

## BOOK REVIEW

Elisabeth Köll,

### *Railroads and the Transformation of China*

(Cambridge, MA: Harvard University Press, 2019)

Matthew Lowenstein, *University of Chicago*

During the late Qing Dynasty, China's railroad network was a fragmented collection of more or less independent lines. Even this is an understatement; one of its most important lines—the Jin-Pu—was itself divided between German and British zones. As the twentieth century progressed, Chinese national governments expended considerable energy and resources into training technical personnel to centralize control of and develop its rail network. Both Chiang Kai-shek's government (1927-1949) and the People's Republic viewed rail expansion as a top priority, one with dire importance to China's economic development as well as to national security. But even such vigorous modernizers as Chiang and Mao Zedong were unable to entirely escape the legacy of China's confused, "semi-colonial" Qing-era railroads. The precise ways in which these legacies influenced the Chinese rail network long after the formal establishment of strong, nationalized rail ministries—and, perhaps, continue to inform China's railways even today—form the driving inquiry of Elisabeth Köll's sweeping new monograph on the history of Chinese railroads.

*Railroads and the Transformation of China* is required reading. It is an exhaustively sourced analysis of how geopolitics, business organization, and social relations influenced the development of one of China's most important industries. Though it is *longue-durée* history, running from the 1870s to the Xi Jinping era, this book will be of particular interest to scholars of the PRC. One of the most tantalizing questions for historians of the PRC is the dual ancestry of Reform and Opening. On the one hand, the post-Socialist system descends directly from its Maoist progenitor. The Leninist party-state remains intact. More importantly, the institutional inheritance from Maoist China was essential to the economic take-off of the last four decades.<sup>1</sup> On the other hand, Reform and Opening also has roots in modern neo-liberalism; it is marked by intense liberalization of the economy including sweeping ministerial reforms, previously unheard of market autonomy, and heavy borrowing of foreign technology and organizational models.<sup>2</sup> Nowhere is this tension more evident than the railroad bureaucracy. The peculiar independence of the Ministry of Railways—including its own police force, its own courts of law, and privileged access to bond markets—have direct roots in the political economy of the cultural revolution, and even in China's semi-colonial past. Yet in 2013, the once mighty Rail Ministry was abolished. Its regulatory responsibilities were delegated to a National Railway Administration, while its commercial operations were vested in a new China Railway

Corporation—a state owned enterprise with for-profit subsidiaries listed in international securities markets.

Köll explores this tension in eight chapters that are as felicitously written as they are insightful. The narrative itself resembles a train ride that carries one, slowly at first, through the Qing and Republican eras, picks up steam through the socialist period, and ends in a high-speed journey into the present. Specifically, the first two chapters cover the institutional origins of the Chinese railroad. Chapter one covers the semi-colonial origins of the Chinese rail network. It offers a vibrant account of the building of the Anglo-German Jin-Pu line. The line struggled to form anything like a coherent work culture or even standard operating procedures. The British half was built along the colonial model for constructing rail lines in India, while the German segment "drew on military procedures and institutions." Especially fascinating is Köll's analysis of the company's land acquisition. She finds that the Chinese gentry, far from resisting the railway out of any putative Confucian traditionalism, proved experts at gaming the rail company's purchasing requirements to squeeze as much as possible in return for the land. Indeed, the offering of extra eight taels of silver per gravesite not only removed objections over railway construction, but even "...engendered new business practices..." in which "...land speculators would approach the owners of the ancestral gravesites on the land targeted for future construction and offer their services as middleman" (40). In return, the speculators would claim the eight taels premium on burial ground land.

Chapter 2 brings the story into the Republic. It charts the fledgling Republic's attempt to create a national administration capable of regulating China's railways and ensuring they would serve Chinese national interests. From 1911 to 1928, railways were managed by the Ministry of Communications and Transportation. After the inauguration of Chiang Kai-shek's Nanjing government in 1928, they were placed under the authority of a newly established Ministry of Railways. But more momentous than high-level ministerial changes were developments in the organizational structure of the mid-level rail bureaucracy. The Republic saw the entrenchment of highly regionalized organization, formalized in the creation of regional "railroad management bureaus." These bureaus were essentially successor institutions to rail lines that had previously been independent. Köll believes that the record of the Republican-era railway was mixed. On the one hand, it scarcely

managed to lay any new trunk lines in a country that desperately needed them. On the other hand, Republican-era China quite effectively invested in railway related human capital. This was a joint private and state effort. Writes Köll, “Companies contributed substantially to the training of skilled labor, but more was required of the state to foster the academic education and professional training of engineers...through the visible hand of the state, China’s engineering education...would benefit not only the railroad sector but also other aspects of the economic and social development of the Republican state” (85).

