

Germany's Economic Integration: Automotive Industry and FDI Analysis

Xintong Zhou

School of Business, University of Southampton, Southampton, UK

Abstract: In this paper, Germany's significant role was explored in regional integration and its competitive edge in the automotive manufacturing industry, underlining the country's strategic involvement in the European Union and World Trade Organisation. Germany's participation in the EU has been instrumental in promoting economic integration across Europe, benefiting from free trade agreements and contributing to the EU's status as a major trade bloc. The paper also delves into the reasons behind Germany's prowess in the automotive sector, using Porter's Diamond Model to analyze factors like advanced technology, skilled workforce, strict consumer standards, and supportive industries, all contributing to the country's global competitiveness in this domain. Furthermore, the study investigates the dynamics of Foreign Direct Investment (FDI) in Germany, identifying key attractions for foreign investors such as technological leadership, a robust market, efficient infrastructure, and favorable investment policies. However, challenges like rigorous government regulations on FDI and cultural differences pose potential hurdles for foreign investors. The conclusion emphasizes that while Germany offers substantial opportunities due to its economic strength and market potential, foreign entities must carefully navigate these challenges to successfully invest and operate in the German market.

Keywords: Economic Integration, Germany, Automotive Industry, Foreign Direct investment (FDI), European Union (EU).

1. Introduction

In recent years, the global economic environment has experienced substantial integration and interconnectedness. This is mostly due to globalisation and the factors such as liberalisation of the international trade system and technological advances that have been taking place throughout the world. The result has been an increase in regional integration and the creation of various economic and trade blocs around the globe. As can be seen from the current picture, countries have made considerable progress in terms of regional integration, the establishment of and involvement in trade blocs, as well as industrial development and foreign direct investment (FDI) inflows.

Germany was chosen to conduct the research. It is a member of the World Trade Organisation and is the largest economy in Europe, with the fourth-largest GDP in the world and the first in Europe [1, 2]. It has experienced considerable regional integration at this stage. The focus of this essay is on the progress and motivation of Germany in regional integration, as well as the competitive advantage of the automotive manufacturing industry of the concerned country. The emphasis also lies on the dynamics of foreign direct investment in the country. Porter's diamond model will be used in the text to explain the achievement of international competitiveness.

2. Achievement in the Domain of Regional Integration

A process of regional economic integration involves countries within a geographical region cooperating to reduce or remove barriers to international trade, people movement, and capital movement [3]. Besides being a member of the WTO, Germany is also a member of the European Union. Among the main regional trading blocs in the world are the EU, NAFTA, ASEAN, AU, and so on, which is a form of

regional integration [4]. German participation in the EU implies enhanced regional economic integration.

The EU is a regional trade bloc. European Union (EU) is an international organization consisting of 27 countries that governs economic, social, and security policies. The European Union was initially limited to western Europe, however, during the early 21st century, it expanded into central and eastern Europe. Its members include Germany, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Malta, the Netherlands, Poland, Spain, and Sweden, among others. Having been one of the members of the European Union, the United Kingdom left the organization in 2020 [5].

One of the core member states of the EU, Germany plays an important role in European trade and contributes significantly to regional economic integration. The EU is the world's largest trade bloc. As measured in purchasing power standards (PPS), the EU-27 accounted for 16.0% of the global GDP in 2017. As a result, it ranked third in the world. With a share of the world GDP of 3.7%, Germany is the largest economy in the EU [6]. The country has been able to achieve peace, stability, and prosperity. Also, most of Germany's goods, services, money, and people are free to move throughout the continent and contribute substantially to EU trade, thus playing a major role in the promotion of integration. Most importantly, Germany has put a great deal of focus on promoting balanced regional development and has primarily pursued regional economic integration through plans and policies that promote balanced regional development, such as the creation of fiscal balance based on the division of powers and taxation systems [7].

Germany joined the EU and the EU signed a lot of free trade agreements on behalf of countries. And Germany benefits from these agreements because it's a member country. EU has 12 free trade agreements including the EU-Mercosur agreement, EU-United Kingdom agreement, EU-Mexico agreement, EU-Singapore free trade agreement, EU-Vietnam Free Trade Agreement, EU-Japan Economic Partnership

Agreement, EU-Central America Association Agreement and so on [8]. Through free trade agreements, tariffs are reduced, goods and services are more easily exported, and customs procedures are improved, resulting in benefits for both individuals and businesses.

The EU is a political union, an economic union, and a single market. This means that the EU eliminates only trade barriers from member states, enabling free movement of nearly all goods, services, money, and people the length and breadth of most of the continent. And, EU citizens are entitled to study, work, or retire in any EU country. Besides, the EU requires that each member state treat EU citizens the same as its own citizens in the areas of employment, social security, and taxation. A unified fiscal and monetary policy has also been implemented. Through the use of the euro, currency fluctuations and exchange costs are eliminated, thereby strengthening the single market to the benefit of citizens. Furthermore, it establishes a common external tariff and achieves the perfect unification of all policies [9].

3. Main Motivating Factors for Pursuing Regional Integration

The main factors driving European economic integration, particularly for Germany, included economic improvement, legal harmonization, political cohesion, and heightened security to ensure stability and enhance prosperity across the region.

3.1. Political and security factors

The Germans wanted to maintain political and social stability and expand their influence. Originally, the European Union was known as the European Coal and Steel Community, with Germany as one of its founding members. In the aftermath of World War II, Germany aimed to secure peace by improving its geographical disadvantage and gaining a barrier against communism. During the Cold War, there were two superpowers with competing political and economic ideologies. Germany suffered from a poor geo-environment, was caught between two opposing camps, and had the most serious border disputes of any European country [10].

The post-war strategy of the Federal Republic of Germany (West Germany) adopted both an internal and an external policy of 'rebuilding the homeland'. The political and economic goals of this policy were achieved through the promotion of regional integration, such as through the formation of the European Coal and Steel Community (1952), the European Economic Community (1957), and the European Atomic Energy Community (1957), all of which were instrumental in establishing the process of cooperation between Germany and European regional organizations [11]. Moreover, as a defeated nation in two world wars, Germany stayed a low international standing. It is imperative for Germany to expand its influence within Europe by joining the organisation, while leveraging Europe as a platform may lead to an increase in Germany's influence internationally.

3.2. Economic factor

Germany sought to improve its economy. Following World War II, Germany sought to rectify the economic chaos caused by the war. Due to the destruction of most cities and machine shops, infrastructures and housing were in ruins. Furthermore, a vast number of top scientists and researchers went to the United States or the Soviet Union. Seriously, food production

in 1947 was 51% less than that of 1938 and industrial output was only a third of 1938 levels. The presence of such a fact was one of the greatest challenges for the war-torn country [12]. It was at this time that Germany needed the opportunity to upgrade its economy, spurring it to join the European Coal and Steel Community and promote regional integration.

