices in later years, once the competition had been eliminated.[379]

With mounting concerns in France about China's growing competitiveness, even the main French business lobby, MEDEF (Mouvement des entreprises de France), shifted its tone and became more defensive, despite being a traditional supporter of further economic integration with China. It began to use the term 'sovereignty' increasingly in its communications, which Geoffroy Roux de Bézieux, the head of MEDEF, stated was becoming 'increasingly important to French business'. A special committee was even established inside MEDEF to deal specifically with the 'sovereignty and security of business'. MEDEF observed that the 'threats facing companies have increased in recent years', including 'industrial espionage' and foreign 'takeovers of flagship firms' — a reference to China. France needed to reassert its economic sovereignty, although it was emphasised that this was 'not protectionism', but rather the 'aspiration to control our destiny'. While it was important not to turn away from 'multilateralism', the tools available were insufficient to deal with states such as China. The 'time had come to stop with the naivety… that had arisen over the last 30 years' around the 'idea that the concept of sovereignty had disappeared from the commercial world'. In accordance with the economic realist understanding of corporate behaviour in periods of defensiveness, the 'roots' of a

[378] *See: Guillaume Grallet, "Les espions, Huawei et le regret d'Alcatel," Le Point (16 February, 2019); Dominique Albertini, "Alcatel-Lucent : histoire d'un désastre industriel," Libération (8 October, 2013).*

[379] *Assemblée Nationale, "Rapport : Commission d'enquête chargée d'examiner les décisions de l'État en matière de politique industrielle, au regard des fusions d'entreprises d'Alstom, d'Alcatel et de STX, Tome I," (2018): pp.54-55; Assemblée Nationale, "Rapport : Commission d'enquête chargée d'examiner les décisions de l'État en matière de politique industrielle, au regard des fusions d'entreprises d'Alstom, d'Alcatel et de STX,, Tome II," (2018): pp.41-53.*

business were deemed highly important now. For businesses, 'their nationality had become crucial' and a 'key' to their success in the global economy.[380]

The tension between France and China was further fuelled by their competition in Africa. France, a former colonial power in the region, still holds influence in Africa through, for instance, the CFA (Communauté Financière Africaine) franc zone, and considers itself as one of the most important actors in the region.[381] However its interests began to clash with Beijing's, whose foreign direct investment now exceeded France's. Moreover, French firms had been losing market share to the Chinese, particularly in francophone Africa, where French business had long held dominant positions in fields such as telecoms, energy infrastructure and engineering. Increasingly these were penetrated by new entrants from China, to the extent that many of the former French colonies now had China as their largest trade partner and not France.[382]

An example of China outmuscling France came in 2018 when the Bolloré group was removed from a major railway project in Benin, due to the charge that the French group did not have sufficient capital and know-how to undertake such a major project, while China did. Bouygues and Vinci also lost out on a major contract for a hydroelectric dam in the Democratic Republic of Congo, set to be the largest in Africa, while in Nigeria a major hydro project, requiring several dams and hundreds of kilometres of grid systems, also went to a Chinese firm. One French industrialist declared that it had essentially become impossible to compete with the Chinese, given the massive financial backing from Beijing's captive financial institutions, comparing it to 'bringing a water pistol to a tank battle'. The surge in China's economic presence in Africa was reflected in market share statistics, with China going from 3% market share in 2001 to 18%, while France's market share went from

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[380] MEDEF, "Souveraineté et compétitivité des entreprises : plus de temps à perdre !," Podcast Audio (2020). On this 'shift 'at MEDEF, see also: Jean-Dominique Merchet, "Souveraineté, le nouveau credo du Medef," L'Opinion (2019).

[381] Ian Taylor, "France à fric: The CFA zone in Africa and neocolonialism," Third World Quarterly 40, no. 6 (2019); Dirk Kohnert, "French domination of markets in Francophone Africa: Post-colonialism at its finest?," SSRN (2022).

[382] Pauline Bax and Olivier Monnier, "China battles France for business in former African colonies," Bloomberg (17 July, 2018); Tom Bayes, "China in Francophone West Africa: A challenge to Paris," Mercator Institute for China Studies (2020).

11% in 2001 to 5.5% in 2017. African states increasingly had a 'degraded image' of France.[383]

Unsurprisingly, as tensions increased, Paris started to push back against China's growing economic assertiveness in Africa, and the French government implemented a containment strategy. In an ironic shift, Paris came out in defence of African sovereignty. Macron declared that he 'wouldn't want a new generation of international investments to encroach on our historical partners' sovereignty or weaken their economies', referring to the large loan deals Beijing had signed with African nations, such as Djibouti. These were said to be putting an unmanageable debt burden on the African recipients of Chinese investment.[384] Evidently, China's rising investment and market share was leading to increased influence, to the detriment of France. The French presence looked ever more likely to be lost to ascendant Chinese economic power, providing another reason for French state elites to become circumspect about China.

Chinese investment in France ramps up

Amid the rising competitive pressures from China and the release of the MIC plan, with its stated intent of achieving 'leapfrogging' growth and industrial dominance, Chinese investment in France ramped up. Similar to Germany, there was a large increase in acquisitions in France by China, especially in high-technology areas, with a clear overlap with the areas targeted in the MIC 2025 upgrading plan. For example, in the nuclear industry, China increased its investment in France by acquiring Manoir Industrie in 2013, a specialist in the manufacturing of steel tubes for the nuclear industry that also produced for the chemical and high-speed rail industries, also key areas of rising Chinese competitiveness. Through further smaller acquisitions in France and elsewhere, the Chinese firm Yantai Taihai moved towards monopolising the market on key inputs to the nuclear waste management industry, inserting China firmly into the nuclear industry value chain.[385] Yantai's significant stake in French spent-fuel pool specialist CTI Group in 2016 was seen

[383] *Izambard, France-Chine, les liaisons dangereuses : espionnage, business: révélations sur une guerre secrète, pp.232-34. Antoine Izambard, "Vincent Bolloré peut-il vraiment quitter l'Afrique?," Challenges (1 June, 2018). Vincent Bolloré, "Faut-il abandonner l'Afrique?," Le Journal du Dimanche (29 April, 2018).*

[384] *John Irish, "Macron warns of Chinese risk to African sovereignty," Reuters (11 March, 2019); Chanel Monteine, "Macron's Africa visit reveals determination to weaken China's grip on the continent," CNBC (16 March, 2019).*

[385] *François Godement and Abigaël Vasselier, La Chine à nos portes : une stratégie pour l'Europe (Paris: Odile Jacob, 2018), pp.65-68.*

as a partnership that had created an 'international market leader with French manufacturing techniques and know-how'. The chairman of Yantai was said to be 'delighted with the acquisition', stating that 'CTI is a fine company that has high-quality know-how. By strengthening Yantai's presence in France, we are increasing the industrial cooperation between China and France in a strategic sector'.[386]

In 2016, Kanlong Optoelectronic Technology acquired a majority stake in French start-up Almae Technologies, which produced next-generation telecom lasers, with the intention of 'supporting its research and development activities'.[387] There were also high-profile takeovers of consumer brands such as Kyriad Hotels, Club Med, Sonia Rikyel, and many vineyards, particularly in and around Bordeaux and Burgundy.[388] Although these investments tended to dominate the media headlines, the majority of the investment was in industrials, with a particular focus on energy, such as the China Investment Corporation taking a large stake in GDF Suez, and automobiles, with significant stakes in PSA. In 2017, Sabart Aero Tech, a specialist in aluminium casing and supplier to the aerospace industry, was purchased, reflecting China's increasing competitiveness in aerospace with the rise of Comac.[389]

Another pertinent example of Chinese investment in France was China's acquisition of access to French shipbuilder STX and its important yards at Saint Nazaire, through its interests in the Italian firm Fincantieri. The acquisition caused a high degree of consternation in Paris. While it cannot be equated to the reaction in Germany regarding the sale of Kuka, which had more of a 'shock effect' and was related to 'future' industries, many of the same concerns came to the fore regarding China and industrial decline, further exemplifying the transition to 'threat perception' in France.

In the early 2010s, STX France encountered financial trouble and needed new investment. The French state sought investment from France in the naval sector, but was unsuccessful,

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[386] Manoir Industries, "Press release: The Yantai Taihai Group acquires an interest in the CTI group's capital," (2016); Philippe Legueltel, "Le chaudronnier CTI, spécialiste des piscines nucléaires, devient chinois," Les Echos (8 April, 2016).

[387] Gide Loyrette Nouel M&A, "Gide advises Canglong Optoelectronic on the acquisition of a French high-tech company," (2016).

[388] Martine Bulard, "Appétit chinois, incurie française," Le Monde Diplomatique (2016).

[389] Le Figaro, "PSA devient officiellement franco-chinois," (18 February, 2014); Carole Bélingard, "Energie, automobile, vins... Quand les Chinois investissent en France," Franceinfo (5 December, 2014); Godement and Vasselier, La Chine à nos portes : une stratégie pour l'Europe, p.71.

leading to Fincantieri's approach to take over the yards in western France in 2015/16.[390] France initially agreed to the proposed takeover in 2016, but at the same time, China's leading shipbuilder, CSSC (China State Shipbuilding Corporation), entered into a partnership with Fincantieri. Fincantieri sought to 'play a strategic role in the development of the Chinese cruise industry', while CSSC gained access to much needed technology and know-how. The agreement entailed the creation of a joint venture in China, at one of CSSC's shipyards, using its facilities but 'on the basis of technological platform licences to the joint venture and the shipyards by Fincantieri'. The press release at the time highlighted that 'in order to ensure the success of the cooperation and [for the joint venture] to benefit from Fincantieri's global experience and expertise…the agreement envisages that Fincantieri will also provide specialised consultancy services [and] supply certain key components'.[391]

What was happening, therefore, was that although CSSC had not bought a global naval leader outright, it was in the process of setting up technological transfer 'pipelines', as evidenced by its partnership with Fincantieri. The Saint-Nazaire yards possessed important knowledge and technology, including a specialised design office comprising 500 engineers and a focus on hull construction. If Fincantieri were to acquire these assets, they could find their way into Chinese hands. In the context of MIC 2025, China was seeking upgrades in naval technology and making inroads into the cruise liner industry, which was one of the major industrial areas where China had little to no presence. As a Senate report observed, China was pursuing a 'strategy of conquering shipbuilding know-how', which included know-how in ocean liner construction, one of the last 'bastions of European industry', with one of the three leading yards in the world being Saint-Nazaire. With large growth potential, especially in China going forward, 'the Chinese government intends to make every effort to capture this growth potential by setting up its own cruise ship construction industry' and thereby supplant the current European leaders. Thus, 'with the objective of catching up, the acquisition of European know-how is its strategic priority', as the construction of such large vessels is highly complex, necessitating highly specific technology and know-how.

China was already boosting innovation 'through massive funding', but its 'takeover of leading companies or partnerships aimed at transferring production…remain the most effective weapons, offering faster and less costly results than R&D programmes lasting

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[390] Capital, "Chantiers de l'Atlantique : le triomphe de l'armada française," (9 September, 2016); Gabriel Vedrenne, "Qui va sauver le joyau industriel STX France ?," Europe 1 (10 November, 2016).

[391] Fincantieri, "Press release: Fincantieri to set up a joint venture in China," (2016).

several decades'. China had already made important strides in small and mid-range boat manufacturing, but 'large and luxury liners are one of the last frontiers…and one of the last segments in which…France retains a real lead'. Therefore, 'if the sale to Fincantieri were to result in a transfer of production or key know-how to China, it would sound the death knell for French shipyards' and 'French industrial policy should not accelerate their penetration'.[392] The deal was ultimately scrapped, with the French state taking a majority stake in the yards. This episode reinforced the perception of China as a rising threat, and highlighted the need for state elites to protect 'strategic assets'.

Causing more consternation in Paris was the fact that Chinese investors were often said to use various holding companies in other jurisdictions, with which their origins could be obfuscated. Luxembourg was one of the principal locations used in Europe, which made it difficult to identify incoming Chinese FDI in France. A significant example of this type of 'hidden' transaction was the purchase of Linxens, a technology firm that specialises in micro-connectors used in RFID (Radio Frequency Identification) technology for transport passes and contactless payment systems. However, the acquisition was made through multiple layers of holding companies, two of which were located in Luxembourg and France. The ultimate beneficial owner was a firm called Ziguang Liansheng, which has, as consulting firm Datenna has pointed out, close connections to the prestigious Tsinghua University and thus to high-ranking state elites in Beijing.[393]

Soon after the acquisition, Linxens announced that it would establish its largest production facility in Tianjin, specifically in the Binhai High Tech Zone, which was set up under the aegis of the CCP and run by the Tsinghua Group. The aim of the zone was to create and lead 'the development trend of high-tech industries through the high concentration of global innovation elements, and the establishment and improvement of international innovation environment and innovation networks'.[394] The acquisition of Linxens and the establishment of key facilities in Binhai aligned with this strategy. The CCP Party Secretary of the zone remarked that 'Linxens' construction of a world-class production facility for smart chip components will provide momentum for the city to become a major technology hub for the

[392] *Sénat de la République française, "Rapport d'information : sur le rachat des Chantiers de l'Atlantique par Fincantieri," (2020).*

[393] *Datenna, "The Acquisition of Linxens," (2019).*

[394] *China Daily, "Tianjin Binhai Hi-Tech Industrial Development Area," (12 February, 2018).*

global chip and cloud sector'.[395] In France, it was claimed that the bulk of decision-making power would remain in France, given the concern voiced at the firm's headquarters outside Paris. However, considering the ambitions of the Chinese operations, and the fact the firm was located in a state-directed incubation cluster, it was more than likely that China would take centre stage for the company in terms of its technological progress.

A last example of obfuscating structures was the acquisition of the French firm All Circuits — involved in the 'connected'/'smart' industry — again via complicated structures that obscured the true beneficial owners. These also turned out to have close ties to Beijing. It was done again through a Luxembourgish firm called IEE, which was owned by a Chinese consortium made up of industrial firms HiWing and SAIC.[396]

To summarise this section, substantial concerns surrounding China's economic rise began to manifest from the middle of the decade onwards, and the threat perception of China heightened substantially, as was the case in Germany. China was catching up, and even leaping ahead in some areas, which became clearer as the decade wore on, leading to commercial relations with China to be seen in a different light, including Chinese investment in France. Thus, not only was France under general competitive pressure from several sides, but now a major new competitor had arrived in China. As we will see in the following section, this led to an acceleration of the industrial 'overhaul' process started in the early 2010s, with more aggressive 'offensive' strategies and increasingly tight 'defensive' measures, where investment screening played a central role, and where China was a key driving factor.

The Balancing Process

France begins to turn on China

The beginning of the French balancing process vis-a-vis China can be traced back to 2015-16, with the 'trigger' being Huawei's actions in France and its involvement with Alcatel, seen in the context of China's rising industrial ambitions. In 2015, French intelligence services mobilised to combat what was now seen as large-scale Chinese industrial espionage. A specific unit, the 'Service de l'information stratégique et de la sécurité

[395] *Quoted in: Datenna, "The Acquisition of Linxens."*

[396] *Christine Berkovicius, "Le fabricant d'électronique All Circuits passe sous pavillon chinois," Les Echos (22 July, 2015).*

économique', or SISSE, consisting of 25 experts from the ministry of the economy in Paris, and a further 22 across the French metropolitan area, was established in collaboration with the ministry of the economy. Huawei's operations and investments in France appear to have been central to its creation.

At the end of 2015/early 2016, a secret operation, referred to internally as *Cerbère*, was launched and spearheaded by the newly created SISSE, with the aim of launching a counter-espionage offensive against Huawei. The main concern was Huawei's potential use of its infrastructure in France for espionage purposes, including obtaining sensitive data. While this related to espionage of the French political apparatus, the bulk of the concern was around industrial espionage efforts, with several 'vulnerable' companies investigated as part of the operation. For instance, as Peugeot had entered into a commercial partnership with Huawei, there was concern that know-how from Peugeot could be stolen. A cloud partnership between Orange and the Chinese firm also generated concern, along with the use of Huawei phones at the energy company EDF.[397]

According to a confidential document from the *Cerbère* project, Huawei had constructed and implemented a sophisticated system of industrial intelligence gathering with the goal of 'penetrating the French ecosystem with a priority given to the world of research and R&D'.[398] SISSE claimed that Huawei was engaged in a global battle with South Korean and American competitors and sought to use French telecoms know-how and technology to help the firm succeed in this global market share battle. One of the firm's principal strategies was to establish 'unequal' partnerships with smaller telecom firms and research institutes across France, pressuring them for access and rights to research outcomes. One example said to have come to the attention of Paris was a collaboration between Huawei and Institut Mines-Telecom Atlantique, whereby Huawei would give EUR 80,000 to the institute, in return for all of the intellectual property rights involved in a research project concerning high speed fibre. The team of researchers would not have the right to work with Huawei's competitors for up to 8 months after the conclusion of the project.[399]

[397] *Antoine Izambard and David Bensoussan, "Comment la France surveille de très près le géant chinois des télécoms Huawei," Challenges (27 June, 2018).*

[398] *Ibid.*

[399] *Ibid.*

The CEA (Commissariat à l'énergie atomique), the French atomic energy agency, which produces nuclear research, was another entity of utmost concern for French state elites. Two contracts were signed with Huawei, related to energy economics and solar-powered mobile phones, with Huawei offering considerably above-market rates for these types of projects. Paris was concerned that Huawei was attempting to get close to the agency and potentially extract technology useful for China. Regarding Huawei, an intelligence insider noted that 'never has a foreign company been so closely monitored', with a host of other ministries and agencies subsequently also brought in to deal with the issue, including the prime minister's office, the French cybersecurity agency and the main French intelligence bodies.[400]

At this stage, it was clear that the issue of an industrial threat from China was known across all state elite levels in France. The direction of travel was towards significantly more confrontation, especially when it came to Chinese economic dealings in France itself, with all of its investments coming under scrutiny. Huawei was subsequently excluded from France's network router upgrades, and worries began to rise around existing Chinese investments. The French state subsequently did not want China to take a larger share in Accor hotels, nor in the Compagnie des Alpes. It also did not sell its remaining share in the Toulouse airport to Chinese investors, preventing them from reaching a controlling stake.[401] State elites increasingly discussed further enhancing the investment screening mechanism, to have better control of inward Chinese investment.

The first step in this regard, following the Kuka takeover in Germany which did not go unnoticed in Paris, was taken in 2017 when France introduced the concept of a European screening mechanism, with the aim of creating a 'European CFIUS' — in reference to the US agency tasked with policing foreign investment.[402] The new government under Emmanuel Macron led the charge in this direction, with the target being China. There were references to the need for 'fair competition' throughout the launch of the initiative. Macron

[400] *Ibid.; Antoine Izambard, "Don de 700.000 euros, contrats en or... Comment Huawei dragues la recherche française," ibid.(5 February, 2020).*

[401] *Antoine Izambard, "DGSI, DGSE, Bercy... Comment l'État surveille les investissements chinois," Challenges (24 March, 2018); Bruna Basini, "Comment la France surveille les investissements chinois," Le Journal du Dimanche (29 October, 2017).*

[402] *Les Echos, "M & A : l'Europe tentée par le protectionnisme," (13 March, 2017); Antoine Izambard, "Pourquoi Macron et Juncker déclarent la guerre aux investissements chinois," Challenges (14 September, 2017).*

himself asserted that 'fair competition must be ensured not only between European companies but also and above all between them and their competitors outside the Union'.[403]

Similar to Germany, two important interrelated elements emerged as part of the 'balancing' process, which Macron also mentioned. Firstly, there was the need 'to protect our strategic industries', which meant preventing Chinese access to French/European technology, thus directly aiming to slow down China's rapid industrial ascent. Secondly, there was the notion of the 'level playing field', which was also mentioned as part of the investment screening initiative.

The sense of 'unfair competition' was further accentuated by the fact that France's trade deficit with China continued to grow to very large proportions, indicating a decreasing competitiveness gap.[404] By late 2017 and going into 2018, there was an increasingly loud insistence on 'reciprocity' and 'balanced cooperation' with China. Jean-Yves Le Drian, the foreign minister of the time, argued that it was necessary for France to 'defend a rebalancing of trade relations'. The Chinese market, he stated, was still largely closed, and it was difficult for French businesses to enter and grow in China, given the protectionist policies pursued by Beijing. The French trade deficit with China was seen as a major 'structural issue' that justified 'rebalancing from above'.

Part of this issue was reflected in the calls for reciprocity, whereby French firms should be able to make more inroads in China, aided by increased support from the French state. The 'highest levels' needed to become involved, even in areas where France was successful vis-à-vis China, such as in aerospace and luxury goods, which faced a host of administrative hurdles in their exports to China, which needed to be addressed.[405]

Thus, as was the case in Germany, the fact that the Chinese economy had been a developmental economy in a 'catch-up' process, still considerably behind technological leaders such as France, meant that its 'protectionism' was not seen as much of an issue.

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[403] Élysée, "Initiative pour l'Europe - Discours d'Emmanuel Macron pour une Europe souveraine, unie, démocratique," (2017).

[404] World Bank, "France trade balance, exports and imports by country 2017," World Integrated Trade Solution (2017).

