

# Railways' Economic Impact on Uttar Pradesh and Colonial North India (1860-1914)



# Railways' Economic Impact on Uttar Pradesh and Colonial North India (1860-1914):

*The Iron Raj*

By

Ian D. Derbyshire

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(1860-1914): The Iron Raj

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# CONTENTS

PREFACE .....	viii
The stimulus for this study .....	viii

INTRODUCTION.....	1
Interpretations of agrarian change and railways' impact in colonial India .....	6
Previous research on the UP's 1860-1914 economy.....	14
Research since the 1980s on railways and India's 1860-1914 economy..	17
What this book covers.....	19

## **PART ONE: BEFORE RAILWAYS**

1: PRE-RAIL TRADE AND TRANSPORT CONSTRAINTS .....	22
Section 1: Pre-rail trade volumes .....	22
Section 2: Pre-rail land and river transport costs and speeds .....	31
Section 3: Intermediate alternatives to railways?.....	41

## **PART TWO: INTRODUCTION AND OPERATION OF RAILWAYS**

2: FINANCING THE RAILWAYS AND ROUTE AND GAUGE POLICIES .....	52
Section 1: Motivations behind India's railway development.....	52
Section 2: How the UP's railways were financed .....	57
Section 3: Routing and gauge policy .....	91
3: BUILDING AND OPERATING THE UP'S RAILWAYS .....	101
Section 1: Construction challenges and responses to North Indian conditions .....	101
Section 2: UP railways' operation and management .....	112
Section 3: Improving operational efficiency.....	128
4: COMPETITION WITH OTHER TRANSPORT MODES AND THE IMPACT OF THE UP'S PEASANT ECONOMY ON RAILWAYS.....	147
Section 1: UP railways' competition with other transport modes.....	147
Section 2: The impact of the rhythms of North India's peasant economy on railways.....	156

### **PART THREE: THE RURAL ECONOMY**

5: MARKET INTEGRATION AND THE RISING PRICE LEVEL .....	164
Section 1: Pre-rail price integration and trends.....	164
Section 2: Market widening and price integration, 1860 to 1914 .....	170
Section 3: Price trends for manufactured and consumption goods ...	194
6: CROPPING TRENDS IN THE UP 1860-1914 .....	204
Section 1: Peasant economy – its constraints and rationale .....	205
Section 2: General UP cropping trends 1840-1914.....	212
Section 3: Temporal and spatial trends for high-value traditional cash crops .....	233
Section 4: Temporal and spatial trends for middle-value cash crops ..	238
Section 5: Temporal and spatial trends for low-value consumption crops .....	251
7: THE GRAIN TRADE, GRAIN STORES AND FAMINE.....	262
Section 1: The wheat trade.....	262
Section 2: The trade in other grains and the crop failure grain trade...	273
Section 3: Gluts, grain stores and their reduction .....	288
Section 4: The changing nature of famine .....	302
8: THE BENEFICIARIES OF AGRARIAN CHANGE - SOCIAL AND REGIONAL TRENDS .....	310
Section 1: Ingredients of independence .....	312
Section 2: Cultivators and agrarian change in the railway era, 1860-1914 .....	331
Section 3: Cycles of dependence .....	344
Section 4: Sub-regional agrarian changes, 1860-1914.....	351
Section 5: Commercialisation and agricultural development? .....	367

### **PART FOUR: THE URBAN ECONOMY**

9: TRADERS AND THE TRADING STRUCTURE IN THE RAILWAY ERA .....	376
Section 1: The expansion of trade and the opening of new trading routes .....	377
Section 2: Changes in the trading structure.....	386
Section 3: Traders and the trading community .....	398
Section 4: The re-entry of Europeans and the development of up- country agencies .....	404
Section 5: The impact of railways on trading methods .....	413

<b>10: URBAN CENTRES AND PROCESSING, SERVICE AND CONSUMPTION INDUSTRIES .....</b>		<b>422</b>
Section 1: The impact of railways on urban centres .....		422
Section 2: The development of processing and bulking industries ...		436
Section 3: Railway service industries .....		447
Section 4: The development of consumption industries .....		466
Section 5: Factors that limited the UP's industrial development .....		482
<b>11: KANPUR – A PARTNERSHIP GROWTH POLE .....</b>		<b>487</b>
Section 1: The transition from commercial entrepot to industrial centre .....		489
Section 2: Key elements in Kanpur's industrial growth.....		512
Section 3: Mills, labour and the hinterland .....		521
 <b>PART FIVE: RAILWAYS' MACRO IMPACT</b>		
<b>12: A SOCIAL SAVINGS APPROACH .....</b>		<b>530</b>
Section 1: The concept of social savings .....		530
Section 2: Freight social savings in India .....		535
Section 3: Freight social savings for core, semi periphery and periphery countries.....		537
Section 4: New approaches to calculating railways' macro impact ...		543
Annex: An estimate of pure freight social savings in 1920 in the UP.....		549
<b>GLOSSARY.....</b>		<b>562</b>
<b>LIST OF ABBREVIATIONS.....</b>		<b>567</b>
<b>BIBLIOGRAPHY .....</b>		<b>570</b>
A: Primary Sources: Archives, Newspapers and Official Publications .....		570
B: Unpublished Dissertations and Manuscripts .....		576
C: Secondary Sources .....		579

# PREFACE

## The stimulus for this study

This book's roots can be traced back to a University of Cambridge dissertation<sup>1</sup> carried out under the supervision of Professor Christopher A. Bayly. This research examined railways' impact between 1860 and 1914 on the predominantly agrarian and peasant-based economy of Uttar Pradesh (UP): what was then the United Provinces of Agra and Oudh (Awadh<sup>2</sup>). Situated in northern India's fertile Upper Ganges (Ganga) Plain, the UP is India's fourth largest state, with an area of 240,000 sq. km (93,000 sq. mi.), and its most populous, at 240 million in 2021.

This book incorporates findings from subsequent research on financing, constructing and operating the UP's colonial-era railways<sup>3</sup> and on their macro-economic impact, as measured through social savings (the change in

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<sup>1</sup> Ian D. Derbyshire, *Opening up the Interior: The Impact of Railways on the North Indian Economy and Society, 1860-1914* (University of Cambridge PhD, 1985).

<sup>2</sup> Since India's independence the names of many provinces, districts, towns and rivers have changed: for example, Oudh, Benares and the river Jumna to Awadh, Varanasi and the Yamuna. This book uses, in most cases, the names in use during the 1860-1920 period, but, in some cases, shows in brackets, on first appearance the names now in use.

<sup>3</sup> Derbyshire, Ian D. "The Building of India's Railways: The Application of Western Technology in the Colonial Periphery 1850-1920" (in *Technology and The Raj: Western Technology and Technical Transfers to India 1700-1947*, eds. Roy MacLeod & Deepak Kumar. London: Sage Publications, 1995), 177-215; Derbyshire, Ian D. "Economic Change and the Railways in North India, 1860-1914" (in *Railways in Modern India*, ed. Ian J. Kerr. Delhi: Oxford University Press, 2001), 173-97; Derbyshire, Ian D. "Competition and Adaptation: The Operation of Railways in Northern India: Uttar Pradesh 1860-1914" (in *Our Indian Railway: Themes in India's Railway History*, eds. Roopa Srinivasan, Manish Tiwari & Sandeep Silas. Delhi: Foundation Books, 2006), 50-75; and Derbyshire, Ian D. "Private and State Enterprise: Financing and Managing the Railways of Colonial North India, 1859-1914" (in *27 Down: New Departures in Indian Railway Studies*, ed. Ian J. Kerr, Delhi: Orient Longman, 2007), 276-313.



national income attributable to railways)<sup>4</sup>. It is informed also by findings from work over recent decades by Ravi Ahuja, Tahir Andrabi and Michael Kuehlwein, David Arnold, Laura Bear, Dan Bogart and Latika Chaudhary, Dave Donaldson, Manu Goswami, John Hurd, Ian J Kerr, Ritika Prasad, Nitin Sinha, Stuart Sweeney, Zoe Yalland and Anand Yang.

