

THEODORE S. HAMEROW

Social Foundations  
of German  
Unification,  
1858-1871,  
Volume I

*Ideas and Institutions*



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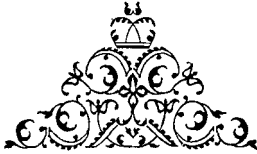
The Social Foundations of  
German Unification  
1858-1871



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Theodore S. Hamerow

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## Preface



THIS BOOK represents an attempt to answer a number of questions which occurred to me originally several years ago while I was working on a study of the inter-relationship of economics and politics in the German Confederation. I realized then for the first time how little we actually know about the process of national unification in Central Europe during the middle years of the nineteenth century. To be sure, the political and diplomatic developments of the 1850's and 1860's have been studied so extensively that little remains to be added, except perhaps a nuance here or a footnote there. But the preoccupation of most scholars with the problems of statecraft has caused them to neglect the social matrix of civic activity. Trying to prove that the liberals were right rather than the conservatives, or the Prussians rather than the Austrians, or the Germans rather than the French, they have largely ignored the material forces and class interests behind the establishment of the German Empire. They have continued to fight the fights of their fathers and grandfathers, trying to justify or condemn with the written word what had been achieved on the battlefield or in the legislative chamber.

Only today, a hundred years later, can we finally turn to new issues, because the old ones have ceased to seem vital to us. They have lost their timeliness. It no longer matters a great deal whether crown or parliament had justice on its side during the constitutional conflict in Prussia, whether the Habsburgs or the Hohenzollerns were better qualified to lead Central Europe toward unity, or whether it was worth destroying an empire in France in order to create one in Germany. We are ready to deal with other problems. For example, what was the connection between industrialization and nationalism in the German Confederation? What groups in society

## PREFACE

avored political reform? What was the effect of economic change on civic ideology? What was the relationship between affluence and authority in the state? Such are the questions I have tried to answer in this book.

As I proceeded with the writing, I began to feel that I could not do justice to the theme within the scope of a single volume. I therefore decided to examine first the economic, social, and ideological framework within which the national consolidation of Germany took place. This section of the work is topical and analytical rather than chronological and narrative. The second volume, which I expect to complete in a year or two, will study the political developments of the period of unification in the light of the categories and patterns described in the first volume. While the over-all dimensions of the book will not become fully apparent until the completion of the second half, I hope that the part now published will make a contribution in its own right to a better understanding of an important era in German history.

One of the reasons for the sense of satisfaction I feel at the appearance of this volume is that it gives me an opportunity to acknowledge the obligations I have incurred in its writing. There are first of all the many libraries, both in this country and abroad, which gave me access to their collections directly or through microfilm. To enumerate them all would require a long and tedious list. But some I cannot leave unmentioned. The Memorial Library of the University of Wisconsin assisted me not only by making available to me its substantial holdings, but also by borrowing important materials from other American libraries. As for European libraries, I am especially indebted to the Universitätsbibliothek of the University of Erlangen-Nürnberg and the Stadtbibliothek in Nürnberg. During my trip abroad in 1962-63 they allowed me to use their resources and obtained for me works from various collec-

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tions in Germany. The Bayerische Staatsbibliothek in Munich permitted me to borrow its books, provided me with information regarding the location of materials I needed, and even admitted me to its stacks, a rare privilege. Finally, the Deutsche Staatsbibliothek in Berlin helped me by letting me examine its holdings, by sending me microfilms, and, most important, by informing me about the collections of other libraries in the German Democratic Republic.

The writing of this book was also made possible by the financial assistance I received from three sources. The Graduate School of the University of Wisconsin was both generous and patient in providing funds for research assistants and research materials year after year, while the Social Science Research Council and the Committee on International Exchange of Persons (the Fulbright Program) awarded me concurrent fellowships which enabled me to spend a year in Europe examining historical data unavailable in this country. Without this stay abroad I would not have been able to complete my work. In conclusion, some of my friends who are experts in the field of nineteenth-century German history kindly agreed to read the manuscript: Francis L. Loewenheim, Otto Pflanze, and George G. Windell. Their comments and suggestions were very helpful, and I want to express my thanks to them.

THEODORE S. HAMEROW  
*Madison, Wisconsin*  
*June 1969*



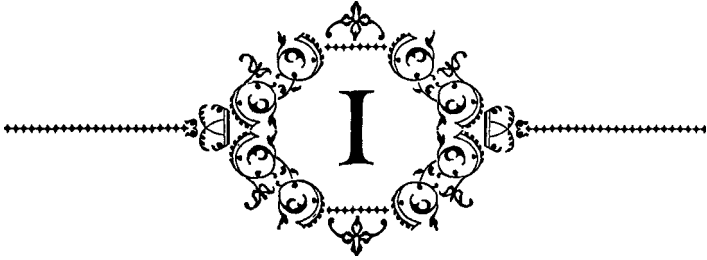


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THE PATTERN OF SOCIETY



# ONE

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## The Economic Environment

IT WAS March 1858. Germany lay in the grip of an economic depression. A boom built on paper profits and wild hopes had just collapsed, bringing in its wake panic, bankruptcy, unemployment, and hunger. In the pervasive mood of bitter disillusionment there was little inclination to commemorate those other March days of ten years before, when the nation had risen in revolution to seek security through freedom and unity. But in Frankfurt am Main an anonymous publicist contrasted the spirit of the spring of 1848 with that which he felt about him now: "Our nation of 'forty million dreamers and idealists' has learned a good deal in the hard school of reality, and it has also fortunately forgotten some things. Above all, it has become more practical. Romanticism and sentimentality, transcendental philosophy and supranaturalism have now withdrawn from the public life of our people into private life. For realism and steam, machines and industrial exhibitions, the natural sciences and practical interests now fill the great market place of life and work at the humming loom of our time."<sup>1</sup>

The Germany which was about to enter upon a new period of political turmoil was indeed less romantic and sentimental, less interested in the transcendental and supranatural. The late 1840's with their famine, depression, revolution, and civil war had been followed by years in which the efforts of the nation had turned from politics to economics. It was as if the popular energies frustrated in the task of national unification had now

<sup>1</sup> *Nach zehn Jahren: Auch eine Rundschau* (März 1848–März 1858) (Frankfurt am Main, 1858), p. 30.

concentrated on the creation of material well-being. The 1850's became the period of a great capitalistic boom, displaying all the characteristic traits of an expanding industrial economy. A bold program of railroad construction created the foundations of a modern transportation system. Mines, foundries, and factories proliferated in an atmosphere of high profits and higher expectations. Lending institutions organized on the joint-stock principle began to compete with older private banks, providing a significant volume of risk capital for industrial undertakings. On the stock exchange new issues were oversubscribed five, ten, and twenty times by jobbers who knew that a show of spurious confidence would enable them to sell their shares to a gullible public at inflated prices. The annual report of the Cologne chamber of commerce for 1855 boasted that "probably in no country on the Continent has industry made more rapid progress these last years than in the Zollverein. A few more years of peace and unrestricted exercise of all our forces in this field, and the Zollverein will be in a position of complete equality with France and Belgium." Even three years later, after the bubble had burst, the liberal economist Max Wirth looked back with pride at what German industriousness had achieved:

The stagnation, the utter paralysis of business in the years 1848, 1849, and 1850 had ended after the fall of the French republic. The totally depleted warehouses had to be filled again, and when at the same time the effects of the introduction of California gold and of the low discount rate made themselves felt by way of England, there gradually developed a spirit of enterprise more powerful than any experienced in Germany up to that time. And although now the magnificent wave of expansion has to be paid for with a business depression, its appearance was so beautiful that we can never forget it. The steamboat traffic on the rivers, the shipment of goods on the railroads, the construction of ships and machinery grew at

an extraordinary rate. Railroads and machine shops, coal mines and iron foundries, spinneries and rolling mills seemed to spring out of the ground, and especially in the industrial regions of Saxony, the Rhineland, and Westphalia smokestacks sprouted from the earth like mushrooms.<sup>2</sup>