Chapters 3 and 4 move from institutional history to social and economic history. Here Köll notes that the impact of the railroad was critical, but markedly differently from that in other countries. Whereas other railroads, particularly in the United States, helped galvanized industry and urbanization, the railroads of Republican China were most notable for their impact on the primary sector. By knitting rural markets and coastal treaty ports more tightly together, the railroads allowed Chinese farmers to sell into global commodity markets, even as it gave them access to industrial consumer goods such as kerosene, milled flour, matches, and cigarettes. However, Köll is careful not to inflate their significance. She believes that ultimately, railroads’ potency as “an aspirational symbol of modernization and efficiency was out of proportion to their actual territorial expansion and their significance for rural passengers...” (161).

Chapters 5 and 6 take us through the entirety of Chiang Kaishek’s Guomindang (GMD) rule (1928-1949). Chapter 5 covers the prewar “Nanjing decade,” the period between 1928 and 1937 during GMD rule but prior to Japanese invasion. Köll takes a mixed view of the Nanjing decade. She notes the impressive investment in human capital made by the GMD’s Railroad Ministry. This allowed for the indigenization of China’s railroad personnel, and raised the level of technical competence throughout government. By training China’s first generation of professional engineers, the railroad began to spur technological advancement in the industrial sector. At the same time, GMD governance left much to be desired. It relentlessly politicized the railroad ministry, “...with special party branches targeting administrative and engineering elites in all railroad bureaus and headquarters” (168). More importantly, like its predecessor, it failed to meaningfully increase China’s rail track mileage.

Chapter 6 takes us through the war. It serves as a fascinating intercalary chapter: the narrative moves away from a social history of the railroad, and toward one that uses the railroad to explore wartime China. Köll finds that the railroad workers were treated extremely well by the occupying Japanese, and little evidence of either communist or nationalist enthusiasm. In this sense, her findings are allied with work by Timothy Brook and others.<sup>3</sup> Equally interesting is her positive appraisal of the GMD war effort, at least relative to the Communist guerrillas. She finds stories of communist gallantry in blowing up railroads to be little more than mythmaking. In fact, destroying rail lines requires a surprisingly amount of technical sophistication. It was the GMD, with its corps of trained engineers, that deserves

most of the credit for cutting Japanese rail links and stymieing the invading forces. It should also be stated that this chapter is an impressive piece of writing. Wartime histories are notoriously difficult to craft, as they require the scholar both to contextualize the narrative within the military situation and to prevent the narrative from getting bogged down in the minutiae of troop movements and logistics. Köll’s chapter stands as a model of how to thread this needle.

Chapters 7 and 8 tell the history of the railroad in the Mao Era. Though organizationally the early PRC railroads inherited much from the GMD, the Communist state was considerably more effective at building new track. Under the first five year plan (1952-1957), “operating mileage increased by approximately 2,400 miles, of which 500 miles consisted of new double- or multitrack sections” (234). In the 1950s and 1960s, China built out its first truly national rail network. A key component of this success was the “railroad corps,” a railroad construction corps under official control of the PLA. According to Köll, the incorporation of engineering and construction into military units “...enabled the building of ambitious railroad projects in difficult terrains, such as the 1,200-mile-long line from Lanzhou to Urumqi...” (241). In short, though the PRC borrowed much from the Nationalists, its organizational innovations were critical to promoting economic development.

In Chapter 8, things go less smoothly. Köll sees the Great Leap Forward and Cultural Revolution as nothing short of disastrous for the nation’s railroads—both in terms of the lived experience of its personnel and in terms of the nation’s capacity to transport people and goods across long distances. Of course this is an old story, but Köll adds to it a new and highly original analysis: the use of accident rates and delays as a proxy for the costs of revolutionary upheaval. Hence, rail accident rates declined steadily during the First Five Year Plan, only to spike during the Great Leap Forward and Cultural Revolution. Similarly, we learn that “[t]he number of days needed for the turnover of freight cars increased steadily from 1966 to 1976...in 1970 the average total turnover time...was 12 percent longer than in 1965, with a 10 percent increase in time spent changing freight cars” (273). Köll fleshes out these statistics with a political narrative, detailing the jockeying for power between rebel factions, the PLA, and more technocratically inclined party members. She also shows that Mao and other senior cadres were increasingly frustrated by the disruption of the rail network, which was critical to the technocrats and their allies in the PLA gaining the upper hand.

