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Rent seeking for madness: the political economy of mental asylums in the United States, 1870 to 1910

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Abstract

From the end of the Civil War to the onset of the Great War, the United States experienced an unprecedented increase in commitment rates for mental asylums. Historians and sociologists often explain this increase by noting that public sentiment called for widespread involuntary institutionalization to avoid the supposed threat of insanity to social well-being. However, that explanation neglects expanding rent seeking within psychiatry and the broader medical field over the same period. In this paper, we argue that stronger political influence from mental healthcare providers contributed significantly to the rise in institutionalization. We test our claim empirically with reference to the catalog of medical regulations from 1870 to 1910, as well as primary sources documenting rates of insanity at the state level. Our findings provide an alternative explanation for the historical rise in US institutionalizations.

1 Introduction

In the last decades of the nineteenth century, the American custodial institutions that took care of the insane and feeble-minded changed dramatically (Foucault, 1964; Rothman, 1971; Hunter et al. 1986; Sutton, 1991; Grob, 1992; Wright, 1997).[1] State governments rapidly took over the provision of such care from non-medical institutions (such as the poorhouse), private medical institutions and families. The takeover resulted in the rapid

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[1] We are not fond of the terms "insane" and "feeble-minded". However, those are the terms used in the historical sources that we rely on herein. We will use the historical terms for the sake of simplicity and without any derogatory intent.

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confinement of mentally ill and feeble-minded patients in large group housing facilities: asylums and other special institutions. Between 1870 and 1910, institutionalization rates (per 100,000 persons) rose nearly three-fold (see Fig. 1).

Why did state governments decide to take on that mission and expand the asylum's role in society? That is the question that we seek to answer in this paper.

Historians, sociologists, and other researchers examining the expansion of institutionalization largely emphasized altruistic considerations within a broader public interest narrative. Prior to the 1870s, poorhouses (known as almshouses) provided care for the insane, feeble-minded, orphans, widows, the elderly, widows, and the downtrodden. Consequently, they seldom were able to provide specialized care and often struggled financially to provide expensive care for people with mental conditions.[2] Rising life expectancy during the postbellum era increasingly made the almshouses ill-suited for caring for the insane and feeble-minded. Longer life expectancies caused neurological conditions to be more prevalent and increased the demand for long-term care and housing for older patients suffering with mental illnesses (Rothman, 1971; Grob, 1992, 2014; Sutton, 1991). The shortcomings of the almshouses pushed state governments into creating centralized systems of publicly funded asylums. Thus, after 1870, "a transfer of patients" from the poorly performing almshouses (Grob, 1983, p. 181) to the state asylum was underway (Ziliak, 2002). The rise of the public asylums' populations was deemed to be a public-spirited response to the problem posed by the mentally ill (Sutton, 1991).

In this paper, we utilize a public choice framework to offer a complementary explanation for the rise in institutionalizations, which argues that the expansion of public asylums benefited asylum-based physicians. Although we emphasize political exchange rather than public interest, the two explanations are not necessarily antagonistic.[3] They can be complements (Leeson, 2019, pp. 39–40). To illustrate such complementarity, consider the "bootleggers and Baptists" theory of regulation (Yandle, 1983; Horpedahl, 2020). The "Baptists", by means of public-interest justifications, propose a policy that offers laudable public benefits. The "bootleggers", rent seekers who expect to profit, will support the policy. In the case of the asylum's expansion, we will argue that rent seeking was in play. Progressive social reformers and voters (i.e., the "Baptists") saw the state asylum's expansion as being in the public interest. Physicians and asylum superintendents (i.e., the "bootleggers"), when well-organized, joined with the progressive social reformers and voters out of self-interest. In other words, public and private interest forces were not at odds with one another—they complemented each other in ways that caused asylums to expand.