There were those, to be sure, who had recognized the risks inherent in the mania of promotion and speculation. About eighteen months before the crash, the eminent financier David Hanseemann warned the directors of the Disconto-Gesellschaft that "we are at present on the road leading to a not insignificant crisis. The gambling fever in shares is more and more affecting almost all classes of the population. Almost everybody is buying, not to retain, but to sell again at a profit after the first installment payment or even earlier, if possible. However impressive the rise in prosperity may be, not enough new capital is being created to absorb this mass of new values in any sound fashion, since nearly every day creates not a few but very many millions of these values suitable for speculation, and the people who have thus acquired or are still acquiring a large fortune are insatiable." The danger signs soon began to multiply. The price of coal reached its highest point in 1856 and then began to decline, while iron passed its peak even earlier. It was disturbing that the shares of an important enterprise like the Darmstädter Bank, which stood at 417 on July 1, 1856, fell by the end of the year to 346. Those of the Disconto-Gesellschaft went from 146 to 122, and those of the Cologne-Minden Railroad from 162 to 156. On September 22 the conservative state-controlled Preussische Bank, sensitive to every shift in the wind, raised its discount rate from 5 to 6 per cent, keeping it at that level for almost half a year before reducing it again. An important Hamburg firm reported in April 1857 that a vague uneasiness

<sup>2</sup> Max Wirth, *Geschichte der Handelskrisen* (Frankfurt am Main, 1858), p. 348. Cf. *Preussisches Handelsarchiv* (1856), 1, 488.



seemed to prevail on the stock exchange, that despite the sizable importation of silver the discount rate remained at a high 7 per cent, and that merchants were encountering difficulty in selling their commodities because of the shortness of credit.<sup>3</sup>

What finally toppled the house of cards was the economic crisis which started in the New World and then overwhelmed the Old. The Swabian publicist A.E.F. Schäffle compared its course with that of an elemental force of nature:

The avalanche from the banks of the Ohio, where it was set in motion by the insidious activities of a few speculating rascals, advanced with devastating violence irresistibly eastward. It crushed the Atlantic states of the great republic, and after a mighty leap across the ocean fell upon England and the mainland of the European continent, reaching as far as the plains around the Baltic Sea (North Germany, Poland, Scandinavia). Everywhere it has brought all branches of business more or less to a standstill. Like a thief in the night it has surprised the world of speculation and production which had climbed to dizzying heights. In a time of the most profound political peace, after a generally rich harvest, that same edifice collapses which in years of scarcity and of a great war had towered on high like a fairy castle springing out of the wilderness. Its rise as well as its fall border on the incredible.

Admittedly, not all parts of Germany were equally affected by the financial collapse. Agricultural regions like Bavaria or East Prussia were less vulnerable than

<sup>3</sup> Alexander Bergengrün, *David Hansemann* (Berlin, 1901), p. 678; Alfred Jacobs and Hans Richter, *Die Grosshandelspreise in Deutschland von 1792 bis 1934* (Hamburg, 1935), pp. 40-41; Jürgen Kuczynski, *Studien zur Geschichte der zyklischen Überproduktionskrisen in Deutschland, 1825 bis 1866* (Berlin, 1961), pp. 124-125; H. von Poschinger, *Bankwesen und Bankpolitik in Preussen* (3 vols., Berlin, 1878-79), II, 382; Julius Kahn, *Geschichte des Zinsfußes in Deutschland seit 1815 und die Ursachen seiner Veränderung* (Stuttgart, 1884), pp. 155-156.

the industrialized Rhineland or Saxony, while most factory towns were not as hard hit as mercantile Hamburg, Leipzig, and Frankfurt am Main. Yet when wholesale prices were falling drastically, some by nearly a third; when shares on the stock exchange were selling for as little as half of par; when the foreign trade of the Zollverein was declining by 300,000,000 marks; when the nominal value of the national wealth was estimated to have shrunk by 25 per cent or more, everyone was bound to feel the hard times directly or indirectly.<sup>4</sup>

The economic depression was all things to all men. Baron Heinrich von Testa, the Austrian minister to the Hanseatic cities, wrote to his government during the days of panic in November 1857 that the ultimate cause of the catastrophe was the "abandonment of patriarchal morality, that weakness for senseless luxury, that resentment of wealth engendered by pride, that overstimulation of the spirit of speculation." The daughter of the eminent Hamburg merchant Justus Ruperti, on the other hand, was convinced that the disaster was an expression of divine displeasure: "It is surely the punishment for the excessive luxury and presumption of our city in recent times. For it certainly cannot be denied that they have been very widespread. Just think of the luxury of the parties and costumes of last winter. The contrast with this winter is truly frightening."<sup>5</sup>

Across the North Sea in England, Marx and Engels were inclined to read a dialectical rather than providential meaning into the economic collapse. Although his father's firm in Barmen was close to bankruptcy,

<sup>4</sup> [A.E.F. Schäffle], "Die Handelskrisis, mit besonderer Rücksicht auf das Bankwesen," *Deutsche Vierteljahrs-Schrift*, xxi (1858), no. 1, p. 256; A. Sartorius von Waltershausen, *Deutsche Wirtschaftsgeschichte, 1815-1914*, 2nd edn. (Jena, 1923), pp. 188, 193-194; Hans Rosenberg, *Die Weltwirtschaftskrisis von 1857-1859* (Stuttgart and Berlin, 1934), pp. 140-143, 156; J. Kuczynski, *Studien zur Geschichte der Überproduktionskrisen*, pp. 129-130.

<sup>5</sup> Percy Ernst Schramm, *Hamburg, Deutschland und die Welt: Leistung und Grenzen hanseatischen Bürgertums in der Zeit zwischen Napoleon I. und Bismarck* (Munich, 1943), p. 562.

Engels exulted at the prospect of exchanging his life as a businessman *malgré lui* for that of a revolutionary leader. He found it "absolutely impossible to think of anything except the general crash. I could neither read nor write." The time for action was finally approaching. "Everything is now at stake. Therefore my military studies will at once become more practical. I shall immediately devote myself to the study of the existing organization and basic tactics of the Prussian, Austrian, Bavarian, and French armies, and beyond that only to riding, that is, fox hunting, which is the only real school." At the same time Marx, more comfortable at his desk than on horseback, was preparing for the impending crisis of capitalism by dropping his hack work for the *New American Cyclopaedia* and returning to theoretical analysis: "I am working like a madman day and night on the synopsis of my economic studies, so that I will at least have the outline clear before the deluge." The deluge never came, but the synopsis on which he worked with such intensity appeared two years later as *Zur Kritik der politischen Ökonomie*.<sup>6</sup>

For most Germans the depression meant above all business failures, lost savings, falling incomes, and disappointed hopes. What made it even worse was that there appeared to be no rational explanation for the disaster which had overtaken them. "All relationships seemed to be topsy-turvy," puzzled the *Preussische Jahrbücher*. "Amid supplies of merchandise greater than ever before, amid rich harvests there was universal privation; in the presence of excellent means of transportation there was no exchange of goods anywhere; notwithstanding large imports of precious metals there was everywhere a shortage of money; despite the most extensive credit institutions there was a rate of interest higher than any the century had known."<sup>7</sup>

<sup>6</sup> Karl Marx and Friedrich Engels, *Briefwechsel* (4 vols., Berlin, 1949-50), II, 302, 314, 334.

<sup>7</sup> [O. Gildemeister], "Die Verkehrskrisis des Jahres 1857," *Preussische Jahrbücher*, I (1858), 98.

