COLONIALISM, POLITICAL RISK, AND FIRM PERFORMANCE: EVIDENCE FROM INDIA

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ABSTRACT. Did political risk constrain foreign investment under colonial rule? We compare British and Indian firms in interwar India using novel panel data. Although risk increased for British firms, we find little evidence of capital withdrawal. Financial outcomes differed mainly across industries, while board Indianization and cross-group interlocks increased only gradually and unevenly. British managing agents likewise remained concentrated in familiar sectors, accommodating Indian participation without substantial diversification. Rather than withdrawing uniformly, British firms added Indian directors where local capital, market knowledge, and commercial connections became valuable, while remaining concentrated in industries supported by established expertise and commercial networks.

1. INTRODUCTION

Why does capital not flow from rich to poor countries? Under common technology, Lucas (1990) calculated that the marginal product of capital in India should have been 58 times that in the United States. He argued that political risk could not explain the lack of capital flows before 1945, reasoning that European investors in colonies such as India could expect contracts to be enforced as effectively as at home. Imperial rule did reduce risks for colonial governments and state-backed investments: British colonies borrowed more cheaply than comparable sovereign states, and railway investors in India benefited from government guarantees (Accominotti, Flandreau and Rezzik, 2011; Bogart and Chaudhary, 2019; Ferguson and Schularick, 2006). But these protections did not extend equally to private equity investment. Investors in mines, plantations, factories, and trading firms remained exposed to policy changes and nationalist mobilization (Austin,

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Dávila and Jones, 2017; Twomey, 2000). Political risk may therefore have constrained private investment even within empires.

Interwar India offers a useful setting in which to examine these risks. India was an important destination for British investment in non-settler colonies, but equity investment was sharply divided by industry. British capital was concentrated in export industries such as tea and jute, where firms drew on knowledge of overseas markets, while Indian capital was more prominent in domestic-market industries such as cotton textiles (Gupta, 2014, 2016; Morris, 1983). After the First World War, trade policy moved away from free trade, the colonial state became more supportive of Indian manufacturing, and constitutional reform and nationalist politics expanded opportunities for Indian business (Lockwood, 2012; Markovits, 1985; Mukherjee, 2001). For British investors, these changes raised uncertainty about their future treatment. Their effects may have differed across firms because British and Indian businesses operated in different markets and drew on different commercial and political connections (Gupta, 2014; Misra, 1999).

In this paper, we ask whether British and Indian firms responded differently to the changing political and economic environment after the First World War. We focus in particular on whether long-established British firms reacted to the erosion of colonial privilege and growing support for Indian industry by changing their financial and organizational strategies. We assemble a new panel of firms listed on Indian stock exchanges between 1907 and 1942. We classify firms as British- or Indian-controlled using the composition of their boards. We concentrate on companies already operating before the war, allowing us to follow incumbent firms through the change in political environment. We examine three margins of adjustment. First, we compare profits, dividends, and share prices before and after the war. Second, we study whether British firms added Indian directors or formed new connections with other firms through board interlocks. Third, we ask whether managing agents – external management firms that promoted, financed, and controlled one or more joint-stock companies – diversified across industries or changed the board composition of the companies they managed.

Economic theory suggests several margins along which British investors might have responded to political risk. First, they could reduce new investment, distribute earnings as dividends rather than reinvest them, sell existing assets, or move capital abroad (Alesina and Tabellini, 1989; Collier, Hoeffler and Pattillo, 2001; Le and Zak, 2006). In firm-level data, gradual withdrawal might therefore appear as weaker share prices or unusually high dividends relative to profits and investment opportunities. Yet no single outcome is decisive: share prices reflect expectations about future cash flows and political risk, while dividends also depend on profitability, investment opportunities, signalling, and agency considerations (Denis and Osobov, 2008; Fama and French, 2001; Jayachandran, 2006;

Pastor and Veronesi, 2012; Pástor and Veronesi, 2013). We therefore interpret the joint movement of profits, valuations, and payouts as suggestive, rather than direct, evidence of capital withdrawal.

Second, firms could adapt organizationally. Local directors may provide information, finance, legitimacy, and political access, while interlocking directorships can transmit information, facilitate monitoring and credit, and coordinate responses to common risks (Acemoglu et al., 2016; Adams, Hermalin and Weisbach, 2010; Akey, 2015; Faccio, 2006; Fisman, 2001; Mizruchi, 1996; Okazaki, Sawada and Yokoyama, 2005). Third, managing agents could expand into emerging domestic-market industries that benefited from growing demand and tariff protection. Such diversification could reduce their dependence on established export industries and allow them to share managerial capabilities and reallocate capital internally when external markets function poorly (Khanna and Yafeh, 2007; Maksimovic and Phillips, 2007; Martin and Sayrak, 2003).

We find little evidence that British firms responded to postwar political risk through broad financial withdrawal or organizational transformation. Differences in profits, share prices, and dividends were driven mainly by industry rather than ownership. Only in cotton did the persistently high dividends of British firms provide suggestive evidence of reduced reinvestment or gradual withdrawal.

British firms also adapted their boards only partially. They added Indian directors slowly and unevenly, while interlocking directorships became denser without eliminating the strong segmentation between British and Indian business networks. Indian traders bought shares in financially constrained British jute firms during the war, and continued to do so in the interwar years (Goswami, 1989).

British managing agents combined limited industrial diversification with substantial Indianization of the boards of firms they managed. British agents were more diversified across industries before the war, and diversified little into new sectors in the interwar period. British-managed boards of directors did become more Indian, especially in jute, coal, and cotton. Overall, British firms and managing agencies largely remained within established industries and organizational structures, accommodating greater Indian participation in some sectors rather than withdrawing or diversifying broadly in response to political risk.

The patterns we observe are explained more readily by sector-specific economic conditions and inherited organizational capabilities than by a broad response to political risk. Differences in profits, share prices, and dividends reflected changes in demand, cartelization, struggles over corporate control, and the expansion of protection and import substitution. In tea and jute, for example, interwar performance was shaped by the success in restricting output and stabilizing prices, as well as by changing ownership and

control (Goswami, 1982, 1985; Gupta, 2001, 2005). Coal's prolonged weakness reflected declining demand and prices, while protection created new opportunities in cotton and other domestic-market industries (Gupta, 2025; Markovits, 1985; Simmons, 1976). These forces generated little systematic evidence of British withdrawal.

Changes in boards and interlocks were likewise concentrated where Indian finance, market knowledge, and commercial connections became more valuable. In coal and cotton, the growing role of Indian directors and networks is consistent with the increasing importance of Indian capital and domestic-market expertise (Ray, 2022, pp. 101–104); (Ray, 1982, pp. 392–394); (Gupta, 2014, p. 163). British managing agencies generally remained within familiar industries, whereas some Indian groups entered newer protected sectors (Tomlinson, 1981, pp. 465–467); (Markovits, 1985, pp. 61–66). Where British-managed firms became more Indian, especially in jute, agencies often accommodated Indian shareholders and directors while retaining their management contracts (Oonk, 2014, p. 54); (Goswami, 1989, pp. 297, 299); (Nomura, 2014, pp. 101–102).

Why was adjustment so limited? British agencies possessed expertise and commercial networks in established export industries but faced informational and organizational disadvantages in unfamiliar domestic markets (Gupta, 2014). These inherited capabilities made continued specialization relatively attractive and entry into emerging import-substituting industries comparatively costly. The tea companies and their association, the Indian Tea Association, still had a voice in policymaking, as seen in the legislation in favour of an international tea cartel (Gupta, 2001). Efforts by well-established managing agents, such as Bird and Company, to enter new sectors during the war had ended in failure (Tomlinson, 1981). British firms in Calcutta did not have surplus resources to move into sectors, unlike the Indian traders, who had accumulated wealth during the war to diversify into industry (Tomlinson, 1981). Political changes altered the environment facing British capital without necessarily inducing either widespread withdrawal or substantial diversification.

1.1. **Contribution.** Since Lucas (1990), a large literature has examined whether political and institutional risk helps explain why capital does not flow more strongly toward poorer and faster-growing economies (Gourinchas and Jeanne, 2013). Theory emphasizes several mechanisms. Governments may expropriate foreign capital directly or indirectly through taxation, default, or policy reversal, reducing investment and slowing capital accumulation (Aguiar and Amador, 2011; Thomas and Worrall, 1994). Uncertainty about future policy can further discourage investment when projects are costly to reverse (Bloom, 2014). Foreign investors may also face expropriation by controlling shareholders in countries where ownership is concentrated and investor protection is weak (Stulz, 2005, p. 1596). Consistent with these mechanisms, countries with stronger institutions

and greater financial openness attract more foreign capital, while high borrowing costs and histories of default deter it (Alfaro, Kalemli-Ozcan and Volosovych, 2008; Prasad, Rajan and Subramanian, 2007; Reinhardt, Ricci and Tressel, 2013). Political risk may therefore affect not only the volume of capital inflows but also their composition. Foreign investment should be especially scarce in projects requiring large sunk costs, long gestation periods, and initially low cash flows, and may instead concentrate in activities offering earlier and more secure returns (Prasad, Rajan and Subramanian, 2007, pp. 180–191). These disadvantages may be compounded when foreign investors lack the political relationships and local networks through which domestic firms compensate for weak formal institutions (Khanna and Palepu, 2000; Prasad, Rajan and Subramanian, 2007).

This literature leaves two gaps that our paper addresses. First, the international-finance literature on political and institutional risk has largely focused on aggregate capital flows and investment, leaving less evidence on how incumbent foreign firms adjust along distinct financial and organizational margins. Second, it has rarely examined political risk within empire, where formal colonial control may have protected contracts without eliminating uncertainty over future policy and political control.

Political risk can affect firms through both the expected consequences of adverse policy changes and uncertainty over which policies will be adopted. When investment is costly to reverse, uncertainty raises the value of waiting and may lead firms to postpone or reduce capital expenditure (Bloom, 2009, 2014). Firm-level studies accordingly find that policy uncertainty depresses investment, with larger effects among firms whose investments are less reversible or whose activities are more exposed to government policy; aggregate evidence points in the same direction (Baker, Bloom and Davis, 2016; Gulen and Ion, 2016; Hassan et al., 2019). Elections provide a more discrete source of uncertainty: firms reduce investment before elections, particularly when their operations are more sensitive to policy outcomes (Jens, 2017; Julio and Yook, 2012).

These responses should vary not only with firms' exposure to political change, but also with their capacity to adapt. Firms possessing local knowledge, political relationships, and experience with domestic institutions may be better able to respond to a changing policy environment. In interwar China, for example, Japanese cotton mills adopted labour-management practices suited to Chinese employment institutions, while British firms lacked comparable institutional experience and adapted less successfully (Zeitz, 2013). The literature therefore predicts varied responses to political change, but provides limited evidence on how foreign and domestic firms adjust across multiple financial and organizational margins.

An existing literature in business history has compared British and Indian firms in the interwar era, and argued that Indian-owned firms responded to the changed environment by increasing output and branching into other industries aided by tariffs (Gupta, 2025; Tomlinson, 1981). But few existing British-owned exporting firms moved into new industries. New types of British firms – multinational corporations such as Unilever and Metal Box – entered new domestic-market industries and often collaborated with Indian capital (Tomlinson, 1978). A related literature in economic history has investigated other topics, such as how firms in the colonial period managed cartels (Gupta, 2001, 2005) or sources of productivity in the cotton mills (Clark, 1987; Gupta, 2011; Wolcott and Clark, 1999). A more recent applied econometric literature has used firm-level data to investigate topics such as technology adoption (Bhattacharjee, 2025), the importance of community networks (Gupta et al., 2022), the effects of trade disruption (Bonfatti and Brey, 2024), or the importance of political connections (Bonfatti, Brey and Thomson, 2025).

By examining several margins of adjustment and separating differences by control from differences across sectors, we distinguish broad withdrawal from more limited organizational adaptation. Our results show that British firms did not generally retreat as political risk increased. Instead, they added Indian directors selectively while remaining concentrated in industries in which they possessed established expertise and commercial networks.

Section 2 provides historical background on Indian industry and the evolution of political risk during and after the First World War, while section 3 describes our new data. The empirical analysis then proceeds in three stages. Section 4 compares the financial performance and payout policies of British- and Indian-controlled firms using data on profits, dividends, and share prices. Section 5 examines whether British firms responded to political uncertainty by adding Indian directors or forming new connections through interlocking directorships. Section 6 shifts the unit of analysis to managing agents and asks whether they diversified across industries or changed the board composition of the firms they managed. Section 7 concludes.

2. Historical Background

This section provides the historical background for our analysis. Subsection 2.1 traces the development of large-scale industry in India before the First World War, emphasizing differences between British and Indian investment, the evolution of export and established domestic-market industries, and the role of British and Indian managing agencies. Subsection 2.2 then examines how the political and economic environment changed during and after the war. It discusses wartime disruption, the shifting balance of political

power, the move toward protection, and other policy changes, before briefly considering developments during the Second World War and the approach to independence.

2.1. **Industry in Colonial India Before the First World War.** Large-scale industry in colonial India emerged from the middle of the nineteenth century. Modern factories, mines, and plantations expanded alongside handicraft and small-scale production. The main prewar industrial sectors developed unevenly across regions. Coal mining, jute manufacturing, and tea plantations grew mainly in eastern and northeastern India, while cotton textiles became concentrated in Bombay and western India. These sectors also served different markets and drew on different sources of capital: tea and jute were closely tied to export markets and British investment, while cotton textiles were more oriented toward the Indian market and drew more heavily on Indian capital (Gupta, 2016; Morris, 1983). By 1914, India had important modern industries, but industrialization remained narrow, regionally concentrated, and embedded in a much larger economy still dominated by agriculture and small-scale production (Gupta, 2025; Gupta and Roy, 2017).

Colonial India received substantial British investment before the First World War, but this investment was concentrated rather than broad-based. Much of it was tied to government debt, railways, and other infrastructure, while private industrial investment was concentrated in export- and resource-linked sectors such as tea, jute, and coal. On the eve of the war, roughly 10% of British capital invested abroad – perhaps £250 million – was invested in India, although much of this was in government and railway debt rather than private industry (Misra, 1999, p. 21). Figure A.1 uses figures from Chapman (1992, p. 248) to show the sectoral distribution of British investment and to distinguish sterling companies listed in Britain from rupee companies listed in India. The figure shows that, outside the railways, British investment was especially important in tea, jute, and coal, the sectors in which British-controlled firms also dominate our prewar data.

Before the First World War, European business in India benefited from privileged access to colonial officials and from administrative and financial arrangements that placed Indian competitors at a disadvantage (Bagchi, 1972, pp. 165–166); (Misra, 1999, p. 163). The colonial state also supported European-owned tea plantations through favourable access to land and a coercive legal framework for recruiting and retaining indentured labour (Gupta and Swamy, 2017). More broadly, the policy of free trade favoured commerce and export-oriented industries such as tea and jute over Indian-owned, import-competing manufacturing (Chakrabarti, 2009, p. 994). Lancashire textile interests, including the Manchester Chamber of Commerce, exerted substantial influence over this policy. When duties were imposed on imported cotton cloth for revenue purposes, their pressure

helped secure a countervailing excise on Indian mill production, preventing the tariff from providing effective protection to domestic producers (Gupta et al., 2022, p. 4).

Indian investment before the First World War was locally rooted. It was not aided by policies such as tariffs. Indian capital dominated cotton textiles, where Bombay and Ahmedabad merchants moved from trade, brokerage, and finance into factory production (Gupta et al., 2022; Ray, 1982). Cotton was second only to tea plantations, which were set up with British investment (Chapman, 1992, p. 248). The textile industry developed with social networks substituting for other prerequisites (Gupta et al., 2022).

Indian merchants were important in external and internal trade, credit, and raw-material marketing. In Bombay, the trading communities of Parsis, Bhatias and Khojas accumulated wealth in the opium and cotton trades before diversifying into cotton textile production (Gupta et al., 2022). In Ahmedabad, local bankers and merchant-financiers financed mills and supplied raw cotton (Ray, 1982, p. 392–394); in Bengal, Indian and especially Marwari merchants provided advances to cultivators and helped move raw jute to Calcutta (Tomlinson, 1981, p. 468). During the war the Marwari merchants began to diversify into jute textile production (Goswami, 1985). In Eastern India, Indian traders and managers also had a small presence in coal (Goswami, 1989; Timberg, 2015). The commercial worlds of Bombay and Calcutta were segregated by industry and by social network (Gupta, 2014).

Tea and jute became major export industries through different routes. Agricultural suitability for crops that were in demand in British markets contributed to British investment patterns (Gupta, 2025). Tea is an example. Consumed in the British market, tea grew naturally in the humid forests of Eastern India (Gupta, 2001; Misra, 1987). The industry developed from state-backed experiments after the 1830s into a plantation industry dominated by European planters, sterling companies, and migrant labour; expansion was aided by cheap land, labour legislation, and a British market in which Indian tea displaced Chinese black tea by the 1880s (Gupta and Swamy, 2017). By 1890, India accounted for more than a third of British tea imports; by 1924 it accounted for more than half (Roy, 2026*b*, p. 7).

Jute was another example. Cultivated in the rain-drenched plains of Bengal, it was used as raw material in British factories (Stewart, 1998). Jute manufacturing was located in a narrow industrial belt around Calcutta, close to the export infrastructure of the Hooghly and to the Bengal districts that supplied raw jute (Goswami, 1982, p. 142). The industry benefited from access to cheap industrial labour and from the fact that raw jute was grown overwhelmingly in Bengal (Goswami, 1985; Morris, 1983). Early mills drew on Dundee machinery and expertise, but by the late nineteenth century the Hooghly mills were buying raw jute from Bengal, employing migrant labour, and

exporting manufactured jute goods through Calcutta to world markets (Goswami, 1991; Sen, 1999). By 1900, Calcutta had displaced Dundee as the dominant site for production of cloth and bagging for trade (Goswami, 1991).

Coal mining was an established domestic-market industry, tied to railways, steamships, mills, and later to steel. The industry began in Raniganj, where early mines were worked in the 1820s and 1830s and the Bengal Coal Company was formed in 1843 (Buchanan, 1966, p. 256). Growth accelerated after the East Indian Railway reached the Bengal coalfields and again after the Jharia field opened in the 1890s (Alexander, 2007, p. 203). By 1914, India produced 16.5 million tons of coal and employed about 151,000 workers (Simmons, 1981, p. 752). European managing agencies dominated the larger joint-stock companies, but Indian entrepreneurs owned many smaller collieries (Simmons, 1976).

Unlike tea, jute, and coal, cotton manufacturing was developed mainly by Indian entrepreneurs, especially Parsis, Gujaratis, and other Bombay and Ahmedabad business groups (Morris, 1983, p. 580); European capital was only a minority share (Gupta, 2014). While cotton cloth was produced overwhelmingly for the domestic market, success in the China market made India the second-greatest exporter of yarn in the world in 1913, behind Britain (Morris, 1983, p. 577-8). Other established domestic-market industries in our data include banking, railways, and "miscellaneous" industries such as sugar, shipping, and flour mills. These sectors were heterogeneous. Railways, exchange banking, shipping, and public utilities were more closely tied to British capital and the colonial state, while Indian capital was stronger in indigenous banking, internal trade, and smaller domestic-market enterprises (Roy, 2011).

Before the First World War, foreign private investment in Indian industry did not usually take the form of modern multinational subsidiaries. Much of it was portfolio investment in companies promoted, controlled, or managed by British managing-agency houses (Tomlinson, 1978, p. 660). These firms were therefore closer to Wilkins's (1988) "free-standing companies" or Chapman's (1998) "expatriate investment" than to today's multinational corporation (Twomey, 2000). Managing agents were usually partnerships, and later sometimes joint-stock or limited-liability companies, that promoted, financed, and managed companies across several industries (Chapman, 1988). They supplied technical expertise, management, finance, procurement, sales, and staffing services, and their reputation in the British financial market reduced information and agency problems for long-distance investors while also increasing concentration and oligopoly (Tomlinson, 1978, p. 663); (Gupta, 2014, 2016; Nomura, 2014). Their income came mainly from management commissions and related services rather than from investment returns alone (Misra, 2000, p. 336). Control did not require majority ownership: agencies could float companies, place their own associates on the board, secure the managing contract,

and retain influence with shareholdings well below 50 percent (Goswami, 1985, p. 236). By the eve of the First World War, many managing agencies operated in India, about a dozen of which were dominant (Misra, 2000, p. 335).

Indian managing agencies had many similarities to British managing agencies. They promoted, financed, and managed firms, and exercised control without necessarily owning a majority of stock. But they differed in their social base. Indian agencies were often family-controlled business groups (Markovits, 1985, p. 16). Tata Sons Ltd., established in 1917 as a successor to earlier Tata family firms, was the largest of these (Nomura, 2014, p. 118). Tata Sons maintained influence over the Tata Iron and Steel Company by managing voting rights, even without a majority of the company's capital (Nomura, 2014, pp. 118–129). Other Indian groups relied on family ownership, placing shares with relatives (Markovits, 1985, p. 17). These groups drew on kinship, caste, and community networks, especially among Marwaris, which supplied credit, information, and trusted partners in markets where formal finance and managerial labour were limited (Markovits, 1985, p. 65).

2.2. **Political Risk in the Interwar Period.** The First World War transformed the commercial environment facing British- and Indian-controlled firms. Wartime restrictions and shipping disruption sharply reduced imports, providing temporary protection to Indian industry and allowing domestic producers to capture a larger share of the home market (Bonfatti and Brey, 2024; Tomlinson, 1979). Cotton mill-cloth production, for example, rose by almost 50% during the war years (Markovits, 1985, p. 10). Wartime procurement also increased demand for Indian manufactures: jute mills supplied gunny bags, sandbags, canvas, and cloth, while cotton and woollen mills produced uniforms and blankets for the Allied forces (Goswami, 1982, p. 148); (Simmons, 1981, p. 750). Expansion was nevertheless constrained by India's continued dependence on imported machinery, stores, and industrial inputs (Tomlinson, 1979). These shocks also altered the relative position of Indian and British business. Indian businessmen accumulated capital during the war, while many British businessmen were absent on military service (Markovits, 1985, p. 11). The government began to reconsider its limited role in industrial development and the support Indian entrepreneurs might require in the event of another war (Lockwood, 2012). The Indian Industrial Commission, appointed in 1916, recommended support for basic industries and technical education, although its proposals had little immediate effect (Mukherjee, 2001).

After the First World War, the political position of British investors became less secure. The Montagu–Chelmsford reforms, embodied in the Government of India Act of 1919, expanded Indian representation and introduced dyarchy in provincial government (Cassan, Iyer and Mirza, 2025). At the same time, the Non-Cooperation Movement mobilized

anti-British sentiment and encouraged boycotts of British goods and institutions (Bhavnani and Jha, 2014). Nationalist mobilization continued during the Civil Disobedience Movement of the 1930s. The movement gained support from sections of the Indian business community seeking policy concessions from the colonial government (Chakrabarti, 2009, p. 1012); (Lockwood, 2012). More broadly, leading Indian industrialists developed increasingly close ties to Congress and provided it with financial support. The Indian National Congress in turn supported the demands of Indian industry: tariffs and government procurement from domestic firms (Lockwood, 2012; Markovits, 1985; Misra, 1999); (Chakrabarti, 2009, pp. 986, 1012–1013).[1]

After the First World War, Indian trade policy began to move away from its prewar commitment to free trade. The war had exposed the strategic costs of India's dependence on imported military, railway, and administrative supplies, while import disruption had allowed domestic manufacturers to expand behind temporary "natural" protection (Roy, 2011, p. 187); (Arthi et al., 2024). Indian industrialists consequently pressed for tariffs and the Government of India became more receptive to their demands, both because of industry's contribution to the war effort and because of its growing political influence (Lockwood, 2012); (Chakrabarti, 2009, p. 985). In 1923, the government formally adopted a policy under which tariffs were considered industry by industry based on applications to the tariff board (Markovits, 1985). Iron and steel received protective tariffs in 1924, and protection was subsequently extended to cotton goods, paper, silk, mixed textiles, and other products (Markovits, 1985, p. 12); (Tomlinson, 1978, p. 668). The change was nevertheless selective and incremental rather than a coherent programme of industrialization.

Exchange-rate policy became another major source of conflict after the First World War. The British business community generally favoured a strong rupee, which lowered the cost of imports and facilitated the repatriation of earnings, whereas Indian manufacturers regarded an overvalued currency as harmful to domestic industry (Chakrabarti, 2009, p. 1002). The colonial government defended a strong rupee partly to maintain investor confidence (Markovits, 1985, p. 45). Indian nationalists and business interests opposed Britain's refusal to devalue the rupee in 1931, and renewed trade deficits later in the decade strengthened manufacturers' demands for devaluation (Omissi, Misra and Owen, 1992, p. 549); (Chakrabarti, 2009, p. 1007). During the Great Depression, falling exports, exchange-rate controversy, imperial preference, reluctant tariff protection, and rural distress all gave nationalists additional arguments for a more interventionist economic policy (Simmons, 1987, p. 598).[2]

[1] See also Bonfatti, Brey and Thomson (2025) and Omissi, Misra and Owen (1992) on relations between Indian business and Congress.

[2] See also Hänsel (2018) on nationalist support for economic planning during this period.

Government procurement policy also became more favourable to Indian manufacturing. In 1925, the Secretary of State transferred greater authority over the purchase of government stores to the Government of India, and by the 1930s an increasing share of official supplies was being purchased locally from Indian producers (Tomlinson, 1978, p. 669). This shift provided domestic firms with an important source of demand and weakened the earlier presumption in favour of British suppliers.

The Second World War made the position of Indian entrepreneurs stronger. It also made the prospect of an early transfer of power substantially more credible. In 1939, few British businessmen expected British rule to end within a decade, but wartime fiscal pressures, Britain's dependence on Indian cooperation, the Quit India Movement, and the postwar election of a Labour government progressively weakened the colonial position (Moore, 1986). The Cripps Mission of 1942 further signalled that constitutional change and a larger role for Indian political and business interests could no longer be treated as remote possibilities. Roy (2026*b*, p. 21) notes that Cripps was receptive to proposals from Indian business leaders for greater state intervention to reduce the power of foreign firms. British firms consequently became concerned that independence would bring the Indianization of senior staff, compulsory incorporation or registration in India, stronger labour regulation, and the abandonment of free trade (Roy, 2026*b*, p. 21).

3. Data

This section introduces our principal source, the *Investors' India Year Books*, and explains how we construct the firm-level panel. The dataset covers more than 1,000 companies and combines information on financial performance, board composition, and organizational structure. From the yearbooks and related sources, we assemble measures of profits, share prices, and dividends, together with board composition in the years for which director lists are available. We also link firms to their managing agents, allowing us to reconstruct agent portfolios and trace changes in their industrial and board composition over time. We conclude by describing the sample and its principal variables; sections 4, 5, and 6 present the corresponding descriptions of financial outcomes, boards and interlocks, and managing-agent portfolios.

Our principal source is the *Investors' India Year Book*, first published in 1911. It covers so-called "rupee companies": firms whose capital was denominated in rupees and whose securities were traded in India. Their shareholders included both Indian investors and British expatriates, and the publication covered most companies listed on the Calcutta Stock Exchange (Tumbe, 2024, p. 4). We use fourteen editions: 1911, 1913, 1917, 1919, 1921, 1925–26, 1926–27, 1927–28, 1931–32, 1934–35, 1936–37, 1938–39, 1941–42 and 1943–44.

Each edition provides a contemporaneous snapshot of the firms it covers, including their directors, managing agents, location, and other organizational characteristics. We therefore observe board membership, board composition, and managing-agent relationships only in edition years, at intervals of roughly three to five years. The yearbooks also report retrospective financial histories, often extending several years before publication. Although their coverage varies across firms and industries, these histories commonly include profits, dividends, and share prices, allowing us to construct more nearly continuous annual series for these outcomes. Figures A.2 and A.3 reproduce entries from the 1927–28 edition for Bowreah Cotton Mills and Birla Cotton Spinning & Weaving Mills. We classify the former as British-controlled and the latter as Indian-controlled according to the nationality of the majority of directors.

Why use *Investors' India* rather than other sources on colonial firms? Its principal advantage is that it combines cross-industry coverage with repeated information on financial performance, directors, and managing agents. Alternative sources generally provide either broader coverage or greater detail along a single dimension. *Thacker's Indian Directory*, for example, reports firms, locations, capital, and entrepreneurs annually, but lacks the retrospective series of profits, dividends, and share prices needed for our analysis (Gupta et al., 2022, Appendix A.1.1). The 1911 Industrial Census covers more than 6,200 factories, mines, and plantations and is therefore far more comprehensive, but it provides a benchmark cross-section rather than a long firm panel and contains neither repeated financial outcomes nor board information (Roy, 2026*a*). Industry-association publications, such as the annual reports of the Bombay Millowners' Association, offer richer operational detail but are confined to particular industries and regions. Indeed, Wolcott and Clark (1999, p. 420) supplement these reports with *Investors' India* precisely to obtain firm-level financial outcomes.

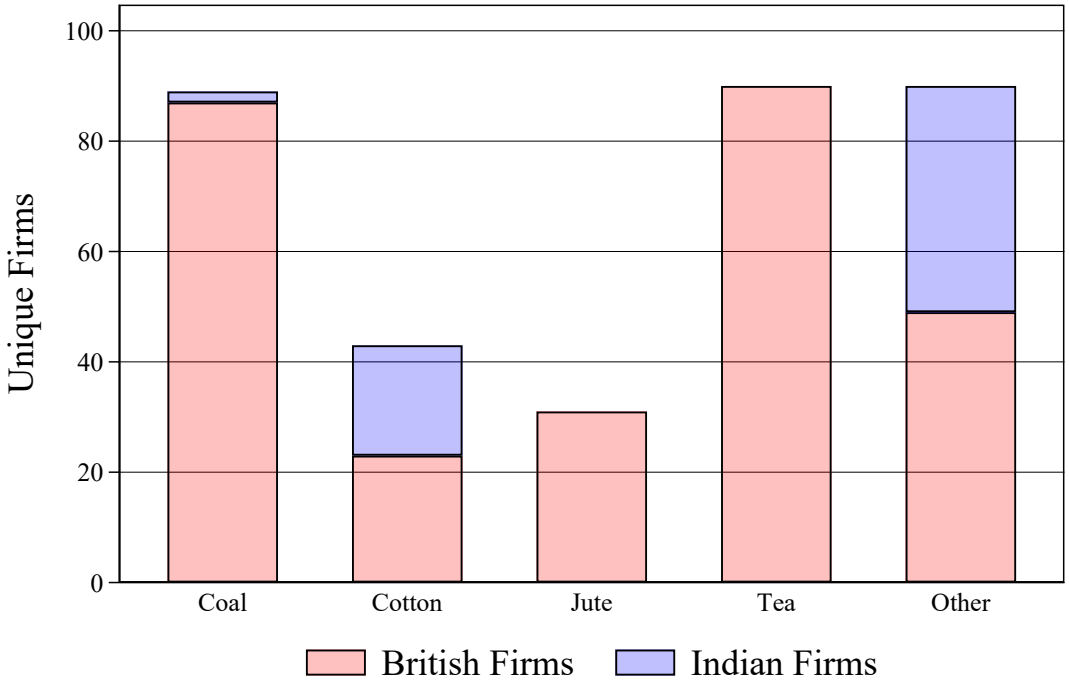
Our merged dataset contains 1,024 firms with financial or organizational information between 1901 and 1943. We classify 346 firms as British- or Indian-controlled using their prewar board composition, supplemented where necessary by the nationality of their managing agent or manager. These 346 firms were already operating before the First World War and form the baseline sample for our firm-level analysis.