[405] Antoine Izambard, "Exportations, écologie... Pourquoi la Chine est devenue la priorité de Le Drian," Challenges (5 February, 2018). See also: André Loesekrug-Pietri, "Il est grand temps pour un « New Deal » avec la Chine," Les Echos (15 January, 2018); Emmanuel Macron, "Déclaration de M. Emmanuel Macron, Président de la République, sur les relations franco-chinoises, à Xian le 8 janvier 2018.," Vie Publique (2018).

However, as China became subtantially more competitive, it rapidly became one. China should not be able to continue playing with the advantage of a handicap, given the rapidly shrinking competitiveness gap. Meanwhile, despite China's protectionism, its businesses were able to invest freely in Europe, a situation that was no longer deemed fair.

These notions were vividly presented by an Alstom Transport executive in testimony for a parliamentary commission, tasked with examining the 'means likely to protect our national industrial flagships in a global context'. The executive observed that 'although innovation is indispensable, it is not the solution that will resolve all problems', as there was clearly 'distortion of competition' globally, and especially in China. One had to 'call a cat a cat' and realise French businesses and Chinese businesses were not participating in this global competition with 'equal weapons'. The situation was akin to 'two gladiators', except that 'one has a shield and a sword, while the other only has a sword'. Around '15 or 20 years ago', this disadvantage did not matter much for the French, because 'their sword was two times as long as that of the Chinese'. French business could still manage, given that the gap in technology and know-how was still very large. Now, however, France 'had lost this advantage' and at the same time, the 'adversary continues to carry a shield' along with a much longer sword.[406]

This reaffirms the idea that although China was previously using a plethora of 'developmental' measures to upgrade its industry, it was not a problem for France, as China did not pose a threat to its position at the technological frontier. But now, with China's catch-up evident, these measures came under much more scrutiny. Moreover, as France had enjoyed a major lead in its principal industries, 'defensive' strategies had not been needed. Certainly, to continue along the lines of the metaphor, France needed to continue 'sharpening' its sword by fostering industrial upgrading, but there had been no need for a 'shield'. Now, though, as competition with China was intensifying rapidly, France also needed a 'shield' and could not just rely on 'offensive' weapons, as part of a balancing process against a rising economic rival.

Throughout 2018, concern around Chinese investment in France continued to swell — the issues related to STX for example — with Le Maire declaring that some of the Chinese

[406] *Assemblée Nationale, "Compte rendu : Commission d'enquête chargée d'examiner les décisions de l'État en matière de politique industrielle, au regard des fusions d'entreprises intervenues récemment, notamment dans les cas d'Alstom, d'Alcatel et de STX," (2017): pp.20-1.*

investment simply amounted to ‘pillage of the French economy’. Le Maire announced he was ‘refusing’ many Chinese investments in France, using the tools provided by the Montebourg decree. The Chinese, he stated, ‘only understand power’, thereby implying that France needed to start pushing back against Chinese ‘incursions’. However, as in Germany during this period, he lamented that the tools he had at his disposal were insufficient to deal with the threat, and that the toolbox provided by the Montebourg decree needed to be expanded. In other words, France’s ‘shield’ needed to be strengthened. The Montebourg mechanism had to be reinforced to include ‘strategic industries’ deemed important for France’s future competitiveness.

There needed to be a rebalancing of the relationship with China, which, as Le Maire declared, meant having more access to Chinese markets, while not ‘having our technologies plundered and being able to set limits when they come to France’. Once again, the notion of ‘reciprocity’ came to the forefront in discussions surrounding China. Le Maire asserted France had no intention of becoming a ‘vassal’ of China, so ‘looters’ would not be welcome in France, and it would ‘use the means to protect itself against investors who would only come to plunder our technologies’. He also noted that Macron had spoken to Xi Jinping on these matters, stating that ‘you have your strategic interests, but we the French as well’, a clear indication of a rebalancing process underway, with China’s development efforts clashing with France’s own interests.[407]

The ministry of the economy subsequently announced an enlargement of France’s investment control regime to include more high-technology areas that were ‘strategic’ for France and thus needed to be ‘shielded’.[408] China was specifically mentioned by the ministry of the economy in reports to the press announcing the expansion of the investment screening mechanism: ‘French companies are increasingly attracting foreign capital, particularly Chinese, and it is therefore important to protect them’. Moreover, ‘foreign powers cannot come and simply help themselves’ to French technology, so there was a need

[407] *Challenges, "Le Maire fustige "le pillage de technologies" chinois et refuse des investissements," (9 January, 2018). Europe 1, "Opposé au "pillage", Le Maire dit refuser "beaucoup" d'investissements chinois," (9 January, 2018); L'Express, "Investissements chinois: comment la France fait le tri," (10 January, 2018); BFM Business, "En voyage en Chine, Le Maire évoque le "pillage" du savoir-faire français," (9 January, 2018); Antoine Izambard, "Comment Le Maire veut protéger les entreprises françaises face à la Chine," Challenges (12 April, 2018).*

[408] *Pascal Dupeyrat, "Protection des fleurons industriels : la France emboite le pas des USA," Les Echos (20 February, 2018).*

to ‘protect us…and protect our sovereignty’. It was imperative that France controlled its technologies, as without control it would not be ‘in charge of their rules and their limits’.[409]

The prime minister declared, ‘we want our factories, our technologies, our headquarters, our decision-making centres and R&D centres to flourish in France and to be anchored there’. To achieve this, it was necessary to ‘strengthen our system for monitoring and protecting strategic companies’ to better protect the productive forces of the country.[410] As another state elite put it, it was time for France to ‘stop being naïve’ and realise that the ‘economic world is a vast theatre of operations’, akin to a ‘battlefield’, and to open ‘our eyes’ to the reality that ‘we have interests to defend’. Therefore, while ‘we have interests that may be convergent with our Chinese friends’ it was becoming clear that the ‘win-win’ situation was starting to break, as ‘win-win does not mean that one side wins twice’.[411]

France’s balancing efforts accelerate

By late 2018/early-2019 momentum began to gather significantly behind France’s balancing process. Le Maire further expounded on the need to economically confront China, lamenting how quickly Europe’s fortunes had changed vis-à-vis China in the last forty years. Going back forty years, ‘China was a country impoverished by 30 years of Maoism’ and was only just beginning its economic opening. Europe, by contrast, had it all, ‘constantly expanding, consolidating and enriching itself’. Fast forward to the latter 2010s, and it had all changed: China was ‘increasingly asserting its power at an absolutely astonishing speed’. Le Maire mentioned a point made by Xi Xinping on a visit to Paris in 2018, where he proclaimed: ‘ladies and gentlemen of the West, realise that we have managed to build in 40 years what it took you three centuries to achieve’.[412]

In order to resist China’s rise and compete, Le Maire even went so far as to suggest the need for the construction of a European ‘empire’ based on ‘technological sovereignty’. Without it, there would be serious damage to ‘political sovereignty’. He cited the example of the car

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[409] *Quoted in: Izambard, "Comment Le Maire veut protéger les entreprises françaises face à la Chine."*

[410] *Gouvernement de la République française, "Discours du Premier ministre à l'Usine L’Oréal Lassigny," (2018).*

[411] *Jean-Baptiste Lemoyne, "Interview de M. Jean-Baptiste Lemoyne, secrétaire d'Etat auprès du ministre de l'Europe et des affaires étrangères, avec Public Sénat le 10 janvier 2018, sur les relations économiques avec la Chine, le commerce extérieur, le conflit syrien, la question migratoire et sur l'élection présidentielle au Liberia," Vie Publique (2018).*

[412] *Bruno Le Maire, "Déclaration de M. Bruno Le Maire, ministre de l'économie et des finances, sur l'avenir de l'Europe face à la concurrence sino-américaine, à Paris le 10 avril 2019," ibid.(2019).*

industry, which, as we have seen in the German case, is undergoing fundamental structural changes. In the future, cars will have autonomous driving systems and be powered by electric batteries. If France does not master these two central facets of the car industry of the future, then it will fall to the back of global value chains in this industry. The body of the car may still look good when produced by European automakers, but 'the value is not in the bodywork'. The actual value of the car will be lost to other manufacturers, such as China, who possess the competences in artificial intelligence and battery manufacturing.[413]

According to Le Maire, a 'technological empire' was required, which essentially involved an offensive and defensive overhaul strategy. France should focus on innovation to stabilise and recover its position at the technological frontier while also being 'able to protect our technologies'. He mentioned that 'what happened with the robot manufacturer Kuka in Germany, which was bought by China a few years ago, should be a lesson to us'. France should not let go of its technologies, fall down the global value chain and become a 'production workshop for the rest of the world', where value creation is lost overseas, resulting in economic 'vassalisation'. Intellectual capital had to remain in France, protected and nurtured, as the only way to remain sovereign and independent. For state elites, it was not 'our vocation to finance inventions and technologies and then hand them over to our economic rivals'. Le Maire further summed up the move towards increased state economic activism, illustrating that 'we are participating in a global technology race, where no holds are barred when it comes to developing innovations that will bring growth in the future'. Therefore, France must put in place a 'shield' to protect its technologies and innovations in the global race, along with increased state involvement in providing 'massive financing' and 'building bridges' between research and industry. The state should also make 'good decisions' in choosing the right markets/technologies that will lead to higher growth. 'Innovation is not free', involving billions in investment and 'years of work', which 'cannot simply be left to be spied away or stolen'.[414]

Facing declining competitiveness and the aggressive technological ambitions of China, it became imperative for France to mobilise its resources in order to reclaim its position at the top of global value chains, and begin building its 'technological empire'. To this end, France launched the PACTE initiative in late 2018/early 2019, which brought together the various

[413] *Ibid.*

[414] *Ibid.*

competitiveness-related policy trends of the previous years, similar to Germany's new industrial strategy. The initiative included new 'offensive' measures, as well as an expansion of 'defensive' tools, among which investment screening played a key role, and where major changes occurred throughout 2019.

First to the offensive measures, which are important to understand, as they also inform the nature of defensive actions taken. They included a new emphasis on technological upgrading to support the other competitiveness enhancing measures described in the PACTE programme, such as improved financing, less regulation and lower taxes.[415] France should be reconstituted as a 'technological breakthrough' economy, as over the previous 15 years France had seen 'a steady decline in its position in the global hierarchy'.[416] Similar to the German strategy, the French vision for renewed technological involved two broad approaches. The first was building general-purpose technologies and diffusing them throughout French industry to increase productivity generally. The second approach involved much more targeted measures aimed at specific industries, where France could build sustainable competitive advantages.

The general-purpose technologies focused on 'robotics and co-robotics', with a trend towards 'customised solutions with higher value added', with the integration of 'intelligent equipment' which could 'support the transformation of the production base of French companies'. The industrial Internet of Things was also deemed central, at 'the heart of the digital transformation of industry', and could lead to 'operational excellence' for French firms, with 'opportunities in all industrial sectors' of the French economy, such as in manufacturing, logistics, oil and gas and health.

AI was seen as crucial, with 'machine learning, natural language processing and multi-agent systems' able to be 'applied in a wide range of ways' that 'impact the value chains in many sectors'. AI was considered a 'cross-cutting technology', with impacts across autonomous driving, medical imaging, disease detection, visual recognition and cyber security. Mastery

[415] *Gouvernement de la République française, "PACTE: Le Plan d'Action pour la Croissance et la Transformation des Entreprises," (2019). Anne De Guigné, "Un pacte productif pour lutter contre le déclassement industriel de la France," Le Figaro (2019); Bruno Le Maire, "Pacte Productif: Discours de Bruno Le Maire, ministre de l'Économie et des Finances. Bercy - Mardi 15 octobre 2019," Vie Publique (2019).*

[416] *Gouvernement de la République française, "Faire de la France une économie de rupture technologique," (2020): p.5.*

of these technologies was ‘imperative’ for French companies in order to ‘move up in quality’.

With these ‘foundational’ technologies mastered, France should also focus on establishing leadership in key industries, building on existing competitive advantages, such as in energy provision, specifically in new energy sources and production, such as hydrogen-based cars and fuel-cells, solar cells, offshore wind power, energy-efficient building, recycling, and batteries for electric cars. Quantum technology was also seen as a leadership area for France, including quantum sensors, cryptography and quantum computing, with France ‘having several assets to become a serious industrial competitor in quantum technologies’. Cybersecurity too was central: France had ‘a rich scientific and industrial fabric’ in the area, enabling it to move into a global leadership position through further enhancement of its competences. The goal was to master the foundational technologies related to the fourth industrial revolution as a base to build on existing competences and become a leader in key industries.[417]

It should be noted that these offensive measures were not targeted solely at China; they were a broad effort to re-establish France’s competitiveness through the use of new technologies. In Germany, by contrast, the connection to China was considerably more direct, because China’s upgrading efforts directly challenged Germany’s leadership in major areas of industrial production. France, on the other hand, was already lagging in its industrial competitiveness, and the emphasis was broader, including the necessity of ‘catch-up’ growth itself, which was accelerated considerably by the rise of China. Although other ‘rivals’ were consistently mentioned in France’s offensive policy strategies, there was however an increasing shift towards focusing on China, as seen in the emerging technologies report. The report specifically mentioned the MIC 2025 plan, stating that China ‘aims to position itself as leader in 10 key industries’, whereby it is ‘massively supporting its industry and new technology’ and thus ‘raising issues of sovereignty for certain French industries’, such as in ‘microelectronics or artificial intelligence’.[418]

While the ‘offensive’ policy initiatives can be seen as a step-up of the measures taken in the early 2010s, aimed broadly at France’s competitiveness, the increasingly tight defensive measures were directly connected to China and its newly expansionist behaviour in France.

[417] *Ibid., pp.26-54.*

[418] *Ibid., p.18.*

Thus, to complement the new offensive measures, there was a further expansion of the 'shield' to protect France's upgrading efforts. During the launch of the PACTE initiative, major changes were made to the investment control regime. The Montebourg decree saw its first major extension, coming into force at the beginning of 2019 and substantially extending the applicable sectors for screening. As highlighted by the ministry of the economy at the beginning of 2018, it was critical for France to introduce more 'strategic' sectors and 'technologies of the future' into the screening remit in order to better defend the national interest, understood here in terms of ensuring and fostering French economic competitive advantage. The new sectors included cybersecurity, artificial intelligence, robotics, additive manufacturing as well as semi-conductors, among the core areas where state elites see the need for competitiveness, as specified above.[419]

Moreover, the regulation applies to organisations engaged in research and development in these areas, not just in their commercialisation, enlarging the scope for intervention even further. This enlargement of the sectors liable to screening was intended to bring French regulation in line with the European regulation, set to be adopted a few months later, and which was 'strongly supported' by France.[420]

The 'PACTE law', passed in May 2019, strengthened the role and power of the ministry of the economy in cases where investments are made in 'sensitive' areas without prior authorisation. The ministry was given the power to issue severe financial penalties, going up to twice the amount of the illegal investment or 10% of the turnover of the company sought for acquisition, whichever is higher. Furthermore, the law gave even more discretion to the ministry of the economy, stating that 'the Minister responsible for the economy may also, if the protection of the national interests…is compromised or is likely to be compromised, take any precautionary measures that appear necessary'. This could mean suspension of the voting rights attached to the shares acquired by the investor, the prohibition of dividend payments attached to the shares, and/or the appointment of an 'agent' of the French state 'responsible for ensuring the national interests within the

[419] *Ministère de l'Économie et des Finances, "Décret n° 2018-1057 du 29 novembre 2018 relatif aux investissements étrangers soumis à autorisation préalable," (2018).*

[420] *Ministère de l'Économie et des Finances, "Communiqué de presse : la France renforce son dispositif de contrôle des investissements étrangers dans les entreprises sensibles," (2019).*

company'. This person would have the right to veto any decision taken by the company that could conflict with French national interests, while also being paid by the infracting party.[421]

Another decree as part of the PACTE initiative aimed at increasing 'strategic' defence was issued in March 2019. Although it was not directly related to investment screening, it was about strengthening French 'economic security', with implications for investment screening. The aim was to assure the 'defence and the promotion of the economic, industrial and scientific interests of the nation, particularly the material and immaterial assets of strategic importance for the French economy'.[422] The decree formalised the economic security concept and further operationalised it under the Commissaire à l'information stratégique et à la sécurité économiques (CISSE), who would steer the policy. The decree also widened SISSE's remit, updated its missions, and stipulated it would operate under the CISSE Commissioner. Three central roles were defined for the service: gathering strategic information, ensuring economic security as well as the promotion of the 'economic, industrial and scientific' interests of the nation.

In regard to strategic information, SISSE was tasked with identifying key areas of the French economy, meaning industries and technologies, that were in the 'economic, industrial and scientific interests of the nation' and subsequently reporting this information to various concerned ministries, primarily the ministry of the economy. It should gather intelligence on potential threats, be they 'persons, entities or any form of regulation' that could impact French economic interests.[423]

In addition, SISSE was tasked with the 'detection and identification of foreign investment transactions' that potentially fall under the purview of the updated investment screening law, both before and after the transactions had taken place, in order to detect and prevent investments where the authorisation of the ministry of the economy had not been sought. SISSE should also take on a monitoring role to ensure the smooth operation of the screening process, and that the parties concerned were abiding by screening regulation, such as waiting

[421] *Gouvernement de la République française, "LOI n° 2019-486 du 22 mai 2019 relative à la croissance et la transformation des entreprises," (2019). See in addition: Pascal Bine, "Le contrôle des investissements étrangers après la loi Pacte," Skadden Marché et Analyse (2019); Xavier Delpech, "Loi PACTE : renforcement du contrôle des investissements étrangers en France," Dalloz actualité (2019).*

[422] *Ministère de l'Économie et des Finances, "Décret n° 2019-206 du 20 mars 2019 relatif à la gouvernance de la politique de sécurité économique," (2019).*

[423] *Ibid., Article III.*

for the full results of the authorisation procedure. Furthermore, 'watch posts' were set up across the country to monitor potential foreign investment incursions.[424]

Besides its screening and monitoring function, SISSE should identify further strategies that could facilitate furthering France's scientific/technological potential, but also work on disseminating 'strategic information useful to economic actors in the context of their international development'. While the precise meaning of the latter remains unclear, it is likely to involve providing information on certain technologies, new markets and competitors to help French industries compete more effectively globally, as well as making French economic actors increasingly 'aware of the challenges of economic security', i.e. pushing French firms to ensure know-how and technology does not fall into competitor's hands.[425] In essence, France has embarked on creation of a fully-fledged economic intelligence service that would play a leading role in investment screening. This underscores the seriousness with which French state elites view rising economic threats, and the need to strengthen defences. While Germany also implemented stringent investment screening mechanisms during the same period, it did not establish a new economic security agency to accompany it, suggesting that the threat perception in France is even higher than in Germany.

Like in Germany, France also had concerns about the tech start-up scene, with the fear that a lot of fledgling, potential future '*fleurons'* could be captured by Chinese interests. To address the issue, Bpifrance, the state-directed development bank, launched the 'French Tech Sovereignty' programme, to provide risk capital to start-ups operating in France that have the potential to be leaders in future technologies and therefore are 'in the sovereign interests of France'.[426] In previous years, several French start-ups, especially in the Fintech space, saw large Chinese investment, such as Tencent's positions in Lydia and Qonto. This raised concern around the 'late-stage' financing of these firms, deemed lacking in France,

[424] *Ibid.*

[425] *On this increased focus on 'economic security', see also: Dupeyrat, Sécurité économique et souverainetés industrielles, pp.140-41; Joffrey Célestin-Urbain, "La politique de sécurité économique de l'État," Constructif 58, no. 1 (2021).*

[426] *Gouvernement de la République française, "Plan de soutien aux entreprises technologiques," (2020); Thibault Madelin and Sharon Wajsbrot, "Bpifrance veut s'armer pour défendre le capital de fleurons nationaux," Les Echos (23 September, 2018).*

thereby leaving the door open to capital from China.[427] To prevent this, a new fund was created to provide French capital to tech start-ups and their technological assets, which could become crucial drivers of economic growth in the years ahead. By keeping the start-ups in France the competitiveness of the French economy could be better safeguarded. While not a formal regulatory barrier or screen put in front of foreign investment, the idea here was that the state itself becomes the investor, so as to outmuscle potential predatory foreign rivals.

In the latter part of 2019, investment screening measures were tightened even further, with the introduction of a new decree and new order. The new decree expanded the scope of the screening to 'any entity governed by foreign law', foreign nationals, as well as French nationals domiciled abroad.[428] Moreover, it applied to the entire chain of control of an entity, meaning that a French company with Chinese controlling interests would need to be screened if buying another French company. All parties within a given chain of control were now considered investors by the French state in the context of screening. In terms of the 'target' companies, screening could be conducted for acquisitions of an entity under French law or branches of foreign entities operating in France under French law. The screening threshold was also lowered from 33 to 25% control of a company.