Incorporating the role of rent seeking into explanations of the expansion of asylums requires an understanding of the political ties between state governments and asylum-based physicians. The period between the 1870s and 1910s was marked by numerous professional groups forming to lobby the federal and state governments for favorable legislation (Holcombe, 1999). The medical profession was especially effective in organizing lobbying effort on behalf of barriers to entry (Hamowy, 1979; Baker, 1984; Law & Kim, 2005; Moehling et al., 2020; Anderson et al., 2020). Asylum-based physicians, who also were able to organize (March & Geloso, 2020), gained from rent seeking but they secured additional

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[2] Administrative costs represented roughly 25% of the budgets of almshouses, while the early government welfare programs expended 2–3% of their budgets on administration (Lindert, 2004, p. 35).

[3] This antagonism is most evident in the literature on the origins of consumer regulations and antitrust (Libecap, 1992; McChesney & Shughart, 1995; DeLorme et al., 1997; Olmstead & Rhode, 2015; Newman, 2019a; Geloso, 2020).

rents through two channels. First, they lobbied for transferring patients from poorhouses to asylums (Pressman, 2002; Rothman, 2002; Sutton, 1991), which explains part of the large increase in institutionalization rates. Second, the nature of the psychiatric subfield post-1870 created a situation in which state governments were the main clients of those physicians. As a result, greater political clout meant that physicians could push for policies that increased the demand for their services, which explains the effects that did not stem directly from shifting the insane from the poorhouse to the asylum (Pressman, 2002; Rothman, 2002; Sutton, 1991). Thus, rent-seeking activities complement existing explanations of asylum expansion in America.

To assess whether asylum physicians were able to secure rents, we rely on state-level institutionalization rates from 1870 to 1910 (provided by US Census Bureau documents) in conjunction with state-level legislation affecting entry into the medical profession (Baker, 1984; Hamowy, 1979). The ability of the medical community of a given state to procure barriers to entry into the profession becomes a proxy for the effectiveness of physicians in the field of mental care in securing rents. Our assumption is that in states where physicians were politically weak, asylum physicians must have been weak as well (and thus unable to secure additional rents). While numerous laws were adopted to restrict entry, the most important one was the examining board.[4] Those boards were enforcement entities that could set the conditions of entry and also amplify the effectiveness of most of the other laws. If the medical profession was too weak to get an examining board, it was too weak to capture most other potential rent sources.

The period from 1870 to 1910 is relied on because it offers the advantage of starting with a largely unregulated medical profession—with few barriers to entry—and competition from both medical and non-medical providers for the care of insane and feeble-minded. The period ends with numerous restrictions on entry into the medical field in general. The subfield of professional mental healthcare was no exception. Not only did practitioners benefit from entry restrictions into the profession as a whole, but they also gained by the introduction of restrictions on the private provision of mental care, the crowding-out of non-medical providers and the ability to foster increases in demand.

Our analysis finds that many entry-restriction laws (examining boards in particular) explain the rise of asylum populations from 1870 to 1910. For example, the introduction of an examining board increased institutionalization rates by approximately 10–20%. The results control for state and year effects. They are robust to changes in how the institutionalized population is measured. Thus, a rent-seeking process was at play. This process dovetails well with public interest explanations of asylum expansion (Sutton, 1991).

In producing a public choice complement to existing explanations of asylum expansion, our paper contributes to other fields within the discipline of economic history. Economic historians have dedicated considerable effort in the last decades to studying government interventions in health care (Anderson et al. 2019, 2020; Cutler & Miller, 2005; Emery, 2010; Miller, 2008; Murray, 2007). Most of that literature focuses on the health outcomes of the interventions (Law & Kim, 2005; Law & Marks, 2009; Baker et al. 2008; Klein et al. 2012; Moehling et al., 2020; Anderson et al. 2019, 2020). Fewer studies have focused on the political economy of the government interventions (Emery, 2010; Hamowy, 2008; Leeson et al., 2019). Our paper adds to the literature by documenting the process underlying the expansion of public care for the mentally ill during the nineteenth century.