The panel is unbalanced for three reasons. First, firms enter later editions of *Investors' India*, either because they were newly established or because the publication's coverage expanded. Second, firms disappear following closure, merger, delisting, or changes in coverage. Third, retrospective financial histories vary in length and completeness, so profits, dividends, and share prices are not available for every firm-year.

A central variable in our analysis is whether a firm is British- or Indian-controlled. We classify a firm as Indian-controlled if more than half of its directors in 1913 have

names that we code as Indian; otherwise, we classify it as British-controlled. When a firm reports no directors, we use the nationality of its managing agent, and where necessary its manager, to assign control. By this measure, 18% of firms observed in 1913 are Indian-controlled. Using an analogous edition-specific classification, 27% of all firm-edition observations are Indian-controlled.

FIGURE 1. British and Indian Firms in 1913



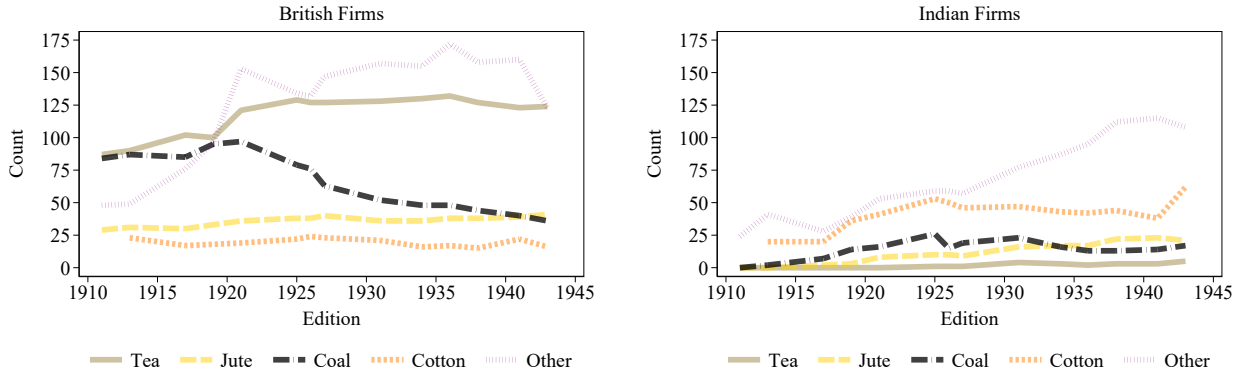
Source: *Investors' India Year Book*, 1913 edition.

We follow *Investors' India* when assigning firms to sectors. Tea, jute, coal, and cotton are all reported in separate sections in early editions, as are banks, railways, and "miscellaneous companies." We group these last three categories into a single "other" sector, into which we also put sectors such as sugar, electric, engineering, and insurance companies that first receive their own sections in later editions.

Figure 1 shows the industrial composition of the baseline sample by control. The sectoral divide is pronounced. All tea firms, 98% of coal firms, and all jute firms are British-controlled, whereas 47% of cotton firms and 46% of firms in the remaining industries are Indian-controlled.

Figure 2 shows how the number and composition of firms change across editions, using the full sample rather than only firms observed in 1913. Firm counts and the sectoral concentration of British- and Indian-controlled firms are generally stable over

FIGURE 2. Number of British and Indian Firms by Industry and Edition



Source: Computed using multiple editions of the *Investors' India Year Book*.

time, although several exceptions stand out. The number of British-controlled tea firms rises through to the 1930s. In coal, by contrast, the number of British-controlled firms declines after the First World War without a corresponding increase in Indian-controlled firms. Figure A.4 reports the Indian share of firms in each sector over time, while Figure A.5 presents the corresponding numbers of British- and Indian-controlled firms by sector and edition.

Our principal financial outcomes are profits, share prices, and dividends. These variables are typically reported once or twice per year; Figures A.2 and A.3 provide examples. We aggregate these observations to the firm-year level. Before constructing the final variables, we winsorize nominal profits, reported high and low share prices, and dividend rates at the 0.1st and 99.9th percentiles of their distributions. Profits and share prices are usually reported in nominal rupees, but are occasionally reported in British pounds or US dollars. We convert dollars to pounds using the exchange rate series from Officer (2026), and then convert pounds to rupees using the official exchange rates in Roy (2011, p. xviii). We convert profits and share prices to real 1914 rupees using the GDP deflator reported by Sivasubramonian (2000, pp. 437–438).

Share prices are usually reported as the highest and lowest prices over a given interval. We first take the midpoint of the reported range, aggregate these midpoints to the firm-year level, deflate them using the same GDP deflator, and then take natural logarithms.

Our dividend measure is the annual dividend rate, typically reported as the "dividend rate per cent. per annum." Figures A.2 and A.3 provide examples, although the rate is not reported for Birla Cotton Spinning & Weaving Mills in the 1927–28 edition of *Investors' India*. The rate is generally reported relative to the subscription or face value of the share rather than its market price. For example, Bowreah Cotton Mills reported a dividend rate of 10% in June 1924 on shares with a subscription price of Rs. 100, implying a dividend of

Rs. 10 per share. This should not be interpreted as a 10% yield on the contemporaneous market price, which ranged from Rs. 294.5 to Rs. 435 during the relevant six-month interval.

To measure board composition and interlocking directorships, we first standardize director names by converting them to lowercase, removing titles, and replacing given names with initials. For example, "G.L. Scott, Esq." becomes "g.l.scott," while "D. P. Khaitan" becomes "d.p.khaitan." We then harmonize spelling variants and manually disambiguate directors across firms and editions. This procedure identifies 518 distinct directors in 1913 and 4,260 across all editions. Of these, 53% in 1913 and 52% overall are coded as Indian.

For each firm and edition, we calculate the share of directors coded as Indian as our principal measure of board composition. We also identify directors who serve on more than one board and use these interlocks to measure a firm's connections to other companies. We distinguish total connections from connections to firms in the same or different sectors and to British- or Indian-controlled firms.

Finally, the yearbooks identify each firm's managing agent. Bowreah Cotton Mills, for example, was managed by Kettlewell, Bullen, & Co., while Birla Cotton Spinning & Weaving Mills was managed by Birla Brothers. We harmonize managing-agent names across firms and editions and classify each agent as British or Indian based on its name.[3]

We construct two measures of portfolio composition. First, we calculate an industrial-diversification index equal to the probability that two firms drawn independently, with replacement, from an agent's observed portfolio operate in different industries. Second, we calculate the share of distinct directors serving on firms in the portfolio who are coded as Indian, counting each director only once within an agent-edition, even if that director sits on multiple boards.

Both measures are necessarily confined to firms covered by *Investors' India*. Our network measures therefore omit interlocks with firms outside the source, while our managing-agent measures omit companies in an agent's portfolio that are not reported in the yearbooks.

4. Profits, Share Prices, and Dividends

In this section, we ask whether the behavior of profits, share prices, and dividends is consistent with capital withdrawal by British investors in response to interwar political risk. Withdrawal might appear in falling valuations or unusually high payouts if firms distributed earnings rather than reinvested them, although neither pattern is decisive on

[3]In fewer than 1% of cases, a firm lists multiple managing agents. We split the entry into individual agents for agent-level portfolio measures. Such firms can therefore appear in more than one agent's observed portfolio.

its own. We find little indication of a general British retreat. Financial outcomes diverged mainly across industries rather than by firm nationality: jute and cotton experienced temporary booms, tea fluctuated sharply before recovering, and coal experienced weak valuations and intermittent profit declines. Only in cotton did British firms sustain dividends that were unusually high relative to profits, providing limited evidence of gradual withdrawal.

4.1. **Literature.** Political risk can induce investors to move wealth abroad or to reduce their exposure to domestic assets. In models of distributional conflict, anticipated taxation or expropriation can generate capital flight, while cross-country evidence shows that political instability and policy variability predict larger private capital outflows (Alesina and Tabellini, 1989; Collier, Hoeffler and Pattillo, 2001; Le and Zak, 2006). In our setting, the analogous response would be a withdrawal of British capital from India through reduced reinvestment, the sale of Indian assets, or the repatriation of earnings.

We do not observe these flows or changes in ultimate share ownership directly. Our financial variables instead capture three related but distinct margins: profits, share prices, and dividends. No single one of these outcomes provides an unambiguous measure of capital flight on its own. Greater risks of expropriation, discriminatory taxation, or adverse regulation can reduce the expected cash flows accruing to investors and discourage further investment (Stulz, 2005; Thomas and Worrall, 1994). Such risks may not immediately reduce realized accounting profits, which also depend on current demand, costs, and capacity utilization. Profits, then, are measures of operating performance rather than direct evidence of capital withdrawal.

Share prices are forward-looking and should capitalize changes in expected future cash flows and returns. Political developments that make future policy less favourable, or that reduce the value of a firm's political connections, should therefore lower its market value (Ferguson and Voth, 2008; Jayachandran, 2006; Pastor and Veronesi, 2012). Political uncertainty can also raise risk premia and increase the volatility and co-movement of equity prices, while option-market evidence shows that investors pay for protection against the price, variance, and tail risks surrounding political events (Kelly, Pástor and Veronesi, 2016; Pástor and Veronesi, 2013). A relative decline in the share prices of British firms could thus indicate deteriorating expectations about their future returns, although it would not by itself establish that investors had withdrawn capital.

The prediction for dividends is less clear. Dividend payments depend on profitability, accumulated earnings, and investment opportunities, as well as on signalling and agency considerations (Denis and Osobov, 2008; Fama and French, 2001; Turner, Ye and Zhan, 2013). A firm preparing for gradual withdrawal might distribute earnings rather than reinvest them, producing high payouts despite weak expected growth. But political risk

could instead reduce dividends by lowering profits or encouraging firms to retain liquid resources. Higher dividends are therefore suggestive of repatriation when accompanied by weak profits or valuations and an absence of renewed investment.

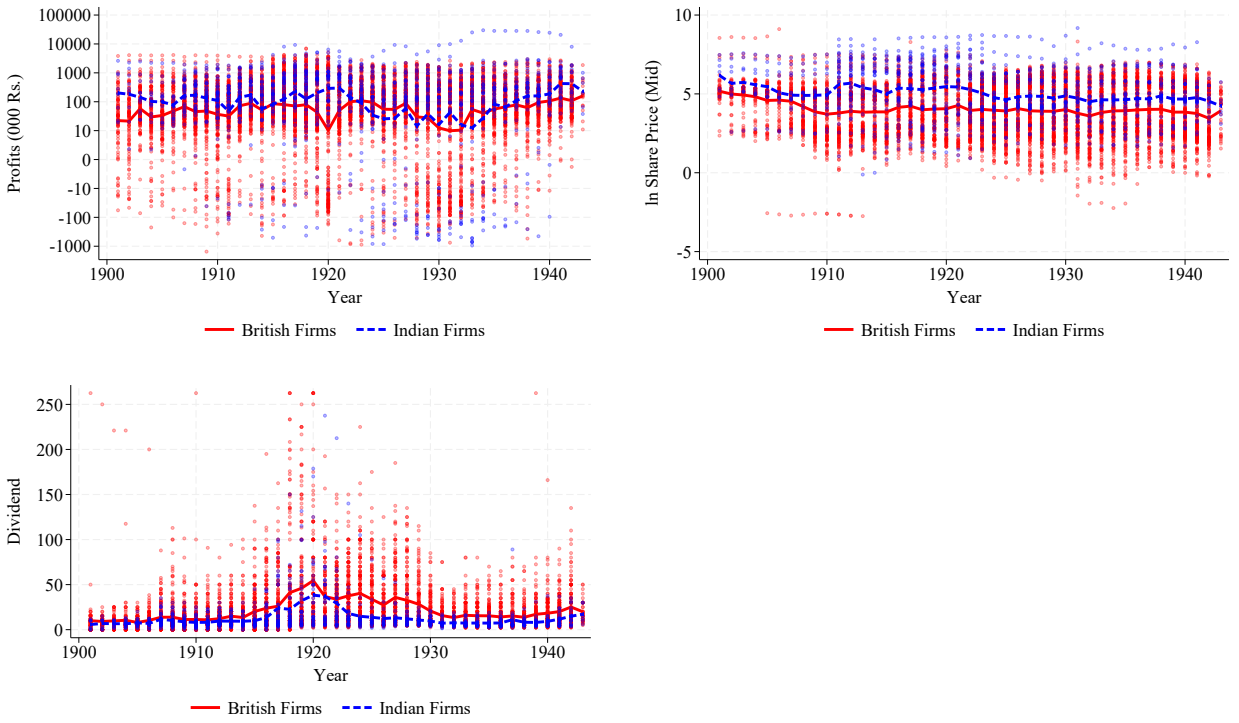
Economic historians disagree over whether British business began a gradual withdrawal from India after the First World War. The preference of British business for a strong rupee has been interpreted partly as an attempt to facilitate the repatriation of profits (Ray, 1979, p. 247). The exceptionally high dividends paid by British-dominated jute companies after the war are also consistent with this interpretation: dividends exceeded 100% of ordinary share capital between 1918 and 1920, and some distributed and undistributed profits were remitted abroad (Tomlinson, 1981, p. 462). More broadly, Markovits (1985, p. 62) argues that British business responded to the weakening of the imperial system not by adapting but by adopting an increasingly defensive strategy.

The evidence does not, however, establish a general exodus of British capital. Tomlinson (1981) emphasizes the absence of systematic estimates of profit repatriation and reinvestment, while Markovits (1985, p. 61) finds no evidence of large-scale withdrawal. Aggregate private foreign investment in India continued to increase during the interwar period, particularly in the 1920s (Tomlinson, 1978, pp. 659–660). These findings are compatible with declining dynamism among established British business houses without implying an absolute reduction in the total stock of foreign capital. The historical debate therefore turns on whether British firms gradually reduced their exposure and ceased to reinvest, rather than on whether there was an immediate and comprehensive flight of British capital. Existing aggregate evidence cannot readily distinguish between these possibilities.

4.2. **Empirical Patterns.** Our analysis in this section is descriptive. We first compare the distributions of profits, share prices, and dividend rates around 1914 for firms classified as British- or Indian-controlled on the basis of their boards. We then trace annual means for the two groups over time, both in the aggregate and within industries. We look for combinations of declining valuations and unusually high payouts relative to profits that might be consistent with reduced reinvestment or gradual capital withdrawal, while recognizing that no single outcome is conclusive. The results provide little indication of a general British retreat. Financial trajectories differed mainly across industries rather than by control, and are more readily explained by sector-specific demand shocks, cartelization, struggles over corporate control, and the shift toward protection and import substitution. Only the persistent dividends of British cotton firms provide suggestive evidence of reduced reinvestment.

4.2.1. *All Industries.* In Figure A.6, we plot kernel densities of real profits, real share prices, and dividend rates in 1914 for British and Indian firms separately, across all industries.

FIGURE 3. Profits, Share Prices and Dividends: All Industries



Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Lines indicate annual means. Each dot is an individual firm-year observation. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

On the eve of the war, Indian firms earned real profits 94% greater on average than British firms. Shares in Indian firms also traded at much higher prices: their mean price was almost five times that of shares in British firms. Dividend rates show the opposite pattern. British firms paid higher and more dispersed dividends, and the mean dividend rate among Indian firms was only 69% of the British mean.

How did these aggregate differences change during and after the war? Figure 3 shows scatterplots of real profits, real share prices, and dividend rates over time, separating firms according to their board compositions in 1913 and indicating the annual means for both groups. The aggregate series do not show a simple postwar decline for either group. Both experienced a wartime boom. Between 1914 and 1920, real profits rose by 138% for Indian firms and 137% for British firms. Dividend rates also increased sharply and by similar proportions: the mean dividend rate rose to slightly more than four times its 1914 level for Indian firms, with British firms experiencing a nearly identical increase. Share prices also rose for both groups, although less dramatically than profits or dividends.

British share prices increased by about 52%, while Indian share prices increased by about 19%.

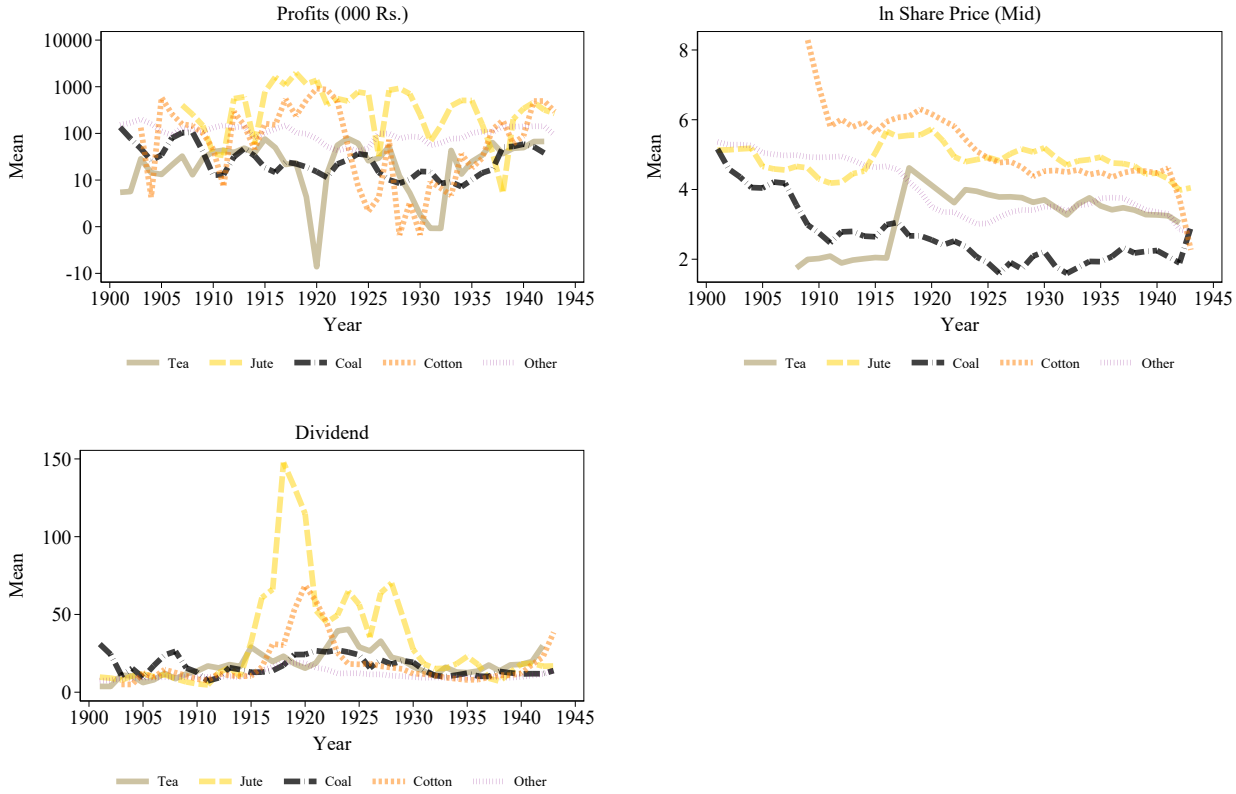
Much of the wartime boom unwound during the 1920s, as profits, share prices, and dividends declined from their peaks. A different divergence emerged during the 1930s. By 1939, Indian firms' real profits were more than three times their 1914 level, but their real share prices had fallen to less than half their 1914 level and their dividend rates were about 14% lower than in 1914. Among British firms, share prices were close to their 1914 level, but profits were 42% higher and dividends were 26% higher.

The aggregate British-Indian comparison is difficult to interpret because ownership was strongly correlated with industry. Firms within the same industry often faced common market shocks and shared policy interests. British cotton manufacturers in Kanpur, for example, joined Indian millowners in supporting tariff protection and a lower-valued rupee, while the Upper India Chamber of Commerce complained that policy favoured manufacturers in Britain (Chakrabarti, 2009, p. 1002). Figure 4 confirms that profits, share prices, and dividends followed sharply different sectoral trajectories. Coal declined over much of the period, while cotton and jute experienced pronounced wartime booms and subsequent reversals. The largest dividend increases occurred in both Indian-dominated cotton and British-dominated jute, whereas tea dividends changed much less. High postwar payouts therefore cannot be interpreted mechanically as evidence that British firms were withdrawing capital. We consequently turn to two more informative comparisons: differences between British- and Indian-dominated industries and, where possible, differences between British and Indian firms within the same industry.

4.2.2. *Export Industries.* We begin with the two principal export industries, tea and jute. Our baseline sample of tea firms that can be classified in 1913 is entirely British, consistent with the dominance of British capital and the limited presence of Indians on tea-company boards. No jute firms in the classified baseline sample are Indian. Figure A.7 shows kernel densities of real profits and dividend rates in tea in 1914; share prices are omitted because they are reported by very few firms. Tea dividends were high and strongly right-skewed, with some firms paying dividends as great as 80% of paid-up capital. Figure A.8 presents the corresponding distributions for jute and also includes share prices. The extreme upper tail of dividend rates found in tea is absent in jute.

What happened after the war? Figures A.9 and A.10 show the subsequent trajectories of the two industries. Tea followed a volatile path. Profits weakened at the end of the war and became negative on average in 1920, recovered strongly during the mid-1920s, and collapsed again in the early 1930s. They subsequently recovered, reaching roughly twice their 1914 level by 1942. Tea dividends fluctuated much less than jute dividends. They

FIGURE 4. Profits, Share Prices and Dividends: By Industry



Source: Computed using multiple editions of the *Investors' India Year Book*. Lines indicate annual means. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value. The sample includes all firms, whether or not they are present in 1913.

fell below their 1914 level during the Depression but had risen to slightly more than twice that level by the end of the sample.

Jute experienced an extraordinary wartime boom. By 1918, real profits were almost eight times their 1914 level, share prices were approximately 2.7 times as high, and dividend rates were more than fifteen times as high for firms in the baseline sample. Profits and dividends remained elevated through much of the 1920s before collapsing during the Depression. The industry then recovered: by 1942, real profits were about 29% above their 1914 level, share prices were 36% higher, and dividend rates were approximately twice as high.

Tea's trajectory reflected sector-specific problems of quality, competition, and supply. During the interwar period, the industry faced declining quality, competition from Ceylon tea, and falling prices and profits (Misra, 1987). In response to excess supply and the collapse in prices during the Great Depression, producers formed a cartel that received legal support from the Government of India (Gupta, 2001). The recovery in profits after

the early 1930s is consistent with the cartel having helped stabilize the industry, although the figure alone cannot identify its causal effect. Coordination within India was facilitated by the concentration of production among a relatively small number of managing-agency groups. Tea was also produced principally for export and had become an important component of British consumption (Misra, 1987, pp. 230–232). Because India did not control world production, however, effective output restriction also required agreements with producers in Ceylon and the Dutch East Indies (Gupta, 2001).

The exceptionally high postwar payouts in jute reflected a sector-specific boom rather than a general withdrawal of British capital. During the war, many jute companies paid dividends exceeding 100% of paid-up capital (Goswami, 1985, p. 231). Wartime profits also financed Indian entry into manufacturing, including jute (Goswami, 1982, p. 143). Some managing agencies distributed shares to partners, managers, and assistants, who subsequently sold them as prices rose; many of the purchasers were Indian, particularly Marwari, investors (Goswami, 1985, p. 231). Indians entered the boards of existing companies during the war and established new jute firms during and after it (Goswami, 1989, p. 293). The wartime boom therefore both generated unusually high payouts and accelerated changes in the industry's ownership structure.

Indian entry occurred within a dense network of commercial and financial relationships between Marwari traders and British managing agencies. Marwari firms supplied raw jute and sometimes extended credit, purchased shares, or provided long-term loans to British companies (Oonk, 2014, pp. 52–54). Their influence increased during the 1920s as cultivators became more willing to withhold supplies in pursuit of higher prices and as the futures market, largely controlled by Marwari traders, became more important (Tomlinson, 1981, p. 468). Indian investors acquired substantial holdings in British-managed firms, and mixed Indian–British boards became increasingly common (Tomlinson, 1978, p. 670). Nevertheless, Indian-owned mills remained relatively small and produced less than 10% of industry output (Goswami, 1982, p. 153). Indian influence over finance, trade, and ownership therefore grew faster than Indian control of manufacturing capacity.

The Depression turned this gradual change into a struggle over corporate control. Jute profits collapsed after 1928, and falling share prices weakened managing agencies that had borrowed against their shareholdings. As collateral values declined, Marwari creditors demanded larger blocks of shares as security and Indian investors purchased shares sold by existing shareholders (Goswami, 1985, p. 239). At the same time, efforts to restrict output were weakened by mills that remained outside the cartel and could profit from continuing to produce (Goswami, 1982, p. 166). Dividend policy consequently became connected to control as well as current profitability. Managing agents had incentives to avoid sharp changes in dividends that might trigger share sales, and some

cartel members maintained payouts by drawing on reserves and dividend-equalization accounts (Goswami, 1982, p. 166). Goswami (1989, pp. 294, 299) argues that British-managed mills sometimes maintained high dividends, even in the face of losses, to support their share prices and discourage sales to Marwari investors. This mechanism offers a coherent interpretation of the 1930s evidence: even as jute profits weakened, dividend policy remained connected to control as well as current profitability, because maintaining payouts could help support share prices and discourage sales to Indian investors.

The different outcomes in jute and tea, even for firms controlled by the same managing agents, reflect entry of Indian firms and the dilution of oligopolistic control by British managing agents. The presence of a fringe group of Indian firms that refused to join the Jute Mills Association's effort to cartelize the industry was responsible for the failure of a jute cartel after 1929. In tea, dominated by British firms and managing agents, a successful cartel operated in the 1930s (Gupta, 2025).

4.2.3. *Established Domestic-Market Industries.* We turn next to the established domestic-market industries, which we divide into coal, cotton, and an "other" category comprising banking, railways, and disparate industries such as sugar and shipping. Figure A.11 shows the distributions for coal. Although Indian entrepreneurs already operated some collieries, too few Indian firms report financial outcomes for a meaningful comparison. The reporting British coal firms paid dividends averaging 16% of paid-up capital. The sharpest British-Indian differences instead appear in cotton in Figure A.12. Indian cotton firms earned 1.7 times the mean profits of British firms, while their shares traded at about 3.5 times the British mean price. Dividend rates differed much less: Indian firms paid 12% on average, compared with 9% among British firms. In the heterogeneous "other" industries shown in Figure A.13, the gap was smaller still. Indian firms had profits on average 15% greater than British firms, while their share prices were 6% lower and their dividend rates were 18% lower.

After 1914, the three established domestic-market sectors followed different trajectories. Figures A.14, A.15, and A.16 show the time trends for coal, cotton, and the remaining established industries. Coal performed poorly through much of the interwar period. British firms' real profits fell to 61% of their 1914 level by 1918 and did not regain that baseline until 1922. After remaining above the 1914 level through the mid-1920s, they weakened again, falling to 57% of the 1914 level in 1928. They briefly returned to the baseline in 1930, but fell again to 60% by 1933 before recovering toward the end of the 1930s. Coal share prices also weakened over the longer run: by 1939, the mean price among British firms was only 56% of its 1914 level. Dividend rates proved more resilient. British firms paid dividends above their 1914 rate through most of the 1920s, even as profits and

share prices deteriorated, but their mean payout had fallen to roughly two-thirds of the 1914 rate by 1937.

Cotton experienced a much larger boom and a sharper subsequent contraction. By 1920, British firms' real profits were more than seven times their 1914 level and Indian firms' profits were more than three times as high. Dividend rates rose even more dramatically, reaching more than fourteen times the 1914 level among British firms and more than five times that level among Indian firms. The two groups' operating performance subsequently moved in broadly similar cycles, but their payout policies diverged. During the late 1920s and early 1930s, British firms continued to pay dividends well above their 1914 rate even when their profits were weak: in 1929, for example, British profits were only 53% of their 1914 level, while their dividend rate remained 78% higher. Indian firms in the same year had profits equal to only 29% of their baseline and dividends 36% above it. By 1939, profits had recovered to more than twice the 1914 level among British firms, while Indian firms' profits remained below their 1914 level. Dividend rates had also fallen below their 1914 level for Indian firms, while remaining above their 1914 level for British firms.

The heterogeneous group of other established industries displays a different British–Indian divergence. Both groups benefited from the wartime expansion, but the increase was much larger and more persistent among Indian firms. Indian profits were roughly twice their 1914 level in 1917 and remained above the baseline throughout most of the 1920s; British profits rose only 40% by 1917 and fell to nearly one-third of their 1914 level by 1922. From the early 1930s onward, the gap widened sharply: by 1935, mean Indian profits were almost five times their 1914 level, whereas British profits were only 47% above their baseline. Share prices were much more volatile, especially among British firms, and do not show a comparably smooth divergence. Dividend rates, by contrast, rose for both groups during the war. Indian payouts fell below their 1914 level during the early 1930s before recovering, while British firms generally maintained dividends above their 1914 rate through the end of the sample.

What could explain these patterns? Coal was an established domestic-market industry, but one that depended heavily on a limited number of large customers. The larger companies and the most productive mines were predominantly controlled by European managing agencies, although Indian entrepreneurs already operated many smaller collieries before the First World War and expanded their participation during the war and the early 1920s (Simmons, 1976, pp. 193–205). Railways alone accounted for roughly one-third of Indian coal demand (Simeon, 1996, p. 88), and several of the leading British managing agencies operated simultaneously in coal, jute, and tea (Bagchi, 1972, pp. 176–177). Wartime demand and prices increased sharply, but the gains were not sustained.

British firms' profits fell during the war, regained their 1914 level in the early 1920s, and remained above it for several years before weakening again in the late 1920s and early 1930s.

From the middle of the 1920s, weaker railway demand and falling prices compounded the coal industry's problems (Goswami, 1985, p. 233). The continued payment of dividends above the 1914 rate through much of the 1920s therefore appears less like a reflection of strong current performance than an attempt to smooth payouts through a deteriorating market. By the 1930s, both dividends and share prices had fallen substantially, consistent with worsening expectations about the industry's future returns. This deterioration did not, however, produce a transfer of control comparable to that in jute. British managing agencies generally retained large direct shareholdings, and relatively few shares in European-controlled collieries changed hands during the 1920s (Banerjee, 2017, p. 81).

Cotton followed a different trajectory. The First World War reduced foreign competition and increased demand for Indian production, producing exceptional profits among both British and Indian mills. Between 1917 and 1922, gross profits in the industry averaged 75.6% of capital (Morris, 1983, p. 605). In our data, profits by 1920 had risen to more than seven times their 1914 level among British firms and to more than three times their 1914 level among Indian firms; dividend rates rose to more than fourteen and more than five times their respective baselines. The subsequent contraction affected both groups, but British firms maintained unusually high payouts for longer. In 1929, for example, British profits were only 53% of their 1914 level, while their dividend rate remained 78% higher. Indian profits had fallen further, to 29% of their baseline, but their dividends were 36% above their 1914 rate.

