

GERALD D. FELDMAN

Iron and Steel in the German Inflation, 1916-1923



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IN THE GERMAN INFLATION
1916-1923

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TO PHILIPPA

Er drohte mit dem Austritt. Ein Kampf zwischen Eisen und Kohle schien bevorzustehen, obwohl es ganz sicher war, dass er niemals ausgetragen werden konnte, denn da es unter den Grossen keinen gab, der nur auf *einem* dieser Flügel stand, hätte jeder sich selbst bekriegen müssen. Aber wie stets im industriellen Leben, so waren auch diesmal nicht die Kampfresultate, sondern die blossen Kampfmomente das Wesentliche—so wie es Wirtz in seinen guten Zeiten gesagt hatte: Der Sieg des einen und die Niederlage des anderen ist nur eine Beigabe zu den industriellen Kämpfen, ausschlaggebendes Ziel ist allein der Ausbau von Kampfstellungen. . . . Es kommt weniger darauf an, dass man einen Kampf bis zum Ende durchficht, als darauf dass man in Bereitschaft ist.

—Erik Reger, *Union der Festen Hand. Roman einer Entwicklung* (Berlin, 1946), p. 393.

CONTENTS

List of Tables	xi
Preface	xiii
Abbreviations	xvii
Introduction	3
The Rationale for This Study and Some Methodological Considerations	3
Iron and Steel in the German Prewar Economy	13
The Great Concerns and Their Leaders	13
Cartels, Syndicates, and Trade Associations	27
Chapter One. The Dilemmas of Industrial Self-Government, September 1916–July 1919	51
Cartels and Syndicates Between Compulsion and Uncertainty	56
Iron and Steel Producers and Their Industrial Consumers	
Between Conflict and Cooperation	71
In War	71
In Revolution	82
Chapter Two. The Disruption of Industrialist Solidarity, July 1919–April 1920	110
The Steel Works Association in Disintegration and the Quest for Alternatives	113
“Onward to World Market Prices!”	130
Government Regulation of the Iron Trades	140
Chapter Three. Unity Restored: The Struggle for Decontrol, 1920–1921	160
The Failure of the EWB	164
Export Controls Under Attack	187
Chapter Four. Vertical Concentration	210
The Tale of Two Concerns	213
The Balance Sheet of Vertical Concentration	244
Chapter Five. 1922: From Low Interest to High Principle	280
The Last Fling	284
Toward an Economic Program	319
	ix

CONTENTS

Chapter Six. 1923: From Ruhr Occupation to Twelve-Hour Shift	346
Surviving Passive Resistance	351
Ending Passive Resistance and the Eight-Hour Day	393
Epilogue	445
Appendix One. Dollar Exchange Rate of the Paper Mark and the Gold Mark in Berlin, 1914–1923	472
Appendix Two. Production of Coal, Pig Iron, and Crude Steel in Germany, Great Britain, France, and Belgium, 1913–1929	474
Bibliography	477
Index	495

LIST OF TABLES

1. The Participation of the Ruhr Mills in the Steel Works Association	17
2. The Participation Quotas in the Steel Works Association in 1912-1913	34
3. Coal, Pig Iron, and Crude Steel Production in Germany, 1913-1919	52
4. Average Prices and Percentage of Price Increases of the Most Important Raw Materials and Iron and Steel Products, 1914-1919	52
5. The Price of Swedish Iron Ore in Kronen, the Exchange Rate of the German Mark in Kronen, the Price and Percentage Price Increase of Swedish Iron Ore in Marks, 1914-1919	56
6. The Price of Various Iron and Steel Products, December 1918-June 1919	97
7. The Price of Various Iron and Steel Products, July 1919-April 1920	127
8. The Price of Various Iron and Steel Products, April 1920-December 1921	172
9. A Comparative Overview of the Concerns (I)	246
10. A Comparative Overview of the Concerns (II)	248
11. Profits of the Most Important Iron and Steel Concerns for the Business Years 1919-1920 and 1918-1919	253
12. The Price of Various Iron and Steel Products in 1922	295
13. The Price of Various Iron and Steel Products, January-December 1923	370

PREFACE

I did not intend to write this book when I began my researches into the socioeconomic history of the German inflation, but like many unplanned creations, its birth is no accident. My original intention was to write a study of industry, labor, and the state in the early Weimar Republic (1918–1923) as a sequel to my earlier study, *Army, Industry and Labor in Germany, 1914–1918* (Princeton, 1966). I was deflected from this original goal, which has now been broadened into a plan to write a social history of the German inflation, that is, a study of the effects of the inflation on all the significant socioeconomic groups and institutions of German society, for two reasons.

First, I discovered the enormous difficulties involved in attempting a relatively general study in a largely uncharted area of historical research. Although historians continuously and religiously pay tribute to the importance of the protracted German inflation of 1916–1923, the major studies focusing on the inflation have, until recently, all been undertaken by economists who paid little or no attention to the concurrent political, social, institutional, sociopsychological, and ideological developments. Thus, I found myself overwhelmed by the sheer difficulties of putting so complex a story together, and I came to the conclusion that the writing of a “preliminary study” of a significant segment of the larger theme might be a useful way of developing the foundations of a broader investigation. Second, I found that I had gathered a disproportionately large amount of what I believed to be highly significant primary source material on the German iron and steel industry during the period of inflation, which at once threatened to make a more general study list very heavily to one side and also required separate treatment because it had reached the point of forming an important story unto itself.

The origins of this book explain certain intentional limitations on its scope of discussion which might appear disturbing to those acquainted with the period and its problems. The coal problem, so central to the economic and political issues of the period as well as to the special problems of the iron and steel industry and so intrinsically interesting because energy crises are no longer simply subjects of historical curiosity, is relatively neglected in this book. This problem, like the momentous social questions involving wages and working hours, come in for somewhat detailed treatment only in the final chapters. Were I to have treated these major issues in detail in this study, I believe that I would

PREFACE

have distorted its purposes. These problems will be treated more fully in the general work I intend to write, and such explorations of them as appear here form points of intersection between the two works.

The purposes of this study are more than instrumental, however, and I believe that my work makes some contribution to certain basic problems of modern German and modern European history. On the most fundamental level, it is a study in business history, an examination of how the leaders of one of Germany's most important and powerful industries conducted business during seven years of inflation and political and social unrest, and of how this group emerged from this protracted crisis in a position of greater power and security than it merited for either economic or political reasons. Second, it is meant to be a contribution to the general history of the Weimar Republic. Until recently the culture and the politics of the Weimar Republic have been narrowly conceived and treated in too much isolation, because historians share Ernst Troeltsch's distaste for the "Americanization" of German life reflected in the Weimar Republic and find the traditional heroes of culture and politics more congenial. In the long run, however, history should not be written to taste, and the reality of heavy industry's enormous role in the culture and politics of Weimar Germany must find its rightful place in its history just as it found its place in the caricatures of Grosz, the articles of "Morus" in the *Weltbühne*, in the funding of Oswald Spengler, the *Süddeutsche Monatshefte*, and the Ufa, and in the desperate efforts of Stresemann to free himself and his party from the constraints that accompanied industrialist money.

A fundamental assumption underlying this study, however, is that the role of industry in the politics and culture of the Weimar Republic or in the politics and culture of any other place and time cannot really be understood in terms of politics and culture alone. To argue that the business of businessmen is business, not politics, and that their political engagement is almost invariably a function of their socioeconomic concerns is to make a methodological rather than a rhetorical point. The ideas and actions of Hugo Stinnes, the problems of export controls and vertical concentration, and the fundamental issues of producer-consumer relations are issues as central to the history of the Weimar Republic as those traditionally studied, because they explain by and large the actions of industrialists on the broader cultural and political stage and because they directly affected the lives of millions of people. Indeed, insofar as they constitute a part of the general history of what historians have increasingly come to recognize as the most fundamental and irreversible of all developments of the modern age, the process of industrialization, they are worthy of study for their own sake. Finally, at a time when "political economy" is being rediscovered,

and the problems of relations among producers, consumers, and governmental authorities have taken on a new urgency, a study such as this one may have a certain contemporary pertinence.

My scholarly endeavors over the past decade, of which this book is the most substantial product to date, as well as my continuing work on the problems of the German inflation, have depended upon generous institutional support and personal assistance. Fellowships from the American Council of Learned Societies, the Humanities Research Fellowship Program of the University of California, and the John Simon Guggenheim Memorial Foundation, and grants from the Social Science Research Council and from the University of California at Berkeley's Committee on Research and its Institute of International Studies made it possible for me to investigate rather than to experience the ravages of inflation and stagflation. From the very inception of my work, I have received extraordinary tangible and moral encouragement from the Institute of International Studies of the University of California at Berkeley, for which I am extremely grateful.

This study is based largely upon archival materials and could not have been written without the access to materials afforded me by the various industrial concerns and organizations in the Federal Republic and by the public archives of the Federal Republic and the German Democratic Republic. I am deeply appreciative of the opportunity to work in these archives and particularly for the unrestrained and unrestricted use I have been able to make of the materials from private industrial archives. While I cannot mention all those who assisted me in so many ways, I wish to express special thanks to Count von Zedtwitz-Arnim of Fredrich Krupp, AG, Erich Warburg and Dr. Curt Duisberg for permission to use the papers in their charge. I also wish to thank Dr. Gertrud Milkereit of Thyssen, Dr. Manfred Pohl of the Deutsche Bank, Manfred Hanke of the Industrieinstitut in Cologne, Bergassessor Hans-Günther Conrad of the Bergbau Archiv und Museum in Bochum, Frau Denking of the MAN Augsburg, Dr. S. von Weiher of the Werner-von-Siemens-Institut, Dr. Helmut Lötze, Director of the Deutsches Zentralarchiv Potsdam, and Dr. Thomas Trumpp of the Bundesarchiv Koblenz for their special efforts on my behalf. The late Dr. Harald Jaeger of the Bavarian State Archives and the late Dr. Gerhard Enders of the DZA Potsdam not only made major contributions to my work but enriched my visits to Munich and Potsdam with a hospitality and warmth I shall always remember. Frau Dr. Hedwig Behrens, the *doyenne* of German business archivists, disregarded the privileges of her well-earned retirement and underwent numerous inconveniences to place important collections at my disposal. For these sacrifices as well as for her splendid hospitality, I thank her sincerely. My debt to the

PREFACE

Historical Archive of the Gutehoffnungshütte, AG and to its head, Herr Bodo Herzog, should be apparent on most of the pages of this book. I thank him both for the most important research experience of my career and for one of the most pleasant.

In my research and writing, I have had the benefit of valuable information and advice from friends and colleagues. Henry Turner and Hans Mommsen were extremely helpful to my research, while Carl-Ludwig Holtfrerich, Jürgen Kocka, Arno J. Mayer, Walter McDougall, Ulrich Nocken, William N. Parker, Irwin Scheiner and Peter-Christian Witt read various parts of the manuscript and made helpful suggestions for improvement. Hans Rosenberg has not only made useful suggestions but, far more importantly, has remained a constant source of encouragement, inspiration and friendship during my years at Berkeley. I have also learned much from the work of Wolfgang Sauer and my conversations with him. I wish to express particular thanks to Heinrich Winkler for his exceptionally helpful reading of the manuscript and to Charles Maier for the time and energy he devoted to my manuscript and for his continuously valuable advice. Responsibility for all deficiencies in this study, of course, rests solely with myself.