3.3. Legal factor

Germany pursued a rational model of international and regional governance to safeguard its national interests. The Federal Republic of Germany developed a new understanding of international law, European law, and domestic law following the Second World War, which led to a broader understanding of justice. This concept allows Germany to reflect on the legality, rationality, and legitimacy of international and regional governance models, as well as actively participate in regional organisations for the protection of sovereignty, integrity, and security within the framework of this framework [13]. Given the significant role the European regional mechanism plays in the development and peace of Europe, as well as Germany's development dilemma in the postwar period, Germany needed a rational model of governance and legal support. A rational model of legal development can be pursued by actively taking part in and contributing to the establishment of European regional mechanisms from the beginning, as well as by promoting the process of European integration [14]. The law, therefore, pushes Germany to pursue regional integration.

4. Reasons for the International Competitive Advantage of German Automotive Manufacturing--- Porter's Diamond Model

Germany is a world leader in the automotive, electrical, mechanical, and chemical industries. It is considered to be one of the most competitive nations in the world in the manufacturing industry [15]. Automobiles have always been regarded as a pillar of German industry. In comparison with other countries, the percentage of employment in and turnover of the German automotive industry is larger and has been increasing since the 1980s [16]. In Figure 1, it can be seen that the German auto industry suffered from both the international situation and the epidemic in 2020. However, it still contributes nearly a quarter of the value of the German industry, with overall sales of €378.1 billion accounting for 11.3% of Germany's annual GDP. This is an indication of the international competitiveness of the auto industry.

Porter's diamond model provides a framework for exploring why certain industries are national competitive internationally [18]. Porter's diamond model indicates that an industry's international competitiveness is influenced by four factors: Firm Strategy, Structure and Rivalry; Factor Conditions; Related and Supporting Industries; and Demand Conditions. These four elements work in conjunction to form a diamond system. Aside from the four broad determinants, two influencing factors exist: government and opportunity. They are not controllable and they may not directly affect international competitiveness, but they influence the four determinants that ultimately affect the international competitiveness of the industry.

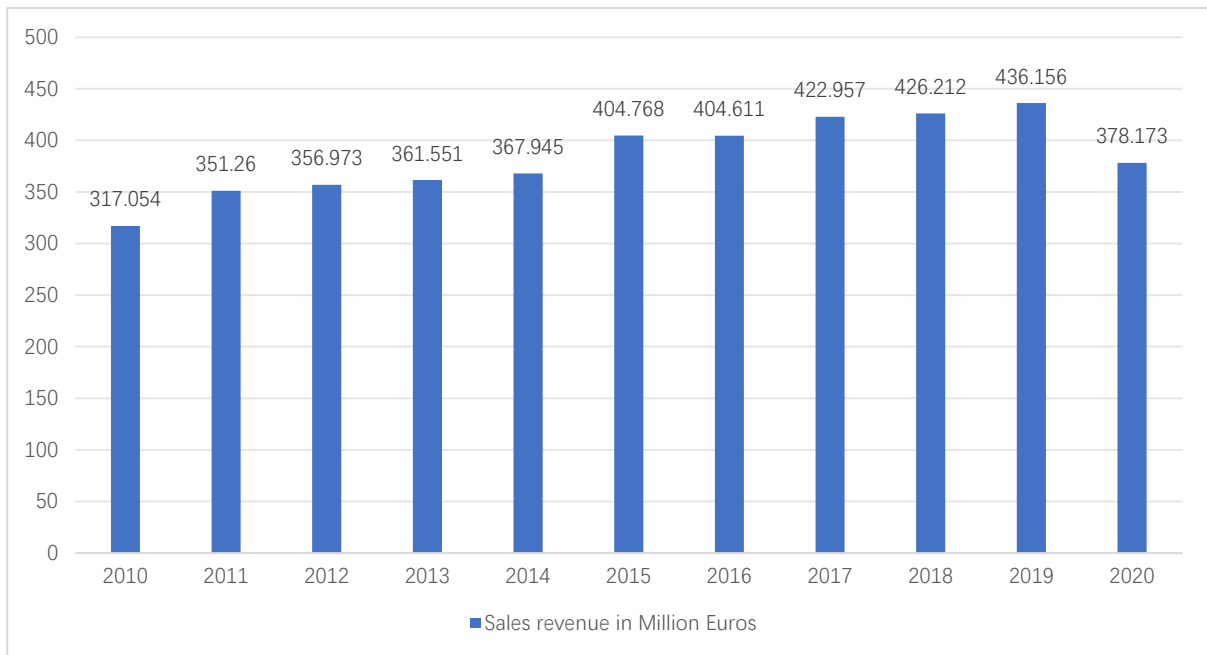


Figure 1. Ten-year sales revenue of the German automotive industry

Source: Statista [17]

4.1. Factor conditions

Factor conditions include many aspects of production, such as natural resources, capital, labour, and technology. Technology, as well as highly qualified personnel, are also important factors in the German automobile industry. This has a favourable effect on the development of the German automobile industry's international competitiveness.

4.1.1. Technology

The German automobile industry possesses a long history of technological development in the areas of environmental protection, new energy, safety, quality, and electric vehicles. There are approximately 3,000 patents filed by German car manufacturers every year, which keeps the German automotive industry at the forefront of innovation. To improve their core competencies, German automotive manufacturers place a high value on research and development and are willing to invest large sums of money. Volkswagen, for example, intends to invest approximately 27 billion euros in the digitalisation of its products and businesses by 2025 [19].

Additionally, a total of 28 percent of the German industry's R&D personnel are involved in the development of vehicles. All of this contributes to the fact that the German automotive industry is a global technology leader and reinforces its position as a pillar of the German economy [20]. As a result of this sophisticated division of labour in research and development and its continuous optimization, the German automotive industry as a whole continues to offer great potential for innovation and great gains in efficiency, which is one of the reasons why the sector enjoys such a strong competitive advantage around the world.

4.1.2. Skilled talents

The German government attaches considerable importance to the development of talent and has created several institutions and programs dedicated to this purpose. German

companies emphasize training and development, particularly in the areas of talent development, training, and recruitment [21]. Volkswagen, for example, is investing not only in innovative technology, but also in the next generation of IT professionals. The Volkswagen Group has partnered with the Talent Factory to train software developers, investing €3.7 million in the first year and €2 million in the subsequent years. The unique skills of these talents can result in technological innovations with the potential to create a competitive advantage [19].

4.2. Demand conditions

The German consumer has very stringent requirements for German automobiles, which has led to continuous improvement and quality improvements to make the industry more competitive. The chart below (Figure 2) illustrates the results of the J.D. Power 2019 German Vehicle Reliability Study, which shows the significant progress made by German automobile companies in terms of vehicle reliability. This study examines the performance of vehicles after several years of use, including mechanical failures, technical issues, and overall vehicle quality. This Figure indicates that some German brands such as Audi, BMW, and Mercedes-Benz have fallen short of expectations and are below the industry average.

