

Dhananjayrao Gadgil Library



GIPE-PUNE-051262

**THE EFFECT OF THE WORLD WAR  
UPON THE COMMERCE AND  
INDUSTRY OF JAPAN**

**ECONOMIC AND SOCIAL HISTORY  
OF THE WORLD WAR**

**JAMES T. SHOTWELL, LL.D., *General Editor.***

---

**JAPANESE SERIES**

**BARON YOSHIRO SAKATANI, D.C.L., *Editor.***

**CHAIRMAN OF THE JAPANESE RESEARCH COMMITTEE  
FORMERLY MINISTER OF FINANCE, AND PRESIDENT OF THE  
SENSHU UNIVERSITY**

THE EFFECT OF THE WORLD  
WAR UPON THE COMMERCE  
AND INDUSTRY OF JAPAN

---

---

COMMERCE

BY KAKUJIRO YAMASAKI, D.C.L.  
PROFESSOR OF ECONOMICS IN THE TOKYO IMPERIAL UNIVERSITY  
MEMBER OF THE IMPERIAL ACADEMY

---

---

INDUSTRY

BY GOTARO OGAWA, M.P.  
MEMBER OF THE IMPERIAL DIET  
DEAN AND PROFESSOR OF PUBLIC FINANCE IN TOYO KYOKAI UNIVERSITY

NEW HAVEN : YALE UNIVERSITY PRESS  
LONDON : HUMPHREY MILFORD : OXFORD UNIVERSITY PRESS  
FOR THE CARNEGIE ENDOWMENT FOR INTERNATIONAL  
PEACE : DIVISION OF ECONOMICS AND HISTORY

1929

COPYRIGHT 1929 BY THE  
CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE  
PRINTED IN THE UNITED STATES OF AMERICA

## EDITOR'S PREFACE

IN the autumn of 1914, when the scientific study of the effects of war upon modern life passed suddenly from theory to history, the Division of Economics and History of the Carnegie Endowment for International Peace proposed to adjust the program of its researches to the new and altered problems which the War presented. The existing program, which had been prepared as the result of a conference of economists held at Berne in 1911, and which dealt with the facts then at hand, had just begun to show the quality of its contributions; but for many reasons it could no longer be followed out. A plan was therefore drawn up at the request of the Director of the Division, in which it was proposed, by means of an historical survey, to attempt to measure the economic cost of the War and the displacement which it was causing in the processes of civilization. Such an "Economic and Social History of the World War," it was felt, if undertaken by men of judicial temper and adequate training, might ultimately, by reason of its scientific obligations to truth, furnish data for the forming of sound public opinion, and thus contribute fundamentally toward the aims of an institution dedicated to the cause of international peace.

The need for such an analysis, conceived and executed in the spirit of historical research, was increasingly obvious as the War developed, releasing complex forces of national life not only for the vast process of destruction, but also for the stimulation of new capacities for production. This new economic activity, which under normal conditions of peace might have been a gain to society, and the surprising capacity exhibited by the belligerent nations for enduring long and increasing loss—often while presenting the outward semblance of new prosperity—made necessary a reconsideration of the whole field of war economics. A double obligation was therefore placed upon the Division of Economics and History. It was obliged to concentrate its work upon the problem thus presented, and to study it as a whole; in other words, to apply to it the tests and disciplines of history. Just as the War itself was a single event, though penetrating by seemingly unconnected ways to the remotest parts of the world, so the analysis of it must be developed

according to a plan at once all embracing and yet adjustable to the practical limits of the available data.

During the actual progress of the War, however, the execution of this plan for a scientific and objective study of war economics proved impossible in any large and authoritative way. Incidental studies and surveys of portions of the field could be made and were made under the direction of the Division, but it was impossible to undertake a general history for obvious reasons. In the first place, an authoritative statement of the resources of belligerents bore directly on the conduct of armies in the field. The result was to remove as far as possible from scrutiny those data of the economic life of the countries at war which would ordinarily, in time of peace, be readily available for investigation. In addition to this difficulty of consulting documents, collaborators competent to deal with them were for the most part called into national service in the belligerent countries and so were unavailable for research. The plan for a war history was therefore postponed until conditions should arise which would make possible not only access to essential documents, but also the coöperation of economists, historians, and men of affairs in the nations chiefly concerned, whose joint work would not be misunderstood either in purpose or in content.

