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The Board of Trade and the regulatory state in the long 19th century, 1815–1914

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Abstract

How does regulatory statehood develop from the regulatory work which governments have always done? This article challenges conventional views that regulatory statehood is achieved by transition to arm's length agencies and that it replaces court-based enforcement or displaces legislatures in favor of less accountable executive power. To do so, we examine the major 19th-century surge in development of micro-economic regulatory statehood in Britain, which had followed more gradual development in early modern times. We show that when the transformation of the Board of Trade is understood properly, a richer appreciation emerges of how regulatory statehood is institutionalized generally and of British state-making in particular. To demonstrate this, we introduce a novel conceptual framework for analyzing and assessing change on multiple dimensions of regulatory statehood, distinguishing depth of regulatory capacity and regulatory capability along six dimensions.

Keywords: Board of Trade, regulatory capability, regulatory capacity, regulatory state, state-making.

1. Introduction

When and how do "regulatory states" emerge? Understanding styles, capabilities, and institutional constraints on feasible reform in "regulatory states" requires exploration of historical trajectories, because legacies, traditions, path dependencies, and constraints from earlier periods influence what people are willing and able to do in later ones (Balleisen & Brake, 2014; Moran, 2003).

Public authorities have regulated economic activity from deepest antiquity. Weights and measures regulation may be much older than the standard measures used in the code of Urukagina (2380–2360 BCE) or the image on the Louvre stele of Hammurabi with ceremonial measuring rods on the stele of the code associated with him (1750s BCE). It was fully institutionalized in the *metronomoi* in classical Athens (Vanderpool, 1968) and in central government in Han dynasty China (Zhao, 2015, 287–288, n. 115). Classical Islam institutionalized the role of the *sahib al-suq* and later the *muhtasib* as market inspector, perhaps drawing upon the classical Greek *agoranomos* (Foster, 1970; Hamdani, 2008). Mediaeval European states developed extensive regulatory controls over labor and some prices. In 14th-century England, labor market regulation previously undertaken by courts and city authorities was established by statute (Braid, 2013); royal charters in England guaranteeing guilds' liberties to regulate labor in their trade (thus effectively delegating regulation to them) have been traced to 1155 (Ladd, 2001, 1000; Sutton, 1998, 127); by Tudor times local justices of the peace had key regulatory roles (Braddick, 2000). Although much early modern regulation (Gauci, 2011) has been criticized as ineffective (e.g., Murphy, 2014), similar charges are often leveled at contemporary regulation too. Moreover, the extent of state "effort," if not always the intensity, of pre-industrial state regulation shows its central importance in state capacity.

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Much recent writing argues that there were clear transitions from regulatory work in government to the condition of being a "regulatory state." Some scholars tracing its origins in Britain and Europe who associate it with the 1980s and 1990s privatization of previously state-run industries (e.g., Holzinger & Schmidt, 2015; Majone, 1994, 1997, 2010) tend implicitly or explicitly to require extensive use of arm's length, operationally independent specialist executive agencies for regulatory statehood. US scholars tend to emphasize a longer run process of historical development and a distinctive trajectory, peculiar to the federal constitution. There, the colonial period saw initiatives in some fields of economic regulation, and many of 13 colonies drew upon English law precedents in their regulatory practice, in part influenced by the supervision of colonial laws by the Board of Trade in London (Steele, 1968). In turn, this influenced 19th-century US state and federal regulation (Goldin & Libecap, 1994). Many have argued that the "gilded" (DeCanio, 2015) and "progressive" eras of latter third of the 19th century until 1914 marked the transition from state-level, local and judicial regulatory authority over fire, public health, professions, quality in some types of goods, weights and measures (Novak, 1996) and in some cases slavery (regulated in some states from colonial times: Din, 1999), to an American regulatory state of exercising federal control over "competition, anti-trust policy, railroad pricing, food and drug safety and many other areas" (Glaeser & Shleifer, 2003, 401) through federal agencies such as the Interstate Commerce Commission (1887) and Federal Trade Commission (FTC, 1914) (Eisner, 2000 [1993]; Skowronek, 1982; McGraw, 1981) created before the Great War. Scholars who insist on explicit rule-making powers for arm's length agencies as the condition for regulatory statehood might date its appearance in the United States to the 1946 Administrative Procedure Act, which consolidated "New Deal" era agencies' practices (Croley, 2011, 61–63) or even the 1960s or 1970s for the FTC.

Critically examining literature on regulatory statehood and borrowing Lavenex et al.'s (2021) distinction between regulatory capacity and capability, this article shifts the focus from independent executive agencies by developing a framework of six distinct dimensions to assess the depth of regulatory statehood: independence, delegation of rule-making, extent, intensity, ramification, and integration (Section 2). We use this framework to assess change in degrees of regulatory statehood in micro-economic regulation in Britain between 1815 and 1914 by one office of state, which has been an unfashionable subject of research for historians for decades—the Board of Trade (BoT) (see Section 3 for rationale for case selection). We show that Moran's (2003) well-known account, which emphasized factories, mines, finance and professions and "club" self-regulation, understates the scale and significance of the transformation achieved. We show that the Board's 1815–1914 transformation drastically reshaped economic regulatory capacity (see Section 4): by 1914 it had almost become a ministry for micro-economic regulation, which on our measures represented a major step toward regulatory statehood.

We also contribute to the state making literature (Bartelson et al., 2018; Berwick & Christia, 2018; Cingolani, 2018; Cingolani et al., 2015; Møller, 2017), by suggesting that economic regulatory capacity is a major aspect of "state capacity" alongside fiscal, coercive (Tilly, 1992), bureaucratic or administrative (Fukuyama, 2011, 2015), legal and territorial control capacities (Johnson & Koyama, 2013). To do so, we give administrative content to Besley and Persson's (2009, 2011) concept of economic regulatory capacity. Focusing on the BoT's micro-economic regulatory functions shows that regulatory capacity in Britain in the 19th century developed more quickly and more extensively than anything achieved in that country in previous centuries, resembling the "hyper-innovation" identified by Moran between 1970 and 2000 but over a longer period. The case therefore allows to reevaluate the established narrative about British state-making.

Regulatory statehood which developed over a long period is likely, *ceteris paribus*, to be more deeply institutionalized than that which emerged at a particular moment to address a specific problem. It is likely to sustain rather different forms of regulatory capacity, in styles of organizing and coordination, extent of regulatory operational independence, division of professional labor, relationships between regulatory work and wider administrative and public law. A regulatory state which emerged gradually is likely to be more diverse in these respects than one which adopted a template at a particular moment, but also more likely to exhibit strong path dependency. A longer time horizon helps to demonstrate contemporary regulatory structures were not inevitable, and that regulatory statehood may develop in other directions in future.