This pattern is suggestive of more persistent dividend smoothing among British firms rather than simply superior operating performance. Established British managing agencies may have had stronger incentives to preserve their reputations with expatriate shareholders, while Indian cotton firms relied more heavily on family and community-based capital networks (Gupta, 2014, pp. 13–14, 147–150). The evidence therefore points to segmented investor constituencies and different payout policies, rather than to a straightforward movement of capital from Indian to British cotton firms.

The increasingly strong performance of Indian firms in the heterogeneous group of other established industries may partly reflect the expansion of protected domestic-market industries during the 1930s, especially sugar. The tariff introduced in 1932 transformed an industry previously constrained by foreign competition and unreliable cane supplies (Attwood, 1985, p. 63). Between 1930–31 and 1936–37, the number of factories rose from 29 to 140, white-sugar output increased from 120,000 to 1.129 million

tons, and imports fell from 809,000 to 22,000 tons (Indian Tariff Board, 1938, pp. 17–20). Contemporary observers also reported that Indian capitalists had invested more than 300 million rupees (Mitra, 1939, foreword). Rapid entry ultimately generated excess production, accumulating stocks, and pressure for coordinated marketing and output restriction (Indian Tariff Board, 1938, pp. 114–119). Sugar thus illustrates how protection created profitable opportunities for Indian-controlled domestic firms, although it cannot explain the entire heterogeneous category.

4.2.4. *Summary.* In sum, the within-industry comparisons provide no evidence of a general flight of British capital after the First World War. The large dividends paid in jute largely reflected its wartime boom and later efforts to preserve corporate control, while coal's deteriorating profits and valuations were not accompanied by substantial transfers of British-owned shares. In cotton, British firms maintained unusually high dividends relative to profits during the late 1920s and early 1930s, a pattern consistent with reduced reinvestment or gradual withdrawal, but not sufficient to establish either. Meanwhile, the stronger performance of Indian firms in several domestic-market industries reflected new opportunities created by protection and import substitution. The evidence therefore points to sector-specific adjustment rather than a common British response to political risk. Capital withdrawal became clearer after independence: by 1953, about 12% of British assets in India had been repatriated through share sales and other investment unwinding (Roy, 2017, p. 15).

5. Board Diversification and Connected Directors

In this section, we examine two organizational responses to interwar political risk: the appointment of more Indian directors and the formation of connections through interlocking directorships. Before the First World War, British- and Indian-controlled firms generally had boards dominated by directors of their own nationality. This separation was nearly complete in tea but weaker in cotton and other domestic-market industries. British firms subsequently added Indian directors only gradually and unevenly. Indian representation changed little in tea, rose more noticeably among British-controlled firms in jute, coal, cotton, and the remaining domestic-market industries, and did not generally produce full convergence in board composition. These differences suggest that board Indianization reflected sector-specific changes in the value of Indian capital, market knowledge, and commercial connections rather than a uniform response to political risk.

Interlocking directorships already connected most firms within a common corporate network before the war, but British firms were generally more highly connected and ties remained concentrated within British and Indian business circles. Interlocks became denser over time, yet British firms generally retained their connectivity advantage and

the network remained strongly segmented by British and Indian control. Cross-group integration increased most clearly in cotton and to a lesser extent in jute and coal, but hardly at all in tea. Like board Indianization, the evolution of interlocks therefore appears to reflect changes in sector-specific managing-agency, financial, and commercial networks rather than broad integration between British and Indian business.

5.1. **Literature.** Boards perform monitoring functions, but they also advise management and provide access to information, finance, legitimacy, and political influence (Adams, Hermalin and Weisbach, 2010). These resource-provision functions suggest several reasons why a foreign-controlled firm might appoint local directors as political conditions changed. Indian directors could supply knowledge of domestic markets and institutions, connections to officials and emerging political elites, and legitimacy with Indian investors, customers, and employees. Such resources should be especially valuable to firms dependent on regulation, tariffs, procurement, or other government decisions (Acemoglu et al., 2016; Akey, 2015; Faccio, 2006; Fisman, 2001; Hillman, 2005). Interlocking directorships could perform related functions by transmitting information, facilitating access to finance, monitoring borrowers or business partners, co-opting sources of uncertainty, and coordinating responses to common threats (Mizruchi, 1996; Okazaki, Sawada and Yokoyama, 2005). These interpretations are not mutually exclusive: firms may add directors because they face greater risk, while some interlocks arise incidentally from the careers and social standing of prominent directors. Empirically, unprofitable firms are more likely to interlock and firms in distress are more likely to add bankers to their boards (Mizruchi, 1996, p. 275, 289-90). Because outside directors are drawn from a small pool of individuals with sufficient reputations, they are often sources of board interlocks (Mizruchi, 1996, p. 278).

These mechanisms fit the institutional structure of colonial Indian business. The historical literature has recognized that boards were embedded in managing-agency and community networks, and multiple directorships could convey status, information, access to capital, and influence over several legally distinct companies. Prominent businessmen such as Fazulbhoy Currimbhoy and F. E. Dinshaw held dozens of directorships, while other Indian directors who were not principals of major business houses supplied expertise in marketing and finance (Markovits, 1985, pp. 15–16). Indian financiers and traders also developed commercial and credit relationships with British managing agencies, particularly in eastern India, sometimes becoming shareholders, lenders, and eventually directors (Oonk, 2014, pp. 52–54). By the 1920s, Indian investors had acquired substantial holdings in some British-managed companies and mixed British-Indian boards had become increasingly common (Tomlinson, 1978, p. 670). Adding Indian

directors could therefore help British firms gain local knowledge, capital, legitimacy, and political access, or co-opt increasingly important investors.

5.2. **Empirical Patterns.**

5.2.1. *All Industries.* We study two dimensions of board structure: the Indian share of a firm's directors and its connections to other firms through interlocking directorships. Following the procedure described in Section 3, we harmonize director names across firms and editions, classify directors as British or Indian based on their names, and calculate the Indian share of each board.

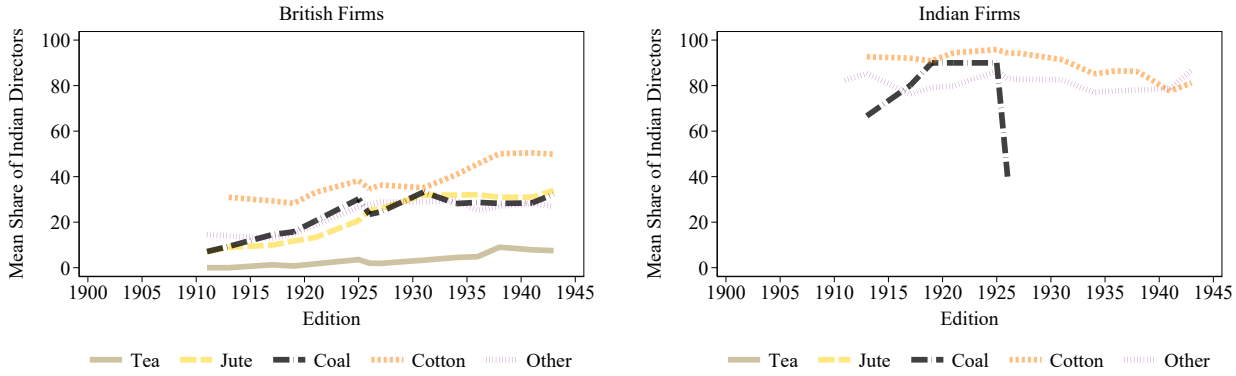
We define an interlock as occurring when the same individual simultaneously serves on the boards of two firms. We count a firm as connected to another company if the two firms share at least one director in the same edition. Multiple shared directors between the same pair of firms are collapsed to a single firm-pair connection, although we record whether the connection is through British directors, Indian directors, or both. We distinguish total connections from links to firms inside and outside the firm's sector and to British- and Indian-controlled firms, classified by their board composition in a given year. These distinctions allow us to assess whether firms deepened existing sectoral networks or formed new connections across sectoral and control boundaries.

Throughout this section, we group firms according to their baseline control status, measured from their 1913 board composition. For the destination of an interlock, however, we classify the connected firm using its board composition in the relevant edition. We therefore distinguish whether a 1913 British- or Indian-controlled firm was connected, in a given edition, to firms that were then British- or Indian-controlled.

Board composition and network position differed sharply between British and Indian firms at the start of our sample. Figure A.17 shows that British boards were still overwhelmingly British: Indian directors accounted for only about 11% of the average British board in 1913. Indian firms had predominantly Indian boards, with Indian directors accounting for about 87% of the average board.

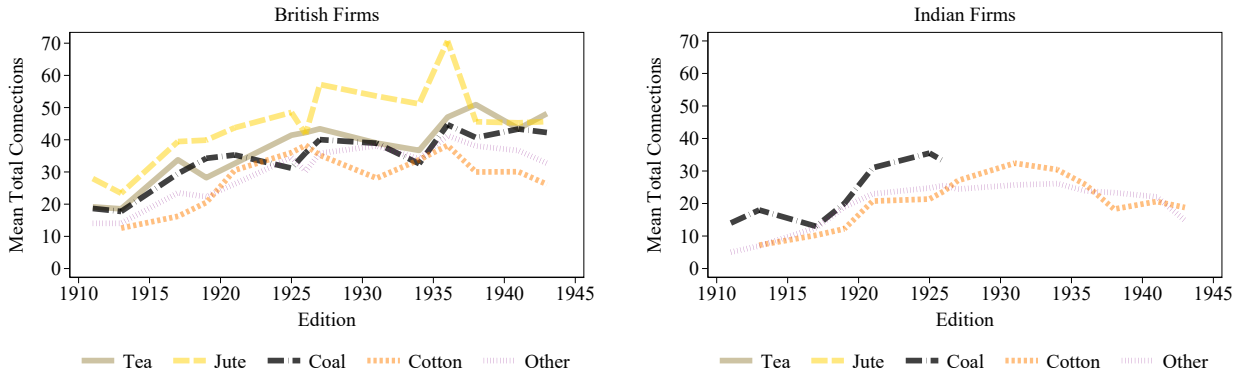
The network in Figure A.18 was nevertheless not divided into separate British and Indian systems. Most firms were connected to at least one other company, although isolation was more common among Indian firms than among British firms. In 1913, only about 5% of British firms and 19% of Indian firms had no board interlock. British firms occupied the more connected part of this network, averaging 17 firm-pair connections compared with 7 among Indian firms. Figures A.19, A.20, A.21, A.22, A.23, and A.24 show histograms of these baseline links by type and sector. Connections were strongly assortative; British firms were linked predominantly to other British firms, while Indian firms' smaller networks were concentrated mainly among other Indian firms.

FIGURE 5. Share of Indian Directors by Year



Note: This figure shows the average share of Indian directors within each industry, based on whether the name is an Indian name or not. We omit Indian coal firms in 1911.

FIGURE 6. Number of Director Connections by Year



Note: This figure shows the average number of director connections within each industry.

After the war, British firms Indianized only gradually. Figures 5 and A.25 show that the mean Indian share of British boards rose from about 11% in 1913 to about 24% by 1931, and then changed little through the early 1940s. Indian firms remained predominantly Indian-controlled throughout: their mean Indian share was about 87% in 1913, stayed mostly above 80% during the interwar period, and was still above 80% in 1943. The main change was therefore a modest opening of British boards rather than convergence in board composition.[4]

[4]We remove Indian coal firms from Figure 5 for 1911. Only a single Indian coal firm, The Royal Coal Company, appears in 1911. In 1911, both its directors in *Investors' India* are British, while its managing agent (N.C. Sircar & Sons) is Indian. In 1913, *Investors' India* lists no directors but does still list N.C. Sircar & Sons as its managing agent. We therefore give The Royal Coal Company the time-invariant classification of Indian. In later editions of *Investors' India*, its managing agent remains N.C. Sircar & Sons and all its directors become Indian.

Networks expanded more substantially. Figures A.18, 6, and A.26 show that both groups accumulated additional interlocking directorships after the war. By 1931, the average British firm had about 41 connections, compared with 28 for the average Indian firm, and British firms generally remained more connected thereafter. The new ties crossed sectoral boundaries as well as linking firms within the same industry. By 1931, British firms averaged about 14 within-sector and 27 cross-sector connections, while Indian firms averaged about 10 and 18, respectively.

This expansion did not produce much integration between British and Indian business networks. Most of the increase came from ties to firms of the same type. By 1931, the average British firm had about 35 connections to British firms but only 6 to Indian firms. Indian firms showed the mirror image: the average Indian firm had about 22 connections to Indian firms but only 6 to British firms. The interwar corporate network therefore became denser without becoming much less segmented, and British firms remained more highly connected than Indian firms throughout the sample.

As in our analysis of profits, share prices, and dividends in Section 4, aggregate comparisons are difficult to interpret because British and Indian ownership was concentrated in different industries. We therefore turn to within-sector comparisons, beginning with the export industries before considering the established domestic-market industries. Figure A.25 traces the Indian share of directors over time within each industry, separately for firms classified as British and Indian at the start of the sample. Figures A.27, A.28, A.29, and A.30 then show how firms' interlocking directorships evolved, distinguishing connections within and across sectors and connections to British- and Indian-controlled firms. Figures A.31, A.32, A.33, A.34, and A.35 show these patterns separately by industry. These comparisons allow us to ask whether changes in board composition and inter-firm networks reflected common responses to political change or instead differed across industries.

5.2.2. *Export Industries.* The two export industries differed markedly in their degree of Indian participation at the start of the sample. Tea remained almost entirely British. Figure A.17 shows that every tea company had an all-British board. Tea companies were also embedded in British corporate networks. As Figure A.20 shows, the average firm had about 19 interlock connections, divided between firms inside and outside the tea industry. Almost none of these connections were to Indian firms.

Indian participation was more visible in jute. Indian directors accounted for about 9% of the average British jute board in 1913, compared with almost none in tea. Jute firms were also highly connected, especially across sectoral boundaries: the average British jute firm had about 23 interlock connections, of which about 16 were to firms outside jute. Unlike tea, the jute network also included some links to Indian-controlled firms,

although these remained limited. The baseline jute network was therefore more open than tea's, but still dominated by British-controlled firms.

Tea changed little in its board composition. Firms classified as British at the start of the sample remained overwhelmingly British through the 1940s, with Indian directors accounting for less than 10% of the average board. Their networks nevertheless became denser. By 1943, the average tea firm had 48 interlock connections, and most of these links were within tea or to other British firms. Connections to Indian firms remained rare, averaging fewer than two per company.

Jute, by contrast, Indianized more noticeably. Although no jute firms in the classified 1913 baseline sample were Indian-controlled, the boards of initially British jute firms became substantially more Indian over time. The mean Indian share of directors rose from about 9% in 1913 to roughly 32% by 1931 and about 34% by 1943. Their networks also became denser and continued to extend across sectors. By 1931, the average British jute firm had about 54 interlock connections, with cross-sector ties outnumbering within-jute ties. Most connections were still to British-controlled firms, but links to Indian-controlled firms became more common than in tea. Jute therefore became more open to Indian directors and Indian-linked networks, even though its baseline firms remained British-controlled.

Tea companies remained firmly under British control. The informational constraint faced by Indian entrants in jute was less binding, as Indian traders controlled much of the raw-jute supply chain and often provided finance to jute firms (Gupta, 2014, pp. 142, 163); (Goswami, 1989, pp. 292, 295). In tea, by contrast, Indian traders had little involvement in the production of the raw material. Cultivation and processing were concentrated within plantations that remained overwhelmingly European-owned (Roy, 2011, p. 218); (Sharma, 2011, p. 83). Entry by Indian entrepreneurs was difficult because successful exporting required capital-intensive marketing and shipping operations, as well as knowledge of European markets already concentrated among British firms and brokers (Roy, 2011, pp. 218–219). These difficulties help explain the stability of tea-company ownership and boards. The pattern may also partly reflect our source. *Investors' India* mainly covers rupee companies, which were more oriented toward the Calcutta market, while sterling companies often sold through London and had less incentive to develop alternative markets (Misra, 1987, p. 234).

Jute followed a different path. Before the First World War, it was one of the principal strongholds of British managing-agency capital (Bagchi, 1972, pp. 262–275). Birla and Hukumchand then established the first Indian-owned mills during and immediately after the war, using profits accumulated in the wartime jute trade (Gupta, 2014, p. 163). Indian investors, especially Marwaris, also acquired shares in British-controlled firms

and pressed for board representation (Goswami, 1989, p. 297). Their influence increased further during the Depression, when losses and capital shortages weakened British control and made firms more dependent on Indian finance (Goswami, 1989, p. 299); (Oonk, 2014, p. 54). The Indianization we observe among British-controlled jute boards is therefore consistent with Indian entry into the industry, rising Indian shareholding, and the erosion of exclusively British financial control.

5.2.3. *Established Domestic-Market Industries.* The established domestic-market industries differed substantially in both board composition and network structure at the start of the sample. Coal was more segregated than jute, though less so than tea. Indian directors accounted for about 9% of the average British coal board in 1913. The small number of initially Indian coal firms also had boards with an Indian majority, although the mean Indian share was only about 67%. British coal firms averaged about 18 interlock connections. These links more often crossed sectoral boundaries than stayed within coal, and they were overwhelmingly to other British firms. The two initially Indian coal firms were also connected mainly to British firms, so the baseline coal network was not integrated around Indian-controlled firms despite the presence of a few Indian entrepreneurs.

Cotton boards were more mixed. Indian directors made up about 31% of the average British board and 93% of the average initially Indian board. Cotton firms were also less connected than firms in tea, jute, or coal, with British and Indian firms averaging about 13 and 7 interlock ties, respectively. Networks nevertheless remained segmented by ownership. British firms connected more often to British than to Indian companies, while Indian firms connected more often to Indian than to British companies.

The remaining established domestic-market industries already had comparatively high Indian representation, but they were heterogeneous and relatively weakly connected. Indian directors accounted for about 14% of British boards and 85% of initially Indian boards. At least 10% of firms in both groups had no interlocks, and British firms again averaged more connections than Indian firms, with about 14 connections compared with 7 among Indian firms. Because this category combines very different industries, we do not place much weight on its within- and cross-sector decompositions.

The established domestic-market industries also followed different paths after the war. In coal, the small number of initially Indian firms makes their trajectory difficult to interpret, and they are no longer observed as a separate group after the mid-1920s. Initially British firms Indianized more rapidly than in tea, with Indian directors accounting for about one-third of the average British coal board by 1931 and roughly 28–32% thereafter. Their network position also changed, but without producing much integration with Indian-controlled firms. British coal firms averaged about 39 interlock connections in 1931, with most of these links crossing sectoral boundaries and going to other British

firms. Connections to Indian firms increased relative to 1913 but remained modest, averaging about six per firm in the early 1930s.

Cotton shows greater convergence along both dimensions. Board composition evolved in a more mixed direction among initially British firms, while Indian firms retained predominantly Indian boards; at the same time, the two groups' networks became almost equally dense. By 1934, British firms averaged about 34 connections and Indian firms about 30. Most of these ties crossed sectoral boundaries for both groups, especially among British firms. Connections to Indian companies became much more important: by 1934, British cotton firms divided their ties almost evenly between British and Indian firms, while Indian cotton firms connected mainly to other Indian firms.

Change was more limited in the remaining established domestic-market industries. Initially Indian firms retained predominantly Indian boards throughout the period, while the Indian share of initially British boards rose from about 14% in 1913 to just under 30% by the late 1920s and early 1930s, before changing little thereafter. Networks expanded moderately. By 1941, British firms averaged about 37 connections and Indian firms about 22, though both figures declined somewhat by 1943. Connections remained concentrated within ownership groups, especially among British firms. Given the heterogeneity of this residual category, we again avoid placing much weight on its within- and cross-sector decomposition.

Because our baseline sample consists of firms that were already established before the First World War, these patterns cannot be explained by the subsequent entry of new Indian-controlled companies. In coal, the relatively pronounced Indianization of British boards coincided with weakening market conditions after the mid-1920s and may reflect the growing value of Indian capital and commercial connections. Company-level evidence confirms that Indian directors entered several continuing coal firms during the interwar period, although it does not identify whether finance, market knowledge, or political access motivated particular appointments (Ray, 2022, pp. 101–104). British coal companies were also embedded in managing-agency groups with interests in jute, tea, and other eastern industries, which helps explain why their new interlocks often crossed sectoral boundaries (Bagchi, 1972, pp. 176–177). In cotton, Indian merchant and community networks had long supplied firms with capital, credit, and knowledge of domestic markets (Ray, 1982, pp. 392–394); (Gupta, 2014, p. 163). The convergence in connectedness may therefore reflect the increasing centrality of these Indian business networks rather than a uniform political strategy among British firms.

5.2.4. *Summary.* There was some board diversification and a substantial expansion of director interlocks, but both changes were uneven. British firms added Indian directors only gradually and mainly in particular industries, while inter-firm networks became

denser without eliminating the strong segmentation of British and Indian business circles. British firms generally remained more highly connected, although cotton became a partial exception. These patterns point to limited, sector-specific adaptation rather than a broad response to political risk.

6. Diversification by Managing Agents

In this section, we ask whether British managing agents responded to political risk by diversifying across industries or by increasing Indian representation on the boards of firms they managed. British agents remained dominant in tea, jute, coal, and many other established industries, while Indian agents were concentrated mainly in cotton; these sectoral patterns changed only gradually over time. British managing agents were also more diversified across industries before the First World War, although diversification was concentrated among a minority of agencies. Nearly all Indian agents operated in only one sector. Neither group became substantially more diversified after the war, despite considerable variation across individual agencies. British-managed portfolios did, however, become substantially more Indian in their board composition. The mean Indian share of distinct directors rose from less than 20% before the war to about 40% by the early 1940s. The increase was concentrated outside tea. Indian managing agents continued to oversee firms with predominantly Indian boards. Overall, substantial Indianization within British managing-agent portfolios accompanied little change in industrial diversification.

6.1. **Literature.**

The economics literature offers both efficiency and agency-based explanations for diversification by conglomerates and business groups. Diversification can create value when firms share managerial capabilities, distribution networks, or other resources across industries, or when internal capital markets allocate funds more effectively than weak external markets (Maksimovic and Phillips, 2007, pp. 425–426, 438–439); (Martin and Sayrak, 2003, pp. 39–41). These advantages may be especially important in developing economies, where business groups can substitute for missing capital and labour markets, weak contract enforcement, and limited state provision of public goods (Khanna and Yafeh, 2007, pp. 335–339). Diversification can also reduce fluctuations in group cash flow and improve borrowing capacity, although shareholders can diversify risk independently and the empirical evidence for mutual insurance within groups is limited (Martin and Sayrak, 2003, pp. 38–40); (Khanna and Yafeh, 2007, p. 339). In the context of long-distance investment in the late nineteenth and early twentieth centuries, the managing agency system was an institutional innovation that addressed reputational concerns of foreign investors in the colonies (Gupta, 2025).

Diversification need not, however, benefit outside investors. Managers may diversify to reduce their own employment risk, enlarge the resources under their control, or protect poorly performing divisions through cross-subsidization (Montgomery, 1994, pp. 166–169); (Martin and Sayrak, 2003, pp. 42–43). Business groups may also use their scale, internal finance, and political connections to deter entry, sustain market power, or entrench controlling families (Khanna and Yafeh, 2007, pp. 355–362); (Morck, Wolfenzon and Yeung, 2005, pp. 655–657). Diversification can therefore either help firms adapt to institutional and political risk or preserve managerial and controlling-owner power.

The economic history literature distinguishes the diversified portfolios of established British managing agencies from the expansion of some Indian business groups into newer industries. Before the First World War, British agencies were often highly diversified, but their interests were concentrated in established colonial activities such as plantations, mining, processing, infrastructure, and transport (Tomlinson, 1978, p. 664). Their portfolios also frequently contained complementary businesses. Bird and Company, for example, expanded from supplying labour to the railways into major interests in jute and coal, while Martin Burn's railway workshops supported its railway holdings (Tomlinson, 1981, p. 465); (Tomlinson, 1978, p. 663). Andrew Yule & Co., another large managing agency house, invested in tea, jute, and coal. Other agencies, such as Williamson, Magor & Co. and Duncan Brothers, remained more concentrated in tea (Bagchi, 1972, p. 162). This diversification could spread risk and exploit operational complementarities without requiring agencies to develop capabilities in substantially different industries. Agents' reputations and guarantees helped attract investors and secure credit, including for new ventures (Lokanathan, 1935, pp. 23–24, 214–220).

Because expansion by British managing agents depended heavily on retained earnings and other internal sources of finance, weak performance could leave a business group trapped in industries with deteriorating prospects (Tomlinson, 1981, p. 464). Bird and Heilger's failure to enter iron and steel illustrates this constraint (Tomlinson, 1981, p. 477). More generally, older British agencies entered the new industries of the interwar period less successfully than Indian groups, German and Japanese firms, or newer British multinationals (Misra, 2000, p. 336). Some British merchant houses did, however, enter new industries. James Finlay & Co., for example, expanded from tea and jute into cotton textiles and sugar refining in India, and made further investments in sugar during the interwar period (Jones and Wale, 1998, pp. 371–373). The top managing agents increased their concentration in some sectors, such as tea, engineering and electricity. Concentration in coal declined. In cotton there was new entry (Mehta, 1955, pp. 310–313).

British agencies were also cautious about sharing control with Indian investors and directors. They had long sought to preserve influence over managed companies with

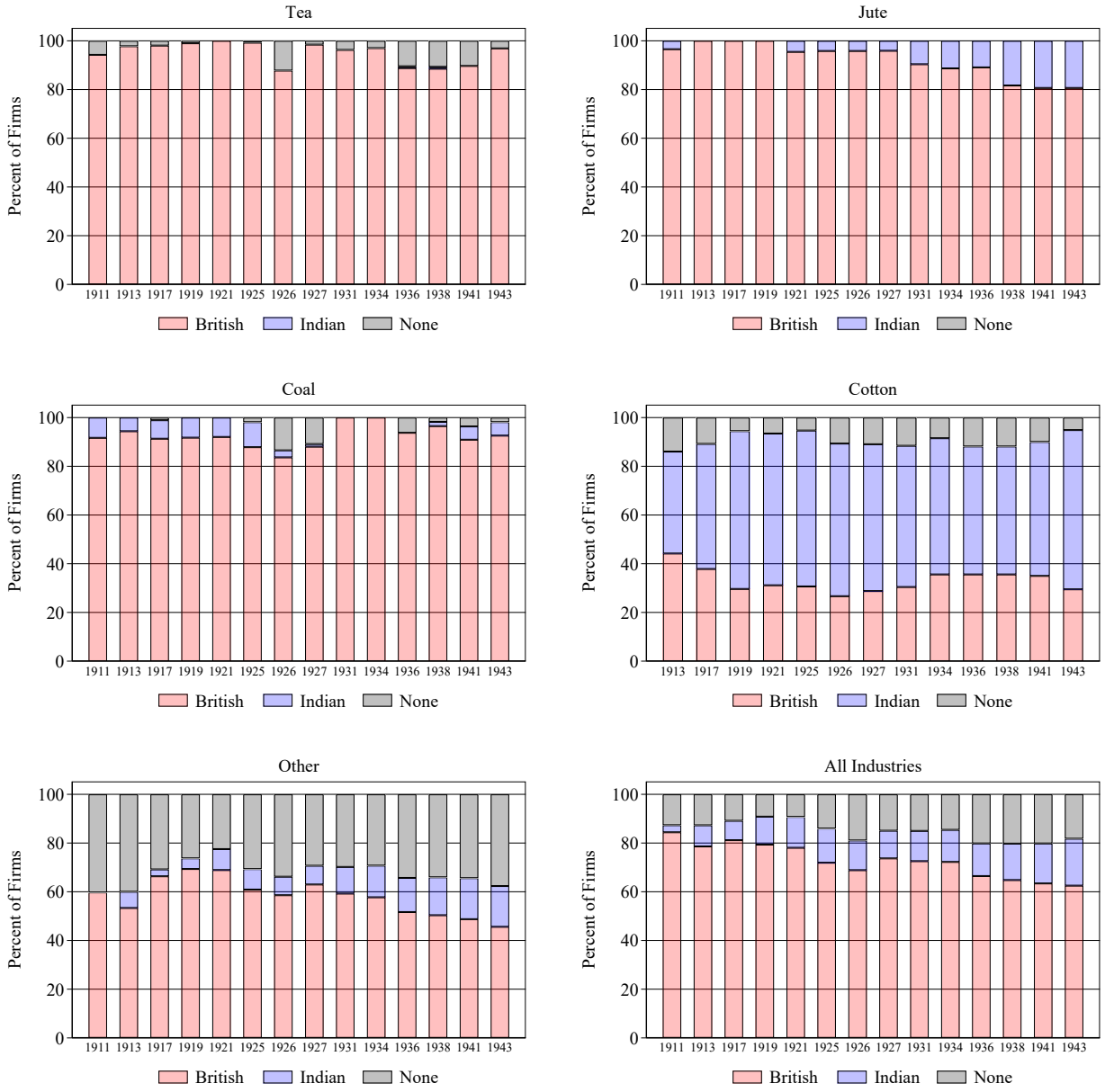
limited capital commitments, using managing contracts, shareholdings, and board appointments to maintain control (Goswami, 1985, p. 236). Edward Benthall's suggestion that it would be "farsighted" to place some Bird and Heilger assets under Indian control shows that partial Indianization was considered as a possible response to political change (Tomlinson, 1981, p. 476). The limited extent to which such proposals were implemented suggests that established organizational structures and concerns about control constrained adaptation as much as a failure to recognize the changing political environment.

Indian managing agents were less diversified and organized differently. Lokanathan (1935, p. 318) describes most as managing a few units within one industry, with exceptions such as Tata. Whereas British agencies recruited experienced assistants into partnerships, Indian agencies were, with exceptions, generally run by families (Lokanathan, 1935, pp. 314–318); (Brimmer, 1955, pp. 556–559). Indian businessmen sometimes controlled several separately constituted agencies, each managing one company, and so a named agency need not encompass the business group making investment decisions (Brimmer, 1955, pp. 566–567). Differences in diversification in our data may therefore reflect these organizational divisions.

6.2. **Empirical Patterns.** We ask whether managing agencies responded to changing political risk by altering the composition of their portfolios. We consider two possible forms of adaptation: diversification into new industries and greater involvement with firms whose boards included Indian directors. Because these questions concern entry into and management of new firms, we expand the sample in this section beyond companies operating before the First World War to include all firms covered by *Investors' India*.

We use three sets of descriptive measures. First, for each industry and year, we report the shares of firms with British managing agents, Indian managing agents, or no managing agent. These figures show whether British and Indian agencies entered industries in which they had previously been less prominent. Second, we measure the extent of industrial diversification within managing-agent portfolios using the probability that two firms managed by the same agent operated in different industries. An increase in this probability indicates greater portfolio diversification. We report this measure separately for British and Indian agents and trace its evolution over time. Third, we examine Indian representation on the boards of firms managed by British and Indian agents. This allows us to ask whether British agencies increasingly managed firms with more Indian directors, even when they did not diversify across industries.

