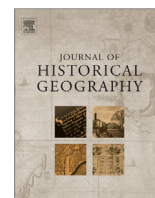


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## Railroads and regional labor markets in the mid-nineteenth-century United States: a case study of the Baltimore and Ohio Railroad

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### Abstract

Previous studies of railroad employment in the nineteenth-century USA have focused on occupational mobility but remarkably little is known in quantitative terms about the geographical and inter-sectoral mobility of railroad workers in a regional or inter-regional context. Uniquely in the antebellum era among the four main trans-Appalachian railroads, which were the largest in the nation, the Baltimore and Ohio (B&O) published comprehensive payroll lists for several specific months between 1842 and 1857. Analysis of these payrolls in conjunction with city directories and manuscript schedules from the 1860 census has enabled reconstruction of key aspects of regional labor market dynamics linked to the railroad sector during this period. A number of important findings emerge, which both amplify and run counter to received wisdom. The most significant of these is that railroad workers fell largely into two groups regardless of skill level. The first group made the railroad a source of long-term employment, while the second used the railroad as a source of temporary employment either in between spells of agricultural labor locally or as a means of raising funds to move west and acquire land in newly settled districts closer to the frontier. This nineteenth-century tendency to revert to the agricultural sector runs counter to the expectations of twentieth-century human capital theory. The conventional post-bellum picture of large numbers of rootless 'boomers' gravitating westwards between railroad companies, is not in evidence on the B&O of the late 1850s. Over longer time-spans, there is some westward movement along the B&O itself, although this was partially counterbalanced by an eastward flow toward Baltimore from the interior. Shop-men had lower retention rates, especially at more westerly points, than the supposedly mobile trainmen, while railroad employees in generic trades, such as blacksmiths and machinists, were more likely to move than their non-railroad counterparts. This important finding suggests that generic workers should not be treated as homogeneous occupational groups, although such homogeneity is very largely implicit in the coding of available digital census datasets. Further to this, extensive construction work along the line of the B&O persisted long after operational service had commenced, and this provided additional opportunities for regular or intermittent railroad labor force participation. Overall, though it was not immune from competition for labor, the enormous size of the B&O compared to most manufacturing establishments of the time made it a key regulator of employment opportunity across the region that it served.

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A huge literature on the transformational effects of railroads in the nineteenth-century has developed, much of it inspired by the landmark works of economic historians, such as Robert Fogel and Albert Fishlow. Following Alfred Chandler, business historians have also turned to the formative period of railroad growth for understanding managerial practices and accounting procedures. Social

historians have influenced this work more recently, emphasizing the social construction of technologies.<sup>1</sup> In contrast, given that by 1880 railroad employees constituted 11% of the entire industrial workforce of the United States (418,957 out of 3.8 million industrial workers), the literature specifically focused on railroad labor and its relationships to regional and national labor markets is much more

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limited, despite the availability of several well-known texts.<sup>2</sup> Three main factors explain this restricted coverage of the topic. First, the development of the industry extended over a lengthy nineteenth-century time-span from the late 1820s onwards. Second, by 1900 it had enormous geographical extent, given that nearly 200,000 miles of track had been laid since 1850. Third, it displayed an extraordinary complexity in industrial organization and re-organization over the period. Of more than 7000 US railroad corporations ever chartered, the majority first appeared in the nineteenth-century.<sup>3</sup> Railroads therefore operated in such widely varying historical, geographical and organizational contexts that findings from one set of circumstances cannot necessarily be assumed to apply in others. For example, Licht's classic study of railroad labor contains extensive analysis of occupational mobility, but has no detailed examination of geographical mobility in an industry that necessarily favored movement from place to place. Also, Licht's occupational mobility findings were based on limited data, mainly drawn from relatively small railroads in New England and Ohio during the 1850s and 1860s. These experiences took shape in a very different environment from 1880s Iowa, as described by Stromquist or the West of the 1890s traversed by Ducker's Atchison, Topeka and Santa Fe. Once account is taken of Lightner's work on the Illinois Central and Taillon's broader studies of railroad brotherhoods, the list of classic railroad labor studies is almost exhausted.