The financial crisis ended even more abruptly than it began. The stock market, which had been declining slowly but steadily since the summer of 1856, began to fall precipitously in September 1857. Two months later it reached bottom. But by the end of the year it had managed to stage a mild recovery, and the worst was over. The movement of the discount rate of the Preussische Bank during those critical weeks told the story. It had risen to 7.5 per cent on November 7 at the height of the panic, was then reduced to 6.5 on December 21, on January 5 it fell again to 5.5, then on January 16 to 5, and finally on February 2 it was set at 4 per cent, the lowest point in about a year and a half. Yet the economy at large was slow to respond to this display of revived confidence by the banking community. There had been too many bitter losses and thwarted hopes. The index of wholesale prices for articles of commerce (1913 = 100) went from 99.5 in 1857 to 84.2 in 1858, then up to 86.0 in 1859, and 94.2 in 1860. The foreign trade of the Zollverein, which had totaled 2,988,000,000 marks in 1857, declined to 2,688,000,000 in 1858 and 2,661,000,000 in 1859, before rising again to 3,018,000,000 in 1860. The turnover of the Preussische Bank, amounting to 2,667,000,000 marks in 1857, stood at 2,463,000,000 in 1858, 2,448,000,000 in 1859, and 2,298,000,000 in 1860. During the years 1855-57, 67 joint-stock companies had been formed in the Zollverein in mining, 43 in metallurgy, and 29 in textiles. During 1858-60 the corresponding figures were 9, 2, and 1.<sup>8</sup>

For that matter, the entire decade following the crash was a period of economic insecurity. Just as the political stagnation of the 1850's had coincided with a financial boom, so the achievement of national unification during

<sup>8</sup> J. Kuczynski, *Studien zur Geschichte der Überproduktionskrisen*, pp. 125, 129-130; H. v. Poschinger, *Bankwesen und Bankpolitik*, II, 382-383; J. Kahn, *Geschichte des Zinsfusses*, pp. 156-158; H. Rosenberg, *Weltwirtschaftskrisis*, pp. 140-143, 156, 170; A. Jacobs and H. Richter, *Die Grosshandelspreise in Deutschland*, p. 41; Pierre Benaerts, *Les origines de la grande industrie allemande* (Paris, 1933), p. 266.

the 1860's took place in an atmosphere of recurrent business recessions. No sooner had the effects of the crisis of 1857 begun to wear off, than the outbreak of the war in Italy, which threatened to involve the states of the German Confederation, produced a minor depression. Prussian treasury bills which in January 1859 sold for 83.75 sank in the course of the next few months to 72, while the 4.5 per cent government bonds went from 101 to 86.5. By the end of the year the money market had recovered, but in view of the tense international situation a feeling of uneasiness persisted. Then, after a period of moderate expansion, came another setback in the wake of the Danish War of 1864. Paradoxically, economic conditions remained fairly stable as long as the conflict was in progress. But once victory had been achieved, the outflow of silver became so pronounced that on September 8 the Preussische Bank was forced to raise its discount rate from 5 to 6 per cent and, on October 6, to 7 per cent. Other lending institutions raised their charges to still higher levels, and it was not until December that the cost of credit began to decline.<sup>9</sup>

The most severe financial crisis of the 1860's coincided with the coming of the Seven Weeks' War, although the disintegration of the German Confederation intensified rather than initiated the economic difficulties. The end of the American Civil War and the renewal of the Zollverein in 1865 stimulated the demand for credit at the very time when the Paris Bourse was buzzing with the news of the Mexican fiasco and several important London firms were declaring bankruptcy. The threat of an Austro-Prussian conflict completed the disruption of the money market until the reorganization of Germany had been achieved. Between the middle of March and the end of May 1866 the discount rate on the Berlin stock exchange rose from 6 to 9 per cent, in Hamburg from

<sup>9</sup> Wolfgang Köllmann, *Sozialgeschichte der Stadt Barmen im 19. Jahrhundert* (Tübingen, 1960), pp. 282-283; H. v. Poschinger, *Bankwesen und Bankpolitik*, II, 383, III, 23, 29, 48-49.

4 to 8, and in Frankfurt am Main from 4.5 to 7 per cent. Shares of the Preussische Bank fell from 155.5 to 115, of the Rhenish Railroad from 118 to 94, of the Schaaffhausenscher Bankverein from 126 to 110, and of the Kölner Bergwerksverein from 64 to 57. The Gleiwitz chamber of commerce in its report for 1866 described how "in the second quarter conditions became more and more troubled in every respect, leading naturally to continually falling prices. But when in the month of June the outbreak of war became unavoidable and imminent, business came to an almost complete standstill. The short duration and fortunate outcome of the war could not effect the immediate revival of trade." Long after hostilities had come to an end, economic progress remained fitful. Diplomatic tension between France and the North German Confederation, labor unrest in the Rhineland, famine in East Prussia, all had an unsettling effect on the world of finance. Only with the victorious outcome of the Franco-Prussian War could the government in Berlin justly claim that "the entire economic life in Prussia rests on a healthy and sound foundation." In 1871 as in 1849 the end of political upheaval introduced a period of business expansion.<sup>10</sup>

While the money market was particularly sensitive to the diplomatic crises and military struggles of the years

<sup>10</sup> Alexander Bergengrün, *Staatsminister August Freiherr von der Heydt* (Leipzig, 1908), p. 327; Hans-Joachim von Collani, *Die Finanzgebarung des preussischen Staates zur Zeit des Verfassungskonfliktes, 1862-1866* (Düsseldorf, 1939), p. 48; Fritz Löwenthal, *Der preussische Verfassungskonflikt, 1862-1866* (Munich and Leipzig, 1914), p. 283; Rudolph von Delbrück, *Lebenserinnerungen, 1817-1867* (2 vols., Leipzig, 1905), II, 371-372; J. Kuczynski, *Studien zur Geschichte der Überproduktionskrisen*, pp. 154, 160-161; J. Kahn, *Geschichte des Zinsfusses*, pp. 164, 179-180, 212, 217, 219, 221; "Aus dem kommerziellen Leben des Jahres 1866," *Vierteljahrsschrift für Volkswirtschaft und Kulturgeschichte*, IV (1866), no. 4, p. 180; *Preussisches Handelsarchiv* (1867), III (Jahresberichte der Handelskammern und kaufmannischen Korporationen des preussischen Staates für 1866), 443; W. Köllmann, *Sozialgeschichte der Stadt Barmen*, p. 45; *Fürst Bismarck als Volkswirth*, ed. Heinrich v. Poschinger (3 vols., Berlin, 1889-91), I, 33; *Europäischer Geschichtskalender*, ed. H. Schulthess (1868), p. 35.

following 1857, the rate of return on industrial investment was also bound to be affected. It is true that the economy as a whole continued to grow, but the dramatic gains of the boom years could not be matched. Of the 79 new enterprises in mining and metallurgy formed in Prussia between 1851 and 1870 with a capitalization of 275,400,000 marks, no fewer than 59, representing an authorized capital of 212,100,000 marks, were established in the period 1852-57. The production of pig iron in the Zollverein increased in value by 173 per cent between 1848 and 1857, climbing from 24,606,000 to 67,228,000 marks, whereas between 1860 and 1870 it advanced 103 per cent, from 52,287,000 to 106,365,000 marks. Figures for the output of foundries including nonferrous metals were even less favorable. During the period 1848-57 the value of Zollverein production rose 168 per cent, from 44,329,000 to 118,937,000 marks. Between 1860 and 1870, on the other hand, the growth was only 74 per cent, from 101,412,000 to 176,457,000 marks.<sup>11</sup>

To be sure, it would be a mistake to minimize the achievements of the German economy during the 1860's. The volume of pig iron production more than doubled, equaling the rate of growth of the previous decade, while the manufacture of steel increased fivefold. The exports of wrought iron and raw steel, moreover, were on the whole greater than imports. Indeed, the Zollverein was third among the industrial powers of Europe as a producer of iron and steel, surpassed only by England and France. The growth in the output of coal was equally impressive. In 1860 Germany was mining approximately 17,000,000 metric tons including lignite, as

<sup>11</sup> H. Rosenberg, *Weltwirtschaftskrisis*, p. 65; *Jahrbuch für die amtliche Statistik des preussischen Staats*, I (1863), 428; Georg von Viebahn, *Statistik des zollvereinten und nördlichen Deutschlands* (3 vols., Berlin, 1858-68), II, 421, 488; *Statistisches Jahrbuch für das Deutsche Reich* (1880), I, 34, 36; Gertrud Hermes, "Statistische Studien zur wirtschaftlichen und gesellschaftlichen Struktur des zollvereinten Deutschlands," *Archiv für Sozialwissenschaft und Sozialpolitik*, LXIII (1930), 150.