According to the 2019 survey, German consumer satisfaction is not guaranteed, and German vehicle buyers are generally less satisfied. In both the premium and sales segments, Germany scores lower than the United Kingdom [22]. The results suggest that German consumers are particularly demanding of their country's automobiles, and that companies will endeavour to innovate and improve the quality of their products to meet German customers' expectations and increase customer satisfaction, which will boost the international competitiveness of the German automobile industry.

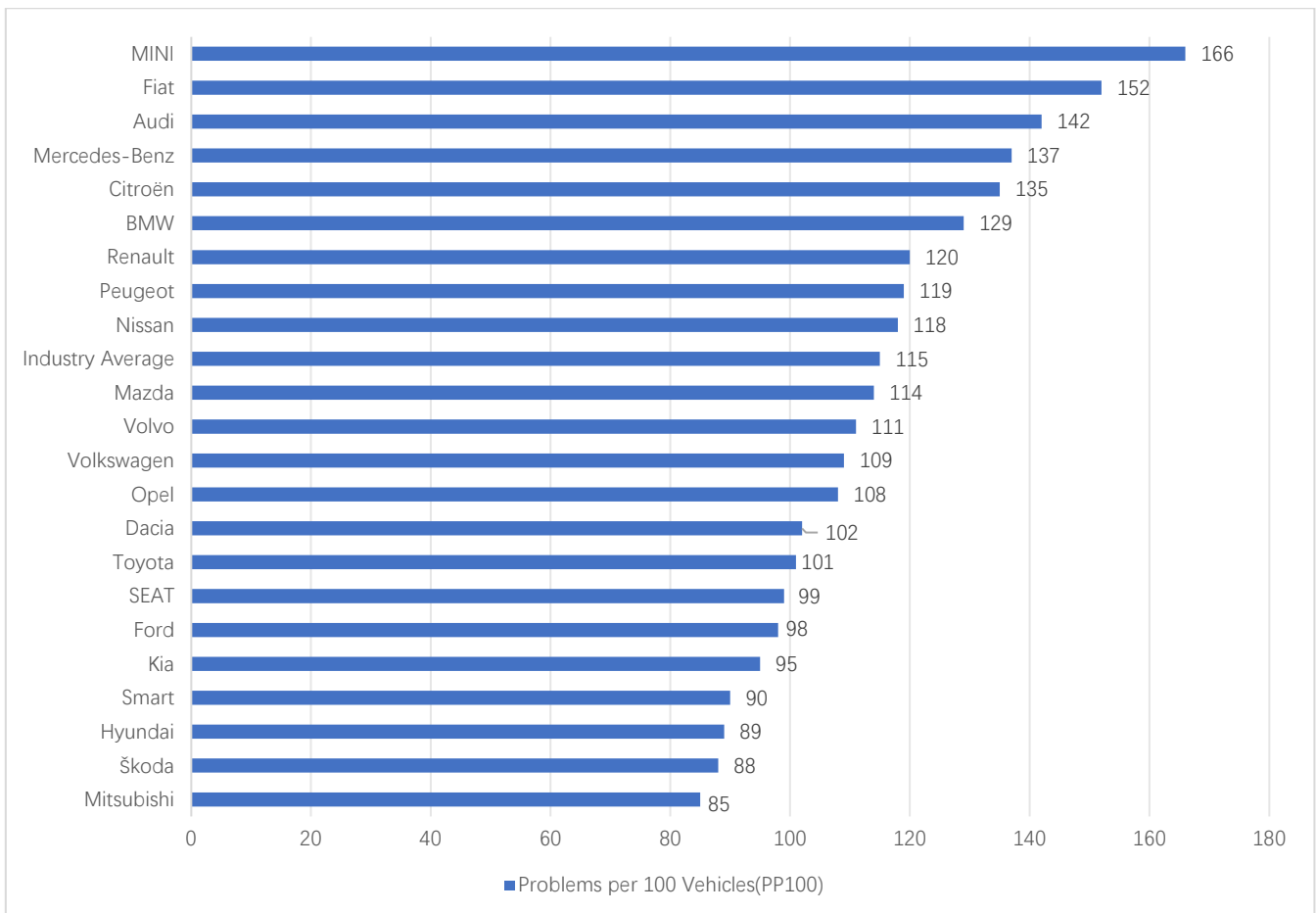


Figure 2. 2019 Germany Vehicle Dependability Study(VDS) Ranking (Problems per 100 Vehicles)
 Source: J.D. Power 2019 Germany Vehicle Dependability Study, SM [22]

4.3. Related and supporting industries

The competitive advantage of the German automotive industry cannot be achieved without the support of related industries such as machinery, chemicals, automotive components manufacturing, education, and many others.

4.3.1. Automotive components manufacturing

It is well known worldwide that German automotive component manufacturers have a high-quality reputation, which has resulted in relatively significant sales of German automotive components worldwide. The sales of automotive components rose in 2017-2018 in Germany, but declined for the second consecutive year due to the epidemic. In comparison to 2019, there is a reduction of €9.1 billion in 2020, which represents a decline of 11% [23]. Nevertheless, it continues to be a very significant factor for the development of the automobile industry. Through the cross-synergy of car manufacturers and component suppliers, the German automotive industry is well known worldwide.

The auto parts and accessories supplier chain owns core technologies and lean production capabilities. For example, over the past three years, the five German auto parts suppliers Bosch, Continental, ZF, Mahle and Schaeffler have acquired and invested in more than forty promising technology start-ups. In this way, they also hope to maintain their position at the top end of the market and leave other rivals in their field

behind [24]. In addition, better quality and more innovative products will increase the international competitiveness of the automotive industry.

4.3.2. Education Industry

Education in Germany provides significant support for the automotive industry, training skilled labour for future cars Manufacturing. An influential part of German education is the apprenticeship system of vocational training. In the apprenticeship system, the government and the companies work together to train qualified workers through apprenticeship training in the manufacturing industry and theoretical studies in school. Before receiving their certification, trainees must spend a specific number of days in apprenticeships with companies and attend educational programs at vocational schools[25]. It facilitates the matching of talent skills with market demand as well as a quota system which ensures that the most talented employees remain in the industry .

Figure 3 shows that apprenticeship contracts signed in 2019 were the highest in automotive manufacturing. This shows that talent is concentrated in the automotive manufacturing industry. Moreover, because the automotive industry has traditionally been dominant, the government has established a national research fund to attract talent at an early stage. An example would be the Volkswagen plant fund, where talent benefits from relevant research results [19].

