

Research Series on the Chinese Dream  
and China's Development Path

Qunhui Huang

---

# China's Industrialization Process



 Springer

# **Research Series on the Chinese Dream and China's Development Path**

## **Project Director**

Xie Shouguang, President, Social Sciences Academic Press

## **Series editors**

Li Yang, Vice president, Chinese Academy of Social Sciences, Beijing, China

Li Peilin, Vice president, Chinese Academy of Social Sciences, Beijing, China

## **Academic Advisors**

Cai Fang, Gao Peiyong, Li Lin, Li Qiang, Ma Huaide, Pan Jiahua, Pei Changhong,

Qi Ye, Wang Lei, Wang Ming, Zhang Yuyan, Zheng Yongnian, Zhou Hong

Drawing on a large body of empirical studies done over the last two decades, the *Research Series on the Chinese Dream and China's Development Path* seeks to provide its readers with in-depth analyses of the past and present, and forecasts for the future course of China's development. Thanks to the adoption of Socialism with Chinese characteristics, and the implementation of comprehensive reform and opening, China has made tremendous achievements in areas such as political reform, economic development, and social construction, and is making great strides towards the realization of the Chinese dream of national rejuvenation. In addition to presenting a detailed account of many of these achievements, the authors also discuss what lessons other countries can learn from China's experience. This series will be an invaluable companion to every researcher who is trying to gain a deeper understanding of the development model, path and experience unique to China.

More information about this series at <http://www.springer.com/series/13571>

Qunhui Huang

# China's Industrialization Process



 Springer

The Springer logo, which consists of a stylized chess knight piece facing left, positioned above a horizontal line.

Qunhui Huang  
Institute of Industrial Economics  
Chinese Academy of Social Sciences  
Beijing  
China

ISSN 2363-6866 ISSN 2363-6874 (electronic)  
Research Series on the Chinese Dream and China's Development Path  
ISBN 978-981-10-3664-4 ISBN 978-981-10-3665-1 (eBook)  
<https://doi.org/10.1007/978-981-10-3665-1>

Jointly published with Social Sciences Academic Press

The print edition is not for sale in China Mainland. Customers from China Mainland please order the print book from: Social Sciences Academic Press

Library of Congress Control Number: 2017961749

© Social Sciences Academic Press and Springer Nature Singapore Pte Ltd. 2018

This work is subject to copyright. All rights are reserved by the Publishers, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publishers, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publishers nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publishers remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd. part of Springer Nature  
The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

## Series Preface

Since China's reform and opening began in 1978, the country has come a long way on the path of Socialism with Chinese Characteristics, under the leadership of the Communist Party of China. Over thirty years of reform efforts and sustained spectacular economic growth have turned China into the world's second largest economy and wrought many profound changes in the Chinese society. These historically significant developments have been garnering increasing attention from scholars, governments, and the general public alike around the world since the 1990s, when the newest wave of China studies began to gather steam. Some of the hottest topics have included the so-called "China miracle", "Chinese phenomenon", "Chinese experience", "Chinese path", and the "Chinese model". Homegrown researchers have soon followed suit. Already hugely productive, this vibrant field is putting out a large number of books each year, with Social Sciences Academic Press alone having published hundreds of titles on a wide range of subjects.

Because most of these books have been written and published in Chinese, however, readership has been limited outside China—even among many who study China—for whom English is still the *lingua franca*. This language barrier has been an impediment to efforts by academia, business communities, and policy-makers in other countries to form a thorough understanding of contemporary China, of what is distinct about China's past and present may mean not only for her future but also for the future of the world. The need to remove such an impediment is both real and urgent, and the *Research Series on the Chinese Dream and China's Development Path* is my answer to the call.

This series features some of the most notable achievements from the last 20 years by scholars in China in a variety of research topics related to reform and opening. They include both theoretical explorations and empirical studies and cover economy, society, politics, law, culture, and ecology, the six areas in which reform and opening policies have had the deepest impact and farthest-reaching consequences for the country. Authors for the series have also tried to articulate their visions of the "Chinese Dream" and how the country can realize it in these fields and beyond.

All of the editors and authors for the *Research Series on the Chinese Dream and China's Development Path* are both longtime students of reform and opening and recognized authorities in their respective academic fields. Their credentials and expertise lend credibility to these books, each of which having been subject to a rigorous peer review process for inclusion in the series. As part of the Reform and Development Program under the State Administration of Press, Publication, Radio, Film and Television of the People's Republic of China, the series is published by Springer, a Germany-based academic publisher of international repute, and distributed overseas. I am confident that it will help fill a lacuna in studies of China in the era of reform and opening.