compared with 81,000,000 for Great Britain, 9,600,000 for Belgium, and 8,300,000 for France. By the time of the establishment of the empire eleven years later German production had risen to more than 37,500,000 tons, while the figure for Great Britain was 118,000,000 and for France and Belgium only 13,000,000 to 14,000,000 each. Yet granted that the economy was expanding at a substantial rate, it was incapable of repeating the miracle of the 1850's. During the period 1851-60 the index of production for capital goods (1860 = 100) more than doubled over what it had been during 1841-50, rising from 37 to 81. For the decade 1861-70, on the other hand, it grew by barely a half, from 81 to 123. There was an obvious and logical correlation between political and economic insecurity which the chamber of commerce of Elberfeld and Barmen recognized in its report for 1867:

In view of the intimate reciprocal relationship prevailing between the diplomatic and economic intercourse of nations, it is natural that in moments when great and fateful decisions have either just been reached or are about to be reached, commerce and industry should regard these disturbances with great concern and avoid all enterprise. This great uncertainty of the European situation has produced a profound listlessness in all the larger centers of commerce. It has uselessly piled up money and capital in all the banks. In addition there were the higher and unavoidable providential dispensations of our time. The widespread epidemic of cholera and rinderpest intensified the general concern as well as the feeling of social malaise, completely paralyzing the will toward any progress or greater business enterprise.<sup>12</sup>

<sup>12</sup> *Preussisches Handelsarchiv* (1868), III (Jahresberichte der Handelskammern und kaufmännischen Korporationen des preussischen Staats für 1867), 133. Cf. *Statistisches Jahrbuch für das Deutsche Reich* (1880), I, 30, 34; Walther Lotz, *Die Ideen der deutschen Handelspolitik von 1860 bis 1891* (Leipzig, 1892), p. 95; Ivo Nikolai Lambi, *Free Trade and Protection in Germany, 1868-1879* (Wiesbaden, 1963), pp. 12, 16;



Not only did political tension have an unfavorable effect on business conditions; economic insecurity in turn threatened to weaken government policy. Prussia embarked on the course of blood and iron in a strong financial position. The income which the treasury derived from state-controlled railroads, from public lands, and from the royal mines and foundries grew steadily throughout the 1860's, rising from 41,500,000 to 100,600,000 marks annually. There was, furthermore, a tax surplus of about 15,000,000 marks in 1862 and again in 1863, so that the cost of the war against Denmark could be covered by funds on hand. A foreign diplomat marvelled that while "all states incur debts, Prussia wages war and still has money left over." As for Bismarck, jubilant over the successes of his statecraft, he boasted of the resources available to him in a letter of March 24, 1865, to Karl Friedrich von Savigny, Berlin's representative at the diet of the German Confederation: "Our financial balance for last year (64) shows that we need only 2 (two) million from the state treasury for the Danish War. Everything else is covered by the surpluses for 63-64. This information, although very gratifying, is to be kept secret because of the legislature. The financiers are pressing loans on us without requiring legislative approval, but we could wage the Danish War twice over without needing one." Four months later Minister of War Albrecht von Roon echoed his chief's optimism, assuring his cousin Moritz von Blanckenburg that "there is money at our disposal, enough to give us a free hand in foreign policy, and if necessary, to mobilize the entire army and pay it for the duration of a campaign. That gives our stand against Austria the necessary aplomb."<sup>13</sup>

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P. Benaerts, *Les origines*, p. 632; Jürgen Kuczynski, *A Short History of Labour Conditions under Industrial Capitalism: Germany, 1800 to the Present Day* (London, 1945), p. 66.

<sup>13</sup> *Denkwürdigkeiten aus dem Leben des Generalfeldmarschalls Kriegsministers Grafen von Roon*, 5th edn. (3 vols., Berlin, 1905), II, 354. Cf. W. G. Hoffmann and J. H. Müller, *Das deutsche Volksein-*

## THE ECONOMIC ENVIRONMENT

The financial prospects, however, were not always rosy. In 1862, as the constitutional conflict between crown and parliament was entering a critical stage, the government experienced considerable difficulty in placing a 4 per cent railroad loan. Worse still, the plan to convert the bond issues of 1850 and 1852 from 4.5 to 4 per cent met with the approval of only about half of the holders. The situation improved after the first victories of Bismarck's diplomacy had revived public confidence in the regime. Yet prior to the Seven Weeks' War, after the government had painfully increased its reserves to 180,000,000 marks by selling the option to acquire the Cologne-Minden Railroad, by utilizing credits approved by the legislature for railway construction, and by drawing on the balance in hand, it turned out that the available funds would support military operations not for a year, as the minister of war had assumed, but only six months. Could the cabinet have raised more money if the campaign of 1866 had dragged on? Only with the greatest difficulty. Between March and June of that year Prussian state bonds had declined about 10 per cent, and in the event of prolonged hostilities the drop would surely have become calamitous. What saved the government from the consequences of its miscalculation was the rapid defeat of the Austrian army.

But late in the decade the cabinet's financial luck began to run out. Bismarck's confidant Robert von Keudell recalled in his memoirs that "economic conditions in Prussia as well as in the North German Confederation were uncertain. After 1866 a heavy burden weighed on business, industry, and commerce, because in view of all the reports regarding the consistently hostile attitude of the Parisian political world, people felt that they must reckon with the possibility of a sudden outbreak of war. In Prussia, consequently, govern-

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*kommen, 1851-1957* (Tübingen, 1959), pp. 30, 81-82; *Bismarck als Volkswirth*, ed. H. v. Poschinger, I, 23; Otto von Bismarck, *Die gesammelten Werke* (15 vols., Berlin, 1924-35), XIV/II, 693.

ment receipts lagged behind the estimates. Some of the measures to facilitate trade which the legislature had approved produced a temporary decline in income, while certain emergencies led to increased expenditures. At the conclusion of the fiscal year 1868 there was an unexpectedly high deficit" of approximately 16,000,000 marks. The forces inhibiting private enterprise were now also making themselves felt in the financial affairs of the state.<sup>14</sup>

Despite these ups and downs, the economy of Germany was undergoing a rapid industrialization. Although its most impressive achievements were not to come until after the Franco-Prussian War, the foundation of those achievements must be sought in the 1850's and 1860's. The transition to the factory system, however, was not a clear-cut process. For a long time there were branches of manufacture virtually untouched by mechanization, while others were experiencing a revolutionary transformation. More than that, within the same field of enterprise old and new methods of production often coexisted, neither strong enough to overcome the other, though time was clearly on the side of innovation. The textile industry was the most important in the Zollverein, employing in 1861 more than 600,000 persons in weaving and almost 150,000 in spinning, compared with about 394,000 in the building trades, 363,000 in metallurgy, and 151,000 in the construction of machinery. Of the 2,069 factories in Prussia with at least 50 workers, 131 were spinneries and 773 weaving plants. The preponderance of textile manufacturing was even more marked in the category of enterprises with

<sup>14</sup> J. Kahn, *Geschichte des Zinsfußes*, pp. 142-143, 212; Heinrich von Srbik, *Deutsche Einheit: Idee und Wirklichkeit vom Heiligen Reich bis Königgrätz* (4 vols., Munich, 1935-42), IV, 270; Robert von Keudell, *Fürst und Fürstin Bismarck: Erinnerungen aus den Jahren 1846 bis 1872*, 3rd edn. (Berlin and Stuttgart, 1902), p. 412; Karl Zuchardt, *Die Finanzpolitik Bismarcks und der Parteien im Norddeutschen Bunde* (Leipzig, 1910), p. 64; Erich Marcks, *Der Aufstieg des Reiches: Deutsche Geschichte von 1807-1871/78* (2 vols., Stuttgart and Berlin, 1936), II, 310.