2. Re-examining the emergence of the regulatory state: conceptual framework

There are several reasons to doubt the usefulness of accounts of the development of the regulatory state which privilege the creation of autonomous arm's-length regulatory agencies in 1980s in Europe or between 1887 and 1917 in the United States, as decisive moments of transition to regulatory statehood. Moran (2003, 38–66) argued that between the 1830s and 1880s a Victorian regulatory state emerged in Britain. Moran's (2003, 41–42) initial illustrative list of bodies included many which were within departments of state, not formally arm's length bodies. If the argument that specialist arm's length agencies represent a major departure rests on the claim that they possess greater autonomy from politicians, then Carpenter's (2001) study of regulation in the United States demonstrated that many government departments achieved *de facto* "bureaucratic autonomy" at least as great as anything possessed by agencies: formal structures of administrative bodies, he found, predicted neither kinds or degrees of real independence (Carpenter, 2001, 357–359). Levi-Faur's (2013) definition of a regulatory state specifically allows that its organizational machinery for standard setting, supervision and enforcement can be found within government departments, not only in independent agencies—as is the case in contemporary China (Pearson, 2005). (Independent rule-making agencies continue to give rise to constitutional anxiety in the United States about what some regard as a "fourth branch" of government, expressed in congressional bills and litigation to assert a congressional monopoly of rule-making: e.g. Tucker, 2018.) More drastically than Carpenter's examples of spending departments, DeCanio (2015) argues that the US Treasury, part of the "core executive," was central to the late 19th-century American regulatory state. Glaeser and Shleifer's (2003) argument that the regulatory state is distinct from previous state forms in reduced reliance on the courts for enforcement seems hard to reconcile with the continuing use of court interpretation and enforcement in much US regulatory work today, not least in utility price regulation. Although Moran (2003) claimed to require "bureaucratic means of enforcement" for the presence of a regulatory state, he also recognized many of the agencies which he examined had to bring cases before the courts. Before defining the concept by organizational structural features or by type of enforcement action, Holzinger and Schmidt (2015) characterize a regulatory state as one "where regulation activity is so prominent that it becomes a defining feature." This is perhaps consistent with Moran's (2003) emphasis on professionalization, a systematic rather than *ad hoc* organization of executive machinery, clarity of boundaries and at least moderately comprehensive coverage and internally consistent approaches. Following Majone (1997) and Seidman and Gilmour (1986), Holzinger and Schmidt understand that prominence as replacing "positive" direct state provision of goods and services in state-owned enterprises. However, if the British or American 19th-century states were regulatory states, then it would not be because regulation replaced any prior system for state control of the same goods and services.

For our purposes, we therefore use the following characterization of the *destination* of trajectories toward regulatory statehood. In its fully developed form, a regulatory state as opposed to a state which conducts some regulation of business, has a broad range of

1 specialist executive bodies
   - either within an office of state (*cf.* Levi-Faur, 2013) or as arm's length agencies exercising either new functions or replacing functions previously handled by courts (US literature) or previously handled by direct government provision (Majone, 1994)—that is, a non-constitutionalist form of "separation of powers" in state-business relations;
2 with subject matter expertise;
3 with powers delegated (e.g., by parliament), typically not to select goals but to select regulatory policy instruments (rule-making), or at least the "settings" of those instruments (e.g., rule interpretation, thresholds for use of powers, conventions for judging factual conditions, etc) (the canonical trichotomy between goals, instruments and settings is Hall's, 1993);
4 with either *de iure* or *de facto* operational independence from ministers and from the legislature in exercising those delegated powers; and
5 carrying out functions of registration, rule interpretation, rule-monitoring, rule enforcement and (more advanced toward a fuller regulatory state) rule-making and related dispute resolution.

British regulators rarely set goals independently: they are specified in legislative mandates. Some may have independence to design and promulgate rules to serve mandated goals under explicit rule-making powers, use of which is subject to challenge by judicial review. Some are given operational independence to interpret legislated rules in making determinations on cases, subject to appeal or judicial review. Some are subject to detailed ministerially set codes and standards for case determinations (for a fuller tabulation of measures of independence and a typology of constraints and accountabilities, see Gilardi & Maggetti, 2011, 203). Our characterization above allows for a spectrum along which states might move. Thus, more advanced movement toward a *deeper* regulatory state would consist in transitions

- from less to greater operational independence (*de facto* or *de iure*) of departments or agencies;
- from delegated rule-monitoring and rule-interpretation to delegated rule-making powers; and/or
- from fragmentation of policymaking toward coherence and integration of management, as well as of policy oversight of economic and regulatory activity.

To assess the depth of regulatory statehood or the distance traveled toward its fuller forms, we use Lavenex et al.'s (2021) helpful distinction between

- regulatory *capacity* or the "brawn" of regulatory statehood—administrative management and execution of regulatory work: skills, expertise, resources, staff for examining cases and inspecting sites and documents, legal powers to sanction and enforce to advise and promote compliance, ability to uphold any internationally agreed rules domestically (cf. Kjekshus & Veggeland, 2011, 1572, but contrasting with Lodge's, 2014, 65 broader definition); and
- regulatory *capability* or the "brain" of regulatory statehood—regulatory policy making and design of schemes of regulation: ability to recognize state's interests in regulation and design rules and mandates for delegated rule-making to align with those interests, choose between regulatory regimes or develop alternatives.

Capacity and capability can vary independently (Lavenex et al., 2021, 450–1). Even if ministers or senior civil servants might wish to develop both in tandem, this might prove challenging: a state could have a sophisticated regulatory policymaking center but limited executive skills or powers, or the reverse.

Table 1 below summarizes the six measures by which depth in capacity and capability can be evaluated.

Integration does not equate to or necessarily require centralization of the administrative apparatus. For example, in the German federal system, federal agencies typically work closely with *Land* level bodies to develop and set common frameworks, especially but not only for problems transcending *Land* boundaries, and can achieve high degrees of integration in these regulatory frameworks without centralization: thus, a high degree of coordination can support sufficient integration as defined here. Moreover, just as capacity and capacity can vary

Table 1 Dimensions of regulatory capacity and capability

	Capacity	Capability
Independence	Degree of independence from ministerial direction in operations	Degree of independence from ministerial direction in setting mandates, e.g., closer to "trustee" model: Tucker (2018)
Delegated rule-making	n/a	Formal delegation of rule-making powers
Extent	Range of fields, target variables, functions for which standards are supervised and enforced	Range of fields, target variables, functions for which standards are set
Intensity	Powers of detection, incentive, advice, enforcement	Detail to which oversight of standards is conducted
Ramification	Diversity and specialism of supervisory and enforcement organizations	Diversity and specialism of functions
Integration	Integration of operational management (e.g., single inspection, common data systems)	Integration of design, mandates, planning, standards across fields and functions

independently, the six factors can vary independently: a high level of integration, for example, is neither a necessary nor a sufficient condition for a high level of ramification or vice versa. For example, the German states of the late Holy Roman Empire of the 18th century which were influenced by cameralism developed highly ramified systems of regulation but without great intensity or integration (Tribe, 1984). The conceptual framework is not itself a causal theory or a causal model; nor does it make specific empirical predictions about particular countries. Rather, it provides a classificatory tool for assessing trajectories toward or indeed away from regulatory statehood.