Upon the termination of the War, the Endowment once more took up the original plan, and it was found with but slight modification to be applicable to the situation. Work was begun in the summer and autumn of 1918. In the first place a final conference of the Advisory Board of Economists of the Division of Economics and History was held in Paris, which limited itself to planning a series of short preliminary surveys of special fields. Since, however, the purely preliminary character of such studies was further emphasized by the fact that they were directed more especially toward those problems which were then fronting Europe as questions of urgency, it was considered best not to treat them as part of the general survey, but rather as of contemporary value in the period of war settlement. It was clear that not only could no general program be laid down *a priori* by this conference as a whole, but that a new and more highly specialized research organization than that already existing would be needed to undertake the Economic and Social History of the World War, one based more upon national grounds in the first instance, and less upon purely international coöperation. Until the facts of

national history could be ascertained, it would be impossible to proceed with comparative analysis; and the different national histories were themselves of almost baffling intricacy and variety. Consequently the former European Committee of Research was dissolved, and in its place it was decided to erect an Editorial Board in each of the larger countries and to nominate special editors in the smaller ones, who should concentrate, for the present at least, upon their own economic and social war history.

The nomination of these boards by the General Editor was the first step taken in every country where the work has begun. And if any justification were needed for the plan of the Endowment, it at once may be found in the lists of those, distinguished in scholarship or in public affairs, who have accepted the responsibility of editorship. This responsibility is by no means light, involving as it does the adaptation of the general editorial plan to the varying demands of national circumstances or methods of work; and the measure of success attained is due to the generous and earnest coöperation of those in charge in each country.

Once the editorial organization was established, there could be little doubt as to the first step which should be taken in each instance toward the actual preparation of the history. Without documents there can be no history. The essential records of the War, local as well as central, have therefore to be preserved and to be made available for research in so far as is compatible with public interest. But this archival task is a very great one, belonging of right to the Governments and other owners of historical sources and not to the historian or economist who proposes to use them. It is an obligation of ownership; for all such documents are public trust. The collaborators on this section of the War History, therefore, working within their own field as researchers, could only survey the situation as they found it and report their findings in the forms of guides or manuals; and perhaps, by stimulating a comparison of methods, help to further the adoption of those found to be most practical. In every country, therefore, this was the point of departure for actual work; although special monographs have not been written in every instance.

The first stage of the work upon the War History, dealing with little more than the externals of archives, seemed for a while to exhaust the possibilities of research, and had the plan of the history been limited to research based upon official documents, little more

could have been done, for once documents have been labeled "secret" few government officials can be found with sufficient courage or initiative to break open the seal. Thus vast masses of source material essential for the historian were effectively placed beyond his reach, although much of it was quite harmless from any point of view. While war conditions thus continued to hamper research, and were likely to do so for many years to come, some alternative had to be found.

Fortunately such an alternative was at hand in the narrative, amply supported by documentary evidence, of those who had played some part in the conduct of affairs during the War, or who, as close observers in privileged positions, were able to record from first or at least second-hand knowledge the economic history of different phases of the Great War, and of its effect upon society. Thus a series of monographs was planned consisting for the most part of unofficial yet authoritative statements, descriptive or historical, which may best be described as about halfway between memoirs and blue-books. These monographs make up the main body of the work assigned so far. They are not limited to contemporary war-time studies; for the economic history of the War must deal with a longer period than that of the actual fighting. It must cover the years of "deflation" as well, at least sufficiently to secure some fairer measure of the economic displacement than is possible in purely contemporary judgments.