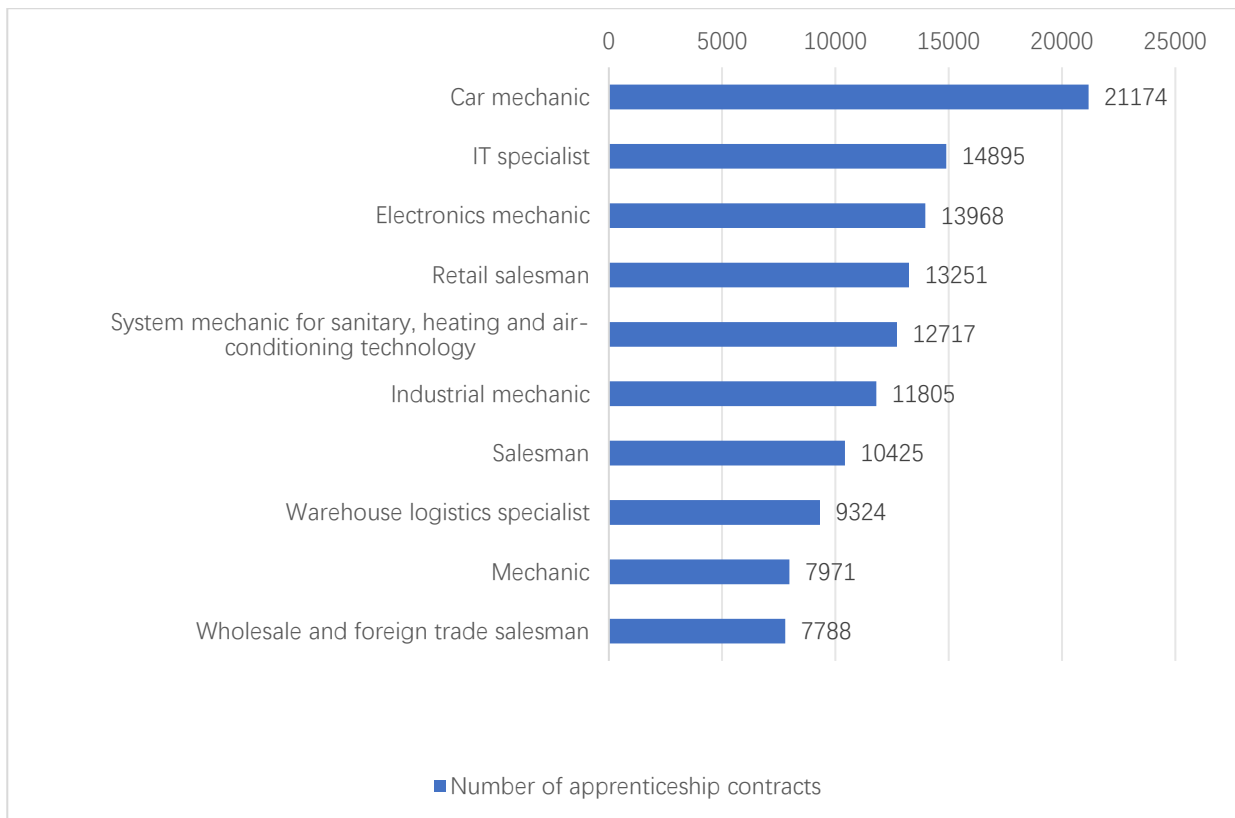


Figure 3. Germany's Top Busy Occupations Among Men: Newly Signed Apprenticeships in 2019
Source: Statistisches Bundesamt [26, 27]

4.4. Firm strategy, structure and rivalry

There is a high degree of specialization in the major automobile manufacturers in Germany, which results in enhanced efficiency and a better customer experience than the competition. Germany has a number of strong car manufacturers, such as Daimler Benz, Volkswagen, Audi, BMW and Porsche.

There are three world-renowned automotive brands in Germany: Mercedes-Benz, BMW and Audi, which compete and promote each other, and which serve as excellent examples of the competitive development of the global automotive industry. From a strategic point of view, this is a typical focus strategy. By specializing in the target market segment, it is able to provide superior service to the competition. BMW and Mercedes-Benz, for example, have always focused on developing this segment of luxury vehicles. This type of company is definitely very competitive. What makes it unique is its specialisation. As a result of intense domestic competition, companies strive to improve their production and operational efficiency, allowing them to become more internationally attractive. Firms are pressured by domestic competition to innovate, improve quality, reduce costs, and upgrade advanced factors of production through investment [28, 29, 30]. All of these factors contribute to the creation of globally competitive companies and thus to the international competitiveness of the industry.

4.5. Government

German policy on low-emission vehicles is known as the "Nationaler Entwicklungsplan Elektromobilität", which aims to develop the automotive industry and protect it [31]. German policymakers explicitly aim to keep the position of German manufacturers and suppliers in the future [32]. Major

German manufacturers and suppliers have access to extensive R&D support to conduct research in the field of electric vehicles, production technologies, and demonstration projects. The result is significant investments in German automotive manufacturing capabilities and technology [33]. Due to this, the German automotive manufacturing industry has become more competitive internationally.

4.6. Chance

German manufacturing benefited from a wave of electrification and intelligence. It is imperative that the German automotive industry invest more in new technologies to remain competitive. VW also announced in 2017 an ambitious plan to procure electric vehicle batteries, with plans to obtain more than €50 billion in batteries by 2030 and electrify all 300 of its models by 2030 [34]. This opportunity is driving significant technological advances in the German automotive industry and increasing its competitiveness.

5. The Motivation Behind FDI Inflow

Foreign direct investment (FDI) is defined as an investment made directly by an individual or company into the operations of another country's entity in the presence of the investor having some influence or control over the operation [35]. The term greenfield investment refers to a type of foreign direct investment in which a parent company establishes a subsidiary in a foreign country to start a business from scratch [36]. The number of greenfield investments in Germany is increasing rapidly. The Germany Trade & Invest (GTAI) annual FDI report indicates that Germany will attract an increasing number of foreign companies in the future.

As reported by the GTAI, there were 1,684 international companies entering Germany in 2021 through greenfield

investments, expansions, and relocations. A total of 372 mergers and acquisitions took place in Germany in the year 2022 [37]. According to the graph (Figure 4) below, Germany

is in the top three countries in the world in terms of FDI projects between 2015 and 2019, indicating that it is an attractive opportunity for foreign investors.