This conceptualization enables us to identify multiple transitions on several dimensions of the development of regulatory statehood. It also allows us to consider movements along spectra, rather than a single transition. Moreover, this definition of a regulatory state allows for cases of decay and divergence, and not only for a presumption of movement toward ever deeper levels of regulatory statehood.

3. Introducing the Board of Trade

To illustrate how the conceptual framework can be used, we examine a single case. Between 1815 and 1914, the BoT was transformed into a ramified ministry of micro-economic regulation or the nearest thing that British government possessed to a single office of state[1] with an oversight of business is a valuable case study to analyze within the framework presented above. This remarkable transformation (Prouty, 1957) in the BoT's economic regulatory roles, structure, capacity, organization and reach should be set alongside American innovations in regulation capacity in the "gilded" and "progressive" eras. Focusing on this period allows us to recognize depth in regulatory statehood development long before extensive nationalization, let alone before privatizations. It also suggests a different view of the character and trajectory of British regulatory state's development than the standard view emphasizing the Treasury and the Bank of England providing macro-economic regulation (Daunton, 2008), and parliament and the courts (Taylor, 2013) as the locus of regulatory decision-making. Without detracting from these authorities' significance, examining the BoT allows us to explore how far development of regulatory capacity and capability in the executive reached the condition of regulatory statehood in micro-economic fields. Rather than examining any one of the Board's functions in detail, we demonstrate the development of scale and breadth in the BoT's "portfolio" of executive functions and their overall impact on regulatory capacity and capability to the point that by 1914, major aggregate movement toward regulatory statehood can clearly be identified.

Before the 19th century, micro-economic regulation would hardly have been recognized in Britain as distinct from the general law affecting private sector activity, including land law, law of contract, law of torts and law of inheritance. While our contemporary category—which concentrates on controls over competition, price, safety, quality, environmental impact, information privacy, certain aspects of human rights—was not stabilized by 1914, examination of the BoT's 19th-century transformation shows that very significant steps were made toward something like our contemporary understanding of regulation as a sphere of executive control over economic activity distinct from other kinds of "background" law. The very fuzzy boundaries of our current conception suggest that it too may shift again in the future.

The Board's origins can be traced to a series of 17-century committees and councils for trade and the plantations beginning in 1621 (Andrews, 1908).[2] The Board became a full office of state in 1696 with a secretariat (Clarke, 1911), in reforms following the 1688–1689 revolution; briefly abolished in 1782 after ferocious criticism by Edmund Burke (Klinge, 1979), it was reconstituted in 1786 (Lingelbach, 1925; Llewellyn Smith, 1928). Formally advisory for much of this period and especially active in providing reports to parliamentary committees, its early executive powers were for oversight of colonial lawmaking (Steele, 1968) and commercial diplomacy with native American peoples. During John Locke's secretaryship, it was central to monetary policy in the 1696 Great Recoinage (Laslett, 1957) and commercial law reform (Horwitz & Oldham, 1993). From the 17th century to the mid-19th century, it was responsible for advising the Treasury on tariff policy and both the Treasury and Foreign Office on commercial treaties. Until the early 1820s, it supported protectionism, especially for skilled labor, textiles, shipping (e.g., through the Navigation Acts), the slave trade and the West India interest. The Board's role in the 17th- and 18th-century development of corn tariff legislation and in particular in the late wartime (1813) and postwar introduction (1815) and amendment (1828) of the 19th-century Corn Laws and its loss of pre-eminence

to Treasury leadership on this issue well before their repeal (1846) have been documented elsewhere (Brown, 1958; Brady, 1967 [1925]; Gash, 2011 [1972]; Hyde, 1934; Schonhardt-Bailey, 2007: for the Board's role in the 1820s reforms and 1849 repeal of the Navigation Acts, see Clapham, 1910a, 1910b; Palmer, 1990), and is not examined here.

Before 1815 micro-economic regulation had been scattered across many institutions. Commissioners of sewage, enclosure, turnpikes, etc., had specific responsibilities, while excise officials extended their work of tax assessment into quality inspection (Ashworth, 2003), boroughs undertook some functions, and justices of the peace or industry chartered self-regulatory bodies (such as Trinity House) carried out others. No executive ministry had oversight of all these functions, until industrialization, post-Napoleonic economic growth, and greater organization among business, finance and, later labor, in calling for micro-economic regulation, pushed parliament to respond.

Presidents of the Board—which ceased to meet as a distinct body after 1815—were not always cabinet-level appointments, but this became more frequent from the 1860s. In 1815, the Board was a small office, mainly focused on overseas trade, with little more than a handful of staff. In 1840, its entire staff was just 40 (Parris, 1959, 17). By 1855 there were 85, of whom 50 were clerks (Prouty, 1957, 111). Excluding staff in the registration bodies under the Board's purview, by 1914 it was a huge body, with 7500 staff on the BoT's direct payroll (reduced to around 4500 by 1927: Llewellyn Smith, 1928, 136). Its growth should not merely be attributed to the general growth of British government in the 19th century (Cromwell, 1966; MacDonagh, 1958; Parris, 1960; Sutherland, 1972) but to a more specific dynamic in business, media and parliamentary and later, labor demand for new functions of and greater capacity in micro-economic regulation, for which the BoT appeared to parliaments throughout the period to be most appropriate administrative home; as a result by 1914, it comprised many regulatory departments and agencies.

Broadly, we can distinguish three phases in the BoT's emergence as a ministry of micro-economic regulation for the domestic economy. In the first phase from the 1820s to 1840s, the template of specialist departments was developed for the first Board inspectorate and registration agencies and a basic statistical capability:

- large scale and regular domestic and international statistical collection and publication operations (1832—the first distinct department in the BoT; labor statistics were mandated from 1886) (Black & Murphy, 2012; Brown, 1958, 76–93; Murdoch & Ward, 1997; Llewellyn Smith, 1928, 209–224);
- railways (from 1820s: McLean, 2002; Parris, 1959; Llewellyn Smith, 1928, 124–146);
- lighthouses (1835);
- shipwrecks and maritime disaster inquiries (1846); and
- a registration agency for seamen (1835)[3] (Prouty, 1957, 67–71)[4];

This first phase could be characterized as mainly focused on regulatory capability in statistics and on regulatory capacity to address negative externalities.