The new order added two new technological areas to the screening procedure, 'quantum technology' and 'energy storage', once again key areas where France was seeking its own competitive advantage. Additionally, significantly more information on the identity of the investors also needed to be provided for the screening process to begin, without the acquisition being nullified. All shareholders with more than a 5% stake needed to be named, and 'any capital link or significant financial support from a State or a public body outside of the European Union over the last 5 years' needed to be mentioned, which would have implications for many Chinese investors.[429]

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[427] *Édouard Lederer, Romain Gueugneau, and Frédéric Schaeffer, "Le chinois Tencent poursuit son incursion dans la fintech française," ibid.(21 January, 2020); Juliette Raynal, "Pourquoi le géant chinois Tencent parie sur Lydia, la plus célèbre des Fintech françaises," La Tribune (17 January, 2020).*

[428] *Ministère de l'Économie et des Finances, "Décret n° 2019-1590 du 31 décembre 2019 relatif aux investissements étrangers en France," (2019).*

[429] *Ministère de l'Économie et des Finances, "Arrêté du 31 décembre 2019 relatif aux investissements étrangers en France," (2019).*

With the onset of the global pandemic, more measures were introduced, with a new order implemented at the height of the pandemic in April of 2020.[430] Biotechnology was included in the list of sectors of heightened control, unsurprisingly as the pandemic highlighted the importance of having a competitive pharmaceutical and medical research sector. Activities deemed 'essential to public health' were already protected under the existing mechanism, but 'French health is sometimes more distant and more prospective'. [431] Additionally, the threshold in terms of potential ownership and necessity for screening was lowered even further, from 25% to 10%. The French government's line of reasoning was that the pandemic had caused significant economic turmoil, making French companies financially weaker than usual and thus vulnerable to predatory foreign participation. Therefore, even more vigilance was needed, with smaller investments also needing to be reviewed. Unsurprisingly, given the tendency towards ever increased tightening, the 'temporary' measure of lowering the threshold was kept in place, and remains in effect in 2023.[432]

In 2021, the list of sectors subject to heightened control was extended once again, with the inclusion of renewable energy.[433] Given the rising threat perception around the French renewable industry, as highlighted previously, its inclusion was also to be expected. Although a lot of the damage had already been done by strong Chinese competition, France still held an advantage in some niche areas of solar production and wanted to make a renewed push to reinvigorate its renewable sector. To this end, France needed to ensure its ecosystem of renewable firms grew without being subsumed by larger Chinese competitors, in reference to the 'growing challenges in the renewable energy sector'.[434]

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[430] *Ministère de l'Économie et des Finances, "Arrêté du 27 avril 2020 relatif aux investissements étrangers en France," (2020); Guillaume De Caligon, "Coronavirus : la France va renforcer le contrôle des investissements étrangers," Les Echos (29 April, 2020).*

[431] *Ministère de l'Économie et des Finances, "Communiqué de presse : Covid-19 | Adaptation du contrôle des investissements étrangers en France (IEF) pendant la crise sanitaire," (2020).*

[432] *Ministère de l'Économie et des Finances, "Communiqué de presse : prorogation jusqu'au 31 décembre 2021 des mesures d'adaptation du contrôle des investissements étrangers en France pendant la crise sanitaire," (2020); Ministère de l'Économie et des Finances, "Communiqué de presse : Bruno Le Maire et Franck Riester annoncent la prolongation d'un an de l'abaissement exceptionnel du seuil de contrôle des investissements étrangers en France de 25 à 10%," (2021); Ministère de l'Économie et des Finances, "Communiqué de presse : prorogation en 2023 de la mesure d'abaissement temporaire du seuil déclenchant le contrôle IEF dans les sociétés françaises cotées sur un marché réglementé," (2022).*

[433] *Ministère de l'Économie et des Finances, "Arrêté du 10 septembre 2021 relatif aux investissements étrangers en France," (2021).*

[434] *Ministère de l'Économie et des Finances, "Communiqué de presse : les activités de R&D portant sur les technologies de production d'ENR sont désormais éligibles au contrôle IEF," (2021).*

The addition of renewable energy brought the total number of 'critical' industries and technologies to 9, which is fewer than in the case of Germany, but also less specific, meaning likely more discretion for the ministry of the economy. Nevertheless, the areas in need of shielding also neatly overlap with the core areas French state elites have defined as imperative for France's future economic competitiveness.

France, then, faced with rising fears around industrial decline, and a rapid increase in the threat perception of China, engaged in a multifaceted balancing process, aimed at protecting and re-establishing French competitive advantages, particularly versus China. This process encompassed both offensive and defensive tools, with investment control/screening playing an especially important role in the latter, in terms of restricting access for China to French technology and know-how. In terms of offensive measures, France launched a new, more assertive strategy aimed at mastering the 'foundational' elements for the fourth industrial revolution, as a way to reinvigorate French industrial production, and using these foundations to build leadership in a host of industries, where France was already seen to have competitive advantages, such as energy. However, with China seeking competence and domination in similar areas, and having already encroached on 'traditional' areas of French strength, offensive measures needed to be complemented by defensive measures, explaining the rising importance attached to investment screening in Paris. As Le Maire made clear, the economic role of the French state, faced with a situation of rising global competition, was to ensure the 'development of new industrial sectors' — hence increased 'offence' — and 'protection', especially against 'plundering investments'.[435]

Summary

Similar to Germany, France's economic relationship with China was characterised by positives throughout the early 2000s and into the 2010s — the focus was almost exclusively on the opportunities presented by China's rapid growth for French business. China was not considered a direct rival, still lagging considerably behind France in terms of technological potential and dominance in major industries. In the wake of the Great Recession, however, and the following Eurozone crisis, France found itself increasingly in a state of economic fragility, with state elites worried about the decline of French industry, its waning global

[435] *Bruno Le Maire, "Déclaration de M. Bruno Le Maire, ministre de l'économie, des finances et de la relance, sur le rôle de l'État dans la protection du patrimoine industriel, au Sénat le 25 mars 2021.," Vie Publique (2021).*

competitive advantages and shrinking global market shares. There were signs of France having entered a decline phase in economic growth.

An industrial overhaul process was launched to stem the decline, resulting in an array of innovation-enhancing initiatives, including increased R&D spending and general investment in the country, university reform, and, most importantly, a state-directed focus on the fourth industrial revolution, to revive French fortunes. As part of this overhaul process, an investment screening mechanism was implemented in 2014, known as the 'Montebourg decree', to better 'protect' France's industry and halt the perceived decline. However, the mechanism was still fairly limited, concentrating only on certain sectors, and was not related to rising Chinese competition, which had not yet become a major factor.

Starting in 2015, this began to change as China started to become a central consideration in French state manager calculations. It became increasingly obvious that China had made large competitive strides and gained major ground in important French industries, such as transportation, nuclear, aerospace, utility management, naval construction and telecoms, and also in Africa, which was traditionally in France's sphere of influence. The threat perception of China began to rise markedly in France, among business leaders and state elites, accentuated by a large rise in Chinese activity and investment in France in the 2015/16 period, heightening French concerns, especially the actions of Huawei and its alleged programme of industrial espionage.

France found itself in a situation whereby it was already questioning its industrial prowess, lamenting the decline of large parts of its industrial base, and then an ever more industrially assertive China emerged, injecting even more alarm into French state elite thinking. As France was already on the defensive, given its weakened economy going into the 2010s, it did not take much for a shift on China to occur: going from opportunity to threat, with a need to balance, in short order. As we saw, the likely trigger for the shift and the move towards increasingly 'balancing' China came with the French intelligence revelations surrounding Huawei's activities in France, which appear to have struck right at the heart of the state apparatus, sending off alarms across all levels of state elites.

Subsequently, measures were taken to curb China's ambitions and reassert France's position, with investment control/screening forming an integral part. France was the initiator of the European project for investment screening, even aiming to create a 'European CFIUS' to better contain Chinese industrial expansionism, all the while calling for more

‘reciprocity’ and a ‘level playing field’ as well. Chinese investment in France came to be seen as ‘pillage’, and the balancing efforts accelerated: a major new industrial renewal effort with new offensive measures was launched in the face of rising technological competition with China, which sought to be much more ‘active’ compared to the efforts in the early 2010s. The stakes rose for French state elites: France needed to be successful in mastering new technologies, otherwise it could lose its competitive position permanently and become a ‘vassal’ to China, as Le Maire put it. And as part of this effort, new defensive tools needed to be added to the state’s arsenal, chiefly investment screening, especially with regard to investment in ‘strategic’ industries related to the fourth industrial revolution, central to France’s future competitiveness.

Chapter VI
The European Union

In tandem with the rising concern regarding Chinese FDI in both Germany and France, the issue also gained prominence at the supranational level with the introduction of the EU-wide investment screening mechanism in 2019. This chapter is also split into three parts. Firstly, the context leading up to the period of tightening restrictions is briefly illustrated. Secondly, the shift towards the implementation of screening measures in Brussels is examined, drawing the connections with what occurred in Paris and Berlin. Thirdly, to provide further insight into the European stance on investment screening, a series of smaller case studies are presented. These highlight the divergences evident across Europe on the issue, thereby shedding more light on the process leading to the screening mechanism, as well as on what the policy direction on the issue is likely to be.

The Context

China was an opportunity needing to be seized

As revealed in the Commission's position papers on China in the 1990s and 2000s, the focus in Brussels was initially on the economic opportunities brought about by the growth of China's economy. China was deemed important for European competitiveness, not due to it potentially posing a threat, but because it represented such a vast business opportunity. Failure to seize the initiative could have negative repercussions in terms of Europe's competitiveness versus the US and Japan. For instance, it was lamented that European investment in China was still lacking, representing a potential relative shortcoming compared with more 'active' rivals, again mirroring the idea that China did not represent an important economic 'actor' in its own right, but rather more a 'battlefield' on which economic war was fought among the major economic powers. Europe was considered to be at risk of 'losing opportunities' and thus needed to act and 'explore the possible openings in China with as much energy as our main rivals'. Therefore, the EU should engage increasingly with China and support its economic development, as it had 'much to offer to help China in its difficult process of transition'. The Commission initiated a range of cooperation initiatives and championed China's accession to the WTO, which was

considered to be fully in line with the EU's economic interests.[436] This also led to the push in Brussels to establish a 'comprehensive partnership', with the emphasis on 'integrating China further in the world economy'. Development assistance was sent to China and trade barriers to Chinese exporters were dismantled. Europe and China had become major partners in 'a world increasingly bound together by the forces of globalisation'.[437]

The Chinese economy's importance was even framed as integral to the EU's future economic security, as securing access to such a large growing market was considered vital to Europe's future long-term economic wellbeing.[438] As discussed in the preceding three chapters, the economies of Europe and China were seen as broadly complementary — China could concentrate on lower value-added, labour-intensive exports to the EU, while the EU would focus on high-technology goods, which continued to be needed in China during its investment-led boom. At the turn of the millennium, Europe's embrace of China was in full evidence.[439] China was on a strong growth trajectory and the potential to tap into its rapid ascent was firmly in the interest of European business, with a plethora of business opportunities opening up as a result of welcoming China into the liberal world economic system.[440]

Similar to Germany and France, Brussels viewed Europe and China as 'synergistic' economies that complement each other. China could continue on the path of capitalist development by gaining access to European markets and technology, while Europe could gain access to a much-needed demand source and keep its technological edge. Again, it was framed as a 'win-win', and there was an eagerness from the European side to keep economic relations as liberal as possible.[441] As a result, China became an important market for any international European business.

By the mid-2000s, the relationship between the EU and China was even often referred to as a love affair, given the increasingly strong commercial ties driven by the EU's principal

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[436] European Commission, "COM(95) 279: Long-term policy for China-Europe relations " (1995): pp.3-5. See also: European Commission, "COM(94) 314: Towards a new Asian Strategy."

[437] European Commission, "COM(98) 181: Building a Comprehensive Partnership with China," p.5.

[438] European Commission, "COM(94) 314: Towards a new Asian Strategy," pp.2-4.

[439] European Commission, "COM(2000) 552: Implementation of the Communication "Building a Comprehensive Partnership with China"," (2000).

[440] European Commission, "COM(2001) 265: EU strategy towards China: Implementation of the 1998 Communication and future steps for a more effective EU Policy," (2001).

[441] See also: Shambaugh, "China and Europe: The emerging axis."

member states and their desire for opening and profiting from the Chinese market.[442] The conclusion of the 'comprehensive strategic partnership' led to China's participation in the Galileo project, the satellite navigation system project aimed at rivalling the US's system, in line with the idea that Europe could be the ongoing source for China's high-technology needs. A 'technology cooperation centre' was also opened in Beijing, further demonstrating the increased cooperation. As a Commission report in 2003 observed, 'The EU offers open and liberal markets for Chinese exports, the transfer of European capital, technology and know-how that come with reinforced commercial ties, but also European experience and best practice in relevant economic, environmental and social sectors'.[443] In return, Chinese markets would be open to European businesses, and the relationship would be 'mutually beneficial'. By the mid-2000s, Romano Prodi, head of the European Commission, said about the partnership that 'if it's not a marriage, it is at least a very serious engagement'.[444] Subsequently, Jose Manuel Barroso referred to the partnership with China as 'one of the EU's top foreign policy priorities for this century', even noting that this did 'not pose a threat', given the concerns being raised in Washington around Europe's embrace of China.[445] Europe appeared to be fully committed to China.

To be sure, by 2007/08, some misgivings started to emerge on the European side, with the European Commission starting to become uneasy with the rising trade deficit, which had exploded in the previous five years. Overall, however, the trajectory of the relationship remained towards further deepening of commercial relations. Some trade friction was not enough to derail the partnership at this stage, especially not following the Great Recession and the Eurozone crisis. During the Great Recession, China remained one of the few sources of strong global demand, proving highly important for export-oriented Europe. The emphasis in Brussels remained on securing the economic 'opportunities' available for European business in China. Moreover, during the collapse in confidence in the euro on global financial markets, China proved a bastion of stability, consistently showing

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[442] See for example: Josephine Ma, "EU eyes engagement after declaring its love for Beijing," South China Morning Post (2004).

[443] European Commission, "COM(2003) 533: A maturing partnership - shared interests and challenges in EU-China relations," (2003): p.15.

[444] Romano Prodi, "Speech by Romano Prodi President of the European Commission: Relations between the EU and China - more than just business EU-China Business Forum Brussels, 6 May 2004," European Commission Press Corner (2004).

[445] Quoted in: Nicola Casarini, Remaking global order: The evolution of Europe-China relations and its implications for East Asia and the United States (Oxford: Oxford University Press, 2009), p.86.

willingness to buy European assets, such as large issuances of distressed Eurozone government bonds.[446]

'We need the money'

As Europe fell into a prolonged recession, Chinese capital was needed, particularly in economically weaker states in the Union, but also in Germany and France, where, as we saw, the investment climate had also deteriorated significantly.[447] Karl De Gucht, the EU Trade Commissioner, argued that inward Chinese investment represented a 'massive opportunity', as China only 'accounts for less than 5% of the world's outflows', implying a significant upside that Europe could take advantage of. De Gucht emphasised that Europe needed 'to be in the game as China becomes a major global player on foreign direct investment'. In even simpler terms, he remarked 'we need the money', again in reference to the dearth in investment following the Eurozone crisis — as 'Member States governments privatise in response to the crisis, they need investors to buy what they are selling'. Chinese investment was to be seen as a 'positive step for many reasons' with 'massive benefits to the European economy from these increased inflows', allowing Europe to be 'in the game'.[448]

In 2013, the EU and China adopted a 'strategic agenda for cooperation', with the aim of achieving 'win-win results', and to further enhance the EU-China Comprehensive Strategic Partnership.[449] As De Gucht, again, stated: 'the trade and investment relationship between China and Europe remains a fundamental source of mutual benefit'.[450] It became clear that European growth would not rapidly snap back to pre-crisis trend, so the growing Chinese market became increasingly important to European businesses. Having access to a double-digit growth market of hundreds of millions of consumers became even more critical than it was previously. This access, in turn, also meant ensuring an open investment relationship with China, continuing to provide access for Chinese investment into Europe, without which

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[446] *Reuters, "China to buy 6 billion euros of Spanish debt," (6 January, 2011); Reuters, "China ready to buy up to 6.6 billion of Portugal debt," (22 December, 2010).*

[447] *See for instance: Der Spiegel International, "Merkel looking for help during visit to China," (2 February, 2012).*

[448] *Karel De Gucht, "Speech by Karel De Gucht European Commissioner for Trade: EU-China investment: A partnership of equals, Brussels 7 June 2012," European Commission Press Corner (2012).*

[449] *European External Action Service, "EU-China 2020 Strategic Agenda for Cooperation," (2013).*

[450] *Quoted in: Benjamin Fox, "EU and China need each other, EU trade chief says," EUobserver (17 September, 2013).*

the large and growing export markets would be in peril. Consequently, the following years resulted in a flurry of deals being announced between China and several European states as economic diplomacy was in full swing between the two blocs. There was no need or desire to start restricting Chinese investment flows at this stage; quite the contrary.

Chinese investment in Europe went up sizeably, especially in countries that were hit hardest by the economic impact of the sovereign debt crisis. Chinese investors acquired substantial assets in Greece — including the port of Piraeus — while in Portugal large positions in local banks were acquired, and Italy saw heavy investments in utilities.[451] European states actively sought to attract Chinese investment, with high-level delegations being sent to China and were 'literally rolling out the red carpet' for potential Chinese investors, as Sophie Meunier puts it.[452] Despite concerns expressed in some circles about Chinese investment, these voices remained a minority, and there was no major shift in the Commission's views on inward Chinese FDI in subsequent years. Cecilia Malmström, who succeeded De Gucht, affirmed in 2014 that Europe remained an open economy for Chinese investors, and welcomed their increased investment under the Investment Plan for Europe, also known as the 'Juncker Plan', and China's Belt and Road Initiative. The European Council and the Commission called for 'synergies' between Europe's capital needs and China's investment appetite, with the idea that this should also lead to a 'joint connectivity platform' that could finance a range of EU-led connectivity projects across Europe, including the development of transport corridors between China and Europe.[453] Juncker emphasised Europe's interest in China's Belt and Road Initiative, as it was 'the kind of strategic thinking from which both Asia, China and Europe could benefit', underlining the continued view of complementarity between the European and Chinese economies.[454]

Overall, then, Europe remained positively inclined towards Chinese investment and even encouraged it throughout the early 2010s, particularly in the context of the Eurozone crisis. However, as we will see, this welcoming embrace of Chinese investment rapidly

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[451] *Meunier, "'Beggars can't be choosers': The European crisis and Chinese direct investment in the European Union."*

[452] *Meunier, "Chinese direct investment in Europe: Economic opportunities and political challenges," p.104.*

[453] *Eric Maurice, "China to join Juncker's investment scheme," EUobserver (28 September, 2015); European Council, "EU-China summit joint statement: The way forward after forty years of EU-China cooperation," (2015).*

[454] *Jean-Claude Juncker, "Speech at the EU-China Business Summit: The EU and China: A solid partnership," European Commission Press Corner (2015).*

transformed into a considerably more confrontational stance towards the middle of the decade.

The Chinese threat and Europe's pushback

The above-illustrated context should not suggest that there was a consistent and unanimous consensus in Brussels on the positives in economic engagement with China. In fact, as previously mentioned, the Commission, in contrast to the governments of Germany and France, drew attention to the rising trade deficit, and initiated several anti-dumping procedures, for example. But as demonstrated by the solar panel dispute, where the Commission attempted to impose punitive sanctions on Chinese imports to protect European producers but faced resistance from Germany, the interests of the principal nation states guided the direction of the relationship.[455]

Even with regard to investment screening, it was arguably the European Commission that first introduced the concept, advocated by the Commissioner for Industry and Entrepreneurship, Antonio Tajani, in 2010 in response to a rising China and its increasing presence in Europe. Tajani stressed the need to protect European 'knowledge', or intellectual capital, which should not be allowed to be siphoned off by China. He argued for a mechanism that could assess whether 'takeovers of European know-how-carriers by foreign firms' posed a risk for the EU or not, for as Tajani explained, 'for a successful European industry, the protection of its knowledge and technology is indispensable'.[456] Although nothing came of Tajani's initiatives and they continued to be largely ignored at the higher levels of decision-making in Brussels, they highlight the fact that there was more scepticism in Brussels around China than in Berlin or Paris at the time.

The genesis of European investment screening

As expected under the economic realist framework, the institutionalisation of investment screening at the EU level was initiated by the bloc's major economic powers — namely France and Germany, but also Italy, which we will examine separately below. The call for Europe-wide investment screening was most prominently expressed in a 'joint letter'

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[455] See: Yu Chen, "EU-China solar panels trade dispute: Settlement and challenges to the EU," European Institute for Asian Studies (2015); Robin Emmott and Ben Blanchard, "EU, China resolve solar dispute - their biggest trade row by far," Reuters (27 July, 2013).