500 or more workers. Of 100 such enterprises, 53 were engaged in the production of cloth and yarn, 36 turned out iron and iron wares, and 11 were scattered in miscellaneous fields. Yet side by side with these highly rationalized industrial establishments were numerous small shops operating in accordance with traditional handicraft methods, and an even larger number of homes in which a family income usually derived from farming or a trade was supplemented by part-time labor at the spinning wheel or loom. Within the Zollverein as a whole, weaving factories employed 144,000 persons, while 469,000 artisan masters and journeymen lived under working conditions no different in any essential respect from what they had been a hundred years before. In the manufacture of linen, the most backward segment of the textile industry, there were 350 mechanical looms, 120,000 hand looms worked on a full-time basis, and 371,000 hand looms in part-time use.<sup>15</sup>

The metal industry was by its nature more responsive to technological progress. Involved in the manufacture of producers' goods, it derived a powerful stimulus from the railroad and construction boom of the 1850's, which withstood the hardships of the depression late in the decade. With some 57,000 factory workers as of 1861, it was far behind the textile mills and shops in the size of its labor force. Even considering only the larger enterprises with 50 or more employees, weaving and spinning plants in Prussia were nearly twice as numerous as foundries and metalworks. Yet there were giants among the ironmasters no less than among the cloth manufacturers. Alfred Krupp was already employing more than 8,000 persons and recording annual sales of some 24,000,000 marks. There were also the firm of Haniel and Huysen and the Hörder works, each with more than 3,000 mill hands, the Phönix Company with 2,100, and the Stumm Brothers with 1,100. The pattern

<sup>15</sup> G. v. Viebahn, *Statistik Deutschlands*, III, 1121; G. Hermes, "Statistische Studien," pp. 141-144, 153-154.

of private investment, moreover, reflected a widespread confidence in the future growth of heavy industry. Of 107 industrial joint-stock companies formed in Prussia during the period 1850-59, about two-thirds were in mining and smelting, as compared with barely a tenth in textiles.

The mechanization of production was also more pronounced in the capital goods industries. By the early 1860's the mines and foundries of the Zollverein, employing 2,100 steam engines with 72,000 horsepower, were far ahead of weaving and spinning, where the comparable figures were 1,400 and 31,000. While in the Prussian textile factories there were still 28,000 hand looms against only about 15,000 mechanical ones, the proportion of blast furnaces using coke rather than charcoal grew from 37 per cent in 1852 to over 76 per cent in 1862. The result was that production not only could keep pace with a swiftly mounting demand for metals but succeeded in supplying an increasing share of the domestic market. Between 1851 and 1857 the German output of pig iron more than doubled, rising from 219,000 to 536,000 metric tons annually. Yet the need for imports from abroad remained unchanged, since domestic manufacture could only satisfy between 66 and 76 per cent of demand. During the following decade, however, the Zollverein began to approach self-sufficiency in iron. Yearly production expanded from 558,000 metric tons in 1858 to 905,000 in 1864, when it amounted to 93 per cent of total consumption.

Still, the process of industrialization in metallurgy, extensive though it was, remained incomplete. The expanding size of the manufacturing units, the growing mechanization of production, the increasing acceptance of the joint-stock principle, all suggested an advanced stage of economic development. And yet even in heavy industry tradition could not be easily uprooted. Throughout the Zollverein small enterprises continued to compete with the great mills, most of them clinging to

preindustrial methods of operation. In 1861 there were still 120,000 artisan shops engaged in the manufacture of heavy metal goods and another 20,500 in specialized metallurgical trades, employing a total of about 277,000 persons. In other words, the average handicraft establishment provided work for barely two people, one of them probably a master tradesman who was also in all likelihood the proprietor, the other a journeyman or apprentice. But the aggregate of those earning a livelihood under this domestic system of output was about five times as great as that in the factories. The vestiges of an older economic order thus remained clearly discernible in the metal industry despite rapid changes in the method and organization of production.<sup>16</sup>

Mining was so closely related to metallurgy that, despite the importance which it had in its own right, much of the contemporary statistical data made no distinction between them. Such a distinction would in any case have been difficult, since numerous enterprises in heavy industry combined the extraction of coal and ore with the founding and refining of metal. In Prussia during the 1850's, 75 firms with an authorized capitalization of 244,360,200 marks were formed in mining and metallurgy, most of them apparently engaged in both operations. In the preceding decade of slower growth, when only seven companies officially capitalized at 43,070,001 marks came into existence, collieries and blast furnaces were also very frequently under common ownership. Yet while the volume of investment

<sup>16</sup> G. v. Viebahn, *Statistik Deutschlands*, III, 1034, 1121; G. Hermes, "Statistische Studien," pp. 151-152, 154; Horst Blumberg, "Die Finanzierung der Neugründungen und Erweiterungen von Industriebetrieben in Form der Aktiengesellschaften während der fünfziger Jahre des neunzehnten Jahrhunderts, am Beispiel der preussischen Verhältnisse erläutert," in Hans Mottek, Horst Blumberg, Heinz Wutzmer, and Walter Becker, *Studien zur Geschichte der industriellen Revolution in Deutschland* (Berlin, 1960), p. 176; H. A. Mascher, *Das deutsche Gewerbewesen von der frühesten Zeit bis auf die Gegenwart* (Potsdam, 1866), p. 524; J. Kuczynski, *Short History*, p. 70; P. Benaerts, *Les origines*, pp. 457, 461-462.

in mines apart from foundries cannot be determined with any precision, there is adequate information regarding their technical progress. Judged by the extent of mechanization, mining was the most advanced sector of industry. As of 1861 it employed close to 20 per cent of all steam engines in the Zollverein with 38 per cent of the total horsepower, far ahead of textiles and metals, which were in second and third place. The results were reflected in the index of productivity for Prussian coal miners (1850 = 100). After climbing steadily to reach 108 in 1858, it suddenly jumped two years later to 119, and by 1865 had reached 150. Thereafter its average rate of growth declined, so that at the beginning of the following decade it was still only 155.

For the mining industry no less than for the economy as a whole the 1850's were boom years. Its output tripled in value between 1848 and 1857, rising from 44,653,000 marks to 137,280,000, while the labor force did not quite double, rising from 88,000 to 169,000. Here was another indication of technological improvement. After the economic crisis of 1857 the industry resumed its growth, but at a less rapid pace. Between 1860 and 1869 its over-all production grew from 18,854,000 to 39,665,000 metric tons, and from 125,902,000 to 240,429,000 marks. The most important branch of mining was coal, accounting in 1857 for about 60 per cent of total value, and to this amount should be added another 8 per cent for lignite. Far behind were zinc and iron, each with approximately 9 per cent, then came lead with 6 per cent, silver with 3 per cent and copper and manganese with less than 2 per cent each. The collieries were also the most developed mining enterprises in the Zollverein, characterized by a high concentration of capital and intensiveness of production. While their number was rising by only 8 per cent from 591 in 1848 to 636 in 1857, their combined output came close to tripling, from 4,384,000 to 11,279,000 metric tons, and their labor force more than doubled from 36,000 to 78,000. The

average coal mine, employing some 122 workers and producing 17,700 tons annually toward the end of the 1850's, was a large-scale undertaking even by the standards of a later age. The industry, moreover, continued to grow steadily throughout the following decade. By 1864 it was providing a livelihood for 99,000 miners and digging 19,409,000 tons, by 1867 the yield was 23,808,000, and by 1871, 29,373,000 tons.