FIGURE 7. Share of Firms with a British, Indian, or No Managing Agent



Source: Computed using multiple editions of the *Investors' India Year Book*.

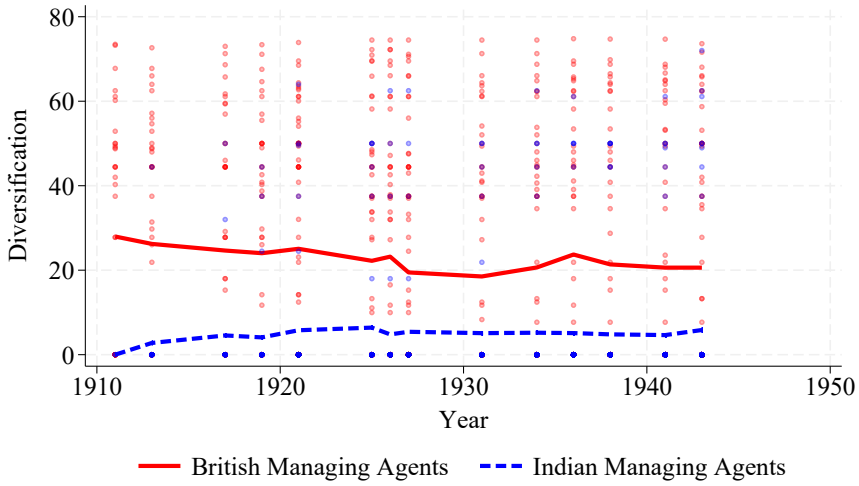
6.2.1. *Diversification across sectors.* Figure 7 reports the prevalence of British and Indian managing agents by industry in each edition of *Investors' India*.[5] The export industries began firmly within the British managing-agency system. Before the First World War, more than 90% of tea firms and nearly all jute firms had British agents, while most of the remainder had no managing agent. Tea changed little over the following three decades,

[5]Fewer than 1% of observations list both British and Indian managing agents. We classify these cases according to whether more than half of the listed agents are Indian or British; there are no ties.

remaining overwhelmingly British-managed. Jute also remained predominantly British-managed, but Indian managing agents became more visible over time, managing roughly one-fifth of jute firms by the early 1940s.

The established domestic-market industries were more varied. In coal, British agents remained dominant throughout the period. Before the war, more than 90% of coal firms had British agents and only a small minority had Indian agents. The Indian-managed share disappeared in the early 1930s, although a small Indian presence reappeared later. Cotton showed a different pattern. In 1913, British and Indian managing agents were roughly balanced, managing about 44% and 42% of firms, respectively, while the remaining firms had no managing agent. After the war, Indian agents became more prevalent and continued to manage a larger share of cotton firms than British agents through the 1940s. In the remaining established industries, British agents managed a majority of firms before the war, but their share declined over time, while Indian agents became more common. Firms without any managing agent also remained important in this residual group, accounting for roughly one-third or more of firms in many editions.

FIGURE 8. Diversification of Managing Agents' Portfolios



Source: Computed using multiple editions of the *Investors' India Year Book*. Diversification is the probability, for a managing agent in a given year, that two firms selected at random from its portfolio with replacement are from different sectors.

We measure the industrial diversification of each managing agent's portfolio using a Herfindahl-type index. Let s_{ajt} denote the share of firms managed by agent a in year t that operate in sector j. Our measure is

$$D_{at} = 100 \times (1 - \sum_{j} s_{ajt}^2),$$

which equals the probability that two firms drawn independently, with replacement, from the agent's observed portfolio operate in different sectors.[6] Figure 8 plots the diversification index over time separately for British and Indian managing agents, while Figure A.36 shows the corresponding distributions in each year.

Before the First World War, British managing agents were substantially more diversified than Indian agents. In 1911 and 1913, their mean diversification index was about 28 and 26, respectively, compared with 0 and 3 among Indian agents. Indeed, as Figure A.36 shows, the overwhelming majority of Indian managing agents were not diversified at all before the war. This difference was not universal across British agencies: about 44–45% were concentrated entirely in one sector. Industrial concentration was nevertheless even more pronounced among Indian agents, nearly all of which managed firms in only one observed sector before the war.

Aggregate diversification changed little after the First World War; if anything, British managing agents became somewhat less diversified. Figure 8 shows that the mean diversification index for British agents fell from about 26–28 before the war to about 19 in 1931, before partially recovering during the mid-1930s. By 1943, however, their mean diversification remained below its prewar level, and the share concentrated in a single sector was higher than before the war. Indian managing agents diversified only modestly. Their mean index peaked at about 6 in the mid-1920s, and nearly 90% still managed firms in only one sector in the early 1940s. Figure A.37 shows that both British and Indian managing agents that were diversified before the war changed their average levels of diversification little over the interwar period. British managing agents who entered the war undiversified increased their diversification more after the war than did comparable Indian managing agents.

These averages conceal substantial differences across individual agencies. Figure A.38 contrasts Bird & Co. with Duncan Brothers & Co. Bird's observed portfolio was already spread across more than one sector before the war, but almost entirely between jute and coal. After the war, coal became much less important in its portfolio, while jute remained a stable core and firms in the residual "other" category became increasingly important. Duncan Brothers, by contrast, remained highly specialized in tea and expanded mainly by adding further tea companies, with only a small jute presence. Figure A.39 compares Andrew Yule & Co. with Tata Sons & Co. Yule entered the period with substantial interests in tea, jute, and coal, alongside other activities, and the broad composition of its portfolio

[6]For this calculation, we treat banks, railways, and the other separately identified industries as distinct sectors rather than combining them into an aggregate "other" category. We retain the set of industries classified as "miscellaneous" in *Investors' India* as a single sector. The measure is based only on firms observed in *Investors' India*; activities outside the dataset are therefore omitted. Agents managing firms in only one observed sector receive a value of zero.

changed little. Tata began with a portfolio concentrated in cotton but subsequently became more balanced between cotton and other industries. The limited change in the aggregate indexes therefore reflects offsetting patterns of diversification, persistence, and within-sector expansion across individual managing agents.

The historical literature emphasizes a contrast between British and Indian managing agencies that is less evident in our aggregate diversification measures. Leading Indian managing agencies expanded into new industries during the 1930s and 1940s, while established British agencies remained more concentrated in traditional sectors (Tomlinson, 1981, p. 458); (Markovits, 1985, pp. 61–66). Our results, however, show relatively little change in average diversification within either group, despite substantial heterogeneity across individual agencies. These findings need not be inconsistent. The historical literature emphasizes entry into new industries by prominent business groups, while our index measures the sectoral composition of individual managing agents' portfolios across a broader sample.

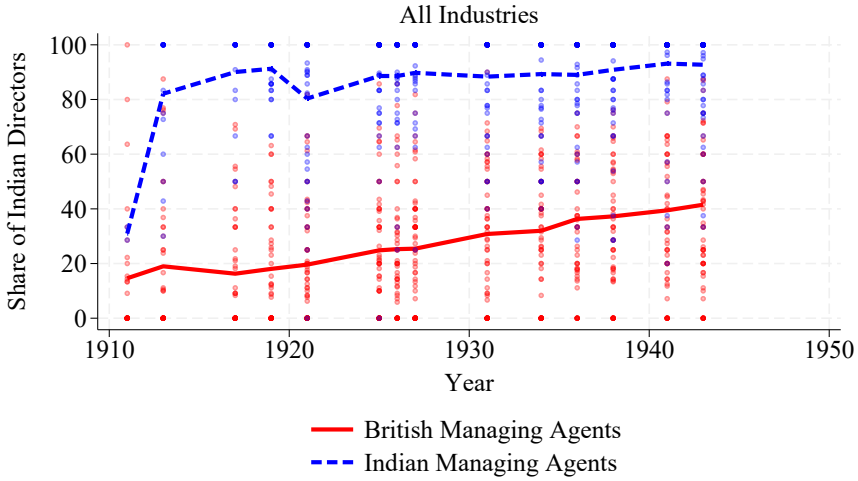
Much of the new British entry into protected domestic-market industries came from newer multinational firms rather than established expatriate managing agencies (Tomlinson, 1978, pp. 668–670); (Misra, 2000, p. 336). Some older British agencies did attempt to diversify. During the wartime boom, Bird and Heilger established enterprises in sawmilling, tanning, and footwear, but these ventures soon failed, reportedly because the agency lacked knowledge of their markets (Tomlinson, 1981, p. 465); (Goswami, 1989). Tomlinson links the failure of these "war babies" to greater caution during the interwar period, noting Benthall's reluctance to move further beyond the firm's established competencies (Tomlinson, 1981, p. 467).

This evidence is consistent with a pattern of diversification shaped by market knowledge and organizational capabilities rather than by political risk alone (Gupta, 2014). British agencies often expanded into related activities that complemented their existing businesses. Mackinnon Mackenzie, for example, diversified into commodities that could be carried by its shipping operations (Turrell and Van-Helten, 1987, p. 270). Such related diversification could still produce portfolios spanning several industries. Indeed, managing agencies' reluctance to commit too much capital to any single enterprise often left them overseeing multiple companies in different fields (Misra, 2000, p. 339).

Some Indian groups were more willing to enter industries outside their established base. Indian business groups expanded out of cotton during the 1930s, especially into protected industries such as sugar, paper, and cement (Markovits, 1985, pp. 61–66). G.D. Birla, Lala Shri Ram, and Walchand Hirachand all entered sugar and other new activities, while profits from the sugar boom helped some Marwari groups finance further diversification. Few of the sugar mills established during the 1930s were promoted by British

managing agents (Markovits, 1985, pp. 61–63, 66). New Indian groups also emerged, including Dalmia in the 1930s (Nomura, 2014, p. 112). Yet this entry need not increase diversification by the average agency, given that many Indian agents operated only in a single industry (Lokanathan, 1935, p. 318). These cases suggest that the expansion of Indian managing agencies reflected both entry by new groups and diversification by established ones, rather than a general tendency shared by all Indian capital.

FIGURE 9. Share of Indian Directors by Managing Agency Type Over Time



Source: Computed using multiple editions of the *Investors' India Year Book*.

6.2.2. *Indian directors.* We next ask whether British managing agencies responded to political change by increasing Indian representation within their portfolios. This could occur either because an agency began managing firms whose boards already included Indian directors or because Indian directors were appointed to firms already under its management. For each managing agent and year, we calculate the share of distinct directors serving on the boards of its managed firms who were Indian. A director serving on more than one firm within the same portfolio is counted only once, so that interlocking directors do not receive greater weight simply because they hold several seats. Figure 9 plots the mean of this agent-level Indian-director share separately for British managing agents and Indian managing agents. Figure A.40 shows the corresponding distributions in each year.

Before the First World War, the boards of firms managed by British agencies remained predominantly British. The mean Indian share of distinct directors in British managing-agent portfolios was about 15% in 1911 and 19% in 1913. Firms managed by Indian agencies had more Indian boards, although the small prewar number of Indian managing

agents makes the early comparison noisy: their mean Indian-director share rose from about 31% in 1911 to 82% in 1913.

After the First World War, firms managed by British agencies became substantially more Indian in board composition. The mean share of distinct Indian directors in British managing-agent portfolios rose from about 15–19% before the war to 20% in 1921 and 31% in 1931, and continued increasing to about 40% by the early 1940s. Indian managing agencies, by contrast, continued to oversee firms with predominantly Indian boards. Their mean Indian share was about 80% in 1921 and generally close to 90% thereafter.

Figure A.41 shows that these aggregate trends differed sharply across industries. In tea, British-managed firms remained overwhelmingly British in board composition. The Indian share of directors in British-managed tea firms was zero before the war and generally remained below 12% thereafter. The few Indian-managed tea observations are too sparse to support a separate interpretation. Jute followed a different pattern. Among British-managed jute firms, the Indian share of directors rose from about 5% in 1913 to about 22% by 1931 and nearly 28% by 1943. Indian-managed jute firms also appeared after the war, and their boards were much more Indian, especially from the mid-1920s onward. Jute therefore shows both gradual Indianization within British-managed firms and the emergence of a small set of Indian-managed firms with predominantly Indian boards.

Indianization was more pronounced in the established domestic-market industries than in tea, but the timing and level differed across sectors. In coal, the Indian share of directors in British managing-agent portfolios was already about 11–15% before the war, rose to 17% in 1921, and then increased more sharply to about 36% by 1931, remaining near that level thereafter. There were too few Indian managing agents in coal to support a meaningful comparison. Cotton showed the largest increase among British-managed firms. The Indian share in British-managed cotton firms was about 38% in 1913, changed little by 1921, but rose to about 50% in 1931 and 67% by 1943. Firms managed by Indian agents retained predominantly Indian boards throughout, generally with Indian-director shares around 90% or higher after the war. In the remaining industries, the Indian share among British-managed firms was about one-quarter before the war, fell in the early 1920s, and then rose gradually to nearly 40% by the early 1940s. Indian-managed firms in these industries also had predominantly Indian boards, although the level varied across editions. The overall rise in Indian representation within British managing-agent portfolios was therefore concentrated in jute, coal, cotton, and the remaining domestic-market industries, rather than in tea.

The increase in Indian representation was substantial over the period, although its timing and extent differed across industries and tea changed little. It was most visible

in domestic-market industries and in jute, where Indian finance, shareholding, market knowledge, or commercial connections became more important. The literature describes British managing agencies more broadly as organizationally conservative: their reliance on personal control, private partnerships, and short planning horizons discouraged large capital commitments and movement into unfamiliar industries (Misra, 2000, pp. 337-339). The same preference for retaining established organizational arrangements may help explain why British agencies accommodated changes in ownership and board composition without surrendering their management contracts.

The evidence is clearest in jute. As British shareholdings declined and Indian investors became more important, British managing agencies often remained in place, while Indian shareholders gained representation on company boards (Oonk, 2014, p. 54); (Goswami, 1989, pp. 297, 299); (Nomura, 2014, pp. 101–102). Ownership and management could therefore become increasingly separated: a company's capital and board might become more Indian even while its British managing agent retained contractual control. A similar process may have occurred in coal, where Indian representation also rose among British-managed firms, although the historical evidence is less direct. Partial Indianization thus appears to have offered some British agencies a means of preserving their managerial position without either fully withdrawing or transferring control.

6.2.3. *Summary.* Overall, there was little diversification across industries: British managing agents began more diversified than Indian agents, but neither group became substantially more diversified after the war. British-managed portfolios did, however, become substantially more Indian in their board composition, with the increase continuing into the early 1940s and concentrated outside tea. This pattern does not support a broad diversification response to political risk. It is more consistent with sector-specific changes in ownership, market knowledge, and existing organizational capabilities, which led British agencies to accommodate more Indian directors without moving far from their established industrial bases.

7. Conclusion

The interwar period brought rising political uncertainty for British investors in India. Yet we find little evidence of a broad withdrawal or organizational transformation in response. Differences in profits, share prices, and dividends after the First World War were driven mainly by industry rather than ownership, with only the persistent dividends of British cotton firms providing suggestive evidence of reduced reinvestment or gradual withdrawal. British firms added Indian directors slowly and unevenly, while denser board interlocks did not substantially erode the segmentation between British and Indian business networks. British managing agencies were more diversified across industries

before the war, but did not become substantially more diversified thereafter. Their principal adjustment was substantial, though sector-specific Indianization: in jute, coal, cotton, and the remaining domestic-market industries, British-managed firms acquired more Indian directors while managing agents generally retained control.

We base our analysis on a newly assembled panel of firms covered by *Investors' India* between 1901 and 1943. For the firm-level analysis, we focus on companies already operating before the First World War, which allows us to classify them as British- or Indian-controlled before the main political changes of the interwar period. We follow their financial performance, board composition, and interlocking directorships over time. We then link these firms to their managing agents and, for the managing-agent analysis, broaden the sample to include all firms observed in *Investors' India*.

The persistence of British investment in established export industries is consistent with the importance of industry-specific knowledge and community-based commercial networks, across which collaboration was often difficult (Gupta, 2014). British firms and managing agencies remained largely concentrated within familiar sectors and substantially separate from Indian business networks, adapting gradually through sector-specific board Indianization rather than broad diversification or withdrawal. The evidence of capital flight is correspondingly weak and confined to a small part of the sample.

British rule reduced some risks, yet investors still faced uncertainty over trade policy, nationalist politics, future control, and the treatment of foreign firms. Despite these risks, British investors remained concentrated in familiar industries and accommodated Indian directors more readily than they diversified broadly or withdrew. These patterns are consistent with adjustment constrained by established capabilities and commercial networks.

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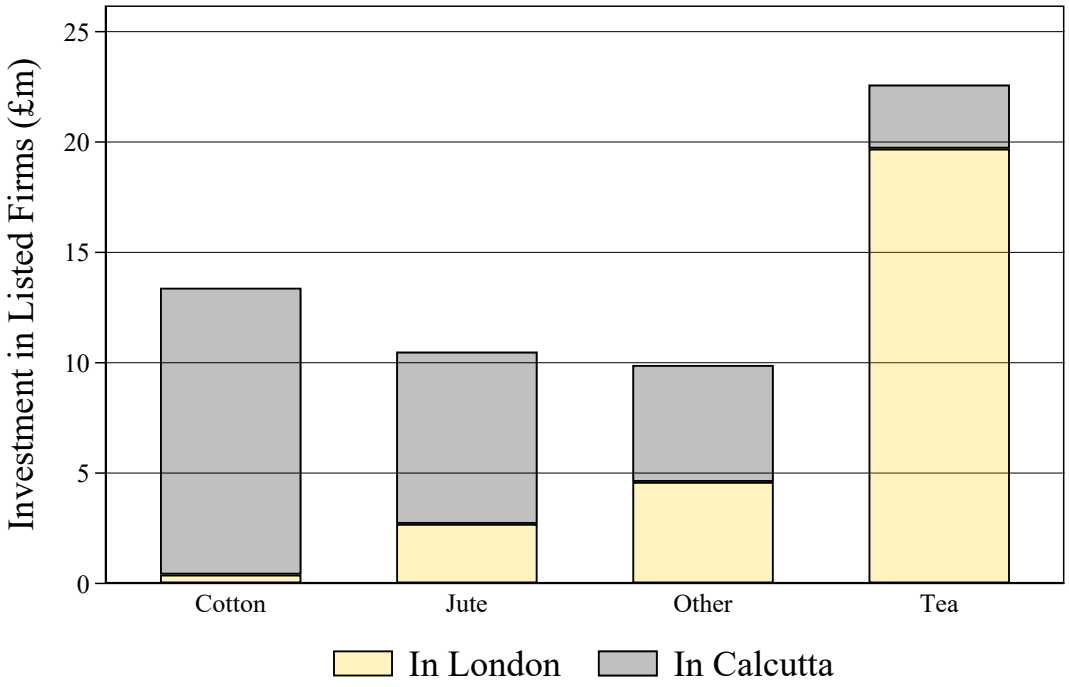
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APPENDIX A. ADDITIONAL FIGURES

FIGURE A.1. Investment by Industry in 1914



Source: (Chapman, 1992, p. 248).

FIGURE A.2. British Firm: Example

BOWREAH COTTON MILLS CO., LD.

Registered 1900. Directors—V. H. MacCaw, Esq.; G. L. Scott, Esq.; Hon'ble S. J. Best. Managing Agents—Messrs. Kettlewell, Bullen & Co., Ld., 21, Strand Road, Calcutta. Auditors—Messrs. Price, Waterhouse, Peat & Co.

Capital authorized, issued and subscribed—Rs. 18,00,000. Ordinary Capital—Rs. 6,00,000 in 6,000 shares of Rs. 100 each. Preference Capital—Rs. 12,00,000: Rs. 6,00,000 "A" 8 per cent. cumulative Preference and Rs. 6,00,000 "B" 7 per cent. non-cumulative Preference shares of Rs. 100 each, fully paid up. "A" Preference shares carry preferential claim to dividend and repayment of capital prior to "B" Preference and Ordinary shares. "B" Preference shares carry preferential claim only to dividend prior to Ordinary shares, but as regards capital these shares rank *pari passu*. Accounts made up half-yearly, June and December.

The Mills consist of 46,672 spindles.

Balance Sheet as on 30th June, 1927:—

	Rs.		Rs.
Capital ...	18,00,000	Gross Block ...	45,04,638
Reserve Fund ...	33,68,673	Less Depreciation	23,95,000
Sundry Liabilities	88,712	Nett Block ...	21,09,638
		Liquid Assets ...	29,19,565
		Profit & Loss Accounts ...	2,28,182
Total	52,57,385	Total	52,57,385

ANALYSIS OF WORKING.

Half-year ended	Dec. 1922	June 1923	Dec. 1923	June 1924	Dec. 1924	June 1925	Dec. 1925	June 1926	Dec. 1926	June 1927
	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
Profit	3,98,488	1,66,001	1,44,386	27,962	45,597*	—25,024	—1,84,232	—38,704	—88,793	1,00,250
Depreciation	.....	.....	.....	.....	.....	.....				
Reserve Funds	.....	.....	.....	.....	.....	.....				
Dividend	3,00,000	1,20,000	90,000	30,000	30,000	.....				
Dividend rate per cent. per annum	100	40	30	10	10	.....	.....	.....	.....	...
Carried forward	74,373	75,374	84,761	37,723	8,319	—16,704	—2,00,936	-2,39,640	—3,28,433	—2,28,183
Highest and lowest price of shares	880-680	700-560	490-330	435-294½	435-390	412½-320	350-255	362-200	312-238	394-314

* Includes Rs. 30,000 transferred from Reserve Fund.

N.B.—There is a contingent liability in respect of dividend on "A" Preference shares from January 1925.

Source: *Investors' India Year Book*, 1927–28 edition, p. 135.

FIGURE A.3. Indian Firm: Example

BIRLA COTTON SPINNING & WEAVING MILLS, LD.

Registered 1920. Directors—B. M. Birla, Esq.; D. P. Khaitan, Esq.; Nursing Das Kothari, Esq.; A. E. Mitchell, Esq. Managing Agents—Messrs. Birla Brothers, Ld., 137, Canning Street, Calcutta. Auditors—Messrs. S. R. Batliboi & Co.

Capital authorized—Rs. 15,00,000. Capital issued and subscribed—Rs. 13,75,000 in 100,000 shares of Rs. 10 each, fully paid up, and 50,000 shares of Rs. 10 each, on which Rs. 7-8 has been called up. Accounts made up half-yearly, June and December.

There are 21,000 spindles and 400 looms.

Balance Sheet as on 30th June, 1927:—

	Rs.		Rs.
Capital ...	13,75,000	Gross Block ...	24,00,823
Reserve Fund ...	2,25,000	Less Depreciation	6,27,323
Sundry Liabilities, including Profit & Loss Accounts	13,90,619	Nett Block	17,73,500
		Liquid Assets	12,17,119
Total ...	29,90,619	Total ...	29,90,619

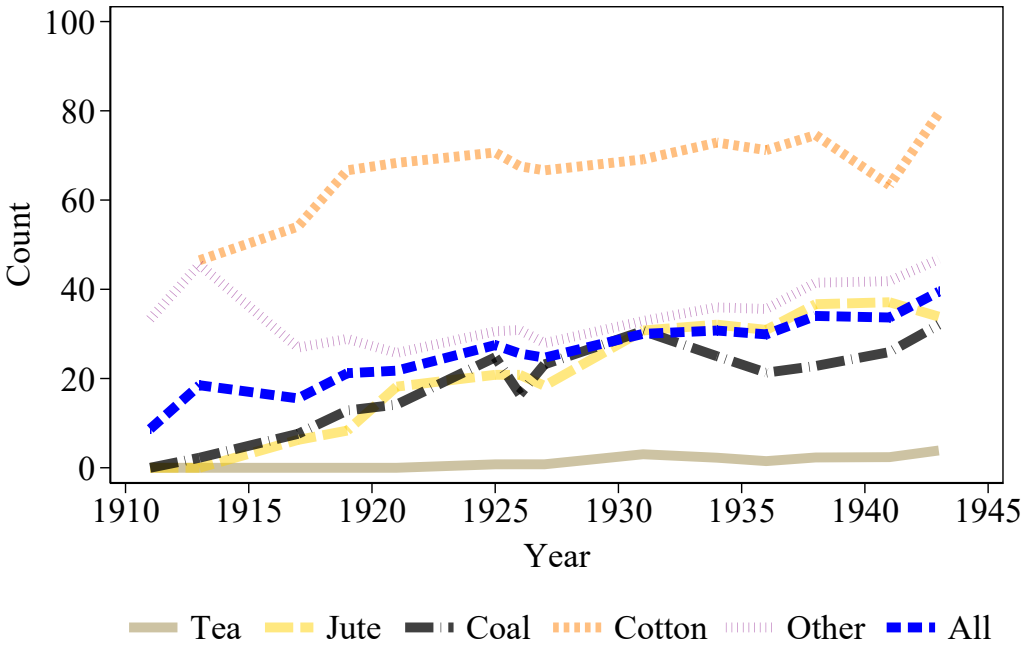
ANALYSIS OF WORKING.

Half-year ended	Dec. 1922	June 1923	Dec. 1923		Dec. 1924	June 1925	Dec. 1925	June 1926	Dec. 1926	June 1927
	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs	Rs.	Rs.
Profit	3,063	54,186	48,309	45,372	81,145	89,844	11,899*	96,459	−10,763	81,268
Depreciation	70,280	...	70,310	1,135	83,042	58,030	46,934	47,184	45,366	45,466
Reserve Funds	1,00,000	.....	.....	.....	85,000					
Dividend	.....	.....	...							
Dividend rate per cent. per annum	.....	.. .	....							
Carried forward	32,436	86,631	64,630	1,08,867	21,970	53,784	18,749	68,024	11,895	47,697
Highest and lowest price of shares	9N	N	N	N	N	N	N	N	N	N

This Profit is shown after transferring Rs. 45,000 from General Reserve.

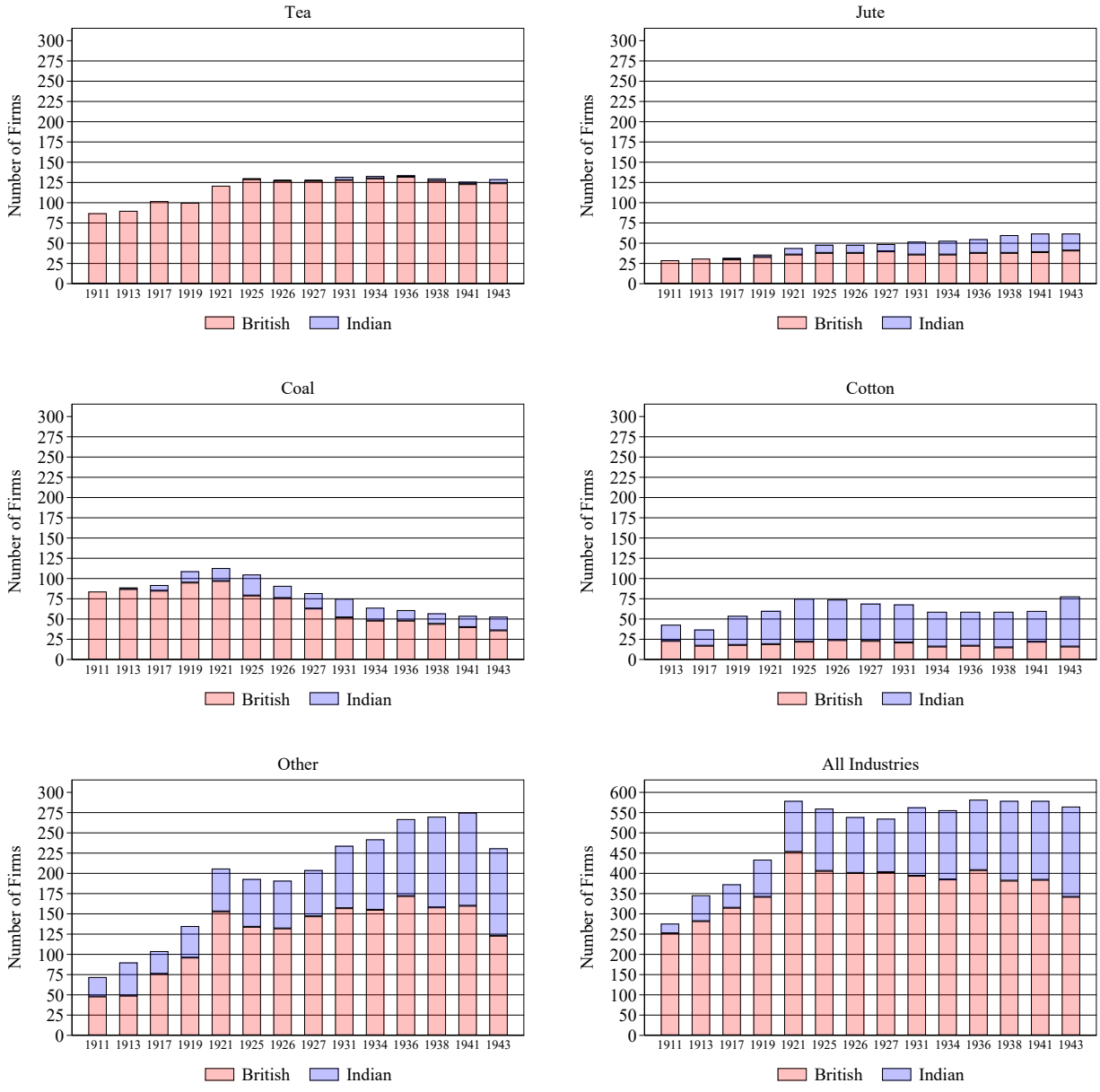
Source: *Investors' India Year Book*, 1927–28 edition, p. 133.