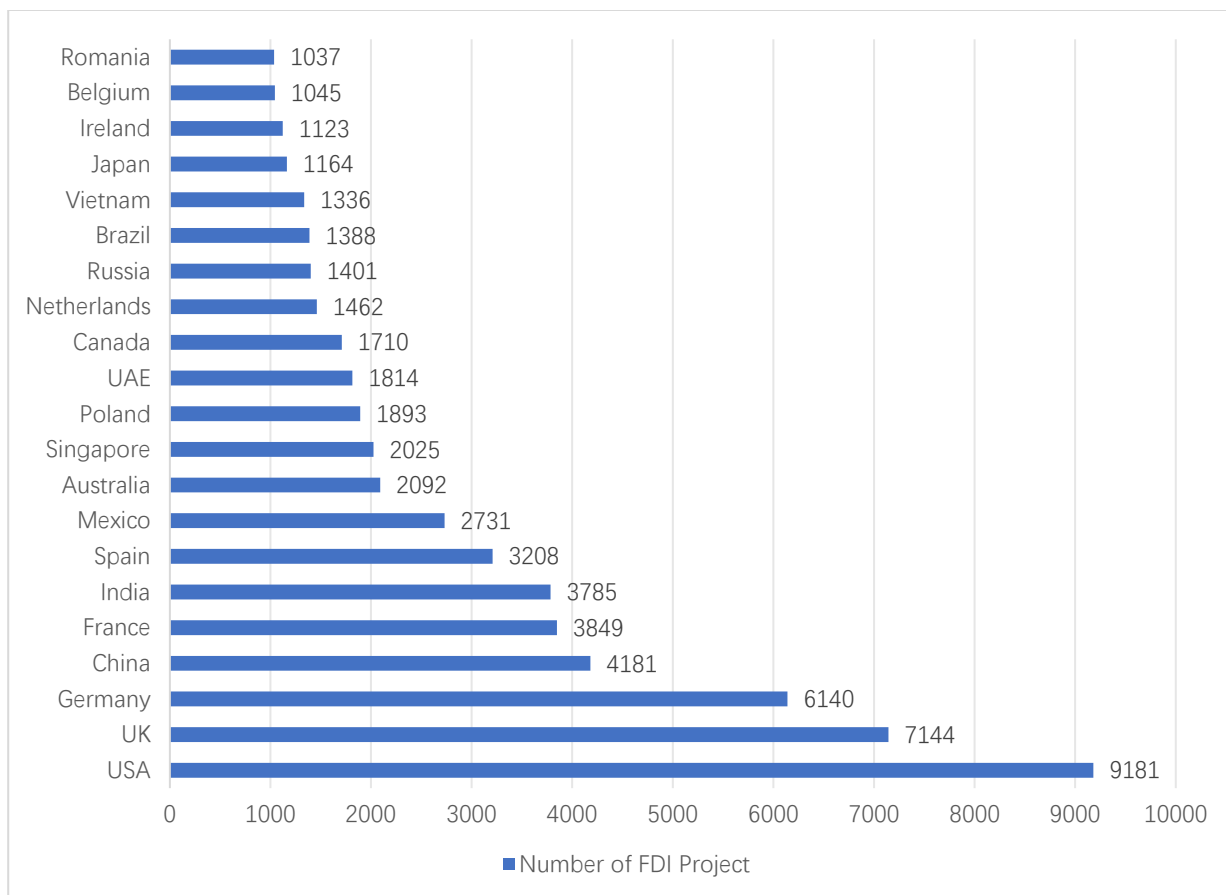


Figure 4. Top Destination Countries(2015-2019) by Number of FDI Project
Source: Statista; Bundesbank [38, 39]

The inflow of foreign direct investment (FDI) to Germany is driven by four key factors, each highlighting the crucial motivations behind such investments.

5.1. Resources

Foreign investors seek access to high technology, and Germany is an industry leader in the field of manufacturing automation, and production in the manufacturing sector is highly automated. The automobile and electronics industries, for instance, are the most likely to benefit from industrial robot implementations. As reported by the International Federation of Robotics, 346 industrial robots per 10,000 employees were operational in 2019, with 20,500 robots deployed in 2019. Joyson Electronics has acquired a number of companies, including the German robotics company Ima, the software company Innoventions and the German car navigation company Dawn, following the acquisition of the German automotive electronics company Preh in 2011. The company achieved synergistic growth in the areas of vehicle safety, automotive electronics, and automotive functional parts, strengthening its global competitiveness and increasing the number of patents it holds globally from approximately 1,300 in 2016 to over 5,000 in 2018 [40].

Foreign investors attempt to recruit top talent. Germany, on the other hand, is a country that is well endowed with technical talent and boasts a large number of the finest

scientists and scientists in leadership positions. Efforts have also been made to create a national talent development and incentive program as a means of guaranteeing the development of research talent. Many foreign companies choose to invest in Germany because of the high quality of the personnel, such as Amazilia Aerospace. There is an adequate supply of qualified personnel in Germany, particularly in Munich, where Amazilia Aerospace can recruit international talent with extensive experience [41].

5.2. Market

In order to reduce transportation costs, foreign investors want to locate production centres closer to target markets. According to the World Bank's 2018 Logistics Performance Index (Figure 5), Germany is Europe's global logistics centre and has an excellent infrastructure. In addition, Germany is centrally located in Europe and foreign investors will be able to quickly access German domestic and international markets and transport goods efficiently via the modern air, rail, water, or motorway transport networks [42]. For example, Maersk, the Danish container shipping company, plans to build a logistics centre in Duisburg. Additionally, the new logistics centre will connect directly with railways, rivers, and roads. The reason why Germany was chosen was its well-developed transport network and its close proximity to the market, which makes it more efficient to transport.

Country	LPI Rank	Infrastructure Rank
Germany	1	1
Japan	5	2
Netherlands	6	4
Singapore	7	6
United Kingdom	9	8
France	16	12
Spain	17	19
Czech Republic	22	26
China	26	20
Poland	28	35

Figure 5. Logistics Performance and Quality of Infrastructure in 2018
Source: World Bank [43]

Further, foreign investors desire to be closer to the consumer. Not only is the German market the economic centre of Europe, but it is also the largest domestic market in Europe. Figure 6 illustrates that Germany accounts for 25% of the EU's GDP and contains 19% of the total population of the EU [44]. Investors can gain access to a large and stable customer base and understand consumer preferences, and the reasons for customer satisfaction, and build relationships with

consumers. With Germany's integration into the global economy, foreign investors have access to knowledge, products, and employees on a global scale. According to the statement of the manager director of Xiaomi Technology Germany GmbH [45], Germany is the economic engine of the European Union and the most populous country, hence the strong consumer power is one of the reasons why the company chose Germany as a destination for its investments.

	GDP (in EUR tr)	Share of Total GDP (EU 27)	Population (in m)	Share of Total Population (EU 27)
Germany	3.3	25%	83	19%
France	2.3	17%	67	15%
Italy	1.7	12%	60	13%
Spain	1.1	8%	47	11%
Netherlands	0.8	6%	17	4%
Poland	0.5	4%	38	8%
Czech Republic	0.2	2%	11	2%
EU 27	13.3	100%	447	100%

Figure 6. Share of Total GDP and Population in the EU 2020
Source: Eurostat, World Bank [46, 47]

Foreign investors pursue an appropriate loan policy. Investors outside of Germany have the opportunity to participate in publicly subsidized loan schemes. There are usually low-interest rates and an attractive grace period associated with these schemes. And, the financial instruments or schemes provided by specific banks are available to foreign investors and are subject to the same conditions as those applicable to German investors.