Were it not for the help of talented and dedicated assistants, the completion of this study would have taken much longer than it has. Alan Kovan, Jeffrey Diefendorf and Pamela Munro assisted me during early stages of my research, while Cornelius Gispén was extraordinarily helpful during early stages of the writing. Irmgard Steinisch assisted me during the bulk of the time spent in the organization and composition of this study, and she did so with intelligence, imagination and sensitivity. I am extremely grateful to her, as I am to Heidrun Homburg for her splendid work in the final stages of this study and to Andreas Kunz.

I wish to express a special word of gratitude to Mrs. Cleo Stoker of the Institute of International Studies for her constant attention to my scholarly well-being and to the members of her staff, Bojana Ristich and Graeme Elberg, who typed the manuscript so quickly and so well.

It has always been a pleasure to work with the Princeton University Press, and Mr. Lewis Bateman has made this even more the case.

Finally, I wish to express my appreciation to my wife, Philippa, to whom this book is dedicated, and to my children, Deborah and Aaron, for their continued devotion to me despite the peculiar preoccupations reflected by this book.

Berkeley, California
April 1976

G. D. F.

ABBREVIATIONS

ADGB	Allgemeiner Deutscher Gewerkschaftsbund General Confederation of German Trade Unions
AG	Aktiengesellschaft
AEG	Allgemeine Elektrizitätsgesellschaft
Arbeno	Arbeitgeberverband für den Bezirk der Nordwest- lichen Gruppe des Vereins deutscher Eisen- und Stahlindustrieller Employer Organization of the Northwest Group of the Association of German Iron and Steel Industrialists
ATH	August Thyssen Hütte
AVI	Arbeitsgemeinschaft der Eisenverarbeitenden Industrie Working Community of the Iron Finishing Industry
BA	Bundesarchiv Koblenz
BayHStA	Bayrisches Hauptstaatsarchiv
DEMAG	Deutsche Maschinenfabrik AG
Deutsch-Lux	Deutsch-Luxemburgische Bergwerks- und Hütten AG
DINTA	Deutsches Institut für technische Arbeitsschulung Institute for Technical Labor Training
DMV	Deutscher Metallarbeiterverband (Socialist) Metal Workers Union
DNVP	Deutsch-nationale Volkspartei German National People's Party
DVP	Deutsche Volkspartei German People's Party
DZA	Deutsches Zentralarchiv Potsdam
EWB	Eisenwirtschaftsbund Iron Trades Federation
GBAG	Gelsenkirchener Bergwerks AG
GHH	Gutehoffnungshütte AG
GmbH	Gesellschaft mit beschränkter Haftung Limited Liability Company

ABBREVIATIONS

GM	Gold Mark
HA/GHH	Historisches Archiv der Gutehoffnungshütte
HANOMAG	Hannoversche Maschinenbau AG
IG	Interessengemeinschaft Community of Interest
IRMA	International Rail Manufacturers Association
IWK	Internationale Wissenschaftliche Korrespondenz zur Geschichte der deutschen Arbeiterbewegung
kgl.	königlich royal
KRA	Kriegsrohstoffabteilung Raw Materials Section
KrAMü	Kriegsarchiv München
Krupp WA	Krupp Werksarchiv
Langnamverein	Verein zur Wahrung der gemeinsamen wirtschaft- lichen Interessen in Rheinland und Westfalen Association to Protect the Common Economic Interests of Rhineland-Westphalia
M	Mark
MAN	Maschinenfabrik Augsburg-Nürnberg AG
Northwest Group	Northwest Group of the Association of German Iron and Steel Industrialists
PM	Paper Mark
RAM	Reichsarbeitsministerium Reich Labor Ministry
RdI	Reichsverband der Deutschen Industrie Reich Association of German Industry
RFM	Reichsfinanzministerium Reich Finance Ministry
Rheinstahl	Rheinische Stahlwerke
RSchA	Reichsschatzamt Reich Treasury Office
RWA	Reichswirtschaftsamt Reich Economics Office
RWM	Reichswirtschaftsministerium Reich Economics Ministry
RWE	Rheinisch-Westfälisches Elektrizitätswerk AG

ABBREVIATIONS

RWR	Reichswirtschaftsrat Reich Economics Council
SAA	Siemens Archiv Akten
SPD	Sozialdemokratische Partei Deutschlands Social Democratic Party
SRSU	Siemens-Rhein-Elbe-Schuckert Union
SSW	Siemens-Schuckert Werke
VDA	Vereinigung der Deutschen Arbeitgeberverbände Association of German Employer Organizations
VdE	Verein Deutscher Eisenhüttenleute Association of German Foundry Engineers
VDMA	Verein Deutscher Maschinenbauanstalten Association of German Machine Builders
VdESI	Verein Deutscher Eisen- und Stahlindustrieller Association of German Iron and Steel Industrialists
Vestag	Vereinigte Stahlwerke AG United Steelworks
ZAG	Zentralarbeitsgemeinschaft der gewerblichen und industriellen Arbeitgeber und Arbeitnehmer Deutschlands Central Working Community of the German Com- mercial and Industrial Employers and Employees
Zechenverband	Mine Owners Association
Zendei	Zentralverband der deutschen Elektrotechnischen Industrie Central Association of the German Electrotechnical Industry

IRON AND STEEL
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INTRODUCTION

THE RATIONALE FOR THIS STUDY AND SOME METHODOLOGICAL CONSIDERATIONS

The German inflation of 1916–1923 was a trauma that the German people have found hard to forget and historians have found difficult to assess. As a consequence, there has been a strong convergence between the popular image of the inflation and the one presented by historians. Both have stressed the horrendous hyperinflation of 1923, that spectacular dénouement of a protracted period of inflation and instability. They have conjured up the familiar but always mysterious personage of Hugo Stinnes to serve as the archetype of inflationary profiteers, and the socioeconomic history of the inflation has been conceived largely in terms of his ilk reaping unwarranted gains while working-class wives rolled wheelbarrows filled with paper money to the bread lines and a “middle class” of savers and pensioners suffered the “ruin” that made them susceptible to fascism.¹

To be sure, historians have realized that the inflation began in 1916 when government expenditure outstripped income from the domestic loans used to finance the war and the government failed, both then and subsequently, to remedy the situation through appropriate taxation and monetary policies. Similarly, historians conversant with the period normally recognize that the hyperinflation began in the last months of 1922 and thus antedated the Ruhr occupation and passive resistance.² The implication of much of the better historical literature on the period is that the inflation was not a natural disaster, that the dikes guarding against the flood had frequently been dismantled and that many had deliberately not been put up, that the looters had often been tolerated and even encouraged, and that no precise accounting

¹ See, for example, the useful little collection of primary and secondary sources by Fritz Ringer, *The German Inflation of 1923 (Problems in European History: A Documentary Collection)* (New York, London, Toronto, 1969). The very title is illustrative of the point being made here, as is the collection itself. Contemporary texts and general surveys tend to treat the inflation similarly, as, for example, Hajo Holborn, *A History of Modern Germany 1840–1945* (New York, 1969), pp. 595–601, and Koppel Pinson, *Modern Germany. Its History and Civilization*, 2nd ed. (New York, 1966), pp. 446–447.

² Economic historians have made the most of these points, as, for example, Gustav Stolper, Karl Häuser, Knut Borchardt, *The German Economy. 1870 to the Present* (London, 1967), pp. 53–60, 74–89. A similar approach has been taken by some general historians, e.g., Holborn, *A History of Modern Germany*.

INTRODUCTION

has ever been made of actual damage suffered and no reasonably acceptable demonstration attempted of the long-term consequences. There is no adequate history of the German inflation, a situation that ceases to be surprising when one considers that, until recently, historians of Germany have tended to concentrate on political and intellectual history and have neglected socioeconomic development. Furthermore, there can be no adequate history of the inflation until some progress has been made in attending to the host of problems and issues raised for the historian by the protracted inflation and peculiar socioeconomic developments of the 1916–1923 period.³

Not surprisingly, the signposts for such investigation have been provided by the economists, who have long been intrigued by the theoretical and practical conclusions that might be drawn from the study of the most extreme inflation ever to engulf an advanced industrial society. Unfortunately, the richness of the problems raised by the inflation has not always been complemented by the statistical material necessary to deal with them in a reasonably conclusive way, and the fact that the years 1914–1923 usually constitute a great gap in the time series on which economists depend, has made it more possible than usual to employ available data to argue differing points of view. Although the historian is far less equipped than the economist to decide most of the issues in debate among the economists, there is much that he can learn from the fact that there is a debate, and there are considerations and dimensions that he can add that might contribute to interdisciplinary discussion as well as raise the level of analysis in both fields.⁴

In contrast to historians, who generally condemn the inflation for its allegedly untoward political and social consequences, economists have been divided in their evaluation of the inflation because they have recognized the fact that the postwar German inflation enabled Germany to maintain a high level of employment, enjoy great export advantages, and reconstruct her industrial plant while the victors of World War I

³ That progress is being made is demonstrated by Peter-Christian Witt, "Finanzpolitik und sozialer Wandel in Krieg und Inflation 1918–1924," in Hans Mommsen, Dietmar Petzina, and Bernd Weisbrod, eds., *Industrielles System und politische Entwicklung in der Weimarer Republik. Verhandlungen des Internationalen Symposiums in Bochum von 12.–17. Juni 1973* (Düsseldorf, 1974) (hereinafter cited as *Industrielles System*), pp. 395–425.

⁴ The gaps in the time series are amply demonstrated in Walther G. Hoffmann, *Das Wachstum der Deutschen Wirtschaft seit der Mitte des 19. Jahrhunderts* (Berlin, Heidelberg, New York, 1965). For excellent surveys of the present state of the discussion among economists along with many penetrating insights, see Peter Czada, "Grosse Inflation und Wirtschaftswachstum," *Industrielles System*, pp. 386–394, and "Ursachen und Folgen der grossen Inflation," in Harold Winkel, ed., *Finanz- und Wirtschaftspolitische Fragen der Zwischenkriegszeit* (Schriften des Vereins für Sozialpolitik, Vol. 73) (Berlin, 1973), pp. 9–43.

enjoyed a brief postwar boom only in 1919 and early 1920 and then suffered from a severe depression and high unemployment in 1920–1922. Where economists have disagreed has been in their evaluation of the German boom. Costantino Bresciani-Turroni, in his classic study, asserted that the inflation produced economic “distortions” by encouraging wasteful investment and purely quantitative expansion. Frank D. Graham took a more sanguine posture and argued that the currency depreciation was “far from being an unmixed curse” because German domestic production was greater in 1920–1922 than it would have been under more stable economic conditions. More recently, the Scandinavian economists Karsten Laursen and Jørgen Pedersen have contended that the German industrial plant and capital base were qualitatively improved during the inflation and that the inflationary policies pursued by the government and the various economic interest groups, although certainly not creating ideal economic conditions, did permit Germany to enjoy a postwar recovery and full employment denied those countries pursuing a deflationary course during the same period.⁵ Was the inflation a curse, a mixed curse, or a mixed blessing? A definite consensus has thus far eluded the economists and may continue to do so because of inadequate data and methodological differences, but it is a question the historian cannot evade in his own confrontation with the German inflation. Although the sociopolitical gains or losses accruing from the inflation necessarily weigh more heavily for the historian than they do for the economist in considering the consequences of the inflation, the sociopolitical balance sheet cannot be torn out and viewed in isolation from the economic ledger in which it is bound.