My interest in this topic was stimulated by articles on late nineteenth century North Indian trade and early Indian nationalist politics which described a shift, after 1860, in the UP's economic centre of gravity from the river-served east UP to the interior west UP as railways spread<sup>5</sup>. My research sought to better understand this process and the macro- and micro-level opportunities and challenges presented by railways. I chose not to follow the rational economics econometric approach then prevalent in rail impact studies<sup>6</sup>, which risks distortion when applied to a peasant economy. I drew on a mix of India Office colonial records on cropping patterns, trading movements and railway policy, as well as lower-level records, from UP

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<sup>4</sup> Ian D. Derbyshire, *Railways in North India 1864-1914: Aspects of Their Economic Impact* (March 1989 paper held at University of Cambridge South Asian Centre), 1-84.

<sup>5</sup> Bayly, Christopher A. "The Age of Hiatus: The North Indian Economy and Society, 1830-50" (in *Indian Society and the Beginnings of Modernisation, c. 1830-50*, eds. Cyril H. Philips & Mary D. Wainwright. London: University of London, School of Oriental and African Studies, 1976), 83-101; Timberg, Thomas A. "Hiatus and Incubator: Indigenous Trade and Traders, 1837-57" (in *Indian Society and the Beginnings*); Francis C.R Robinson, "Municipal Government and Muslim Separatism in the United Provinces, 1883 to 1916," *MAS*, 7:3 (1973): 389-441, esp. 397-98; Francis C.R. Robinson, *Separatism Among Indian Muslims: The Politics of the United Provinces' Muslims, 1860-1923* (Cambridge: Cambridge University Press, 1974), 59; and Eric Stokes, *The Peasant and the Raj: Studies in Agrarian Society and Peasant Rebellion in Colonial India* (Cambridge: Cambridge University Press, 1978), 228-29.

<sup>6</sup> Robert W. Fogel, *Railroads and American Economic Growth: Essays in Econometric History* (Baltimore: John Hopkins Press, 1964); Albert Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Cambridge MA: Harvard University Press, 1965); Gary R Hawke, *Railways and Economic Growth in England and Wales 1840-70* (Oxford: Clarendon Press, 1970); John H. Coatsworth, *Growth Against Development: The Economic Impact of Railroads in Porfirian Mexico* (De Kalb, Ill: Northern Illinois University Press, 1981); John Hurd, "Railways and the Expansion of Markets in India, 1861-1921," *EEH*, 12:3 (July 1975): 263-88; Hurd, John. "Railways" (in *The Cambridge Economic History of India (CEHI) Volume 2: c. 1750 - c. 1970*. eds. Dharma Kumar & Meghnad Desai. Cambridge: Cambridge University Press, 1983), 737-61; and MB McAlpin, *Subject to Famine: Food Crisis and Economic Change in Western India, 1860-1920* (Princeton, NJ: Princeton University Press, 1983).

divisional, district and commercial centres, notably Cawnpore (Kanpur) and vernacular newspaper reports. The aim was to gain both top-down and bottom-up ‘Subaltern’<sup>7</sup> perspectives on railways’ impact.

This work would not have been possible without the assistance of library staff at the Indian Office Library and Record Office (London), Cambridge University Library (Official Publications room), the South Asian Centre (Cambridge University), and the Public Records Office (Kew). In India, particularly helpful were the National Archives, Rail Transport Museum, Railway Board Library, Nehru Memorial Library, Jawaharlal Nehru University and Delhi University in New Delhi; the State Archives and Board of Revenue Library in Lucknow; the Regional Archives in Allahabad (Prayagraj); the National Library in Calcutta (Kolkata); the Upper India Chamber of Commerce (UI CoC) and S.P. Mehra of *The Citizen* in Kanpur; and the Collectorate Record Offices in Gorakhpur, Meerut and Moradabad. Financial support at various stages of this research was provided by the Social Science Research Council, Jesus College Cambridge and the British Academy. My principal debts fall to Professor Christopher A. Bayly (1945-2015) for his support and inspiration during the initial research and also from Roy MacLeod, Deepak Kumar and Ian J. Kerr (1941-2020) for encouraging me to publish subsequent articles on rail construction and management.

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<sup>7</sup> Ranajit Guha ed. *Subaltern Studies No. 1: Writings on South Asian History and Society* (Delhi: Oxford University Press, 1982). There were 11 volumes of the Subaltern Studies series to 2000.

## INTRODUCTION

On 1 August 1864 the first train passed along the newly opened East Indian Railway (EIR) line between Delhi and Calcutta. Half a century of feverish construction ensued, criss-crossing India like iron rods, built principally from capital inflows from London<sup>8</sup>. By 1915 Rs 50,841 lakh<sup>9</sup> had been invested in an all-India track mileage of 34,235 miles, which surpassed the combined rail networks of the African continent and China<sup>10</sup>.

In the long half century between 1860 and 1914, steamships and railways bound together a world economy embracing Asia, Africa, South America and the old Atlantic trading axis of Europe and North America, which formed the industrialising "engine of growth"<sup>11</sup>. European trade with Asia had previously involved principally high-value luxuries. Now lower-value bulky agricultural commodities were shipped to Europe and intra-Asian trade in such goods also expanded.

India's export trade increased in value by 401% between the 1870s and 1910s and the import trade by 472% (Table 1). Foreign trade doubled as a proportion of India's national income, from 10-12% in the 1860s to 18-22%

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<sup>8</sup> William J. MacPherson, *British Investment in Indian Guaranteed Railways 1845-75* (University of Cambridge PhD, 1954) calculated that by 1875 £107 million had been invested by companies and the state in Indian railways. This compared with a total British capital investment of £180 million between 1850-75. Alexander K. Cairncross, *Home and Foreign Investment, 1870-1913: Studies in Capital Accumulation* (Cambridge: Cambridge University Press, 1953) put India's share of total British overseas investment at £160 million (20%) out of £785 million in 1870; at £270 million (21%) in 1885; and at £380 million (10%) out of £3,780 million in 1913.

<sup>9</sup> A lakh is 100,000.

<sup>10</sup> Calculated from Clive B. Dudley & Morris D. Morris, "Selected Railway Statistics for the Indian Sub-Continent: 1853-1946-47," *Artha Vijnana: Journal of the Gokhale Institute of Politics and Economics*, 17:3 (September 1975): 187-298; and Anthony J.H. Latham, *The International Economy and the Underdeveloped World, 1865-1914* (London: Croom Helm, 1978), 22.

<sup>11</sup> W. Arthur Lewis, *Growth and Fluctuations, 1870-1913* (London: George Allen and Unwin, 1978).

around 1914<sup>12</sup>. Britain became India's main trading partner, with India absorbing 13% of Britain's exports in the early 1880s (up from 8% in the early 1870s) and Britain supplying four-fifths of India's imports in the same period<sup>13</sup>.

