

labor additionally in farming.¹² As the author notes, the establishment of appropriate national research systems is very important. However, he overlooks the serious manpower shortage in most of the developing countries. Without sufficient local manpower, any excellent research systems which might appear would not work effectively as the system-planners would expect. A very urgent matter in this regard is the training and education of agricultural scientists with the heavy support of the developed countries. As Theodore W. Schultz has stressed on many occasions, investment in human capital is essential in the development of agriculture.¹³ This is important both from the long- and short-term viewpoint.

Finally, regarding the last chapter on "peasant-based" strategies, two points are noted here: The author's discussions are based on the experiences of Japan, Taiwan and China. Though he distinguished the difference among the three, essentially he treated them as the same type under the term "peasant-based" technology. Japan and Taiwan can be grouped under the same category. However, China cannot be so because the collective farming system under the socialistic economy is fundamentally different from a market-oriented economy. Thus implications from it cannot be regarded as being the same, even though all three countries' agriculture is apparently peasant farming. As he mentioned, land reform was executed by the political force of the Supreme Commander of the Occupation in Japan and of the Kuomintang regime in Taiwan, respectively. And China's case was through political revolution. Thus all cases emerged "as a result of historic events larger than the agricultural sector and larger than the national framework" (p. 243). Are there any alternatives to abolishing the existing land-owning elite systems in other developing countries without such radical historical events?

The above comments do not mean that the value of the book is reduced. This book should be read by all researchers and policy-makers who are eager about agricultural and rural development in developing countries. (Saburō Yamada)

¹² See Asian Development Bank, *Rural Asia*, p. 249.

¹³ For instance, Theodore W. Schultz, "The Economics of Agricultural Productivity in Low Income Countries," paper presented at the Conference on Agricultural Development in China, Japan, and Korea, Taipei, December 17-20, 1980.

China's Transition to Industrialism: Producer Goods and Economic Development in the Twentieth Century by Thomas G. Rawski, Ann Arbor, University of Michigan Press, 1980, xii + 211 pp.

Mao Zedong, in his 1956 speech on the "Ten Major Relationships," criticized the Stalin method of putting priority on heavy industry, and advocated the increased rate of investment allocated to light industry and agriculture. The fact remains, however, that China's economic structure which clearly emphasizes heavy industry

has not changed since the period of the First Five-Year Plan (1953–57). But it can safely be said that the development of heavy industry in China greatly contributed to the development of the Chinese economy as a whole. *China's Transition to Industrialism* focuses on this topic by analyzing the state of various producer industries such as machinery, metallurgy, chemistry, building materials, energy, and mining. Following a summary of the book will be a discussion of several points raised by the author.

I

Thomas G. Rawski's book has six chapters. The first three chapters deal with the development process of China's producer industries in the twentieth century by dividing it into three major periods (pre-1937, 1949–57, and post-1957). The last three chapters, based on the facts presented in the first three chapters, logically seek a relationship between producer industries on the one hand and economic development and management on the other. These chapters can be summarized as follows:

Chapter 1 deals with the development of China's producer industries during the years 1900–1937. More specifically, the following three sectors are described: (1) machinery industry, focusing on the development and history of Shanghai's Da-long Machinery Works after 1902; (2) chemical industry, showing a correlation between growth and increasing domestic demand (which is in sharp contrast to the state of the machinery industry which had been restrained by technological constraint); and (3) iron and steel industry, where output did not increase in spite of twofold demand. The development of these producer industries, together with the establishment of large-scale enterprises backed by Japanese investment in Manchuria, created the basis for the future development of Chinese industrialization.

Chapter 2 studies producer industries during the period of the First Five-Year Plan in which industrialization was promoted by applying the Soviet method. During this period, the policies of massive investment, rapid import substitution, and administrative allocation of resources substantially increased the total output. Imports from the Soviet Union and Eastern Europe and their corresponding economic cooperation also contributed to this growth. However, because emphasis was placed on increasing output volume, other aspects of quality and commodity assortment were neglected. The key feature of industrial development during this period was the establishment of working channels for accumulating and applying technical knowledge or technical information in order to deal with difficulties arising from the production process.

The main subject of Chapter 3 is the economic results obtained during the 1960s. During this decade, the emphasis of China's economic policies was placed on quality rather than sheer growth of industrial output. Moreover, Chinese industry entered a phase of self-sustaining growth during the decade beginning in 1957. At that time, producer industries played a major role in economic development. Except for the failure of small-size backyard blast furnaces, the Great Leap Forward was effective in combining rural industry with agriculture, and allowed farmers to reap practical benefits from advances in industrial technology. The change of emphasis from

"rushing" to "harmonic" growth¹ first purported in 1957 was eventually realized at the beginning of the 1960s. Industrial sectors that developed during the 1960s were the petroleum and chemical fertilizer industries. Also, small-scale local enterprises (the so-called five small industries consisting of the machinery, cement, iron and steel, chemical fertilizer, and energy sectors) spread to over fifty thousand people's communes as well as to more than two thousand counties.