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[4] Examining boards acted essentially as policing entities that enforced codes of ethics, degree requirements, reserved acts and entry requirements (Hamowy, 1979, p. 77).
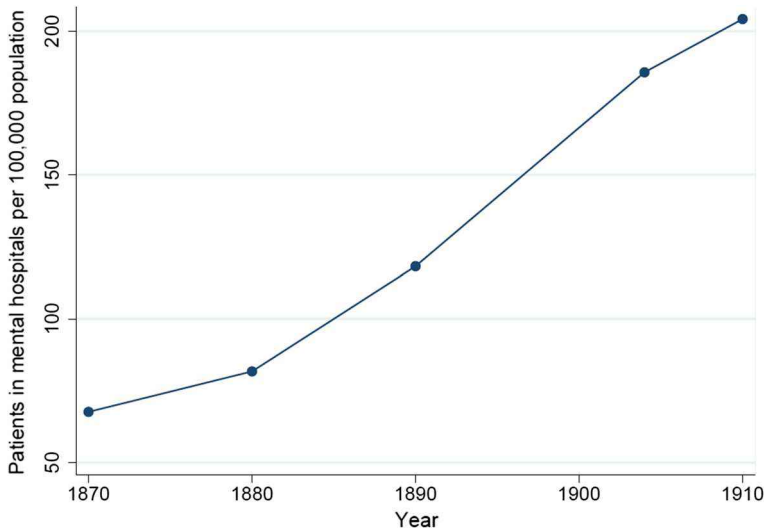
Fig. 1 Institutionalized Mental Patients (per 100,000 population), 1870–1910. *Source*: For 1880 to 1923, we used the data provided by the US Bureau of the Census (1926, p. 112). For 1870, we used the data contained in the special report of the US Census Office (1888)

Our paper proceeds as follows. In Sect. 2, we review the historical rent seeking by asylum physicians within the United States, and its expansion into the medical profession more broadly. Section 3 outlines our data and develops our empirical strategy. Section 4 presents our results. Section 5 concludes and provides implications for further research. There is also an online supplement to this article that details the source materials and additional robustness checks.

2 Insanity, asylums, and rent-seeking physicians

2.1 Almshouses and asylums

Before the US Civil War, when families were unable to care for mentally ill relatives, patients often were provided with necessary attention in almshouses. Almshouses were local institutions often financed by philanthropies, churches, or local taxes. Each state adopted its own poor law that had distinct features for the management of alms (and for qualification thereof) (Hannon, 1984a, b, 1985, 1997; Katz, 1996; Kiesling & Margo, 1997). As a result, the features of the pauper populations for whom almshouses cared varied widely by state. By the 1820s, a wave of institution-building effort led to the broader emergence of almshouses, which, in addition to providing care for the insane, also provided relief to the poor and disabled (Katz, 1996; Rothman, 1971). As a result, the poor and the insane frequently were housed together. Moreover, because of the link between mental illness and poverty (Lund et al., 2010), sizable fractions of the paupers in almshouses were mentally ill (Ziliak, 2002). Finally, prior to 1870, physicians treated mentally ill patients rarely, meaning that the care provided to the insane was not medical and the providers were not medical organizations.

Pre-1880 attempts to gauge the number of local almshouses and insane populations were quite flawed. However, state-level estimates find that more insane individuals were in the poorhouses of Massachusetts in the 1840s (one of the states with the most developed system of care for the insane) than the total number of insane enumerated by US Census officials (Jarvis, 1842, pp. 118–119). By 1880, 24.3% of the almshouse population of the United States suffered from a mental illness (Grob, 1983, p. 181).

Although initial levels of almshouse appropriations were quite generous (even by twentieth-century standards) (Hannon, 1984a), the almshouses increasingly faced complaints from social reformers of the 1800s. Critics often accused local almshouse managers of corruption and staffing facilities through patronage networks (Katz, 1996; Rothman, 1971; Sutton, 1991). Although "local communities were financially liable for their poor and indigent insane residents" and almshouse financiers and managers faced strong incentives to provide care and keep costs low (Grob 1992, p. 10), critics held that almshouses were unable effectively to distinguish between patients needing temporary relief and those needing life-long treatment, such as the truly insane, thus both wasting local funds and providing inadequate treatment (Hannon, 1984b). Starting in the 1870s, almshouses faced growing criticism because of a perceived rise in the prevalence of insanity (White, 1903). Urbanization after the Civil War brought mental illness into starker light. The perceived deviancy of the mentally afflicted began to be seen as a societal threat. Fearing that an increase in disorderly conduct would disrupt social order in dense urban environments, the demand for controlling delinquent groups grew.[5] The almshouse was seen as unable to deal with the mounting weight of that task.