**Table 1: India's overall exports and imports by value<sup>14</sup>**

<i>Period</i>	<i>Annual exports (Rs million)</i>	<i>Index</i>	<i>Annual imports (Rs million)</i>	<i>Index</i>
1870-79	5,973	100	3,490	100
1880-89	8,743	146	5,591	160
1890-99	10,674	179	6,918	198
1900-09	15,177	256	9,978	286
1910-19	23,984	401	16,493	472

India's trading pattern played a vital part in solving Britain's complicated web of international payments. Tables 2 and 3 set out the principal commodities (by value) exported and imported. Opium and Bombay (Mumbai) mill yarn were sent from India to China, oilseeds, raw cotton and hides to Europe, and flour and jute to Britain. Piece-goods and metals flowed in from Britain and glassware, trinkets and later sugar from Continental Europe. India's favourable trading balances with Europe, America and Asia helped settle British trading debts from purchases of tea, cotton, foodstuffs and manufactured items from these areas<sup>15</sup>, so that it served as a clearing house for the British Empire. Anthony Latham argued that, without the surplus earned by India:

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<sup>12</sup> Tirthankar Roy, *The Economic History of India 1857-1947* (Delhi: Oxford University Press, 2011 3<sup>rd</sup> edn.), 90; and Nabendu Sen, *India in the International Economy, 1858-1913: Some Aspects of Trade and Finance* (Calcutta: Orient Longman, 1992), 34-37.

<sup>13</sup> Peter J. Cain & Anthony G. Hopkins, *British Imperialism: Innovation and Expansion 1688-1914* (London: Longman, 1993), 333.

<sup>14</sup> John Adams, *Economic Change, Exports and Imports: The Case of India 1870-1960* (University of Texas, Austin, PhD, 1966).

<sup>15</sup> Cotton was sent to Japan from India and oilseeds to the US, see Samuel B. Saul, *Studies in British Overseas Trade, 1870-1914* (Liverpool: Liverpool University Press, 1960).

“the whole pattern of international development would have been severely constrained”<sup>16</sup>.

**Table 2: The percentage composition of India's exports by value (5-year averages)<sup>17</sup>**

	1870	1880	1890	1900	1910
Raw cotton	36.4	16.2	14.3	10.7	14.5
Opium	21.4	18.8	9.5	7.3	5.6
Rice	7.1	11.9	11	13.2	11.9
Indigo	5.4	5	3.5	1.9	0.2
Raw jute	4.3	5.9	7.6	8.6	10
Manufactured jute	0.4	1.5	2.6	6.7	8.8
Oilseeds	4.6	8.4	10.4	11.1	10.8
Hides & skins	3.1	5.1	4.8	8.1	6.9
Tea	4.6	8.4	10.4	11.1	10.8
Wheat	0.2	4.8	8	3.8	5.8
Other	12.5	14	17.9	17.5	14.7
<i>To</i>					
Britain	53.6	42.6	34.4	27.5	25.4
Asia	32.2	31.7	26.9	30.9	28.6
Rest of Europe	8.9	17	25.3	24	31.5
America	3.5	4.1	4.9	8	9.8
Other	1.8	4.6	8.5	9.6	4.7

<sup>16</sup> Latham, *The International Economy*, 70.

<sup>17</sup> Source: Anthony J.H. Latham, "Merchandise Trade Imbalances and Uneven Economic Development in India and China," *Journal of European Economic History*, 17:1 (Spring 1978): 33-60, Tables 1-4.

**Table 3: The percentage composition of India's imports by value (5-year averages)<sup>18</sup>**

	1870	1880	1890	1900	1910
Cotton manufactures	44.7	53.2	39.1	36.6	32.1
Cotton: twist & yarn	8.3	7.2	5.2	3.3	2.7
Metals: brass, copper	4.6	3.6	2.7	1.6	2.2
Metals: iron & steel	3.7	3.5	4.3	5.7	7.3
Railway plant, stock	4.3	2.4	2.7	2.7	4.2
Sugar	1.9	2.9	3.8	6.4	9.3
Others	32.5	27.2	42.2	43.7	42.2
<i>From</i>					
Britain	83.7	81.3	74.6	66.4	62.4
Asia	11.2	11.4	11.9	10.7	16
Rest of Europe	1.8	3	7.7	17.2	15
America	0.3	1	2	1.7	3.1
Other	3	3.3	3.8	4	3.5

Ocean steamships and railways brought greatly expanded trade after 1860, but the responses to and effects of this varied across the periphery. In the temperate settler regions of Australia, New Zealand, Canada and the US Midwest European migrants extended arable farming for export<sup>19</sup> and these countries climbed aboard the escalator of economic growth, but South America witnessed skewed growth. Inherited demographic, ecological and institutional structures influenced responses to the opportunities afforded by cheap, speedier, reliable go anywhere railroads.

In 1914, India was still poor, with per capita incomes less than one fifteenth of Britain's<sup>20</sup>. It did not approach anywhere near economic take-off. Nevertheless, there had been considerable expansion of internal and external trade. India's railways moved 2,450 million net ton miles of goods

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<sup>18</sup> Ibid.

<sup>19</sup> James Foreman-Peck, *A History of the World Economy: International Economic Relations Since 1850* (Brighton: Wheatsheaf Books, 1983), 122.

<sup>20</sup> Alan Heston, "National Income" (in *CEHI*, 376-462), 377. In 1913 Russia's per capita income was double India's: calculated from Malcom. E. Falkus, *The Industrialisation of Russia: 1700-1914* (London: Macmillan, 1972), 12.

in 1882 and this had increased more than six-fold to 15,239 million net ton miles by 1913-14<sup>21</sup>. Writers at the end of our period wrote about an "Economic Transition"<sup>22</sup>. India was a different place in 1914 than half a century earlier. This book examines the changes that took place in the United Provinces of Agra and Oudh (the UP), which is now the north Indian province of Uttar Pradesh<sup>23</sup>.

The UP (Figure 1) lies in the wide fertile Upper Ganges Plain in the subtropical zone. In 1901 its population was nearly 48 million, which was greater at the time than that of the United Kingdom (38 million) or Japan (44 million). The UP's interior location meant that a smaller proportion of its recorded trade was geared to the ports than was the case for Bengal, Bombay or Madras presidencies and even the Punjab<sup>24</sup>. However, the UP was not completely landlocked: it had long enjoyed cheap riverine transport eastwards, on the Ganges, to the Bay of Bengal.

Analysis of railways' impact on the UP provides the opportunity for comparing responses of differing sub-regions, some landlocked and some river-served, and railways' interaction with another key innovation, canals.

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<sup>21</sup> Dudley & Morris, "Selected Railway Statistics".

<sup>22</sup> Theodore Morison, *The Economic Transition in India* (London: John Murray, 1911).

<sup>23</sup> The UP, with an area of 106,772 sq. miles (excluding Princely/Indian states and barren hill areas), comprised the territories of the North-Western Provinces (NWP) and Oudh. Areas of the UP came under British rule at different dates: 1793, in the case of Permanently Settled Benares in the east; 1801, for the Central Doab and Rohilkhand; 1803, for the Upper Doab in the northwest; 1817, for Bundelcund; and 1856, for Oudh. In 1836, the NWP was created through merger of the 1793-1817 Ceded and Conquered Provinces. It was administered by a lieutenant-governor, based at Agra until 1858 and at Allahabad subsequently. Oudh was administered by a chief commissioner, based at Lucknow. In 1877 an amalgamated NWP and Oudh was created, with its capital at Allahabad. In 1901 this was renamed the United Provinces of Agra and Oudh and in 1920 Lucknow replaced Allahabad as the administrative capital.