Although the factory (1833: Bartrip, 1982; Bartrip & Fenn, 1983) and mines (1842: Edmonds & Edmonds, 1963) and salmon fisheries (1861: transferred to the BOT in 1887: MacLeod, 1968) inspectorates, under the Home Office vote (Pellew, 1982, 121–182), were created in the same period, the first BoT railway inspectors were at work before either was in operation. Nuisance and sanitary inspection for public health were introduced in 1847 and 1848 and extended in the 1870s (Crook, 2007). Although no doubt the Board learned from factory, mine and sanitary inspection experience, it is unlikely that they provided a template. Nor could the 1836 instauration of the General Register Office for births, marriages and deaths have provided a sufficiently detailed template for the much more complex case determinations required of officials for joint stock company, let alone patent, design, copyright or trademark registration.

In the second phase from 1840s to 1880s, this machinery was applied with greater depth, extent, and intensity to a wider range of fields including transport, fuel, major infrastructure and further the "software" of trade in measurement, commercial finance, and patents:

- creation of the Railways Department in 1840; transfer of railway functions to a satellite Board in the 1850s, but then reabsorbed in the 1860s;

- all shipping and maritime affairs (Prouty, 1957; Robinson, 2009; Llewellyn Smith, 1928, 90–123; Wilde, 1956) including safety (Palmer, 1991; Press, 1992) tonnage (1854) to (McLean & Johnes, 2000), lighthouses, wrecks and salvage, fisheries (1861, 1866; sea fisheries 1888: Allen, 1897) pilotage (1913: Fairlie, 1926) all overseen by a new Marine Department from 1850;
- ports and harbors (1861); licensing submarine cables landing on the British foreshore (1863); all foreshore matters (1866); navigable waterways, canals (all under the Harbour Department from 1860s), bridges and tunnels (1854);
- conditions on works for the supply of gas (1847 and 1871) (Llewellyn Smith, 1928, 175) and electric lighting (1882: Higgins & Edwards, 1883, reviewed in *Nature*, 1.3.1883, 410–411);
- employer's liability for worker injuries (1880, with a reformed compensation scheme in 1897) (Asher, 2003);
- weights and measures (1866);
- bankruptcy administration (1883: this became a large department: Taylor, 2013, 233–237); some aspects of life insurance (1870) (Rawlings, 2018);
- a registration agency for companies (1844);
- a registration agency for designs (1842), and
- a registration agency for patents (1852; 1875, fully under BoT from 1883).

In these decades, regulatory functions extended much more widely to transport infrastructure and, after the repeal of the Navigation Acts, to maritime matters, and to infrastructure for the new fuels of gas and electricity. This phase was also characterized by major innovations in "software," infrastructure regulation for market transparency and "market making" in registration in companies, designs, patents, and bankruptcy.

In the final phase, from the 1890s to 1914, functions were extended into conciliation and minimum wage regulation, with explicit distributional goals, and a generally pro-consolidation policy regulation in the railways until around 1909 when the terms of debate shifted (Cain, 1972):

- labor dispute conciliation (1896) (Allen, 1964; Davidson, 1972, 1978), labor exchanges (1909), minimum wages in selected trades (1909) (Bean & Boyer, 2009; Blackburn, 1991) all under the Labour Department from the 1890s;
- labor dispute conciliation was also transferred to satellite commissioners in 1911; and
- a registration agency for trademarks and of copyrights (1911).

In this period, although the Foreign Office now led on conventional tariff diplomacy, the Board entered international regulation in maritime matters, being represented at the Submarine Cable Convention talks in the early 1880s (6 & Heims, in press) and leading on the "Rules of the road at sea" talks (Palmer, 2005).

Some regulatory functions were delegated to chartered industry self-regulatory bodies such as Trinity House which took on the administration of shipmasters' examinations (Wilde, 1956, 200). The Board span off responsibility for several functions to other offices of state, including the Board of Education (1856), the Board of Agriculture (1889) and later the Board of Agriculture and Fisheries (1903) (Foreman, 1986) and the Ministry of Labour (1917).

Changes to the Corn Laws, other tariffs and the Navigation Acts in 1820s, their repeal in the 1840s and the 1850s unilateral elimination of tariffs can be seen as deregulatory. Despite some deregulatory rhetoric, the joint stock company registration scheme was detailed and demanding (Taylor, 2013, 78–79). No functions were removed by statute from the BoT in this period. One or two Presidents resisted parliamentary proposals for new powers (Rawlings, 2018, 571; Wilde, 1956), but in most such cases, their successors accepted similar legislation. Sometimes powers were used with less vigour. But no 19th-century British government had a program for less vigorous use of BoT powers generally, across the full range of functions. Contrary to the view that 19th-century Britain was an age of *laissez faire*, no governments proposed general deregulation.

With factory and mine inspection remaining with the Home Office, the Board's function list was not comprehensive, but it was not inchoate. Extension in the Board's functions shows a clear overall direction, following backward linkages (Hirschman, 1958) from overseas trade into the domestic economy, as shown in the following timeline of the functions listed above. The Board's responsibilities were extended from overseas trade to

domestic infrastructure for internal trade and for delivery of goods to ports for export, from Navigation Act protectionism for trade shipping to detailed regulation of maritime activity, to the "software" of joint-stock companies and micro-economic aspects of finance, patents, copyrights, and trademarks, and then finally into industrial relations. It thus addressed all the major innovations of the century in industrial and commercial infrastructure for trade.

Most functions given to the BoT in this period were genuinely regulatory ones (cf. Clarke, 2000; Lodge & Wegrich, 2012; Moran, 2003). First, they involved the setting of principles or rules for businesses to comply with, and the creation of oversight machinery to collect data from businesses on their status (joint stock company registration) or operations (maritime safety, railways, minimum wages, telegraph landing sites). Secondly, the Board had some powers to deal with those businesses which did not meet standards (intervene in a labor dispute through conciliation, deny registration of a patent or trade mark, sometimes after extended engagement with applicants or their agents ranging from advice to adjudication: the Comptroller-General's decisions on patents held juridical status and the BoT could not intervene in individual determinations: Llewellyn Smith, 1928, 196–7). Typically, however, neither the BoT nor the Home Office undertook direct formal enforcement: they could only refer cases to the courts for enforcement (Bartrip, 1982).