In most other branches of mining, however, small enterprises and traditional methods were still the rule. Lignite was an important supplement of coal, in 1857 employing 11 per cent of all workers in the pits and accounting for 8 per cent of the combined worth of mine production. Yet there were 683 companies in the field, 47 more than in coal, so that average employment in each was only 26 workers and average value of annual output 16,500 marks. Iron mining was another case in point. It was second only to the collieries in the size of its labor force, while in value it was in third place, after coal and zinc. The industry was particularly important in Westphalia, the Ruhr, the Harz mountains, Thuringia, Upper Silesia, the Spessart range, and the upper valley of the Lahn. In 1857 there were 3,000 iron pits in the Zollverein with 28,000 workers and an output of 11,654,000 marks. For each mine there were thus fewer than 10 miners and an annual production of less than 4,000 marks. Modest as these figures were, they represented a significant improvement over the conditions of 1848, when there were 2,000 works, each on an average with 8 workers and a yield of 1,900 marks. Even as late as 1864, when the labor force had risen to 24,000 men and production to 12,964,000 marks, iron mining had advanced only a short distance beyond the level of a handicraft.<sup>17</sup>

<sup>17</sup> *Jahrbuch für die amtliche Statistik des preussischen Staats*, 1 (1863), 425-428; P. Benaerts, *Les origines*, pp. 377-378; H. A. Mascher, *Das deutsche Gewerwesen*, p. 524; J. Kuczynski, *Short History*, p. 84; G. v. Viebahn, *Statistik Deutschlands*, II, 365, 371, 377, 407; *Statistisches*



For that matter, so modern a form of industrial enterprise as machine construction was in the social origin of its leaders, the dissemination of its technology, and the form of its organization not far removed from the world of trade guilds. Its beginnings went back to the late eighteenth century, when mercantilist civil servants of the Prussian state began to build engines and engine factories on the British model, hoping to improve production in the royal mines and foundries. In the 1820's the aging Goethe was disturbed by the incipient mechanization of economic life noticeable even in provincial Weimar. "Machinery, which is gaining the upper hand, worries and alarms me," he confessed in *Wilhelm Meisters Wanderjahre*. "It rolls on like a thunderstorm, slowly, slowly. But it has taken aim, it will come and strike." By that time the manufacture of machinery had ceased to be primarily a state enterprise. It was now more and more dominated by a group of inventive and energetic self-made men, many of them of lower-class background, who had left some skilled craft or modest countinghouse to become the pioneers of a new industry. August Borsig had learned the carpenter's trade before receiving technical training in the Gewerbeinstitut in Berlin and founding his own machine shop. The bell-maker Carl Anton Henschel transformed his foundry in Kassel into a plant for the construction of steam engines. Josef Anton Maffei, who established in Munich the first locomotive works of southern Germany, was originally a dealer in groceries. Richard Hartmann had come to Chemnitz as a wandering journeyman blacksmith, then in 1832 he hired three workmen and opened a small repair shop, in 1841 he built his first engine, and by 1845 he was employing 350 men. These were typical success stories of the early period of machine-building in Central Europe.

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*Jahrbuch für das Deutsche Reich*, 1 (1880), 30-32; G. Hermes, "Statistische Studien," pp. 148, 150-151; A. Sartorius von Waltershausen, *Wirtschaftsgeschichte*, pp. 166-167.

Ways of acquiring skill and experience were equally uncomplicated. There were no trade journals or professional publications, and schools of technology were few in number. Many founders of new enterprises, therefore, began as employees of older firms, gradually acquiring the knowledge needed to start out on their own. This was essentially the time-honored training method of the guild system adapted to the needs of a youthful industrialism. In their business practices, moreover, the machine-builders resembled master artisans from whom they were often descended more than capitalistic entrepreneurs. Sober and hardheaded, running their factories the way their fathers had run their shops, they looked with suspicion on newfangled financial devices which divorced ownership from management. Only 4 joint-stock companies with a capitalization of 18,150,000 marks were formed in the Prussian machine industry in the 1850's, although there were over 300 companies in the state engaged in the construction of engines. For Germany as a whole, of some 320 joint-stock companies which had come into existence during the decade with a capital close to 2,400,000,000 marks, no more than 8 with 25,500,000 marks were in machinery-building. Was this business conservatism also responsible for the relative decline of mechanization in the machine industry? Whatever the reason, it was incongruous that the same manufacturers who were providing engines for mines and foundries could not themselves keep pace with the technological advance of other sectors of the economy. Their workers almost tripled between 1846 and 1861, rising from 13,000 to 37,000, while their machines increased from 139 to 618 and their horsepower from 1,700 to 6,600. Yet their percentage of the Zollverein total for the number of machines fell from 9 to 6, and for the volume of horsepower from 6.4 to 3.5. The great period of German engine-building was to come later, well after the middle of the century, when the era of rugged individualism had come to an

end, and the financier and technician had begun to counsel or even displace the self-made craftsman and inventor.<sup>18</sup>

It was symptomatic of an early stage of industrialism that before 1871 the most important area of investment was not in production but transportation. The railroad was king on every stock exchange in Germany. More than half of the approximately 3,000,000,000 marks at which joint-stock companies were capitalized on the eve of the Franco-Prussian War had gone into the construction of railway lines. Enterprises of such vast dimensions completely overshadowed mines and foundries with 360,000,000 marks and machine factories with a mere 33,000,000 marks. In Berlin stockbrokers were trading in 175 railroad issues, almost half of all offerings. Only government bonds could hold their own on the money market against rail shares. What attracted the investor was the prospect of a quick and ample profit. In the late 1860's the Leipzig-Dresden Railroad was paying dividends of 25 per cent, the Saxon Coal Railroad 23 to 24 per cent, the old Nürnberg-Fürth Railroad 19 per cent, and the Magdeburg-Leipzig Railroad 18 per cent. These were notable achievements which tended to obscure the fact that many companies could show only a modest return. Some of the better lines, however, continued to pay 15 to 20 per cent for years, and the average for all Prussian railroads in 1865 was a respectable 6.25 per cent. The steady flow of investment capital promoted

<sup>18</sup> Johann Wolfgang Goethe, *Wilhelm Meisters Wanderjahre: Wilhelm Meisters theatralische Sendung* (Zurich, 1949), p. 460; Fritz Redlich, "The Leaders of the German Steam-Engine Industry during the First Hundred Years," *Journal of Economic History*, IV (1944), 143-145, 147-148; Franz Schnabel, *Deutsche Geschichte im neunzehnten Jahrhundert* (4 vols., Freiburg im Breisgau, 1929-37), III, 403-405; Heinrich Bechtel, *Wirtschaftsgeschichte Deutschlands* (3 vols., Munich, 1951-56), III, 158-159; H. Blumberg, "Die Finanzierung der Neugründungen," pp. 176-177; P. Benaerts, *Les origines*, pp. 266-267, 377-378, 389; H. A. Mascher, *Das deutsche Gewerbewesen*, p. 524; Ludwig Pohle and Max Muss, *Das deutsche Wirtschaftsleben seit Beginn des neunzehnten Jahrhunderts*, 6th edn., (Leipzig and Berlin, 1930), pp. 14-15.

the growth of the German rail network from 5,800 kilometers in 1850 to 11,000 in 1860, and 18,600 in 1870. Only the United States and Great Britain could surpass these figures.<sup>19</sup>

The form of railroad ownership in the German Confederation varied from state to state. Some of them like Hanover and Baden adopted the principle of state proprietorship which the Belgians had introduced. In the Bavarian Palatinate and for a time in Mecklenburg-Schwerin private enterprise was the rule. Hesse-Kassel and Nassau favored a mixed system under which public and private lines existed side by side. All in all, as of 1860, state railroads totaled 5,200 kilometers, private railroads under government management 1,400, and private railroads with administrative autonomy 4,600. In Prussia the conservative bureaucracy of the late 1830's, distrustful of innovation almost as a matter of principle, followed a policy of watchful waiting with regard to railway companies. Then in 1842 a new period opened, when the state began to encourage construction by subscribing to the capital of important new lines or guaranteeing the interest on their obligations. But direct government ownership did not begin on any significant scale until after 1848, when August von der Heydt became minister of commerce. A political trimmer with a remarkable talent for administration, he devoted himself during his fourteen years in office to the creation of a network of public railroads. Sometimes the state would engage directly in the building of a new line, as

<sup>19</sup> H. Bechtel, *Wirtschaftsgeschichte Deutschlands*, III, 164, 453; Werner Sombart, *Die deutsche Volkswirtschaft im neunzehnten Jahrhundert und im Anfang des 20. Jahrhunderts*, 5th edn. (Berlin, 1921), pp. 242-243, 489, 493; Werner Sombart, *Der moderne Kapitalismus: Historisch-systematische Darstellung des gesamteuropäischen Wirtschaftslebens von seinen Anfängen bis zur Gegenwart*, 6th edn. (3 vols., Munich and Leipzig, 1924-28), III, 163; Friedrich Lütge, *Deutsche Sozial- und Wirtschaftsgeschichte* (Berlin, Göttingen, and Heidelberg, 1952), p. 367; L. Pohle and M. Muss, *Das deutsche Wirtschaftsleben*, pp. 16-17; *Zeitschrift des königlich preussischen Statistischen Bureaus*, xv (1875), 430; *Statistisches Handbuch für den preussischen Staat*, II (1893), 299.