Interest-reduced lending offers foreign investors the opportunity to obtain capital in a cost-effective manner during the investment phase, simplifying long-term financial planning. In addition, at the European level, the European Investment Bank (EIB) collaborates with private banks to finance investment projects. There are many advantages of EIB loans, including lower loan rates, long repayment terms, and other favourable terms, which are ideal for large investment projects [37].

5.3. Efficiency

Freedom is exploited by foreign investors to achieve greater efficiency. Efficiency-enhancing investments are also prevalent in regions with regional integration. Germany is a member of the European Union. And the EU is a single market. People, goods, and capital move freely within a country. Due to the broader market and increased competition in the EU, the allocation of resources can be made more productive for the foreign investor in the German market [48]. The long-term development of business is achieved through

the accumulation of factors of production more rapidly, the free flow of factors and goods, as well as better cooperation between science and technology.

5.4. Capability

Foreign investors want to improve their technology level making it easier for them to access R&D. Germany offers highly innovative regional networks where foreign investors have access to excellent knowledge, technology, and value chains. Through interactive research and learning processes, cutting-edge technologies are quickly diffused. Germany has the largest research community in Europe, with 24% of the EU's scientists residing and working in Germany. In addition, Germany hosts several renowned basic research institutes. By working with them, foreign investors can decrease the risks associated with new product development and thereby the level of R&D expenditures ([37]. For instance, Singapore's TeleMedC has formed an R&D partnership with the ophthalmology department of the University Hospital Hamburg-Eppendorf and will be operating in Hamburg [49].

6. Two Main Challenges Posed by The Local Business Environment

However, there are many challenges for foreign investors entering the German market, including government policy and culture.

6.1. Government policy on FDI

The German government has increased its scrutiny of investors from outside the EU in recent years. It was in 2017 and 2018 that Germany amended the Foreign Trade and Payments Ordinance (AWV) to allow the government to conduct security reviews of global M&A transactions involving critical infrastructures such as energy and information technology. Furthermore, the requirement for the approval of foreign equity investments in critical infrastructure and defence and security has been revised from 25% of the voting rights to a more stringent 10% [50]. As well, the German Government has broadened the definition of critical infrastructure companies, such as vaccine manufacturers. At the same time, Germany, along with France and Italy, has advocated for the establishment of a framework bill on foreign investment review at the EU level [51]. The AWV amendment specifically targets the health sector due to the COVID-19 pandemic.

Following the implementation of the German Foreign Trade and Payments Regulation (AWV), the legislature amended the Foreign Trade and Payments Act (AWG). A standstill obligation was imposed on all acquisitions that met the filing requirements, and the time frame for completing administrative procedures was adjusted. Generally, the AWG has two months to decide whether to initiate formal proceedings. Upon initiating such a procedure, there is a further period of four months to approve or disallow the operation. If the case in question is of particular complexity, the period can be extended by an additional three months [52].

As a result of recent amendments to AWG and AWV, the requirements for controlling investments have increased, which has resulted in more complex investigation procedures lengthening the inspection process significantly [53]. The successive reforms of foreign investment regulations and the increased regulation of foreign direct investment have many uncertainties for foreign investors, especially for foreign investors with a large number of investments in Germany such as China. The risk of investing in Germany and Europe continues to grow, and preparation is challenging but necessary. This means consumption of manpower and cost as well as is a limitation for foreign investors.

Additionally, the key areas identified in the framework agreement for increased scrutiny are highly overlapping with the recent investment priorities of Chinese companies. As a consequence, some of China's investments in Europe may be obstructive or even unsuccessful. In 2018, for example, the German government banned the Chinese company Yantai Taihai from acquiring the German machinery manufacturer Leifeld Metal Spinning. The German government considered the deal to present a potential risk to public order and information security since the high-strength metals produced by Leifeld are used in key areas such as automobiles, space stations, and industry [54].

6.2. Culture

Cultures are different, such as different trade union systems and different concepts of corporate governance and business practices. Germany is one of the countries with a strong trade union presence and a long history. When foreign investors enter the German market with a lack of understanding of the local trade union system and culture, this can easily lead to conflicts [55]. For example, there are significant differences between China and Germany in terms of trade union systems and labour management, both in terms of regulations and

ideology.

There are some Chinese companies lacking experience in adapting their processes to local systems, which causes them to continue using management models with Chinese characteristics in their European development, such as a high-pressure management style, an increased work intensity and an emphasis on interpersonal relations [56]. However, it is evident that these approaches from China cannot be used in the relatively well-established European social system, as they can easily lead to conflict and friction between Chinese companies and local employees and trade unions. Due to differences in operational scale, geographic location, and other aspects, cultural differences between companies from different countries can be significant. Management philosophies, pricing concepts, work attitudes, and management methods can all lead to intense cultural conflicts. When China's Joyson Electronics acquired Germany's Preh, Junyu Li, the CFO of Joyson Electronics, stated that the inevitable cultural conflicts were quite fierce. Germans care more about individual ideas and recognition, as well as the balance between personal life and work. This is different from the thinking of most Chinese people. During the process of integrating the two companies' cultures, it was very important for Preh. to respect the culture [57]. This is therefore a major challenge for foreign investors.

7. Conclusion

In conclusion, Germany, as one of the main members of the WTO and the EU, has contributed to regional integration, including the signing of a series of free trade agreements. It has also contributed to the trade dynamics of the EU in the current period. The main reasons for Germany's participation in the regional trade bloc were historical issues such as the desire to pursue peace and ameliorate the economic damage of the war, as well as legal issues.

Furthermore, Porter's diamond model was used to analyse the automotive industry, thus explaining that the industry is competitive due to talent, technology, and consumer markets. In addition to this, the German education sector and the automotive parts industry also provide significant support to the automotive industry, as well as the rapid growth of the industry due to internal competition. Government policy and intelligent development have also had an impact on the automotive industry.

German technology, markets, customer base, infrastructure, talent and policy factors are also responsible for the net inflow of FDI into Germany. However, changes to the AWG and AWV in Germany have increased the uncertainty of increased investment by foreign companies in Germany. In addition, cultural differences are a challenge and the different ways in which people work can lead to friction between unions and companies. Foreign companies looking to do FDI in Germany therefore also need to think about how to deal with the German challenge.