Xie Shouguang

# Acknowledgements

After a relatively short gestation period, the *Research Series on the Chinese Dream and China's Development Path* has started to bear fruits. We have, first and foremost, the books' authors and editors to thank for making this possible. And it was the hard work by many people at Social Sciences Academic Press and Springer, the two collaborating publishers, that made it a reality. We are deeply grateful to all of them.

Mr. Xie Shouguang, president of Social Sciences Academic Press (SSAP), is the mastermind behind the project. In addition to defining the key missions to be accomplished by it and setting down the basic parameters for the project's execution, as the work has unfolded, Mr. Xie has provided critical input pertaining to its every aspect and at every step of the way. Thanks to the deft coordination by Ms. Li Yanling, all the constantly moving parts of the project, especially those on the SSAP side, are securely held together, and as well synchronized as is feasible for a project of this scale. Ms. Gao Jing, unfailingly diligent and meticulous, makes sure every aspect of each Chinese manuscript meets the highest standards for both publishers, something of critical importance to all subsequent steps in the publishing process. That high quality if also at times stylistically as well as technically challenging scholarly writing in Chinese has turned into decent, readable English that readers see on these pages is largely thanks to Ms. Liang Fan, who oversees translator recruitment and translation quality control.

Ten other members of the SSAP staff have been intimately involved, primarily in the capacity of in-house editor, in the preparation of the Chinese manuscripts. It is time-consuming work that requires attention to details, and each of them has done this and is continuing to do this with superb skills. They are, in alphabetical order: Mr. Cai Jihui, Ms. Liu Xiaojun, Mr. Ren Wenwu, Ms. Shi Xiaolin, Ms. Song Yuehua, Mr. Tong Genxing, Ms. Wu Dan, Ms. Yao Dongmei, Ms. Yun Wei, and Ms. Zhou Qiong. In addition, Xie Shouguang and Li Yanling have also taken part in this work.

Ms. Wu Min is the SSAP in-house editor for the current volume.

Our appreciation is also owed to Ms. Li Yan, Mr. Chai Ning, Ms. Wang Lei, and Ms. Xu Yi from Springer's Beijing Representative Office. Their strong support for the SSAP team in various aspects of the project helped to make the latter's work that much easier than it would have otherwise been.

The translation and draft polish process benefited greatly from the consistent and professional coordination service by Besteasy (Beijing) Translations Corporation. We thank everyone involved for their hard work.

Last, but certainly not least, it must be mentioned that funding for this project comes from the Ministry of Finance of the People's Republic of China. Our profound gratitude, if we can be forgiven for a bit of apophasis, goes without saying.

Social Sciences Academic Press  
Springer

# Contents

|          |                                                                         |    |
|----------|-------------------------------------------------------------------------|----|
| <b>1</b> | <b>Introduction</b>                                                     | 1  |
|          | References                                                              | 7  |
| <b>2</b> | <b>China's Industrialization Process: An Overview</b>                   | 9  |
| 2.1      | Industrialization Process of PRC Before Reform and Opening Up           | 10 |
| 2.2      | Industrialization Process Since Reform and Opening Up                   | 12 |
| 2.3      | China's Achievements Through Industrialization                          | 23 |
| 2.4      | Basic Experience and Lessons from China's Industrialization             | 27 |
|          | References                                                              | 31 |
| <b>3</b> | <b>Progress Evaluation of China's Industrialization</b>                 | 33 |
| 3.1      | Evaluation Methods                                                      | 34 |
| 3.1.1    | Evaluation Method for Industrialization Level                           | 34 |
| 3.1.2    | Division Criteria for Different Regions                                 | 41 |
| 3.2      | Evaluations Based on Individual Indicators                              | 41 |
| 3.2.1    | Evaluation Based on Per Capita GDP                                      | 42 |
| 3.2.2    | Evaluation Based on Output Value Ratio of the Three Industries          | 46 |
| 3.2.3    | Evaluation Based on Industrial Structure                                | 48 |
| 3.2.4    | Evaluation Based on Urbanization Rate                                   | 48 |
| 3.2.5    | Evaluation Based on Proportion of Population Employed in First Industry | 51 |
| 3.3      | Comprehensive Evaluations                                               | 53 |
|          | References                                                              | 57 |
| <b>4</b> | <b>Key Features of China's Industrialization</b>                        | 59 |
| 4.1      | Rate                                                                    | 60 |
| 4.2      | Regional Variations                                                     | 67 |
| 4.3      | Driving Force                                                           | 71 |
|          | References                                                              | 79 |