[456] Daniel Goffart, "Interview: EU-Kommissar Antonio Tajani," Handelsblatt (31 August, 2010). Michel Barnier also appears to have voiced concerns alongside Tajani: Ian Wishart and Jennifer Rankin, "Call to investigate foreign investment in EU market," Politico Europe (23 February, 2011).

addressed to the European Commission by the economic ministries of these three states in early 2017.[457] The letter voiced concern that 'in the last few years, non-EU investors have taken more and more European companies with key technological competences for strategic reasons', leading to worries about the 'possible sell-out of European expertise' to China. The issue of reciprocity was also raised, with European businesses needing the same 'fair access' to markets as foreign competitors had in Europe. While the EU already allowed member states to screen foreign investments on a state-by-state basis, there had now arisen a need to build a 'screen' to encompass all of Europe, to be led and supervised by the European Commission. A few months later, in May 2017, the European Commission released a position paper on 'harnessing globalisation', where it acknowledged the need for a common investment screening procedure at the supranational level, noting the 'concerns' that had arisen around European firms with 'key technologies' being acquired for 'strategic reasons'. These concerns mirrored those previously discussed in Paris and Berlin.[458]

As a reminder, Emmanuel Macron, who had recently been elected in France, was also pushing for an investment screening mechanism at EU level as part of his 'Europe that protects' drive during France's presidency of the EU. He emphasised that it had become vital for Europe to 'safeguard its interests and strategic sectors'.[459] In addition, Berlin was dealing with the fallout of the Kuka takeover, which had set alarm bells ringing as to China's rising industrial ambitions. The push towards tightening inward FDI policy began to gather significant momentum and made its way onto the agenda of the European Council, as seen from the conclusions of the meeting in June 2017, where the initiative to 'analyse investments from third countries in strategic sectors, while fully respecting Member States' competences', was 'welcomed'. The language used at the European Council was still cautious, and not as forceful as France and Germany would have preferred, but the direction of travel was towards increased protection.[460]

In July of that year, the policy proposals put forward in the February letter by Germany, France and Italy were updated and resubmitted to the Commission, likely as a result of

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[457] *Bundesministerium für Wirtschaft und Energie, Ministère de l'Économie et des Finances, and Economico, "Letter to Commissioner Cecilia Malmstrom."*

[458] *European Commission, "COM(2017) 240: Reflection paper on harnessing globalisation," (2017).*

[459] *Isabelle Lasserre, "Emmanuel Macron: «L'Europe n'est pas un supermarché»," Le Figaro (21 June, 2017).*

[460] *European Council, "EUCO 8/17: European Council meeting (22 and 23 June 2017) – conclusions," (2017).*

deliberation with other member states in the Council. The new proposals were less ambitious than those set out earlier in the year.[461] From this point on, however, there was a clear change in the Commission's communication, which consistently illustrated the need for more control over foreign investment. By September of 2017, a Commission policy proposal on investment screening was ready and launched alongside Juncker's state of the union address. He asserted that 'we are not naïve free traders. Europe must always defend its strategic interests', which was 'why we are proposing a new EU framework for investment screening'.[462]

An important question to consider at this stage is why both France and Germany chose to pursue the matter of FDI screening at the supranational level, when they were already taking steps domestically to tighten FDI policy. The reasons are likely multifaceted. Firstly, the Commission proposal in September 2017 clarified that the new policy initiative 'provides legal certainty for Member States that maintain a screening mechanism'.[463] That is to say, both Germany and France were given the space to pursue tighter FDI control, without potential reproach from the Commission. It can be seen as laying the supranational legal foundation for more protectionism in Europe's major economies.

Secondly, for those states in the process of building stronger investment protection mechanisms, such as Germany and France, being part of a common market with other states that did not have investment screening protections could present a risk. Foreign investors could potentially acquire assets through other European channels. By implementing a screening mechanism at the EU level based on 'information sharing' and 'monitoring', risks could be reduced for the more protectionist states. They would theoretically be aware of foreign investors acquiring European assets, even if foreign firms already operating in one member-state are able to freely invest across the bloc under freedom of movement rules. Introducing a 'screen' on investment transactions made by third-country investors further restricted the ability of Chinese economic actors to circumvent tighter restrictions. This aim is evident in the second letter sent by Germany, France and Italy in mid-2017, whereby they

[461] *Brigitte Zypries, Carlo Calenda, and Michel Sapin, "Non-paper: European investment policy: A common approach to investment control," (28 July, 2017).*

[462] *Jean-Claude Juncker, "State of the Union Address 2017," European Commission Press Corner (2017).*

[463] *European Commission, "Proposal for establishing a framework for screening of foreign direct investments into the European Union," (2017).*

highlighted the need to focus on 'intra-community acquisitions' as well, where an 'EU-resident direct investor is controlled by non-EU parties'.[464]

Thirdly, as the issue of 'reciprocity' became increasingly important in Paris and Berlin, a logical path to pursue these concerns was at the supranational level, which is also where it took on more prominence compared to the national debate. A central aspect of a balancing process is the restriction of access to intellectual capital, but it also entails other steps to 'equalise' competition, as evidenced by the language around 'levelling the playing field'. Using the supranational level, and with it the 'heft' of the European market, it can provide higher leverage through the ability to apply pressure with the weight of the entire economic bloc behind it, strengthening the negotiating position of European states vis-à-vis China.

In addition, as Stephan Schill has illustrated, a more restrictive approach to Chinese FDI can also be understood as addressing 'gaps' within the EU's legal architecture, which, as he highlights, enshrines the freedom of capital movement in the Maastricht constitution, even with third countries. Implementing a 'screen' for foreign investments enables the EU to further restrict the rights of third country investors, and thereby provides it more power in negotiations.[465] In a 2017 paper accompanying the investment screening policy proposal, the Commission stated as much, noting that 'vigorous and appropriate policies' needed to be implemented in order to 'open up other economies and ensure that everyone plays by the same rules', and that 'trade and investment policy remains the most appropriate tool to ensure that third countries offer a level of openness for foreign investment equivalent to that of the EU'.[466]

Thus, the growing concern in Europe's major economic powers— principally Germany and France — subsequently translated to the supranational level, and set in motion a policy drive at the European Commission to significantly tighten investment controls for the single market. As we will examine in section three, the screening policy initiative was not unanimously welcomed across the member states, due to differing economic interests. Nevertheless, it was a harbinger of what was to come in the following years.

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[464] *Zypries, Calenda, and Sapin, "Non-paper: European investment policy: A common approach to investment control."*

[465] *Schill, "The European Union's foreign direct investment screening paradox: Tightening inward investment control to further external investment liberalization."*

[466] *European Commission, "Welcoming foreign direct investment while protecting essential interests," (2017): p.6.*

In the economic realist perspective, the Commission assumed the role of 'guarantor' and 'protector' of Europe's productive forces. With the Commission's screening proposal in September 2017, the notion of 'essential interests' of the 'EU or its Member States' was introduced. Although the concept features throughout the Commission's communication, no explicit definition of the idea was presented. However, it becomes clear what was meant. After an exposition on how the EU has been very open to foreign investment, the Commission asserted that as 'foreign investment patterns change, security and public order must be ensured' by preventing potentially harmful foreign activities that have 'repercussions on critical technologies, infrastructure, inputs, or sensitive information', while also referencing the Parliament's calls to screen 'strategic industries, infrastructure, and key future technologies'.[467] From this we can infer that the 'essential interests' of the EU and its member states are to safeguard and foster the productive capacity of their economies, especially in areas involving a high amount of intellectual capital. The consistent references to technology throughout the Commission communication underscore this aspect, especially the references to the European 'edge' in technology, which again presupposes assumptions Europeans have.

To have an 'edge' infers that Europe sees itself ahead in terms of certain technologies and 'strategic industries'. Protecting the edge comes down to the need for 'balancing' China, as it starts to move into innovation-driven growth and begins to compete head-to-head with Europe economically. The Commission working documents submitted alongside the investment screening proposal further illustrate this change of thinking towards more protection, especially in 'high technology' areas, where foreign acquisitions could be 'to the detriment of the EU's technological edge'.[468]

European competitiveness concerns & China's challenge

As in Germany and France, the tightening investment restrictions at the European level should be understood against the background of concerns related to European competitiveness in the global economy. Like major member states, the EU advocated a significant industrial overhaul, evident in the increasing calls for a new European industrial policy since 2017, in conjunction with the new investment screening policy. The

[467] *Ibid., p.2.*

[468] *See for example: European Commission, "SWD(2017) 297: Staff working document - proposal for establishing a framework for screening of foreign direct investments into the European Union," (2017).*

Commission recognised in 2017 that Europe's industry faced a 'new industrial age', whereby it was becoming more important than ever to 'maintain and reinforce Europe's industrial leadership in the age of globalisation'. Promoting European industry became a core part of the Commission's economic mission under Juncker's leadership, as illustrated in the Political Guidelines. The goal was to elevate the industrial sector so that it once again reached a 20% weighting in the European economy, arguing that it 'plays a key role in supporting Europe's global leadership and international stature'. The pressure was mounting in Europe, as 'Europe's competitors are investing heavily in the upgrade of their industry', while the 'innovation gap with some countries is increasing' as well. Furthermore, major economies 'like China are starting to compete precisely in those higher value-added segments where Europe does best', reflecting the concerns that were rapidly rising in Paris and Berlin.[469]

To further elaborate on the rising concerns around competitiveness and international economic rivalry, especially in relation to China, it is important to consider the broader context surrounding the introduction of the investment screening measures. As discussed in chapter II, the economic realist perspective suggests that as an economic rival emerges and begins to compete with an incumbent, significant efforts will be made to reassert leadership. In addition to protective elements such as investment screening, economic balancing also involves a wide range of policies aimed at industrial upgrading to enhance competitiveness.

In Europe, this was evidenced by the return of industrial policy. As we saw, new industrial policy initiatives were developed in Germany and France, but also translated to the European level, as signified by the 'Franco-German Manifesto for a European industrial policy fit for the 21st Century', which is arguably the purest example of a holistic competitiveness 'upgrading' initiative. Germany and France made the case that Europe 'must pool its strengths and be more united than ever', whereby the 'choice is simple when it comes to industrial policy: unite our forces or allow our industrial base and capacity to gradually disappear'.[470] A much more 'ambitious' European industrial strategy was needed, which was broken down into three constituent 'pillars'.

[469] *European Commission, "COM(2017) 479: Investing in a smart, innovative and sustainable Industry: A renewed EU Industrial Policy Strategy " (2017).*

[470] *Peter Altmaier and Bruno Le Maire, "A Franco-German manifesto for a European industrial policy fit for the 21st century," (2019).*

Firstly, the proposal stressed the need for 'massively investing in innovation', again with the idea of significantly improving European intellectual capital. Europe could 'only succeed if we are the ones creating, developing and producing new technologies'. Thus, to ensure Europe's standing, Europe must aim to operate at the global technological frontier, or risk being left behind. To achieve this, more capital must be invested in technology, particularly in the field of artificial intelligence. Concrete plans should be put in place to nurture 'cutting-edge technologies', through the use of the IPCEI (Important Projects of Common European Interest) framework, with the goal of building up competence in key strategic industries, such as in microelectronics and batteries.

Secondly, the proposal called for 'adapting our regulatory framework' to become more lenient on mergers of large European companies, as the limited size of European firms posed a risk to Europe's competitiveness compared to rapidly growing Chinese companies, which had been allowed to thrive as national champions. The Commission should consider global competition, where European firms could be too small to compete, rather than just competition at the European level.

The third pillar was the ability to implement 'effective measures to protect ourselves', whereby 'we will only succeed if we are capable of defending our technologies, companies and markets'. The investment screening framework was addressed directly, emphasising the need for 'full implementation'. It needed 'to be actually used by Member States to protect Europe's strategic technologies and assets which are critical'. In addition, the proposal called for further 'tough national legislation', as was being implemented in France and Germany, given 'European interests are vulnerable when some member states do not act in this area'. This reference to vulnerability related the aforementioned notion that French and German interests could be threatened by takeovers from inside the Union as well, for example by Chinese investors circumventing controls by using existing structures inside the single market.[471]

Thus, as France and Germany were in the process of upgrading the competitiveness of their economies in the face of rising Chinese competition, this process was pushed onto the European level as well. Economic balancing can take several forms, and this manifesto neatly brings the 'offensive' and 'defensive' elements together: Europe geared up for increased state intervention to orchestrate a competitive 'overhaul' to ensure its position on

[471] *Ibid., pp.4-5.*

the technological frontier, while simultaneously implementing protective measures to ensure it keeps 'strategic' assets and has a mechanism to protect future innovation.

The connection to China, the need to economically balance it in Brussels and investment screening were made even clearer by a series of reports issued by the Commission on China around the same time as the implementation of the investment screening measures. For instance, in a report analysing the Chinese industrial upgrading process, the Commission observed that Chinese capital had also gone more international and was increasingly concentrated in Europe, noting that the 'The number of EU firms controlled by China has increased rapidly, from 1.4% of foreign-controlled firms in 2007 to 8% in 2015-16'.[472] All other principal non-EU investors decreased their investments during this period, while China greatly increased investment exposure to Europe. Further, compared to the early days of Chinese investment in Europe, it had started to control 'firms with a high market share' and increasingly targeted 'strategic sectors, particularly manufacturing and ICT companies'. The Commission illustrated that Chinese interests had shifted from 'wholesale and retail toward manufacturing', especially 'high-tech manufacturing' involving fourth industrial revolution technologies.

The Commission also examined the productivity levels of Chinese firms after acquiring a European firm, noting the 'concern that these acquisitions will give Chinese firms an edge in global markets, to the detriment of European competitiveness'. As the Commission observed: 'Analysis of acquirers' performance post-acquisition indicates that cross-border M&As overall lead to higher labour productivity, sales growth and labour productivity growth for the acquirers', meaning Chinese firms were becoming more competitive based on their acquisitions, according to the Commission.[473]

The Chinese acquisition drive in Europe was seen as adding to the gathering competitive pressures brought by China, as it is 'increasing its share in manufacturing global value chains', driven chiefly by 'competitiveness gains'. Leaving aside 'demand-related factors', the Commission stated that around 40% of the loss in the EU's share in manufacturing global value chains — and around 45% of China's gain — was due to changes in competitiveness since 2000. Examining the sectors where Chinese competitiveness had

[472] *European Commission, "China: Challenges and prospects from an industrial and innovation powerhouse," (2019): pp.33-4.*

[473] *Ibid., p.36.*

been growing especially rapidly, the report remarked that it was particularly concentrated in 'high-tech sectors that focus on electrical and mechanical engineering', reflecting China's 'political strategy of industrial modernisation', whereby it seeks to 'gradually reduce the need for foreign-based technology through domestic competitiveness'. Europe was still clearly ahead of China in pharmaceuticals, as 'China's research & Innovation (R&I) base in this sector is currently comparatively weak'. However, the Commission argued that large gains in competitiveness in the foreseeable future are likely, given China's focus on genomics and pharmaceutical applications of artificial intelligence. Thus, even in one of the notable competitive exceptions in Europe, the competitiveness gap was likely to be closed. The conclusion drawn was that the rise of China was 'shifting the world's economic centre of gravity away from formerly dominant highly industrialised countries', driven both by a 'catch-up process' and by a 'strong gain in Chinese competitiveness — and the concomitant loss in the EU's competitiveness'.[474]

The Commission's 'innovation scoreboard' has also shown the competitive threat coming from China. While the 'scoreboard' continues to give the EU a good overall score, amongst the leading 'innovators' in the world, the changes in the relative standing between the EU and the rest of the world since 2012 are stark. According to the report from 2019, China made the most progress on innovation in those 8 years, moving up 17 points versus the EU's 3. In fact, based on the EU's own indicator China grew five times more than the EU during this period in terms of its innovation capacity, meaning in relative terms Europe has been losing in recent years.[475]

In a subsequent report in early 2019, China was labelled 'an economic competitor in the pursuit of technological leadership' and the connection between China's growing economic power and the need to strengthen the Union's competitiveness was further underlined.[476] The report called for building the 'capacity to channel investments where strategic EU interests are at stake' and a major industrial policy effort at the Union level. Additionally, 'in the context of the renewed industrial policy strategy, the EU should foster industrial cross-border cooperation, with strong European players, around strategic value chains that are key to EU industrial competitiveness and strategic autonomy'. There was also mention

[474] *Ibid., pp.20-22.*

[475] *European Commission, "European Innovation Scoreboard 2019," (2019); European Commission, "European Innovation Scoreboard 2018," (2018).*

[476] *European Commission, "EU-China – a strategic outlook," (2019): p.1.*

of ‘strengthening the security of critical infrastructure and the technological base’, i.e. building ‘defensive’ tools to retain European competitiveness, with a direct reference to foreign investment screening in this China-based document. ‘Foreign investment in strategic sectors, acquisitions of critical assets, technologies and infrastructure in the EU, involvement in EU standard-setting and supply of critical equipment can pose risks to the EU’s security’.[477] The Commission then mentioned the new investment screening regulation, set to come into force a few months later, and highlighted it as ‘action 10’ in its China strategy approach, as it would allow ‘identifying collectively and addressing security and public order threats posed by acquisitions in sensitive sectors’, leaving little doubt that the investment screening regulation was chiefly aimed at China.[478]

The issues of reciprocity and ‘level playing field’ were also in full evidence again. The Commission averred that ‘China can no longer be viewed as a developing country. It is a key global actor and leading technological power’. It had ‘become a strategic competitor for the EU while failing to reciprocate market access and maintain a level playing field’, with the fear of scale effects coming to the fore once more.[479] The Commission noted that Chinese businesses could achieve significant advantages by being able to expand into a very large protected home market, thereby rapidly achieving vast size and hence the concomitant operational leverage and deep resources for further R&D. In this regard, the Commission claimed that ‘China preserves its domestic markets for its champions’, ‘shielding them from competition’. Now, given the ‘magnitude of our trade and investment links it is important to develop...a more balanced and reciprocal economic relationship’. The question was how Europe could prise open the Chinese market further. The Commission suggested ‘rebalancing’ of the relationship could be achieved through a number of ways. One was addressing trade, specifically through the WTO, which needed to be ‘modernised’, with ‘some gaps to be filled to ensure a level playing field’. Another key point was investment, where the EU had been working towards finalising the Comprehensive Agreement on Investment, which would allow for ‘fair and equal treatment for EU companies operating in

[477] *Ibid., pp.9-10.*

[478] *Ibid., p.10.*

[479] *Ibid., p.5.*

China', and where the concerns of 'reciprocity' in the investment screening legislation could serve as leverage.[480]

By mid-2019, there were outright calls for an 'assertive industrial policy allowing the EU to remain an industrial power'. The European Council stated that 'the global competitive pressure as well as the harmful practices of e.g. China call for a unified and determined response by the EU', while also underlining the need for Europe 'to be at the forefront of innovation and to fully exploit the opportunities offered by the European-wide home market'.[481] Simply put, a fully fledged protection and upgrading process was set in motion, whereby European productive capacity was to regain competitiveness versus a rapidly ascending rival.

Technological sovereignty

The drive towards increased investment control must also be understood in the context of the discussion around 'technological sovereignty' in Europe, a term that has increasingly entered the debate, especially in Brussels.[482] While the term has been used more frequently, it is not fully defined by either supranational actors or state elites in the member states. However, the meaning can be deduced from the overall context of the discussion. It is related to the broader concerns discussed here, with Europe progressively losing its competitive advantages, and more fundamentally, meaning a loss of mastery of the intellectual capital foundational to the next wave of technological innovation. Declaring the need for sovereignty signalled the desire amongst European states to ensure that control of intellectual capital stayed in Europe. If Europe did not achieve 'mastery and ownership of key technologies', as President von der Leyen declared, then the relative economic power of European states would fade, as the bulk of high value-adding industries would be located elsewhere, particularly in China.[483]

The implications are clearly profound: as competitive advantages erode, the major economies in Europe would slide down the global 'value chain', a process that could prove highly destabilising. If large parts of the European economy became significantly less

[480] *Ibid., p.11.*

[481] *European Council, "An EU Industrial Policy Strategy: a Vision for 2030," (2019).*

[482] *Éanna Kelly, "'Tech sovereignty' rises on EU agenda, as Germany launches homegrown electronics programme," Science|Business (2020).*

[483] *Ursula Von der Leyen, "Shaping Europe's digital future: Op-ed by Ursula von der Leyen, President of the European Commission," European Commission Press Corner (2020).*

competitive, more margin pressure would arise, leading to rationalisation, job losses and reorientation to less competitive economic activities. Productivity would decline, and relative living standards could drop, which in turn could threaten the very fabric of European nation states, highly diminishing their power in the economic realist understanding. Considered from this perspective, the alarmist rhetoric around 'technology', 'global competition' and 'new realities' is logical, and likely explains the remarkable increasing unanimity around these issues in Europe's major economies and at the supranational level.