### THE PATTERN OF SOCIETY

with the Eastern Railroad, or it would purchase an established company like the Niederschlesisch-Märkische Railroad, or it might take over the management of a private enterprise such as the Bergisch-Märkische Railroad. By 1860 some 2,800 of the 5,700 kilometers of Prussian railroads were under government ownership or administration.

After von der Heydt resigned his post two years later, the pendulum swung back in favor of free enterprise. The cabinet, determined to carry out the royal program of military reform even without a legal budget, was reluctant to assume an additional financial obligation by embarking on new railway ventures. The rising tide of economic liberalism, moreover, began to carry the bureaucracy with it. Count Heinrich von Itzenplitz, the new minister of commerce, maintained that it did not matter who built the railroads, as long as someone did. It was particularly difficult for the business community to reconcile the ideal of *laissez faire* which it increasingly professed with the leading role of the state in the transportation system. The prominent industrialist and politician Friedrich Hammacher insisted at a meeting of representatives of the German chambers of commerce that "the turn of fate placing the railroads in the hands of the state governments . . . means nothing other than practicing communism. It means nothing other than confiscating private property in the interest of the state and the public welfare, and paralyzing the railroads in the fulfillment of their industrial mission for the common good. No one of us will doubt that he would certainly not be inclined to invest capital in railroad enterprises if the state had the power under any conditions whatever to destroy the property of the railroads." To many statesmen and businessmen alike this logic seemed irrefutable. During the 1860's the mileage of private railroads in Prussia increased twice as much as that of state-owned lines. Elsewhere the reaction against public ownership was not so pronounced. But throughout Germany dar-

ing entrepreneurs like the "railroad king" Bethel Henry Strousberg formed companies, issued stock, promoted, borrowed, and kited, until the pyramid collapsed in the depression of the following decade.<sup>20</sup>

An increase in commerce accompanied and reflected the expansion of industry and transportation. To be sure, the foreign trade of Germany was only about half that of the United Kingdom, and the difference in the rate of growth increased in favor of the latter after the middle of the century. In the competition for second place in the commerce of Europe, moreover, the French were usually successful, although only by a narrow margin. Yet the rise in the total value of the imports and exports of the Zollverein was impressive. It went from 1,067,000,000 marks in 1850 to 2,173,000,000 in 1860 and 4,834,000,000 in 1869. The population was also growing at a steady rate, but even on a per capita basis, foreign commerce more than tripled, the figures being 36, 63, and 125 marks. During most of the period 1850-69 the balance of trade was unfavorable; only in 1853, 1854, 1858, and 1864 did exports exceed imports. The resultant burden of indebtedness, however, was not heavy. In two decades the total for the states of the Zollverein was no more than 1,113,000,000 marks, almost 90 per cent of it incurred during the years 1866-69. Such a minor imbalance posed no problem for an advancing economy.

The pattern of exportation, however, suggested that the progress of German industrialism was uneven and intermittent. While the greatest proportional increase among goods shipped abroad was in the products of

<sup>20</sup> A. Sartorius von Waltershausen, *Wirtschaftsgeschichte*, pp. 104-105, 277-278; Walther Lotz, *Verkehrsentwicklung in Deutschland seit 1800*, 4th edn. (Leipzig and Berlin, 1920), p. 35; F. Lütge, *Sozial- und Wirtschaftsgeschichte*, p. 366; *Deutsches Verkehrsbuch*, ed. Hans Baumann (Berlin, 1931), pp. 7, 11, 14, 25; P. Benaerts, *Les origines*, p. 320; *Verhandlungen des Dritten Deutschen Handelstages zu Frankfurt am Main, vom 25. bis 28. September 1865* (Berlin, 1865), p. 34; *Statistisches Handbuch für den preussischen Staat*, II (1893), 299.

mining and smelting, followed by manufactured wares, agricultural produce, and semifinished articles, these changes were not considerable enough to alter the basic distribution of the components of foreign trade. The largest single category of exports from the Zollverein remained manufactures, amounting to 47 per cent of the total in 1850, 52 per cent in 1864, and 44 per cent in 1869. Within this category textiles consistently accounted for more than half. Raw materials and semifinished products were in second place, with between 27 and 33 per cent. Foodstuffs, ranging from 17 to 20 per cent, were the last of the important elements of exportation. Not until the great expansion of heavy industry after 1871 did these ratios begin to change substantially. As for retail trade, it was still the domain of the small storekeeper, who like the master tailor and shoemaker practiced a time-honored craft in a tradition-bound way. Toward the end of the 1850's there were in Prussia 39,300 proprietors of commercial establishments with 22,900 helpers. Even in a sizable city like Breslau the 500 provision merchants had only 800 employees, so that the typical grocer's shop could hardly have changed much since the time more than a hundred years before when Silesia first became Prussian.<sup>21</sup>

The passing of the old order was more apparent in banking. The demand for new sources of risk capital engendered by the progress of industry was bound to affect the world of finance more than foreign or retail trade. It led in fact to the formation of a number of important new lending institutions distinguished from older banks by both the form of their organization and the character of their investment. In the first place, they were built on the joint-stock principle, thereby seeking to tap a source of funds greater than that available to private financiers. Secondly, they were prepared to ad-

<sup>21</sup> W. Sombart, *Die deutsche Volkswirtschaft*, pp. 224, 521; Gerhard Bondi, *Deutschlands Aussenhandel, 1815-1870* (Berlin, 1958), pp. 145-146; G. Hermes, "Statistische Studien," pp. 158-159.

vance loans for industrial ventures, more hazardous but also potentially more profitable than the government bonds favored by the established firms. The increasingly self-confident tone of their statements of purpose is a gauge of their success as well as of the advance of the economy as a whole. At the time of its establishment in 1851 the directors of the Disconto-Gesellschaft announced modestly that they expected "to provide credit for handicraftsmen and small businessmen by discounting notes or by cash advances." The Darmstädter Bank in 1853 hoped "to transfer temporarily to German industry the funds needed for its operations in the form of current accounts paying interest, but without at the same time encouraging agiotage or directing capital toward unproductive speculation on the stock exchange." By 1856 the Berliner Handelsgesellschaft promised that it would engage in "the operation of bank, commercial, and industrial enterprises of all kinds, as well as the organization, amalgamation, and consolidation of joint-stock companies." And in 1870, with Germany on the threshold of a new era of worldwide economic activity, the Deutsche Bank proudly boasted that it would pursue banking activities of every sort, "particularly the advancement and facilitation of commercial relations between Germany, the other European states, and overseas markets."

There were good financial reasons for this self-confidence. Between the Revolution of 1848 and the depression of 1857 about fourteen major joint-stock banks were established in Germany, starting with the A. Schaaffhausenscher Bankverein of Cologne and ending on the eve of the crash with the Handelsgesellschaft in Berlin, the Allgemeine Deutsche Credit-Anstalt in Leipzig, the Mitteldeutsche Creditbank in Meiningen, and the Norddeutsche Bank in Hamburg, among others. "Each city, each state, however small, wants to have its bank and its lending establishment," observed the French consul in Leipzig in a dispatch to his govern-



ment of March 14, 1856. "There are many people who are somewhat frightened by this enthusiasm which they find not entirely in keeping with the real needs and financial means of Germany. . . . It seems as if there is as much determination to cover Germany with a network of credit institutions as there was to cover her with a network of railroads." The comparison was apt. Of the nearly 2,400,000,000 marks invested in new joint-stock companies during the 1850's, about 1,000,000,000 were in transportation, 800,000,000 in banking, and 600,000,000 in industry. The ten largest investment banks of northern Germany represented as much capital as all the joint-stock companies of the Zollverein engaged in mining and smelting. Is it any wonder that many investors preferred to put their money into ventures like the Disconto-Gesellschaft or the Handelsgesellschaft rather than collieries and foundries? Out of a total of 359 issues traded on the Berlin stock exchange at the end of 1870, 175 were in railroads, 99 in government loans, both domestic and foreign, 76 in various banking institutions, and only 9 in industrial enterprises.