|                                                                                                                                              |           |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>5 Outlook for China's Industrialization</b> . . . . .                                                                                     | <b>81</b> |
| 5.1 Trends and Risks in Late-Stage Industrialization. . . . .                                                                                | 82        |
| 5.1.1 Economic Slowdown and the Risks Associated<br>with Stagnation . . . . .                                                                | 82        |
| 5.1.2 Increasing Share of the Service Industry<br>in the Economy and the Risks Associated<br>with "Hollowing-Out of Manufacturing" . . . . . | 84        |
| 5.1.3 Industrial Structure Improvement and Risks<br>Associated with "Technical Upgrading Trap" . . . . .                                     | 87        |
| 5.1.4 "Integration of Industrialization and Informatization"<br>and Risks Associated with "New Industrial<br>Revolution" . . . . .           | 91        |
| 5.1.5 Cutting Excess Capacity and Risks Associated<br>with Economic Liabilities. . . . .                                                     | 94        |
| 5.1.6 Quality Improvements in Factors of Production<br>and Risks Associated With Sluggish Reforms<br>in the Factor Market . . . . .          | 97        |
| 5.1.7 Shift Toward Industrial Policies that Support Market<br>Functioning and Risks from "Policy Dysfunction" . . . . .                      | 99        |
| 5.1.8 Developing Countries Moving Up the Global Value<br>Chain and Risks Associated with "Being Squeezed<br>on Both Sides" . . . . .         | 100       |
| 5.2 Strategies for Further Advancing Industrialization Process. . . . .                                                                      | 103       |
| 5.2.1 Realizing the Transition from Factor-Driven Strategies<br>to Innovation-Driven Strategies . . . . .                                    | 103       |
| 5.2.2 Realizing the Strategic Transition from Building<br>an Industrial Giant to Building an Industrial<br>Powerhouse . . . . .              | 104       |
| 5.2.3 Realizing the Strategic Transition from Pursuing<br>Catch-Up to Pursuing Inclusive-Growth . . . . .                                    | 107       |
| 5.2.4 The Relationship Between Industrialization<br>and Urbanization . . . . .                                                               | 108       |
| 5.2.5 The Relationship Between Globalization<br>and Independence . . . . .                                                                   | 109       |
| 5.2.6 The Relationship Between the Real Economy<br>and the Virtual Economy . . . . .                                                         | 110       |
| 5.2.7 Properly Addressing the Relationship Between<br>Labor-Intensive Industry Development<br>and Industrial Upgrading . . . . .             | 113       |
| 5.2.8 The Relationship Between Industry Transfer<br>and Regionally Coordinated Development. . . . .                                          | 114       |