The structural changes that have taken place and continue to take place in the economic development of advanced industrial societies appear to have a certain independence of events of such monumental import to the historian as world wars, domestic political turbulence, and radical changes of political regime. Looking at the time series for the German case, economic historians have convincingly argued that “German industry has developed in the ‘long run’ according to the laws which apparently inhere in modern economies, and that the general and the typical break through more strongly than the special instances in which an attempt is made to impose political decisions upon the

⁵ Costantino Bresciani-Turroni, *The Economics of Inflation. A Study of Currency Depreciation in Post-War Germany, 1914–1923* (London, 1968), esp. pp. 372–374 and 398–404. (The work was originally published in 1937, and the author had been an Italian representative on the Reparations Commission after World War I.) Frank D. Graham, *Exchange, Prices, and Production in Hyper-Inflation: Germany 1920–1923* (Princeton, 1930), esp. pp. 317–320; Karsten Laursen and Jørgen Pedersen, *The German Inflation 1918–1923* (Amsterdam, 1964), esp. pp. 123–127.

INTRODUCTION

economic process.”⁶ One does not have to be an economic determinist to recognize that economic development and conditions provide parameters within which political action, social development, and intellectual life take place and that a historical understanding of any period must take account of the interconnection between economic and other structures. Recent research in nineteenth-century German history has demonstrated how close attention to the phases of industrial development, to so-called long waves and trend periods, and to business cycles make sociopolitical and cultural developments more intelligible.⁷ Certainly the sociopolitical history of the twentieth century is even less separable from its economic history than that of the nineteenth, but unfortunately twentieth-century economic history is far harder to organize than that of the preceding century. David Landes has noted: “The twentieth century by contrast is a confusion of emergencies, disasters, improvisations, and artificial expedients. One passes in a few weeks of 1914 from a quiet stream, as it were, to white water.”⁸

If the historian is not to be overwhelmed by the “exogenous” factors that have made this century so chaotic, then he must be aware of the “laws which apparently inhere in modern economies.” Nevertheless, the context must not be so “long run” as to obliterate the significance of the short run and the “exogenous” on which the historian usually rivets his attention. Modest theoretical and conceptual frameworks would seem more appropriate than grander ones. The applicability of long waves and trend periods to the twentieth century is even more disputed than it is for its predecessor, and it is difficult enough to fit so limited and turbulent a phenomenon as the German inflation of 1916–1923 into the modest framework of the business cycle without attempting to relate it to more elaborate cyclical models.⁹ Nevertheless, the long run must not be forgotten. In understanding the behavior of economic and political leaders in the postwar decades, there is much to be gained from realizing that the period 1817–1896 was one characterized by relatively uninterrupted deflation combined with enormous

⁶ Wolfram Fischer and Peter Czada, “Wandlungen in der deutschen Industriesstruktur im 20. Jahrhundert,” in Gerhard A. Ritter, ed., *Entstehung und Wandel der modernen Gesellschaft. Festschrift für Hans Rosenberg zum 65. Geburtstag* (Berlin, 1970), p. 117.

⁷ See, especially, Hans Rosenberg, *Grosse Depression und Bismarckzeit. Wirtschaftsablauf, Gesellschaft und Politik in Mitteleuropa* (Berlin, 1967).

⁸ David Landes, *The Unbound Prometheus. Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge, 1969), p. 359.

⁹ Joseph Schumpeter, *Business Cycles*, 2 vols. (New York and London, 1939), II, p. 692ff.; Gustav Clausen, *Die wirtschaftlichen Wechsellagen von 1919 bis 1932* (Jena, 1933), p. 49ff.

economic expansion.¹⁰ As will be shown, the habits of mind, the intellectual presuppositions, and the practical actions of German businessmen and officials compelled to deal with the wartime and postwar inflation were informed by the nineteenth-century experience and the expectations that came with it. The presumption of deflation and continued expansion generally persisted throughout the inflation and provided the context within which policy was made.

As suggested above, the significance of the inflation and, indeed, of the entire history of the Weimar Republic, tends to be lost when placed in the context of the secular growth of the German economy. This is not the case when one places them in the context of economic growth in the interwar period. The economist Ingvar Svennilson has shown that the interwar period was one of relative stagnation, that is, of reduced output, in the European economy.¹¹ The economic context within which the tragedy of the Weimar Republic was played out deserves greater attention from historians if for no other reason than because it indicates certain general limitations on the capacity of the Republic to master its particular problems and inhibits speculative fantasizing about unhistorical alternatives.¹² At the same time, recognition of the interwar stagnation also serves to give more precise formulation to the earlier discussed problem of evaluating the consequences of the inflation. It is possible to argue that the economic development of Germany during the inflation either spared that country some of the symptoms of stagnation experienced by the other European nations or that it simply put off the day of reckoning and intensified later difficulties by multiplying and exacerbating the structural problems that characterized the stagnation. Both points may be and have been argued as economists have considered the structural problems of the German economy, the relative development of "new" and "old" industries, the balance of producer and consumer industries, and other questions of concern to students of economic growth.¹³ In any case, the work of economists taking the view "that economic growth over a period must

¹⁰ Landes, *Unbound Prometheus*, pp. 233–234.

¹¹ Ingvar Svennilson, *Growth and Stagnation of the European Economy* (Geneva, 1954), esp. p. 41ff.

¹² Dietmar Petzina and Werner Abelshauser, "Zum Problem der relativen Stagnation der deutschen Wirtschaft in den zwanziger Jahren," *Industrielles System*, pp. 57–76; and Wolfram Fischer, "Die Weimarer Republik unter den weltwirtschaftlichen Bedingungen der Zwischenkriegszeit," *ibid.*, pp. 26–50.

¹³ Czada, "Grosse Inflation und Wirtschaftswachstum," in *ibid.*, pp. 391–392. See also the important work of Rolf Wagenführ, *Die Industriegewirtschaft. Entwicklungstendenzen der deutschen und internationalen Industrieproduktion 1860 bis 1932* (*Vierteljahrshefte zur Konjunkturforschung*, Sonderheft 31) (Berlin, 1933), p. 20ff.

INTRODUCTION

be regarded as a process in which each new step is determined by the steps preceding it"¹⁴ is most pertinent to the interests of the historian, not merely because of the obvious analogy to the historical method, but also because it provides the best framework within which to analyze the impact of "exogenous" political and institutional influences on economic decision making.

However endogenous the character of secular economic development may be, it is also true that the tempo of such development, and the manner and conditions under which it takes place, are increasingly determined by "exogenous" influences. Hence the distinction between endogenous and exogenous influences is often artificial and misleading. Whatever the variations in the industrial development of the advanced industrial nations of the West and however different the role played by the state in their industrialization, there has been a high degree of convergence among them in this century in at least two respects.¹⁵ On the one hand, industry everywhere has become more "collectivist" in character. Monopolistic or oligopolistic organization of many of the most important areas of production has become commonplace, and the industrial world has been increasingly dominated by cartels, trusts, and conglomerates. These developments have been promoted by the effort to reduce the impact of economic crises through self-help, by scientific and technological advances and the need for ever larger capital resources to apply them, by the interests and ambitions of the businessmen involved, and by varying degrees of government encouragement. The capitalist economies have long ceased to function in accordance with the classical and neoclassical models that have been used to explain and legitimize their existence, and industrial organizations have increasingly found it necessary to seek the support of the state and of "public opinion" to maintain and develop their interests. Modern industry, therefore, has not only become "collectivist" in its approach to production and the market but also in its sociopolitical activity. If their

¹⁴ Svernilson, *Growth and Stagnation*, pp. 3-4. He goes on to point out that: "If a different attitude is adopted, if, for example, the successive stages in the development of an economy were regarded as a series of causally unconnected equilibria, that would certainly involve an entirely different approach. It would then be possible to explain the changes over a period of twenty years by a close examination of all the circumstances at the beginning and at the end of that period. But it is obviously impossible to use this much simpler method if the various changes in the intervening years are regarded as affecting one another in a chain of cause and effect, and thus as affecting also the final result of the end of the longer period."

¹⁵ For a fuller discussion of the tendencies discussed below as well as the extensive literature, see Heinrich Winkler, ed., *Organisierter Kapitalismus. Voraussetzungen und Anfänge* (Kritische Studien zur Geschichtswissenschaft, Vol. 9) (Göttingen, 1974), esp. pp. 9-57.

origins lie in the nineteenth century, the interest group and the lobby have nevertheless truly blossomed in the twentieth century as a consequence of advanced industrialization and the growth and complexity of private economic power.

On the other hand, the state has everywhere played a greater role in economic life. The preparation and conduct of major wars have served as the catalysts of this process, but it is obvious that the growth of private economic power, the recognition that the state could itself take action to relieve and mitigate the effect of economic crises, and the intensified demand by large segments of the population for an increasing measure of social security in the broadest sense, have all served to increase the functions of the state. World War I is generally considered to be the great watershed in this development, albeit a watershed that was often ignored by contemporaries in their yearning for a return to the past and that is frequently exaggerated by present-day analysts who underestimate the extent to which its lessons were rejected in the interwar period. Yet, World War I did point the way to a quantitative and qualitative change in the state's socioeconomic role. Whatever the prewar precedents, and there were many, the state assumed a much more direct function in economic life as the major consumer of industrial production, regulator of production and distribution, and mediator or arbiter of socioeconomic conflict. The points of contact and interdependence between the public and private sectors suddenly increased beyond what anyone could have imagined as a consequence of these new functions and because of the state's dependence on the private sector for the organizational apparatus and expertise needed to fulfill them. The practice of subcontracting public functions to private organizations had begun along with the effort to implement government regulation through industrial self-administration. However great the retreat from war economics after 1918, the precedents had been established and were to be reemployed with increasing frequency in later years. Consequently, the potential conflict between public and private power has been made all the more complicated by their frequent intermingling.

These phenomena have encouraged a revival of interest in political economy, strictly speaking. Just as the great depression of the 1930s drove economists to a preoccupation with cyclical theory, and the problems of underdevelopment promoted the investigation of economic growth and development in the 1950s and 1960s, so the contemporary problems of economic management—persistent international monetary problems coupled with seemingly uncontrollable inflation, the emergence of the multinational corporation, the development of regional economic groupings, raw materials and ecological problems—have

INTRODUCTION

called into question tried formulas of economic theory and raised interest in defining the actual operation of political and private power in the economic realm and in the possibilities of economic planning so that blatant dysfunctionalities and irrationalities might become intelligible and avoidable. The complexity of contemporary socioeconomic and political life, however, has made it extraordinarily difficult to develop concepts and theories adequate to organize and analyze the available information and to point toward clear and promising lines of investigation.¹⁶

The search for adequate theories and concepts and the problematic nature of those available present a particularly inviting situation for the historian, whose critical empiricism has the function of testing existing theories and concepts, but also the constructive task of providing the factual and analytical data on which old theories and concepts may be refined and new hypotheses developed. The value of historical research for such purposes has already been made abundantly evident in the discussion of economic growth, where overly schematic theories have given way to more viable ones thanks to the work of economic historians. Similarly, conceptualization about the political economy of twentieth-century capitalist societies could certainly benefit from more empirical investigation about how businessmen and bureaucrats have actually interacted among themselves and with one another, of how industrial concentration and organization of various types have actually taken place, of why certain decisions were taken rather than others, and of how much "organization" there actually has been under capitalism as well as of what such "organization" has really meant. Furthermore, under the impress of the growing demand for accountability and growing concern with the legitimation of existing institutions and structures, historical investigation of concrete developments may help to provide a more realistic understanding of how socioeconomic decisions and actions have actually been undertaken and thereby assist in the definition of sensible expectations and criteria for evaluation.