With this phase of the work, the editorial problems assumed a new aspect. The series of monographs had to be planned primarily with regard to the availability of contributors, rather than of source material as in the case of most histories; for the contributors themselves controlled the sources. This in turn involved a new attitude toward those two ideals which historians have sought to emphasize, consistency and objectivity. In order to bring out the chief contribution of each writer it was impossible to keep within narrowly logical outlines; facts would have to be repeated in different settings and seen from different angles, and sections included which do not lie within the strict limits of history; and absolute objectivity could not be obtained in every part. Under the stress of controversy or apology, partial views would here and there find their expression. But these views are in some instances an intrinsic part of the history itself, contemporary measurements of facts as significant as the



facts with which they deal. Moreover, the work as a whole is planned to furnish its own corrective; and where it does not, others will.

In addition to the monographic treatment of source material, a number of studies by specialists are already in preparation, dealing with technical or limited subjects, historical or statistical. These monographs also partake to some extent of the nature of first-hand material, registering as they do the data of history close enough to the source to permit verification in ways impossible later. But they also belong to that constructive process by which history passes from analysis to synthesis. The process is a long and difficult one, however, and work upon it has only just begun. To quote an apt characterization, in the first stages of a history like this, one is only "picking cotton." The tangled threads of events have still to be woven into the pattern of history; and for this creative and constructive work different plans and organizations may be needed.

In a work which is the product of so complex and varied coöperation as this, it is impossible to indicate in any but a most general way the apportionment of responsibility of editors and authors for the contents of the different monographs. For the plan of the History as a whole and its effective execution the General Editor is responsible; but the arrangement of the detailed programs of study has been largely the work of the different Editorial Boards and divisional Editors, who have also read the manuscripts prepared under their direction. The acceptance of a monograph in this series, however, does not commit the editors to the opinions or conclusions of the authors. Like other editors, they are asked to vouch for the scientific merit, the appropriateness and usefulness of the volumes admitted to the series; but the authors are naturally free to make their individual contributions in their own way. In like manner the publication of the monographs does not commit the Endowment to agreement with any specific conclusions which may be expressed therein. The responsibility of the Endowment is to History itself—an obligation not to avoid but to secure and preserve variant narratives and points of view, in so far as they are essential for the understanding of the War as a whole.

• • • • •

The Japanese Series in this War History constitutes one of the most important sections of the entire survey, for it contains the only

x EFFECT OF WAR ON JAPANESE COMMERCE

record that has been attempted of the entire effect of the War upon the social and economic life of Japan. Years of careful study and of research have gone into the making of these volumes to which scholars of Japan of the highest competence have devoted their best energies.

From its inception the Division of Economics and History of the Carnegie Endowment has had as the head of its Japanese Research Committee, His Excellency, Baron Sakatani, who has gathered around him a group of experts for the study of the causes and effects of war in modern society. When the Economic and Social History of the World War was planned, this Research Committee became a part of the directing organization of the History and had already its material for the Japanese volumes well in hand when the Japanese earthquake occurred in 1923 and not only destroyed much of the documentation but so dislocated the economic life of Japan as to make more difficult than ever the measurement of economic forces concerning the World War. The material had largely to be written anew or rewritten, and then the difficulties of translation and adaptation to the Western reader added new delays, so that the Japanese Series, although begun early in the post-war years, appears only after the passage of a decade.

For the student of world economy there is a wealth of suggestion in the data of these volumes showing how far-reaching is the disturbance of modern war in industrialized countries with their interdependent interests and how temporary are the advantages of the speculative industries dependent upon the forced markets of war. But while the effects of the War upon Japan furnish another chapter to the universal argument for peace which lies in this whole history, the Japanese authors have enriched the survey by including much more than the direct effects of war itself. It is an era in the general economic history of Japan which is here depicted, and so the material should prove a mine of reference data to American or British readers not only for the problem of war history but for its setting in history as a whole. Thus in conception these volumes are part of a lasting national record, as they are in execution a notable scientific achievement.