<sup>24</sup> Hurd, "Railways", 757.

## **Interpretations of agrarian change and railways' impact in colonial India**

Until the 1960s, the debate on economic change in India between 1860-1914 and railways' impact was dominated by conflicting interpretations by economic nationalist and imperialist-meliorist historians.

### *The economic nationalist perspective*

As set out in the late nineteenth and early twentieth century writings of the Liberal MP and nationalist politician Dadabhai Naoroji (1825-1917), the humanitarian William Digby (1849-1904) and the Indian Civil Service (ICS) officer Romesh Chunder Dutt (1848-1909)<sup>25</sup>, economic nationalist writers saw railways eroding the isolation of self-sufficient village communities and, by facilitating increased imports of Lancashire piece goods, causing craft unemployment and demographic pressure on the land. In addition, they argued that high revenue settlements and the need to export produce to meet the drain of "home charges"<sup>26</sup>, led to increased cash-cropping, grain exports, falling per capita foodgrain availability and Malthusian famines in the 1890s. The economic nationalists' allegations of a worsening plight for agriculturists and daily insufficiency of food led the Government of India (GOI) to set up the Dufferin Inquiry in 1887 and Lord Curzon to draft a special minute defending the assessment system in 1900<sup>27</sup>.

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<sup>25</sup> Dadabhai Naoroji, *Poverty and UnBritish Rule in India* (London: Sonnenschein & Co., 1901); Romesh Chunder Dutt, *The Economic History of India in the Victorian Age* (London: Kegan Paul, 1904); and William Digby, *"Prosperous" British India: A Revelation from Official Records* (London: T. Fisher Unwin, 1901).

<sup>26</sup> "Home charges" were the amounts the GOI annually remitted to England to pay guaranteed interest on capital invested in India's railways and irrigation works, interest on debt incurred by the GOI, purchases abroad for government stores, charges for British troops on the Indian establishment, furlough and retired pay of civil and military officers and government servants.

<sup>27</sup> Sarvepalli Gopal, *British Policy in India: 1858-1905* (Cambridge: Cambridge University Press, 1965), 257; and Elizabeth Whitcombe, *Agrarian Conditions in Northern India* (Delhi: University of California Press, 1971), 266.



**Figure 1: The United Provinces of Agra and Oudh and its Districts in 1914**



The economic nationalists' immiserationist analysis continued, between the 1950s and 1970s, in the writings of Irfan Habib and Elizabeth Whitcombe<sup>28</sup> and the development of underdevelopment dependency writings of Andre Gunder Frank (1929-2005) and world systems theory of Immanuel

<sup>28</sup> Whitcombe, *Agrarian Conditions*; and Irfan Habib, "The Colonisation of the Indian Economy, 1757-1900," *Social Scientist*, 3:8 (March 1975): 23-53.

Wallerstein (1930-2019)<sup>29</sup>. Drawing on Latin America's experience, Frank saw railways acting as:

"the physical instrument(s) used to restructure the economy in order to be able to suck raw materials out and pump manufactured commodities in along the right way".

The economic nationalist perspective has resurfaced in recent articles and books by Stuart Sweeney<sup>30</sup> and by Laxman Satya, who concluded that:

"the colonial railways ... had a regressive impact on the land, environment and the people of South Asia"<sup>31</sup>.

The economic nationalist perspective also informed the research and writings of Daniel Thorner (1915-74). Thorner concluded that, while railways had brought change, the overall result was stasis:

"the older style (self-subsistent) village communities have been dissolved .... and replaced ... by village units in which the dominant forces are rent-receiving landlords (typically absentee), aggressive moneylenders and crop merchants. The bulk of the rural population has come to consist of dependent tenants and landless labourers ... function(ing) within an increasingly market orientated structure ... (but) the basic modes of cultivating the soil, the tools and working methods, remain fundamentally unaltered ... (railways) helped spread a veneer of modernization over the countryside while doing little to initiate a process of genuine modernization"<sup>32</sup>.

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<sup>29</sup> Andre Gunder Frank, *Dependent Accumulation and Underdevelopment* (London: Palgrave Macmillan, 1978), esp. 87-91 and 146-9; and Immanuel Wallerstein, *World Systems Analysis: An Introduction* (Durham, NC: Duke University Press, 2004). Frank argued, 90, that deindustrialisation, the economic drain to finance railways, increased exports and the influence of a narrow comprador elite, converted parts of India "into a plantation economy not dissimilar to South American ones". But his work said little about India's internal market.

<sup>30</sup> Stuart Sweeney, "Indian Railways and the Famine 1875-1914: Magic Wheels and Empty Stomachs," *Essays in Economic & Business History*, 26 (2008): 147-157; and, Stuart Sweeney, *Financing India's Imperial Railways, 1875-1914* (London: Pickering & Chatto, 2011).

<sup>31</sup> Laxman Satya, "British Imperial Railways in Nineteenth Century South Asia," *EPW*, 43:47 (2008): 69-77.

<sup>32</sup> Daniel Thorner, "Great Britain and the Development of India's Railways," *Jech*, 11:4 (December 1951): 389-402, esp. 400; and Daniel Thorner & Alice Thorner, *Land and Labour in India* (Bombay: Asia Publishing House, 1962).

### ***The imperialist-meliorist perspective***

The contemporary observers and historians Theodore Morison (1863-1936), Fred J Atkinson, Percival Griffiths (1899-1992), Lilian Knowles (1870-1926) and Vera Anstey (1889-1976)<sup>33</sup> acknowledged that railways ushered the destruction of village self-sufficiency, but argued that they also brought beneficial modernisation, evidenced by expanding commerce and India's cotton, jute and later steel industries. For Percival Griffiths, Britain, in less than two hundred years, had "converted India from a medieval to a modern state"<sup>34</sup> and had overseen an increase in per capita incomes.

Both the economic nationalists and imperialist-meliorists agreed that agriculture was commercialised after 1860, with a larger share of agricultural produce marketed and more consumer items bought from outside. Regional crop specialisation increased, with farmers buying certain foodstuffs from distant producers and varying cropping in response to changes in market prices and demand. The meliorists noted also that irrigation and cart ownership, improved. However, the economic nationalists retorted that, while trade expanded, the bulk of the cultivating and labouring community received a declining share of the rural cake.

### ***Reinterpretations that brought to the fore social and structural constraints***

Between the 1960s and 1980s detailed, localised studies highlighted social and structural constraints and determinants of change. This led to a reinterpretation of the later nineteenth century that was influenced by experience of the 1960s' Green Revolution in rural India and the country's failure to move towards economic "take off"<sup>35</sup>.

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<sup>33</sup> Morison, *Economic Transition*; Theodore Morison, *The Industrial Organisation of an Indian Province* (London: John Murray, 1906); Fred J. Atkinson, "A Statistical Review of the Income and Wealth of British India," *JRSS*, 65:2, (June 1902): 209-83; Percival Griffiths, *The British Impact on India* (London: Macdonald, 1952); Vera Anstey, *The Economic Development of India* (London: Longmans Green, 1931); and, Lilian C.A. Knowles, *The Economic Development of the British Overseas Empire* (London: Routledge, 1924).

<sup>34</sup> Griffiths, *British Impact on India*, 219.

<sup>35</sup> Andrew C. Pearse, *Seeds of Plenty: Seeds of Want* (Oxford: Clarendon Press, 1980); and Francine R. Frankel, *India's Green Revolution: Economic Gains and Political Costs* (Princeton, NJ: Princeton University Press, 1971).

