

Ralph William Huenemann, *The Dragon and the Iron Horse. The Economics of Railroads in China, 1876-1937*, Cambridge, MA, Harvard University, 1984, 347 pages.



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Railways were originally developed in the Western world. It was the outcome of the combined development of western industry, technology, finance, and institutional systems. As Rostow pointed out, western society was well prepared in the above aspects, hence the emergence and development of railways could become an impetus for economic take-off. However, this was not the case in China. The traditional Chinese society did not generate any inherent demand for railways, nor was the society prepared for its advent. So, when it was introduced into China by the Western powers who forced China open with gunboats, it stirred up tremendous horror among the late Qing ruling group. The opponents' concerns and worries about railways were apparently justified: foreign invasion, unemployment caused by technological development, and the undermining of the essential core of traditional Confucian society. The advocates recognized the benefits that railways could do to China and pushed railway construction as strongly as they could. But more importantly, for a semi-colonial country whose autonomy was greatly impaired, China simply couldn't resist the westerners' requests for railways. During the scramble for concessions, the foreign powers fiercely competed for railway rights and established spheres of influence based on railways. Along the rail lines, they also obtained the coal mine concessions and the rights to station troops. Such a situation continued in the Republican period and did not change until the foundation of the People's Republic. Obviously, railways had become a useful tool for the imperialists to control and exploit China.

This was the typical point of view among Chinese historians before 1978. After the “Reform and Opening up” policy was carried out in 1978, the ideology of class struggle in the Chinese scholarship weakened gradually. Chinese historians started to reconsider the role of railways in China's modernization from a more subjective perspective and to recognize some positive aspects of the impact of railways. Simultaneously, in the West,

there were also different views about railways' role in China's modernization. As a work of the Harvard School of apologetics for imperialism in China, Ralph William Huenemann's *The Dragon and the Iron Horse: the Economics of Railroads in China 1876-1937* is said to be the first formal economic analysis of the development of Chinese railways. The core question the author aims to answer is whether the foreign financed railways brought economic benefits to China.

In the first Chapter "The Policy Conundrum", the author first brings up a question: should China build railroads? It was an essential question for the late Qing government, over which advocates and opponents disputed for nearly two decades. In the political realm the dangers were obvious, but the author is more interested in a second question: did railroads bring economic benefits to China? The author builds a *fable* about the introduction of a railway into a traditional economic region, and then makes economic analysis of the benefits from railroads. But later on, the author admits that "we shall never have a satisfactory measure of the impact of the railroads on aggregate Chinese income", "we do not know whether the railroads were economically beneficial" (p. 31).

In Chapter 2 "The Tempo of Construction, 1876-1937", the author makes an elaborate account of the periods of Chinese railway development in a complex context of politics, economics, and international relations. He discusses the disputes over railways between the self-strengtheners and the conservatives, China's humiliating defeat in the Sino-Japanese War of 1894-1895 and the following imperialistic scramble for concessions, the rise of Chinese nationalism and the Rights Recovery Movement, and the impact of the warlordism on railway development. The author concludes that "China between 1876 and 1937 had not solved the dilemma posed by railroads" (p. 97), especially in terms of financing, whether domestically or internationally.

Chapter 3 "Skinning the Ox Twice" cites Lenin's phrase as its topic, to refer to the dual exploitation of financial capital: first, it reaps profit directly on its loans, and second it profits indirectly from the sale of the machinery that the loans are used to purchase. The author rebuts that, first, Chinese bonds were thought of as much riskier due to the lack of adequate information, the corruption in financial dealings and dangers of exchange rate fluctuation, etc., and in fact the railway bonds turned out to be not as profitable as usually anticipated. Second, the expenditures on machinery were not definitely inflated by monopoly power. The author

also disagrees with the claim that foreign capital displaced native capital in that Chinese private capitalists and public officials were mostly unwilling to invest in railways as the returns on railway bonds were not attractive enough.

In Chapter 4 “The Structure of Railroad Costs”, the author probes the concepts of marginal cost and economies of scale and tries to answer whether the railroads were subject to economies of scale. While applying functions to analyse the railroad costs, the author argues that this analysis becomes complex mainly because a railroad is a multi-product firm, hence answers and results are not definitive, though the evidence does suggest that the cost structure of the Chinese railroads exhibited some degree of economies of scale. The author emphasizes that “we should probably use caution in assessing the results”, “there is indeed no such thing as an exact or true estimate of railway costs” (p. 174).

Chapter 5 “The Causes of Financial Distress” tries to answer whether external or internal problems resulted in China’s financial distress, for by the 1930s almost all national railways were insolvent. The author analyses the factors which affected railway revenues and costs, such as warlordism, coal traffic, water competition, links to larger networks, pricing policy, ad hoc taxes, corrupt surcharges, inflated operating costs, and the interest rates on the debts, and so on. The author concludes that “the financial problems that plagued the Chinese railways were only partially due to imperialism”, “the domestic problems were more significant” (p. 218).

In Chapter 6 “Assessing the Economic Benefits”, quantitative estimates of the railway’s economic benefits are developed, and the relationship between financial success and economic benefits is discussed. The author calculates that “as of 1933, the national income of China was larger by at least 193 million yuan than it would have been without the foreign-built railways” (p. 228). The author also argues that profitable railroads may generate no economic benefit for the host country, while unprofitable railroads may still be economically beneficial.

In Chapter 7 “Conclusions”, the author returns to the question: was it beneficial for China to build railroads? Once again, the author asserts that as the question is very complex, no one should expect a definite answer. According to his calculations, railways did provide an economic benefit to China, despite the context of imperialism within which they were built (p. 247).

The author draws on rich Chinese and English-language materials and applies economic theory and quantitative methods to his research. Even after elaborating calculations and analysis, the author takes cautions in making general conclusions, repeatedly expressing his hopes that the discussions will prove to be both illuminating and provocative. And surely enough, they are. Readers still benefit a lot from the book even today, nearly 40 years after its first publication.

When the Communist Party came to power in 1949, “the dilemma posed by railways” – as Huenemann said – that confronted Old China was gone. All foreign concessions were abolished, and China accomplished complete independence and autonomy. Railway lines were laid out according to China’s own demand of strategic and social development. Although the financial and technological challenges still existed, the Communist Party did most successfully mobilize the people and all domestic resources to overcome the difficulties. Take the Chengdu-Chongqing railway for instance. This line connects the Capital of Sichuan Province and the economic hub of the same province, and it was significant for the development of Southwest China. But the complicated conditions of terrain in the Southwest had always been a great challenge. This line was planned, and construction work began in late Qing and resumed in the Republican period, but apart from very little earthwork, not even a rail was laid before 1949. In New China, it took only slightly more than 2 years to finish the 500-km line. In the years from 1881 to 1949, a little more than 20,000 km railways were finished in China, while 6,000 km were finished between 1950 and 1957. After the “reform and opening up” policy, China resumed to borrow abroad for railway construction, but the conditions were completely different from 100 years ago, with loans arranged on acceptable and non-political terms. By the end of 2021, China’s railway mileage totalled 150,000 km, among which high speed mileage totalled 40,000 km.

WANG BIN

Institute for the History of Natural Sciences of the  
Chinese Academy of Sciences

[wangbin@ihns.ac.cn](mailto:wangbin@ihns.ac.cn)