J. T. S.

## AUTHOR'S PREFACE

WHEN the Japanese Committee of the Carnegie Endowment for International Peace decided to study the effects of the World War upon economic conditions in Japan, I took charge of the section relating to commerce. I limited the sphere of action to five fields, foreign trade, foreign exchange, home trade, the stock market, and prices. The survey was made in two separate groups of studies, those dealing with the period down to and including 1918, and those dealing with the first post-war years. In both the collecting of material and its preliminary handling I was able to secure the collaboration of experts. In the case of the first series of studies I assigned home and foreign trade to Mr. T. Yagi of the Department of Agriculture and Commerce; foreign exchange to Mr. J. Nakanishi of the Bank of Japan; the stock market to Mr. Y. Kawai, Managing Director of the Tokyo Stock Exchange; and prices to Mr. T. Yumoto, of the Department of Finance. From their reports I selected those parts which seemed most pertinent. And, by arranging and unifying them, I produced those sections of this volume which carry the study down to the end of the War. Upon the period that followed I had the help of Mr. Seiji Tokunaga, Hokakushi, of the Department of Finance, who is also highly qualified for the discharge of the duties involved.

K. Y.

NOTE ON  
JAPANESE WEIGHTS AND MEASURES  
USED IN THIS VOLUME

1 <i>cho</i>	= 2.45 acres
1 <i>kwan</i>	= 8.27 pounds
1 <i>momme</i>	= 1/1000 of a <i>kwan</i>
1 <i>kin</i>	= 1.32 pounds
1 <i>koku</i>	= 4.96 bushels
1 <i>yen</i>	= 49.8 cents
1 <i>sen</i>	= 1/100 of a <i>yen</i>
1 <i>rin</i>	= 1/1000 of a <i>yen</i>

I  
THE EFFECT OF THE WORLD WAR UPON THE  
COMMERCE OF JAPAN

CONTENTS

PART I. DURING THE WAR

*Chapter I. Foreign Trade.*

1.	General Remarks . . . . .	3
	i. Historical Development of the Foreign Trade of Japan . . . . .	3
	ii. Growth of Japan's Foreign Market . . . . .	6
2.	Export Trade . . . . .	9
3.	Import Trade . . . . .	18
4.	Obstacles to Foreign Trade . . . . .	18
	i. General Remarks . . . . .	18
	a. Shortage of Bottoms . . . . .	18
	b. Currency Policies of Foreign Countries which Affected the Foreign Trade of Japan . . . . .	18
	c. Prohibitions of the Export of Gold and Silver Bullion and Specie . . . . .	19
	d. Trading with the Enemy Regulations . . . . .	20
	ii. Obstacles to Export Trade . . . . .	22
	a. Control of Exports . . . . .	22
	b. Import Prohibitions in Foreign Countries . . . . .	22
	iii. Obstacles to Import Trade . . . . .	24
	a. Prohibitions of Exports in Foreign Countries . . . . .	24
	b. Control of Australian Wool . . . . .	25
	c. Prohibitions of Imports Produced in Enemy Territory . . . . .	26
5.	Administrative Measures to Protect and Encourage Foreign Trade . . . . .	27
	i. Despatch of the Commission of Investigation . . . . .	27
	ii. The War-time Marine Insurance Compensation Act and the War-time Marine Reinsurance Act . . . . .	28
	iii. Inspection of Exports . . . . .	29
	iv. Control of the Shipping Business . . . . .	30
	v. The Establishment of Commercial Agencies and Consulates . . . . .	31
	vi. Measures taken to Mitigate Foreign Export and Import Prohibitions . . . . .	32

*Chapter II. Foreign Exchange.*

1. Japan's International Trade Balance during the War . . . . .	88
2. The Increase of Specie Reserves . . . . .	84
3. Financial Measures Taken for the Regulation of the Foreign Exchange Market . . . . .	85
i. Funds Required in the Foreign Exchange Market . . . . .	86
ii. Measures Taken to Adjust the Foreign Exchange Market . . . . .	87
4. Fluctuations of Foreign Exchange Rates . . . . .	89
i. Exchange on Great Britain . . . . .	89
ii. Exchange on France . . . . .	40
iii. Exchange on the United States . . . . .	42
iv. Exchange on Russia . . . . .	43
v. Exchange on India . . . . .	45
vi. Exchange on China . . . . .	46