This new research revealed already sizeable rural trade in the seventeenth and eighteenth centuries and a differentiated rural social structure, with village-level local controllers<sup>36</sup> and landless labourers: not self-sufficient, undifferentiated village communities. The work of Robert E. Frykenberg also led to a questioning of whether nineteenth century rural India saw fundamental change in landholding concentration and landless labourer proletarianisation<sup>37</sup>.

During the 1970s and 1980s, four new interpretative strands emerged:

1. *Structural dependency*: The Bengali historians Rajat K. Ray, Amit Bhaduri and Amiya Kumar Bagchi<sup>38</sup>, informed by structuralist and dependency<sup>39</sup> literature and the writings of Karl Marx (1818-83), Vladimir Ilyich Lenin (1870-1924) and Karl Kautsky (1854-1938), emphasised the dominance of metropolitan groups and rural elite compradors (intermediaries/agents for

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<sup>36</sup> Brian J. Murton, "Key People in the Countryside: Decision Makers in Interior Tamil Nadu in the Late Eighteenth Century," *IESHR*, 10:2 (June 1973): 157-81.

<sup>37</sup> Robert E. Frykenberg, *Guntur District 1788-1848* (Oxford: Oxford University Press, 1965); Robert E. Frykenberg ed., *Land Control and Social Structure in Indian History* (Madison, WI: University of Wisconsin Press, 1969); Stokes, *The Peasant and the Raj*, ch. 9; Dharma Kumar, "Land Ownership and Equality in Madras Presidency 1853-54 to 1946-47," *IESHR* 12:3 (July-September 1975): 229-61, who all stressed continuity in landownership (sizes and social groups). Dharma Kumar, *Land and Caste in South India: Agricultural Labour in the Madras Presidency during the Nineteenth Century* (Cambridge: Cambridge University Press, 1965) and Jayasankar Krishnamurty, "The Growth of Agricultural Labour in India - A Note," *IESHR*, 9:3 (September 1972): 327-32 both contradicted Surendra J. Patel, *Agricultural Labourers in Modern India and Pakistan* (Bombay: Current Book House, 1952), who had suggested that between 1871 and 1931 agricultural labourers increased from 14% to 33% of India's agricultural population. A fluctuation between 20-30%, with little long-term growth, became the conventional wisdom.

<sup>38</sup> Rajat Ray & Ratna Ray, "The Dynamics of Continuity in Rural Bengal under British Imperium," *IESHR*, 10:2 (June 1973): 103-28; Rajat Ray & Ratna Ray, "Zamindars and Jotedars: A Study of Rural Politics in Bengal," *MAS*, IX:1 (1975): 81-102; Amit Bhaduri, *The Economic Structure of Backward Agriculture* (London: Academic Press, 1983); and Amiya Kumar Bagchi, "Reflections on Patterns of Regional Growth in Indian under British Rule," *Bengal Past & Present*, 45 (January-June 1976): 247-89.

<sup>39</sup> For a review of dependency literature, from the early works of Paul Baran (1909-64), Raul Prebisch (1901-86) and Gunnar Myrdal (1898-1987) through to Andre Gunder Frank, Arghiri Emmanuel (1911-2001), Giovanni Arrighi (1937-2009), Samir Amin (1931-2018) and Immanuel Wallerstein in the 1970s, see Dudley Seers ed. *Dependency Theory: A Critical Re-Assessment* (London: Pinter 1981).

foreign interests) and of the perpetual indebtedness of many peasants to the land-controlling class. They argued that this resulted in forced commerce and backward agriculture with little technological investment. In nineteenth century Bengal, village-level controllers (jotedars) dominated subordinate groups through sub-letting and usury. The jotedars skimmed off surplus value and acted as intermediary compradors, providing cheap cash crops to monopsonistic British jute and indigo dealers. With deindustrialisation increasing the pool of sharecroppers and labourers<sup>40</sup>, the structure became one which Amit Bhaduri and Alice Thorner (1917-2005) termed semi feudalism<sup>41</sup>. The high degree of rural income inequality and the limited jotedar consumption market (served by imported goods) meant little boost was given to local industrialisation or re-invested in agriculture. Instead, surplus income was siphoned off by European traders or dissipated on personal consumption by jotedars, who acted as a block on development<sup>42</sup>.

2. *Structuralist-meliorism*: Studies of the ryotwari<sup>43</sup> areas of Western and Southern India suggested that a key development was the rise and enhanced importance of "rich peasants", who benefitted from institutional and commercial factors<sup>44</sup> between 1860 and the scissors of the 1930s' depression,

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<sup>40</sup> Permanently settled Bengal and Bihar, with river Ganges transport and late 18th century handicraft textile production for long-distance markets, suffered the most markedly from early 19th century deindustrialisation.

<sup>41</sup> Semi feudalism referred to the congruence of large landholding and moneylending to chronically indebted sharecroppers, causing persistence of pre-capitalist modes of production: see Amit Bhaduri, "A Study of Agricultural Backwardness under Semi Feudalism," *Economic Journal*, 83 (1973): 120-37; and Alice Thorner, "Semi-Feudalism or Capitalism? Contemporary Debate on Classes and Modes of Production in India," *EPW*, 94th, (11 & 18 December 1982).

<sup>42</sup> Jotedars were most important in the previously scrub jungle tracts of north Bengal and along the Sunderbans. In East Bengal, demographic pressure and monopsonistic jute purchase left cultivators highly dependent: see Sugata Bose, *The Roots of Communal Violence in Rural Bengal: A Study of the Kishoreganj Riots, 1930* (Cambridge: Commonwealth and Overseas History Seminar Paper, 16 Oct 1980).

<sup>43</sup> This involved the government directly collecting land revenue from cultivators (ryots) rather than from zamindars (proprietors/ landholders) who leased their land to tenant farmers.

<sup>44</sup> Ravinder Kumar, "The Rise of the 'Rich Peasant' in Western India" (in *Soundings in Modern South Asian History*, ed. D. Anthony Low. Berkeley, CA: University of California Press, 1968); Charlesworth, Neil. "Rich Peasants and Poor Peasants in 19th Century Maharashtra" (in *The Imperial Impact: Studies in the Economic History of Africa and India*, eds. Anthony G. Hopkins & Clive J. Dewey. London 1978: The Athlone Press, 1978, 97-113); Neil Charlesworth, "The Russian Stratification Debate and India," *MAS*, 13 (1979): 61-95; Neil Charlesworth,

when cash crop prices fell more sharply than hired labour costs and rental-revenue demands<sup>45</sup>. Ravinder Kumar noted that the new ryotwari settlements in Western India gave a firmer legal basis to such village-level controllers; while Neil Charlesworth and David Washbrook noted that rich peasants were able to benefit disproportionately from expanding trade after 1860 because: they had a larger marketable surplus; were able to plant larger areas under cash crops; could ride out bad years and profit from grain trading in famine periods during which they acquired distress sale land; were able to invest in carts to market produce to rail markets; and they were independent enough to achieve true market prices for their produce. These rich peasant groups improved their living standards and invested surplus income in rural moneylending, irrigation wells, carts, and sometimes into local processing mills. They played a prominent role in the nationalist movement during the 1930s and were major beneficiaries under the Congress Raj.