5.3 Industrial Development During the 13th Five-Year  
Plan Period . . . . . 115

5.3.1 Guiding Idea for Industrial Development During  
the 13th Five-Year Plan Period . . . . . 116

5.3.2 Key Areas for Industrial Development During  
the 13th Five-Year Plan Period . . . . . 119

5.3.3 Adjustment of Industrial Development Policies  
During the 13th Five-Year Plan Period . . . . . 129

5.3.4 Open-Up Policy Will Shift from the Orientation  
of Driving Growth to Integrating Resources . . . . . 136

5.3.5 Talent Policy to Shift from Attracting Elite  
to Forming Gradient . . . . . 138

References . . . . . 139

**Postscript** . . . . . 141

**Bibliography** . . . . . 143

# Chapter 1

## Introduction



Although economic theorists still hold different views on the definition of industrialization so far, industrialization in its general sense refers to the economic development process in which the economic structure of a country or a region transforms from one dominated by agriculture to one dominated by industry. “Industrialization is a process. The following are some basic characteristics of a definite industrialization process: first, manufacturing activities and the secondary industry occupy a higher proportion in national income (or regional income), perhaps with the exception of interruptions caused by economic cycles. Next, normally the proportion of working population employed in manufacturing and secondary industry is also on the increase. Meanwhile, with an increase of these two proportions, the per capita income for the whole population also increases with the exception of temporary interruptions”, the term “Industrialization” is described as such in the *New Palgrave Dictionary of Economics*.<sup>1</sup> According to theories on industrialization, such industrialization process is inevitable in the economic growth of developing countries due to the following reasons: first, from the perspective of demands, as suggested by the consumption law of Engel, when people have more income in an expanding economy, they tend to spend less on food and more on industrial products and services. The huge demands for industry will prompt rapid growth of industry; second, from the perspective of productivity, as the industrial sector develops, it will provide the agricultural sector with many modern inputs, enhancing productivity in the agricultural sector, while as productivity of the agricultural sector increases with the growth of the economy, the agricultural sector will become smaller and the industrial and service sectors will continue to expand; third, from the perspective of professional division of labor, division of labor and professionalization not only greatly speed up the emergence of new industrial sectors and the development of modern big industries, but also gradually strip the agricultural sector of many functions and activities related to agricultural produc-

---

<sup>1</sup>John Eatwell, Murray Milgate and Peter Newman: *The New Palgrave Dictionary of Economics*, p. 861, Chinese translated version, Economic Science Press, 1992.

tion, as a result, the non-agricultural sector becomes larger while the agricultural sector becomes smaller; fourth, from the perspective of an open economy, agriculture relies on land as its most fundamental production factor, and labor productivity of the agricultural sector is restricted by land resources, therefore, it is unsustainable to drive economic growth by exporting agricultural products and other primary products by virtue of its abundant reserves of natural resources. Therefore, these countries also have to resort to the path of industrialization to become developed countries.<sup>2</sup> Empirical studies (including section analysis and historical analysis) by Kuznets also suggest that the income level of a country is positively correlated to its level of industrialization and all industrialized countries have undergone a transition in which its economic structure changes from one dominated by agriculture to one dominated by industry.

A country's industrialization process is closely associated with but by no means fully equivalent to its industrial development. Due to the roles of such common factors as consumer demand mode, scale economy and level of production technologies, industrialization is not only a process for a country to transform its agricultural sector to non-agricultural sector, but also a changing process for the internal structure of the industrial sector. Both Hoffman's Law and Chenery's sectional studies reveal the sequential regularity that the industrial sector develops from primary consumer-goods industries to capital-goods industries. If we consider industrialization as a process of modernization, then the evolution of the industrial sector from a lower to a higher level in the process of industrialization may be regarded as the process of industrial development, which can also be considered as a manifestation of the modernization of industry. In terms of content scope, industrialization not only refers to the transformation of the economic structure of a country or a region, but also emphasizes the overall social and economic development and change as a result of the transition in the economic structure from one dominated by agriculture to one dominated by industry, therefore, industrialization is regarded as an overall strategic choice for a country or a region to realize modernization; however, industrial development or modernization has a narrower sense, which chiefly analyzes the development of industry itself and the issue of modernization, and explores whether and how industry of a country or a region is established on the basis of the latest scientific technologies of the time, and whether and how various technological and economic indicators of industry can reach the advanced levels of the contemporary world. In terms of judgment criterion, industrialization puts particular emphasis on describing the overall economic growth driven by industrial development of a country or a region, and reflects the process in which the economy of a country or a region continues to grow as industry holds an increasingly higher proportion in national revenue and its working population. Therefore, the industrialization level of a country or a region can be judged by analyzing the per capita national income, the output value of the

---

<sup>2</sup>Guo Xibao: *Economic Growth: Theory and Policy*, pp. 98–100, China Social Sciences Press, 2000.

first and secondary industry as well as the change in its working population as a proportion of the national aggregate. By contrast, industrial development level or industrial modernization level mainly reflects the extent to which industry itself has developed. It includes both quantitative and qualitative changes in industry and is measured by a series of indicators reflective of the level of industrial quality and industrial development, including industrial labor productivity, industrial technology and equipment level and the proportion of high-tech industry output value in the total industrial output value.

Since modern times, it has become dreams of numerous Chinese people with lofty ideals to realize industrialization in China and turn it into a modern country. For China, to become an industrialized country is an inevitable requirement for the great rejuvenation of the Chinese nation and an important economic connotation for realizing the “Chinese dream”. After the founding of the People’s Republic of China in 1949, China’s industrialization process can be divided into two major periods: pre-reform and opening up and post-reform and opening up. During the period of pre-reform and opening up when China was taking an industrialization path under the traditional planned economic system, China laid its foundations for the entire industry and formed a relatively complete industrial system. However, real tremendous changes didn’t come until the period of post-reform and opening up when China was on an industrialization path with Chinese characteristics. During this period, China has seen a transition in its basic economic conditions from an agricultural giant to an industrial giant<sup>3</sup> and its economic aggregate has leapt to world’s second place.