*Chapter III. Domestic Trade.*

1. General Remarks . . . . .	48
2. State of Domestic Trade during the War . . . . .	50
i. The Insufficient Supply of Commodities and the Advance in Prices . . . . .	51
ii. The Anti-Profitteering Ordinance . . . . .	52
iii. Establishment of Public Markets . . . . .	52
iv. The Warehousing or Storage Business . . . . .	53
v. Insurance . . . . .	54

*Chapter IV. The Exchanges.*

1. The Stock Exchange . . . . .	58
i. General Remarks . . . . .	58
ii. The Period of Stagnation . . . . .	58
iii. The Period of the Boom . . . . .	59
a. The Situation in 1915 . . . . .	59
b. The Situation in 1916 . . . . .	59
iv. The Period of Caution . . . . .	60
a. The Situation in 1917 . . . . .	60
b. The Situation in 1918 . . . . .	61
2. The Rice Exchange . . . . .	61
i. State of the Rice Exchange during the War . . . . .	61
a. Introductory Remarks . . . . .	61

CONTENTS

xv

b. The Period of Falling Markets . . . . .	62
c. The Period of the Boom . . . . .	63
ii. Government Measures for Regulating the Price of Rice, and their Influence upon the Market . . . . .	64
a. Introductory Remarks . . . . .	64
b. Measures Taken by the Terauchi Ministry . . . . .	64
c. Measures Taken by the Hara Ministry . . . . .	66
3. The Raw Silk Exchange . . . . .	67
i. Introductory Remarks . . . . .	67
ii. The Market Collapses . . . . .	67
a. The State of the Market before the Outbreak of the War . . . . .	67
b. The State of the Market after the Outbreak of the War . . . . .	68
c. Proposals of Relief for the Raw Silk Market . . . . .	68
d. The Establishment of the Imperial Raw Silk Com- pany . . . . .	69
iii. Rising Prices . . . . .	70
4. The Cotton-Yarn Exchange . . . . .	71
i. Introductory Remarks . . . . .	71
ii. Falling Prices . . . . .	72
iii. A Gradual Advance . . . . .	72
iv. Boom Conditions . . . . .	73
v. The Period of Fluctuations . . . . .	73

*Chapter V. Prices.*

1. General Remarks . . . . .	75
i. Price Conditions throughout the Country . . . . .	75
ii. Price Conditions in Tokyo . . . . .	78
a. Outline of Price Fluctuations . . . . .	78
b. Outline of Price Fluctuations in Tokyo for the Vari- ous Classes of Commodities . . . . .	80
c. Causes of Fluctuations of Commodity Prices . . . . .	81
d. Retail Price Conditions, and the Relation between Wholesale and Retail Prices in Tokyo . . . . .	82
e. Price Advances, and the Inflation of Currency . . . . .	83
2. Conditions under which Certain Commodities Greatly Ad- vanced in Price during the War . . . . .	87
3. Relation between Prices and Wages . . . . .	95
Conclusion . . . . .	101

THE EFFECT OF THE WORLD WAR UPON THE  
COMMERCE OF JAPAN

PART II. POST-WAR PERIOD

*Introduction*

*Chapter I. Foreign Trade.*

1. General Remarks . . . . .	107
i. During the War . . . . .	107
ii. Post-War Conditions . . . . .	108
a. 1919 . . . . .	108
b. 1920 . . . . .	108
c. 1921 . . . . .	109
iii. Decline in the Value of Trade, by Continents and by Countries . . . . .	109
2. Export Trade . . . . .	112
3. Import Trade . . . . .	116

*Chapter II. Foreign Exchange.*

1. General Remarks . . . . .	121
i. The Position of Japan in International Finance during the War . . . . .	121
ii. Post-War Changes . . . . .	121
a. The International Balance . . . . .	121
b. Specie Reserves . . . . .	124
c. Gold Exports and Imports . . . . .	127
2. Funds for Foreign Exchange . . . . .	127
3. Measures for Facilitating Foreign Exchange . . . . .	128
i. The Creation of the Bank Acceptance Trade Bill . . . . .	129
ii. The Introduction of Stamped Bills . . . . .	130
4. Foreign Exchange Rates . . . . .	136
i. General Remarks . . . . .	136
ii. Sterling Exchange (London) . . . . .	137
iii. French Exchange (Paris) . . . . .	139
iv. American Exchange (New York) . . . . .	139
v. Chinese Exchange (Shanghai) . . . . .	140
vi. Indian Exchange (Bombay) . . . . .	141
vii. Russian Exchange (Harbin) . . . . .	142