The BoT's work shows that, far from being alternatives, growth in formal powers proceeded together with deepening of principles and soft law and with development of interpretive conventions and informally developed professional practices among registrars, inspectors, and civil servants. For example, the Board was concerned with setting clear rules such as those on unseaworthy shipping in the Merchant Shipping Act of 1876. Yet this was complemented by BoT-encouraged self-regulatory conventions developed in Lloyd's Register in 1835, and determinations of seaworthiness made during inspection of ships and their documentation depended as much on interpretation, industry conventions and the use of discretion (Prouty, 1957) as inspectors' decisions do now (Hutter, 1996).

The next section assesses how far the Board, in its wider context of development in regulatory capacity and capability, moved toward the condition of regulatory statehood, on the definition and measures identified above. Because our purpose is to consider how far the trajectory in the development of entire portfolio of the Board's functions shifted, on the dimensions set out above, toward regulatory statehood, the following sections consider the Board as a whole, against each criterion in turn. To analyze the depth of the British regulatory state in the 19th century, one would ideally assess the entire corpus of the machinery of regulatory governance, and not only that within the BoT's orbit, including the factory and mine inspectorates under the Home Office, and banking regulation mainly under the Bank of England (e.g., Collins, 1989; Schneider, 2022) subject to Treasury oversight, though the Board was involved in corporate governance of joint-stock banks (Taylor, 2013). Such a comprehensive study is beyond this article's scope.

4. The transformation of the BoT: assessing the depth of regulatory capacity and capability

Of our measures of regulatory statehood, we first examine *independence and delegated rule-making to assess regulatory capacity and capability*. Some might argue that one test of how far movement was made toward regulatory statehood might be whether subsidiary bodies were given *de iure* operational independence from ministers in making decisions and/or whether they acquire delegated rule-making powers.

Contemporary administrative understanding is that *de iure* operational independence requires expression in statute overtly restricting the powers of ministers to intervene in operational decisions, and requires protected tenure for regulatory agency chief officers for several years of (Gilardi & Maggetti, 2011). With the exception of patent registration and the 1909 Trade Boards, no such legal provisions were enacted for any of the Board's registration agencies or even for its labor relations conciliators, let alone for any other department within the office. Yet one should not exaggerate the contrast between contemporary conditions and those of the latter half of the long 19th century. Indeed, Fernández-i-Marín et al. (2016) and Badran (2017) demonstrate that *de iure* independence is often undermined in practice, while as Carpenter (2001) shows, *de facto* independence can be very great in the absence of its *de iure* expression.

In the few cases where any *de iure* discretion was granted, it could be restricted *de facto*. The Trade Boards created by the 1909 Act were given some explicit, statutory but limited discretion in setting rates for the "sweated

trades", based on the supposed expertise of the members, but "The appointed members of the boards … were strongly advised [by BoT officials] to cold-shoulder any attempts to equate trade board rates with a national minimum or a living wage" (Blackburn, 1991, 58), for fear of pushing up costs to the point of making British exports uncompetitive (Davidson, 1978, 584–5; Deakin & Green, 2009).

In other cases, *de facto* operational independence was often greater than the *de iure* position might suggest. Registration agencies for patents and copyrights made difficult and complicated technical determinations of completeness, fairness, and (from 1902) originality and ownership for patents, originality and distinctiveness and non-deceptiveness for designs (1839: Greysmith, 1983) and for trademarks (1875). Examiners became increasingly professionalized, not least because rejections could result in legal challenges (Foreman, 1986, 44–46; Llewellyn Smith, 1928, 196–99). Field labor dispute conciliators operating unavoidably found themselves exercising considerable discretion in making determinations of facts and of the scope for finding agreements (Davidson, 1972, 1978). Conciliators' frontline expertise led to their contributions being welcomed in policy discussions within the BoT's Labour Department (Davidson, 1972, 246).

By *explicit* "delegated rule-making powers," regulatory scholarship tends to use as its implicit point of reference the US Administrative Procedure Act 1946 (Croley, 2011), although others trace their development in the United States to earlier agencies (e.g., Breger & Edles, 2015; Carpenter, 2001; Skowronek, 1982). If this were the only way to define the concept of rule-making to determine whether a system meets the condition for being a regulatory state, then the 19th-century British state and the BoT would not be counted. Significant *explicit* rule-making powers without parliamentary approval were very rarely formally delegated to any agency or department before 1914 (we note one late exception below). Of course, however, acting under authority from legislation (as has been the case for regulatory work for centuries: Craig, 2016, 2021), registration agency officials and railway inspectors made determinations on cases, enunciating rationales for decisions, and following their predecessors' rationales and principles, which set *de facto* precedents and expectations, which came to be given due weight by courts when their decisions were challenged. Today in Britain most explicit substantive regulatory rule-making is subject to (negative or, more rarely, affirmative) rapid parliamentary approval procedures: agencies are supposed to confine their own publications of rules to matters of procedure or to matters of detail in the interpretation of schemes, but boundaries are fuzzy; this system dates only from 1946, and had no exact analogue in the nineteenth century. Much English administrative law generally has its roots in procedural principles or rules, as in the *Wednesbury* principles of judicial review. Yet the distinction between substantive and procedural rules is neither a sharp dichotomy nor stable over time. A procedure which is difficult to use can effectively deny ability to perform a substantive duty or claim a substantive right. Interpretations can drift over time. Patterns of actions made under changed interpretations can create institutionalized expectations, in turn giving rise to legitimate claims in law.

Statutes setting out how applications were to be made to the BoT's registry agencies were not always very detailed; agencies themselves created many of the application procedures, defined the standards of evidence required, for example, to enable examiners to make determinations of patent application originality, and they set procedures for time taken, with unavoidable cost implications for businesses. Moreover, procedural regulation has implicit or explicit consequences for substantive regulation. For example, the status of provisional registration for companies which emerged from procedural regulation in the 1844 Act carried some advantages but lacked others: this had consequences for directors' legal liability (Johnson, 2010, 151).

More fundamentally, the distinction between rule-enforcement and rule-making is far from crisp, at best a spectrum (Coslovsky et al., 2011, 322–3) and at worst a delusion. Classical English legal thought recognized that administrative law becomes established by the series of decisions which offices of state make in particular cases: decisions create administrative precedent which must be followed in relevantly similar cases to avoid challenge by judicial review on grounds of unfairness by inconsistency. Indeed, Parris's (1959) study of BoT's of railway department inspectors' decisions in the 1840s-1860s on approvals of companies' new lines or gauges or in accident inquiries traced ways in which rule-making emerged from rule enforcement. This process arose both by the inductive formation of consistent patterns over time and reference to past decisions as precedents and pressure for consistent treatment of similar cases. It arose precisely because of the nature of the authority exercised by inspectors over companies as in each particular case they interpreted the statutory principles and rules with which they were tasked: BoT railways inspectors' decisions effectively made administrative law (Parris, 1959, 283;

Rohr, 2002). In the same way in the United States, although the Federal Trade Commission lacked formal rule-making powers for its first few decades, but precedent-based cumulation of its formally advisory decisions came *de facto* to constitute rule-making, to the point that it could eventually codify its approach in a 1962 Rule of Practice (Dyer & Ellis II, 1972).