The literature is virtually silent about labor on the four major eastern trunk lines, namely the Pennsylvania, the Erie, the New York Central and the Baltimore and Ohio (B&O), apart from during periods of industrial upheaval, such as the strike of 1877 or the Pullman strike of 1894.<sup>4</sup> This represents a major gap in our understanding of the historical geography of the United States before the Civil War, because these trunk lines played a pivotal role in crossing the Appalachian barrier to facilitate the westward movement of workers and immigrants and to integrate previously separate regional economic sub-systems.<sup>5</sup> In this era these same trunk lines, as the leading railroads in the nation, were also

learning the corporate management and administrative lessons that were to make them, in Chandler's famous words, 'the Nation's first big business'.<sup>6</sup> Our lack of knowledge is compounded by recent analysis of railroad workers from the US 1880 census, which shows that from a national perspective and even at that relatively late date, the major concentrations of railroad labor were largely in the industrialized northeastern states served by these trunk lines. So the 1880s experience of groups of unionized railroad workers in the frontier west, for example, cannot be assumed to be representative of the whole industry, and especially of the eastern trunk lines in the antebellum period, before unions became established.<sup>7</sup>

A further serious shortcoming in our understanding of processes of supply and demand for railroad labor in relation to wider employment contexts has emerged unexpectedly from an investigation into occupational categories in the 1880 census.<sup>8</sup> This shows that a distinction needs to be made between jobs which are generic across a number of industrial sectors, e.g. carpenters and machinists, and those which are more specific to individual work contexts, such as coal miners and railroad engineers (locomotive drivers). From a general standpoint of both occupational and geographical mobility, especially within industrializing areas, generic workers would potentially have had more alternative employment opportunities and locations open to them than their industry-specific colleagues. However, we know almost nothing about how this affected mobility over timescales of varying length, with the partial exception of Meyer's work on 'networked machinists'.<sup>9</sup> The present study aims to start addressing these major gaps in our understanding of railroad employment and labor mobility, by focusing on the antebellum period in part of the Northeast United States. The B&O is used as an example, because it is the only eastern trunk line for which detailed information on employees is available prior to 1860. Before analysis of the B&O payrolls to answer the specific research questions detailed below, both railroad labor mobility and the B&O case study must be placed in their broader theoretical and empirical contexts.