CONTENTS

xvii

*Chapter III. Domestic Trade.*

1.	General Remarks . . . . .	147
	i. During the War . . . . .	147
	ii. After the War . . . . .	147
	a. 1919 . . . . .	147
	b. 1920 . . . . .	148
	c. 1921 . . . . .	151
2.	Insurance . . . . .	155
	i. General Remarks . . . . .	155
	ii. Life Insurance . . . . .	156
	iii. Fire Insurance . . . . .	158
	iv. Marine Insurance . . . . .	160
	v. Other Forms of Insurance . . . . .	161
	vi. Post-Office Insurance . . . . .	163
3.	Warehousing . . . . .	164
	i. General Remarks . . . . .	164
	ii. General Conditions . . . . .	165

*Chapter IV. The Various Exchanges.*

1.	General Remarks . . . . .	167
	i. During the War . . . . .	167
	ii. After the War . . . . .	168
2.	The Stock Exchange . . . . .	170
	i. General Remarks . . . . .	170
	ii. Financial Stagnation (November, 1918-March, 1919) . . . . .	171
	iii. The Market Revives (April, 1919-March, 1920) . . . . .	172
	iv. The Market Collapses (April-December, 1920) . . . . .	174
	v. The Market is Steady Again (January-December, 1921) . . . . .	175
3.	The Rice Exchange . . . . .	176
	i. General Remarks . . . . .	176
	ii. Rising Prices (November, 1918-March, 1920) . . . . .	176
	iii. Falling Prices (April, 1920-June, 1921) . . . . .	178
	iv. Prices Rise Again (July-November, 1921) . . . . .	180
4.	The Raw Silk Exchange . . . . .	181
	i. General Remarks . . . . .	181
	ii. Prices Fall (November, 1918-February, 1919) . . . . .	181
	iii. An Active Market (March, 1919-January, 1920) . . . . .	182
	iv. Prices Fall Again (February, 1920-August, 1921) . . . . .	182
	v. Rising Prices (September-December, 1921) . . . . .	185

xviii EFFECT OF WAR ON JAPANESE COMMERCE

5. The Cotton-Yarn Exchange . . . . .	185
i. General Remarks . . . . .	185
ii. An Active Market (November, 1918-March, 1920) . . . . .	186
iii. Falling Prices (April, 1920-March, 1921) . . . . .	187
iv. Prices Rise Again (April-October, 1921) . . . . .	188

*Chapter V. Prices.*

1. General Remarks . . . . .	190
i. During the War . . . . .	190
ii. After the War . . . . .	190
2. Prices in Tokyo . . . . .	191
i. Introductory Remarks . . . . .	191
ii. Wholesale Prices . . . . .	191
a. General Fluctuations . . . . .	191
b. Prices of Various Commodity Groups . . . . .	191
c. Fluctuations of Wholesale Prices of Staple Commodities . . . . .	195
iii. Retail Prices . . . . .	198
a. General Fluctuations . . . . .	198
b. Fluctuations in the Various Classes of Commodities . . . . .	199
Food Products . . . . .	199
Fuels . . . . .	199
Building Materials . . . . .	200
Articles of Clothing . . . . .	200
Miscellaneous . . . . .	200
iv. Relation between Wholesale and Retail Prices . . . . .	201
3. Relation of Prices to Currency and Wages . . . . .	204
i. Prices and Currency . . . . .	204
ii. Prices and Wages . . . . .	208
Conclusion . . . . .	212

**II**  
**THE EFFECT OF THE WORLD WAR UPON THE**  
**INDUSTRY OF JAPAN**

**CONTENTS**

**INTRODUCTORY**

*Industrial Changes.*

1. Capital . . . . .		217
	Comparative Investments of Capital in Manufacturing, and in Other Branches of Business . . . . .	219
2. Factories . . . . .		220

