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Germany's position in the world on globalization, technology and innovation

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Abstract. Germany is situated in Central Europe bordering the Baltic Sea and the North Sea. Germany is the sixth largest country in Europe. The capital of Germany after a vote from the lower house Bundestag in 1993 was moved from Bonn in the West to Berlin in the East. Germany houses the European Central Bank and according to recent statistics the GDP of Germany stood at 4.0T. Germany is a powerhouse when it comes to technology and innovation. Well-known brands include; BMW, Mercedes, SAP, Volkswagen, Audi, Siemens, Allianz, Adidas, Porsche, Deutsche and Bosch.

Keywords. Germany; Globalization; Technology; Innovation.

JEL. E58; G01; L25.

1. Introduction

Germany has long been known to take advantage of globalization. The exports of the country's goods and service account for more than half of the country's value added. Many jobs depend on exports. Germany is a heavy manufacturing nation, and it depends on inexpensive and high-quality imports. For many years Germany has ranked high on the list of top trading nations, only China and United States are ranked higher. The nation is also one of the top three importing companies. Due to worldwide technological progress, transport costs are falling. At the same time however, customer duties and large number of non-tariff and trade barriers continue to place a sever burden on global trade.

Like many other nations Germany benefits strongly from a comprehensive integration into the global economy. Further integration of economies at the global or regional level will remain an important goal for economic growth for Germany and many other countries. Germany is a member of the UN, NATO, the G7, the G20 and the OECD. It has the third greatest number of UNESCO World Heritage Sites.

Challenges to globalization include the following.

- Increasing protectionism.
- Imbalances in trade balances
- The reform of the world trade system
- The distribution of globalization gains

Greater attention to long-term trends or expected world change processes such as digitization and demographic change.

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Germany is a social market economy, and the question then arises as to how this model fits into with the rest of the world and many other economies.

2. Germany technology and innovation

As discussed, earlier Germany is a powerhouse to many in the manufacturing sector. Well-known brands include, Mercedes, BMW, SAP, Volkswagen, Audi, Siemens, Allianz, Adidas, Porsche, Deutsche and Bosch. Furthermore, Germany has competitive advantages in the following sectors.

- Energy and the Environment
- Financial Services
- Medicine and healthcare
- Transport and logistics
- Technology and Innovation.

In the recent years Germans have developed key technologies that are vital to innovation and growth. Recent developments include the following.

The 5 fastest growing technology companies in Germany, feature the follows.

- Nepal GmbH
- RightNow GmbH
- Efficient Energy GmbH
- Zolar GmbH
- Forecast GmbH ([Deloitte, 2021](#)).

Germany is the second largest importer and third largest exporter of consumer oriented agricultural products worldwide, and by far the most important European market for foreign producers. Germany is an efficient cost-effective location in the center of the EU. While many consumers are very price sensitive, the market also provides many wealthy consumers who follow value for money concepts. Germany still has one of the lowest food prices in Europe.

Germany has the third-largest aerospace & defense market in Europe following the UK and France. Three Quarters of the German production are exported. France received a fourth of the German exports. To a large degree these exports are attributable to Airbus intra-company trade as part of their geographically dispersed production model with major sites in Germany and France. The German homeland security & public safety market is significant also. Aerospace occupies a prominent position in the German government's strategic considerations. BMW i's aerospace strategy is significant for Germany as an industrial country both technologically and economically. Lufthansa is another German company that is vital to the economy.

Advanced Manufacturing is the best prospect industry for this country. Advanced manufacturing is the convergence of information and communications technologies with manufacturing processes to drive real-time control of energy productivity costs and information across factories and companies. In 2011 it was identified as one of the highest priority

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manufacturing areas by the Federal German government. Advanced Manufacturing is expected to provide excellent export potential for industries such as machine tools/ general industrial equipment. Germany is the 5th largest robot market in the world with about 20,000 industrial robots currently utilized in various industries.

Germany has a robust well-established healthcare system and medical equipment. Brands such as Siemens, Carl Zeiss and Dragerwerk were founded at the end of the 19th century and voice for the long history of producing high quality medical equipment's. Germany claims the third-largest medical technology market in the world after the US, Japan and US. It is by far the largest European Market, twice the size of the French market and three times as large as those of Italy, UK and Spain. The German medical device market is one of the most lucrative healthcare markets world-wide.

Germany has one of the largest ICT markets in the world and the single largest software market in Europe. Germany hosts several key ICT trade shows, making it a premier marketplace for US companies to reach global partners and buyers. ICT is priority sector for the German government. Germany's economic innovation policy is outline in the Digital Agenda of the BMW. It focuses on digital infrastructure, digital economy, digital workplaces, innovative public administration, digital environments in society, education, research, science, culture and media, security, protection, and confidence for society and business. Policy objectives include cybersecurity, the digitization of the German economy and the expansion of the German broadband network. Challenges include the impact of the EU Digital Single Market, the GDPR, the E-privacy Regulation on ICT companies and the latest cybersecurity policy developments.

The term smart cities refer to the development and use of ICT in almost all areas of local life in order link municipal infrastructure such as energy, building, governance, transportation, water and sewage based on integrated development concepts. Enabled by the Internet of Things, sensors, networks and mobile-based technologies are the basis of any smart city concept.

A report published by the World Economic Forum ranks Germany as number with a score of 87.5 out of 100 as the world's most innovative country. It outperformed the US that came in second and Switzerland came in third. According to the new index, the speed at which countries can adopt new ideas, methods and products will give them a competitive advantage as the Fourth Industrial Revolution continues.

Performance Overview 2018 Key ◊ Previous edition ◻ High income group average ◻ Europe and North America average



Image: World Economic Forum

Germany's position as the world's top innovator is due in part to the sheer number of ideas it comes up with. The index also found that a high degree of buyer sophistication and increase in funding for small and medium sized enterprises and mobility projects. This commitment to R&D means that German carmaker are not shaping the future. Volkswagen spends the most on R&D behind Amazon. Protecting innovative companies makes the individual firms and Germany as a location for industry more competitive. Consumers also profit innovative product. Germany has more that 1,000 public and publicly funded institution for science and research development. 600 research and innovation networks and clusters.

3. Conclusion

Germany remains one of the most highly advanced countries in the world. It is highly developed with a superior infrastructure in-place. Its economics system promotes a high level of R&D and innovation completely backed by the government and robust public institutions. It has high degree of efficiency and proficiency in advanced manufacturing. It is one of the most important countries in the European Union, holding an important position that is built to last.

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