Köll concludes the book with a discussion of the post-Mao era. She poses the question that, in one form or another, faces all historians of modern China. Namely, “[i]n light of the impressive expansion of domestic networks and advances in high-speed rail, does the history of China’s railroad matter at all...?” Köll answers in the affirmative, citing the Republican-era railroad bureaus—themselves an adaptation meant to accommodate the fragmentation of the Qing-era railroads. Writes Köll, “...as an institution the railroad bureau system even survived the abolition of the Ministry of Railways in 2013 and continued under its successor, the China Railway

Corporation” (291). Köll goes on to note that in spite of China’s impressive railway mileage and its phenomenal technological progress in high-speed rail, “[f]rom a financial perspective, the Chinese railroad sector today performs little better than it did during the pre-1949 period” (292). Despite the 2013 corporatization, Chinese railways often pursue political or strategic mandates rather than profit. That is, railroads are seen as “nation-building efforts to integrate the ethnic minority areas and to reduce economic and social inequalities” (293). Indeed, the railway has unusual geopolitical importance as a centerpiece of Xi Jinping’s One Belt, One Road Initiative—a vision that Köll traces to Sun Yatsen. In highlighting the primacy of strategic, rather than economic, logic that continues to guide Chinese rail policy Köll’s book is highly prescient. It anticipates the recent revelations regarding the fraudulent rail traffic that constitutes much of the Belt and Road Initiative rail freight,<sup>4</sup> as well as the increasing financial burden that an over-extend rail sector places on economic development.<sup>5</sup>

Ultimately, one of the work’s most valuable contributions to the field is to apply the methodologies of firm-focused business history to Mao-era *shiyè danwèi* (“public service units”). In doing so, Köll reaches some surprising conclusions. Though institutional continuities between the socialist period and the pre-socialist past are no longer unexpected by historians, the specific continuities of industrial organization are revealing. For example, in light of Eckstein and Andors’s work on Soviet and Maoist influences on Chinese industrial organization,<sup>6</sup> it was interesting to read about how the railroad bureaus—at the very heart of the industrial economy—continued to operate with same basic Republican-era organizational structure throughout the entirety of the socialist period. Moreover, though the Railway Ministry was severely buffeted by political campaigns and by the Cultural Revolution in particular, there is no sign that it was captured by regional party committees to nearly the extent of other technocratic ministries.<sup>7</sup> Indeed,

despite Köll’s harsh assessment of the Great Leap Forward and Cultural Revolution, the Maoist political system comes off as a more capable steward of development than its predecessors. The contrast between the rapid track expansion under the CCP—expansion that for better or worse continues to this day—to the almost complete lack of any railway construction during the entire Republican era is striking.

Finally, Köll’s important new book poses a number of questions. First, there is the matter of the source base. Köll’s chapters on the PRC are necessarily drawn from publications available in libraries, rather than as-yet inaccessible archives. How might access to the archives have changed the PRC narrative? What outstanding questions does Köll have about Mao-era railroads that might yield to archival materials? Second, though there is much continuity between Qing-era railroads and the present day, there is also much that is different. In the Qing, railroad construction was a source of China’s acute capital deficits as it needed to import machinery, technology, and professional expertise. As Köll shows, this deficit—along with the unequal treaties—constituted the logic for China’s early, “semi-colonial” railway system. Today, on the contrary, China is a world leader in railroad technology, and railroad construction provides a crucial outlet for a serious capital glut. How does this change the political and social implications of railway management and expansion? Finally, Köll wisely declines to speculate on rail development’s impact on various classes of Chinese society, as this would be far too meandering a digression. Nevertheless, the socio-economic implications of railroads—who benefits and by how much?—are important. It would be interesting to hear Köll’s thoughts on whether these questions are tractable to archival history and how, or if they are data questions best left to social scientists.