Acknowledgment

I would like to express my sincere gratitude to everyone who has supported and assisted me throughout the completion of this paper. First and foremost, I am deeply grateful to my supervisor for their diligent guidance and unwavering professional support. Additionally, I would like to express my heartfelt thanks to my classmates, who have been a constant source of support and encouragement. Their insights,

discussions, and camaraderie have not only enriched my learning experience but have also been crucial to the development of this research. Their willingness to share knowledge, exchange ideas, and offer constructive feedback has been truly invaluable. I am immensely appreciative of their friendship and collaboration. Lastly, a special thanks to my family and friends for their unwavering support and understanding throughout my academic and research endeavors. This study would not have been possible without their backing. Once again, I would like to express my heartfelt gratitude.

References

- [1] World Bank (2022a). GDP (current US\$) - Germany | Data. [online] Worldbank.org. Available at: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=DE>. [Accessed 16 Apr. 2022]
- [2] World Trade Organisation (2021). WTO Members and Observers. [online] wto.org. Available at: https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm. [Accessed 19 Apr. 2022]
- [3] Wild, J.J. and Wild, K.L. (2020). *International Business* Harlow: Pearson Education Ltd. pp.224–250.
- [4] O'Reilly, C. and Murphy, R.H. (2016). Exogenous Resource Shocks and Economic Freedom. SSRN Electronic Journal. doi:10.2139/ssrn.2832541.
- [5] Nergiz, E. (2013). The Evolution of the European Union as a Trade Bloc. In: Dincer, H., Hacıoglu, Ü., eds., *Globalization of Financial Institutions*. [online] Springer, Cham, pp.139–147. doi:https://doi.org/10.1007/978-3-319-01125-7_10.
- [6] Eurostat (2020a). Purchasing power parities in Europe and the world. [online] ec.europa.eu. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Purchasing_power_parities_in_Europe_and_the_world#Shares_in_world_GDP [Accessed 27 Apr. 2022].
- [7] European Union (2022a). Achievements. [online] european-union.europa.eu. Available at: https://european-union.europa.eu/priorities-and-actions/achievements_en. [Accessed 27 Apr. 2022]
- [8] European Commission (2022). Access2Markets Free trade agreements. [online] trade.ec.europa.eu. Available at: <https://trade.ec.europa.eu/access-to-markets/en/content/free-trade-agreements>. [Accessed 25 Apr. 2022]
- [9] European Union (2022b). Germany. [online] european-union.europa.eu. Available at: https://european-union.europa.eu/principles-countries-history/country-profiles/germany_en. [Accessed 28 Apr. 2022]
- [10] Maulucci, T.W. (2015). Diplomatie mit Gefühl: Vertrauen, Misstrauen und die Außenpolitik der Bundesrepublik Deutschland. *German History*, 34(1), pp.178–180. doi:10.1093/gerhis/ghv120.
- [11] Lambertz-Pollan, R. (2016). Bibliographie in Auf dem Weg zur Souveränität und Westintegration (1948-1955). pp.710–780.
- [12] Bauer, T.K., Braun, S. and Kvasnicka, M. (2013). The Economic Integration of Forced Migrants: Evidence for Post-War Germany. *The Economic Journal*, 123(571), pp.998–1024. doi:10.1111/eoj.12023.
- [13] Fulbrook, M. (2014). *A history of Germany, 1918-2008: the divided nation*, Fourth edn. Wiley-Blackwell.
- [14] Dai, Q.X. (2009). An analysis of Germany's participation in regional and international organisations. *Internal Review*, 6(7). doi:CNKI:SUN:GJGC.0.2009-06-004].
- [15] Orth, M. (2018). Why is the German economy so strong? [online] deutschland.de. Available at: <https://www.deutschland.de/en/topic/business/why-is-the-german-economy-so-strong-seven-reasons> [Accessed 1 May. 2022]
- [16] Jürgens, U. (2004). An Elusive Model — Diversified Quality Production and the Transformation of the German Automobile Industry. *Competition & Change*, 8(4), pp.411–423. doi:10.1080/1024529042000304437.
- [17] Statista. (2022a). Revenue in the automobile industry in Germany from 2010 to 2020. [online] Available at: <https://www.statista.com/statistics/657398/automobile-industry-germany-sales/> [Accessed 12 Apr. 2022].
- [18] Rugman, A.M. and Verbeke, A. (1993). How to operationalize porter's diamond of international competitiveness. *The International Executive*, 35(4), pp.283–299. doi:10.1002/tie.5060350403.
- [19] Volkswagen (2022). Digitalization. [online] www.volkswagenag.com. Available at: <https://www.volkswagenag.com/en/group/digitalization.html>. [Accessed 27 April. 2022]
- [20] Ministry of Commerce.PRC (2012). Introduction to Germany's five industries of strength. [online] de.mofcom.gov.cn. Available at: <http://de.mofcom.gov.cn/article/ztdy/201202/20120207956194.shtml> [Accessed 6 May 2022].
- [21] Festing, M., Schäfer, L. and Scullion, H. (2013). Talent management in medium-sized German companies: an explorative study and agenda for future research. *The International Journal of Human Resource Management*, 24(9), pp.1872–1893. doi:10.1080/09585192.2013.777538.
- [22] J.D. Power (2019). 2019 Germany Vehicle Dependability Study. [online] J.D. Power. Available at: <https://www.jdpower.com/business/press-releases/2019-germany-vehicle-dependability-study> [Accessed 2 May 2022].
- [23] VDA (2022). Turnover figures. [online] www.vda.de. Available at: <https://www.vda.de/vda/en/Topics/Automotive-industry/market-developments/turnover-figures> [Accessed 27 Apr. 2022].
- [24] Huang, G.Q., Qu, T., Zhang, Y. and Yang, H.D. (2012). RFID-enabled product-service system for automotive part and accessory manufacturing alliances. *International Journal of Production Research*, 50(14), pp.3821–3840. doi:10.1080/00207543.2011.592863.
- [25] Deissinger, T. and Hellwig, S. (2005). Apprenticeships in Germany: modernising the Dual System. *Education + Training*, 47(4/5), pp.312–324. doi:10.1108/00400910510601896.
- [26] Destatis Statistisches Bundesamt. (2022a). Persons in employment: Germany, years (until 2019), economic sections, sex. [online] doi:<https://www-genesis.destatis.de/genesis/online/1698942266713>.
- [27] Destatis Statistisches Bundesamt. (2022b). Persons in employment: Germany, years (until 2019), occupational status, sex. [online] Available at: <https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&electionname=12211-9005&language=en#breadcrumb> [Accessed 20 Apr. 2022].
- [28] Audi (2022). Shaping the future of premium mobility. [online] audi.com. Available at: <https://www.audi.com/en/brand.html>. [Accessed 23 Apr. 2022].
- [29] BMW (2022). Discover BMW. [online] discover.bmw.co.uk. Available at: <https://discover.bmw.co.uk/>. [Accessed 23 Apr. 2022].
- [30] Mercedes-benz (2022). Mercedes-Benz: Overview. [online] www.mercedes-benz.co.uk. Available at:

