

## 7.18 How Industrialization Transformed Germany (DBQ)



BASF Factory (1881)

**Sources:** <https://searchinginhistory.blogspot.com/2015/04/the-industrial-revolution-of-germany.html>;  
[http://germanhistorydocs.ghi-dc.org/sub\\_doclist.cfm?sub\\_id=122&section\\_id=11](http://germanhistorydocs.ghi-dc.org/sub_doclist.cfm?sub_id=122&section_id=11);  
<https://sourcebooks.fordham.edu/mod/germanbanks.asp>; <https://www.daimler.com/company/tradition/company-history/1885-1886.html>

**Background:** Germany emerged as the most industrialized country by the end of the 19th century, surpassing the home of the industrial revolution – Great Britain. Germany had the natural resources required to start an industrial revolution. Large coal reserves were located in the Saar, Ruhr, Upper Silesia, and Saxony. Iron deposits existed in areas of Erzgebirge, Harz Mountains, and Upper Silesia. The most significant challenge towards Germany's industrial revolution was its political division.

**Instructions:** Using the picture above and the information in documents and charts A-I, write a 500-word essay explaining how industrialization transformed Germany.

A. Textile was the first industry to experience mechanization. The first spinning machine in Germany was built in Chemnitz in 1782. In 1796, the first coke-blast furnace - began operation in Gleiwitz in Upper Silesia. Steam engines contributed to the industrial development of Germany. Steam engine powered textile mills, pumped water out of iron mines, and led to increased coal production. Production of coal went from 1 million tons a year in 1820 to 6 million tons in 1850. From 1837 to 1849 the number of factories in Prussia alone increased from 419 to 1,444. The first railroad line opened on December 1835 and ran between Nuremberg and Furth. In 1842, the Prussian government created the Railway fund in order to finance railroad construction project. Between 1850 and 1870, track mileage increased from 3,638 miles to 11,600 miles. The painting above shows the BASF chemical factory in Ludwigshafen on the Rhine River near Mannheim. It started producing dyes in 1865. BASF is still the largest chemical producer in the world.

B. Population Growth (1890-1914): German society grew and changed dramatically in the last quarter of the nineteenth century. In the twenty years prior to the First World War, the rate of population growth averaged 1.34 percent, as compared to .47 percent annual growth in 1871. The result was that Germany's population – 41 million in 1871 – grew to 49.7 million by 1891 and increased to 65.3 million by 1911. This chart shows surplus of births over deaths per 1,000 residents. In 1891 the population grew by 545,000 people. In 1909 it grew by over 900,000 people.

1886	+10.9
1891	+13.6
1896	+15.5
1901	+15.1
1906	+14.9
1907	+14.2
1908	+14.0
1909	+13.9

C. Population Redistribution (1871 and 1910): Up to 1871, Germany had been primarily agricultural. By the 1890s, however, the rise of cities and industrial production had begun to reshape German ways of life. The population grew by more than a third between 1871 and 1911, and more Germans lived in urban areas, both in absolute numbers and as a percentage of the population. Berlin, by far the country's largest city and a major industrial center, experienced a 150.7% growth in population between 1871 and 1910, indicative of changing population patterns. Hamburg's annual growth rate for this period exceeded that of all other German cities. Many smaller cities – especially in industrial areas such as the Ruhr region (Westphalia), the upper Rhine Valley, the Neckar Valley, and Saxony – tripled or quadrupled in size during this time.

Region	1871	1910	Percent Increase	Annual Growth Rate
Berlin	826,000	2,071,000	150.7	23.8
Hamburg	339,000	1,015,000	199.4	28.4
German Reich	41,059,000	64,926,000	58.1%	11.8%

D. Occupational Breakdown of Germany's Population (1882-1907): Industrialization changed the way the rapidly expanding German population earned its livelihood. In 1871, about 49 percent of the workforce was engaged in agriculture; by 1907, that number had fallen to 35 percent. In the same period, many Germans migrated to urban areas to take full advantage of growing industries. Industry's share of the workforce rose from 31 to 40 percent.