<sup>1</sup> Nineteenth-century railroad workers have not been examined in over 25 years as a subject of historical and geographic study and analysis. The literature on antebellum railroad workers, moreover, is restricted to a handful of studies. A. Fishlow, *American Railroads and the Transformation of the Ante-bellum Economy*, Cambridge, 1965; R.W. Fogel, *Railroads and American Economic Growth: Essays in Econometric History*, Baltimore, 1964; A.D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business*, Cambridge, 1977; D.W. Meinig, *The Shaping of America: A Geographical Perspective on 500 years of History*, Vol. 2 *Continental America, 1800–1867*, New Haven, 1993; D.W. Meinig, *The Shaping of America: A Geographical Perspective on 500 years of History*, Vol. 3, *Transcontinental America, 1850–1915*, New Haven, 1998; J. Stover, *American Railroads*, 2nd Edition, Chicago, 1977; S. Stromquist, *A Generation of Boomers: The Pattern of Railroad Labor Conflict in Nineteenth-century America*, Urbana, 1987; J.E. Vance, *The North American Railroad: Its Origin, Evolution and Geography*, Baltimore, 1995; B. Welke, *Recasting American Liberty: Gender, Race, Law, and the Railroad Revolution, 1865–1920*, Cambridge, 2001; R.J. Orsi, *Sunset Limited: The Southern Pacific Railroad and the Development of the American West, 1850–1930*, Berkeley, 2005; J.H. Ducker, *Men of the Steel Rails: Workers on the Atchison, Topeka & Santa Fe Railroad, 1869–1900*, Lincoln, Nebraska, 1983; W. Licht, *Working for the Railroad: The Organization of Work in the Nineteenth Century*, Princeton, 1983; D.L. Lightner, *Labor on the Illinois Central Railroad, 1852–1900: The Evolution of an Industrial Environment*, New York, 1977; P.M. Taillon, *Culture, Politics, and the Making of Railroad Brotherhoods, 1863–1916*, Ph.D. Dissertation, University of Wisconsin–Madison, 1997; P.M. Taillon, *Good, Reliable, White Men: Railroad Brotherhoods, 1877–1917*, Urbana, 2009; R. White, *Railroaded: The Transcontinentals and the Making of Modern America*, New York, 2011, provides additional national level context but does not focus on labor issues, see also <http://www.stanford.edu/group/spatialhistory/cgi-bin/site/pub.php?id=99> (accessed November 10, 2012) for a visualization study of labor dismissals on the Chicago, Burlington, and Quincy Railroad 1877–88, undertaken at the suggestion of one of the present authors. On the social construction of technologies, see D. Edgerton, *The Shock of the Old: Technology in Global History since 1900*, New York, 2006. Edgerton emphasizes a history of 'technology in use' rather than invention and the persistence of old technologies among the modern. Edgerton's view is especially relevant because with railroads the question is how people adjusted to them, adapted, and came to terms with their use and meaning. See also, D. Nye, *Technology Matters: Questions to Live With*, Cambridge, 2006, especially 46–47. Nye emphasizes that technology is not deterministic and is 'unpredictable', often with 'no immediate impact'.

<sup>2</sup> The figure for total railroad employment can be found in Department of the Interior, Census Office, *Report on the Agencies of Transportation in the United States*, Washington, 1883, 257. The figure for total industrial employment is calculated from the national totals of employment by occupation in the digital version of the US 1880 Census: Minnesota Population Center, *North Atlantic Population Project: Complete Count Microdata. Version 2.0 [Machine-readable database]*, Minneapolis, 2008 (<http://www.nappdata.org>). Transportation workers are included in the total, but the calculation is necessarily subject to interpretation of what constitutes 'industrial' labor.

<sup>3</sup> J.F. Stover, *The Routledge Historical Atlas of the American Railroads*, New York, 1999; W.D. Edson, *Railroad Names: A Directory of Common Carrier Railroads Operating in the United States, 1826–1982*, Potomac, Maryland, 1984.

<sup>4</sup> E.W. Martin, *The History of the Great Riots: The Strikes and Riots on the Various Railroads of the United States and in the Mining Regions Together with a Full History of the Molly Maguires*, Philadelphia, 1877; R. Schneirov, R. Salvatore and S. Stromquist (Eds.), *The Pullman Strike and the Crisis of the 1890s: Essays on Labor and Politics*, Urbana, 1999.

<sup>5</sup> S. De Geer, The American manufacturing belt, *Geografiska Annaler* 9 (1927) 233–359; D.R. Meyer, The national integration of regional economies 1860–1920, in: R.D. Mitchell, P.A. Groves (Eds.), *North America: The Historical Geography of a Changing Continent*, London, 1987.

<sup>6</sup> A.D. Chandler, *The Railroads: The Nation's First Big Business: Sources and Readings*, New York, 1965.

<sup>7</sup> R.G. Healey, Railroads and immigration in the northeast United States 1850–1900, *Geography Compass* 6, (2012) 455–476.

<sup>8</sup> R.G. Healey, A full-scale implementation of the NAPP 1880 U.S. Census dataset using dimensional modeling and data-warehousing technology, *Historical Methods* 44, (2011) 95–105.

<sup>9</sup> D.R. Meyer, *Networked Machinists: High-technology Industries in Antebellum America*, Baltimore, 2006.

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