*Chapter I. Manufactures of Metals.*

1. Iron . . . . .		223
	Before the War . . . . .	223
	During the War . . . . .	225
	General Survey . . . . .	225
	Promotion of New Enterprises . . . . .	227
	Prices of Iron and Manufacturers' Profits . . . . .	230
2. Zinc . . . . .		234
	Before the War . . . . .	234
	During the War . . . . .	235
	The Ore Supply . . . . .	236
	The Market for Zinc . . . . .	238
	Market Prices of Zinc . . . . .	240

*Chapter II. Shipbuilding.*

1. Before the War . . . . .		242
2. During the War . . . . .		245
	General Remarks . . . . .	245
	Source of Shipbuilding Supplies . . . . .	248
	The First Agreement . . . . .	250
	Demand for and Cost of Ships: Profits Made by Manufac- turers . . . . .	258
	The Withdrawal of the Subsidy . . . . .	256
	The Armistice and the Industry . . . . .	257

*Chapter III. Machinery Industry.*

Introduction . . . . .	258
Before the War . . . . .	258
During the War . . . . .	259
1. Manufactures of Machinery, in Detail . . . . .	260
Power Machinery, Pumps, Hoisting Cranes, and the Like . . . . .	260
Quantity and Variety Produced . . . . .	260
Factory Activity . . . . .	261
Trade Conditions . . . . .	261
Dynamos, Motors, Telephone and Telegraph Instruments, and the Like . . . . .	262
Quantity and Variety Produced . . . . .	262
Factory Activity . . . . .	263
Trade Conditions . . . . .	263
Machine Tools and Parts Thereof . . . . .	264
Quantity and Variety Produced . . . . .	264
Factory Activity . . . . .	264
Trade Conditions . . . . .	265
Spinning and Weaving Machinery and Parts ; Sugar, Paper, Printing, and Other Machines . . . . .	265
Quantity and Variety Produced . . . . .	265
Factory Activity . . . . .	265
Trade Conditions . . . . .	266
Ship, Mining, Chemical, and Other Machinery, and Parts Thereof . . . . .	267
Production and Variety of Products . . . . .	267
Factory Activity . . . . .	267
Trade Conditions . . . . .	267
2. Instruments of Precision . . . . .	268
Quantity and Variety Produced . . . . .	268
Factory Activity . . . . .	268
Trade Conditions . . . . .	268
Watches and Clocks . . . . .	269
Factories and Factory Workers . . . . .	269
Quantity and Variety Produced . . . . .	269
Meters, Devices for Weighing and Measuring, Medical and Scientific Apparatus, Musical Instruments, etc. . . . .	270
Quantity and Variety Produced . . . . .	270
Factory Activity . . . . .	271
Trade Conditions . . . . .	271

CONTENTS

xxi

3.	Arms and Munitions . . . . .	271
	Standard Products . . . . .	271
	Policy Regarding Manufacture of Arms; Quantity and Variety Produced . . . . .	271
	Factory Activity . . . . .	272
	Trade Conditions . . . . .	272
	Fuses . . . . .	272
	Manufacturers Who Dealt Directly with Russia . . . . .	272
	Manufacturers Who Undertook the Work through the Medium of the Army and Navy . . . . .	273
	Firms in Tokyo . . . . .	273
	Firms in Aichi . . . . .	274
	After the Russian Revolution . . . . .	275
	After the War . . . . .	275