Nevertheless, there was limited structural change. Rich peasant cultivators re-invested some of their profits into input improvements. But trading groups rarely re-invested in agriculture because absentee landlords found it difficult to exert effective possession and control of land to develop large market orientated capitalist holdings<sup>46</sup>. The Punjab, which had a substantial community of surplus producing cultivating peasants, fostered in part by British colonial land policies on the Canal Colonies and operating in a region of weak local trader dominance, had the most significant re-investment of profits into agricultural inputs and the most buoyant agricultural growth after 1900<sup>47</sup>. However, in general, much of the increased

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*Peasants and Imperial Rule: Agriculture and Agrarian Society in the Bombay Presidency, 1850-1935* (Cambridge: Cambridge University Press, 1985); Washbrook, David, "Economic Development and Social Stratification in Rural Madras: The 'Dry Region' 1878-1929" (in *The Imperial Impact*, 61-95); Stokes, *The Peasant and the Raj*, ch. 12; and David Hardiman, *Peasant Nationalists of Gujarat, Kheda District 1917-34* (Oxford: Oxford University Press, 1981).

<sup>45</sup> Christopher J. Baker, *An Indian Rural Economy: 1880-1955 The Tamilnad Countryside* (Oxford: Oxford University Press, 1984).

<sup>46</sup> Baker, Christopher J, "Debt and Depression in Madras, 1929-36" (in *The Imperial Impact*, 233-42). This does not mean that they did not purchase land for rentier purposes or as a means of enhancing their social status.

<sup>47</sup> Satish Chandra Mishra, *Patterns of Long Run Agrarian Change in Bombay and Punjab: 1881-1972* (University of Cambridge PhD, 1981) considered that different income distributions in the trader-dominated Bombay economy and the peasant surplus product Punjab economy were a crucial factor behind their differential development.

income went on rich peasant consumption or was used by traders for processing industry investment.

3. *An emphasis on demographic, socio-cultural and peasant economy constraints*: Anthropologists and economic historians who were influenced by the writings of Alexander Chayanov (1888-1937) on *Peasant Farm Organisation* (translated into English in 1966) stressed the uniqueness of peasant economies and the socio-cultural constraints on economic change, for example caste, the jajmani system and the joint family. They highlighted demographic factors rather than just commercial, in particular the cyclicity of changes at the family household level and the ability of peasant economies to absorb and adapt to external economic changes<sup>48</sup>.

4: *New meliorists*: In 1966 Morris D Morris (1921-2011)<sup>49</sup> re-opened the debate on economic change in late nineteenth century India. His work stimulated a generation of new meliorists to question and reinvestigate key assumptions of the economic nationalist school: deindustrialisation; increased cash-cropping to the detriment of per capita food supplies<sup>50</sup>; and,

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<sup>48</sup> Frederick G. Bailey, *Caste and the Economic Frontier* (Manchester: Manchester University Press, 1957); Trude Scarlett Epstein, *Economic Development and Social Change in South India* (Manchester: Manchester University Press, 1962); Tom G. Kessinger, *Vilyatpur: 1848-1968: Social and Economic Change in a North Indian Village* (Berkeley, CA: University of California Press, 1974); Tom G. Kessinger, "The Peasant Farm in North India: 1848-1968," *EEH*, 12:3 (July 1975): 303-31; and Sumit Guha, *The Agrarian Economy of the Bombay Deccan: 1818-1941* (Delhi: Oxford University Press, 1985). Older imperialist writers, such as J. Bampfylde Fuller, *The Empire of India* (London: Pitman, 1913), 139, also emphasised cultural barriers to development. Fuller wrote that every successful man was surrounded by "a crowd of poor relatives (who) cling to his skirts, living in his house, feeding in his house and offering him in return their respectful salutations". However, modern sociologists and historians have emphasised the rational acquisitiveness of peasants, while noting socio-structural constraints and the need for crop diversification against risk: see John Harriss ed. *Rural Development: Theories of Peasant Economy and Agrarian Change* (London: Hutchinson, 1982).

<sup>49</sup> Morris D. Morris, "Economic Change and Agriculture in Nineteenth Century India," *IESHR*, 3:2 (June 1966): 185-209. This article provoked lively debate between new meliorists and modern economic nationalists: see Morris D. Morris et al, *Indian Economy in the Nineteenth Century: A Symposium* (Delhi: Indian Economic and Social History Association, 1969).

<sup>50</sup> Peter Harnetty, "Cotton Exports and Indian Agriculture: 1861-70," *EcHR*, 24:3 (August 1971): 414-29; Michelle Burge McAlpin, *The Impact of Railroads on Agriculture in India, 1860-1900: A Case Study of Cotton Cultivation* (University of Wisconsin-Madison PhD, 1973); Michelle Burge McAlpin, "Railroads, Cultivation

high and increasing revenue assessments forcing distress sales<sup>51</sup>. They employed the quantitative and theoretical methods of econometric New Economic History to investigate whether the Indian rural economy was rational or was a perverse, custom-bound peasant economy<sup>52</sup>. Moni Mukherjee calculated a 35% increase in India's per capita income between 1860 and 1920<sup>53</sup>. Debate remained over its distribution, but Michelle Burge McAlpin argued that expanded cropping and labour demand brought trickle down benefits.

### **Previous research on the UP's 1860-1914 economy**

While there had been research on late nineteenth century landholding and tenurial systems in the UP<sup>54</sup>, studies on the rural and urban economy were limited until the 1970s and 1980s. Elizabeth Whitcombe and Simon Commander presented a pessimistic or stasis picture of economic trends, while Ian Stone and Peter Musgrave set out a more positive picture.

#### ***Decline/stasis: the Whitcombe and Commander perspectives***

Elizabeth Whitcombe's 1971 *Agrarian Conditions in Northern India* broke new ground in revealing that the canals and railways introduced into the UP in the nineteenth century had unforeseen deleterious side effects: canals

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Patterns and Foodgrain Availability: India 1860-1900," *IESHR*, 12:1 (January-March 1975): 43-60; and Michelle Burge McAlpin, "The Effects of Expansion of Markets on Rural Income Distribution in Nineteenth Century India," *EEH*, 12:3 (July 1975): 289-302.

<sup>51</sup> Shri Prakash, *The Evolution of the Agrarian Economy of Gujarat (India) 1850-1930* (University of Cambridge PhD, 1984); and McAlpin, *Subject to Famine*.

<sup>52</sup> Hurd, "Railways and the Expansion of Markets"; and Dharm Narrain, *The Impact of Price Movements on Areas under Selected Crops in India, 1900-39* (Cambridge: Cambridge University Press, 1965).

<sup>53</sup> Moni Mukherjee, *National Income of India: Trends and Structure* (Calcutta: Statistical Publishing Society, 1969); Heston, *National Income*. After 1920 India's per capita income was steady to falling against a background of steady demographic growth and yield improvements in cash crops. David Washbrook, Shri Prakash, Sumit Guha and Michelle Burge McAlpin viewed the period 1860-1914 as one of agricultural and commercial expansion and growth in Southern and Western India.

<sup>54</sup> Stokes, *The Peasant and the Raj*; Walter C. Neale, *Economic Change in Rural India: Land Tenure and Reform in Uttar Pradesh 1800-1955* (New Haven, CT: Yale University Press, 1962); and Thomas R. Metcalf, *Land, Landlords and the British Raj: Northern India in the 19th Century* (Berkeley, CA: University of California Press, 1979).



contributing to waterlogging, malaria and the spread of saline reh, while railways brought local deforestation. Additionally, Whitcombe suggested that canals encouraged excessive cash cropping and railways excessive grain exports at the expense of peasant consumption, resulting in a deterioration in living standards and health.