This study of the German iron and steel industry in the inflation is meant to serve as a modest contribution to such goals and, hopefully, as an encouragement to further investigations along similar lines. It seeks to explain in concrete terms how the businessmen in this industry

¹⁶ For discussions of the problems of theoretical and conceptual development, see Eike Hennig, "Materialien zur Diskussion der Monopolgruppentheorie," *Neue politische Literatur*, 18, April-June 1973, pp. 170-193; Winkler, *Organisierter Kapitalismus*, pp. 9-35, 150-154, 195-213; *Industrielles System*, pp. 955-956; and Claus Offe, *Strukturprobleme des kapitalistischen Staates* (Frankfurt a.M., 1973).

managed their enterprises, their relations with the customers in the iron and steel consuming industries, and their relations with state and society during almost a decade of war, revolution, and inflation. There are good reasons for singling this industry out for investigation. Before the war, it was the most blossoming, powerful and expansive branch of the older "heavy" industries, and it exhibited considerably more dynamism than the extractive industries, especially the coal industry, over which it tended to exercise an increasing measure of domination. David Landes has pointed out that, of all the old industries, "iron and steel was the only one of the branches that had made the Industrial Revolution to have a second youth,"¹⁷ in the decades before World War I thanks to great technological breakthroughs, the opening up of new ore fields, and the highly favorable pattern of demand. Although Germany's assumption of her status as Europe's leading industrial power deserves measurement in more ways than one, and particularly in the newer areas of electrotechnical and chemical production, her prewar overtaking of Great Britain in iron and steel production has often been used by scholars and laymen as both the actual and symbolic evidence for this triumph.¹⁸ As the most technically advanced, highly concentrated, and best organized of all the prewar European iron and steel industries, it appeared paradigmatic of the peculiar characteristics that were identified with German economic and political power. It was no accident that the iron tariff of 1879 and its successors constituted the cornerstone of the Empire's commitment to the "protection of the national labor" through industrial protectionism and the most tangible expression of heavy industry's political influence in Berlin.¹⁹

What also makes this industry so particularly suitable for examination during the years under consideration was that it stood so centrally in the matrix of the structural, economic, social, and political transformations of the postwar period. The war heightened the industry's importance by increasing the demand for iron and steel while creating conditions harmful to production and requiring government support and regulation as well as an intensification of industrial organization. The iron and steel industry was the industry that suffered most from the energy crisis, the coal shortage, of the wartime and early postwar years. It was the industry that suffered most from the ravages of the Versailles Peace Treaty, which tore away Lorraine, Luxemburg, and portions of Upper Silesia and denied Germany the Saar for fifteen

¹⁷ Landes, *Unbound Prometheus*, p. 460.

¹⁸ For example, see Stolper, *German Economy*, pp. 24–25.

¹⁹ See Rosenberg, *Grosse Depression*, p. 154ff.

INTRODUCTION

years. As a result, Germany lost 43.5% of her pig iron capacity and 38.3% of her steel capacity.²⁰ It was generally accepted that the enormity of the iron and steel industry's losses gave it exceptional claims in the economic reconstruction, claims yet increased by the fact that this industry was compelled to make some of the most significant concessions to labor during the Revolution by accepting the eight-hour day and was particularly threatened by the tariff provisions of the Versailles Treaty. It was the industry hardest hit by the war and the peace.

Paradoxically, however, therein lay its strength during the inflation. It stood at the forefront of German industry's use of the inflationary pressures and incentives to rebuild its plant and recapture its markets. Because of its basic importance to the economy as a whole, its pricing policies were of central concern in the efforts to control the inflation and harmonize the relations between producers and consumers. The iron and steel industry thus became a major focus of the questions concerning the degree to which primary producers should be permitted to take advantage of raw materials shortages and inflation and disregard the interests of their customers in other industrial sectors, and the extent to which the state should and could regulate interindustrial relations. It also became the test case of the capacity and power of the state to define and achieve ends consonant with the best interests of the industry and the economy as a whole, just as it became the test case of an industry's willingness and ability to accomplish these goals on its own. Despite numerous setbacks and difficulties, the basic story to be told here is one of success for the iron and steel industry, success in rebuilding its plant through a ruthless pricing policy and use of the inflation to promote vertical concentration, success in eliminating or evading government controls, and, in the end, success in nullifying some of the most important social gains of the German Revolution of 1918.

No less paradoxical than the strength the iron and steel industry garnered from its weaknesses as a consequence of the war and revolution, however, was the fact that this very strength served to intensify the endogenous weaknesses of the industry and heighten its vulnerability to the relative stagnation of the interwar years. Already suffering a relative stagnation in technological development and demand in comparison to the newer chemical and electrotechnical industries, the post-inflationary iron and steel industry faced an extremely abrupt reckoning with the structural problems that had been veiled by the prewar prosperity and the inflationary reconstruction. Once the veil was lifted

²⁰ Landes, *Unbound Prometheus*, p. 462ff.

by the stabilization, the "brutal"²¹ contrast with prewar conditions and the expectations that had been carried over from happier times produced not only economic, but also social and political problems of major proportions for the Weimar Republic. Yet it did not abate, but rather intensified the claims of this industry on the nation and the notorious, if often exaggerated and improperly depicted, political power that heavy industry exercised to 1933. For these reasons, its successes in the years of inflation constitute an important case study of the way in which the exercise of private economic power is accomplished as well as a means by which the historian may come to grips with some of the fundamental issues and developments of the German inflation itself.

IRON AND STEEL IN THE GERMAN PREWAR ECONOMY

The Great Concerns and Their Leaders

The outbreak of World War I marked the end of a long period of sustained growth for the German iron and steel industry. Germany stood second only to the United States in crude steel production, accounting for one-fourth of the world's production. In 1913, Imperial Germany, inclusive of Luxemburg, which formed part of the German customs area, produced 19,309,000 tons of pig iron and 18,935,000 tons of crude steel, whereas the United Kingdom produced 10,482,000 tons of pig iron and 7,787,000 tons of crude steel during that same year. The most important industrial area for Germany's iron and steel production was the Rhenish-Westphalian region, which produced 42% of the pig iron and 53% of the crude steel in 1913, but the regional concentration in the West of Germany is better expressed when account is taken of the German Lorraine, which had important interconnections with the Ruhr before the war. The two regions combined accounted for 61% of German pig iron and 65% of her crude steel production in 1913. The overwhelming preponderance of the Ruhr-Lorraine regions over the other significant producing areas of the Siegerland, the Saar and Silesia, is closely tied to the fundamental sources of Germany's triumphant history in prewar iron and steel production.²²

²¹ *Ibid.*, p. 459. See also Svennilson, *Growth and Stagnation*, p. 120ff.; and Norman Pounds and William N. Parker, *Coal and Steel in Western Europe. The Influence of Resources and Techniques on Production* (Bloomington, 1957), pp. 250-253.

²² Paul Wiel, *Wirtschaftsgeschichte des Ruhrgebiets. Tatsachen und Zahlen* (Essen, 1970), pp. 226-227 and 238. Frederic Benham, whose total figures vary slightly from those of Wiel, and whose figures do not include Luxemburg, gives

INTRODUCTION

Raw materials and technological development were the primary initial bases of success, and they went hand in hand with one another in creating the expansion of heavy industry.²³ The foundation of the Ruhr's extraordinary position in the industrial history of the West was its exceptional supply of anthracite coal highly suitable for coking, an advantage that enabled iron producers to go over to the coke-blast furnace in the 1850s. Large-scale steel production in Germany, however, was retarded until the invention of the Thomas process for the production of basic steel in 1879. In contrast to England, with its ample supply of nonphosphoric ores suitable for the production of acid steel in the unmodified Bessemer converter, Germany was not blessed with a satisfactory ore supply. The Ruhr was poor in ore, and the ores of the Siegerland region were expensive and presented special problems. It was the Thomas process that made it possible for Germany to make use of the great supplies of phosphoric minette ore in Lorraine and to import phosphoric ores from Sweden, Spain, and Morocco. During the ensuing decades, German industry employed this process, as well as the Siemens-Martin open-hearth process (1864), which utilized scrap and pig iron to produce a higher quality steel more easily controlled as to specifications than Thomas steel, to undertake the mass production of steel that gave it continental leadership.

The annexation of Lorraine in 1871, therefore, yielded unanticipated benefits in the form of the minette ore fields and encouraged a high degree of fruitful interchange and some division of labor between the Ruhr and Lorraine. The Lorraine received coal from the Ruhr and returned ores, and there was thus some transport benefit through the return haul. Also, there was some tendency for the production of pig iron and other of the industry's cruder products to concentrate in Lor-

the following breakdown of production in the chief producing areas in *The Iron and Steel Industry of Germany, France, Belgium, Luxemburg and the Saar* (London, 1934), p. 18:

Output of Germany in 1913
(in thousands of tons)

	Pig Iron	Steel
Germany (1922 frontiers)	10,904	12,182
Polish Upper Silesia	625	1,050
Lorraine	3,864	2,286
Saar	1,371	2,080
Totals	16,674	17,598

²³ The discussions of the role of raw materials and technology in this section follow closely the discussions given in Landes, *Unbound Prometheus*, pp. 215-219, 249-269; Pounds and Parker, *Coal and Steel*, pp. 262-271. See also Emil Schrödter, "25 Jahre deutsche Eisenindustrie," *Stahl und Eisen*, 24, May 1, 1904, pp. 490-500.

raine, whereas the production of more advanced products centered in the Ruhr, where there was a supply of high-quality labor and also proximity to the finishing industries. Nevertheless, it is misleading to overstate the interdependence of the two regions or to suggest that there was a true "Ruhr-Lorraine system,"²⁴ a matter of importance to the historian because of the claims of German annexationists during the war as well as of critics of the Versailles Treaty after 1918. The Lorraine was dependent on the Ruhr for more than half of its coke supply, but the Ruhr in 1914 took only 24% of its iron ore from Lorraine and Luxemburg. The Ruhr was far more heavily dependent on Sweden and Spain, whose ores had a higher iron content, and it was favorably located to receive shipments of these ores thanks to the Rhine River. Lastly, the actual share of pig iron production in Lorraine and Luxemburg sent to the Ruhr before the war was diminishing, not increasing.

Thus, the reality was that the two regions were competitive, except for the Lorraine's dependence on Ruhr coke, and that the basic advantages lay with the Ruhr thanks to its coal supply, superb location from a transportation point of view, and ready supplies of cheap scrap that permitted an employment of the open-hearth process not equally possible in Lorraine. The Ruhr had the strength and flexibility to survive without Lorraine. What is more to the point in considering the prewar period is that the Lorraine constituted an integral part of the German economy, that German interests in the region were expanding, and that some of the great German concerns, like Klöckner and Stumm, were centered in the Southwest, or, like Thyssen and Stinnes' Deutsch-Luxemburg concern, had built large new modern plants in Lorraine before the war.