As Thierry Breton, the EU Internal Market Commissioner, explained 'we have entered a global race in which the mastery of technologies is central', for which the 'European Commission is deploying its entire industrial toolbox'.[484] It was 'time for Europe to play its cards' in terms of asserting itself technologically, especially in areas such as semiconductors, which are considered to be 'at the core of the global technological race', a 'race about…industrial leadership', where 'China is trying to close the technological gap'. The Commission started work on the 'European Chips Act', with the aim of reasserting a strong European presence in the semiconductor market and building on the work of Europe's 'leading research centres'.[485] Breton argued that in order to succeed 'we cannot let key technologies go to China and repeat in semiconductors what we experienced with solar panels'.[486]

The investment screening regulation is directly connected to the principle of 'technological sovereignty' and the protection of these critical assets. As further noted by the Commission, 'the recent EU foreign direct investment (FDI) screening regulation…provides the European Commission the opportunity to assess the risks of foreign investments into all companies, including companies active in the semi-conductor sector from a European perspective in terms of impact on security and public order. This includes impact on programmes of Union interest regarding critical infrastructure, critical technologies or critical inputs'.[487] It comes under the heading of 'regulatory framework that boosts competitiveness and protects EU interests', with the implication that such actions constitute

[484] *Thierry Breton, "The geopolitics of technology," LinkedIn (2021).*

[485] *Florian Dèbes and Derek Perrotte, "L'Europe à la relance pour les puces électroniques " Les Echos (21 January, 2021).*

[486] *Thierry Breton, "Technological geopolitics: It's time for Europe to play its cards," European Commission Blog Post (2021); La Tribune, "Thierry Breton : « L'Europe mettra des moyens pour implanter des usines de semi-conducteurs en Europe »," (24 June, 2021).*

[487] *European Commission, "SWD(2021): Strategic dependencies and capacities," (2021).*

a defensive measure aimed at retaining competitive advantages, especially vis-à-vis those nations that are targeting the same technologies. In connecting the principle of 'technological sovereignty' with the investment screening mechanism, EU Commissioner Breton again made the direct link, illustrating to the European Parliament that 'another element to maintain Europe's technological sovereignty is the Regulation on screening of foreign direct investments'.[488]

Protecting the technological edge

The drive for a more interventionist and 'protective' Europe, especially regarding its technology, was accelerated further by the Covid-19 pandemic. Germany, which took over the Presidency of the Council, made European 'technological sovereignty' one of the cornerstones of its programme. The pandemic had revealed the 'vulnerability of our economy in a globalised world' and was a 'precursor of the stiffer competition that Europe will have to face in the future'. Global 'competitive pressure will be intensified', so it was imperative that Europe move towards building 'technological sovereignty'.[489] Under Germany's Presidency there came a further push for 'AI made in Europe'. The aim was to 'develop the European Union's existing capabilities as one of the world's largest AI think tanks to become the world's leading decentralised AI network that supports the transfer of AI applications into practice'.[490]

In connection, in 2020, the Commission presented a 'New Industrial Strategy for Europe' to support a European industrial rebirth that would allow Europe to thrive in rapidly intensifying global economic competition, replete with slogans such as 'we now need a new industrial way for Europe, fit for the ambitions of today and the realities of tomorrow'. It also refers to 'geopolitical plates' shifting, which 'affects the nature of competition', in reference to the fact that Europe now faces stiffer, more head-to-head economic competition from the rise of China. Come what may, the Commission strongly asserted that 'one simple reality will remain the same: Europe will always be the home of industry. And with this

[488] *European Parliament, "Questionnaire to the Commissioner-Designate Thierry Breton," (2021).*

[489] *European Council, "Programme of Germany's Presidency of the Council of the European Union in the fields of education, research and innovation," (2020): pp.4-5.*

[490] *Ibid., p.6.*

strategy, the European Commission is ready to do what it takes to make sure it stays that way'.[491]

A raft of initiatives were presented, such as the Intellectual Property Action Plan, which aims to 'uphold technological sovereignty', as well as major investment in the 'green transition', a process of 'upskilling' across the workforce and 'embedding a spirit of industrial innovation'. 'Horizon Europe' was set to be launched, the largest ever 'research and innovation' programme launched by the EU, with 100bn euros dedicated to it, aimed at 'leading the development of key digital, enabling and emerging technologies across sectors and value chains'.[492] The 'European Innovation Council' was also established, serving as a 'one stop shop to bring the most promising high potential and breakthrough technologies from lab to market application'. It was to work in harness with the European Institute of Innovation and Technology, creating a European version of DARPA, a state-funded institution with the aim of fostering and promoting high technology development to create industrial competitive advantages.[493]

The Commission stressed the importance of maintaining and developing a technological edge, with the key technologies being artificial intelligence, advanced manufacturing, nanotechnology, semiconductors, quantum computing, robotics, advanced materials, biotechnology, energy storage, mobility, cybersecurity as well as micro- and nano-electronics.[494] These also happened to be the technologies that to a large extent overlapped with those deemed 'critical' to 'public order' in the investment screening mechanism.[495] In terms of the EU's relative competitive position in these various technologies, the Commission noted that in Advanced Manufacturing, Europe maintained 'sound technological leadership', while progress was also being made on advanced materials, but faced 'challenges in comparison with its global competitors' for all the other technologies,

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[491] *European Commission, "COM(2020) 102: A new industrial strategy for Europe," (2020): pp.1-2.*

[492] *European Commission, "Horizon Europe Strategic Plan (2021 – 2024)," (2021): pp.7-8.*

[493] *European Commission, "Press release: EU budget: Commission proposes most ambitious Research and Innovation programme yet," (2018); European Commission, "Horizon Europe and the new European Innovation Council: Backing visionary entrepreneurs," (2021).*

[494] *See for example the reports on 'key enabling technologies': European Commission, "Future technology for prosperity: Horizon scanning by Europe's technology leaders," (2019); European Commission, "Advanced technologies for industry: Providing useful guidance to industries, policy makers and academics," (2020).*

[495] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union," Official Journal of the European Union (2019): Article 4.*

‘gradually losing leadership’ in many of them. This was seen in the dramatic rise in Chinese patents across these various technologies, but also in the EU’s performance in terms of R&I, which was ‘creating concerns over (future) technological dependencies’. R&D expenditure had lagged in Europe, overtaken by China in the ICT space. While Europe’s R&D expenditure per company across the entire economy was still ahead of China’s, the ‘gap is continuously decreasing’. Back in 2011, the R&D intensity ‘was much higher for the EU companies’ versus China. By 2021, although European R&D intensity had grown, it had increased ‘at a much higher pace for the Chinese companies’, indicating that Europe faced ‘a number of challenges’ in the ‘areas of key technologies’ and ‘risks falling behind’ in certain areas ‘that will drive future competitiveness’.[496]

In parallel with these ‘offensive’ measures, there came the need to ‘reinforce Europe’s industrial and strategic autonomy’, which ties in with the idea of ‘technological sovereignty’ and the goal of maintaining Europe’s position as a leader in technological innovation and value creation. Failure to do so, as argued by Paris, could result in industrial ‘vassalisation’. To this end, the establishment of an investment screening mechanism was highlighted by the new industrial strategy, as there was a need to be ‘more strategic in the way’ foreign investment was assessed. [497] Understood in an economic realist sense, the increasingly ‘strategic’ stance meant protecting key areas vital for Europe’s competitiveness, defined in terms of knowledge and technology associated with the fourth industrial revolution, which were coming under threat as a result of China’s rapid industrial upgrading efforts.

The European screening mechanism

It is against this background that the first European investment screening legislation in 2019 should be understood.[498] Although the mechanism in its first form was not as comprehensive, or powerful, as the Commission may have initially hoped, the reasons behind which we will explore in the section below, it did underpin the interventionist efforts pursued in both Berlin and Paris at the supranational level, and marked a significant defensive turn.

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[496] *European Commission, "The 2021 EU Industrial R&D Investment Scoreboard," (2020): pp.68-70.*

[497] *European Commission, "COM(2020) 102: A new industrial strategy for Europe," p.13.*

[498] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union."*

The Commission was not given the powers to conduct investment screening itself, but it 'strongly recommended' member states to implement a national screening mechanism and stipulated minimum requirements for such a mechanism. In addition, a coordination system for sharing information on screening across the EU was established, with the Commission playing the central role in the process. Therefore, the EU screening system should not be considered equivalent to the controls implemented in the major member states, such as Germany and France, but rather as a 'formal channel of exchange of information', where the idea was to 'raise awareness' if the investment impacts the national interests of more than one member state.

As the Commission noted, the EU mechanism was established to 'complement' the national screening systems and make them more effective.[499] It increased the focus on problematic foreign investment across the Union and facilitated the exchange of information, allowing member states to better ascertain potential threats, such as potentially threatening foreign investment via other member states. The new regulation made it clear that screening would not be confined to entities established outside the Union: companies set up in the EU and making investments in the Union could also be subject to monitoring. The 'anti-circumvention clause' could be used to monitor EU companies, meaning European entities could fall under the new regulation as well.[500] Recital 10 of the screening regulation stated that investments undertaken by entities in the Union that do not 'reflect economic reality', in that they are ultimately owned by persons or companies from outside of the Union, would be subject to closer investigation. It would need to be ascertained whether a 'scheme of circumvention' is enabling a foreign investor to get around the screening regulation.[501] The Commission observed that the most common form of circumvention was through the use of shell companies, in another reference to the Chinese investments in previous years, via, for example, Luxembourg. These companies do not engage in economic activity themselves, but rather their purpose is to facilitate transactions.[502] As we saw, the Chinese use of European entities to gain access to sensitive sectors and technologies was an issue that state

[499] *European Commission, "Frequently asked questions on Regulation (EU) 2019/452 establishing a framework for the screening of foreign direct investments into the Union," (2020): p.12.*

[500] *Ibid., p.8.*

[501] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union," p.2.*

[502] *European Commission, "Frequently asked questions on Regulation (EU) 2019/452 establishing a framework for the screening of foreign direct investments into the Union," p.8.*

elites had identified, particularly in France. With the EU regulation, these forms of 'back door' investments could be better controlled.

The new regulation allows member states to screen 'on the grounds of security and public order', the definitions of which were very broad. The Commission added that member states were also empowered to use these measures 'to address specific risks', leaving room for policy manoeuvre for countries like France and Germany. The mechanism allowed for the broadest latitude possible for intervention since the 'regulation applies to all sectors of the economy and is not subject to any thresholds' and at the same time the 'need to screen a transaction may indeed be independent from the value of the transaction itself'.[503] In other words, intervention is allowed across all areas of the economy, in large as well as small enterprises, which also need to be included as these 'may be of strategic importance on issues like research and technology'.[504]

Furthermore, the screening framework should 'provide Member States and the Commission with the means to address risks to security or public order in a comprehensive manner, to adapt to changing circumstances', while 'the list of factors that might affect security or public order should remain non-exhaustive'.[505] Article 4 of the regulation provided an 'indicative list of factors' that the members states could include in their screening mechanism, covering all the main technological areas that Germany and France were in the process of screening, such as robotics, semiconductors, quantum technology, AI, nanotechnologies and biotechnology.[506] To broaden the applicability even further: 'in determining whether a foreign direct investment may affect security or public order, it should be possible for Member States and the Commission to consider all relevant factors, including the effects on critical infrastructure, technologies (including key enabling technologies) and inputs which are essential for security or the maintenance of public order, the disruption, failure, loss or destruction of which would have a significant impact in a Member State or in the Union'.[507] Thus, the new regulation in effect allowed those member

[503] *European Commission, "Guidance to the Member States concerning foreign direct investment and free movement of capital from third countries, and the protection of Europe's strategic assets, ahead of the application of Regulation (EU) 2019/452 (FDI Screening Regulation) " (2020): p.3.*

[504] *Ibid., p.1.*

[505] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union," p.2.*

[506] *Ibid., p.7.*

[507] *Ibid., p.2.*

states intent on building a robust screening mechanism to tighten their measures as much as they deemed appropriate. It established the supranational legal foundations for Germany and France's tightened FDI investment regimes.

Turning to the functioning of the mechanism, member states with a screening mechanism in place are obliged to notify the Commission and the other member states of the FDI being screened.[508] The information provided must include details of the ownership of the foreign investor, the source of funding, and the members states in which the targeted company and/or the foreign investor has business interests. This ensures that states highly concerned with screening, such as France and Germany, have a better overview of potential investments into the Union that may affect them.

The second element relates to other member states' ability to monitor the FDI screening. Once the Commission and the member states have been notified of a case of FDI screening, they have 15 days to notify the member state where the investment is taking place whether they intend to issue comments or opinions. They may also request more information if they see their security or public order affected. The member state receiving the investment is subsequently required to take any comments and opinions into consideration in 'sincere cooperation', as defined by EU law.

When there is foreign investment in a member state with no screening mechanism in place, that member state is not obliged to inform the Commission or other member states of the FDI. However, other member states and the Commission reserve the right to request more information and issue opinions on the matter. This again allows member states that have a particular interest in strengthening investment screening to influence foreign investment in other EU member states without a mechanism, insofar as these may threaten their security or public order. Thus, even in states where there is no screening mechanism, an element of control is introduced with this new regulation.

Given the importance of the screening mechanism in Germany and France, this was likely done in order to extend their investment control, establishing formal measures of influence on investments in member states where the same form of control does not exist or is

[508] *Section derived from: Gibson Dunn, "EU regulation on establishing a framework for screening of foreign direct investments into the European Union has been adopted," (2019).*

significantly more lax. These member states are 'required' upon request to provide 'a minimum level of information without delay' on the investment.[509]

The Commission also gained important new competences as part of the regulation, being able to request information from member states as well as issue comments and opinions on foreign investments into the Union, provided they meet at least one of two criteria.[510] The investment must affect EU-funded projects, or it must affect more than one member state. The definition of what qualifies as affecting more than one member state is very broad. For example, if a foreign investor seeks to acquire a company in one member state but has subsidiaries in others that have national investment screening frameworks, it would apply. If the foreign investor aims to buy a firm in one member state but that firm also sells its products and services to other members states, this would also fall under the coordination mechanism's remit, where comments can be made by the Commission or other member states.

EU-funded projects refer to programmes and initiatives with significant European funding, or those created specifically under EU law, related to 'critical infrastructure, critical technologies and critical inputs', all areas covered by the more active industrial policy initiatives in Brussels, deemed key for European competitiveness. These initiatives include: Galileo, Horizon Europe, Trans-European Networks or Transport, Copernicus and the European Defence Industrial Development Programme. The Commission's opinion is given more weight when foreign investments affect these projects of 'common interest', providing a 'tool to protect projects and programmes which serve the Union as a whole and represent an important contribution to economic growth'.[511] The receiving member state is required to take 'utmost account' of the Commission's opinion, and if it does not follow the advice, it must explain why, thereby adding further oversight and control.

Finally, the Commission is also responsible for maintaining a public record of all investment screening mechanisms in place across the EU.[512] This measure can be seen as a way to put

[509] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union," p.4.*

[510] *Gibson Dunn, "EU regulation on establishing a framework for screening of foreign direct investments into the European Union has been adopted," p.3.*

[511] *European Parliament and Council of the European Union, "(EU) 2019/452: Establishing a framework for the screening of foreign direct investments into the Union," p.3.*

[512] *Ibid., p.5.*

pressure on those member states that do not yet have a screening procedure in place to install one. Additionally, the public record can provide easier access to information for strong advocates of screening, such as Germany and France, to identify areas where screening is not being carried out within the Union.

In conclusion, the introduction of the investment screening mechanism at the European level can then be seen as a consequence of the rising threat perception of China in the major European economies, and the increasing need to balance it. Chinese investment continued to be supported in Brussels until the shift in Berlin and Paris around 2015/16, following which the economic balancing process gained momentum at European level as well, with investment screening playing a central role. The Commission's concerns mirrored those we saw in Paris and Berlin: Chinese economic competition needed to be taken seriously — China could no longer be seen just as a large 'market opportunity' with an economy a long way off innovation-driven growth. It had caught up rapidly and would increasingly compete head-to-head with European business, meaning Europe needed to reassert its competitive advantages. The introduction of investment screening could help in this regard. It could provide leverage to further open up restricted Chinese markets, to help European firms better compete, but importantly it could also serve to retard China's technological ascent by restricting access to European know-how and technology at the technological frontier.

China and the European divergence

While the EU is a supranational construct, though driven largely by its most powerful constituents — mostly France and Germany — this does not imply the bloc acts in unison across all economic matters, such as on foreign investment and investment screening in particular. This has led to significant divergence in discussions over Europe-wide investment screening, with some EU member states yet to construct and implement an investment screening procedure and others opposing it vehemently. As a result, the mechanism, while significant, given it was constructed rapidly from essentially zero, is not comparable to the US CFIUS system and functions as more of a coordination mechanism among member states. The purpose of the following section is to show that the divergence in state elite views across member states on the new screening mechanism can also be understood in the economic realist framework — being driven by differing stages of competitive advantage amongst member nations, differing economies, and thereby differing economic perceptions of China.

The European divergence on China

Broadly, with regard to investment screening, there has been a dichotomy between southern and northern European nations, with the largest northern European nations being in favour of screening and smaller southern economies being against. Interestingly, although southern EU member states are currently less likely to advocate protection in the face of an advancing China, the situation used to be thoroughly reversed in the early 2000s. Back then, China's rapid economic ascent from a low starting point meant its economy was competing largely in low and middle technology areas, posing a direct competitive threat to the economically less advanced nations in Europe. An important factor was the import structure of the Chinese economy, which, throughout the 2000s and 2010s, was primarily composed of raw materials and capital goods. The latter constituted around 40% of total imports on average.[513]

In northern Europe, highly competitive capital goods producing industries created a substantial complementarity between China and most northern European countries, as we saw in the case of France and Germany amid the hyperbole of 'synergies' and 'win-win' during the 2000s. By contrast, southern European economies relied more on consumer goods and generally lower value-added products for exports, where demand is highly price-sensitive, resulting in intensifying competition with China. For southern Europe, the Chinese market was much less of an 'Eldorado', as competition was already head-on with competitive Chinese firms. It also became evident that, in addition to being largely unable to tap into a large potential market, southern European economies were more vulnerable to direct Chinese competition in world markets, including Europe itself. Southern European countries lost over 20% of market share within the Eurozone, with the large part of these losses going to China.[514] During the mid-2000s, it was southern Europe principally calling for more protection from China, as evidenced by strong demands for protection following the Chinese evisceration of the European textile industry.[515] Although these calls did fall on

[513] *World Bank, "China trade summary," World Integrated Trade Solution (2020).*

[514] *Mattias Vermeiren and Ferdi De Ville, Rising powers and economic crisis in the Euro Area (London: Palgrave Macmillan, 2016), p.59.*

[515] *For example, looking at the period following China's accession to the WTO, the EU saw a large flood of Chinese imports landing on European markets, with one sector — textiles — seeing full liberalisation and hence a rapid and voluminous introduction to the European market, moving up almost 200% in terms of volume in the span of just 2 years. The textiles sector has traditionally been, and to a degree still is, an important sector for the majority of southern European countries. By some estimates, for example, Spain during this period, between 2001 and 2010, lost over 60,000 jobs in the face of Chinese imports outcompeting large segments of its textiles industry. Northern European economies by contrast were far more sanguine about these developments, as the textiles industry had lost in importance in most northern economies a long time before, meaning the focus was more on enhancing consumer welfare, providing*

some sympathetic ears in Brussels, they were not of much concern in the major economic powers of the north, where the 'Eldorado' mentality towards China dominated.

Fast forward to the 2010s, the calculus towards China had changed for many of the southern European states. China's arrival in low-to-mid-technology industries was a *fait accompli*. The advent of the Eurozone crisis led to a considerable softening of the hard stance on China due to less concern about competitive pressure as China moved up the value chain, and also as it became a valuable source of investment capital in a time of crisis. In economic realist terms, it started to make more sense to liberalise economic relations with China to enhance the economy's productive forces. In contrast, northern Europe experienced the opposite development: as China was not seen as a direct rival, the focus could be on exploiting the burgeoning market opportunities. However, once China showed signs of pushing into innovation-driven growth, the calculus in northern states changed, pivoting to a more protectionist position and pulling the EU apparatus with them. Let us now examine more concrete cases tracing these developments.

Portugal

In relative terms, Portugal has been one of the largest recipients of Chinese investments since 2010, with Chinese companies acquiring assets in the utilities, health care and banking sectors.[516] Faced with severe financial stress in the 2011 crisis period, and lack of fiscal transfers from the EU, Portuguese economic interests were better served by moving closer to China. The severe dearth of investment, and the dire fiscal situation overruled any competitiveness concerns towards China. From an economic realist perspective, Portugal's productive capacity was best secured and strengthened by welcoming Chinese investment. It helped alleviate acute funding pressure on the Portuguese state and supported growth and job creation during a difficult period.

Given this background, Lisbon has been particularly cautious about expanding the investment screening mechanism targeted at China, and has pushed back against Germany

cheaper access to clothing. See: Jappe Eckhardt, "The evolution of EU trade policy towards China: The case of textiles and clothing," in Prospects and challenges for EU-China relations in the 21st century, ed. Jing Men and Giuseppe Balducci (Brussels: Peter Lang, 2009).

[516] Laurens Cerulus, "Enter the dragon," Politico Europe (4 October, 2017); John Geddie and Dhara Ranasinghe, "Portugal's bond with China: Pioneering debt sale founded on close ties," Reuters (3 July, 2017); Dominic O'Neill, "Chinese buyers descend on Lisbon," Euromoney (3 June, 2015).

and France.[517] Portugal, already having been outcompeted by China, seeing it move into higher value-added segments, has moved into to a much more accommodating position, seeing China as less of a direct competitor and more as an important supplier of capital.