Progressive social reformers argued that a substitute for almshouses, a network of public asylums, needed to be created. While some asylums existed before the Civil War, they were few in number and had limited ability to offer long-term care for patients (Grob 1992, p. 8). By the end of 1870s, owing to mounting criticism and public calls for action, states gradually transitioned to reforming mental healthcare and took on an increasingly direct role in the management, funding and provision of care. From then on, private asylums received public funds, numerous public asylums were built and overall state expenditures allocated to caring for the insane increased (Dowbiggin, 1997).

The "public interest" justification was that asylums would specialize in dealing with the care of the insane and feeble-minded, while almshouses would concentrate on dealing with poor relief. Although their proposals were deemed expensive, reformers and state legislators claimed that the quality of care would be superior, thus reducing the threat of delinquency and generating a net overall benefit to society (Grob, 1992). Moreover, progressive social reformers also saw asylum expansion as a fallback solution to poverty after attempts to pass welfare programs—such as health insurance (Murray, 2007) and old age pensions (Costa, 1998; Holcombe, 1999)—ended in failure. By reclassifying the aged infirm, the intemperate and the chronically ill "as officially recognized lunatics", they could turn the asylum into a de facto social policy venue (Sutton, 1991, p. 666).

The public interest explanation for asylum expansion is the most popular view in the literature. Virtually all of the scholarly debates relate to whether (or to what degree) the

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[5] As documented in the vocabulary of the time. For example, the 1880 and 1890 US Census specifically lists insane and feeble-minded individuals as part of the "degenerate classes" or "defective classes". The Council on Mental Hygiene, when issuing reports on the number of "mental defectives" housed in asylums, called for more confinement (outside of family houses) of the feeble-minded to advance American interests (Rothman, 2002, p. 322).

asylum lived up to its promise.[6] However, reasons can be found for revisiting the discussion of origins and providing nuance to the public interest motivations.

2.2 Rent seeking and asylums

The historical development of public asylums suggests strongly that their expansion was motivated in part by the special interests of asylum physicians who were seeking rents. Rent-seeking explanations (Krueger, 1974; Tullock, 1967), often are placed in opposition to the "public interest" because private actors try to secure private gains through legislation, even though it comes at a net cost to society. However, the antagonism between public and private interest forces is not automatic. On the contrary, those forces often complement one another (Leeson, 2019), a conclusion that, we argue, can be seen in the case of the asylum's expansion.

In order to understand the complementary nature of the private and public forces at play, a digression on the history of medical regulations in the late nineteenth century is necessary. After the Civil War ended in 1865, federal and state governments were left with considerably more regulatory and discretionary powers than before (Kolko, 1965; Libecap, 1992; Holcombe, 1999; Troesken, 2006; Newman, 2019a, b). To secure political favors, many professionals formed organizations specifically to lobby political figures for profession-friendly legislation or public funding. Physicians were among the most successful in influencing legislation. By uniting under the banner of the American Medical Association (AMA) (Baker, 1984; Burnham, 2015; Hamowy, 1979), physicians secured dozens of favorable laws at the state level.

Although the AMA pushed for legislation under the guise of improving professional standards, competition-weakening "monopoly doubtless [was] the intent of the AMA's program" (Starr, 1982, p. 92). That goal was achieved mostly by lobbying for the creation of examining boards in order to prevent other medical practitioners from treating patients (Baker, 1984, 1999; Hamowy, 1979; Starr, 1982).[7] By 1920, all states had established examining boards. Before 1915, examining boards and state governments enacted more than 400 statutes regulating medical practice (Hamowy, 1979).