FIGURE A.4. Share of Indian Firms



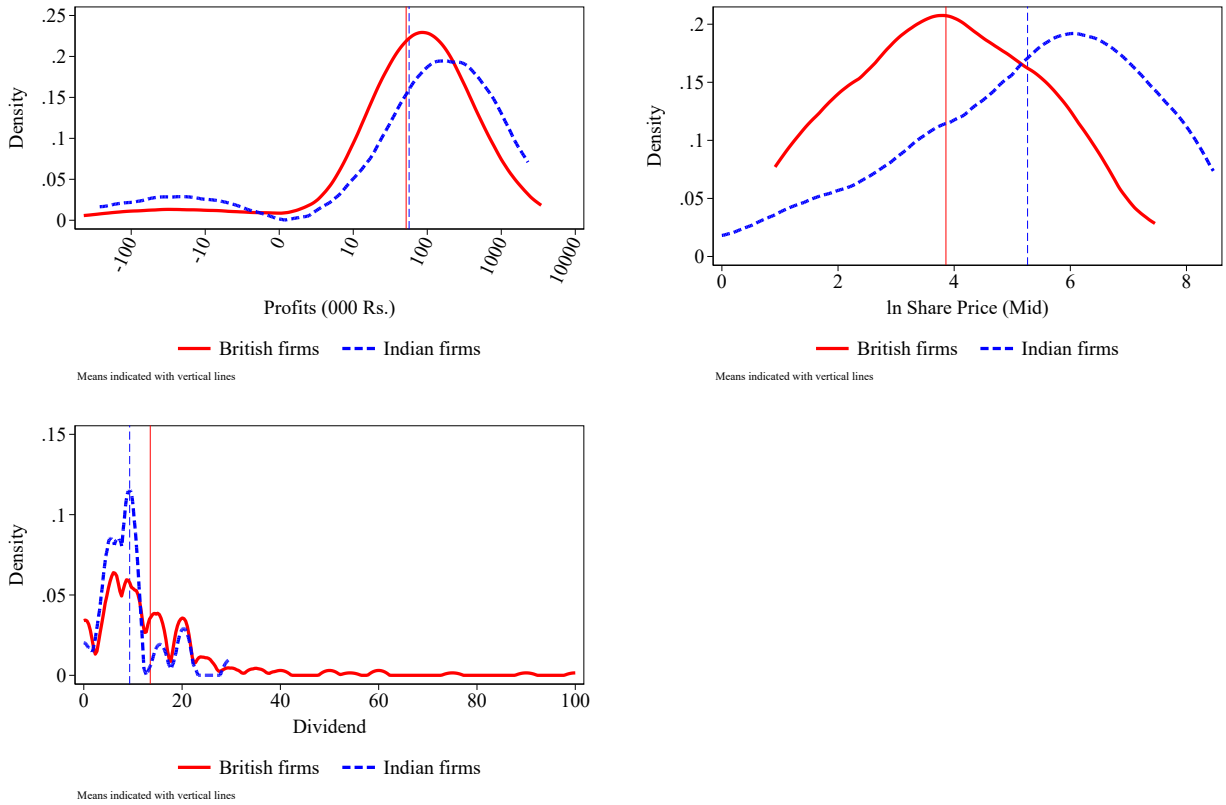
Note: This figure shows the share of firms classified as Indian, both overall and within each industry. A firm is classified as Indian if more than 50% of its directors have Indian names. When director information is unavailable, classification is based on the nationality of the managing agent or, if there is no managing agent, the manager.

FIGURE A.5. Indian and British Firms Over Time



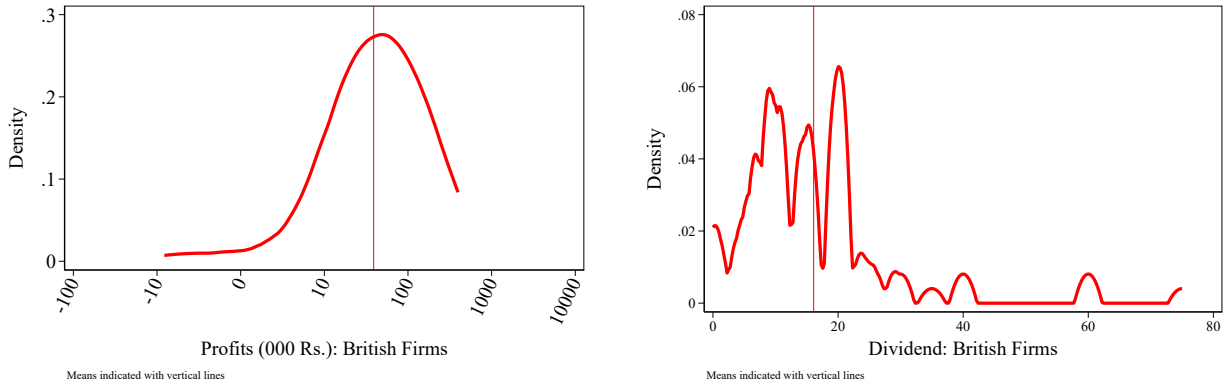
Source: Computed using multiple editions of the *Investors' India Year Book*.

FIGURE A.6. Profits, Share Prices and Dividends in 1914: All Industries



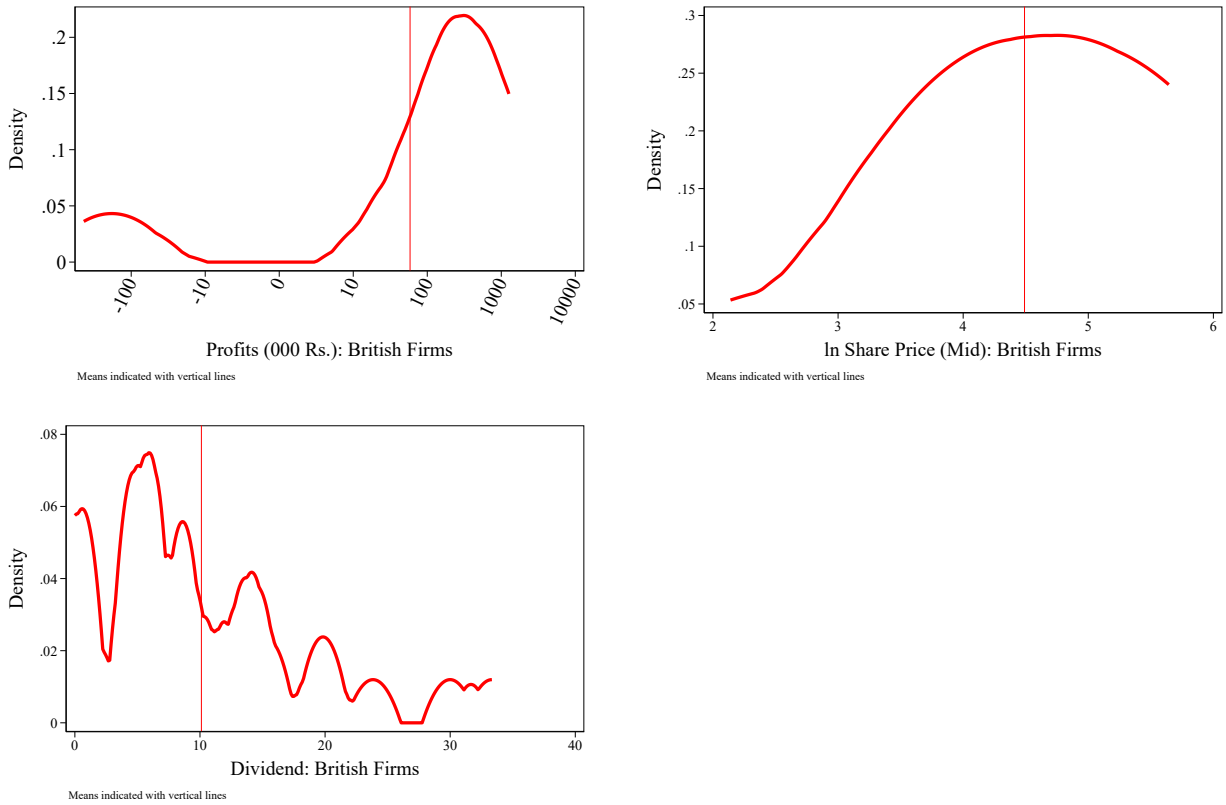
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.7. Profits, Share Prices and Dividends in 1914: Tea



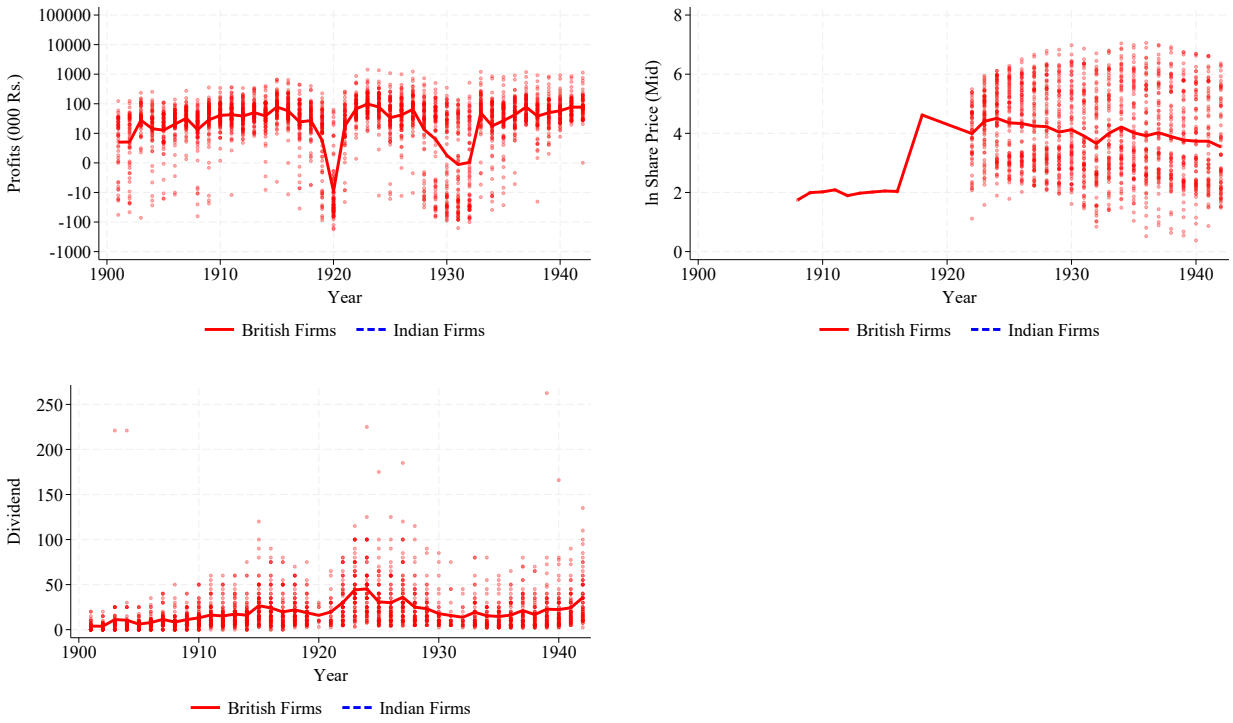
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.8. Profits, Share Prices and Dividends in 1914: Jute



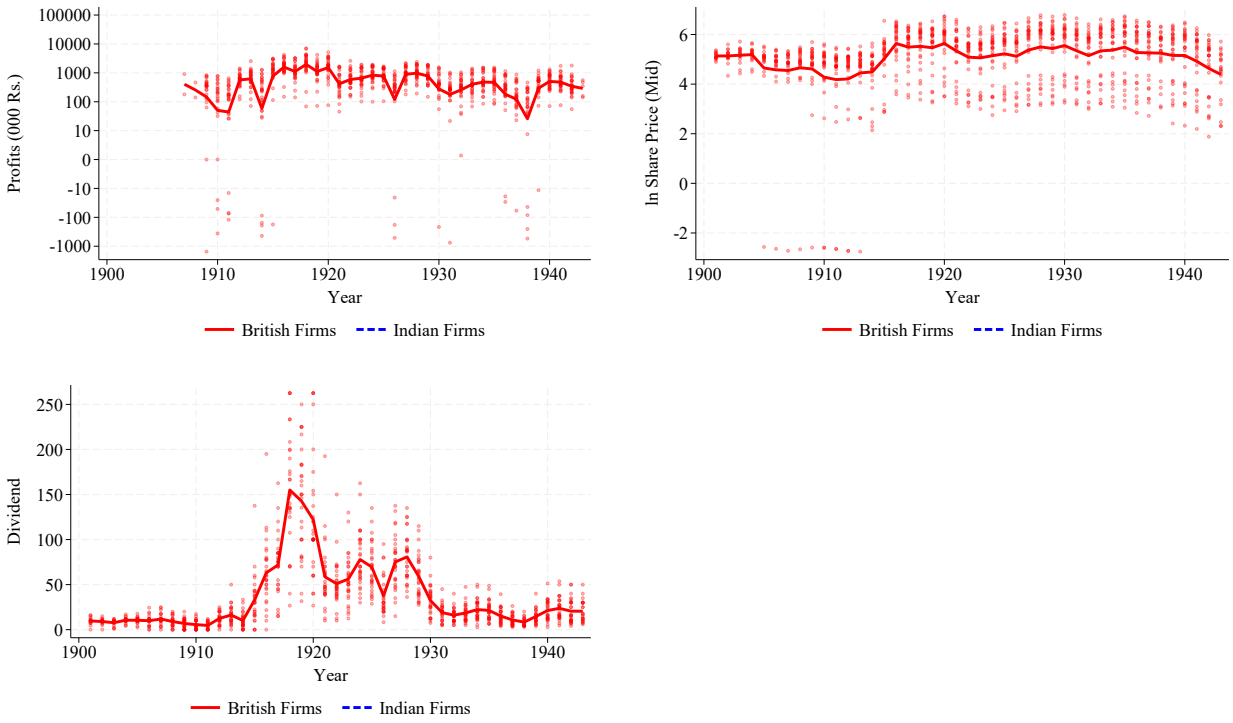
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.9. Profits, Share Prices and Dividends: Tea



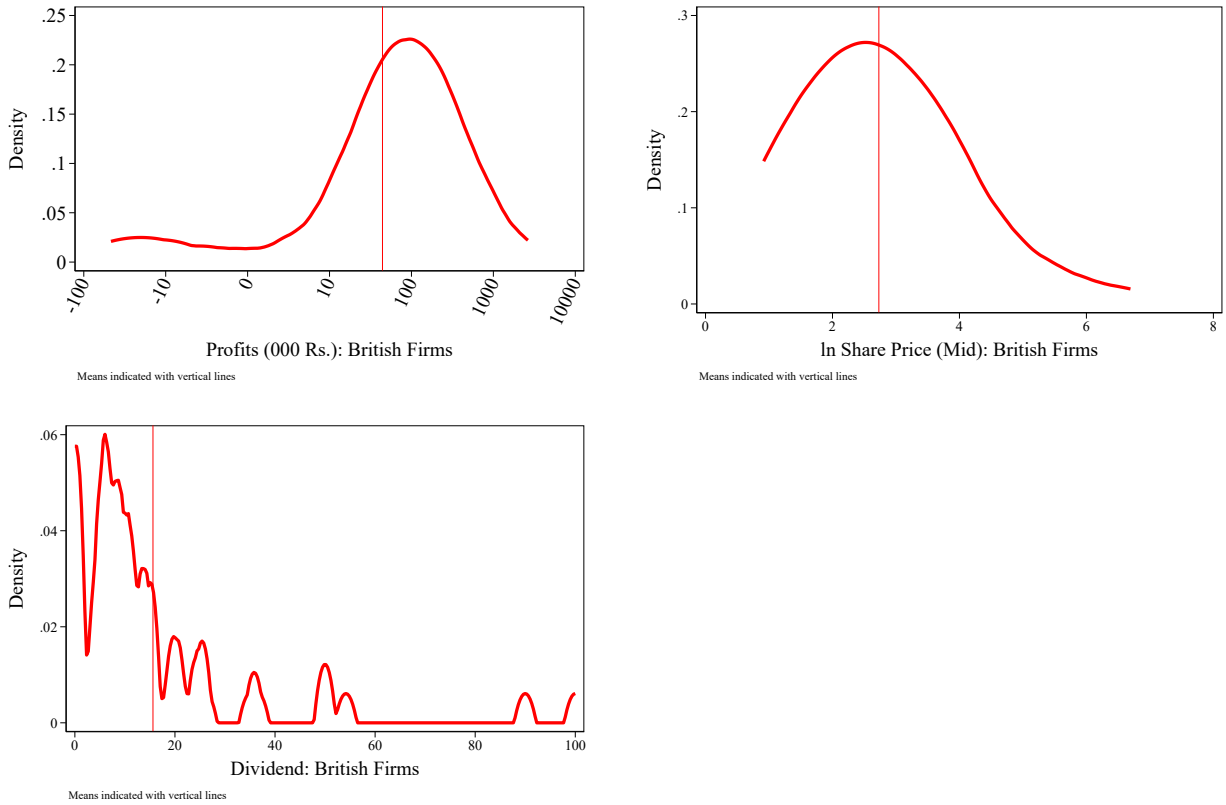
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.10. Profits, Share Prices and Dividends: Jute



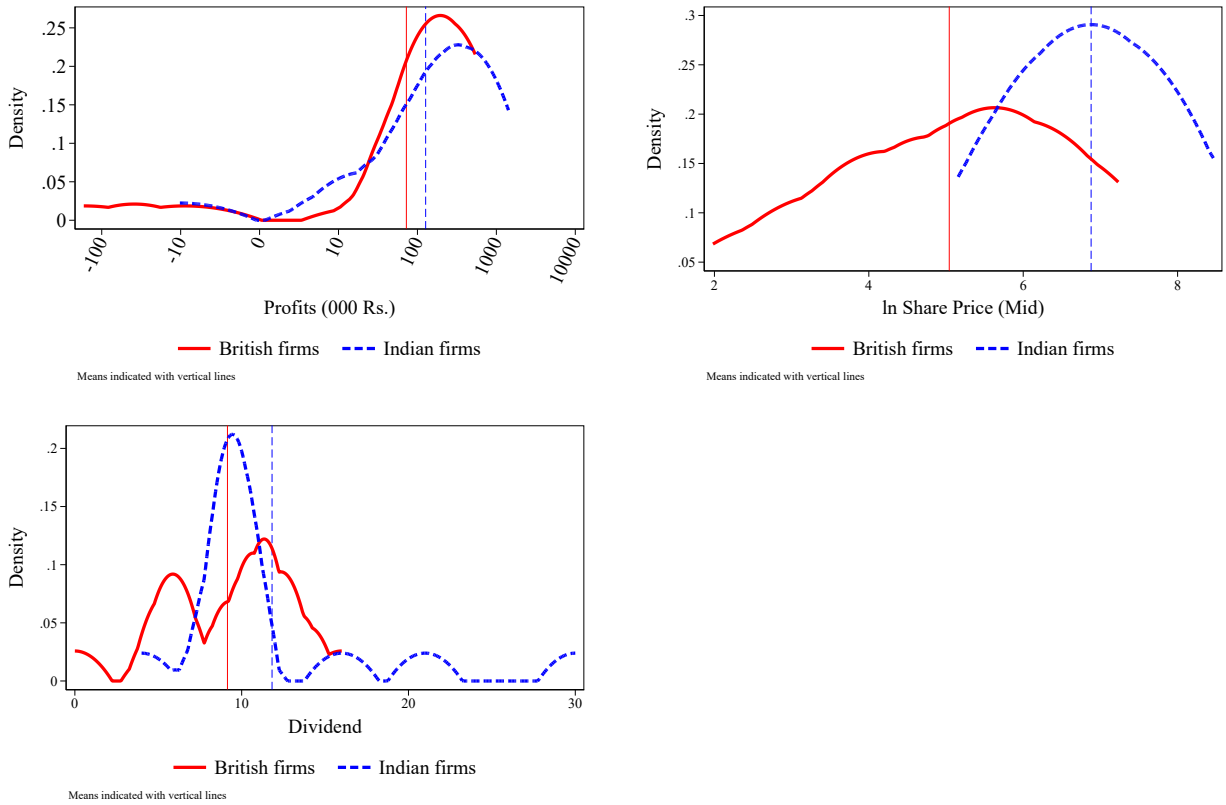
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.11. Profits, Share Prices and Dividends in 1914: Coal



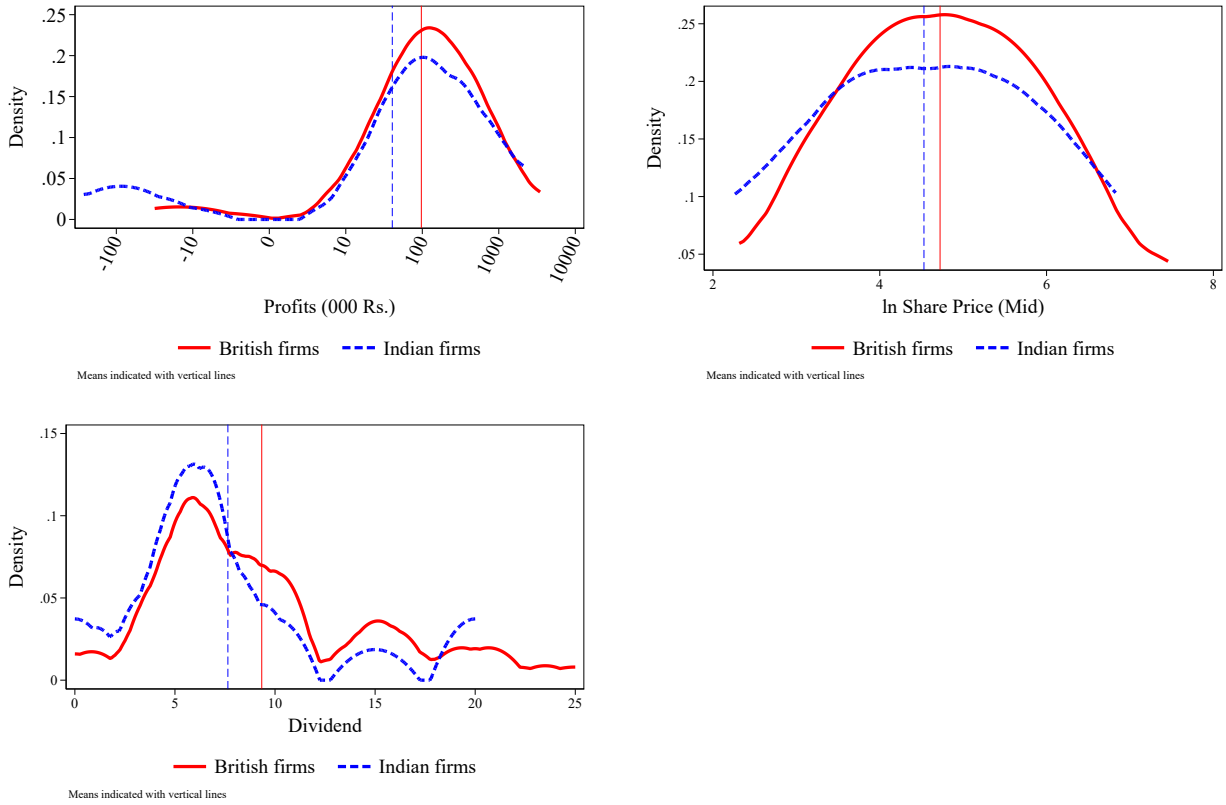
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.12. Profits, Share Prices and Dividends in 1914: Cotton



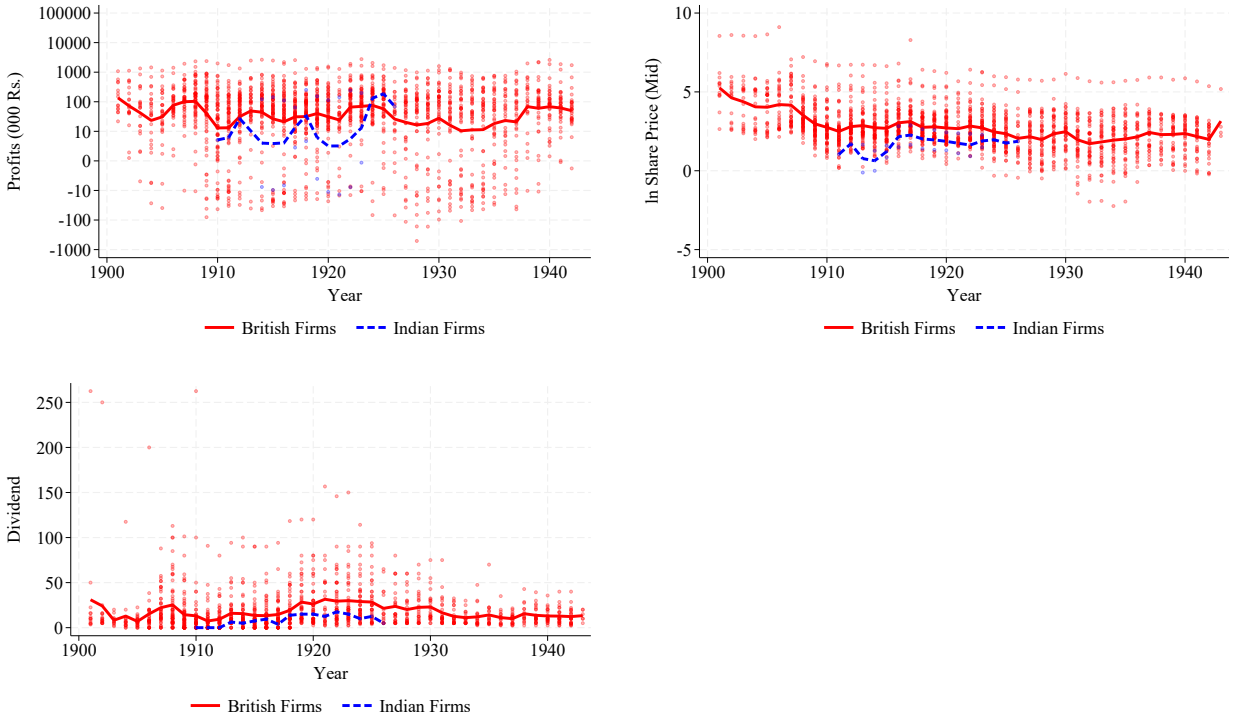
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.13. Profits, Share Prices and Dividends in 1914: Other Industries



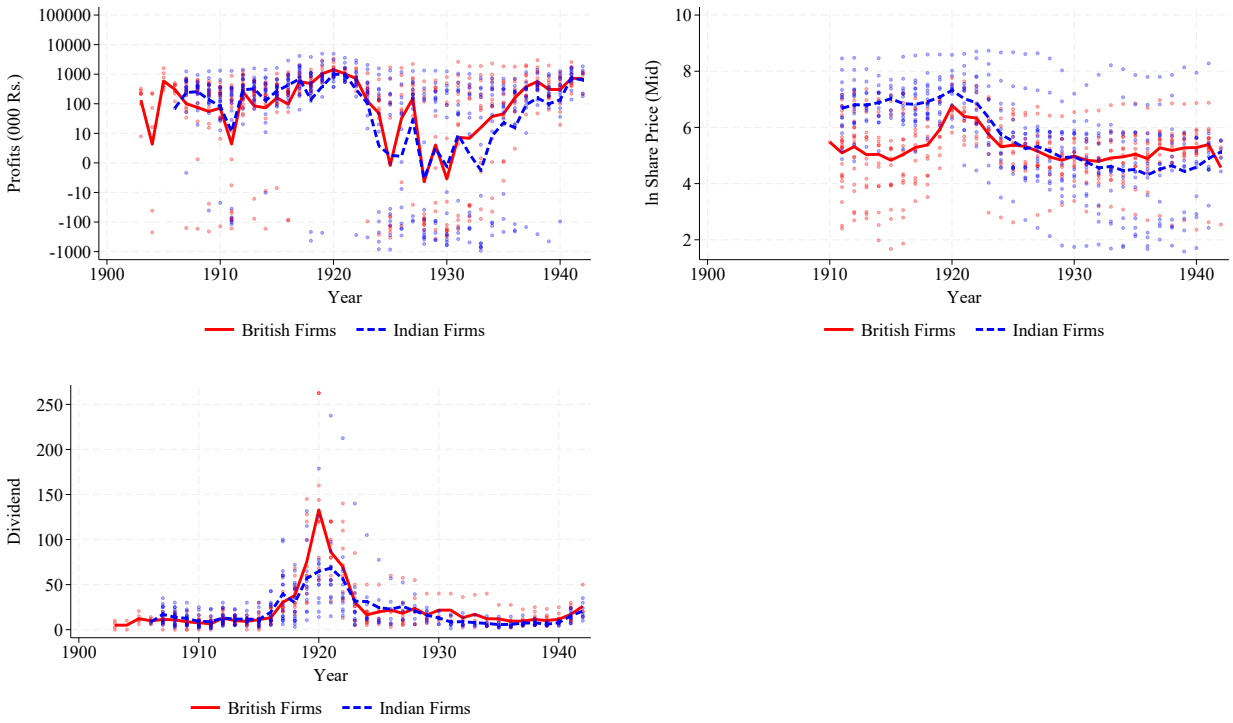
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.14. Profits, Share Prices and Dividends: Coal



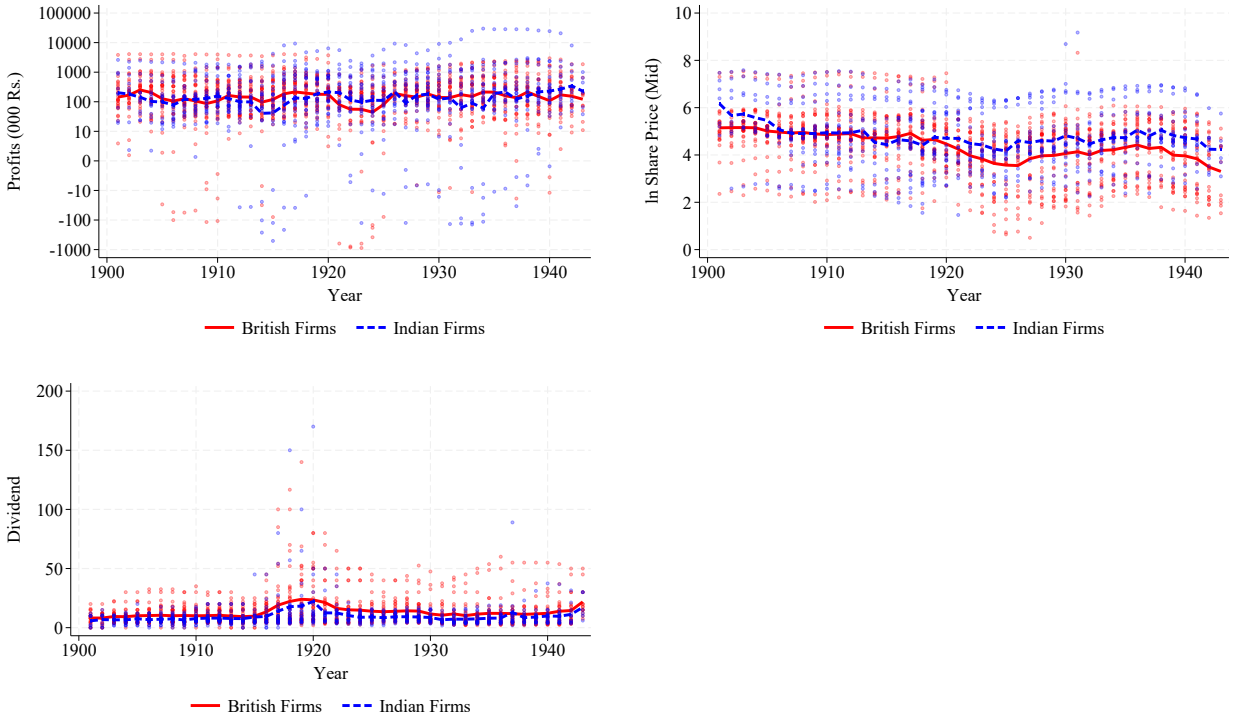
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.15. Profits, Share Prices and Dividends: Cotton



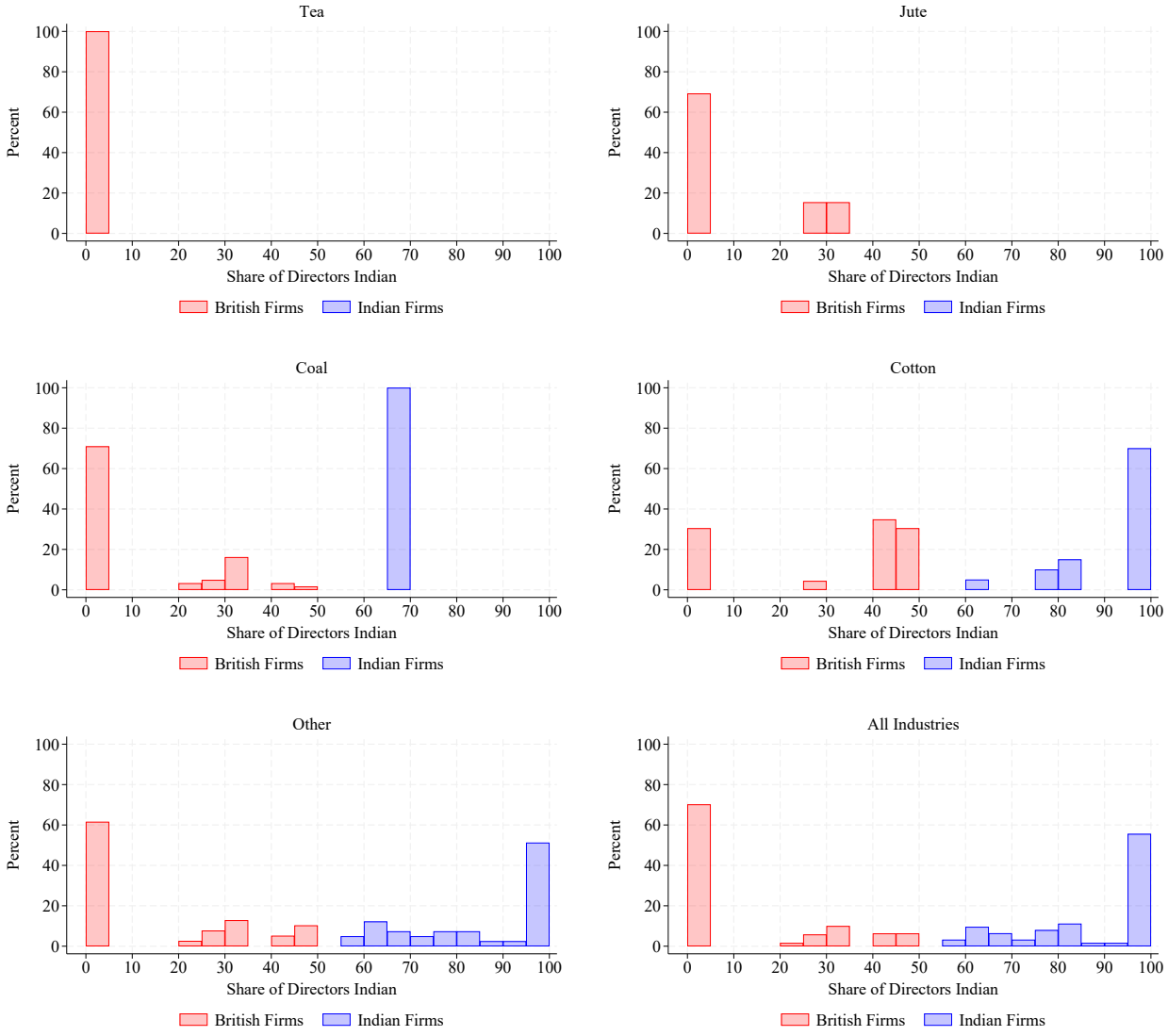
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.16. Profits, Share Prices and Dividends: Other Industries



Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. Monetary values are converted to real 1914 rupees using data from Sivasubramonian (2000). Dividend rates are reported as a percentage of the subscription value.