Simon Commander's 1980 *Agrarian Economy of North India: 1800-80* was informed by the work of Fernand Braudel (1902-85), with the ideas of the *longue durée*, medium-term conjunctures (profound changes) and short-term événements (events) and the "co-existence of inflexibility, inertia and slow motion"<sup>55</sup>. Commander noted that cash crop levels were already high, in 1830, in parts of the UP. Thereafter, the nineteenth century witnessed an outward expansion of the cultivated area that was broadly in line with population growth, but, in places, crop intensification led to falling yields. Overall, Commander concluded "though growth was achieved in gross terms, per capita income tended to decline"<sup>56</sup>. It was the areas which inherited lower population densities, notably the Upper Doab in the West UP, which fared better than the already densely peopled perennial tracts of the Central Doab and East UP.

Both Whitcombe and Commander provided valuable insights into the working of the later nineteenth century UP rural economy. However, in arriving at their decline/stasis interpretations they gave insufficient focus to differentiation within the cultivating community and to developments after 1880. It was in that later period when the full impact of railways and canals was felt and some of their negative externalities began to be remedied: canals being remodelled and railways moving to coal (rather than wood) burning.

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<sup>55</sup> Fernand Braudel, *Afterthoughts on Material Civilization and Capitalism* (Baltimore, MD: John Hopkins University Press, 1977).

<sup>56</sup> Simon J. Commander, *The Agrarian Economy of North India 1800-80: Aspects of Growth and Stagnation* (University of Cambridge PhD, 1980); Simon J. Commander, "Colonial Rule and Economic Subordination: The North Indian Economy in the Nineteenth Century," *Études Rurales*, 89/91 (1983): 169-98; and Simon J. Commander, "Proto-Industrial Production as a Barrier to Industrialisation? Case of North Indian Sugar Industry, 1850-1980," *EPW*, 20:12 (23 March 1985):, 505-16.

***Specific groups and areas benefitted:  
the Stone and Musgrave perspectives***

Ian Stone and Peter Musgrave provided more optimistic interpretations of the 1860 to 1914 period<sup>57</sup>.

Ian Stone's 1984 *Canal Irrigation in British India* demonstrated that canal irrigation in the Ganges-Jumna Doab removed constraints on manpower and bullocks. This allowed cultivators to extend, intensify and improve production and introduce new crops and crop mixes. Stone argued that canals benefitted groups and areas which had conducive institutional and demographic bases.

Peter Musgrave's 1976 *Rural Society in the United Provinces 1860-1920* focused on Oudh and uncovered a later nineteenth century shift in economic and social power towards village-level controllers. These controllers profited from their intermediary position, especially on the large taluqdari estates in Oudh. Musgrave found fluidity in the late nineteenth century rural power structure, with landlords seeking to enhance rents, as demographic pressure on the soil increased and as the aristocratic cost of living spiralled. Tenants sometimes resisted through rent strikes or gained occupancy protection.

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<sup>57</sup> Ian Stone, *Canal Irrigation and Agrarian Change under Colonial Rule: A Study of the United Provinces 1830-1930* (University of Cambridge PhD, 1981); Ian Stone, *Canal Irrigation in British India: Perspectives on Technological Change in a Peasant Economy* (Cambridge: Cambridge University Press, 1984); Stone, Ian. "Canal Management and Agricultural Production in the United Provinces" (in *Arrested Development in India*, ed. Clive Dewey. Delhi: Manohar, 1988); Peter J. Musgrave, *An Indian Rural Society: Aspects of the Rural Society in the United Provinces, 1860-1920* (University of Cambridge PhD, 1976). Other theses on aspects of the 1860-1914 UP economy include Robert G. Varady, *Rail and Road Transport in 19th Century Oudh: Competition in a North Indian Province* (University of Arizona PhD, 1981); William M. Bateson, *The Agrarian System of the Upper Gangetic Plain: 1870-1910* (University of Wisconsin-Madison PhD, 1974); and Jayati Ghosh, *Non-Capitalist Land Rent Theory and the Case of Northern India* (University of Cambridge PhD, 1983).

## Research since the 1980s on railways and India's 1860-1914 economy

Since the 1980s there has been research on the building of Indian railways by Ian Kerr<sup>58</sup>, on their management by Dan Bogart and Latika Chaudhary<sup>59</sup>, on aspects of their economic impact by John Hurd<sup>60</sup>, Tahir Andrabi and Michael Kuehlwein<sup>61</sup>, and Dave Donaldson<sup>62</sup>, and there have been new overviews on the 1860-1914 Indian economy by Tirthankar Roy<sup>63</sup> and Tom Tomlinson<sup>64</sup>. These works have added new caveats and insights to the findings of the 1980s.

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<sup>58</sup> Ian J. Kerr, *Building the Railways of the Raj 1850-1900* (Delhi: Oxford University Press, 1995); and Ian J. Kerr, *Engines of Change: The Railroads That Made India* (Westport, CT: Praeger, 2007). A useful guide to archival sources on India's railways is H.C. Hughes, "India Office Railway Records," *Journal of Transport History*, VI:4 (November 1964): 241-48.

<sup>59</sup> Dan Bogart, "A Global Perspective on Railway Inefficiency and the Rise of State Ownership, 1880-1912," *EEH*, 47(2) (2010): 158-78; Dan Bogart & Latika Chaudhary, "Engines of Growth: The Productivity Advance of Indian Railways, 1874-1912," *JecH*, 73:2 (June 2013): 340-71; Dan Bogart & Latika Chaudhary, "Regulation, Ownership and Costs: A Historical Perspective from Indian Railways," *American Economic Journal: Economic Policy*, 4:1 (February 2012): 28-57; Dan Bogart & Latika Chaudhary, "Extractive Institutions? Investor Returns to Indian Railway Companies in the Age of High Imperialism," *Journal of Institutional Economics*, 15:5 (October 2019): 751-74; and Bogart, Dan & Chaudhary, Latika, "Railways in Colonial India: An Economic Achievement?" (in *A New Economic History of Colonial India*, eds. Latika Chaudhary, Bishnupriya Gupta, Tirthankar Roy & Anand Swamy eds., Abingdon: Routledge, 2016, ch. 9).

<sup>60</sup> John Hurd & Ian J. Kerr, *India's Railway History: A Research Handbook* (Leiden: Brill, 2012); and Hurd, John. "A Huge Railway System But No Sustained Economic Development: The Company Perspective, 1884-1939: Some Hypotheses" (in *27 Down: New Departures*, ed. Kerr, 314-46).

<sup>61</sup> Tahir Andrabi & Michael Kuehlwein, "Railways and Price Convergence in British India," *JecH*, 70:2 (June 2010): 351-77.

<sup>62</sup> Dave Donaldson, "Railroads of the Raj: Estimating the Impact of Transportation Infrastructure," *American Economic Review*, 108:4-5 (2018): 899-934.

<sup>63</sup> Roy, *Economic History of India 1857-1947*.

<sup>64</sup> B.R. Tom Tomlinson, *The Economy of Modern India: From 1860 to the Twenty-First Century* (Cambridge: Cambridge University Press, 2013).

Other topics have also been explored. These have included: railway workshops, by Ian Kerr<sup>65</sup> and Nitin Sinha<sup>66</sup>; railways and pilgrimage (tirtha-yatra), by Ian Kerr<sup>67</sup>; railway policing, by David Campion<sup>68</sup>; railways and Indian nationalism, by Visalakshi Menon and Sucheta Mahajan<sup>69</sup>; agricultural trade, transport and markets in Bihar, by Alok Sheel<sup>70</sup> and Nitin Sinha<sup>71</sup>; and general popular histories of India's colonial railways, by Kartar Lalvani<sup>72</sup> and Christian Wolmar<sup>73</sup>.