The victory of the new banks, however, was neither immediate nor complete. In finance as in industry tradition was a powerful force. Even the great Darmstädter Bank, organized with the aid of French capital on the model of *Crédit Mobilier*, proved a disappointment at first. Its report of May 22, 1854, spoke of the difficulties it had encountered because of "political circumstances and the hostility of a great many people," complaining that its critics were spreading the view that it was "an essentially dangerous institution established to excite speculation to an excess, to aid *agiotage*, and to feed the manipulations of the bourse." The opposition to joint-stock financing could at times prove insurmountable. For example, in Frankfurt am Main, a historic stronghold of the private bank, the great firms like *Grünelius*, *Metzler*, and of course *Rothschild* succeeded in frustrating most plans for new credit institu-

tions. There were many instances, on the other hand, in which farseeing financiers of the old school participated in the formation of investment companies designed to meet the needs of industry. The *Handelsgesellschaft*, established with the support of such banking houses as Sal. Oppenheim Jr. & Co. of Cologne and Mendelssohn & Co. of Berlin, was a case in point. Abraham Oppenheim collaborated with the brilliant entrepreneur Gustav Mevissen in organizing the Darmstädter Bank. There was the *Waaren-Kredit-Gesellschaft* founded at Königsberg in which Gerson Bleichröder and Jacob Cassel, both of them engaged in private underwriting, played an important role. In view of these interconnections between the old banks and the new, it would be misleading to make a sharp distinction between their interests.

Whatever their structural differences, moreover, they often undertook the same sort of financial operations. In its early lean days the Darmstädter Bank acted as the fiscal agent for the Hessian state, underwrote a portion of the French Crimean War bonds, and participated in a loan to the government of Baden. By the same token even the Rothschilds, after achieving greatness as moneylenders for the rulers of Europe, began to promote such ventures as the Upper Silesian Railroad and the Machine Construction Company of Karlsruhe. The ubiquitous Oppenheim brothers joined forces with the *Disconto-Gesellschaft* to help form the Aachen-Höngen Mining Company; S. Bleichröder as well as the A. Schaaffhausenscher Bankverein were members of the consortium which reorganized the Kissing & Schmöle metalworks in Westphalia; Cohn, Bürgers & Co. and the Darmstädter Bank took the lead in financing the Berlin-Potsdam-Magdeburg Railroad; and M. A. v. Rothschild & Sons and S. Bleichröder collaborated with the *Disconto-Gesellschaft* and the Darmstädter Bank on the Thuringian Railroad.

How meaningful then is the usual textbook differentiation between the old banks and the new, when applied to the middle years of the nineteenth century? The latter institutions undoubtedly helped by their example to demonstrate the possibilities of industrial investing and promoting. Yet the undeveloped state of the German credit system precluded a high degree of specialization in finance. All types of banking houses shared in the prosperity of the years 1850-70. In Cologne the number of private lending firms rose from 11 to 24, and even those establishments engaged only in money changing increased from 7 to 13. The resources of the joint-stock banks were not yet sufficient to give them a decisive advantage. As of 1857 the largest among them had an average capitalization of barely 30,000,000 marks. The value of the acceptance bills of nine big banking companies in Berlin was a mere 8,200,000 marks, while in Prussia as a whole there were only 602 establishments with 1,172 employees dealing in money and credit. At the beginning of the twentieth century a spokesman for the Dresdner Bank, contemplating the growth of financial operations during his lifetime, concluded with substantial accuracy: "It is from 1871 that our real development dates, and it is since that year our great banks have been organised."<sup>22</sup>

Yet even during the years before the achievement of national unification the economy had begun to display tendencies symptomatic of industrial capitalism. The most obvious of these was the growing mechanization of

<sup>22</sup> J. H. Clapham, *The Economic Development of France and Germany, 1815-1914*, 4th edn. (Cambridge, 1951), p. 390. Cf. A. Sartorius von Waltershausen, *Wirtschaftsgeschichte*, pp. 555-556; Jürgen Kuczynski, *Die Bewegung der deutschen Wirtschaft von 1800 bis 1946*, 2nd edn. (Berlin and Leipzig, 1947), p. 71; P. Benaerts, *Les origines*, pp. 266-267, 273-278; G. Hermes, "Statistische Studien," pp. 155-156; W. Sombart, *Die deutsche Volkswirtschaft*, pp. 178, 489; Rondo E. Cameron, "Founding the Bank of Darmstadt," *Explorations in Entrepreneurial History*, VIII (1956), 118-119, 123-125; Alfred Krüger, *Das Kölner Bankiergewerbe vom Ende des 18. Jahrhunderts bis 1875* (Essen, 1925), pp. 143, 151, 167-169, 195; W. Sombart, *Der moderne Kapitalismus*, III, 210.

production. In 1850 the horsepower employed in German industry was 260,000, as compared with 370,000 for France and 1,290,000 for the United Kingdom. Ten years later Germany was still in third place with 850,000, while the French figure was 1,120,000, and the British 2,450,000. But the German rate of increase had been the largest, and by 1870 a significant change had taken place in the relative positions of the three leading industrial powers of Europe. Germany with 2,480,000 horsepower was now well ahead of France, which had 1,850,000. More than that, the United Kingdom's total of 4,040,000 was not even twice that of Germany, whereas twenty years before it had been five times as large. This technological advance of Central Europe was clearly reflected in the growing productivity of labor. The number of coal miners in the Zollverein increased 119 per cent between 1848 and 1857, while the amount of coal mined increased 157 per cent. In the extraction of iron ore the working force expanded 82 per cent and the volume of output 183 per cent. Laborers employed in blast furnaces grew 41 per cent as compared with a rise in the production of pig iron of 155 per cent. During the 1860's the increase in productivity was equally impressive. The average annual output of a worker in coal mining grew about 33 per cent, in copper mining 24 per cent, and in iron smelting 71 per cent. While more rational methods of organizing production accounted in part for this progress, most of it was the effect of an improvement in industrial technology.<sup>23</sup>

As significant as the mechanization of production was its incipient tendency toward concentration. The large-scale enterprise was already beginning to jeopardize the economic existence of the countless small workshops and countinghouses whose roots were still in the preindustrial age. The result in many cases was a decline in the total number of establishments engaged in a given field

<sup>23</sup> J. Kuczynski, *Short History*, pp. 85, 87, 89, 116, 151, 153; G. v. Viebahn, *Statistik Deutschlands*, II, 365, 377, 421.

of manufacture accompanied by a marked increase in the size and strength of those which had emerged victorious in the struggle for existence. This trend was most pronounced where industrialization was farthest advanced. Metallurgy and metalworking were an apt illustration. Those factories in the Zollverein engaged in the production of basic materials like pig iron and requiring the largest amount of capital and equipment decreased slightly between 1849 and 1861, from 720 to 656, while the average number of workers in each factory more than doubled, from 25 to 56. Similarly, enterprises involved in transforming and refining operations, that is, forges, rolling mills, and steel works, diminished by about a half, from 2,567 to 1,311, but the labor force per unit rose from not quite 5 to 16. By contrast, plants turning out specialized metal products such as wire, tools, and machines increased from 498 to 1,103, at a more rapid rate than the number of employees, so that the workers in an average shop actually declined from 27 to 25.

The process of concentration was also discernible in railroading, where a policy of consolidation could be profitably combined with speculation on the stock exchange. The Bergisch-Märkische Railroad, for example, enjoyed great success in expanding its network in the Rhine valley despite the fact that its administration was controlled by the Prussian government. It absorbed the Düsseldorf-Elberfeld line in 1857, the Prince Wilhelm in 1863, and the Aachen-Düsseldorf, the Ruhrort-Krefeld-Kreis Gladbach, and the Elector Friedrich Wilhelm's Northern Railroads in 1866. Even among private bankers there was a growing disparity between the large firms and the small, as the experience of Cologne suggested. The number of banking houses in the city, exclusive of those engaged only in money changing, rose from 9 in 1835 to 33 in 1875. Yet in fact wealth was increasingly concentrated in the six leading companies, whose combined resources were probably more than ten