FIGURE A.17. Share of Indian Directors in 1913: By Industry



Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.18. Director Networks by Year

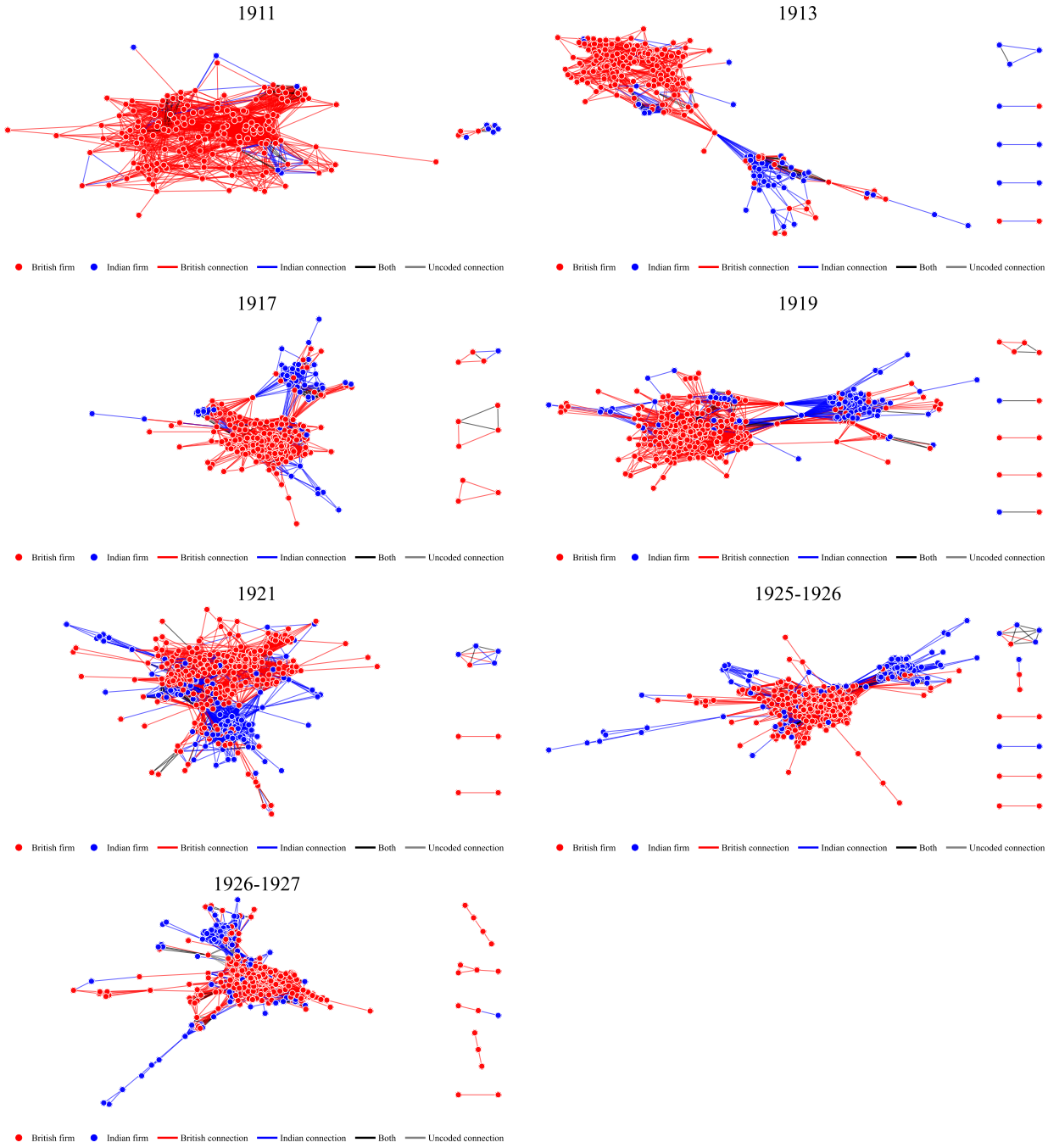
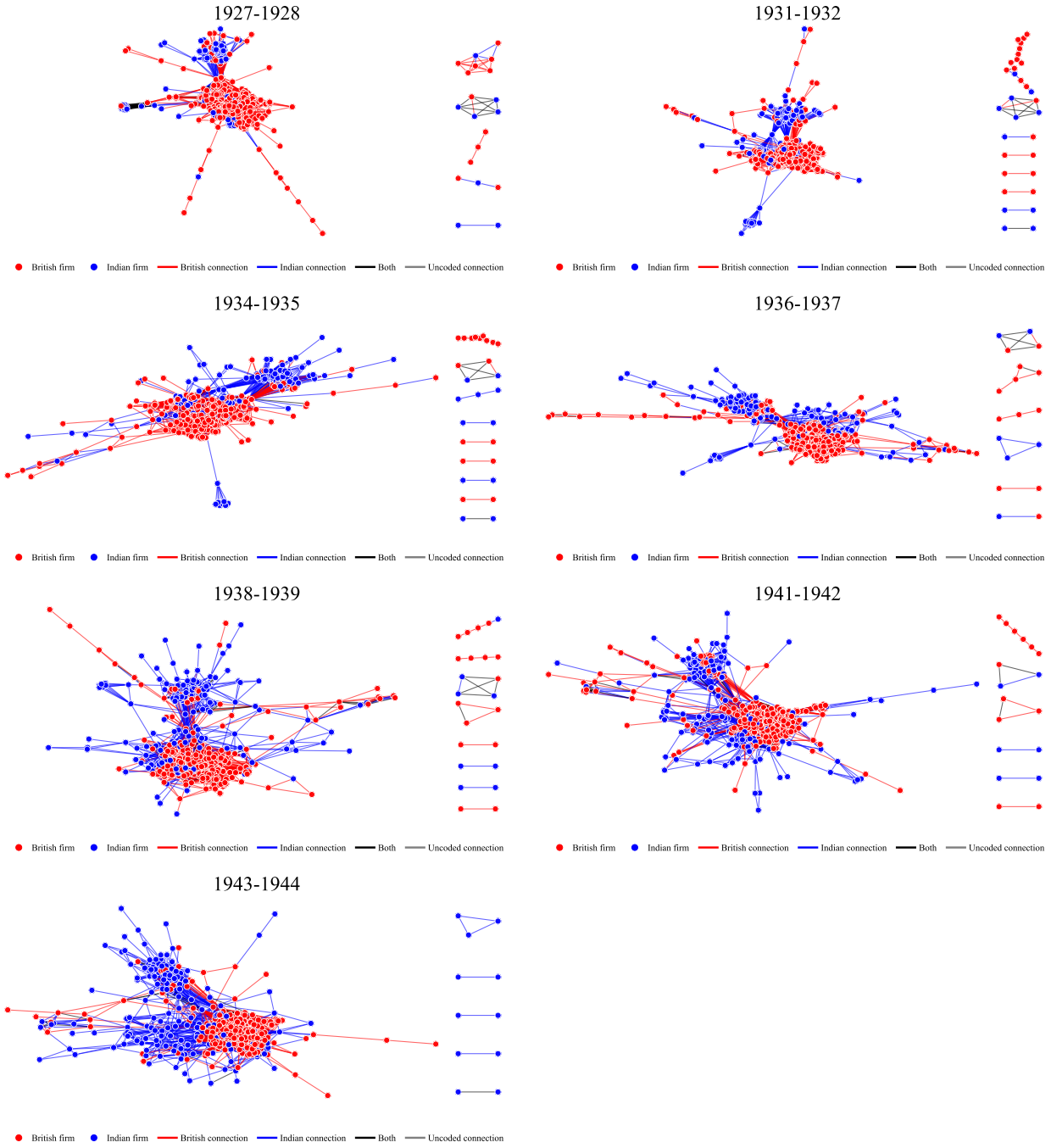
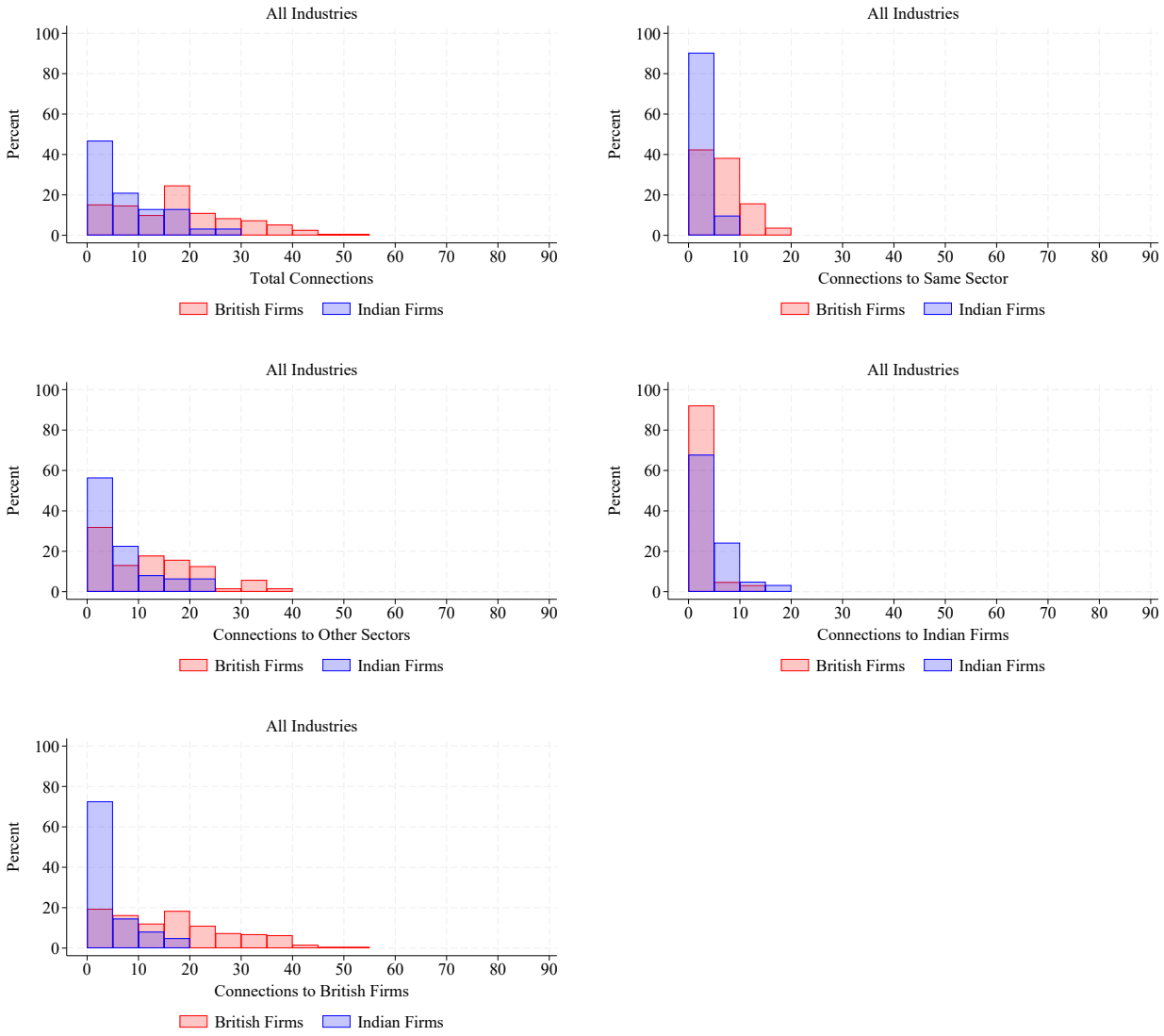


FIGURE A.18. Director Networks by Year (continued)



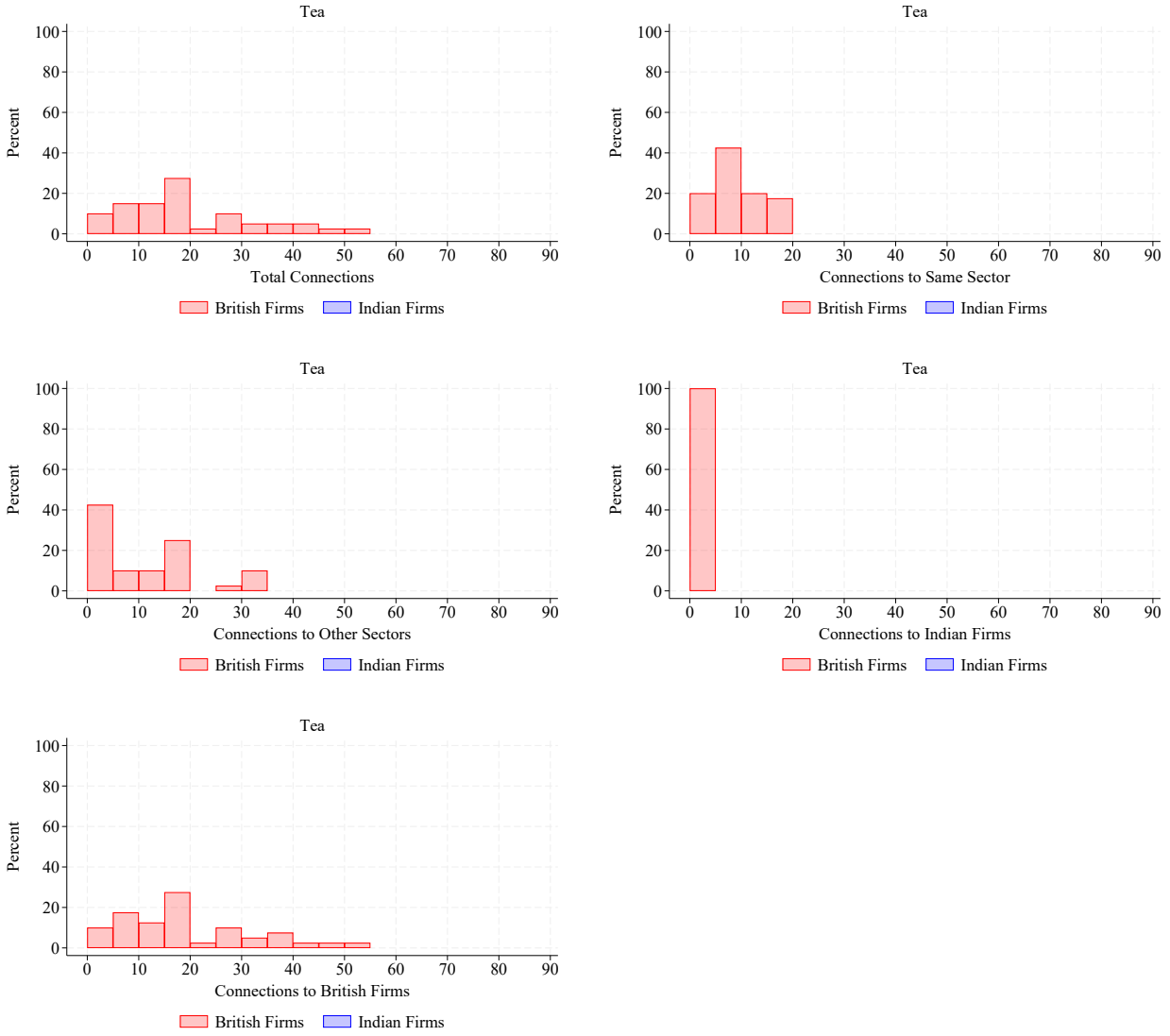
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details. This figure omits isolated firms for legibility. Nodes are firms, coloured by British or Indian control in 1913. Edges indicate at least one shared director between two firms in the relevant edition; edge colour records whether the connected firm is classified as British, Indian, both, or uncoded in that edition.

FIGURE A.19. Director Connections in 1913: All Industries



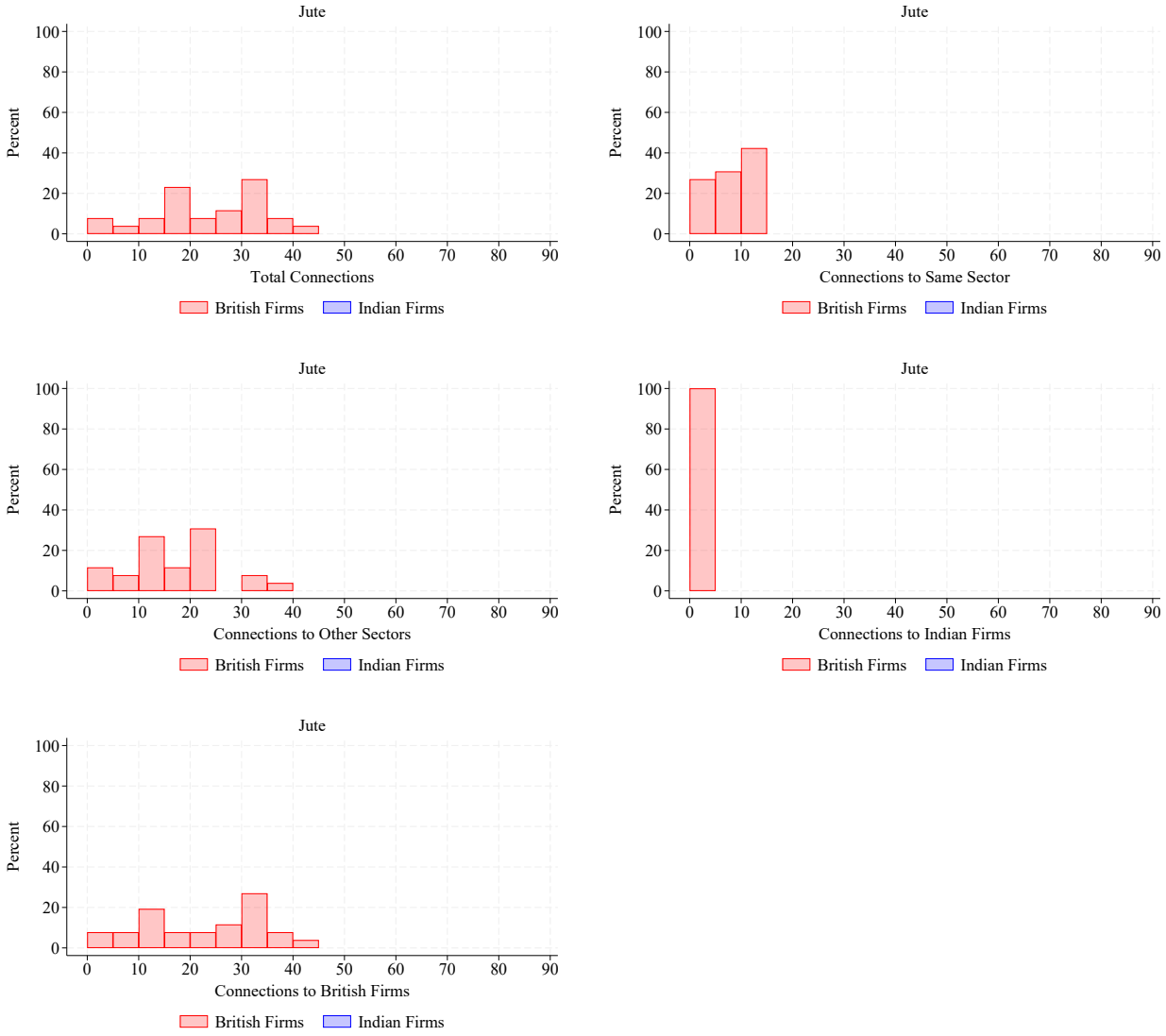
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.20. Director Connections in 1913: Tea



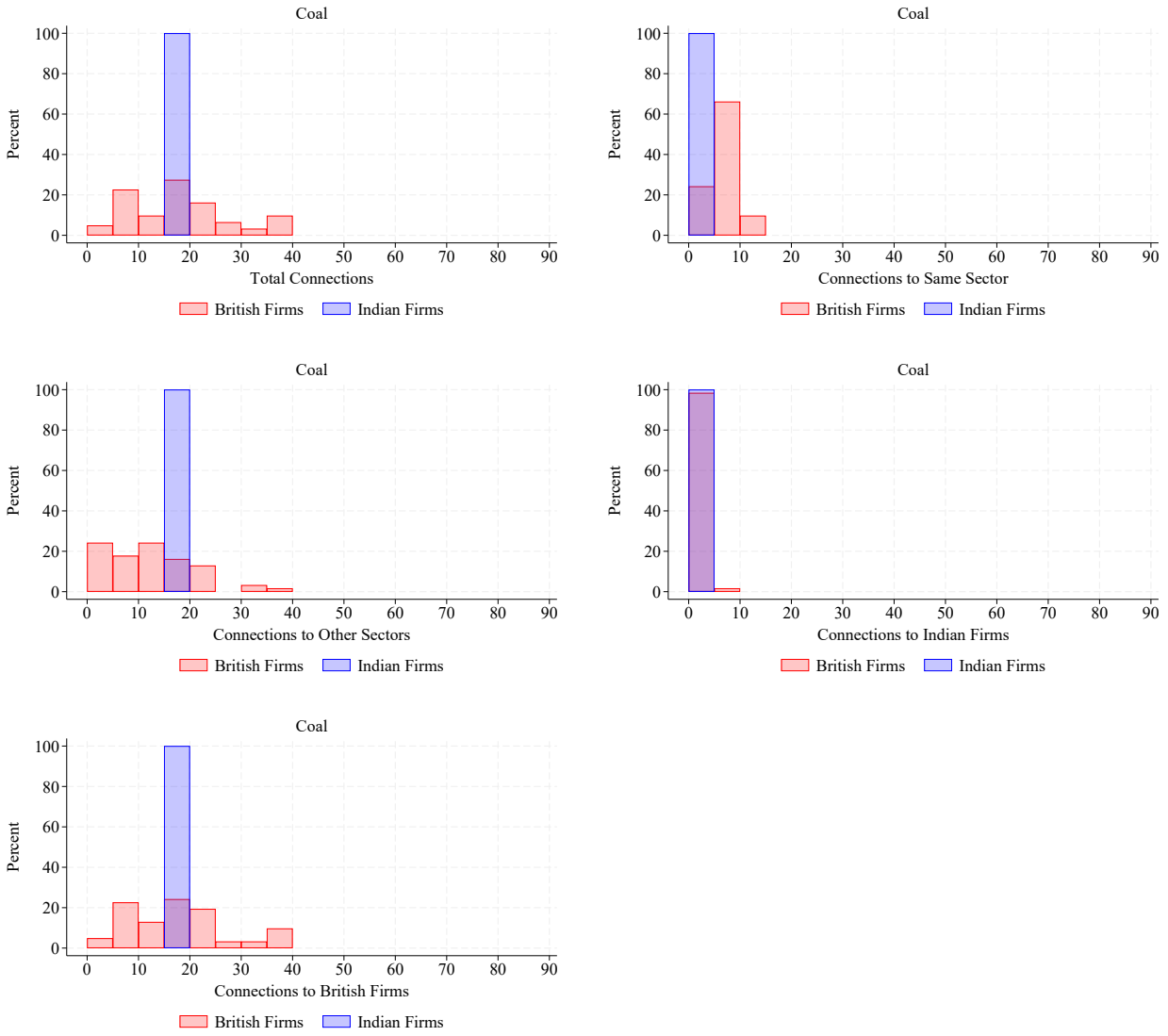
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.21. Director Connections in 1913: Jute



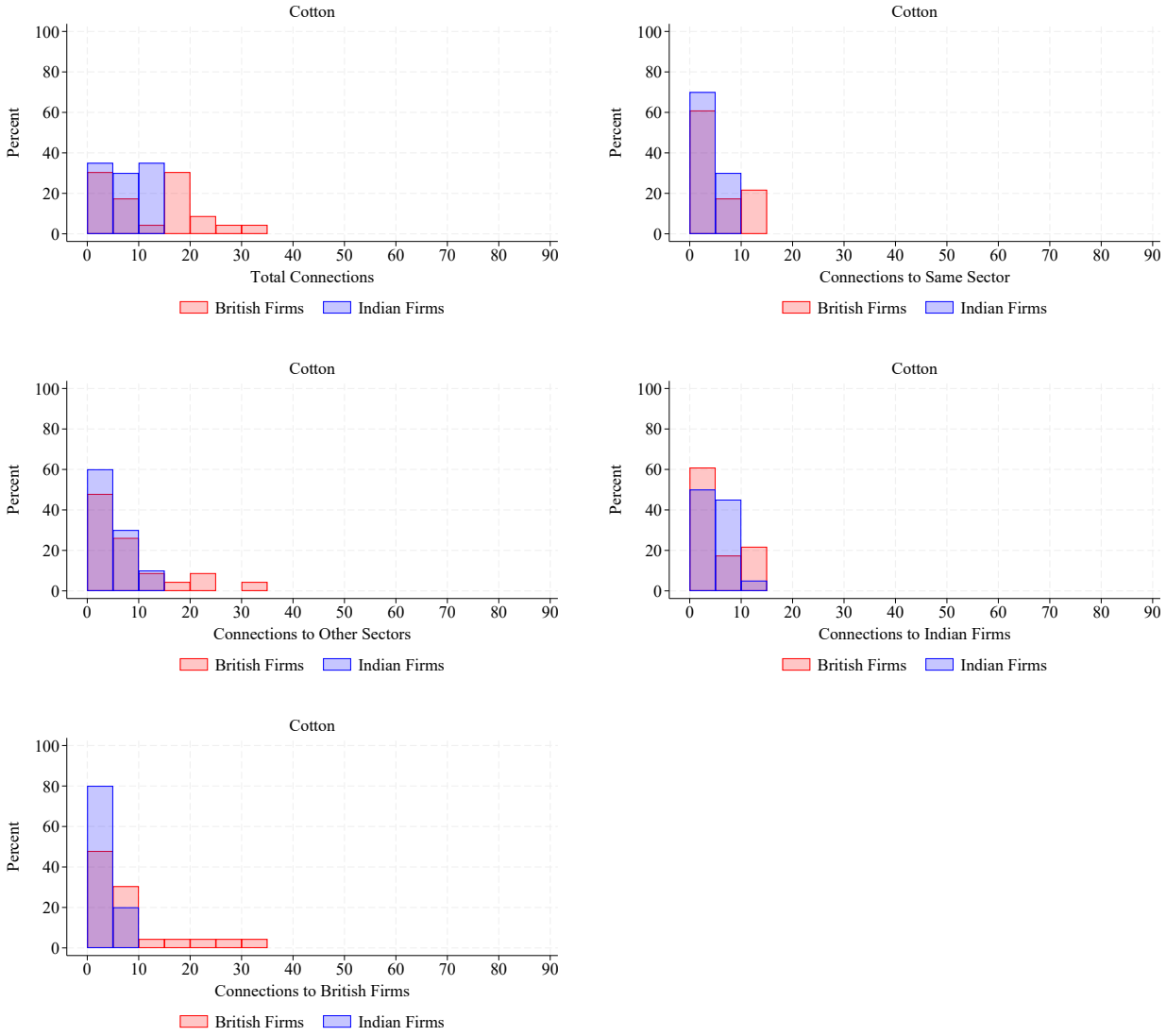
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.22. Director Connections in 1913: Coal