Insofar as organizational factors played a major role in the strength of the industry, as they most certainly did, they lay not in regional integration, but rather in the development of large capacities and the advancement of vertical and horizontal integration. Although technological developments after 1880 were not as spectacular as those that had preceded, they favored increases in the scale of production and integration of the various stages of production. Engineering improvements, the employment of electricity, advances in fuel utilization and economy permitting sophisticated interchanges of gases and employment of fuels, all favored the large-scale "mixed" or integrated concerns

²⁴ As does Guy Greer in *The Ruhr-Lorraine Industrial Problem. A Study of the Economic Inter-Dependence of the Two Regions and their Relation to the Reparation Question* (New York, 1925), pp. 18ff and 68ff. My discussion is based on the more convincing analyses of Pounds and Parker, *Coal and Steel*, pp. 287-293, and William N. Parker, "Coal and Steel Output Movements in Western Europe," *Explorations in Entrepreneurial History*, 9, April 1957, pp. 214-230, esp. pp. 225-227.

INTRODUCTION

that came to dominate the industry. There were great economic and technological advantages to combining ore fields, coal mines, cokeries, blast furnaces, steel plants, and rolling mills. On the one hand, there were the benefits of greater self-sufficiency that came with the control of the primary raw materials, and, as shall be discussed later, these were increased by the cartelization process. A more diversified production also gave the great concerns the advantage of being able to compensate for losses in one sphere of production through profits in another. On the other hand, large-scale operation and integration made it possible to link a number of coal mines to large-scale coking facilities and, thanks to the invention of the mixer (1874) and its implementation, to coordinate blast-furnace, converter or open-hearth, and rolling operations in such a way that as much as possible was produced in "one heat."

By 1914, 21% of the production of the Rhenish-Westphalian coal mining industry was being produced by the "mixed works" of the iron and steel industry.²⁵ It is a measure of the degree of concentration in the industry that in 1904, when the most important of the industry's cartel organizations, the Steel Works Association (*Stahlwerksverband*) was founded, its members, the number of which varied between 27 and 31 and all of whom were "mixed"—that is, integrated firms and concerns—produced 73.45% of all German steel production sent to market. The percentage was 81.71% in 1911.²⁶ The "outsiders" in 1904 were largely the "pure" rolling mills (*reine Walzwerke*), most of whom were to be absorbed or to go out of business in the coming decade, and certain open-hearth producers in the Siegerland, who were able to prosper in the shadow of the Steel Works Association because of the specialized nature of their production and certain locational advantages. Even these facts however, do not do full justice to the importance of the largest integrated firms and concerns. A better measure of their domination is provided by their cartel quotas in the Steel Works Association as shown in Table 1, which includes only the major Ruhr mills and excludes such important producers as the Saar concerns of Stumm and Röchling. Yet to measure their strength thus is still to omit as much as it is to tell. It excludes ore, coal and coke, and by-product production, not to mention pig iron production and the large amounts of crude and semifinished steel consumed by the concerns themselves in the production of rolled and more finished products and

²⁵ Wiel, *Wirtschaftsgeschichte*, p. 213. See also the basic study by H. G. Heymann, *Die gemischten Werke im deutschen Grosseisengewerbe* (Stuttgart and Berlin, 1904).

²⁶ H. Bogner, *Die Wandlungen in der Organisation der deutschen Stahlindustrie und ihre Ursachen*, diss. Phil. (Heidelberg, 1929), p. 17.

TABLE 1

The Participation of the Ruhr Mills in the Steel Works Association
(Measured in thousands of tons and percentages)

	1904		1905		1907	
	Thousand Tons	Percent	Thousand Tons	Percent	Thousand Tons	Percent
Thyssen	694	9.3	704	8.7	974	8.2
Gutehoffnungshütte	408	5.5	408	5.0	585	4.9
Horde	425	5.7	424	5.2	—	—
Rheinstahl	385	5.2	385	4.7	489	4.1
Krupp	456	6.1	456	5.6	977	8.2
Bochumer Verein	306	4.1	306	3.8	336	2.8
Phoenix	—	—	515	6.4	1130 ^a	9.5
Hoesch	321	4.3	321	4.0	455	3.8
Total	2995	40.2	3519	43.4	4946	44.3

^a Inclusive of Horde.

Source: Wilhelm Treue, *Die Feuer verlöschen nie. August Thyssen-Hütte 1890–1926* (Düsseldorf and Vienna, 1966), p. 144. The 1912 statistics have been left out because they do not include all steel production.

the manufacture of machinery. Also, it does not take into account transport and marketing operations.

In 1913, Thyssen, to take an outstanding but representative example, fully owned nine coal mines in the Ruhr along with mine construction facilities; ore fields in Lorraine, Normandy, and on the Lahn; a limestone quarry and cement plant in Rüdersorf and another cement plant in Hagedingen; iron and steel works in Bruckhausen and Dinslaken (Gewerkschaft Deutscher Kaiser), Mülheim/Ruhr, Meiderich, Hagedingen (Lorraine), and Reisholz (central Germany); a major machine building plant in Mülheim/Ruhr; a coal marketing firm with branches in Bruckhausen, Mannheim, Strasbourg, Paris, Naples, Oran, Suez, and Genoa; four iron and steel marketing firms, the branches of which were to be found in Berlin, Stettin, Duisburg, Ludwigshaven, Königsberg, and Buenos Aires; three transportation enterprises that included a transport operation in Rotterdam, a fleet of five high seas freighters, and port facilities in Mannheim and Strasbourg; and the waterworks of the Gewerkschaft Deutscher Kaiser in Bruckhausen. At the same time, the Thyssen concern participated in the ownership of a coal mining company in the Ruhr and in the Saar and in a tar plant; ore fields in Tschiaturi and Nikolajeff (Russia); a limestone and dolomite works; and steel plants in Krefeld, Oberbilk, and Caen (Normandy).²⁷

²⁷ Wilhelm Treue, *Die Feuer verlöschen nie. August Thyssen-Hütte 1890–1926* (Düsseldorf and Vienna, 1966), pp. 156–157.

INTRODUCTION

Like Thyssen, the great concerns were all highly complex, far-flung enterprises.²⁸ Although they produced many of the same things, by and large, it is important to recognize that they were also individually unique in major aspects of their production programs and emphases. They had all integrated backwards by one means or another into ore and coal mining and into coke production, and they were all heavily engaged in the production of pig iron and crude steel as well as the more finished foundry and rolled products. However, the vertical expansion of Phoenix and Rheinstahl, in contrast to Thyssen and Hoesch, did not extend forward to machine construction before the war, and the vertical expansion of the latter concerns into finishing and manufacturing was in no way as extensive as that of Krupp and the Gutehoffnungshütte. Although a giant producer of primary products, Krupp was Germany's most important private producer of artillery, had become a major manufacturer of machines through its takeover of the Grusonwerke in Magdeburg in 1893 and, after taking over the Maschinenbau AG Germania in Kiel in 1902, entered the field of shipbuilding and the large-scale construction of steam engines, steam turbines, and diesel motors. The less mammoth but venerable Gutehoffnungshütte (GHH) in Oberhausen had long produced steam machines and boilers at its plants in nearby Sterkrade and ships for inland waterways at its yards in Walsum. During the prewar period, there was a clear thrust on the part of the major concerns in the direction of finishing and the manufacture of large machines because their profitability was higher than the cruder products. Thus, whatever the individuality of the concerns, it is also possible to note common patterns of expansion. What does make the individuality of the concerns important, despite their propensity to copy one another in order to remain competitive, is that it exercised an important influence on their policies and business styles and helps to explain differences of opinion over cartel and syndicate pricing policies as well as over those organizations themselves.

Policies and business styles, however, were also strongly influenced by the history and traditions of the concerns and their ownership and financing. The beginnings of the GHH could be traced back to 1741 and those of Krupp to 1811. They were both family concerns, the GHH being largely in the possession of the Haniel family, and the identification with a family was a characteristic they shared with Thyssen, Hoesch, Stumm, and Röchling and various Upper Silesian enterprises. In this respect they were different from more impersonal corporations

²⁸ This discussion is based largely on the wealth of material scattered throughout Arnold Tross' invaluable *Der Aufbau der Eisen und eisenerarbeitenden Industrie-Konzerne Deutschlands* (Berlin, 1923). The expansion of the Ruhr concerns may also be followed chronologically in Wiel, *Wirtschaftsgeschichte*, pp. 245-273.

like Phoenix and Rheinstahl. As is well known, banks played a major role in the development of German heavy industry, and this encouraged a measure of depersonalization of the enterprises and dispersion of ownership. Few concerns were as autonomous as the GHH, which seems to have maintained almost total independence of the banks thanks to the capacity and willingness of the Haniel family to supply its capital requirements. The great Upper Silesian firms were largely family financed as well. During the initial period of expansion, banks often played the major role in the founding of concerns, as in the case of the Gelsenkirchener Bergwerke AG (GBAG), and strongly influenced their policies directly through their positions on the supervisory boards (*Aufsichtsräte*) and indirectly through various forms of encouragement and pressure. The boards of directors (*Vorstände*) of the concerns necessarily heeded the will of the supervisory boards, because the dispersion of stock was not very great in German industry and general stockholder meetings counted for even less than they do in the United States.²⁹

In the decades before the war, two tendencies were in evidence with regard to the financing of heavy industry. First, such financing tended to be undertaken by consortia rather than by individual banks because the capital requirements had become so great. Second, the financial strength and power of the concerns had increased to the point where not only were the banks wooing them rather than the reverse, but also the concerns themselves had greatly improved their capacity for self-financing by the storing up of silent reserves and cautious dividend policies carried to the point where 20–25% of their expansion was self-capitalized. To be sure, industrialists chaffed a bit under their continued dependence on banks, but the evidence militates against all notions of a domination by “finance capital” in the years before the war. The trend was precisely in the opposite direction.³⁰ Krupp ruled in Essen, Haniel in Oberhausen, and Thyssen in Bruckhausen. Although August Thyssen needed large amounts of outside money just before the war to

²⁹ See Jürgen Kocka, *Unternehmer in der deutschen Industrialisierung* (Göttingen, 1975), p. 100ff. On the relationship between banking and industry, see O. Jeidels, *Das Verhältnis der deutschen Grossbanken zur Industrie mit besonderer Berücksichtigung der Eisenindustrie* (Leipzig, 1905); E. Riesser, *Die deutschen Grossbanken und Ihre Konzentration* (Jena, 1910); M. Gehr, *Das Verhältnis zwischen Banken und Industrie in Deutschland seit der Mitte des 19. Jahrhunderts*, diss. Phil. (Stuttgart, 1959); W. Hagemann, *Das Verhältnis der deutschen Grossbanken zur Industrie* (Berlin, 1931), esp. pp. 18ff. and 86ff.

³⁰ See Walther G. Hoffmann, “Die unverteiltten Gewinne der Aktiengesellschaften in Deutschland 1871–1957. Trend, Konjunkturverlauf und branchenmässige Unterschiede,” *Zeitschrift für die gesamte Staatswissenschaft*, 115, 1959, pp. 271–291.