And recently researchers have been interested in two new strands:

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<sup>65</sup> Kerr, Ian. J. "The Railway Workshops and Their Labour: Entering the Black Hole" (in *27 Down: New Departures*, ed. Kerr, 231-75).

<sup>66</sup> Nitin Sinha, "Entering the Black Hole: Between 'Mini England' and 'Smell Like Rotten Potato', the Railway-Workshop Town of Jamalpur, 1860s-1940s," *South Asian History and Culture*, 3:3 (2012): 317-47.

<sup>67</sup> Kerr, Ian J. "Reworking a Popular Religious Practice: The Effects of Railways on Pilgrimage in 19<sup>th</sup> and 20<sup>th</sup> Century South Asia" (in *Railways in Modern India*, ed. Kerr, 304-27). Tirtha is a fixed place where a mela (Hindu fair/festival) takes place.

<sup>68</sup> Campion, David A. "Railway Policing and Security in Colonial India, c. 1860-1930" (in *Our Indian Railway*, eds. Srinivasan, Tiwari & Silas, 121-53).

<sup>69</sup> Menon, Visalakshi & Mahajan, Sucheta, "Indian Nationalism and Railways" (in *Our Indian Railway*, eds. Srinivasan, Tiwari & Silas, 155-71). Daniel Thorner saw modern Indian nationalism, which drew support from a new middle-class of merchants, journalists, lawyers and other professionals in a country more closely tied together, as an "unintended consequence" of railways: see Thorner, Daniel. "The Pattern of Railway Development in India" (in *Railways in Modern India*, ed. Kerr, 80-96, esp. 80). Thorner's article was originally published in February 1955 in the *Far Eastern Quarterly*.

<sup>70</sup> Alok Sheel, "Agricultural Trade and Markets in British India: Shahabad and Gaya Districts, 1800-1920," *Indian Historical Review*, 42:1 (June 2015): 90-112. Sheel's findings mirrored many of those set out here in Part 3.

<sup>71</sup> Nitin Sinha, *Communication and Colonialism in Eastern India: Bihar, 1760s-1880s* (London: Anthem Press, 2014).

<sup>72</sup> Kartar Lalvani, *The Making of India: The Untold Story of British Enterprise* (London: Bloomsbury, 2016).

<sup>73</sup> Christian Wolmar, *Railways & the Raj: How the Age of Steam Transformed India* (London: Atlantic Books, 2017).

- Marian Aguiar<sup>74</sup>, Ravi Ahuja<sup>75</sup>, Laura Bear<sup>76</sup>, Manu Goswami<sup>77</sup>, Ritika Prasad<sup>78</sup> and Arup Chatterjee<sup>79</sup> have explored railways' role as a tool of colonial control and their place in India's cultural history.
- Iftekhhar Iqbal<sup>80</sup> and V.M. Ravi Kumar<sup>81</sup> have considered railways' environmental impact.

## What this book covers

This book analyses the responses of the UP rural and urban economies to the opportunities and challenges provided by railways between 1860 and 1914. A key theme is differential responses and effects. Areas, products and persons with accumulated vents for surplus and/or relative independence benefitted disproportionately from the opportunities and market expansion brought by cheap, speedier, reliable, go anywhere railways. But change took place within the structural and cultural constraints of the UP's peasant economy and the colonial nexus.

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<sup>74</sup> Aguiar, Marian, "Railway Space in Partition Literature" (in *27 Down: New Departures*, ed. Kerr, 39-67); Marian Aguiar, "Making Modernity: Inside the Technological Space of the Railway," *Cultural Critique*, 68:1 (2008): 66-85; and Marian Aguiar, *Tracking Modernity: India's Railway and the Culture of Mobility* (Minneapolis: University of Minnesota Press, 2011).

<sup>75</sup> Ahuja, Ravi, "The Bridge-Builders': Some Notes on Railways, Pilgrimage and the British 'Civilizing Mission' in Colonial India" (in *Colonialism as Civilizing Mission: Cultural Ideology in British India*, ed. Harald Fischer-Tiné & Michael Mann eds. London: Anthem Press, 2004); and Ravi Ahuja, *Pathways of Empire: Circulation, Public Works and Social Space in Colonial Orissa c. 1780-1914* (Hyderabad: Orient Black Swan, 2009).

<sup>76</sup> Laura Bear, *Lines of the Nation: Indian Railway Workers, Bureaucracy, and the Intimate Historical Self* (New York: Columbia University Press, 2007).

<sup>77</sup> Manu Goswami, *Producing India: From Colonial Economy to National Space* (Delhi: Permanent Black, 2004).

<sup>78</sup> Ritika Prasad, "Time Sense': Railways and Temporality in Colonial India," *MAS*, 47:4 (2013): 1252-82; and Ritika Prasad, *Tracks of Change: Railways and Everyday Life in Colonial India* (Delhi: Cambridge University Press, 2015).

<sup>79</sup> Arup K. Chatterjee, *The Purveyors of Destiny: A Cultural Biography of the Indian Railways* (Delhi: Bloomsbury, 2017).

<sup>80</sup> Iftekhhar Iqbal, *The Bengal Delta: Ecology, State and Social Change, 1840-1943* (London: Palgrave Macmillan, 2010).

<sup>81</sup> Kumar, V.M. Ravi, "Railways and Forests: History of Railways and their Impact on Forest Policies of South India, 1850-1900" (in *The Railways in Colonial South Asia: Economy, Ecology and Culture*, ed. Ganeswar Nayak. London: Routledge, 2021, ch. 4).

This book views the UP rural economy through a peasant economy family-farm lens, whose rationale is outlined in chapter 6. The perspective is dynamic, using primary macro (annual cropping, price, and railborne trade statistics and the decennial censuses) and micro level sources (DGs, SRs, SAs and village surveys and notes) to delineate both broad trends and local constraints and responses.

The broad findings are structural-meliorist: UP per capita incomes rose in aggregate between 1860 and 1914 as trade expanded, agricultural prices became integrated at higher levels and agriculture's terms of trade improved. Particular regions and rural groups, notably "independent" (in relative terms) cultivators, obtained a disproportionate slice of this expanding cake. But entry into this rural elite was not entirely closed: the number of independent cultivators increased as the threshold to independence was lowered and as rural credit and trade became more competitive. But there were also cycles of relative prosperity and depression affecting broader groups and areas, outside of a medium-term movement that was checked by the later 1920s depression. Part 3 examines the responses and trends within the rural economy.

Part 4 examines railways' impact on trading structures, traders and urban centres. The volume of trade transacted at higher levels and moving longer distances increased significantly. This enhanced the importance of urban centres and there was an influx of new broker groups, the Marwaris and Europeans, with contacts to the new markets opened by railways in Western and Central India and overseas. Meanwhile, rising rural demand brought changes to the functions of urban centres: from extractive centres into storage, brokerage, re-distributive and sometimes manufacturing centres for their rural hinterlands. This stimulated some limited industrialisation in processing and consumption goods, with Kanpur developing as a significant inland manufacturing centre by 1914.

Part 5 assesses railways' macro and comparative economic impact using the social savings approach.

But before this, in Part 1 the UP's pre-rail economy and transport system, and its constraints, is examined. Then Part 2 analyses the introduction and spread of railways in the UP: looking at how they were financed and built; their routing, rating and operational policies; and the competition they faced from existing transport modes.