<sup>1</sup> On the institutional heritage, see Jean Chun Oi, *Rural China Takes off: Institutional Foundations of Economic Reform* (Berkeley: University of California Press, 1999); on capital accumulation see Chris Bramall, *In Praise of Maoist Economic Planning: Living Standards and Economic Development in Sichuan since 1931*, (Oxford: Oxford University Press, 1993).

<sup>2</sup> On land ownership reforms and local government’s use of land to purchase foreign technology, see Meg Rithmire, *Land Bargains and Chinese Capitalism: The Politics of Property Rights under Reform* (New York: Cambridge University Press, 2015). On financial reforms see Carl E. Walter and Fraser J. T. Howie, *Red Capitalism: The Fragile Financial Foundation of China’s Extraordinary Rise* (Chichester: Wiley, 2011) as well as Stephen Bell and Hui Feng, *The Rise of the People’s Bank of China: The Politics of Institutional Change* (Cambridge: Harvard University Press, 2013). Note that Rithmire, Walter, and Howe also stress the historical importance of the planned economy.

<sup>3</sup> Timothy Brook, *Collaboration: Japanese Agents and Local Elites in Wartime China* (Cambridge: Harvard University Press, 2005). Also see Prasenjit Duara, *Sovereignty and Authenticity: Manchukuo and the East Asian Modern* (Lanham: Rowman &

Littlefield Publishers, 2003) and Margherita Zanasi, “New Perspectives on Chinese Collaboration” *The Asia-Pacific Journal* vol. 6:7 (July 2, 2008), <https://apjff.org/-Margherita-Zanasi/2828/article.pdf>. Note that this scholarship is largely concerned with the discourse surrounding collaboration; Köll adds to this a discussion of material incentives.

<sup>4</sup> Sun Lichao “Deng Shenxian: Zhong-Ou Banlie ji ‘paomo’” (Deng Shenxian: China-Europe freight packed with “bubbles”), *Zhongguo Jingyingbao*, July 26, 2019, <https://cj.sina.com.cn/articles/view/5808591992/15a38147801900jum7>, accessed September 2, 2019.

<sup>5</sup> Zhao Jian, “What’s Not Great About China’s High-Speed Rail? The Debt,” *Caixin Global*, January 29, 2019, <https://www.caixinglobal.com/2019-01-29/zhao-jian-whats-not-great-about-chinas-high-speed-rail-the-debt-101375797.html>, accessed September 2, 2019.

<sup>6</sup> Alexander Eckstein, *China’s Economic Revolution* (New York: Cambridge University Press, 1977) and Stephen Andors, *China’s Industrial Revolution: Politics, Planning, and Management, 1949 to the Present* (New York: Pantheon Books, 1977).

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<sup>7</sup> Compare this to the capture of the Banking system by provincial-level party apparatuses, Carl E. Walter, “Party-State Relations in the People’s Republic of China: The Role of the

People’s Bank and the Local Party in Economic Management,” Dissertation (Stanford University, 1982).

## Response

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I am grateful to Matthew Lowenstein for his very thoughtful and generous review of my book. I am delighted to respond to his questions with answers that are by nature rather speculative and thus invite further discussion.

As Lowenstein points out in his review, my book presents a grand narrative of China's railroad history throughout the twentieth century from railroad construction in the last decade of the Qing dynasty to the introduction of high speed rail. Although the book does not explicitly focus on the post-1949 period, I am glad that the relevant chapters are of interest to PRC historians and contribute to the discussion about institutional continuities and disruptions across the 1949 divide. The historical trajectory of railroads beginning as Sino-Foreign ventures in the late Qing, the process of nationalization in the early Republic, bureaucratic institution-building during the Nanjing decade and transformation and integration of the rail network into the socialist nation-state after the revolution give evidence of continuities as well as disruptions. The continued existence of the railroad bureau (*tieluju*) system, in particular, shows surprising resilience, surviving the abolition of the Ministry of Railways in 2013. Of course, the institutional transformation of and within a national railroad system is a complex topic as we are dealing with a huge operational and administrative system.