INTRODUCTION

finance the construction of the new works at Hagendingen, more than half of his capital resources in 1913, 126,890,000 out of 249,920,000 marks, were his own.³¹ Indeed, the size of the great concerns encouraged investment because their very enormity made a return likely and failure difficult to imagine. At the same time, industrialists like Thyssen and Hugo Stinnes recognized that if their debts were sufficiently high, then they could have as much if not more of a hold on their creditors as the latter had on them.³²

The very size and complexity of concerns set increasing limits on the possibilities of personal management and promoted the separation of ownership from control, but it is important not to exaggerate these well-known phenomena when considering the German iron and steel industry.³³ Strong personal rule or surveillance from the top continued before the war and during the period discussed in this study, whether it was exercised by the family ownership, as in the case of Gustav Krupp von Bohlen und Halbach (1870–1943), who exercised a personal surveillance over his directors in matters of basic policy and never allowed his leading director, even one so domineering as Alfred Hugenberg (1865–1951), who held the position from 1907 to 1918, to be more than a *primus inter pares* among the directors,³⁴ or whether it was exercised by founder entrepreneurs, like August Thyssen (1842–1926),³⁵ or by general directors, like Paul Reusch (1868–1956) of the GHH, who had and deserved the complete confidence of the Haniel family.³⁶ Also, an important role was played by new men in the industry, like Peter Klöckner (1863–1940), the son of a shipyard owner, who had begun his career in the iron merchant firm of Carl Spaeter and then became an industrialist in 1900 when he assumed leadership and controlling interest in the Lothringer Hütten und Bergwerksverein.³⁷ Another new man in the industry who entered from a similar background was the “merchant from Mülheim,” as he chose to style himself, Hugo Stinnes

³¹ Treue, *August Thyssen-Hütte*, pp. 150–155.

³² Herbert von Beckerath, *Grossindustrie und Gesellschaftsordnung. Industrielle und Politische Dynamik* (Tübingen and Zürich, 1954), pp. 18–19.

³³ The same is true of other industries and large concerns, as has been shown by Jürgen Kocka in his important study, *Unternehmensverwaltung und Angestelltenschaft am Beispiel Siemens 1847–1914. Zum Verhältnis von Kapitalismus und Bürokratie in der deutschen Industrialisierung* (Stuttgart, 1969), esp. pp. 233ff. and 429ff.

³⁴ See the revealing material in Ernst Schröder, *Otto Wiedfeldt. Eine Biographie* (Beiträge zur Geschichte von Stadt und Stift Essen, Vol. 80), p. 94.

³⁵ Treue, *August Thyssen-Hütte*, p. 246ff.

³⁶ Erich Maschke, *Es entsteht ein Konzern. Paul Reusch und die GHH* (Tübingen, 1969), pp. 230–231.

³⁷ Jakob Reichert, “Peter Klöckner,” in *Rheinisch-Westfälische Wirtschaftsbiographien* (Münster i.W., 1960), pp. 85–104.

(1870–1924). He was the son of a Rhine shipowner, who founded a coal trading firm in 1893 and then moved into the iron and steel industry after 1900 when he created and developed the Deutsch-Luxemburg (Deutsch-Lux) concern.³⁸ Klöckner and Stinnes played a very direct role in management, and thus maintained a strong connection between ownership and control. Only within this context can one say that they were to depend very heavily on the directors who conducted the day-to-day operations of their concerns and, as the relationship between Hugo Stinnes and the general director of Deutsch-Lux after 1915, Albert Vögler (1877–1945), or Karl Haniel and Paul Reusch will show, general directors or prominent directors could and did play an increasingly important and independent role in the development of general policy and, in their turn, became dependent on the industrial bureaucracy below them for day-to-day operations.

The importance of the great general directors who stood at the summit of this growing bureaucracy of “leading employees” (*leitende Angestellte*), i.e., directors and officials (*Beamte*) in the great concerns was already in evidence before the turn of the century in the persons of Emil Kirdorf (1847–1938) of the Gelsenkirchener Bergwerke (GBAG) and Wilhelm Beukenberg (1858–1923) of Phoenix. The son of an unsuccessful textile manufacturer, Kirdorf left textiles and entered the coal industry in 1871 at the lowest level of administration, where he learned the trade and proved his abilities despite the insensitive and humiliating manner in which the owners of those days handled their “employees.” In 1873 he entered the GBAG, which he was to direct for 53 years, and not only built up the concern into Germany’s greatest prewar coal producer, but also played a leading role in the founding of the Rhenish-Westphalian Coal Syndicate in 1893. Then, in 1902–1903, in close collaboration with his brother Adolph (1845–1923), the general director of the Aachener Hüttenvereins, and in keen competition with Thyssen and Stinnes, who sought to gain an interest in the GBAG for their own purposes, he guided the GBAG’s expansion into iron and steel. Although his career and activity was closer to that of Thyssen and Stinnes in many respects than it was to the more typical general director, Kirdorf always considered himself the “responsible administrator of the property of others” rather than an owner-entrepreneur, like the founders of the GBAG and his first masters, Friedrich Grillo and Adolph von Hanseemann. The latter men were also the

³⁸ There is a large and controversial literature on Stinnes, ranging from the adulatory work of Cert von Klass, *Hugo Stinnes* (Tübingen, 1958), which must be treated with great caution, to the penetrating but impressionistic essay by Felix Pinner (Frank Fassland) in *Deutsche Wirtschaftsführer* (Berlin, 1924), pp. 11–32. Hopefully this study will contribute something to an understanding of his activities.

INTRODUCTION

founders of the Disconto-Gesellschaft, and the otherwise cantankerous Kirdorf not only generally accepted his dependence on the banks as a fact of life, but also worked very harmoniously with the president of his supervisory board during the period covered by this study, Arthur Salomonsohn of the same bank.³⁹

If Kirdorf stands out as the archetype of what the great *Generaldirektor* and concern builder was and could be, he was nevertheless a very unique personality who bridged the transition from the German industrial revolution to its period of advanced industrialization. Beukenberg, despite his age, is more typical in training and career pattern of the group of top executives who reached the height of their careers before the war and dominated heavy industry during the Weimar Republic. Born in the Ruhr in 1858, he attended Gymnasium and then did two years of practical work in state plants and machine works before attending the famous Technische Hochschule in Berlin. In 1888, he passed the government examination in machine construction (*Regierungsbaumeister des Maschinenfachs*) and took over the leadership of the construction and machine plants of the Dortmund-Gronau-Emscheder Railroad Co. He became a director in 1895, but left in 1903 when it passed under state control to become general director of the Hoerder Bergwerks- und Hüttenvereins, which merged with Phoenix in 1906. Until his retirement in 1922, Beukenberg directed the affairs of this important producer, and "technical progress and careful accounting were the most distinguishing marks of his activity." Not only did Beukenberg serve Phoenix directly, however, but he also served his concern and industry indirectly through his membership on various government commissions dealing with freight rates and other transportation problems, matters of no small moment to heavy industry, and played a prominent role in the major cartels and syndicates as well as on the boards of various institutes and technical schools devoted to the advancement of knowledge and the training of personnel needed by industry.⁴⁰

In all these characteristics, Beukenberg was more or less at one with the group of younger top executives who had reached the summit of their careers before 1918 and became the model group for future gen-

³⁹ Helmut Böhme, "Emil Kirdorf, Überlegungen zu einer Unternehmerbiographie," *Tradition. Zeitschrift für Firmen Geschichte und Unternehmerbiographie*, 13, December 1968, pp. 282-300.

⁴⁰ Stahl und Eisen, 43:2, August 16, 1923, pp. 1092-1093. The obituaries in this journal are often an excellent source of information on important industrialists. Another useful source in addition to the others cited here is Georg Wenzel, *Deutsche Wirtschaftsführer. Lebensgänge Deutscher Wirtschaftspersönlichkeiten. Ein Nachschlagebuch über 1300 Wirtschaftspersönlichkeiten unserer Zeit* (Hamburg, Berlin, Leipzig, 1929).

erations of German managers. Most of them were in their forties during the war, came of solid but by no means wealthy middle-class backgrounds, had technical, commercial, or legal training, and combined these special skills with the kind of administrative ability and dedication that earned them the recognition and authority necessary for the rapid rise to leading positions. Albert Vögler, for example, became general director of Deutsch-Lux in 1915 at the age of 38. The son of a factory manager in Essen, he attended the more modern Realgymnasium and then went to the Technische Hochschule in Karlsruhe. After working as an engineer for a machine plant in Herne and at a large iron works, the Georgs-Marienhütte in Osnabrück, he was hired by the Dortmunder Union as a director in 1906. When Deutsch-Lux took over the Union in 1910, Stinnes made Vögler a member of the board of directors and increasingly his most trusted manager. Vögler was indeed an extraordinary individual, who combined a genuine interest in technology and science with a keen business sense and remarkable organizational and administrative abilities.⁴¹

Paul Reusch, although certainly not uninterested in technological and scientific matters, was above all a shrewd businessman and exceptional organizer and leader. Unlike most of the leading Ruhr managers, Reusch came from South Germany and was the son of a Württemberg mining official. He attended the Technische Hochschule in Stuttgart, and then went to work for iron and steel concerns in Budapest and Wittkowitz (Moravia) before taking employment at the Friedrich-Wilhelms-Hütte, a Deutsch-Lux holding. In 1905, he became a member of the GHH's board of directors and took over the general directorship in 1908 at the age of 40. Temperamental and stubborn, when it suited his purposes, Reusch was to become a commanding and respected figure in the industry for the strength of his views and the vigor with which he presented them. His personality comes fully to the fore in his correspondence, which, in its frankness and clarity, reflected his penchant for laconic commentary and forceful command. Yet he could also be very skillful in negotiation, knew how to distribute responsibility and gain sincere loyalty from his subordinates, and was well suited to become an imposing, albeit, at times, somewhat extremist representative and spokesman for the industry as a whole.⁴²

Although a technical background was often an essential component

⁴¹ On Vögler, see Gert von Klass, *Albert Vögler. Einer der Grossen des Reviers* (Tübingen, 1957) and *Nekrologe aus dem Rheinisch-Westfälischen Industriegebiet. Jahrgang 1939-1951* (Schriften der Volks- und Betriebswirtschaftlichen Vereinigung im Rheinisch-Westfälischen Industriegebiet) (Düsseldorf, 1955), pp. 121-123.

⁴² Maschke, *Konzern*, p. 32ff.