Malta

The same applies to other smaller EU states, such as Malta, which has also consistently sought closer economic ties with China. The Maltese leadership refers to a 'special relationship' and the government has reaffirmed 'its commitment to its long-standing relations with China' and that it is firmly against 'protectionist policies that risk rolling back the progress achieved in recent decades'.[518]

Malta's stance is derived from its position in the global political economy: it is a small economy, does not compete directly with China and has no high-technology industry. For example, Malta has no domestic steel industry but has a booming construction sector that needs steel. Therefore, a lowering of European steel prices due to Chinese dumping is actually beneficial to a large part of the Maltese economy.[519] Furthermore, due to its location in the Mediterranean, Malta has advertised itself as a potentially important 'hub' for China's BRI, thereby attracting Chinese investment in its infrastructure. Unsurprisingly, Malta was reluctant to move towards investment screening, which it noted could be seen as protectionism.[520]

Cyprus

Another EU member that was hesitant to move towards investment screening was Cyprus, for reasons similar to Malta's. It has a small economy, little-to-no high-tech industry and no direct competition with China. Like Portugal, Cyprus had also endured a severe economic crisis, which made a new source of investment capital in the form of China highly welcome. Following a bailout by the EU, as its banking system faced collapse, the EU imposed what

[517] *Cerulus, "Enter the dragon."*

[518] *The Report Company, "Interview with Christian Cardona, minister for the economy, investment and small business," (19 November, 2015); Government of Malta, "Press release: Malta re-affirms its commitment to its long-standing relations with China," (2018).*

[519] *This connection made in: François Godement and Abigaël Vasselier, China at the gates: A new power audit of EU-China relations (London: European Council on Foreign Relations, 2017), p.116.*

[520] *Malta Independent, "Prime Minister in China to sign agreement promoting investment," (4 November, 2018); Reuters, "With eyes on China, EU lawmakers back investment screening," (14 February, 2019).*

became known as a ‘bail-in’, where money in depositor accounts in Cypriot banks was seized, essentially destroying Cyprus’ ambition to become an offshore banking haven.

Perceiving mistreatment by Brussels and the northern creditor nations, Cyprus began pursuing alternatives, with China proving to be an obvious solution to its economic problems. In 2015, shortly after the crisis, the President of Cyprus, Nicos Anastasiades, went on a marketing tour to China, pitching Cyprus as a favourable investment environment, and as an ideal location for China’s expansion of the BRI.[521] Since then, there has been a flurry of Chinese investment in transportation, aviation, real estate and natural resources, the idea being that Cyprus can act as a Chinese ‘hub’ for European expansion.[522]

As an EU member strategically located close to the Suez Canal and at the intersection of three continents, it is an ideal focal point for Chinese economic expansion through the BRI. Cyprus has not mentioned any intention of setting up an investment screening mechanism and even upgraded its relationship to China to a ‘strategic partnership’ in 2021, underscoring its pivot to China following its 2015 banking crisis.[523]

Luxembourg

China-accommodating stances were not only found in southern Europe but also further north, such as in Luxembourg, which has so far refused to implement any form of foreign investment screening, and has played an important role in Chinese expansion in Europe. Luxembourg’s stance should be understood as a reflection of its competitive position vis-à-vis China and the structure of its economy. Unlike Germany, Luxembourg does not have a large high-technology industrial sector potentially threatened by Chinese competition. On the contrary, the Luxembourgish economy is largely based on financial services, which China increasingly needs for the international expansion of its businesses. Both countries still see the relationship as ‘symbiotic’ win-win.

All major Chinese banks, for example, have a presence in Luxembourg, using it as the centre of their operations across the EU. The Luxembourg state investment agency — Luxembourg

[521] *George Psyllides, "Cyprus doors open to Chinese companies, talks include energy," Cyprus Mail (15 October, 2015).*

[522] *Mordechai Chaziza, "Cyprus: The Next Stop of China’s Belt and Road Initiative," The Diplomat (22 December, 2021).*

[523] *Cyprus Mail, "Cyprus-China relations upgraded to strategic partnership," (1 December, 2021).*

for Finance — calls Luxembourg the 'gateway to Europe for Chinese banks'.[524] As an investment fund centre, Luxembourg is also the largest domicile for international assets invested in China, ahead of the US as well as Hong Kong. Additionally, it has a large and deep offshore RMB bond market, enabling Chinese firms to easily finance themselves in Europe.

Considering these factors, Luxembourg is unlikely to be a champion of increasingly hawkish policy on China in Europe. From an economic realist perspective, it is evident that as Luxembourg's productive capacity is derived from financial services, and China makes up a large demand for these services, and cannot directly compete with Luxembourg, it is in Luxembourg's interests to keep relations with China as stable and positive as possible.

Sweden

An interesting case in the EU is presented by Sweden, which is a European industrial powerhouse and high-tech economy, with several business segments likely to be impacted by Chinese competition, related to automation, machinery and tool manufacturing. On the surface, one would have expected Sweden to lead the charge with Germany to tighten investment policy towards China. However, Sweden was one of the opponents of the investment screening legislation when it was first brought to the table in 2017.[525] Why was this the case?

Firstly, and most obviously, Sweden is a small, open trading economy that needs access to global markets. It has also been very competitive, being one of the most innovative European economies, having entered innovation-driven growth decades ago. Naturally, given these circumstances, the inclination amongst Swedish state elites is to promote liberal international economic relations as much as possible, including inward investment.

Against this background, Chinese investment was welcomed in Sweden, as evidenced by the high-profile acquisition of Swedish automotive company Volvo by Geely, which is widely regarded as a success story.[526] Under Geely's ownership, Volvo managed a significant turnaround, which further strengthened the liberal sentiment towards Chinese

[524] *Luxembourg for Finance, "China Business," (2019).*

[525] *Robin Emmott and Michel Rose, "At EU summit, Macron pleads for limits to foreign takeovers," Reuters (22 June, 2017).*

[526] *Pamela Ambler, "Volvo & Geely: The unlikely marriage of Swedish tech and Chinese manufacturing might that earned record profits," Forbes Magazine (23 January, 2018).*

investment. It should be noted, however, that the overall level of investment was low, especially compared to Germany, meaning that the Geely acquisition likely had a disproportionate impact on the assessment of Chinese investment in Sweden.[527]

Furthermore, Swedish exporters were also experiencing substantial gains in the Chinese market during this period, further contributing to a positive perception of Chinese investment. Thus, during the initial push for the European investment screening mechanism, Sweden was in the hesitant camp, although the government did note at the time that there were some legitimate concerns, which it would have to look into before engaging further on the investment screening issue.[528]

What a difference a few years have made. Unease in Sweden regarding China has picked up in a major way since 2018, resulting in the eventual full implementation of an investment screening mechanism. In 2019, the Swedish government released a position paper on its 'approach to matters relating to China', which exemplifies the shift to a more hawkish approach, falling in line with the positions taken in Germany and France.[529] The paper acknowledged that 'China has become a key global player in research, innovation and technological development', having caught up with developed nations in terms of technology due to 'comprehensive investments and state engagement, underpinned by programmes such as Made in China 2025'. In the process, it has also 'successfully transferred technologies and know-how from foreign companies', aided by 'strategic acquisitions of foreign companies with cutting-edge technologies'.[530]

The paper went on to state that Sweden has been a target of these efforts, illustrating that 'Sweden is in the Chinese sphere of interest in terms of strategic investments and acquisitions, and business and academic cooperation', leading the Swedish government to 'conclude that China is attempting in various ways to obtain intelligence about technological developments in various sectors and about Sweden's operational capabilities and defence

[527] *Around one third of all Chinese investment in Sweden was in this deal alone. When considering Geely's further investment in Volvo, such as in its truck division, this goes up to over three quarters. For an overview of total Chinese investment in Sweden up to 2018: Rhodium Group, "Chinese FDI in Europe," MERICS Papers on China (2018): pp.12-13.*

[528] *Jonas Hallberg, "Investment screening in four Nordic countries – an overview," National Board of Trade Sweden (2019): pp.16-20.*

[529] *Government of Sweden, "Government Communication: Approach to matters relating to China " (2019).*

[530] *Ibid., p.8.*

planning'.[531] These are the same concerns that have arisen in both France and Germany regarding technological outflow, but with a larger security component as well.

The concerns over Chinese investment and technology transfer came to a head with Huawei's potential involvement in the expansion of Sweden's 5G network capacity. Similar to other countries, the Chinese firm was excluded from the public tenders, but Sweden went a step further by labelling Huawei a 'national security threat'. Klas Fridberg, head of the Swedish security services, made clear that 'China is one of the biggest threats to Sweden…The Chinese state is conducting cyber espionage to promote its own economic development and develop its military capabilities. This is done through extensive intelligence gathering and theft of technology, research and development. This is what we must consider when building the 5G network of the future'.[532]

Subsequently, the development of a control regime on FDI began to gather momentum. The Swedish government launched an investigation in 2019, which culminated in a final report and proposal for a new investment screening mechanism in 2021. China was mentioned throughout the report in a negative light, indicating that China was the driving factor behind the investment screening policy launch. The report mentioned, for example, that 'it is not Sweden as a country that China is primarily interested in, but the technology and knowledge that is available in Sweden.', with whole sections of the report dedicated to the 'Made in China 2025' plan and Huawei.[533]

The Netherlands

Another country to experience a Damascene conversion towards China is the Netherlands. Like Sweden, the Netherlands is a small, open, innovative, and competitive trading state, which will a priori always tend to favour liberal economic policy. Access to open global markets is crucial to large and important segments of the Dutch economy, making the country naturally inclined to be anti-protectionist. This inclination has often been referred

[531] *Ibid., p.11.*

[532] *Kelvin Chan, "Sweden bans Huawei, ZTE from 5G, calls China biggest threat," AP News (20 October, 2020).*

[533] *Government of Sweden, "SOU 2021:87 Granskning av utländska direktinvesteringar," (2021).*

to as an ‘ideological’ disposition, which in a sense is understandable — given the Dutch’s consistent anti-protectionist line — but can also be somewhat misleading.[534]

Using economic realist reasoning, it is in the Netherlands’ interest to promote liberal international economic relations. As a small, internationally orientated and competitive economy, it will want as much access to the global economy as possible. That means it tends to favour liberal policy at home as well, as it cannot expect to find open markets abroad while being protectionist at home. Dutch state elites, therefore, favour liberal economic policy not due to being imbued with ‘ideology’, but simply because it is in the Netherlands’ interests. One could argue, for example, that Luxembourgish state elites are ‘ideological’ adherents to free capital markets, which is true to an extent, but can obfuscate the fact that it is in Luxembourg’s economic interests to promote free and open capital markets.

Given the Netherlands’ natural inclination to shun protectionism, the scepticism towards investment screening in 2017 was understandable — the calculus in the Hague automatically leans toward free commerce. To change this calculus, a significant shift must occur whereby the Dutch state’s interests are better served by moving in a more protectionist direction. The shift appears to have begun in 2018, in relation to China, as evidenced by the report ‘Netherlands-China: A New Balance’, where the Dutch government made the case for a new approach to China.[535]

The report starts by underlining that the Netherlands is a ‘country with a strong economic position…it is not without reason that we have been in the top 10 most competitive economies since 2005’. However, ‘the world around is not standing still…we see a multipolar world emerging due to geopolitical and economic power shifts’, where ‘China plays a central role’. It had become clear to the Netherlands that there was a ‘clash between models’ — ‘the open Western model, which is also the starting point for the Netherlands, versus the closed Chinese model, which seems to benefit from Western openness’, in terms of ‘transfer of knowledge and technology’, but at the same time ‘restricts access to its own market’.

The report goes on to argue that ‘technology has become part of the competition for world power’, with the concern being that ‘China is already betting on the next technological

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[534] For example: John Fox and François Godement, A power audit of EU-China relations (London: European Council on Foreign Relations, 2009), p.4.

[535] Government of the Netherlands, "Nederland-China: Een nieuwe balans," (2019).

revolution' meaning on AI, robotics and quantum computing. China had 'expressed its ambition to become world leader in these fields', meaning the Netherlands could be displaced at the technological frontier.[536]

In explaining the shift on China, it was recalled that 'China was an economy that was largely complementary to the West: companies and consumers benefitted from relatively cheap labour, products and greater choice', linking back to the ideas of 'win-win' and 'synergistic economies'. The problem, however, is that more recently China 'has developed into a formidable competitor and major technological player', as it has markedly increased its capacity in research and development, 'an indication of the transition to a knowledge-intensive economy with a focus on technological innovations'. Thus, as China moves through to the upper stages of economic development, it is coming into friction with economies such as the Netherlands.

Further, Dutch firms and sectors were starting to 'experience the magnitude and severity of the problems', with the 'high-tech and transportation sectors' coming to see the risks of 'knowledge leakage'. Like in the other cases, the MIC 2025 strategy was referenced, which the Dutch government sees as a programme that 'aims to ensure that China makes large technological leaps forward' through a 'sophisticated and assertive strategy', which consists of a combination of large-scale R&D, acquisitions of foreign high-tech companies and access to the Chinese market in exchange for technology transfer.[537]

'What can we do?', the report goes on to ask, to combat the more assertive Chinese competition. The solution is a 'combination of offensive and defensive' measures. The first is to move towards a 'level playing field' to ensure that Chinese markets are as open as possible, to eliminate any asymmetries in terms of market access, helping the competitive position of Dutch and European firms. The second is to ensure stronger domestic innovation, an offensive strategy, as previously discussed. The Netherlands began a process of assertive 'upgrading' and moving the technological frontier further out, achieved through new industrial policy.

The third solution is defensive, in which various steps should be taken to 'protect the domestic market'. That meant adjusting the state-aid framework, putting in place trade

[536] *Ibid., pp.14-5.*

[537] *Ibid., pp.26-7.*

defence measures and ‘managing risks with regard to investments and takeovers’. Accordingly, the Dutch ‘Task Force on Economic Security’ was established to monitor takeovers and the process towards implementing a screening mechanism commenced.[538]

Italy

Arguably the most complicated case in Europe regarding Chinese investment is Italy. As noted above, Italy, along with Germany and France, was one of the signatories of the open letter to the European Commission calling for the construction of an investment screening mechanism, and has to a significant degree followed the trajectory of both France and Germany with increased concern around Chinese investment, though with considerably more nuance.

Much like other southern European economies following the Great Financial Crisis and the subsequent Eurozone crisis, Italy struggled with lacklustre domestic demand and subsequently subdued investment, declining productivity growth, high debt loads as well as a general lack of competitiveness. The Italian economy does have pockets of innovative potential, especially amongst its small- and medium-sized businesses in the north of the country, which allowed the country to move towards advanced economy status by the 1980s.[539] Starting in the late 1990s and early 2000s, however, a wider malaise started to set in, which further intensified throughout the post-Eurozone crisis period.

Unlike Germany, Italian industry has on the whole not been able to upgrade since 2000, and has subsequently lost ground in international markets due to rising competition from emerging economies, especially China.[540] For instance, like in Spain, the previously highly competitive Italian textile industry lost substantial ground once China joined the WTO, along with large parts of its machinery and equipment industry. With the Italian economy

[538] *Ibid., pp.29-30. See also a further parliamentary report in 2019, which made a similar case in terms of combatting economic threats to the Netherlands, again following a two-pronged approach. Firstly, strengthening innovation domestically, as ‘after all an innovative economy is also a less vulnerable economy’. Secondly, being ‘vigilant about the damage to the integrity and exclusivity of Dutch knowledge’: House of Representatives of the Netherlands, "30821 nr. 72: Nationale Veiligheid," (2019). In addition: Government of the Netherlands, "Rapport: Speelbal of spelverdeler," (2020).*

[539] *Richard Locke, Remaking the Italian economy (Ithaca: Cornell University Press, 1995), pp.103-35.*

[540] *On Italy’s increasingly troubled economic competitiveness: Renata Targetti Lenti, "The Italian economy 1961–2010: From economic “miracle” to decline," in Italy and Japan: How similar are they?, ed. Silvio Beretta, Axel Berkofsky, and Fabio Rugge (Milan: Springer, 2014), pp.185-204; Martin Bull, "In the eye of the storm: The Italian economy and the eurozone crisis," South European Society and Politics 23, no. 1 (2018).*

coming under competitive pressure, we would expect the Italian state to move into a more defensive direction, considering the traditionally active role of the Italian state in the economy. That is, in fact, what happened in the early 2000s. Certainly, like in Germany, large segments of Italian businesses concentrated on the gains to be made through having access to a booming consumer market in China. Overall, however, the rise of China hurt Italian industry, leading the Italian state to be one of the more vociferous demanders of protection in the EU.[541]

By the 2010s, though, as with other southern European economies, the competitive advantage seized by China was largely a *fait accompli*, while attention amongst Italian state elites was naturally focused on the more pressing matters of simply stabilising growth following the severe stress brought on by the financial crisis. China emerged as an important source of capital, and a willing spender in a nation faced with insufficient demand and investment. Moving from crisis to crisis, Italy could not afford to have competitiveness concerns vis-à-vis China. Investment from China was welcomed throughout the 2010s. China took large and/or controlling stakes in various Italian industries, including banking, electrical grids, ports, telecoms and transportation. The Chinese purchase of Pirelli in 2015 was widely lauded, with Pirelli executing a successful turnaround, while the Chinese owners were said to have a largely 'hands off' approach. The acquisition also opened up greater market opportunities in China for the firm to expand.[542] At this stage in 2014-15, Italian state elites emphasised that Chinese acquisitions, which were accelerating, as in Germany and France, should be welcomed, with Prime Minister Renzi making several trips to China to attract further investment. As Renzi reasoned at the time 'We need to work hard to attract more Chinese companies to come to Italy to invest', making the point that 'combining Italy's technology and China's vast market is…a benefit to both countries'.[543]

In the following years, Italy sought to court Chinese investment and closer economic relations, culminating in its decision in 2019 to formally join China's BRI. Italy was the only major European country to sign a memorandum of understanding (MOU) with China, stating that it saw its economic future closer to China.[544] Prime Minister Conte explained

[541] *See for example: The Economist, "The real sick man of Europe," (19 May, 2005).*

[542] *Sergio Paba and Cinzia Parolini, "Chinese acquisitions in Italy: Performance of target companies, political reactions and public perception, future prospects," Demb Working Paper Series (2021).*

[543] *The Straights Times, "Italian PM courts Chinese investment on visit to Beijing," (11 June, 2014).*

[544] *Ferdinando Giugliano, "China finds a G-7 ally for Belt and Road," Bloomberg (7 March, 2019).*

that Chinese investment should not be considered as 'predatory', but rather as beneficial for Italy. Italy also abstained from voting on introducing the investment screening mechanism at the EU level, in a sign of solidarity with China.[545]

Yet, as we know, Italy was also one of the signatories of the 'initiatory' letter sent to the Commission in early 2017 positing the need for an investment screening mechanism. What explains this seeming schizophrenia in Italy? The inconsistency is likely related to the volatility in Italian politics and the disagreements amongst Italian state elites whether tighter economic relations with China are an opportunity or a threat, leading to policy variability.

From an economic realist perspective, the oscillation in Italy is understandable. Italy's productive capacity has declined, one of the main issues being a lack of investment. Government and private debt are high, while investment from northern Europe has also not been forthcoming since the Eurozone crisis. Thus, it is logical for Italy to move closer to China as a potentially easy way to help alleviate the situation. Nevertheless, Italy is still an innovative economy, with competitive industries, still able to compete despite the macroeconomic malaise in recent decades. Hence, there are reservations as to why Italy should 'give up' its remaining industries. Moreover, Italy's relationship with China should not be viewed in isolation but within the context of wider European relations with China, especially those of Germany and France, which are economically more important to Italy than China. As Germany and France turned more hawkish on China, while Italy sought to deepen relations, it caused frictions with its most important economic partners.

Prior to 2016/17, Italy's relations with China were not an issue, as Germany too was seeking closer relations. However, with Germany and France since becoming significantly more hawkish, the problem presented itself for Italy. The question became whether Italy should increasingly turn its back on northern Europe, and fully embrace China by becoming a junior partner, hoping to see a strong economic revival on the back of the dynamic Chinese economy. This was not an unreasonable suggestion, given the perception in Italy that Germany had shown a considerable lack of solidarity for Italy during the crisis years. Alternatively, Italy could seek domestic and European solutions to its economic issues by shoring up its competitiveness through new industrial policy and targeted protection, while seeking investment assistance through the EU.