This leads us directly to Matthew Lowenstein's first question regarding potential new interpretations if China historians would gain access to archives curated and maintained by the former Ministry of Railways and the various railroad bureaus. As I describe in the book, despite intensive lobbying at several regional railroad bureaus and an official visit at the Ministry of Railways in Beijing, I never succeeded in gaining access to their archives. In this context, Lowenstein's question of how access might change our post-1949 narrative of the railroad system and its historical trajectory is legitimate and important. I speculate that new material from the railroad bureau's archives would not change my existing argument about the nature of the railroad system's institutional evolution and transformation, but would instead add substantial complexity to the research agenda by providing evidence from railroad bureaus and stations at the local, regional and provincial level.

For example, it would be very insightful if we had evidence showing how exactly the communication and command structures worked between regional railroad bureaus and specific stations, especially at railroad hubs such as Xuzhou, Jinan, or Zhengzhou. Archival evidence of communication and interaction between line management and stationmasters during the Republican period allows us to analyze the stationmasters' decision-making process regarding freight car distribution, showing that their incentives often were not aligned with the line management's regulations and economic targets.

Unfortunately, we are not yet in a position to document in detail the dynamics at the local and regional level of the rail system for the post-1949 period. It would be particularly interesting to analyze the implementation of government policies across railroad bureaus during the Great Leap Forward and the Cultural Revolution. Exploring how central government policies would have been discussed by staff members with professional and administrative expertise at the railroad bureaus and local stations might uncover specific challenges of implementing central party policies in a complex operational system, but also add new bottom-up information on potential critical discussions and political tensions at the local institutional level.

I also imagine that access to archival material might allow us to research the power relationship between different railroad bureaus and the Ministry of Railways and identify potential diverging economic goals related to passenger and freight transport. It would be interesting to see discussions about state-directed targets and economic policies and their adaptation to the financial and operational realities of different lines within the national railroad network. However, the archival documents I would be most interested in discovering are related to the so-called railway transportation courts, the railroads' own court system which was integrated into the national court system in 2012. Access to legal case files might strengthen my argument of the railroad system functioning almost as "a state within a state" under the purview of the Ministry of Railways with a relatively high level of autonomy and power compared to other ministries. In addition, access to those files might also give us a chance to explore the relationship between the interests of the central government, railroad bureaus and local society through the lens of the judicial process.

Matthew Lowenstein's second line of questions involves the issue of how the semi-colonial origins change the political and social implications of railway management and expansion. My book presents the semi-colonial origins of China's first lines as a vital factor in the evolution of the line-centered railroad bureau system during the Republican period. Of course, I agree with Lowenstein's assessment that there is inherent continuity as well as change in the system as it moves into the post-1949 period. Whereas semi-colonial origins created administrative, financial and operational standardization problems during the Republic, these issues were no longer important after 1949. The PRC's rail network expansion became possible due to the role of the state setting new economic and political priorities and transferring railroad construction to the PLA's newly founded railroad army corps (*tiedaobing*). At the same time, I argue that the relatively quick recovery of the war-damaged rail network and its integration into the socialist state were possible due to the bureau system which already possessed many characteristics of the work unit (*danwei*) system. In short, while

the PRC's rail expansion would not have been possible without the central role of the state and its allocation of resources in terms of capital and labor, the bureau system afforded a relatively smooth transformation of its administrative system into the new political framework and easy integration of new lines into the network.

This brings me to Matthew Lowenstein's last question, namely whether access to the archives would allow historians to provide a better assessment of who benefits and to what extent from railroads as transportation infrastructure. As an institutional railroad history, my study makes an argument for the important economic and social benefits railroads introduced to the Chinese who embraced the new technology and related opportunities of socio-economic mobility with great pragmatism and rationality. However, we need a lot more

studies, including research by social scientists, on transportation networks and their socio-economic impact in order to evaluate how railroads transformed local/regional economies and societies in twentieth-century China. Thomas Rawski and Kenneth Pomeranz have shown in their work how to approach these issues from an economist's and an economic historian's perspective.<sup>1</sup> I hope that scholars in different disciplines will continue to explore railroad infrastructure as a lens on China's historical trajectory. At the beginning of the twenty-first century, moving people, goods and ideas continues to shape China's development agenda in the domestic realm and on the global stage.

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<sup>1</sup> Thomas G. Rawski, *Economic Growth in Prewar China* (Berkeley: University of California Press, 1989); Kenneth Pomeranz, *The Making of a Hinterland: State, Society, and*

*Economy in Inland North China, 1853-1937* (Berkeley: University of California Press, 1993).