For this article's question, this flow of case-level administrative enforcement determinations into *de facto* rule-making has profound implications. It challenges the presumption that rule-making requires delegated powers for publishing express schemes without the approval of the legislation. Once it is accepted that rule-making arises throughout quotidian regulatory work, then it becomes necessary to accept that Britain's emergent system of administrative law supported a particular trajectory toward regulatory statehood in micro-economic regulation, but not a lesser degree of regulatory statehood than one with explicit delegated rule-making powers. Justices of the peace had operated in the English judiciary from the 12th century, commissioners of sewage from late mediaeval times (Morgan, 2017), and excise officers from the 1650s, all exercising some limited regulatory functions ancillary to their main roles. The 19th century saw the first full inspectorates in the executive rather than the judiciary, overseeing rather than providing economic functions (unlike sewage commissioners) and separate from tax assessment functions (unlike excise officials). Only in this period did such bodies become central to micro-economic regulation across all industries: the legal basis of their authority was by no means novel in administrative law (Craig, 2021) but the regulatory capacity which they constituted was a significant institutional innovation. For this reason, among others, Moran (2003, 38–66) argued that Victorian Britain deserved the status of a regulatory state. If we consider rule-making by executive regulators and not only by the legislature, then by 1914 there was a regulatory state in Britain, but not of an American type. Indeed, in the final decades of the period, in some cases, specific delegated powers were granted to the BoT to make explicit schemes of rules, as in the Railway Employment (Prevention of Accidents) Act 1900 under which the BoT published rules for power brakes, station lighting, and sidings (Llewellyn Smith, 1928, 144). The doctrinal basis in administrative law for the Board's rule-enforcement to shade into rule-making was not legally novel, but the context of application in inspectorates and registration agencies of the central executive for micro-economic regulatory functions was a significant transformation in the 19th century.

The section above has already provided an indication of the measure of *extent of regulatory capacity and capability*. Certainly, gaps remained in 1914 in the extent of British economic regulatory capacity, when compared with the United States by the same date. Most evidently, Britain lacked regulatory capacity for dealing with competition until 1949 (Freyer, 1992). Yet the range of regulatory work introduced between 1815 and 1914 was remarkable, showing faster growth in extent of regulatory capacity than any previous century of English or British history had done. By comparison with 21st-century economic regulation, a greater proportion of the regulatory capacity created by 1914 in Britain was "generic," meaning that it applied to any industry. "Specific" regulation, focused on a single industry, had expanded but mainly in infrastructure or transport (railways, ports, harbors, canals, shipping, submarine telegraph cable landing rights), or else operated at an intermediate level of large clusters of industries (weights and measures within the BoT, the factories inspectorate under the Home Office). Nevertheless, this weighting of relative effort very roughly reflected the balance of new business investment in Britan during the 19th century, which was indeed concentrated in these fields. With the exceptions of wool and silk textiles, in many important British industries of older lineage, such as brewing, salt, paper, soap, bricks, etc., no imperative was ever felt for industry-specific regulation, not because industry-specific regulation was not conceived, but mainly because the combination of the Board of Excise and Customs had sustained since the 17th century a form of regulation not only for the collection of government revenue but also, especially for the Excise, for product quality (Ashworth, 2003).

Gauging change in *intensity of capacity and capability* in economic and business regulation is more difficult and is contested in the literature for most fields discussed here. In shipping and maritime affairs, the intrusiveness of the interventions made by the merchant shipping legislation (e.g., the seamen's register and fund, examinations for shipmasters, the creation of commissioners to oversee standards in seaborne emigration, control over hazardous cargoes, tonnage inspection, rules of the road at sea and the international negotiations leading to Hague conventions on that subject), over just three decades into what had been one of the less regulated industries, was remarkable (Palmer, 1991; Prouty, 1957; Vasey, 1980).

There was significant growth in intensity of powers in safety regulation, from maritime safety to the factories and mines under the aegis of the Home Office. Another category of very significant enhancement of intensity was in the field of information. Duties to supply information from details about joint stock companies' capital and directors to, by the end of the period, mandated statistical returns, to information required for approvals of patents and trademarks and copyright protection all represented a very significant growth in the intensity of regulatory information gathering on business (some Foucaultian scholars regard this as evidence of deepening governmentality: Murdoch & Ward, 1997).

On the other hand, price regulation was limited, when we exclude the effect of customs tariffs applied under the Corn Laws on wheat, barley, oats, and rye prices in the first 30 years of our period. The railway department acquired a role in overseeing a restricted set of charges only very late in the period, and mainly for conciliation than for direct setting of levels (Alborn, 1998). British participation in the International Telegraph Union resulted in British owned international submarine cable companies operating ITU regulations and tariffs for a minority of their routes, thus bringing price regulation to bear on British owned international companies via the supranational level (6 & Heims, 2021, in press; Winseck & Pike, 2007). But this was exceptional for the period, and was handled by the General Post Office, not the BoT.

The BoT's regulatory capacity and capability became increasingly *ramified* through the century, beginning with the creation of the statistical and then the railway departments, followed by the Marine, Harbors, Bankruptcy and insolvency, and Labour departments, and supplemented by the arm's length registration agencies beginning with the one for seamen and then those for companies, and later for patents, trademarks, copyrights, and designs.

Any assessment of *integration of capacity and capability* must show a similarly mixed report, with very significant advance unprecedented in previous centuries, yet still far from complete. Until responsibility was transferred to the Foreign Office in the early 1870s (Gaston, 1982; Otte, 2017), the BoT oversaw diplomacy for commercial treaties. Many of its leading civil servants had become firm advocates of tariff-free trade (Brown, 1958; Mason, 1996). In the 1815–1914 period, integration in the management of regulatory capacity, in the sense of that term used by Lavenex et al. (2021), had been developed much further than integration in regulatory capability. The BoT's commercial statistical gathering, analysis, and publication on a wide range of measures of business and economic activity was, by the end of the century, more robust, detailed, and disaggregated than perhaps any other office of state outside the field of imperial defence could boast for its field. This provided an informational basis for policy work at BoT central level, for senior civil servants and the Board's Presidents willing and able to undertake it.