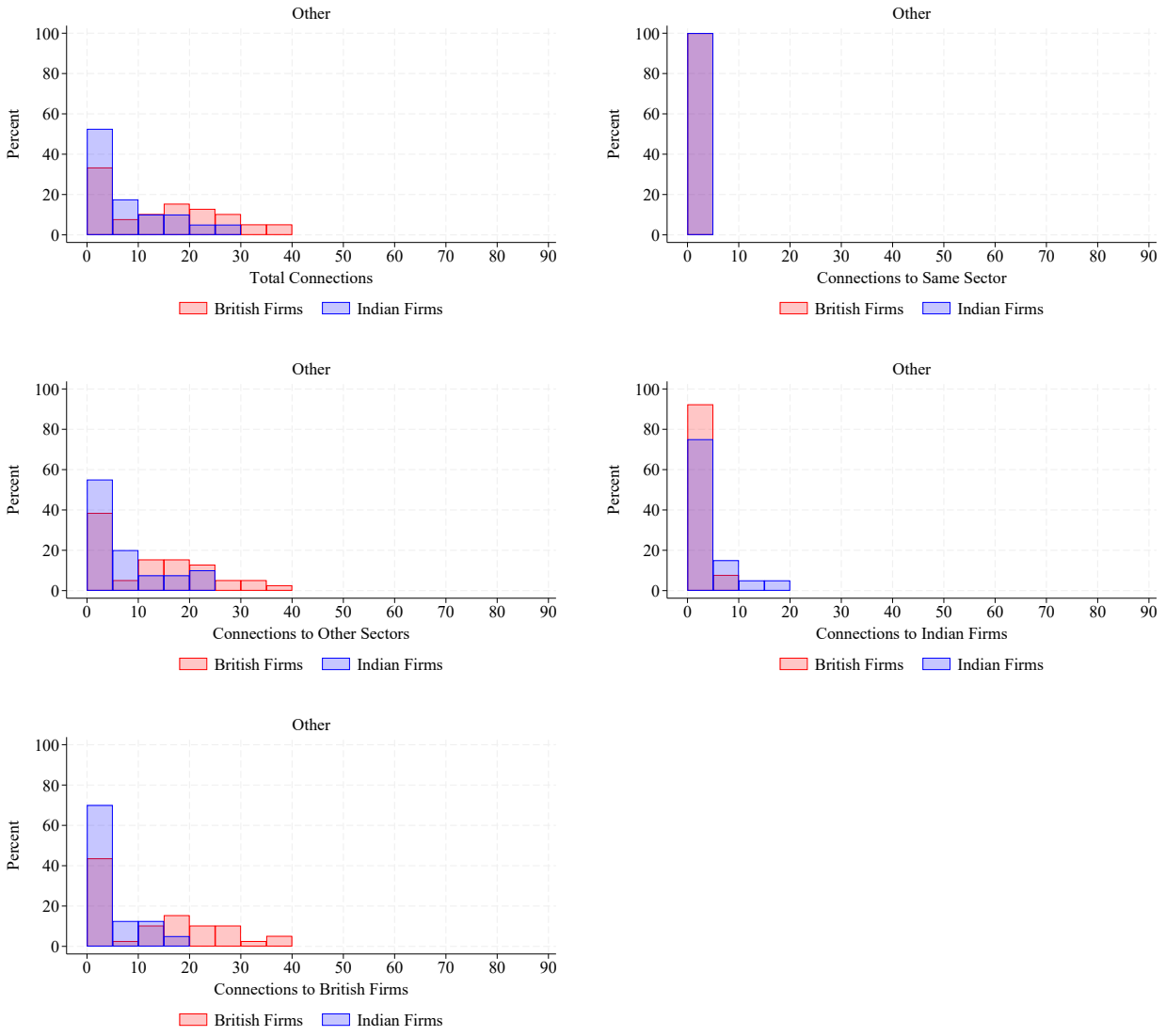
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.23. Director Connections in 1913: Cotton



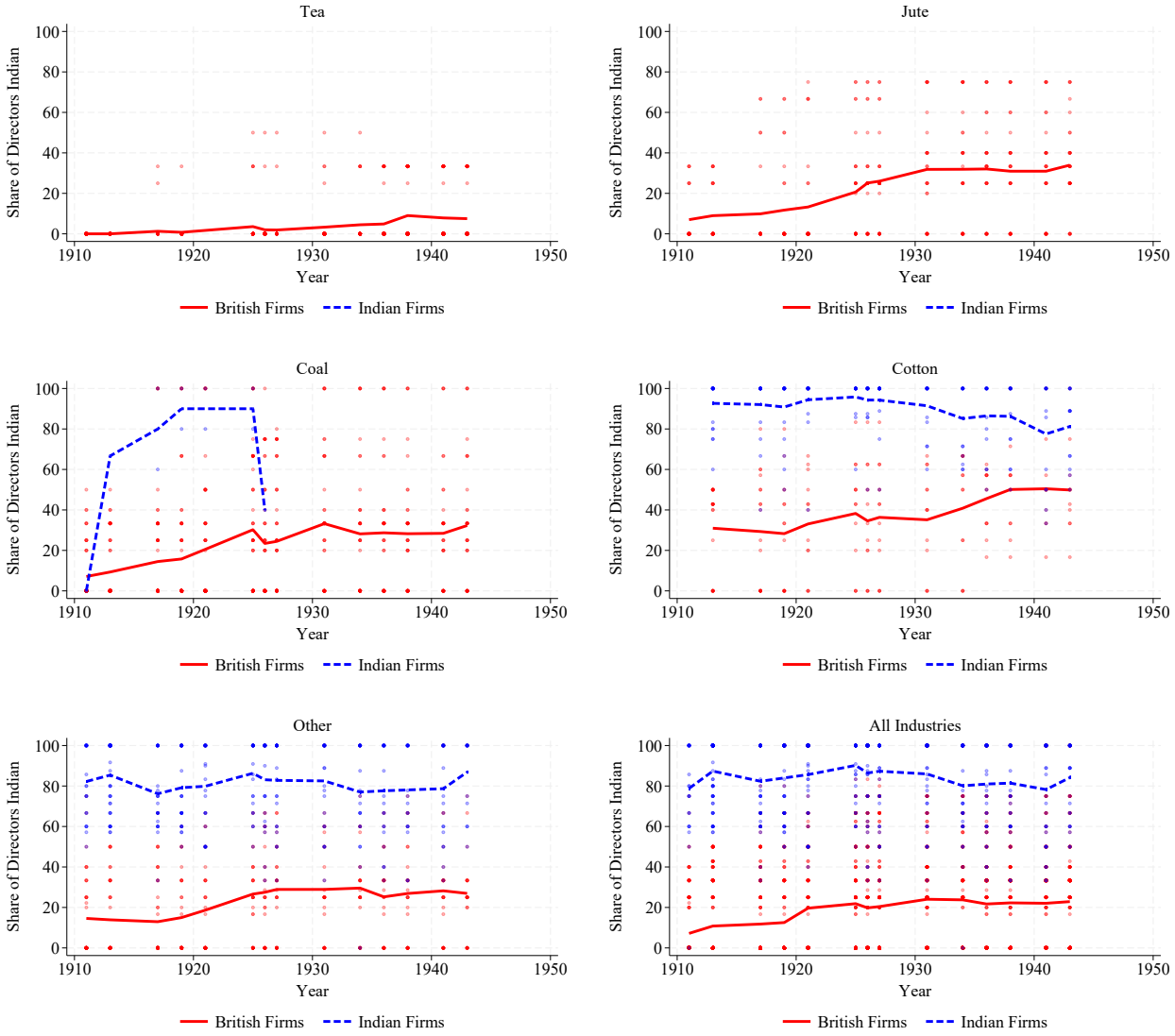
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.24. Director Connections in 1913: Other Industries



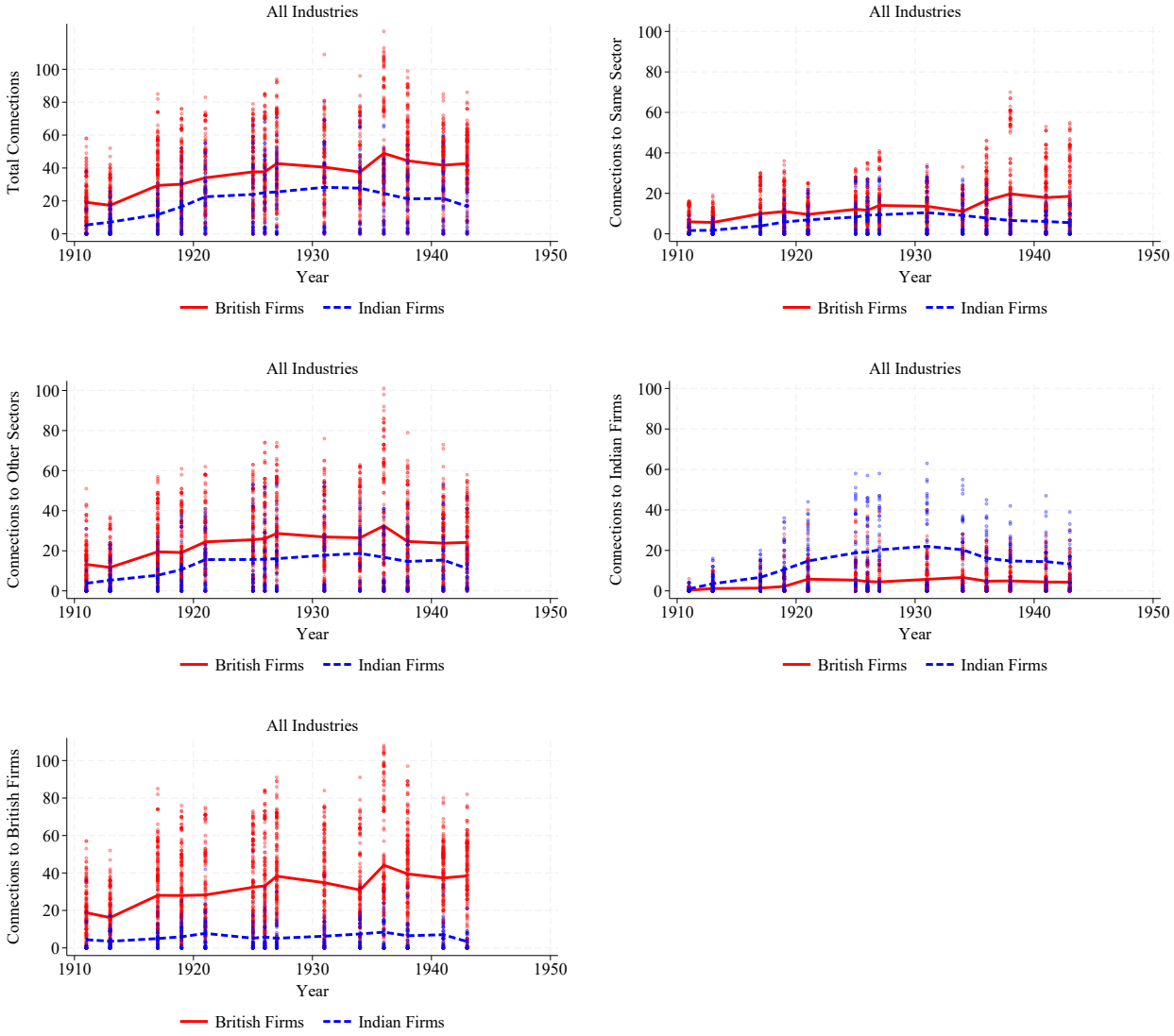
Source: Computed using the 1913 edition of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.25. Share of Indian Directors Over Time: By Industry



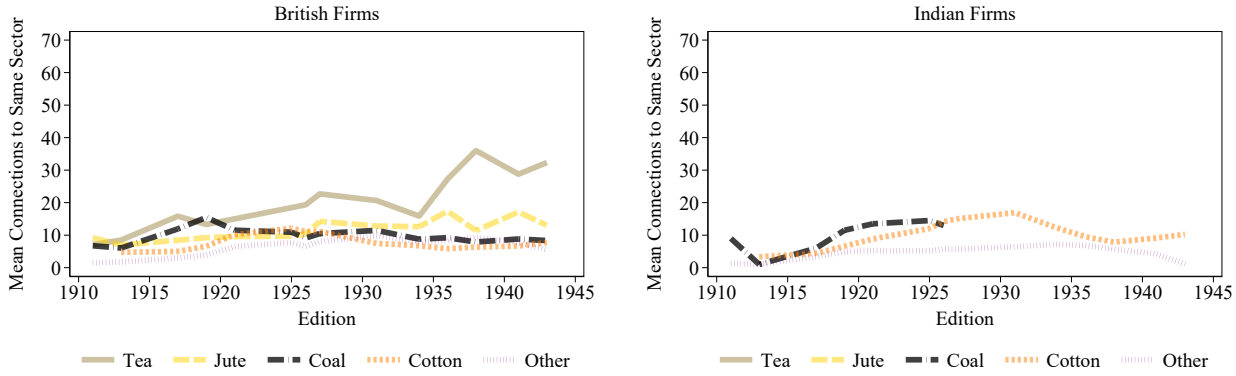
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.26. Connections by Type: All Industries



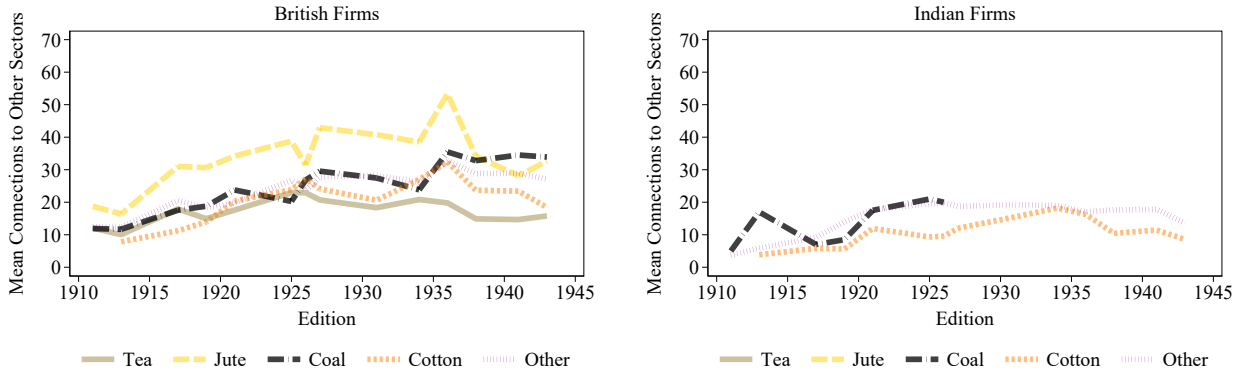
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections are firm-pair interlocks: two firms are connected if they share at least one director in the same edition. In the panels showing connections to British or Indian firms, the connected firm's control is measured in the relevant edition.

FIGURE A.27. Same-Industry Connections by Year



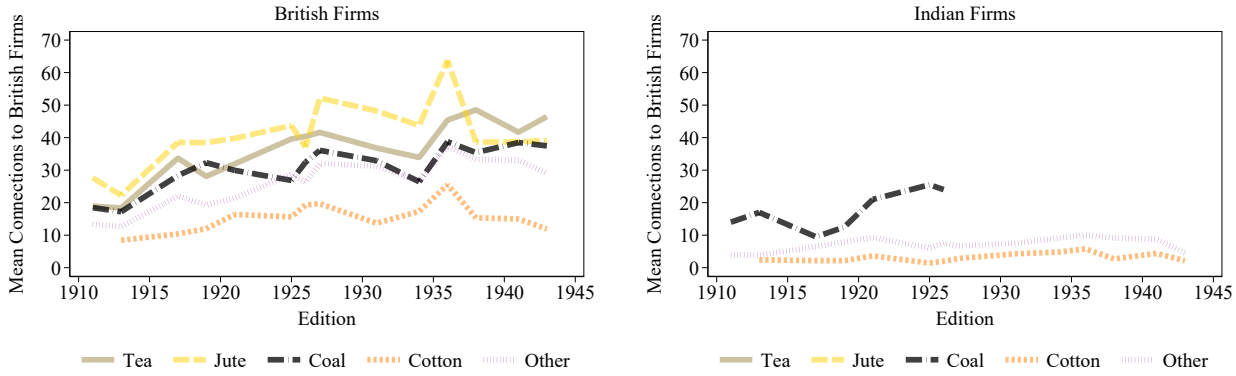
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.28. Cross-Industry Connections by Year



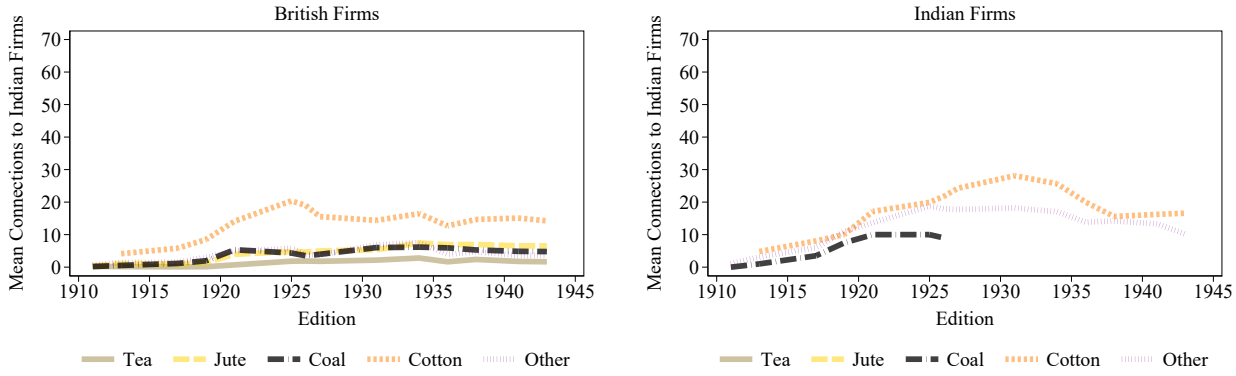
Source: Computed using multiple editions of the *Investors' India Year Book*. Firms are classified as "British" and "Indian" based on their board composition in 1913. See text for details.

FIGURE A.29. Connections to British Firms by Year



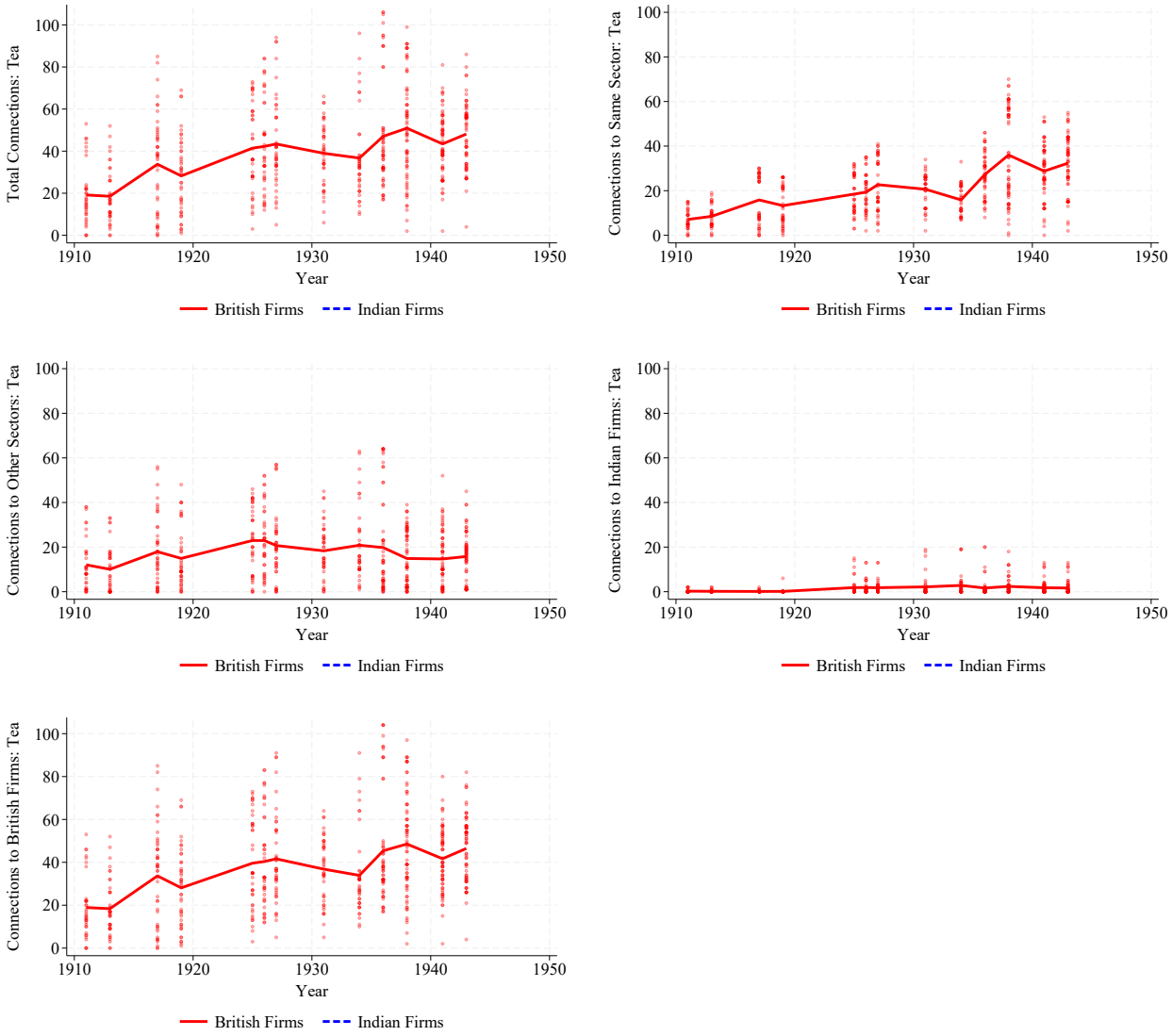
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. The figure reports firm-pair interlock connections to firms classified as British-controlled in the relevant edition.

FIGURE A.30. Connections to Indian Firms by Year



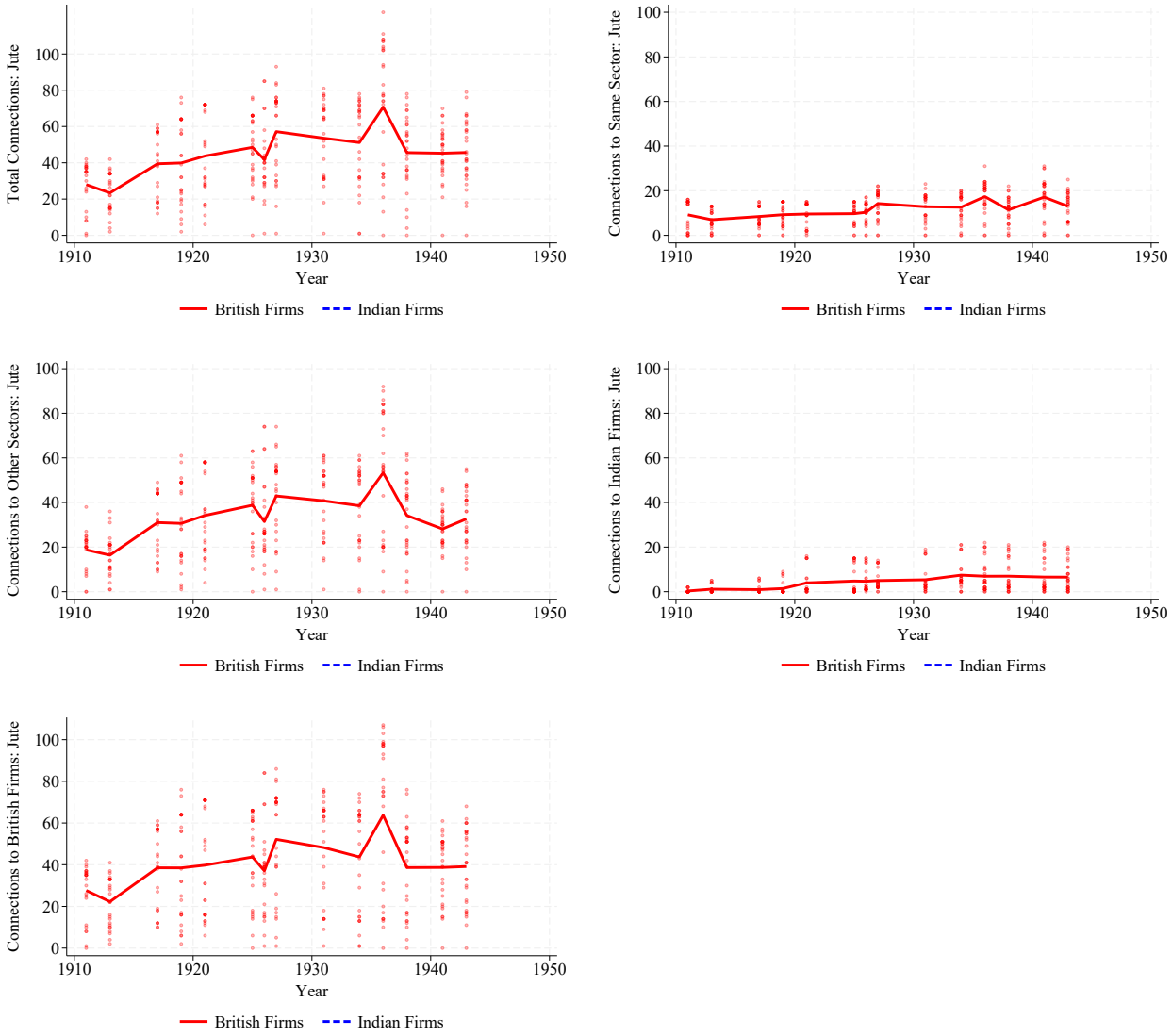
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. The figure reports firm-pair interlock connections to firms classified as Indian-controlled in the relevant edition.

FIGURE A.31. Connections by Type: Tea



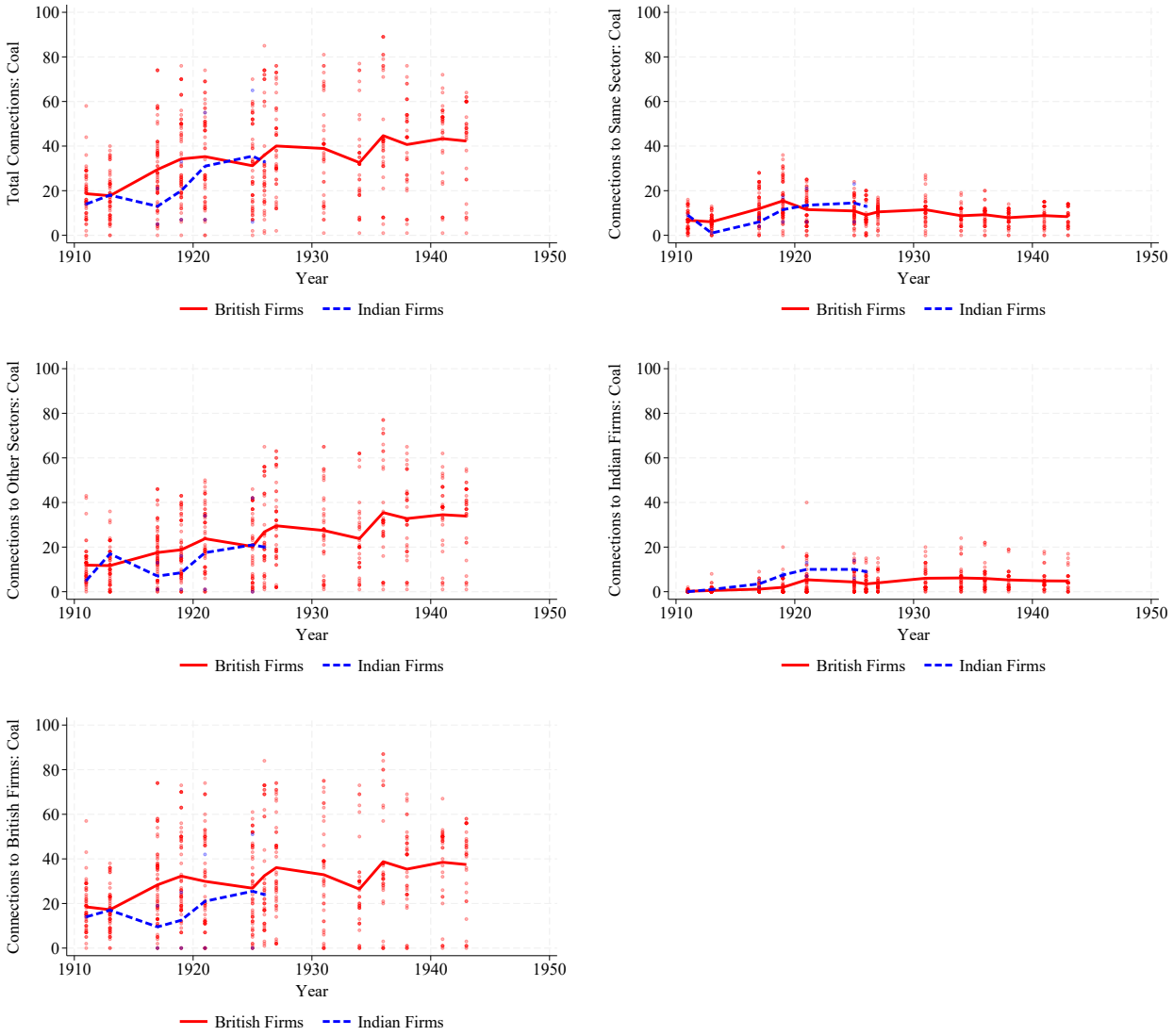
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections to British or Indian firms classify the connected firm using its control status in the relevant edition.