Chapter 4 clarifies the role of producer industries played in Chinese economic development. GVFO (gross value of factory output: output of modern factories plus output of handicraft factories with more than four employees) and GVIO (gross value of industrial output: total output of GVFO plus agricultural products processing and private handicraft activities) during 1912-73 are shown in the book, together with an analysis of industrial output by sector between 1952 and 1972. These studies clearly show that after 1949, the producer sector acted as the catalyst in the development of industry as a whole, and the output of producer industries accounted for half of the GDP increments during 1957-71. Therefore, industrial technology in China can be said, in a broad sense, to be similar to conventional models in advanced countries in that its major objective was to increase labor productivity by capital-intensive technology. Compared to India and Brazil (who together with China share similar national economic scales), China holds a predominant position both in increasing rate of growth and in size of industrial sector in its economy.

Chapter 5 confirms that China's industrial organization under the Soviet method which had been introduced during the 1950s has not changed in its fundamental characteristics since. During the period of the First Five-Year Plan, targets were set to increase the gross output index but little emphasis was put on quality, cost, and the variety of goods produced. Objectives in national economic policy, however, have slightly shifted after 1957 toward increased emphasis on a more balanced economy. These objectives have basically been maintained except during the Great Leap Forward, the Cultural Revolution, and the unstable period after the death of Mao Zedong and Zhou Enlai.

Chapter 6 describes the author's long-term forecasts regarding the development of producer industries in China. In the developmental process, as China's experience in producer industries shows, isolation from international society and the resultant self-reliance have promoted industrial innovation. When compared internationally, China's developmental process is similar to that of advanced economies; until it developed a modern manufacturing industry, China had experienced the process of repairing and imitating foreign-made machinery starting from the textile industry. Finally, the connotations of China's economic policies are discussed. The author points out that the high achievement of Chinese industry was not due to superiority of socialism, but because of efficient economic management by the planning authorities, managers, and workers. In the case of China, since the effectiveness of the economic model was limited, motivation and morale were the main factors in achieving industrial objectives.

¹ "Rushing" and "harmonic" growth are terms coined by Hungarian economist Janos Kornai differentiating the two approaches of (1) emphasizing output and (2) striving for quality and overall economic balance between the sectors.

II

As outlined above, this book clearly describes the role of producer industries in the growth of the Chinese economy, and statistical data collected from the limited materials available help support the author's argument.² However, clarification on several points is still needed.

The author points to the share of producer industries in GVFO as the data by which to judge the producer industry's role in the process of development. According to this, the share of producer industries in GVFO, on the basis of 1952 prices, accounted for 52.8 per cent in 1957, 73.4 per cent in 1965, and 84.0 per cent in 1973, all significantly high figures (p. 86). These figures show that the producer sector contributed greatly to China's industrial development.

As the following table shows, large investment was made in heavy industry. Moreover, the investment ratio of heavy industry in overall capital construction was 46.5 per cent during the period of the First Five-Year Plan, which is not very different from 46.8 per cent in 1979.³ Judging from such large investments in heavy industry, it is a natural consequence that the share of producer industries in total output is very high. Besides, China's heavy industry has a self-sustaining characteristic, supplying little to agriculture and light industry. Among total consumption of steel materials in 1978, 15.5 per cent was supplied for agriculture and repair of agricultural machinery, and 11.7 per cent for light industry. In the case of pig iron consumption, agriculture and light industry sectors received only 3.6 per cent and 1.1 per cent, respectively. In the Chinese economy today there still remains a problem of non-equivalent exchange between agricultural and industrial products.

INVESTMENT RATIO OF HEAVY INDUSTRY TO LIGHT INDUSTRY

The First Five-Year Plan	The Second Five-Year Plan	1963-65	The Third Five-Year Plan	The Fourth Five-Year Plan
8 fold	10.8 fold	12.8 fold	14.1 fold	10.2 fold

Source: Feng Baoxing, Wan Xin, and Zhang Dajian, "Jiqu pianmian fazhan zhonggongye de lishi jiaoxun" [Remember the historical lesson of giving priority to heavy industry], *Hongqi*, 1979, No. 12, pp. 14-17.

Taking these points into consideration, this book should have discussed more thoroughly the current problems of the Chinese economy caused by the developmental method which has consistently put priority on producer industries. According to current debates in China, one widespread view suggests that because of excessive population and unemployment, the notion of giving priority to the development of producer goods is no longer suitable to the Chinese economy.⁴ By ignoring such

² More detailed study on the statistical data can be found in Thomas G. Rawski, "China's Industrial Performance, 1949-73," in *Quantitative Measures of China's Economic Output*, ed. Alexander Eckstein (Ann Arbor, Mich.: University of Michigan Press, 1980).