In the early 19th century, integration in regulatory capability in the then small BoT depended upon a dynamic minister President committed to the pursuit of a strategic agenda (e.g., Huskisson in the 1820s, Gladstone in the 1840s) and on informal ordering in cabinet permitting them the discretion to undertake it. Nevertheless, in those decades the main priority for strategic work was in tariff reduction (Brown, 1958) and to a lesser extent railways (Hyde, 1934) and ports, rather than the broader agenda of micro-economic regulation which would develop more vigorously from the later 1840s onward. No explicit, named, dedicated specialist unit was created in the BoT or anywhere else in British government, charged with oversight of and strategy for economic regulation generally. Nor did the Treasury coordinate spending offices' regulatory work. Between 1830 and 1870, effort was invested in improved regulatory policy capability, but not in its integration. That investment was mainly in support for parliamentary select committee inquiries and new standing consultative bodies for each of the BoT's functions (Llewellyn Smith, 1928, 228–243).

Some senior BoT civil servants did attempt to develop strategic perspectives spanning the Board's regulatory work. In the 1860s, as principal private secretary to the President of the Board, Louis Mallet, sought to find ways to reconcile parliamentary demands for further regulation of abuses with his own fervent preference for limited intervention. In a series of roles at the Board from the 1890s, from head of the Labour Department to Permanent Secretary, Hubert Llewellyn Smith sought to develop an overview of the BoT's regulatory work, seeking to balance his own support for unemployment insurance and conciliation of labor disputes with his concern about the dangers of costs on business imposed by regulatory schemes. However, as the BoT became increasingly ramified, as specialist departments and agencies multiplied, and as Presidents came and went, the Board struggled to develop and institutionalize an integrated and strategic regulatory policy capability.

Nevertheless, in micro-economic policy, the BoT was the largest hub. It lay at the center of a governing network of economic regulatory capacities, encompassing other spending offices. By 1914 senior officials were managing the interfaces with the Home Office, Foreign Office, Admiralty, General Post Office, India, and Colonial Offices to sustain as much coherence across that network of regulatory capacities as was within their power, operating without a government-wide regulatory policy coordination center. Steady legislative accretion of new responsibilities left BoT officials with limited scope for "bureau-shaping" (Dunleavy, 1991). They could, though, manage overlaps and tensions with other offices of state through informal and bilateral relationships and later through inter-departmental committees (introduced and institutionalized in numbers under the 1902–1905 Balfour administration: 6 & Heims, in press).

Bartrip (1982) argued that the 19th-century inspectorates were under-resourced, timid bodies which achieved too little by way of improving the lives of those with whose fates they were charged. However, general improvement in living standards is not one of the conditions set by regulatory state scholars as a measure of regulatory capacity. Regulatory capacity can be significant for trajectories of state-making, even when it is insufficiently matched by regulatory effectiveness or by adequacy for ensuring justice.

Moran (2003) argued that the 19th-century regulatory state in Britain was characterized by co-operative club-like ordering, by delegation to self-regulation, and that the professions and the Bank of England's relationship with financial services were typical cases and that even the Home Office's inspectorates of factories and mines largely worked on a similar basis. Moran's account combined a political rather than economic version of regulatory capture theory with Cain and Hopkins' (1986, 1987) much debated "gentlemanly capitalism" thesis about 19th-century British political economy. Certainly, features of club-like and cooperative regulation were not absent from the Board's regulatory work, as analysts of rail regulation have reported (Alborn, 1998). Yet, as regulation developed over the second half of the century, the trend in the Board's regulatory approach was toward reducing the cooperative and club-like basis. In railway regulation, for example, as Alborn (1998) demonstrates, demands from the 1880s onward by business customers of rail freight services for lower charges, growing shareholder activism from the 1890s and increasing conflict with labor from the 1890s left the Board's regulatory bodies to try to mediate between several clubs rather than simply working with a club of railway managers. Under Gladstone's third and fourth administrations, President of the Board A.J. Mundella sought, with mixed success, to introduce stricter regulation of freight rates. Maritime regulation had been steadily tightened from the 1850s (Prouty, 1957). Although the 1912 *Titanic* disaster inquiries correctly exposed the Board to great criticism for the efficacy of its regulation (McLean & Johnes, 2000), the expectations by which the Board's failures were judged in 1912 were ones that had been raised by the Board's aspirations to expand its regulatory effort and to raise standards. Critics of the Board's pre-1914 labor conciliation have accused it of bias toward employers. Nevertheless, under Llewellyn Smith as head of the Labour Department in the 1890s and then especially markedly under the post-1905 Liberal government, the Board showed greater recognition of the justice of trades' unions claims (Allen, 1964; Davidson, 1972, 1978), and unions regarded the department as more favorably disposed to workers than other offices of state (Asher, 2003). Thus, club-like features did decline in the BoT in this period.

Moran's own definition of the regulatory state emphasized professionalism, specialism, delegation to officials, bureaucratic means of enforcement, comprehensiveness and a systematic rather than an *ad hoc* character, and he thought that Victorian Britain had crossed this threshold. A consideration of the BoT, as well as Moran's review of factories, finance, and professions, extends and confirms this finding but also qualifies it. It makes clear that the 19th-century British regulatory state was far more comprehensive, far more professional, far more systematic even than Moran recognized. Yet in overarching regulatory capability it was perhaps less systematic and less coordinated than Moran fully acknowledged. Interests increasingly contended against each other for the Board's attention: from the 1880s if not much earlier the Board was mediating among "clubs," by no means all of which were made up of "gentlemanly capitalists".

Table 2 summarizes the extent of development in the Board's regulatory and capability between 1815 and 1914 on each of the dimensions of regulatory statehood distinguished above.

Our findings also challenge any assumption that trajectories of development should be measured by how far they result in steadily tighter enforcement of steadily tighter standards. Tightening of standards certainly did occur over the course of the 19th century, as Taylor's (2013) study on clamping down on corporate fraud show,

Table 2 Assessment of dimensions of Board of Trade regulatory capacity and capability

	Capacity	Capability
Independence	High for railway inspectors by c.1860s. High for patent registrars much more quickly after instauration	Limited. High *de iure* for Trade Boards but much less so *de facto*
De iure delegated rule-making	n/a for capacity	None
Extent	Rapid growth from 1840s onward	Rapid growth from 1840s onward
Intensity	Greatest for railways esp. from 1860s; deep in maritime from 1850s; significant in patents from 1880s; significant in minimum wages immediately on instauration in 1909	Developing from 1870s. Deepest from 1890s
Ramification	Very marked by 1860s	Well developed by 1880s with judgements involved in patents; conciliation function in labor disputes in 1890s significantly extended types of standard and regulatory role
Integration	Limited, except within maritime and within railways, but not across fields	Belated: only with introduction of executive for BoT under Llewellyn Smith in 1900s

as they did in maritime and railway matters. But this was not always and everywhere the objective for regulation in the BoT. Even in the field of fraud, and even more obviously in the registration of companies, patents, and trade-marks, and in the Board's development of complex and sophisticated statistical data collections, a key objective was to increase the transparency of regulated industries and companies not only to investors but to the public and to parliament.