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[545] *Valbona Zeneli, "Italy signs on to Belt and Road Initiative: EU-China relations at crossroads?," The Diplomat (3 April, 2019).*

These are the two questions Italian state elites have grappled with since 2016/17. The initial signs on investment screening were that Italy wanted to pursue the domestic/European route to supporting growth, as seen in the promotion of a new industrial policy and the investment screening 'letter' to the Commission. The minister of the economy in 2017, Carlo Calenda, was a China sceptic who opposed China attaining market economy status at the WTO. He regarded himself as an advocate of 'economic patriotism', aiming to lead the Italian version of *Industrie 4.0*, which meant that elements of 'protection' were necessary to defend against 'predatory takeovers by countries that are not open to foreign investment and that buy patents and know-how and then move them back to their country of origin'.[546]

Although concerns around China continued to grow in Italy, they did not reach a tipping point as they did in France and Germany, and the general courtship of China continued, and even stepped up significantly in 2019, as we saw with the BRI MOU. At this stage, state elite thinking revolved around finding more immediate solutions to the lack of investment in Italy. This went to the core of the dilemma facing Italy during the initial investment screening period: take the much-needed capital injections from China, but potentially see large parts of Italian industry fall into Chinese hands and in the process lose indigenous innovation capacity. Or, resist the temptation, make reforms, reinvigorate Italian industry in the context of European solidarity and new industrial policy. Faced with an economy burdened by consistent underperformance and chronic lack of demand and investment, it was not an easy decision. It should be no surprise that certain parts of the state elite wanted to opt for the seemingly easier option and hitch Italy's economic wagon to China's. In the end, however, the domestic/European route prevailed, with the 2019 BRI decision largely being seen as a mistake, and the subsequent Italian government once again supported investment screening.[547]

In the years that followed, the Italian parliament's committee for the intelligence secret services (Copasir) increasingly warned about China's intentions in Italy, observing that it was seeking to 'obtain strategic know-how and leverage', and that it had become a 'strategic adversary' for Italy. Copasir called for the government's 'golden power' rule — allowing the state to intervene in transactions involving foreign parties — to be enhanced and used

[546] *Alessandro Giuli, "Il Piano per l'Italia spiegato da Carlo Calenda. Intervista al ministro," Tempi (31 July, 2017).*

[547] *Francesca Ghiretti, "The Belt and Road in Italy: 2 Years Later," The Diplomat (23 March, 2021); Hong Xixi, "Italy changes track," Istituto Affari Internazionali (2021).*

more proactively. It also noted that Italy's research institutions needed to be better protected from Chinese influence, particularly in 'areas where research activities are most advanced', otherwise Italy ran the 'real risk of technology and know-how being stolen'. Additionally, Copasir emphasised the importance of protecting and enhancing any advantages Italy had in advanced technology, ensuring 'an increasingly adequate protection of the excellence, infrastructures and intangible infrastructures that characterise our system', protecting the 'main elements of strategic value that the country is endowed with'.[548]

Against this background, and given the rising concern in Germany and France, developing investment screening at the European level and tightening the golden power concept domestically made sense. Although China was never explicitly mentioned in the implementation of the state's enhanced 'golden power', it was clear that China was the primary target. Each time the golden power has been used, apart from one exception, it targeted transactions involving parties from China. One of the most high-profile interventions was in relation to the attempted acquisition of LPE, an Italian semi-conductor firm, by a Shenzen-based investment company, which even involved the highest parts of government, with Prime Minister Draghi declaring that semi-conductors are 'of strategic importance', and therefore needed to be protected.[549] After years of significant wavering, Italy also turned more hawkish on China and aligned itself to the balancing process commencing in Berlin and Paris.

Summary

As we have seen, there have been significant divergences across Europe regarding the introduction of investment screening. Countries opposed to a mechanism generally fell into two camps: smaller states increasingly reliant on Chinese capital and medium-sized, highly competitive states with a predisposition towards *laissez-faire*. State elites in Cyprus, Malta and Luxembourg see increased collaboration with China as beneficial — their economies do not possess high-tech industry, and are more reliant on services to drive growth. As China expands and develops its markets in Europe, logistical and financial services in these

[548] *See: Decode 39, "China eyes Italy's 5G, academia and seaports. The COPASIR report," (2021).*

[549] *Giuseppe Fonte, "Italy vetoes takeover of semiconductor firm by Chinese company Shenzhen," Reuters (9 April, 2021); Rebecca Arcesati and Francesca Ghiretti, "Italy pushes back against China's technology transfer," Mercator Institute for China Studies (2022); Giuliana Lampo, "Italy's exercise of foreign investment screening power against Chinese takeover," The Italian Review of International and Comparative Law 1, no. 2 (2021).*

countries can benefit, meaning any protectionist line on China should be avoided, if possible. Meanwhile, highly competitive, export-driven, high-technology states, such as Sweden and the Netherlands, tend to have an innate disposition towards free markets, eschewing all forms of protectionism. Their own interests are furthered by this disposition: competitive, export-oriented economies need free access to markets globally for best possible success. However, the calculus in Stockholm and the Hague also started to change. There came the realisation that while China continued to represent an immense market opportunity, it was rapidly catching up and beginning to compete head-on in areas of their traditional competitive advantage. If this continued, especially with the arrival of new technological inflection points, they could suffer a severe loss in relative competitiveness in the future. Thus, the calculus began to shift in the direction started in Berlin and Paris; strategic concerns around competitiveness and technology began to take precedence over an adherence to *laissez-faire*. It means that the only remaining 'supportive' bloc in Europe against a more protective stance versus China are the smaller, less industrially competitive states. Divergences in Europe on the issue have lessened, with a more homogenous, hardened stance on China beginning to form, indicating that more investment control is likely in the coming years.

Chapter VII

Summary, Discussion and Conclusions

Theoretical foundations

This research has argued that the introduction of investment screening measures in Europe can be usefully understood using an economic realist framework. A brief recap of the theoretical apparatus is in order. The core tenets of the theory hold that the state is central in the analytical process, defined in terms of organised political territorial units concerned with the distribution of power between them. In turn, power is defined fundamentally in terms of wealth, but not in terms of just amassing 'hard' wealth, as in the mercantilist conception, but crucially as a nation's ability to produce wealth, defined as 'productive capacity' or, as List put it, the 'productive forces'. As we have seen, in the economic realist approach, three forms of capital constitute the productive capacity of an economy: natural, material and intellectual capital. While all are essential, intellectual capital is the most valuable ingredient for long-term success in upgrading the productive forces. It provides the ability to not just use natural and material capital but, crucially, to improve upon it. It is the central factor behind technological innovation, which drives the productive capacity of an economy. If a nation has a strong base in intellectual capital, it will tend to be a leading technological innovator and possess strong productive capacity.

In the economic realist view, then, states are central, concerned with the distribution of power between them and hence with the status of their productive capacity, especially their mastery of intellectual capital. The competitive ranking of states globally is fundamentally determined by their relative abundance of intellectual capital, which can be understood using the Porterian model of competitive advantage of nations. The more intellectual capital a nation has, the more innovative it can become, leading to eventual entry into 'innovation-driven' growth. This growth no longer relies on simply marshalling natural and material capital, but on creating new technologies and markets, leading to sustainable competitive advantages. With innovation-driven growth and a position at the technological frontier, comes a highly competitive economy, and thus high value creation, which state elites want to nourish and protect. Rising nations will tend to be highly aggressive in acquiring intellectual capital to raise their competitiveness, resulting in protectionist policy stances. Leading nations will tend to promote liberal commerce, given their high competitiveness, as access to as many markets as possible is to their advantage.

Crucially, however, this dynamic can change, when a rising nation threatens to enter innovation-driven growth, and potentially takes a position at the technological frontier. If the rising nation proves successful, then the relative endowment of intellectual capital in the leading nation will decline, resulting in a relative decline in competitiveness and power. In such a scenario, the leading state will tend to revert to more interventionist policy stances in an effort to curb the rise of the encroaching nation and secure its competitive advantages, especially in terms of technology. The threat perception of the rising nation grows substantially, its perceived advantages are examined more closely, and the economic relationship begins to be rebalanced.

Foreign investment policy can be seen as part of this process: dominant, leading, competitive nations tend to have a high degree of investment openness. Foreign capital has little impact on the nation's productive capacity, while openness at home can help their competitive firms access more markets abroad. However, when the economy's relative competitiveness begins to decline, open investment regimes become problematic, as domestic firms and technology need to be increasingly protected and even nurtured back to competitive strength. The state, therefore, begins to move away from a liberal, open stance. Economic policy starts to be geared towards rehabilitating competitiveness, where investment policy plays a key role. Rising nations tend to employ myriad methods to acquire and absorb intellectual capital, including industrial espionage, high-skilled foreign labour, technology transfer and foreign acquisitions. But as rising nations become successful at mastering intellectual capital and become more technologically sophisticated, incumbent nations seek to restrict the channels of intellectual capital acquisition. Thus, the introduction of investment controls in leading nations can be understood as a balancing process that involves both offensive and defensive elements. Active industrial policy is used to create more technological competitiveness, but also to protect the technological advantages that are already there.

The stakes are raised significantly during technological 'revolutions', as evidenced by the first industrial revolution, and its profound impact on the relative productive capacities of the 18th and 19th centuries. Those nations that were able to master the new technologies of the time became leading/dominant economies over the following generations, while those that failed to do so experienced a precipitous decline in relative power. With the advent of the 'fourth industrial revolution', similar dynamics are expected to unfold in the following decades, making the focus on technology even more critical among states. A failure to

master emerging technologies could lead to a significant loss in status for currently leading states, while presenting a major opportunity for rising nations to potentially leap towards the technological frontier and become dominant nations themselves.

Applying the framework to Europe-China investment relations, China assumes the role of a rising economy, while the major European states are the incumbents. Any significant change in investment policy by the incumbents, from an economic realist perspective, indicates a shift in the relative competitive positions between the rising and incumbent economies. A 'defensive' action, such as the introduction of investment screening, thus can be seen as a response to China's successful efforts to accrue more intellectual capital and move into innovation-driven growth. This has led China to becoming a direct competitive rival to the major European economies. According to economic realist logic, European states would seek to limit China's ability to directly challenge them by engaging in a balancing process to slow down or even halt China's industrial upgrading, whereby FDI control forms part of the toolkit.

To examine the explanatory value of the framework, we first analysed whether China could be considered a rising, challenger economy, and if so, what strategies it employed to position itself at the technological frontier. Subsequently, we conducted case studies across Germany, France and the European Union to examine whether the economic relationship between Europe and China had undergone changes, and if so, the extent to which these changes reflected shifting relative competitiveness between the economies.

It was determined that China had indeed become substantially more competitive in relation to Europe, and had signalled its intention to engage in more direct competition through its adoption of innovation-driven growth. We then examined whether this diminishing competitiveness gap led to a rising threat perception of China. Noting that it did, it was assessed whether this heightened threat perception initiated a balancing process in Europe, aiming to restore its economic competitiveness versus China. This was found to be the case.

Subsequent analysis explored the relationship between the adoption of FDI control across Europe and the aforementioned developments. The case studies revealed that there were logical connections between China's success in industrial upgrading, a rising threat perception in Europe, the commencement of a balancing process and the implementation of investment screening measures. A concise summary and discussion of the presented case studies follow.

China's aims

Historically, China's economy has consistently been one of the most competitive in the world, operating at each respective era's technological frontier. Although it is still debated why it occurred, from the 15th century onwards, China's productive potential began to weaken relative to the West, which eventually led to what the Chinese described as the 'century of humiliation', as the major European powers dominated China during the age of imperialism. This period, arguably often underappreciated in the West, continues to have a major influence on China, with a widespread sense that the country needs to overcome this 'humiliation' and reassert its rightful position as a leading power. To achieve this goal, it was necessary to significantly increase China's productive forces. While some strides were made in this direction during the Mao era, overall, the attempt failed. Hence, China turned to the capitalist mode of development at the end of the 20th century, in a process launched by Deng Xiaoping.

China leveraged its factor advantages of abundant cheap labour to establish a competitive light industry export sector, utilising basic technology. China was able to accumulate the necessary capital to import more advanced foreign technology and, with higher growth rates, the economy became increasingly attractive to foreign investment. In line with economic realist thought, Beijing realised that merely importing foreign technology or allowing foreign investors to operate freely in China would increase the material capital of the nation, but not the intellectual capital. Therefore, the emphasis shifted to not only adopting foreign technology, but crucially, to understanding it. This is why China heavily engaged in joint ventures, in which foreign firms could establish themselves in China, sell into its growing market, but would have to operate alongside analogous Chinese firms that could absorb their know-how.

The strategy worked well. By the 1990s and early 2000s, China had upgraded its industrial capacity significantly. It could absorb and use foreign technology, and emerged as the 'workshop of the world'. China excelled at production and generated substantial capital, which it then invested in productivity-enhancing infrastructure, thus improving its productive capacity even more, leading to a virtuous cycle of growth.

Nevertheless, although China's emergence as 'workshop of the world' was clearly a success, concerns arose in Beijing that China could not remain merely a 'workbench' for the rest of the world. While China had become adept at absorbing and using production

technology, seen in the development of vast factory cities in the east of the country, the most value-adding activities such as engineering and product design were being performed overseas. For China to continue its economic ascent, it could not be content with capturing lower value-added parts of global value chains, but should aim higher.

Moreover, it became evident that the growth model that had served China well since the 1980s, through mass labour mobilisation and infrastructure investment, had reached its limits. Eventually, these growth drivers become saturated. By the mid-2000s, concerns emerged that China was at risk of falling into the 'middle income trap', where, following the initial growth spurts of 'catch-up' economies, competitiveness starts to dwindle and the economy advances at a much slower pace.

At this stage, the focus in Beijing shifted towards achieving 'indigenous innovation', with the goal of transforming China from an investment-driven economy based on the mobilisation of cheap labour to an economy capable of widespread innovation. This shift would substantially increase the competitiveness of the Chinese economy, allowing it to capture larger shares of global value-added, and move beyond its role of 'workshop', where ultimate control of the valuable technology and know-how remained elsewhere.

One approach to achieving its goal was a significant increase in investment in science and technology, targeted at building domestic innovation capacity. Additionally, Chinese students were increasingly sent abroad to learn and absorb foreign know-how. The joint venture system was also tightened, giving the Chinese counterparty more control in the venture to facilitate the transfer and absorption of technology. Crucially, another successful method utilised throughout the 2000s was the acquisition of foreign companies by Chinese entities, using FDI to gain access to technologies and know-how that China did not possess domestically. Beijing issued 'guidelines' on foreign investment, indicating that it should enhance China's technological capacity, and a series of development strategy reports on improving 'indigenous innovation' saw outward investment as an import channel for access to know-how and technology. China began investing in foreign companies as part of a strategy to rapidly build its intellectual capital, improve its innovation potential, and ultimately increase its economic competitiveness.

Following the Great Recession, two important developments accelerated China's 'innovation drive'. Firstly, the crisis made the Chinese economic model even more unsustainable. The steep drop-off in demand from the West caused the Chinese export sector

to suffer, prompting Beijing to pivot the economy even more towards investment spending to compensate for the decrease in foreign demand. Higher investment spending, however, started to become progressively unproductive, exemplifying the need for newer, more advanced growth drivers for the economy.

Secondly, the post-crisis period also saw the onset of the fourth industrial revolution, which Beijing viewed as a crucial opportunity for 'leapfrogging' growth. It meant moving beyond 'catch-up' growth, where the goal is to emulate market leaders, to becoming a market leader itself. The fourth industrial revolution produces technological paradigm shifts that open up a window of opportunity for rising economies to 'skip the queue' and move right to the edge of the technological frontier. This opportunity was too important for China to miss, and its upgrading efforts accelerated as a result, particularly in new, emerging technologies where newcomers were much less at a disadvantage compared to incumbent leaders.

As a result, China's economic ambitions became increasingly focused, particularly following the accession of Xi Xinping, who, more than his predecessors, saw the necessity for China to push towards becoming an innovation-driven economy. The result was a series of new plans and strategies, culminating in the now infamous MIC 2025 plan, in which the principal idea was that China could now envisage closing the gap in competitiveness with the leading economies. By 2025, China aimed to occupy important positions across the global industrial value chain, and by 2049, it aimed to reassert its 'rightful' place at the top of the global economy, marking the return of China following two centuries of decline.

To make it happen, China needed to focus on 'strategic' areas, especially in areas where leapfrogging growth was possible, such as new energy vehicles, robotics and automation, or additive manufacturing. The plan highlighted that overseas investment was a simple and effective way of obtaining know-how and technology, and there was a marked increase in Chinese FDI after the acceleration of the innovation drive in 2010. The overseas investments were targeted at sectors and industries that Beijing to sought to develop to make leaps in competitiveness. Europe, as one of the most technological advanced regions in the world, was an obvious target of this strategy.

At the same time that China was implementing these measures and paving the way towards 'leapfrogging' growth, there were obvious indications of China's progress in various industries. Chinese telecoms emerged as strong global competitors during the 2010s, along with the consumer electronics industry, which had made great strides since the mid-2000s,

while in nuclear as well Chinese competences increased greatly, with its industry even starting to export by the mid-2010s. China's success in renewable energy was also noteworthy, as it attained leadership positions in wind and solar energy. Furthermore, the gains in Chinese competitiveness in information technology were arguably even more remarkable, with the rise of global behemoths that rivalled their counterparts in the US in terms of size.

So, as we approached the mid-2010s, China began to recognise the urgency of shifting into innovation-driven growth, requiring a greater focus on intellectual capital, especially in areas associated with the fourth industrial revolution. One important strategy to ensure greater access to intellectual capital was through foreign investment, which allowed for the direct acquisition and absorption of foreign technology and know-how. Concurrently, China was making great strides in enhancing its productive capabilities, as evidenced by the increased competitiveness across various high-profile industries. This, then, was the situation faced by Europe by the mid-2010s: an increasingly competitive China, seeking to enter 'leapfrogging' growth, and engaging in FDI in Europe to facilitate its upgrading process.

Germany's volte face on China

Germany has been a leading industrial power since at least the turn of the 20th century, situated at the technological frontier in myriad industrial activities. Its industrial prowess has shaped a liberal policy predisposition among German state elites, with the primary objective of supporting and nurturing Germany's highly competitive export industry in global markets. Given its position of industrial strength, the opening of the Chinese economy starting in the 1980s was perceived as a major opportunity for German industry. It became particularly important in the 1990s and early 2000s, when China entered its investment-driven growth phase, creating high demand for German capital goods.

As we saw, the relationship between Germany and China was considered 'synergistic': Germany would provide China with much needed high-technology goods, in return for access to a burgeoning Chinese economy. Meanwhile, China could upgrade its industry by concentrating on lower and mid-technology sectors, and thereby did not directly compete with German manufacturers. During the 2000s, Germany's economy underwent a process of reducing domestic labour costs, leading to increased dependence on exports. This made access to Chinese markets even more important, particularly for large German

multinationals that had established a significant presence in China by that time. Although Germany did not welcome China's efforts to build domestic innovation capacity using various tools such as joint ventures, market restrictions, and administrative obstacles, these measures could be tolerated due to the large profit pools available in China.

Once Chinese outwards investment began to experience growth in the late 2000s, it was generally embraced in Germany, seen as a means to maintain economic relations between the two as liberal as possible. The intention was to 'set an example', as the minister of the economy Philip Rösler put it in 2010. As German industrial exporters relied heavily on international trade and investments, and were vital to the German economy, the policy disposition towards inward investment naturally leant towards openness. The Eurozone crisis, and the subsequent dearth of investment throughout Europe further reinforced the inclination to welcome Chinese investment. China was the only major economy that grew substantially during this period, making full access to its markets even more crucial to German exporters, who were faced with a weakened European market.

In the early 2010s, a parallel, but eventually connected development began to emerge, in the form of the onset of the fourth industrial revolution and Germany's efforts to ensure leadership of it. To that end, Germany implemented various programmes and initiatives, with the most prominent being the *Industrie 4.0* initiative. The initiative can be viewed as an example of 'offensive' economic realism, aimed at developing and securing Germany's position on the technological frontier in emerging, but highly important, industrial technologies.

There was a growing realisation in Berlin that to maintain its industrial leadership position, it was essential to master the technologies associated with the fourth industrial revolution. Failure to do so could result in disastrous losses in competitive advantage. State elites identified areas, such as robotics, smart production systems, artificial intelligence and sensors, as critical domains — all of which would be central in building competitive industrial complexes in the future.

As mentioned earlier, during this time in the early 2010s, China also demonstrated a growing interest in engaging with fourth industrial revolution technologies, recognising the potential for 'leapfrogging' growth, especially in high-technology manufacturing. China began to emulate the German industrial strategy, specifically the *Industrie 4.0* initiative, as a means to rapidly achieve mastery of emerging industrial technologies. It initiated its own

‘offensive’ strategy in the same technological domains that Germany was focusing on, which was most vividly seen in the form of the MIC 2025 strategy and the takeover of German robotics firm Kuka. The takeover triggered a major rise in the threat perception of China as a competitor. Not only was China in the process of designing an industrial strategy that sought to launch China past Germany at the industrial technological frontier, but it was also using the acquisition of German firms to do so.

This, as would be expected, proved unacceptable in Germany, leading to a shift away from the ‘synergistic’ view of Germany-China economic relations, with rising conflicts of interests beginning to emerge. Germany’s shift was further accelerated in the post-2015 period by the material reality of China’s rapidly advancing industrial upgrading efforts. China became the largest industrial robotics market in the world and experienced substantial growth in the markets for sensors and automation software — key areas of focus for Germany’s *Industrie 4.0* initiative. All the while, China already demonstrated its potential to leapfrog in certain areas, such as solar energy, and made steady progress across all major industrial segments, gaining significant market shares across Europe, even in sectors of traditional German strength.

Consequently, China’s upgrading efforts no longer solely impacted low and mid-technology economies, but began to affect Germany as well. It became evident in Germany that if China’s upgrading efforts continued to be successful, especially in fourth industrial revolution technologies, German firms would face a substantial loss of market shares in China. More of the technological content of products manufactured in China would originate from Chinese firms rather than from Germany. At the same time, as Chinese firms continued to expand, these market share losses could extend to in third markets as well.

Against this backdrop, a balancing process started against China in Germany, with investment control playing an integral part. Following the Kuka acquisition, Germany tightened its investment screening regulation to encompass more ‘strategic’ sectors. The issue was also elevated to the European level by the German government, driven by the rising threat perception of China. The issue of ‘reciprocity’ became a focal point, with louder calls for creating a ‘level the playing field’ between Germany and China. The introduction of investment screening was therefore also viewed as a means to force further market openness in China.