The psychiatric profession was part of that broader rent-seeking movement and it too organized politically. While the AMA secured professional benefits for physicians, Adolf Meyer became the primary figurehead advancing the narrow interests of the mental health profession after 1880 (El-Hai, 2005; Pressman, 2002; Valenstein, 1986). Meyer envisioned expanding mental health facilities into all major cities and increasing dramatically the number of physicians and social workers to treat the mentally disturbed (Pressman, 2002). Under the banner of "psychobiology", Meyer united previously contending factions

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[6] Most of that attention is on the quality of care provided to patients in asylums, e.g., overcrowding, death rates (Grob, 1992; Noll, 1995; Pressman, 2002), the ethical behavior of asylum physicians, notably regarding the use of questionable procedures such as lobotomies (March and Geloso, 2020) and the forcible commitment of otherwise sane individuals (Lombardo, 2008).

[7] The AMA's first successful attempt to seek rents occurred in 1877 when the Illinois state legislature allowed the State Board of Health (enacted at the same time) to refuse to grant medical licenses based on the perceived quality of physicians' medical degrees. The number of physicians in Illinois declined dramatically. As Starr (1982, p. 104) notes, "within a decade [of passing legislation], 3000 practitioners were said to have been put out of business." That represented a decline of nearly 40% in Illinois's physician labor force (Hamowy, 1979, p. 82). After successfully passing legislation in Illinois, Burnham (2015, p. 311) notes that "state after state rushed to set up examining boards."

(asylum superintendents, neurologists, and private-practice physicians working with mentally ill patients) to push for a widespread public mental health movement (Pressman, 2002, pp. 20–23). His efforts were aimed at linking the profession with powerful political actors who would legislate in their favor. That political alliance became so strong that "in the early twentieth century, two of the leading features of psychiatrists' lives were medical practice in public asylums and service in public health organizations" (Dowbiggin, 1997, p. 37).

Although described as an effort to improve professional standards and address the perceived insanity problem, Meyer's movement, much like that of the AMA, also was motivated by "self-serving reasons" (Pressman, 2002, p. 311). However, unlike the rest of the medical profession, the efforts of Meyer and what would come to be known as the American Psychological Association (APA) were meant not only to restrict access to the profession, but were animated by two additional objectives. The first was to exclude (or reduce the number of) non-medical providers of care to patients. The second was to secure increases in state funding for asylums, mental health professionals, expanded roles for psychiatric wards within hospitals, and expanded legislative powers to have patients committed involuntarily to asylums for periods of observation (Pressman, 2002; Rothman, 2002; Valenstein, 1986). Thus, clear rent-seeking efforts on the part of the psychiatric profession were underway.

How were the rents from asylum expansion secured? Those working within the asylum system advanced their goals along two primary paths: reducing competition from the poorhouse (and other private providers) and pushing states to increase funding to asylums (by authorizing more funding per capita and lax commitment laws).

2.2.1 Reducing competition from poorhouses and others

The first channel consisted in accusing the almshouse of treating the insane poorly. Critics of the almshouses (generally social reformers and mental health specialists) had long contended (with empirical evidence) that the insane were ill-served by almshouses (Jarvis, 1842, 1855). However, it must be understood that almshouses were competitors to asylums. They provided care in local proximity to the families of patients (something that asylums could not always offer) even though they were non-medical providers. Almshouses competed for private and governmental funds (from local governments) by providing alternatives for mentally ill patients and caretakers. Transferring a committed patient from an almshouse to a publicly funded asylum meant securing state funding to house patients. Both institutions battled over who should have care of those who were then labelled as the pauper insane, or the insane poor.