5. Conclusion

This article's question was "How far did the transformation of the BoT between 1815 and 1914 represent a shift toward Britain becoming a 'regulatory state'?". By measures of

- the proliferation of specialist executive units, outside the legislature and the court system but not merely advising the legislature;
- possessing and legitimated by technical expertise in micro-economic fields (e.g., railways inspectors, patent registration officers, maritime disaster inquiry officials);
- with express regulatory powers of rule monitoring, rule interpretation and rule enforcement leading implicitly to rule making, where regulatory decisions came to be made based on extension by consistency treating previous executive regulatory decisions as a body of "precedents" not unlike the manner in which courts do; and
- which exercised a degree of operational independence;
- where the regulatory work was not ancillary to taxation; and where
- economic regulation focuses in detail on the domestic economy and not only on international trade.

it had moved a considerable way toward regulatory statehood, and much further and more rapidly than British government had done in the previous few centuries.

Developments in the long 19th century show greater increase in extent and ramification of capacity than the previous three centuries.

In micro-economic regulation, some BoT specialist agencies, with a degree of *de facto* operational independence operated as departments. The registries were created at arm's length from ministers and from direct management by the BoT's own permanent under-secretaries. By 1914 a ramified structure had been built under one

office of state to undertake many core micro-economic regulatory tasks. British administrative law recognizes the presumptive legal force of departmental circulars, inspectors' decisions and patent and company registrars' decisions on particular cases, and the institutionalized expectations to which those decisions give rise among businesses and citizens, as in effect delegated rule-making.

Financial services regulation was left largely to the Bank of England and the courts; although the Bank's capacities grew substantially after the 1860s, its systems were neither as ramified nor as extensive in its field as those of the BoT in its areas. The huge British international submarine cable telegraph companies were only loosely regulated by pressure from the General Post Office and their acceptance of International Telegraph Union regulations for a few of their routes (6 & Heims, 2021, in press). Nor was regulatory statehood evenly distributed even within the Board's area of purview: for example, road transport remained very weakly regulated and without any specialist bureau before 1914.

Britain's 19th-century surge in regulatory statehood was not achieved by supplanting parliament as the main arena for rule-making, nor yet by replacing litigation as Glaeser and Shleifer's (2003) theory would predict: indeed, regulation gave the courts new powers for new types of cases, as in the field of corporate fraud. Regulatory capacity increased in all three branches of the state in tandem, and rule-making capacity developed through enforcement work in the inspectorates and in the registries.

The development of regulatory capacity and capability was central to the trajectory of British 19th-century state-making. The very marked increase in the scope of economic regulation in this period made a more significant contribution to the emergence of regulatory statehood than is measured by the limited stringency of enforcement alone. In underpinning markets with new kinds of transparency and information, in sustaining state oversight over the industrial age infrastructure, transport and communications, and in creating capacities for mediating between interests, the transformation of the BoT from a small overseas-oriented body to a ramified micro-economic regulatory system overseeing the domestic economy produced a new kind of state. In regulating the domestic economy, it contributed to the wider imperial system. Regulatory capacity and capability should be understood as being just as central to state-making as fiscal or military or legal capacity in the state-making literature.

We suggest that the framework presented here will be useful for future cross-national comparative analysis of development trajectories in regulatory capacity and capability toward regulatory statehood. Other countries' trajectories and their moves in any one century on each of the dimensions will no doubt show significant differences from those of the British 19th-century case. However, when we allow that regulatory statehood can be based on functions in departments of state and not only in arms' length independent agencies, it is likely that for many countries, significant moves toward regulatory statehood will be shown to have been achieved well before the 1980s wave of privatizations. Although the dating and particular aspects of Britain's trajectory will undoubtedly be distinctive, it is likely that more complex trajectories of regulatory statehood will be found in other contexts too if researchers look beyond independent agencies and the privatization and liberalization of markets.

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Conflict of interest statement

The authors have no conflicts of interest.

Data availability statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Endnotes

[1] In this article, we follow the 19th century convention in referring to executive bodies of state which were represented by a cabinet minister as "offices of state," whether they were formally titled Offices (Home, Foreign, Colonial, etc) or Boards (Local Government, Education, Agriculture), and when we refer to particular units within offices of state, we speak of them as "departments."

[2] Although it is not this article's subject, the Board's role in slavery must be recognized. "The plantations" were slave-based colonies in the Americas and the Caribbean. It then oversaw colonial law-making. Throughout the 18th century, the Board actively protected the British slave trade, until its 1789 major report criticized some of its cruelties. Several 19th-century Presidents of the Board were personally invested in slavery including Huskisson and Gladstone. Its direct role in the 1807 abolition of the trade was minor but hardly helpful. The BoT's main direct concern in the 1833 abolition legislation was with tariffs on imported sugar from countries continuing to use slave labor (Harling, 2015; Huzzey, 2010). The Board broadly supported the West India "interest," over the legislation compensating slaveowners but not slaves. In the 1830s, the Board produced statistics for the select committee on abolition claiming to show that British West Indian planters needed slaves to compete with, for example, Cuba (Sheridan, 1961, 540). After abolition and until the 1846 sugar tariff equalization, it compromised its free trade principles to argue for preferential sugar tariffs for the West India planters to assist them to compete with Cuban and Brazilian slave-produced sugar (Brown, 1958, 191–194). By our period, though, quasi-regulatory functions over slavery ("amelioration" until 1833, and thereafter the management of the abolition and its extended transition) were exercised by the Colonial Office and later the India Office.

[3] The regulatory function of the registry is clear by the exclusion of seamen from registration and therefore from their livelihoods if the BoT test deemed them "colour blind": Bailkin (2005) and Bickerton (1896).

[4] From this list, we exclude a host of departments newly created in the BoT which lacked micro-economic regulatory functions, such as the Meteorology Department (1855), the Design Schools (1837), the Science and Art Department (1853) which became the Education Department (1856) and the Commercial Intelligence Department (1899). Also excluded are special data collections such as the 1908 "cost of living" investigations (Mitchell, 1909).

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