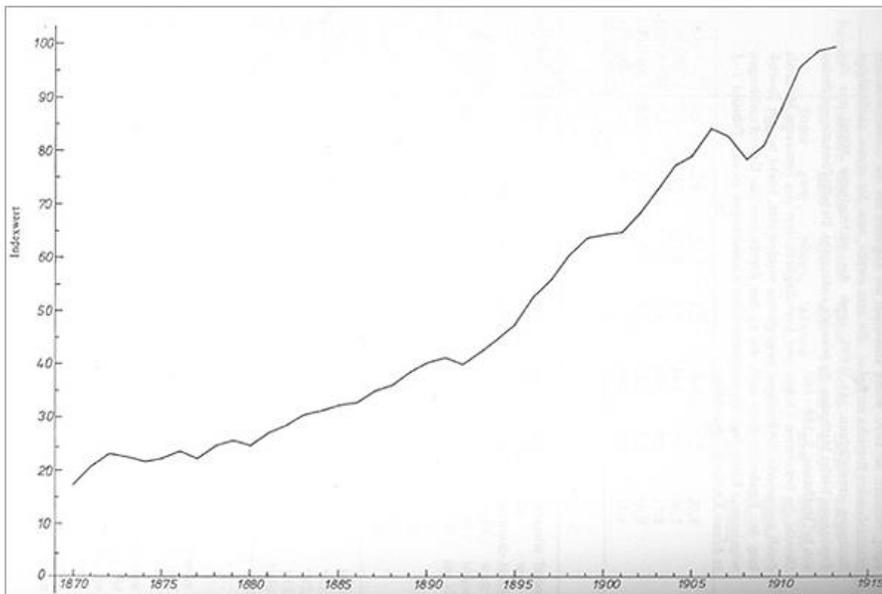
Economic sector	Year	Total number of gainfully employed	% of total population
Agriculture	1882	8,236	41.6
	1895	8,293	35.0
	1907	9,883	28.4
Industry	1882	6,396	34.8
	1895	8,281	38.5
	1907	11,256	42.2

### E. Employees Per Company in Industry and Trade

1882	59.8	4.4	13.0	11.8	9.1	1.9
1895	41.8	7.4	17.3	17.4	12.8	3.3
1907	31.2	7.0	19.4	20.8	16.7	4.9

F. Industrial Growth (1870-1914): A short, speculative boom fueled by the euphoria over the defeat of France and the prospects of a unified marketplace followed German unification in 1871. German industrialization, however, first gathered force in the 1890s and increased dramatically in the years leading up to the First World War. On the whole, industrial production increased fivefold in the years between 1870 and 1914.

Index\* of Industrial Growth



### G. Robert Franz reported on the German banking system to the US Senate (1910)

Technical and economic reasons were the cause which in the first instance led to the amalgamation of coal and iron works, particularly during the last years, and these same factors tend more and more to bring about the establishment of great consolidated works combining the production of the raw material with that of the half-finished and manufactured articles. This development would not be possible at all, or would meet with great difficulties, without a corresponding organization of the money and credit markets, i.e., without strong banks which are in a position to carry through the necessary financial transactions. Developments of industry and banking showed the same tendency and mutually influenced each other to a large extent . . . The entire development was, moreover, vigorously furthered by a commercial and tariff policy favorable to industry . . . This decisive influence of the banks on the industries reaches further than the mere possession of shares of industrial undertakings would warrant, as it is an easy matter for the banks to procure for stock-holders' meetings proxies of the shares which their customers have deposited with them. The result is that in many cases, the banks appear to wield a controlling power over the industrial corporations . . . The progressive industrialization of Germany and the large increase of its population caused on the one hand increasing imports of industrial and auxiliary materials as well as of foodstuffs, and on the other steadily growing exports of industrial products. As a result Germany's share in the world's commerce shows a rapid growth. Until the seventies of the last century the financial regulation of German foreign oversea trade had been almost exclusively in the hands of London banks. The establishment in 1870 of the Deutsche Bank at Berlin meant a turning point in this regard . . . The Berlin joint stock banks, moreover, have become permanently interested in foreign banks and banking houses; they have also founded transportation, mining, and industrial enterprises whose sphere of activity is mostly abroad, and in which they acquired a permanent interest by taking over part of the capital stock . . . There can be no doubt that they have had a large share in raising German commerce and industry to its present world-wide commanding position.

H. By the end of the 19th century Germany had advanced beyond Britain in terms of economic output. The prime reason for this was that Germany developed the newer industries, while Britain maintained a heavy stress on textile production. One of the most successful firms in Germany engaged in the manufacture of colours and pharmaceutical products, is the Farbenfabriken Friedr. Bayer & Co. of Elberfeld. This chemical works may be regarded as typical of a number of similar concerns engaged in the same branch of industry. - Harold Baron. *Chemical Industry on the Continent* (1909)

I. Benz Patent Motor Car: The first automobile (1885–1886)



The first stationary gasoline engine developed by Carl Benz was a one-cylinder two-stroke unit which ran for the first time on New Year's Eve 1879. Benz had so much commercial success with this engine that he was able to devote more time to his dream of creating a lightweight car powered by a gasoline engine, in which the chassis and engine formed a single unit. The major features of the two-seater vehicle, which was completed in 1885, were the compact high-speed single-cylinder four-stroke engine installed horizontally at the rear, the tubular steel frame, the differential and three wire-spoked wheels. The engine output was 0.75 hp (0.55 kW). Details included an automatic intake slide, a controlled exhaust valve, high-voltage electrical vibrator ignition with spark plug, and water/thermo siphon evaporation cooling.