Local newspapers reported frequent contests between asylums and almshouses for public support. For example, in 1874, the *Memphis Daily Appeal* published a report by Dr. George Duncan, who managed the asylum for the poor and insane of Shelby County, Tenn. Duncan (1874) complained that he had been given a court order that the "pauper lunatics be transferred to the county poorhouse" even though he believed that the asylum was a better place for them. The same page of the *Memphis Daily Appeal* contained criticisms of the almshouse. In 1883, the *New York Times* publicized a report from the well-organized and politically potent (Katz, 1984, pp. 119–120) New York State Charities Aid Association arguing that poorhouses contributed to insanity (Anonymous, 1883). Numerous physicians were members of that association, including Adolf Meyer (State Charities Aid Association, 1906, p. 23).

In the 1870s, New York passed several laws transferring the insane to public asylums (Dowbiggin, 1997; Katz, 1984, 1996). New York state provides a useful illustration because its reforms were followed quickly by others (Dowbiggin, 1997, p. 37).[8] Gradually, during the 1870s and 1880s, the state adopted measures forcibly to transfer the insane to mental asylums (Anonymous, 1879; Katz, 1984). By 1890, the estimated 2200 insane patients that remained in poorhouses were transferred to the asylums without consent. Lobbying efforts by asylum superintendents had led to the authorization of nearly half a million dollars for the "additional insane to be cared for" (Anonymous, 1892).

Such measures were resisted by almshouse managers. Superintendents of almshouses developed "a sense of occupational identity" that was "fostered by attacks on county poorhouses and attempts to remove the insane to state institutions" (Katz, 1984, p. 123). They emphasized local treatment of the insane and the importance of proximity to the local community as a superior form of care (Katz, 1984, p. 128). However, their efforts ultimately failed. High administrative costs and considerable variation in the quality of care combined with the perception of corruption and mismanagement made the almshouses unable to mount a convincing defense (Katz, 1984; Stewart, 1925). Advocates of asylum-based treatment successfully persuaded legislators and the public that treating insanity required removal from society and that the asylum was the best vehicle for serving that end (Rothman, 2002). The almshouses declined gradually as care-provider for the mentally ill and feeble-minded: by 1910, under 5% of paupers receiving alms were deemed insane as opposed to more than 25% in 1880 (Ziliak, 2002, p. 164). In some other states, almshouses simply opened their own insane departments subject to the same regulations imposed on asylums (US Bureau of the Census 1914). Essentially, non-medical care for the insane progressively was crowded-out.

Legislation placing restrictions on comparatively rarer private medical institutions secured additional rents for public asylums. Asylum managers and physicians frequently lobbied for oversight by state boards. In eleven states, the boards were tasked with supervising the issuing of licenses to private institutions competing with public asylums (US Bureau of the Census 1914, pp. 73–74). However, asylum physicians and managers were often members of the license-delivering boards (US Bureau of the Census, 1906, p. 74).

All of the foregoing factors worked to reduce drastically the number of people in almshouses and private centers by creating a favorable regulatory atmosphere for public asylums. As a result, by the 1920s, public asylums had "monopolized the system" (Rothman, 2002, p. 292).

2.2.2 Securing demand increases

Shifting bodies from private and local care arrangements into public asylums cannot explain fully the rapid increase in institutionalization (Sutton, 1991). The reduction in the capacities of almshouses (relative to population) is not of sufficient magnitude to explain the increase in public asylums, nor can the comparatively small number of private asylums.

The stronger political clout developed by the mental healthcare field was a complement. The ability to lobby state governments to centralize care for the insane in state-funded asylums means that psychiatrists and other professionals treating the mentally ill developed

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[8] For example, an article published in Oregon's *New Britain Daily* noted that physicians lobbied hard for commitment laws and state funds to mimic legislation found in Massachusetts (which was based on that of New York).

strong political influence. Because of their political prowess, those physicians were able to increase a state's demand for their services, amounting to a form of regulatory capture (Stigler, 1971). In essence, mental health professionals and asylum superintendents had vested interests in expanding the scales and scopes of state governments, representing a second channel of rent seeking.