³ Nobuo Maruyama, "Chūgoku no keizai shisutemu to kindaiika" [Economic systems and modernization in China], *Keizai hyōron*, 1980, No. 9, p. 98.

⁴ Meng Lian, "Buneng pianmiande 'shengchan ziliao shengchan youxian zengchan' zuowei

problems the author misleads the reader by giving an overly optimistic estimation regarding the Chinese objectives of implementing the "Four Modernizations" by the end of this century.

Next, in Chapter 4, the author contradicts the theory of Fei and Ranis, namely, that labor-intensive methods (according to domestic factor endowments) are generally preferable in selecting technology methods in developing countries. According to the author, capital-intensive technology in China has been more economical in its usage of labor as well as capital, and that products have been of better quality; thus it was more reasonable. The author maintains that the farmers' failure in managing producer industries such as iron and steel with the indigenous backyard method during the Great Leap Forward supports the above fact. He also mentions the recent increase in China's import of iron, steel, and fertilizer, as well as imports of large-scale power generation and oil refinery plants, saying that this increase in imports is specifically due to the inadequacy of domestic production.

However, the policy of introducing large-scale plants from foreign countries, on which the author based this theory, is about to be suspended under the present adjustment policy. This is not merely a temporary measure adopted because of shortage of funds, but rather a fundamental policy change regarding the future developmental path. Rong Wenzuo, for example, asserts that the Chinese economy is characterized by (1) large population and high unemployment, and (2) a weak economy, and therefore believe that the expansion of labor-intensive industry should be emphasized.⁵

In Chapter 5, the author indicates that China's planning system has been successfully functioning not because of authoritative orders or specific target instructions but because of mutual trust and common interests among industrial leaders at each level of the management hierarchy. The managing of organizational problems in industry, he points out, has been improved by the fact that the planning and administrative authority was transferred from ministries of industry in the central government down to the local governments at the levels of province, city, and county. He maintains that this decentralization helped reduce the "tautness" of industrial planning by weakening the authority of the central government.

This argument, however, is not persuasive because he fails to take into account the recent argument in various documents about economic planning. According to the prevailing view, management of industry has been under the control of bureaucratic administration (either central or local government), and the authority of enterprises is minimal at best. Currently, economists advocate a system in which enterprises' autonomy is expanded and market mechanism is introduced.

The planning system has caused the additional problem of an unstable supply of raw materials, and to deal with this situation enterprises have had a tendency to move toward vertical integration or to hoard raw materials, as is generally known. Rawski asserts that the scope and magnitude of hoarding, and consequently of Paretian

anpai guomin jingji jihua de chufadian" [At the starting point of the national economic planning, priority should not be given one-sidedly to the producer industry], *Jingji yanjiu*, 1979, No. 9, pp. 16-18.

⁵ Rong Wenzuo, "Lun fazhan laodong miji hangye" [On the development of labor-intensive industry], *Renmin ribao*, June 2, 1980.

inefficiency, have been reduced especially by remedial action since 1960 (p. 136). However, as clearly indicated by the long-term existence of the industrial and commercial transaction tax, the vertical integration of enterprises still remains, implying that the planning system operates less smoothly than in the author's evaluation.

Finally, it should be mentioned that Rawski's approach in dealing with the transitions in China's economic policy after 1949 is questionable. Each period of China's economic development after 1949 was clearly divided according to the shift of top leaders and the different policies and models they pursued. In Rawski's presentation, however, no clear distinction of period models exists. He recognizes, in Chapter 6, that the policy toward "harmonic growth" taken in the 1960s is the basic characteristic of the Chinese economy except for the fast-moving periods of the Great Leap Forward and the Cultural Revolution (p. 149). But, according to the author's emphasis, motivation and morale are considered the important factors in achieving China's industrialization (p. 154). When retracing the process of Chinese economic development, at the very periods when motivation and morale were enhanced, Rawski maintains that the imbalance resulting from the administrative plan was solved by the leaders' and workers' devoted attitudes toward society. On the contrary, during the adjustment period in the early 1960s as but one example, the policy was to stimulate workers with materialistic incentives and to regard profit as the main index of enterprise achievement and success. Under the latter policy, the system was based on the proposition that the individual's seeking-profit behavior was conducive to the interest of the enterprises and ultimately the government. High morale and motivation were merely by-products of the original economic policy.

Furthermore, Rawski states that the revitalization of the loyalty and passion of officials at the micro-economic level is the key element in strengthening economic development power. However, the direction of the current economic reform, based both on competition in the market and the independent accounting system of enterprises, allows enterprises and individuals to seek their own profit. Therefore, once the notion of self-profit as ultimate objective is established, it is quite doubtful that the campaign for arousing people's devotion to the state will be effective.

(Kyōichi Ishihara)