FIGURE A.32. Connections by Type: Jute



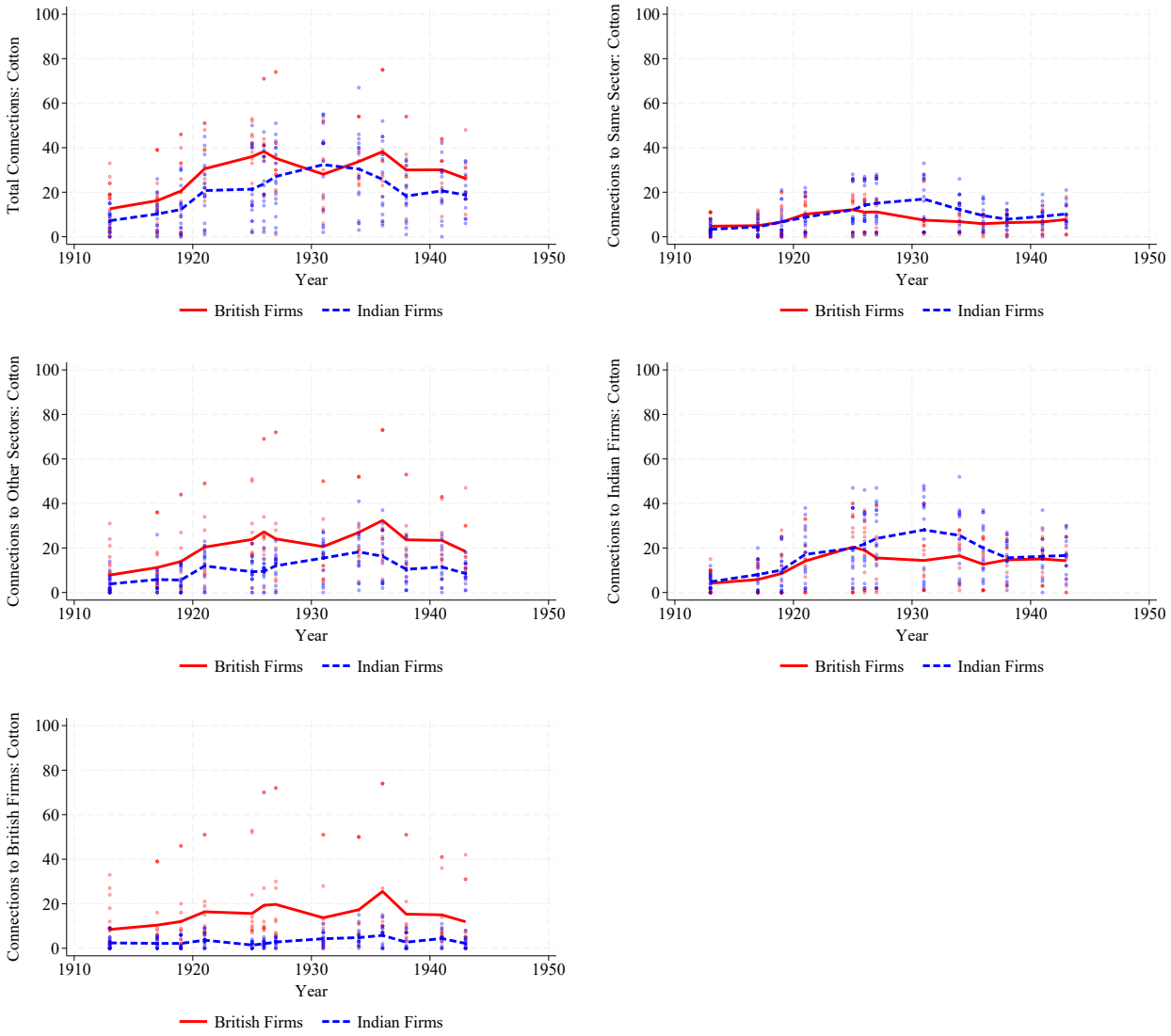
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections to British or Indian firms classify the connected firm using its control status in the relevant edition.

FIGURE A.33. Connections by Type: Coal



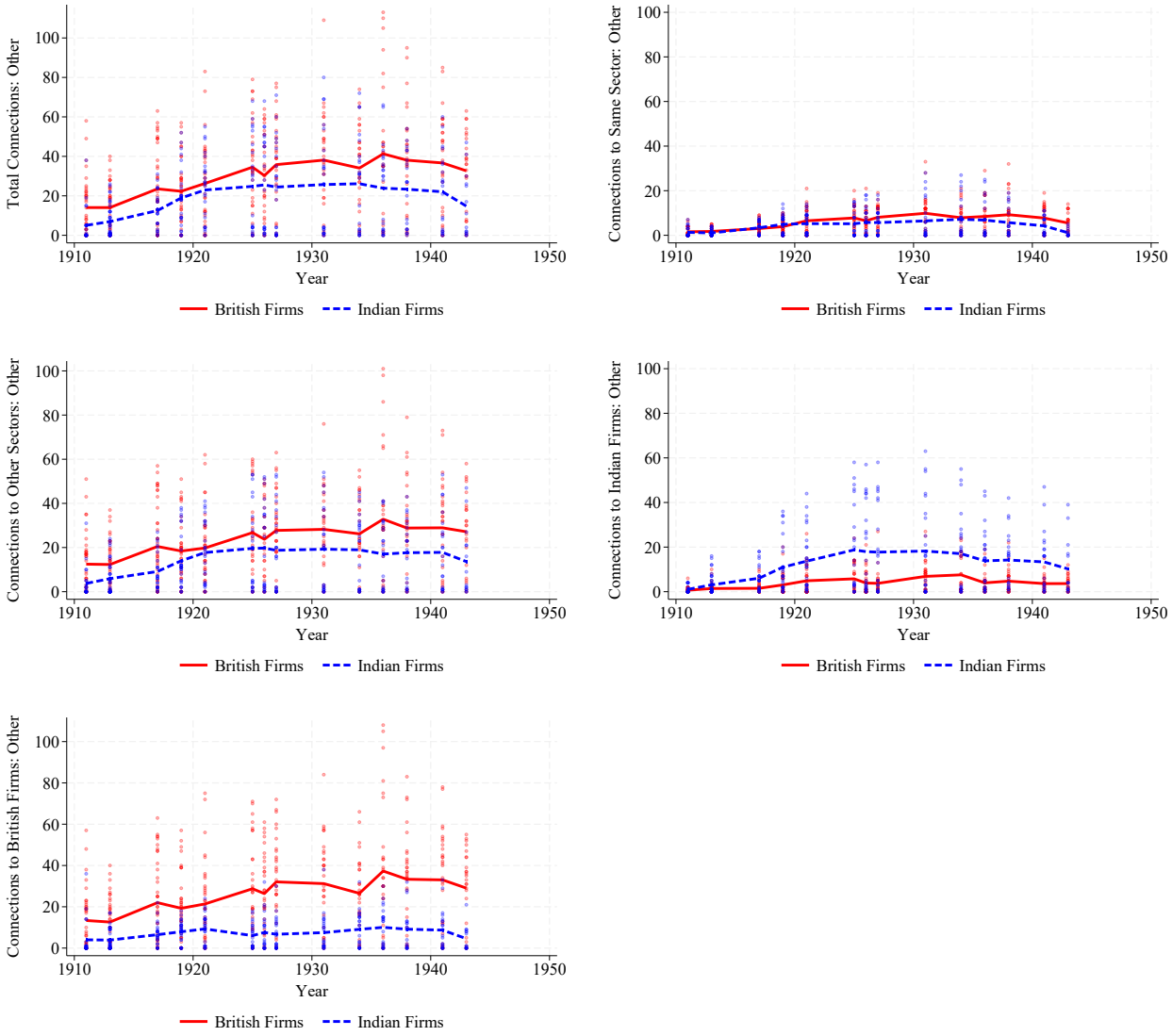
Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections to British or Indian firms classify the connected firm using its control status in the relevant edition.

FIGURE A.34. Connections by Type: Cotton



Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections to British or Indian firms classify the connected firm using its control status in the relevant edition.

FIGURE A.35. Connections by Type: Other



Source: Computed using multiple editions of the *Investors' India Year Book*. Focal firms are grouped as "British" or "Indian" according to their board composition in 1913. Connections to British or Indian firms classify the connected firm using its control status in the relevant edition.

FIGURE A.36. Diversification by Managing Agents by Year

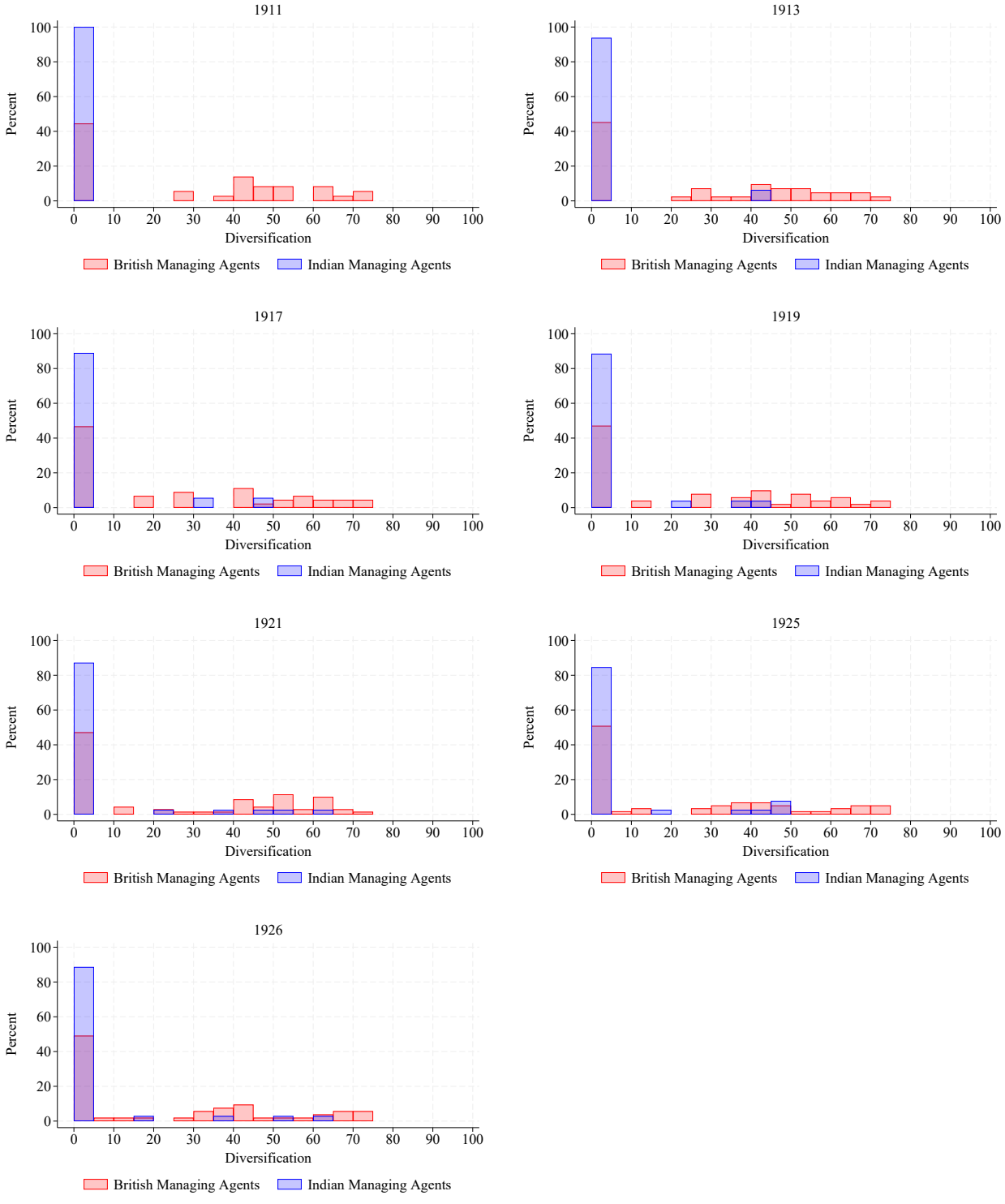
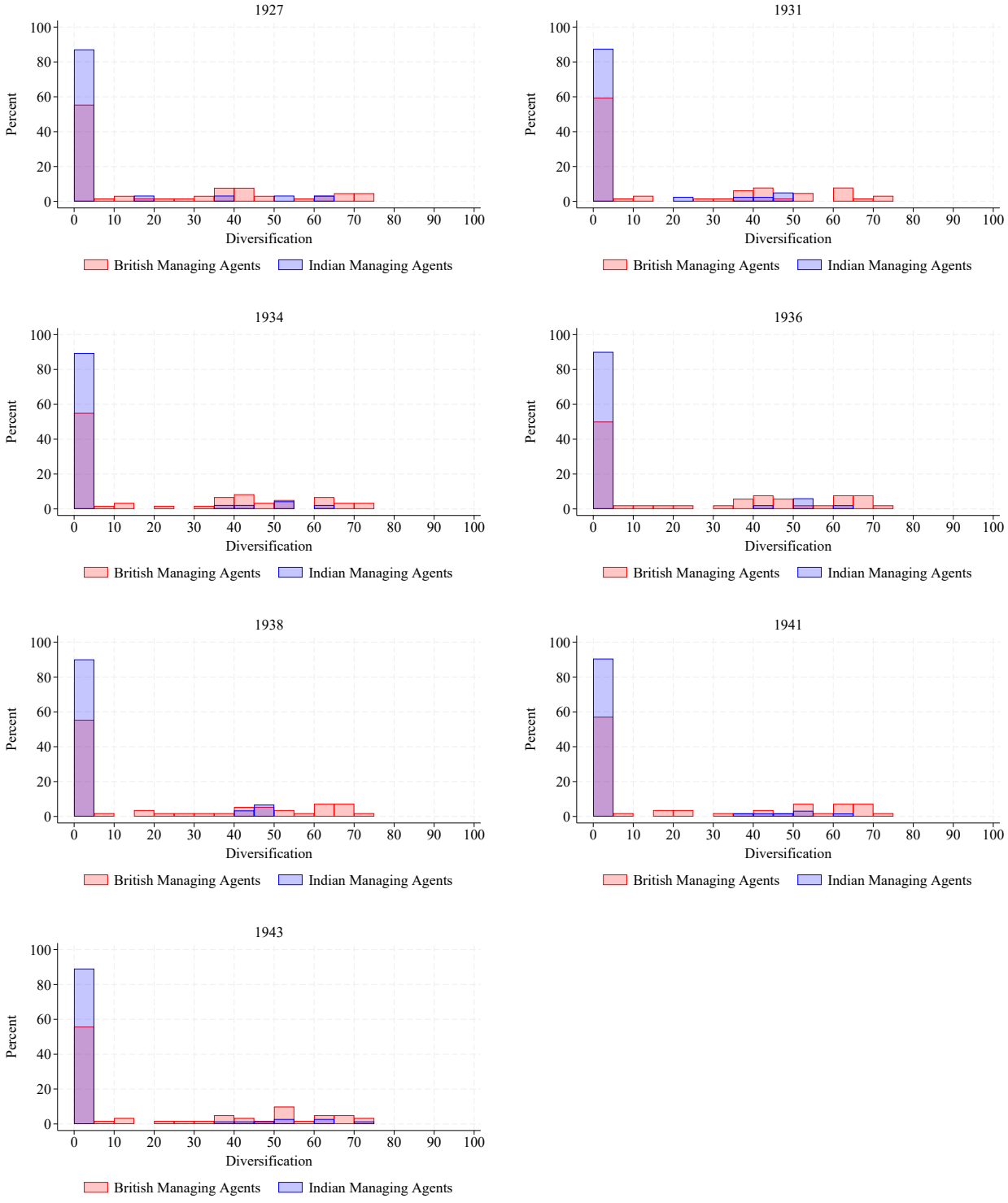
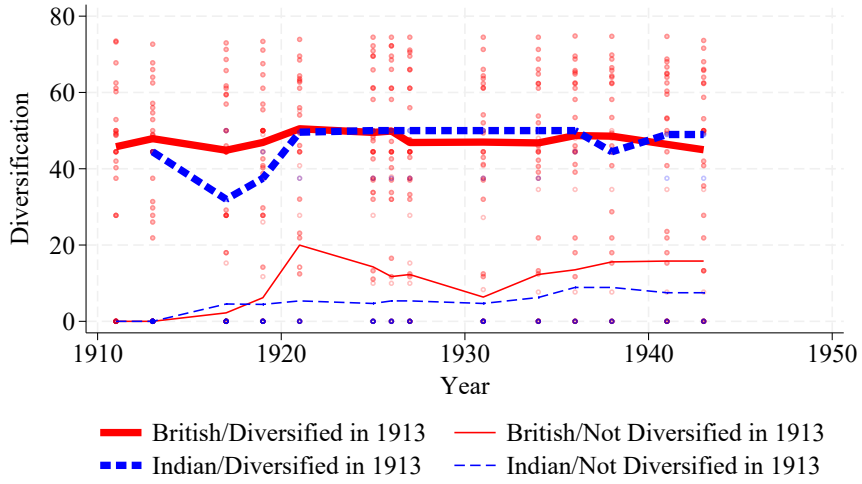


FIGURE A.36. Diversification by Managing Agents by Year (continued)



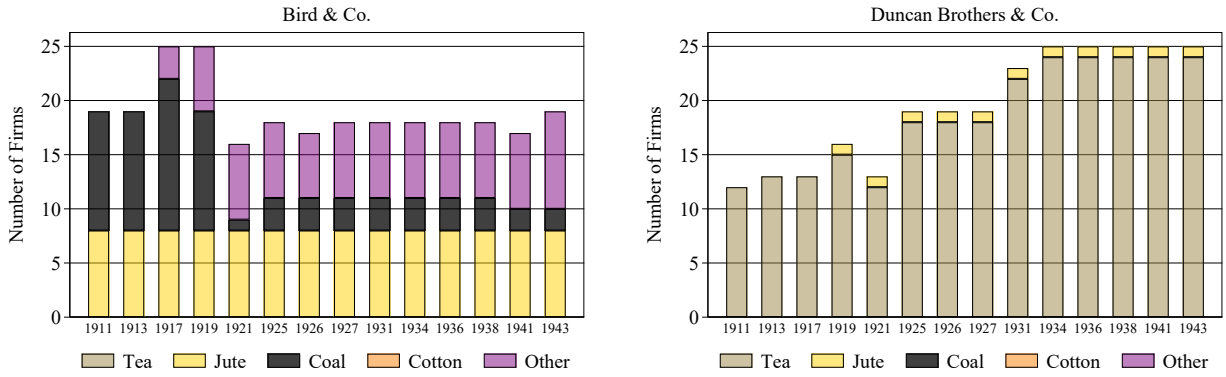
Source: Computed using multiple editions of the *Investors' India Year Book*.

FIGURE A.37. Diversification of Managing Agents' Portfolios by Diversification in 1913



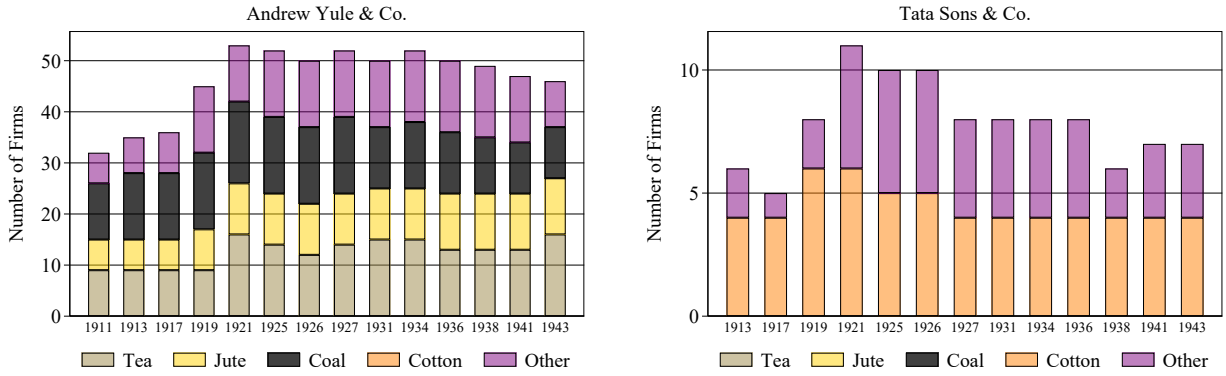
Source: Computed using multiple editions of the *Investors' India Year Book*. Diversification is the probability, for a managing agent in a given year, that two firms selected at random from its portfolio with replacement are from different sectors.

FIGURE A.38. Variation Within British Managing Agencies



Source: Computed using multiple editions of the *Investors' India Year Book*.

FIGURE A.39. Variation Across British and Indian Managing Agencies



Source: Computed using multiple editions of the *Investors' India Year Book*.

FIGURE A.40. Indian Directors by Managing Agents by Year

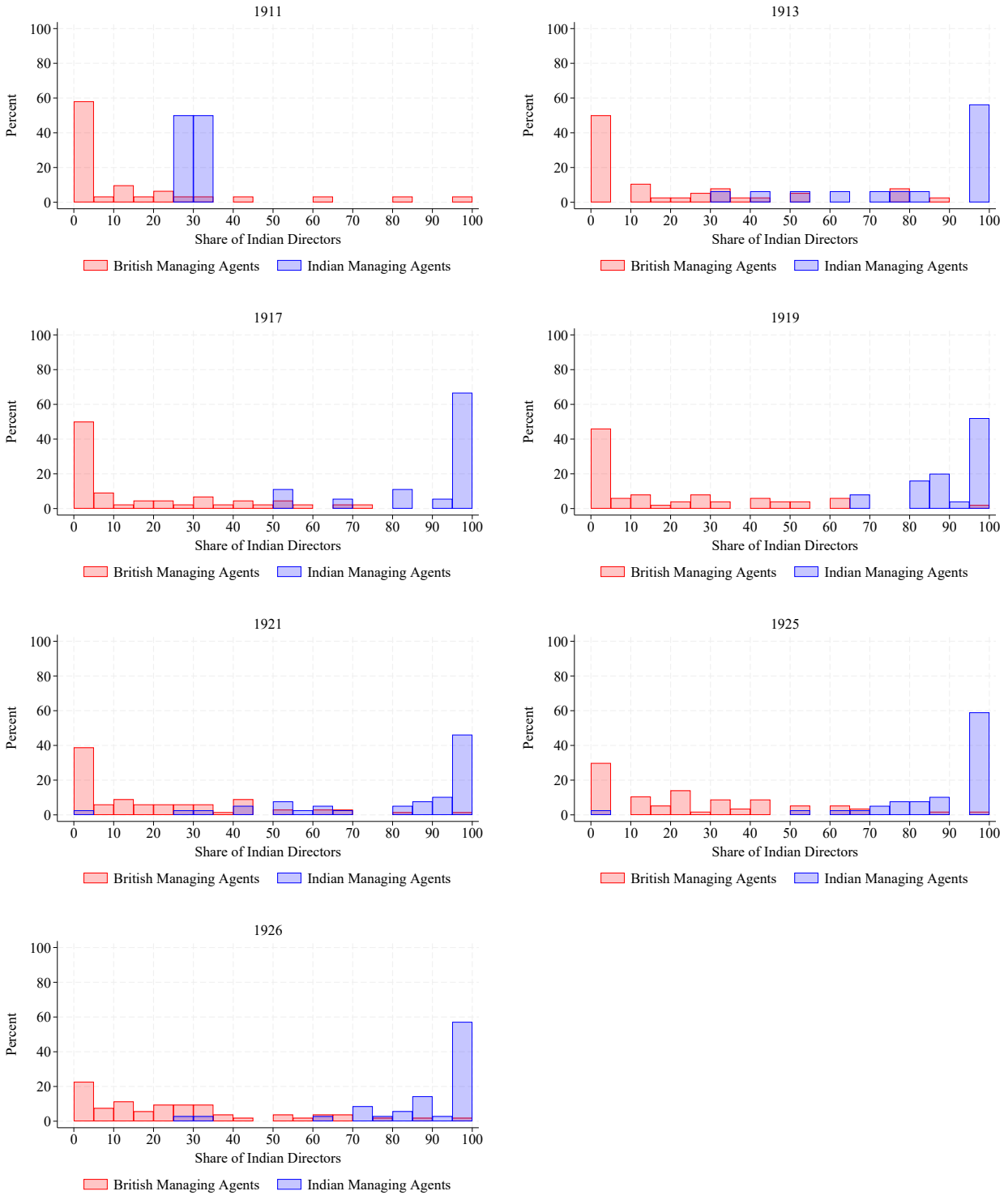
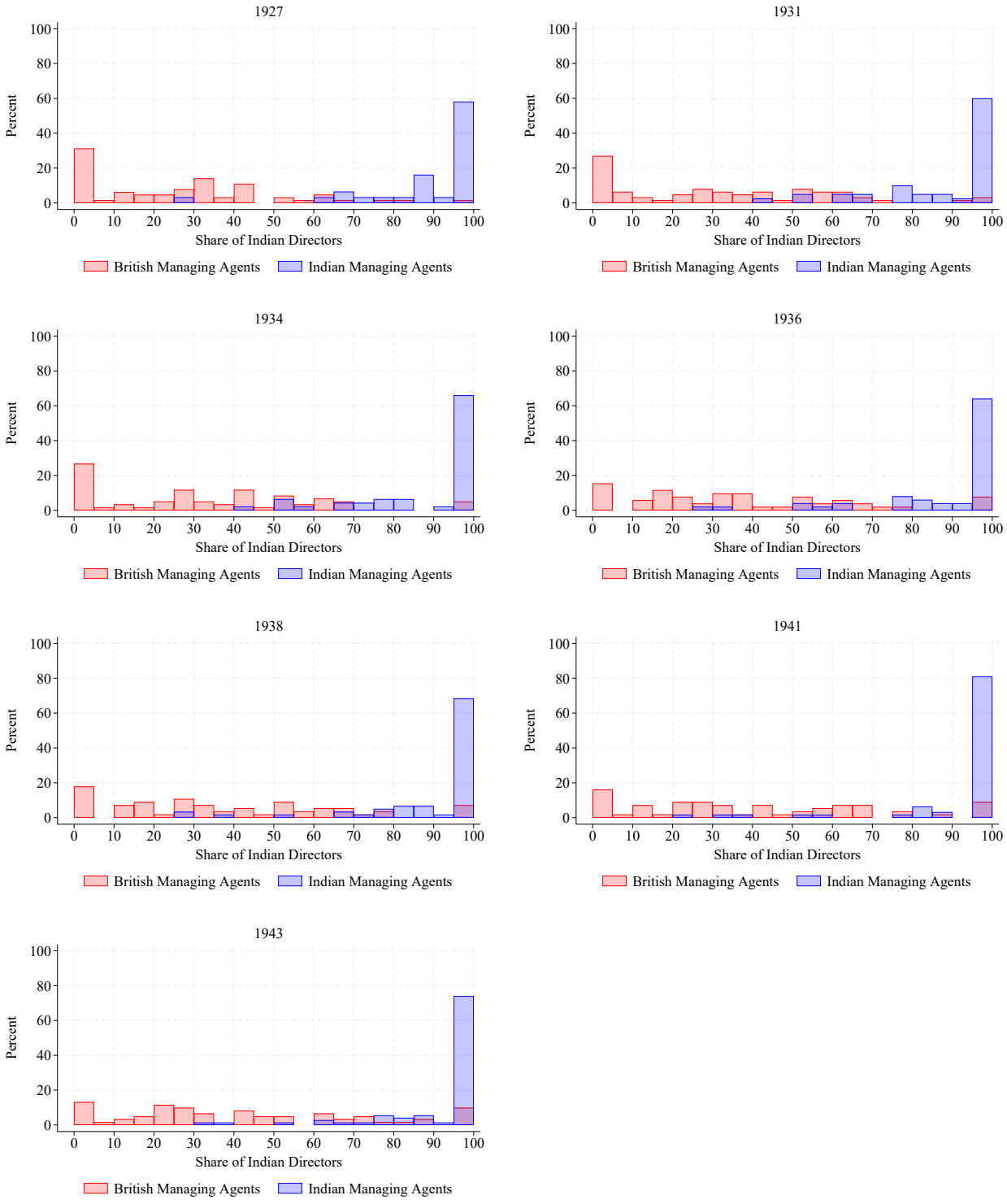
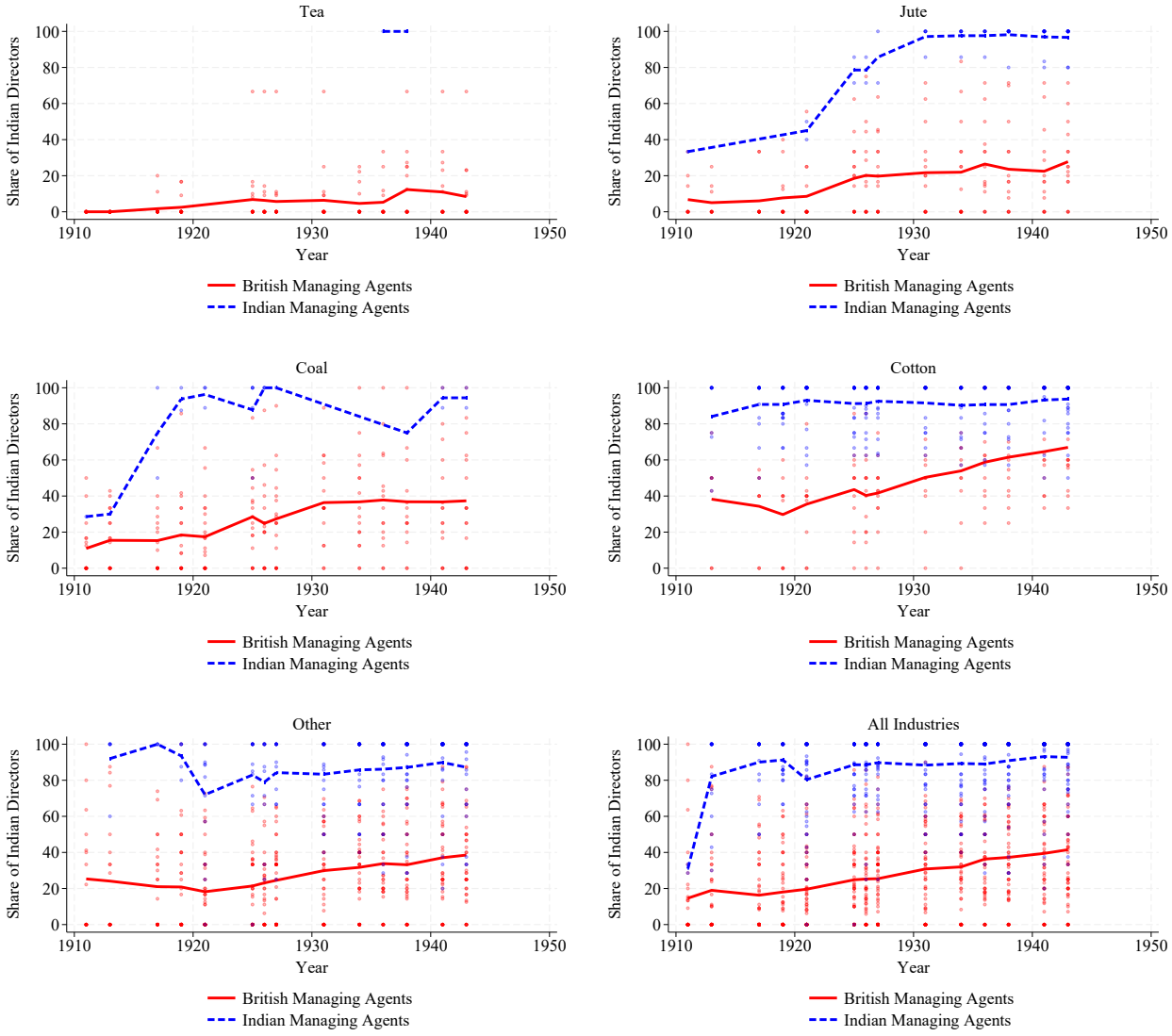


FIGURE A.40. Indian Directors by Managing Agents by Year (continued)



Source: Computed using multiple editions of the *Investors' India Year Book*.

FIGURE A.41. Share of Indian Directors by Managing Agents over Time



Source: Computed using multiple editions of the *Investors' India Year Book*.