INTRODUCTION

of a successful career in the prewar iron and steel industry, an industry that in the German case prided itself on the assiduous promotion and utilization of every technical development possible, important posts were increasingly being assumed by men with legal and governmental backgrounds. Concern building was a legal, financial, and administrative matter after all, and lawyers were often more suited to direct industrial bureaucracies than technicians and they were often more skillful in dealing with government agencies and handling marketing problems as well. A good example was Johann Hasslacher (1869–1940), who became general director of Rheinstahl in 1910. He was the son of a Saar mining official, but he went to a classical Gymnasium and received a law degree at Bonn, after which he continued to work in the legal field until 1896, when he went to work as a legal expert and then director at the GBAG. Rheinstahl employed him because of his legal skills, negotiating ability, and understanding of commercial and marketing problems. In these characteristics he was similar to other important directors with a legal background, such as Heinrich Vielhaber (1868–1940) of Krupp, Oscar Sempell (1876–1942) of Deutsch-Lux, and Gustav Dechamps (1878–1942) of the Rombacher Hütte. A background in marketing and finance, as in the case of August Thyssen's important director and adviser, Carl Rabes (1871–1942), could also be the source of a rapid rise and a splendid career in a major heavy industrial concern.⁴³

These, then, were the types of men who presided over growing industrial bureaucracies of directors, plant managers, and technical and commercial staffs and who gave orders to the once independent firm owners or managers who often remained with their works after, for reasons of interest or necessity, they had entered into a community of interest (*Interessengemeinschaft*) or had fully merged with a larger concern. Historians frequently draw a useful analogy between industrial bureaucratization in the late nineteenth and early twentieth centuries and the earlier bureaucratization of the state. Just as kings and princes came to view themselves as the "first servants of the state," so some owners came to view themselves as servants of their enterprises, which took on an "objective existence" and had "objective necessities" of their own. The general directors and their colleagues were like ministers,

⁴³ For the biographies of these industrialists, in order of mention, see *Nekrologe*, pp. 30–31, 41–42, 71–72, 63–65, 69–70. On the social and educational backgrounds of the managerial group, see Heinz Sachtler, *Wandlungen des industriellen Unternehmers in Deutschland seit Beginn des 19. Jahrhunderts. Ein Versuch zur Typologie des Unternehmers*, diss. Phil. (Halle, 1938), p. 40ff. Although his methodology presents problems, his conclusion that an increasing number of the group came from upper-class backgrounds and had traditional academic training is quite likely to be correct.

who could be hired and fired at will and whose existence was necessitated as much by the uncertain quality of the owner's heirs as by the complexity of the enterprise itself. As in the case of the state, so in the case of the concerns the tension between the continued effort at personal rule by the owner and the progress of bureaucratized management was being decided painfully but fatefully in favor of the latter.⁴⁴ Also quite in keeping with the analogy, however, was that the general directors and their colleagues were something more than "employees" and were not without direct financial interest or family interest in their positions. They received high salaries and other emoluments, often owned some stock themselves, and were appointed to boards of supervisors of firms belonging to the concern as well as to supervisory boards of firms in which they might have an interest and that might have a desire to gain the benefit of their advice and support. They were also well on the road to establishing dynasties of general directors. Director and later General Director Fritz Springorum (1886–1942) of Hoesch certainly owed something to the fact that his father, Friedrich, had been general director of Hoesch, and Ernst Poensgen (1871–1949) of Phoenix certainly had a head start in industry because he had inherited his family's pipe and rolling works. These had been merged with Phoenix in 1910, and the latter gave him a concern directorship at that time.⁴⁵ Similarly, Paul Reusch was to see his son Hermann assume his old position after World War II. All this is not to say that Fritz Springorum, Ernst Poensgen, and Hermann Reusch were not extremely able men. The evidence seems to demonstrate that they were and that Fritz Thyssen (1871–1951) was also an able successor to his father.⁴⁶ However, it must be emphasized that the leading directors of the industrial concerns constituted a developing managerial elite filled with personal and social ambition as well as talent and energy.

Like the founding generation of German heavy industry, the general directors were seeking to make a respected place for themselves in German society, and they faced many of the same difficulties and employed many of the same solutions. The "feudalization" of the great early industrialists, their quest for titles, and their building of castles and villas are well known and amply illustrated by Krupp and Stumm.⁴⁷ However, the social ambiguity of the new managerial group was even

⁴⁴ See the excellent discussion in Kocka, *Unternehmensverwaltung*, p. 547ff. The analogies with the development discussed in Hans Rosenberg, *Bureaucracy, Aristocracy, and Autocracy. The Prussian Experience 1660–1815* (Cambridge, Mass., 1958) are quite striking.

⁴⁵ *Nekrologe*, pp. 172–174, 72–73.

⁴⁶ *Ibid.*, pp. 234–236.

⁴⁷ Friedrich Zunkel, *Der Rheinisch-Westfälische Unternehmer, 1834–1879* (Cologne, 1962), pp. 93–132, 246–253.

INTRODUCTION

greater than that of the earlier generation of owner-entrepreneurs because they were only "employees" and, it was argued, did not bear the risks and sense of responsibility of the founders. They, therefore, had the double burden of proving themselves within their own environment and capturing the coveted titles and acceptance in the upper echelons of German society that they naturally desired. Although many could take pride in their titles as Royal Commercial Councilors (*Kgl. Kommerzienräte*), their reserve officer status, and, as in the case of Kirdorf and Reusch, their respective estates "Streithof" and "Katharinenhof," they were still men who had guaranteed entrée to the best hotels but not to the best salons. At the same time, however, they were a group increasingly conscious of their own worth and accomplishments, with a profound sense of "calling," a growing conviction that they were the bearers of the nation's economic future, and a certain disdain for privy councilors in Berlin, who had the illusion that an economy could be run from the "green table," and professors who fantasized that socio-economic problems could be solved on the basis of economic theory rather than the hard realities of economic life. The idea that the separation of ownership from control meant that industry was falling into the hands of a less responsible generation was nonsensical. If anything, the sense of responsibility of the general directors for the property placed in their charge was heightened by their sense of calling and desire to prove themselves as a new elite directly responsible for thousands of workers and massive economic units vital to the economy as a whole.⁴⁸

It has been argued that the coming of the general directors marked a decline in the vitality of entrepreneurship and the willingness to take risks demonstrated by the founding generation in German heavy industry.⁴⁹ It seems significant that so successful a general director as Paul

⁴⁸ The importance of the group discussed here as a new elite inspiring even the present-day generation of German managers should not be forgotten, because there is almost complete continuity between the group directing German industry in 1914 and in the Weimar Republic. See Wolfgang Zapf, *Wandlungen der deutschen Elite. Ein Zirkulationsmodell deutscher Führungsgruppen 1919–1961* (Munich, 1965), pp. 236–237. On the ideology and problems of German executives, see Heinz Hartmann, *Authority and Organization in German Management* (Princeton, 1959), pp. 16–50. There is a fine discussion in Kocka, *Unternehmer in der deutschen Industrialisierung*, pp. 215–223. See also Kurt Wiedenfeld, *Das Persönliche im modernen Unternehmertum*, 2nd ed. (Munich, 1920). In his *Unternehmensverwaltung*, pp. 556–559, Kocka makes the excellent point that the Weberian model of bureaucratization as a means of domination (*Herrschaft*) is particularly in need of modification when applied to industrial bureaucratization, where the well-being and profitability of the firm imposes a testable standard of performance in the legitimation of organizational change.

⁴⁹ For a discussion of the literature on this and related problems, see Wolfgang Zorn, "Typen und Entwicklungskräfte deutschen Unternehmertums im 19. Jahr-

Reusch was to be so taken with the gloomy prognostications of Oswald Spengler.⁵⁰ The Faustian spirit that had typified the industrial revolution and the readiness to bear risks and losses became, it would seem, increasingly tempered by a sense that dikes had to be constructed to preserve what had been accomplished. The most famous of these dikes, of course, were the cartels and syndicates, and it has been claimed that just as concern building undermined the role of the individual in industry and forced the entrepreneur to give way to the manager, so the cartels destroyed the willingness to take risks and expand. Such arguments are more nostalgic than illuminating, however, and they distract from an actual consideration of the role of personalities and economic organizations in advanced stages of industrial development and promote an understatement and an underestimation of dynamic qualities that have shifted their focus rather than been eliminated.

Cartels, Syndicates, and Trade Associations

To be sure, the original purpose of the cartels was a defensive one and had the reduction of risk through the prevention of cutthroat competition as its object. They were almost invariably formed to deal with crises, and although the first cartel-like agreements in the iron industry can be dated back to 1844–1845, it is no accident that cartels proliferated during the downswing of 1873–1896. During this period, they represented a more sophisticated industrialist response to the downturns in the business cycle and the periodic capital shortages and inventory crises by which they had long been plagued. Initially, they had treated such crises fatalistically, as products of “times” that were always “changing,” an attitude that suggests that a sense of helplessness in the face of crises constituted an important component of the “willingness” to take risks in earlier entrepreneurial generations. Much of this attitude persisted later on and provided an undercurrent of pessimism that is to be found even in the most expansionist and optimistic of periods among the Ruhr industrialists. Yet there was a growing sophistication about crises and a sense that something could be done about them. First, an effort was made to explain them by specific causes, such as the drop in demand in a particular market, a tariff

hundert,” *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, 44, March 1957, pp. 57–77. A good illustration of the pessimistic point of view is Joseph Schumpeter, “Der Unternehmer in der Volkswirtschaft von Heute,” in Bernhard Harms, ed., *Strukturwandlungen der deutschen Wirtschaft*, 2 vols. (Berlin, 1928), I, pp. 295–312.

⁵⁰ Bodo Herzog, “Die Freundschaft zwischen Oswald Spengler und Paul Reusch,” in Anton Koktanek, ed., *Spengler-Studien. Festgabe für Manfred Schröter zum 85. Geburtstag* (Munich, 1965), pp. 77–97.

INTRODUCTION

increase somewhere, or the emergence of new competition. With the crisis of 1873, however, there developed a more general sense that there were deeper economic causes underlying the crises and that their impact could and should be mitigated or reduced through collective policies and actions. Increased sophistication of perception was accompanied by increased sophistication of reaction. The "classic" capitalistic responses to crises that took the form of wage reductions, dismissals of workers, reductions of investment and production, and price reductions were never totally abandoned, but they were superseded to an increasing extent by efforts at a more countercyclical approach in the form of demands for state contracts and credits, tax and freight rate reductions, and tariffs. Although the state did help sporadically with such measures, it never developed a real countercyclical policy of its own, and industrialists turned to self-help through the creation of cartels to stabilize prices and regulate production and of syndicates, which had the added function of marketing the regulated products. Although cartel agreements were binding in public law, it must be recognized that most of the cartels of the 1873–1896 period in heavy industry were notoriously unstable short-term affairs and were undermined by both their members and outsiders.⁵¹

What these experiences in cartelization did create, however, was a growing appreciation of the value of organization and some understanding of how they might be made to work more effectively. The high fixed costs in heavy industry created a combined need for high productivity to reduce costs and stabilize prices that would ensure a return (*Rentabilität*). The iron tariff of 1879 made such organization seem all the more imperative, because mechanisms were needed to ensure that industry would gain from the tariff on the domestic market while being able to enjoy the favorable export market as well. Given the increasing similarity in production methods and costs structures on, at least, the basic products of the industry by the turn of the century, serious competition would only have dissipated the advantages of the tariff and of higher production. In short, price stability in certain areas of production seemed more profitable than competition. Although the early cartels were true "children of distress" (*Kinder der Not*) and although the initial deliberations leading to the great cartels and syndicates of the industry had begun in times of depression, many of the

⁵¹ Wolfram Fischer, "Konjunkturen und Krisen im Ruhrgebiet seit 1840 und die wirtschaftspolitische Willensbildung der Unternehmer," in *Wirtschaft und Gesellschaft im Zeitalter der Industrialisierung. Aufsätze, Studien, Vorträge* (Göttingen, 1972), pp. 179–193; Rosenberg, *Grosse Depression*, p. 268ff.; Veit Holzschuher, *Soziale und ökonomische Hintergründe der Kartellbewegung*, diss. Phil. (Erlangen, 1962), p. 49ff.

important ones were actually formed in more prosperous years and reflected a sustained effort to eliminate short-term speculative fluctuations in prices and introduce stability in pricing in both good and bad times for certain products through regulation of production and prices, common marketing arrangements, and regional allocation of orders to save on transport cost.