Since reform and opening up, against the backdrop of informatization and globalization, China, a country with the world’s largest population, has successfully advanced market-oriented reforms and rapid industrialization process, maintaining a high economic growth rate for over 30 consecutive years. In 1978, the per capita GDP was less than US\$100, while in 2015, China’s GDP reached RMB 67.7 trillion, with the per capita GDP close to US\$8000 if calculated with the average exchange rate of the year. In terms of industry, in 2015, China’s total industrial added value reached RMB 22,897.4 billion, China’s manufacturing output accounted for more than 20% of the world total, and China has maintained its place as the world’s first major country since 2010. Of more than 500 kinds of main industrial products, over 220 rank the 1st in the world in terms of output. In terms of import and export trades, in 2014, China’s volume of import and export of goods stood at US\$4303 billion, accounting for 11% of the world’s total, and in 2013, China surpassed US in total volume of import and export to become the world’s largest country for trade in goods; with the advance of industrialization, China has made remarkable achievements in major infrastructure construction, with railway, highway, civil aviation, waterway, piping and other transportation infrastructure keeping expanding and a complete network pattern gradually taking shape. In 2015,

---

<sup>3</sup>Chen Jiagui and Huang Qunhui: *China Basic Economic Conditions Has Transformed from Agricultural Giant to Industrial Giant*, Economic Perspectives, issue 5, 2005.

the railway mileage in traffic operation reached 120,000 km, next only to the US, expressway mileage in traffic operation was 1253.73 million km, optical fiber broadband network and 3G network covered all cities and towns; in 2014, penetration rate of mobile phones was 94.5% and internet penetration was 47%. China's economic development can be seen in both quality and quantity: for instance, during the "12th Five-Year Plan" period, China has made breakthroughs in its production capacity in manufacturing complicated and high-precision equipment, with a number of major scientific achievements including China's lunar probe Chang'e, China's deep-sea manned submersible Jiaolong, China's high-speed railway, China's quadrillion supercomputer system Tianhe No. 1, China's self-developed C919 large jetliner, and China's 1st space lab module Tiangong-1.<sup>4</sup>

China's tremendous economic changes since the reform and opening up are undoubtedly a phenomena most worthy of world attention at the turn of 21st century. Recent years, economists have always tried to make out from different angles what factors had driven economic growth in such a populous country as China over 30 years? So far, results of analysis show that at least the following factors have supported China's high economic growth: the rapid advance of industrialization and urbanization, huge driving forces by consumption demands in the wake of an era of mass consumption, crucial impetus to China's economy by the opening to the outside world on a deeper level, high savings providing sufficient fund guarantee for China's sustainable high economic growth, the foundation of human resources provided by an abundant labor supply and increasingly higher labor quality, system foundation established through economic structural reform of the "Chinese Mode" and ever-increasing technological levels enabled by technological progresses, to name just a few. A host of concepts related to "Chinese Experience", "Beijing Consensus", "China Model" and "Peaceful Rise" are also put forward and become popular under such a background. Regardless of the perspective from which we summarize and describe China's economic development, one fundamental fact remains that China's economic growth has relied upon the consistent rapid growth of China's industry and the rapid progress in China's industrialization process driven by its industrial development. In fact, the industrialization path with Chinese characteristics represents an essential part of the "Chinese Road". Therefore, gaining an overall and scientific understanding of China's industrialization process is also a key to understanding the "Chinese Road", and an important part of telling true stories about China.

With respect to China's rapid industrialization process, there emerge a large amount of research literature on this aspect, which gives in-depth analyses of the level, characteristics, influence factors, strategy and mode of and other issues related to China's industrialization. However, after over 30 years of rapid industrialization, which level has China's industrialization reached now, and which stage does it remain and how far are we yet to go to realize industrialization or economic modernization? How should we describe the past history of China's industrialization and

---

<sup>4</sup>Huang Qunhui: *Lay a Solid Foundation for Real Economy*, Qiushi, issue 4, 2016.