Germany was said to have ‘left its barndoor wide open’ for too long, while the door in China was only open ajar, so Germany’s barndoor needed to be increasingly closed. And so it was: by 2018, more inward investment control measures were announced, with the lowering of the ‘screening’ threshold for foreign investment from 25 to 10%. Amid more Chinese investment, German state elites declared that Germany ‘could not be exploited for its openness’. Concerns around German competitiveness grew further, eventually culminating in a new industrial strategy towards the end of the 2010s, which can be understood as a holistic balancing package aimed chiefly at China.

The strategy included a combination of ‘offensive’ and ‘defensive’ balancing measures, aimed at promoting, nurturing and safeguarding German intellectual capital and competitive advantages. It involved removing administrative hurdles and other ‘supply side’ measures to support German risk-taking and innovation, such as easing merger regulations to allow for bigger German firms, increasing labour market flexibility and improving infrastructure. Additionally, the strategy called for more direct measures to support German technological upgrading, particularly by revitalising the *Industrie 4.0* initiative, with greater emphasis on AI. AI was seen as the most important ‘base technology’ for the future. Also proposed was the creation of an agency for ‘breakthrough innovations’, as a form of German ‘DARPA’.

While these measures were ‘offensive’ strategies aimed at boosting innovation, with its ‘technological sovereignty’ concept, the new strategy also sought to protect German intellectual capital. According to ‘technological sovereignty’, Germany could only maintain its sovereignty if it controlled the key industrial technologies utilised in its industries. Sovereignty could only be ensured in the long run if the high-value components of German industrial production remained under German control, meaning that the majority of value-added and subsequent profits needed to stay in Germany.

By linking sovereignty to technological capability, German state elites introduced the rationale and legitimacy for implementing further protective measures for the German economy. While Germany continued to adhere to liberal principles, exceptions could be introduced based on the notion of ‘sovereignty’. Investment screening was deemed a vital tool to ensure this ‘technological sovereignty’, as a way to protect the German industrial fabric, and to further ensure that control and margins remained in Germany and did not flow to China. It set the stage for further tightening, which occurred in 2020 when the screening mechanism was significantly expanded. The updated mechanism explicitly mentioned key

technologies and industries such as robotics, artificial intelligence, smart manufacturing, quantum computing and driverless cars — precisely the technological areas German state elites deemed central to future industrial competitiveness and Germany's position at the technological frontier. It was in these areas that China was also engaged in its own upgrading/leapfrogging efforts. If China succeeded in its efforts, German 'sovereignty' would be at risk, so more protection of German companies was needed and thus a substantial protective umbrella in the form of a robust screening mechanism.

In summary, as China pursued innovation-driven growth, it began to encroach upon critical areas of German industrial competence, which led to a rising threat perception of China. This perception engendered a balancing process in Germany, with the establishment of a screening mechanism playing a central role in protecting German interests.

France's shift on China

France, like Germany, has been a leading economy since the 19th century, possessing competencies in high technology sectors such as aerospace, nuclear, utilities and transportation. France's position of strength shaped its relationship with China during its opening up period, throughout the 1990s and early 2000s. Again, similar to Germany, the focus was exclusively on the opportunities available in the rapidly growing Chinese market. French businesses and state elites regarded China as an 'Eldorado', recognising it as an important demand source for French exports. This 'synergistic' view of China continued to be in evidence in Paris until the 2010s, leading to the welcoming of Chinese investment in France, particularly in the immediate years following the Great Recession.

French state elites emphasised that Chinese investment could contribute to job growth and help foster even closer economic ties with China. China's growth remained highly appealing to French business, which had also emerged as one of the largest investors in China during the 2000s. Like in Germany, China was not seen as a rival — it had an increasingly large economy, but in terms of technological capacity, it still lagged France by a distance, especially in the key areas of French expertise. Therefore, the underlying perception among state elites was that China needed France, and French companies could continue to thrive in the Chinese market.

While China continued to be viewed positively throughout the early 2010s, with Chinese investment being warmly welcomed, concerns around the future of the French economy began to manifest. Unlike Germany, which launched its *Industrie 4.0* initiative to solidify

its global industrial leadership, France recognised the pressing need to revitalise its industrial base, as it had experienced large market share losses in the preceding years. France was perceived as being in a state of industrial stagnation, so the focus was not on maintaining continued leadership but rather on a more extensive process of industrial overhaul, as exemplified by the Gallois report. The period witnessed the introduction of various policy initiatives aimed at boosting French competitiveness, comprising both offensive and defensive elements. One notable development included the implementation of the Montebourg decree in 2014, which marked the introduction of the first investment screening mechanism by a major European state in the 2010s. Importantly, the case research can confirm that the introduction of this initial screening mechanism was not related to the rise of China. At that stage, France faced a broader challenge of losing competitiveness across the board, rather than to a specific upcoming rival. Nevertheless, the increasing economic fragility felt in Paris set the stage for major concerns around China in the following years.

As previously highlighted, during the 2010s, China continued to mark significant success in industrial upgrading and pursued innovation-driven growth. China's advance exerted notable pressure on French industry across numerous sectors, including nuclear, automobiles, shipbuilding, rail, aerospace and utilities. China's entry into African markets also led to significant market shares declines for French firms, which proved to be particularly worrisome, as many African markets had historically been dominated by France. China began to encroach upon core areas of French industrial competence, posing a direct challenge.

As competition intensified throughout the 2010s, China saw the need to accelerate its acquisition of intellectual capital. This involved sizeable outward investment in foreign firms, as well as an increase in industrial espionage efforts. Although such activities may have been present to some degree in the 1990s and 2000s, they became more concerning for France as competition from China became more intense. An important case was the suspicion in 2016 that Huawei engaged in extensive espionage, seeking to harvest French intellectual capital. There was a growing perception that the fall of French telecoms giant Alcatel was directly linked to Huawei's espionage activities, reinforcing the rising threat perception of China's industrial ambitions.

After 2016 all Chinese investments in France started to come under increased scrutiny, with the French government blocking ongoing investments by China, such as in the Toulouse airport or in Accor Hotels. State elites began discussing ways to further strengthen the French investment screening mechanism in response to the growing influx of Chinese investments. Similar to Germany, the balancing process against China revolved around two interrelated elements: protecting 'strategic industries' and 'levelling the playing field'. The latter became more prominent as France's trade deficit continued to grow significantly in 2017 and 2018, highlighting the extent to which France was losing its industrial competitiveness. The preferential treatment enjoyed by China as a developing nation was no longer tolerable, especially considering Chinese investors could freely invest in France. While China's practices of restricted market access, subsidies and technology transfer could be accepted when it lagged behind France in terms of its technological capability and industrial competitiveness, the obvious advancements made by China necessitated the elimination of these advantages.

Moreover, French state elites recognised the need to not only focus on bolstering its 'offensive' arsenal vis-à-vis China, such as promoting and creating technological advantages in France, but also on defending them. France aimed to push China towards further market openness, dismantle perceived 'unfair' trade advantages, and prevent access to French technology that could contribute to China's successful accumulation of intellectual capital, technological capacity and overall competitiveness.

By 2018, Chinese investment in France was viewed as 'pillage', and a move gathered around strengthening the Montebourg decree to include more 'tools' able to counter Chinese investment incursions. It was time for France to 'stop being naïve' and better defend its interests, which meant extending the 'shield' over French businesses provided by the Montebourg decree to further 'strategic', high technology sectors. State elites came to the realisation that if France failed to protect its high-technology capabilities and allowed them to be overtaken by China, France could end up becoming China's economic 'vassal'. If China established a technological lead over France, a growing amount of global value-added previously generated in France would shift to China. Fewer high-value functions, such as R&D and top corporate decision-making, would be located in France in the future. Consequently, France risked becoming a middle-tier consumer market, reliant on know-how and technology from China. This scenario, referred to as 'economic vassalisation' by the minister of the economy, needed to be prevented at all costs. Therefore, the prevention

strategy in France entailed concerted efforts to stimulate the innovation potential of French industry while also protecting it through enhancement of France's investment screening mechanism.

In 2019, France initiated a renewed reform process called the PACTE initiative, similar to Germany's new industrial strategy launched during the same period. The PACTE initiative brought together and sought to improve the various competitiveness-related policy measures in the preceding years. The package included both offensive and defensive elements. The offensive measures, akin to those in Germany, centred around ensuring France's technological readiness for the fourth industrial revolution. This involved intensified planning and investment in foundational technologies such as AI, smart manufacturing and robotics. These technologies were considered essential for building competitive advantages in sectors where France already had expertise, including energy provision, health care and potentially quantum computing in the future.

However, France's success in attaining mastery of the foundational technologies and leveraging them for competitive advantage was imperilled by China's rapid technological ascent. China targeted France as a source of intellectual capital that could be used to eventually leapfrog it as these emerging technologies matured. Thus, as part of the same policy package, more 'defensive' measures were deemed necessary, including tighter investment restrictions. 'Economic security' became central for French state elites, with a new economic security agency — SISSE — tasked with protecting the 'material and immaterial assets of strategic importance' for the nation. Monitoring posts were set up across the country as an integral part of the investment screening process, helping to identify threatening foreign investments.

The investment screening mechanism was further expanded to include additional high technology sectors that required defence, aligning with the areas where France wanted to achieve mastery and where China was rapidly catching up. These new sectors included robotics, AI, energy storage and semi-conductors. The stage was thereby set for further tightening in the early 2020s. New areas such as renewable energy and biotechnology were also to be protected in France, again areas where China was seeking upgrading and eventual dominance.

In summary, France faced broad competitiveness challenges in the 2010s, which led to increasingly active state involvement in redressing France industrial deficiencies. However,

it was China's evident successes in pursuing innovation-driven growth and its targeting of French technology that moved France towards a significantly more defensive posture. China could no longer be seen as a business 'Eldorado'; instead, it emerged as an economic rival, intent on surpassing France in key industries and sectors. Access to French intellectual capital played a crucial role in China's efforts, necessitating measures to halt its access, not least as a way to put pressure on China to open its markets up further and forego its 'developmental' advantages. The implementation and continued deepening of an investment screening mechanism served these purposes.

The European Union's reversal on China

As we observed, the overall view in Brussels throughout the 2000s and into the 2010s was positive towards China, aligning with Paris and Berlin. The emphasis was on the opportunities presented to European business in the expanding Chinese market. The European Commission saw China as integral to European competitiveness, not as a potential rival, but rather as a crucial growing market that Europe needed to tap for continued success on the global economic stage. The 'synergistic' perspective of the European and Chinese economies, as seen in Paris and Berlin, was also prominent in Brussels.

Although some concerns started to arise in the late 2000s at the Commission regarding the growing trading deficit with China, these concerns were largely swept away by the onset of the Great Recession. The importance of the Chinese economy further increased as it became one of the key demand sources in the post-2008 period. Meanwhile, Europe was faced with a double-dip recession and a lack of investment capital, with business confidence severely damaged by the crisis. China emerged as an important supplier of capital, viewed by the Commission as a 'massive opportunity' that should be welcomed. Chinese investment across the EU experienced a substantial increase and was supported in Brussels. The European Commission also embraced Beijing's BRI, considering it as an additional opportunity for economic integration with China within the framework of the Commission's Investment Plan for Europe of the early 2010s. Chinese investment in Europe was not only welcomed at this stage, but was actively sought after.

The situation, however, began to change rapidly post-2015, particularly in 2016/17, as Brussels adopted a more hawkish stance towards Chinese investments. As we saw, this shift in Brussels can be understood in the context of the increasingly confrontational positions taken by Europe's two major economic powers, France and Germany. Together with Italy,

they advocated the creation of a supranational screening system in 2017, coinciding with Germany's handling of the repercussions of the Chinese takeover of Kuka and France's mounting threat perception of China. Consequently, as worries about China's emergence as a key economic rival intensified in Europe's key economies, these concerns translated to the supranational level as well.

Following the investment screening push by Paris and Berlin, the Commission's discourse on FDI in Europe began to change substantially. Openness and liberalism were certainly still stressed, but increasingly with the need for 'control'. This eventually led to the Commission's proposal to establish an investment screening framework in 2017, with Europe no longer being 'naïve free traders', as Juncker put it. The motives behind Germany and France's elevation of the issue to the supranational level included clearing the European legal/regulatory space for Paris and Berlin to pursue a more protectionist investment policy stance. But in addition, they were highly likely linked to the issues of 'reciprocity' raised by Germany and France. Leveraging the entire European market to compel further market access would be more powerful tool than pursuing these efforts solely in the individual capitals.

Similar to Paris and Berlin, the threat perception of China in Brussels began to grow from around 2016 onwards. This was evident in numerous competitiveness reports, which highlighted the narrowing gap between Europe and China. The concerns in Brussels, like in the major capitals, centred around China's increasing competitiveness in higher value-added industrial segments, where the European economy had previously excelled. The risk of a major relative competitiveness loss mounted. So, the balancing process gained further momentum, alongside the investment screening policy drive in Paris and Berlin.

The Commission recognised China's shift towards high-value manufacturing and observed that China's acquisitions in Europe were helping in this regard. The Commission's research highlighted that the productivity of Chinese firms that had acquired European high-technology firms had improved. As we demonstrated, there were explicit acknowledgements in Brussels that a large proportion of the EU's global manufacturing markets share losses in the preceding decade were attributable to China's rising competitiveness.

Moving to the late 2010s, the Commission directly referred to China as an economic rival, seeking to leapfrog Europe at the technological frontier. It was imperative for Europe to

mount a pushback offensive, which meant not only pursuing a more active industrial policy, in tune again with the ideas in the major capitals, but also reinforcing the EU defensive arsenal — a key component of which was investment screening. In response to the rising threat perception of China, the Commission introduced new investment screening legislation in 2019, reflecting the changing China strategy, and the initiation of a balancing process.

As we saw, however, the new EU screening regulation proved not to be as all-encompassing and stringent as was initially hoped in Paris or Brussels, which were intent on creating a system more akin to CFIUS in the United States. Instead, EU investment screening took the form of a Europe-wide information sharing system, with the European Commission acting in a 'monitoring' role, resembling more a surveillance apparatus rather than direct control. The relative watering down of the EU screening system in its first iteration can be attributed to significant divergences across the EU's member states on the issue.

These divergences, as we posited, can also be understood in an economic realist sense, taking into account each member state's relative competitive position versus China. States that opposed a stringent screening mechanism, such as Portugal, Malta, Cyprus or Greece, are not in direct competition with China and are unlikely to be in the foreseeable future. All of them even provide certain services essential for Chinese economic expansion in Europe, thus viewing China as a positive force for developing the productive capacities of their economies.

Meanwhile, states such as the Netherlands and Sweden have a predisposition towards liberal policies, driven not by ideological factors but by their competitive positions in the global economy. They are both highly competitive, high-technology and leading players in their particular market segments. In order to ensure markets are as open as possible for their businesses, liberal policy tends to be the preference. This explains the initial hesitant stance towards investment screening seen in these states in 2017. However, as we illustrated, the threat perception of China also began to grow, just somewhat later than in Berlin and Paris, eventually leading both of these liberal trading states to become key supporters of further tightening of European investment controls.

Indeed, the implementation of the investment controls in 2019 marked just the beginning of a broader trend, whereby the threat perception of China intensified across all the major European economies, even among the traditional free traders. There was an increasing

consensus that Europe needed to enhance and protect its innovation potential. This necessitated the introduction of a more proactive Europe-wide industrial policy, especially in the context of rapidly advancing fourth industrial revolution technologies. In tandem, more robust protective measures were necessary for those technological areas deemed 'strategic'. The goal was to ensure Europe's 'technological sovereignty', which was part of positioning Europe at the forefront of technological paradigm shifts. Europe should not just become a 'user' of emerging technologies. Safeguarding Europe's capacity to generate new technology, manifested in intellectual capital, became paramount, a key part of which was the continuous reinforcement of the screening tool.

Conclusions

This research argues that the introduction of investment screening measures in Europe can be effectively analysed using an economic realist framework. While previous research has acknowledged the importance of 'technology' in the establishment of European screening mechanisms, this study delves deeper into the underlying forces behind the importance of technology for states. By doing so, it not only highlights the central role of technology and its protection in the implementation of the screening mechanisms but also sheds light on the reasons behind its significance.

In the economic realist understanding, technology — an expression of intellectual capital — is considered foundational to the development of an economy's productive capabilities, making it crucial for states to support its creation. As economies are separated into distinct political units in the form of nation-states, there is inherent competition between them — each nation wants its economy to be at the technological frontier and benefit from the resulting competitive advantages. With major economic powers each seeking a position at the technological frontier, the possibility of friction is always present. Friction arises especially when a rising economic power wants to establish a leading position, prompting balancing behaviour in the previously dominant economies. By using this framework, we can go beyond observing the relevance of technology, but also understand its connection to industrial competitiveness and the balance of power, which in turn conditions state behaviour in regard to investment policy. Thus, we can see why the introduction of investment screening in Europe occurred when it did. The issue of technology only became important for European states as China showed signs of closing its competitive gap with Europe, leading to a rising threat perception and resultant balancing process.

In connection, the study can also help in understanding FDI policy in general. As we saw in the introduction, FDI policy is often understood in terms of political systems, whether a certain government is authoritarian or democratic, or in terms of special interest groups, in the form of, for example, corporate lobbying. By considering FDI policy within the economic realist framework, as we have done here, a different, potentially useful understanding can emerge. FDI policy is not seen as a result of certain political institutions or interest groups, but rather as a function of an economy's competitive position.

Germany and France did not begin to implement increased investment controls due to a change in type of government, or direct interest group pressure. Instead, tighter investment control was connected to concerns related to a decline in relative competitiveness against China amongst state elites. FDI policy, along with trade policies, tends to be liberal when a state's economy is in a highly competitive position and situated at the technological frontier. Its businesses strive to access as many markets as possible, and benefit from their inherently high competitiveness. However, if their competitiveness is threatened, the calculus for state elites begins to change, necessitating more control and intervention, with the underlying goal of preserving competitive advantage.

These propositions of economic realism in regard to foreign investment policy are straightforward, provide valuable insight for further research on FDI intervention and can be applied to other cases, potentially expanding the use of alternative theoretical frameworks on the topic.

Finally, this research also helps illuminate the broader economic relationship between Europe's major powers and China. A more protectionist stance in Europe in terms of inward investment is just one component of the larger rebalancing dynamic commencing, observed across all areas of economic interaction, particularly in trade. Hence, the economic realist framework presented in this study offers a useful foundation for exploring other aspects of the economic relationship, and understanding its future trajectory.

When examining Germany, it becomes evident from the preceding analysis that economic relations are unlikely to return to anything resembling the 'complementarity'/'synergistic' period between the economies. Germany and China have converged, as a result of China's success in upgrading its industries. Consequently, the days of Germany welcoming and encouraging Chinese investment in Germany are highly unlikely to return. Nevertheless, a few important points are worth highlighting. While Germany now perceives China as a

direct industrial competitor, and needs to balance it, this does not negate the fact that the Chinese market continues to be a highly important growth driver for the German industrial complex. Therefore, while German state elites have begun to lean hawkish on China, they need to exercise caution — being excluded from Chinese markets would have a severe impact on German industry, which cannot, yet, be compensated by strong growth elsewhere. As a result, occasional deviations from the increasingly hawkish stance might occur, such as allowing some Chinese investment in Germany by selectively opening the 'barndoor' on occasion to ensure continued access to Chinese markets.

In the long run, however, the realisation that China is becoming a direct rival for industrial leadership means the dependency on the Chinese economy must be reduced. This is likely to have two main consequences. Firstly, Germany may refocus its attention on the United States, with whom it shares some economic rivalry but not broad competition in the same industrial segments that China is targeting. Strengthening transatlantic ties, in the process ensuring export markets, and eventually aligning with US efforts to balance China become attractive incentives for Germany. Secondly, Germany's elevated reliance on the Chinese economy to generate growth domestically is principally caused by lacklustre demand in European economies over the past decade. If the European economy can be revitalised and a sustainable upturn in demand can be engineered, Germany would naturally reduce its dependence on Chinese growth to keep the German industrial export machine going. That suggests Germany may increasingly opt for more European economic integration, assuming a leading role in reenergising European growth. Consequently, there may be support of fiscal union in the future as a means to strengthen the European economy.

In the case of France, similar to Germany, it is highly improbable that relations can revert to a state resembling the pre-2015 period, where Chinese investment was highly welcome in France and a notion of synergistic economies existed among French state elites. On the contrary, the trajectory for France appears to be quite the opposite. As France's competitive position has faced significant threats in recent years, it is likely to adopt higher levels of protectionism and engage in greater balancing of China.

It is worth noting that France relies substantially less than Germany on exports and, consequently, on the Chinese economy. With healthy population growth by European standards, internal demand can remain robust for the foreseeable future, allowing greater room for France to take a hawkish stance on China. While Germany may oscillate to a

degree between a hawkish and a more accommodative stance due to its export dependence, France is more likely to maintain a firm and consistent position.

Regarding the implications for the European Union, as principal economic powers in Europe move towards a more confrontational stance, this will also have consequences on the supranational level. With the threat perception of China widening in recent years, encompassing more states beyond just Germany and France, divergent approaches to China are diminishing. Consequently, a more unified and assertive stance is likely to assert itself in Brussels, driven in part by an increased threat perception of China within the European Commission as well.

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