*Chapter IV. Chemical Products.*

1.	Dyestuffs . . . . .	277
	Before the War . . . . .	277
	History . . . . .	277
	During the War . . . . .	277
	Disappearance of Imports . . . . .	277
	Classes, Quantity, and Quality of Products . . . . .	278
	Raw Materials . . . . .	279
	Factory Activity . . . . .	280
	After the War . . . . .	281
2.	Sodas . . . . .	281
	History . . . . .	281
	Promotion of Companies . . . . .	283
	Raw Materials . . . . .	284
	Skill of Manufacturers and Quality of Goods . . . . .	284
	Prices . . . . .	284
3.	Potassium . . . . .	285
	Potassium Chlorite . . . . .	286
	Seaweed Chlorite . . . . .	286
	Bittern Chlorite . . . . .	287
	Potassium Chlorate . . . . .	289
	Potassium Bichromate . . . . .	292
4.	Phosphorus . . . . .	294
	During the War . . . . .	295
	Production and Trade . . . . .	295
	Prices . . . . .	296
	Raw Materials . . . . .	296

xxii EFFECT OF WAR UPON JAPANESE INDUSTRY

5. Sugar . . . . .	297
Before the War . . . . .	297
History . . . . .	297
Japan Proper . . . . .	297
Raw Sugar . . . . .	297
Refined Sugar . . . . .	298
Formosa . . . . .	299
Raw Sugar . . . . .	299
Refined Sugar . . . . .	299
During the War . . . . .	800
Raw Sugar . . . . .	800
Japan Proper . . . . .	800
Formosa . . . . .	801
Refined Sugar . . . . .	801
Japan Proper . . . . .	801
Formosa . . . . .	802
Mills . . . . .	803
Japan Proper . . . . .	803
Formosa . . . . .	803
Consumption of Sugar in Japan Proper . . . . .	804
Market Prices . . . . .	804
6. Miscellaneous Industries . . . . .	804
Matches . . . . .	804
Paper . . . . .	806
Glass . . . . .	807
Porcelain . . . . .	808
Enamelled Wares . . . . .	809
Portland Cement . . . . .	809
Oils . . . . .	809
Soap . . . . .	810
Wood Wax . . . . .	810
Peppermint . . . . .	811
Lacquer Ware . . . . .	811
Saké . . . . .	811

*Chapter V. Spinning and Weaving.*

1. Cotton . . . . .	812
Yarn . . . . .	812
Before the War . . . . .	812
During the War . . . . .	812
Production, Demand, and Exports of Yarn . . . . .	813
Mills . . . . .	814

CONTENTS

xxiii

Prices . . . . .	315
Profits . . . . .	315
Importation of Raw Cotton . . . . .	317
Fabrics . . . . .	320
Résumé . . . . .	320
Trade . . . . .	320
2. Silk . . . . .	321
Production . . . . .	321
Mills . . . . .	322
Silk Fabrics . . . . .	322
Mills Producing Silk Fabrics . . . . .	324
Prices . . . . .	325
Fabrics of Silk and Cotton Mixed . . . . .	325
3. Hemp, Jute, Flax, Ramie, Wool, etc. . . . .	326
Hemp Cloths . . . . .	326
Production . . . . .	326
Imports and Exports . . . . .	327
Hemp Yarns . . . . .	327
Production . . . . .	327
Mills . . . . .	328
Imports and Exports . . . . .	328
Raw Materials and Imports of Same . . . . .	328
Woolen Fabrics . . . . .	330
Production . . . . .	330
Imports and Exports . . . . .	330
Mills . . . . .	330
Woolen Yarn . . . . .	331
Production . . . . .	331
Imports and Exports . . . . .	331
Raw Materials and Imports of Same . . . . .	332
Mills . . . . .	332
4. Knitted Goods . . . . .	332
Production . . . . .	332
Raw Materials . . . . .	333
Imports . . . . .	333

*Chapter VI. Miscellaneous Industry.*

1. Electricity . . . . .	334
Before the War . . . . .	334
History . . . . .	334

**xxiv EFFECT OF WAR UPON JAPANESE INDUSTRY**

During the War . . . . .	335
Résumé . . . . .	335
Increased Demand and Industrial Development . . . . .	336
2. Gas . . . . .	337
Before the War . . . . .	337
During the War . . . . .	337
3. Other Industries . . . . .	338
Brushes . . . . .	338
Braided Goods . . . . .	338
Starch and Flour . . . . .	338

*Chapter VII. Conclusion.*

1. General Effect of the War on Japanese Exports . . . . .	339
2. Foundations of Japan's Manufacturing Industry . . . . .	342
Raw Materials . . . . .	344