- <https://www.mercedes-benz.co.uk/passengercars/the-brand/explore-mercedes-benz/stage.module.html>. [Accessed 25 Apr. 2022]
- [31] Mazur, C., Contestable, M., Offer, G. and Brandon, N. (2012). Comparing electric mobility policies to transition science: Transition management already in action? In: 2012 IEEE Third International Conference on Sustainable Energy Technologies (ICSET). [online] Kathmandu, Nepal: IEEE, pp.123–128. Available at: doi: 10.1109/ICSET.2012.6357385..
- [32] Mazur, C., Contestabile, M., Offer, G.J. and Brandon, N.P. (2015). Assessing and comparing German and UK transition policies for electric mobility. *Environmental Innovation and Societal Transitions*, 14, pp.84–100. doi:10.1016/j.eist.2014.04.005.
- [33] Ifo Schnelldienst (2008). Industrie: Klimaschutz oder industriepolitik? eu-vorgaben zur co 2 -minderung für die automobil. pp.28–31.
- [34] TMF group (2019). German automotive industry strives for transformation as investment opportunities and risks coexist. [online] www.tmf-group.com. Available at: <https://www.tmf-group.com/zh-cn/news-insights/articles/2019/october/automotive-industry-in-germany/> [Accessed 25 Apr. 2022].
- [35] Riggs, T. ed (2015). *Foreign Direct Investment*. [online] Gale. Available at: <https://link.gale.com/apps/doc/CX3627200076/GVRL?u=unihull&sid=bookmark-ITOF&xid=33bc053b> [Accessed 1 May 2022].
- [36] Davies, R.B., Desbordes, R. and Ray, A. (2018). Greenfield versus merger and acquisition FDI: Same wine, different bottles? *Canadian Journal of Economics/Revue canadienne d'économique*, 51(4), pp.1151–1190. doi:10.1111/caje.12353.
- [37] Germany trade & invest (2022a). FDI Reporting. [online] www.gtai.de. Available at: <https://www.gtai.de/en/meta/press/fdi-reporting>. [Accessed 2 May. 2022]
- [38] Statista. (2022b). Foreign direct investment (FDI) worldwide. [online] Available at: <https://www.statista.com/study/163434/foreign-direct-investment-fdi-worldwide/> [Accessed 27 Apr. 2022].
- [39] Bundesbank. (2022). Direct investment statistics. [online] Available at: <https://www.bundesbank.de/en/statistics/external-sector/direct-investments/direct-investment-statistics-811578> [Accessed 29 Apr. 2022].
- [40] Zheng, H. and Guan, K. (2013). People's Daily: Sino-German cooperationa win-win - NEWS CENTER - JOYSON ELECTRONICS. [online] en.joyson.cn. Available at: <http://en.joyson.cn/index.php?a=shows&catid=137&id=566> [Accessed 1 May 2022].
- [41] Amazilia Aerospace (2022). The future of digital flight controls. [online] Available at: <https://www.amazilia-aerospace.de/> [Accessed 4 May. 2022].
- [42] Germany trade & invest (2022b). Innovation in Germany. [online] www.gtai.de. Available at: <https://www.gtai.de/en/invest/business-location-germany/innovation-in-germany>. [Accessed 4 May. 2022]
- [43] World Bank. (2020b). 2018 | Logistics Performance Index (LPI). [online] Available at: <https://lpi.worldbank.org/2018> [Accessed 29 Apr. 2022].
- [44] Germany trade & invest (2022c). Market Germany - Europe's Economic Hub. [online] www.gtai.de. Available at: <https://www.gtai.de/en/invest/business-location-germany/market-germany-europe-s-economic-hub#769776> [Accessed 26 Apr. 2022].
- [45] Anonymous (2021). PRESS RELEASE: PANTAFLIX AG produces documentary SOCIAL MEDIA - SOCIAL ME in partnership with Xiaomi Germany - and celebrates world premiere together. Dow Jones Institutional News.
- [46] Eurostat (2020b). First population estimates. [online] Available at: <https://ec.europa.eu/eurostat/documents/2995521/11081093/3-10072020-AP-EN.pdf/d2f799bf-4412-05cc-a357-7b49b93615f1> [Accessed 1 May 2022].
- [47] World Bank Open Data. (2021). World Bank Open Data. [online] Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2020&locations=EU&name_desc=false&start=2020&view=bar [Accessed 20 Apr. 2022].
- [48] In 't Veld, J. (2019). The economic benefits of the EU Single Market in goods and services. *Journal of Policy Modeling*, 41(5), pp.803–818. doi:10.1016/j.jpolmod.2019.06.004.
- [49] Telemedc (2021). About us. [online] Telemedc Saving Eyes to Improve Lives. Available at: <https://www.telemedc.com/about-us> [Accessed 6 May 2022].
- [50] UNCTAD-Investment Policy Hub (2018). Germany - Foreign Trade and Payments Ordinance | Investment Laws Navigator | UNCTAD Investment Policy Hub. [online] UNCTAD. Available at: <https://investmentpolicy.unctad.org/investment-laws/laws/269/germany-foreign-trade-and-payments-ordinance> [Accessed 2 May 2022].
- [51] Eur-lex (2021). EUR-Lex - 32019R0452 - EN - EUR-Lex. [online] Europa.eu. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0452> [Accessed 1 May. 2022].
- [52] Herbert Smith Freehills (2020). Covid-19: Pressure Points: New German FDI rules (Germany). [online] Herbert Smith Freehills | Global law firm. Available at: <https://www.herbertsmithfreehills.com/latest-thinking/covid-19-pressure-points-new-german-fdi-rules-germany> [Accessed 2 May 2022].
- [53] Hogan Lovells (2020). Germany further tightens its foreign investment control regime - increased risk for Chinese investors. pp.40–41.
- [54] Roland Berger (2019). Report on the Development of Chinese Enterprises in the EU 2019. pp.46–50.
- [55] Ministry of Commerce. PRC (2021). Foreign Investment Cooperation Country (Region) Guide Germany 2021. pp.7–10.
- [56] Consulate General of the People's Republic of China in Düsseldorf (2020). [The economy of the region] Chinese companies that have been riding the wave over the years, how are they doing in North Rhine-Westphalia? [online] Generalkonsulat der Volksrepublik China in Düsseldorf. Available at: http://dusseldorf.china-consulate.gov.cn/lqcz/202008/t20200819_3738916.htm. [Accessed 3 May 2022]
- [57] China Business News Research Institute (2022). Joyson Electronics: Globalization Beginning with the Acquisition of the Century-Old German Factory Preh. [online] YICAI. Available at: <https://www.yicai.com/news/101377600.html> [Accessed 3 May 2022].