To a considerable degree, the cartels and syndicates were successful in stabilizing prices, but it would be mistaken to conceptualize their operation in static rather than in dynamic terms.⁵² There is good reason to argue that the cartels, despite intentions to the contrary, accelerated tendencies toward vertical integration and promoted the destabilization of the industry by encouraging overproduction. The first tendency was already evident when the Rhenish-Westphalian Coal Syndicate was founded in 1893. The actual as well as potential increase in coal prices encouraged the backward integration of the iron and steel producers already in progress. They now had added reason to assure themselves a cheaper coal supply through the acquisition of coal mines and through the exercise of the self-consumption rights (*Selbstverbraucherrechte*) allowed syndicate members, that is, their right to produce and utilize coal over and above their quotas. The iron and steel cartels and syndicates, by contrast, promoted both backward integration, in the case of pig iron, and forward integration by stimulating heightened productive efforts in the less cartelized or uncartelized finished products. Why this was the case is best understood from an analysis of the major cartels in the industry during the prewar period.

The most basic and well organized of these in the last years before the war was the Pig Iron Syndicate (*Roheisenverband*) which, after its reorganization in 1910, encompassed all pig iron producers. Sales were made through the syndicate, which had the form of a limited-liability corporation (*GmbH*) composed of its members. Voting rights on quota allocation and prices as well as other important questions were vested in the membership in accordance with their quotas, but the quotas did not include pig iron produced and employed by the members for their own use. The successful organization of this area of

⁵² The approach taken here is very close to that of Erich Maschke in his important *Grundzüge der deutschen Kartellgeschichte bis 1914* (Dortmund, 1964) and is also in conformity with the discussions in Pounds and Parker, *Coal and Steel*, p. 315ff., and D. L. Burn, *The Economic History of Steelmaking* (Cambridge, 1940), pp. 275–285. The literature on cartels and other forms of industrial concentration is quite large, but special note should be taken of Robert Liefmann, *Cartels, Concerns and Trusts* (London, 1932), Hermann Levy, *Industrial Germany. A Study of Its Monopoly Organizations and Their Control by the State* (Cambridge, 1935), and Herbert von Beckerath, *Modern Industrial Organization. An Economic Interpretation* (New York and London, 1933).

INTRODUCTION

production had been a long time in coming. Initial efforts had been regional in nature and, although the organization of the Rhenish-Westphalian Pig Iron Syndicate in 1896 was a major breakthrough, it had a troubled history and suffered dissolution along with all but the Upper Silesian Pig Iron Syndicate in 1908. In that year, a bad one on the pig-iron market, the organizations were unable to withstand the pressures of English competition and the competition of German producers who refused to submit to cartelization, especially the Eisenwerk Kraft in Stettin. Significantly, the years 1910–1912 were good ones on the pig iron market, and this reduced the quarrels over quotas that made organization so difficult. No less significantly, however, the lead was taken by a “rump syndicate” of the six major Rhenish-Westphalian mixed works, which demonstrated its predominance by gradually persuading the other works and regional groupings to join in a common organization. Yet another indication of the predominance of these works was the unrestricted self-consumption right included in the new contract. The mixed works were in a position either to supply less than their allotted quotas when the market was good so as to utilize their pig iron for more lucrative steel production or to make maximum use of their quotas in bad years when they felt happy to sell anything. Although this placed some extra burdens on the smaller works, there can be no question about the fact that the Pig Iron Syndicate did produce a high degree of price stability in both good and bad years. In the good year of 1912, German prices varied only 4.03% while English and American prices varied 25.75% and 26.32%, respectively.⁵³

The effort to attain such success, assuming one regards it as such from a general economic perspective, was necessarily more troubled and complicated in steel because more products were involved and the range of cartelization as one moved from cruder to more finished products was always a major question. The great breakthrough came in 1904 with the founding of the Steel Works Association, an effort by the mixed works to put an end to “unhealthy competition” and ensure reasonable returns through the stabilization of prices and production. As the case of pig iron demonstrated, syndicalization is easiest in the case of cruder, more uniform products, which permit sale through a central agency. It is much more difficult where specifications or profiles vary and questions of quality become involved. Consequently, the Steel Works Association created two categories of products. The crude A products consisted of semifinished steel (*Halbzeug*—ingots, slabs, billets, sheet bars, broad tool steel), railroad material (*Eisenbahnober-*

⁵³ Arthur Klotzbach, *Der Roheisen-Verband. Ein geschichtlicher Rückblick auf die Zusammenschlussbestrebungen in der deutschen Hochofen-Industrie* (Düsseldorf, 1926); Willi Tübben, *Die nationale und internationale Verbandspolitik der Schwerindustrie vor und nach dem Kriege*, diss. Phil. (Heidelberg, 1930), p. 23ff.

bau—rails, spikes, joint bars, and fish plates), and structural steel (*Formeisen*—girders and universal steel). These products were uniform and easily marketed through a central agency—that is, syndicalized—and an agreement was made to set up quotas and market them through the Steel Works Association. The more finished B products—merchant bars (*Stabeisen*), rolled wire (*Walzdraht*), steel plate (*Blech*), pipes (*Röhren*), and cast and forged pieces (*Guss- und Schmiedstücke*)—were not dealt with in the same way. They were not syndicalized, the marketing remaining in the hands of the individual concerns, but quotas were placed on production. At the same time, A and B products consumed by the works themselves were not included in the quota restrictions.

The Steel Works Association proved effective in maintaining stable price levels for the A products and in strengthening Germany's position in the formation of certain international agreements among steel producers, particularly the Girder Agreement with the Belgian and French producers in 1904 and the International Rail Manufacturers Association (IRMA) of the same year. It gave producers a stronger hand in dealing with the associations of iron and steel merchants, because the Steel Works Association could offer rebates to merchants who were cooperative. It also proved effective in helping Germany to meet the challenge of international competition, such like that presented by the United States Steel Corporation, the giant trust founded in 1901 and bringing together a large number of steel producers, in part with the object of permitting the United States to compete effectively on world markets now that the domestic market was no longer consuming all its production. Between 1904 and 1911–1912, the amount of production sold by the Association abroad increased from 28.1% to 39.7%. Although this involved a considerable amount of dumping in that export prices were always lower than domestic prices, it also reflected an extremely aggressive marketing operation abroad by the Association. There is no evidence that the domestic market was being deprived by the quest for foreign markets. In 1906–1908, for example, when domestic demand was very high, exports by the Association dropped to 18.4%. Furthermore, the Association gave rebates to manufacturers employing iron and steel for the purpose of exporting manufactured products (*Ausfuhrvergütungen*).⁵⁴

These undeniable successes, however, must be set against the very real difficulties and dysfunctionalities of the Steel Works Association which plagued it from the moment of its birth and persisted throughout its existence. It was meant to serve as an all-encompassing organization that would include all the production of the industry and would absorb preexisting cartels already formed. When compared to the organ-

⁵⁴ *Ibid.*, p. 34ff.

INTRODUCTION

izational situation of other steel producing nations at the time, then, it certainly must be celebrated (or deplored) as the quintessence of cartelization. Nevertheless, by 1912 it had really failed of this purpose of all-inclusiveness, just as it had failed in its proclaimed intention of promoting stabilization in the industry and acting as an instrument for the encouragement of rationalization through the limitation of excess capacity and the placing of a premium on efficiency. To begin with, long-term intentions are not easily realized by three-year contracts. The Steel Works Association, quite in keeping with the past cartel traditions, was based on a short contract, and this meant that there was a periodic, regularly scheduled struggle for quotas for which the members had to prepare. Because power in the cartels was measured in terms of the quotas, this was in itself an encouragement to expand in order to demonstrate that old quotas were too low. To this incentive to expand was added that of a still unsatiated foreign market.⁵⁵

In this context, the full syndicalization of the A products only encouraged the integrated works to take advantage of their self-consumption rights in the A products to produce more B products. On the one hand, production quotas on the B products in the Steel Works Association were looser than for the A products. On the other hand, there was the good export market. The end result was a strong incentive to produce more of everything. At cartel renewal time, the entire complex of circumstances provided splendid reasons for adjusting quotas to the latest increases in capacity, as was done in the 1907 renewal. The most important consequence was an enormous increase of B product production and sale. In 1911–1912, the sale of A products was only 32.24% above 1905–1906, but that of B products was 106% more, and the sale of the most important of the latter, merchant bars, had increased 124.10%. The undeniable stabilization of prices in the A products and of the amounts thrown on to the market had encouraged a dramatic expansion—probably an overexpansion—of production in the more finished B products, which had become a safety valve (*Sicherheitsventil*) for the mixed works seeking to exploit their capacities and increase profitability.⁵⁶

Syndicalization of the B products had been the stated goal of the Association when the production quotas were set up in 1904, but consistent discussion of the subject since that time had led to consistent

⁵⁵ See the excellent discussion in H. R. Todsal, "The German Steel Syndicate," *Quarterly Journal of Economics*, 32, 1917, pp. 259–306. Also, see Bogner, *Wandlungen*, pp. 5–28; G. Embscher, *Periodische Wandlungen im Zusammenschluss der deutschen Industrie*, diss. Phil. (Dessau, 1928), pp. 30–72.

⁵⁶ Bogner, *Wandlungen*, p. 73, and Todsal, in *Quarterly Journal of Economics*, 32, pp. 289–299.

failure. Indeed, an increasing number of producers were anxious to eliminate even the production quotas after 1907, and the concerns gave implicit recognition to the instability of the Association by developing their marketing organizations and forming close connections with iron merchant firms not only to satisfy immediate needs but also in anticipation of the Steel Works Association's demise.⁵⁷ The atmosphere surrounding the renewal of the Association in May 1912 was extraordinarily tense, and although it appears to have been standard procedure for holdouts to play "*va banque* with the nerves of the participants in the negotiations," the fears of a "collapse comparable to an economic Jena" certainly were quite real.⁵⁸ In fact, it could be argued that the compromises made in order to extend the life of the Association another five years had only served to undermine it still further, and whatever the successful battle for renewal might be called, it certainly was no economic Leipzig.

In the discussions, Adolph Kirdorf argued in vain that the "elimination of B-quotas will be a regression to the old conditions, and a Steel Works Association without B-quotas will no longer be a Steel Works Association."⁵⁹ He was outvoted, however, by colleagues such as August Thyssen, who demanded either the syndicalization of the B products or the termination of all restraints on their production, and by those who considered the whole effort to organize the B products in any manner hopeless or undesirable. There was also a last minute battle over the apportionment of the A quotas. Although it would appear that no one, not even Hugo Stinnes, whose resistance to a diminution of his monopoly in production of the so-called Grey girders actually brought the negotiations beyond the twelfth hour, was willing to take responsibility for breaking up the Association in 1912, its future seemed far from rosy. Thyssen, without whom the Association could not have survived, was bitter over the concessions made to Stinnes, and was to be successful in winning similar rights for himself in court. He was also profoundly dissatisfied with his quota in A products, which he felt insufficient in the light of his increased capacity thanks to the new plants in Hagendingen. In the last analysis, however, the jockeying over the A product quotas was not the main issue, but rather the fact that, by 1912, less than one-third of the industry's production was encompassed by the Steel Works Association in any form because of the decartelization of the B products. The famed Association had become a "torso."⁶⁰ (See Table 2.)

⁵⁷ *Ibid.*, pp. 270–271.

⁵⁸ *Stahl und Eisen*, 32, May 9, 1912, p. 769.

⁵⁹ Steel Works Association negotiations, April 19, 1912, HA/GHH, N. 3000030/16.

⁶⁰ Negotiations of April 30–May 1, 1912, *ibid.*, and Bogner, *Wandlungen*, p. 72.