The role of the physicians managing public asylums, often referred to as the superintendents, is crucial. Superintendents were among the first group of physicians to organize specifically to lobby for government funds for professional purposes (Pressman, 2002).[9] As a consequence, they secured salaries that were higher than all but the most successful physicians (Valenstein, 1986, p. 11). Superintendents' favorable positions also placed them outside of the governing bodies of their medical peers, providing them comparatively more power to exercise over their patients (Burnham, 2015; El-Hai, 2005; March & Geloso, 2020; Pressman, 2002; Rothman, 1971). In such positions of comparative isolation, political influence was a crucial predictor of medical prestige (El-Hai, 2005). Public asylums and the number of patients committed to them expanded rapidly.

As public fear of the destructiveness of delinquent behavior intensified, superintendents inserted themselves into public discourse to highlight the dangers posed by the "degenerate" and "delinquent" classes. They organized multiple conferences, frequently wrote to the media and testified on the dangers of deviant behavior to state legislatures. They frequently joined with progressive social reformers by arguing for more generous asylum funding to increase the capacities of their institutions.

That analysis is reminiscent of the bootleggers and Baptists analogy proposed by Yandle (1983). Progressive social reformers (i.e., the Baptists) were interested ethically in the fate of the insane and they pushed for asylum expansion to care for them. Asylum physicians and superintendents (i.e., the bootleggers) were interested more financially. Both groups formed a coalition that pushed for asylum expansion, with the latter group acting as a key lobbying force (Valenstein, 1986, p. 11). The reward from those lobbying efforts was the co-option of an administration of social control functions and public bureaucracies (all of which was funded by state budgets) (Sutton, 1991, p. 665). This self-serving coalition enabled superintendents and others working within state asylums to increase the demand for their services and for commitment rates through two mechanisms.[10]

First, they lobbied successfully for more lenient commitment laws (Pressman, 2002). If patients could be committed more easily and with less opposition from families and other institutions, asylums would receive more funding (Rothman, 2002, pp. 314–315).[11] Important powers were granted to asylum superintendents in order to commit patients against their will (US Bureau of the Census, 1914, pp. 75–84). While that policy can be seen as a public interest decision, the rules for appeals militate partially against it. For example, appeals in Vermont and New York required a jury of 12 individuals to be assembled (US

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[9] By 1844, superintendents had formed the Association of American Superintendents of American Institutions for the Insane, three years before the broader medical profession established the American Medical Association, which pursued similar political goals (Burnham, 2015; Starr, 1982).

[10] State governments also benefited from the collaboration. Sutton (1991, p. 667) speaks of "career contingencies in the commitment process" providing benefits for political figures. By funding large-scale public asylums, state legislators earned patronage from physicians caring the mentally ill, contractors who built asylums, and from families of mentally ill or disabled individuals who proved too difficult to manage at home (Rothman, 1971; Sutton, 1991).

[11] Involuntary commitment also was facilitated by stretching psychiatric terminology to incorporate more diagnostic criteria (Luchins, 1988, p. 477).

Bureau of the Census, 1914, p. 82). In New York, the petition for appeal had to be made within 30 days of the commitment order and the petitioner had to post a bond for payment of the costs of rehearing in case the order was sustained (US Bureau of the Census, 1914, p. 82). Many other states adopted similar legal requirements. The requirements were important enough to deter most forms of opposition to involuntary commitment, meaning an increase in the volume of patients being admitted.

The second mechanism was to lobby for greater funding. To acquire more revenues, superintendents had to argue that they needed extra funds to expand capacity. As superintendents competed with each other for prestige measured by budget size, tying their requests to the promise of greater treatment capacity was crucial. In addition, they also lobbied for increases in per patient funding. They were quite successful with respect to the former, but not the latter: between 1890 and 1915, total inflation-adjusted expenditures on all insane patients increased by a factor of 3.1, while per patient funding increased only by a factor of 1.15 (US Bureau of the Census, 1906, p. 41; Bureau of the Census, 1919, pp. 14–15). Numbers for the 1870–1890 period are more elusive, but signs suggest a rapid expansion in total funding during that period as well, but with a significantly slower increase in per patient funding (Grob, 1983).[12]

To assess the contribution of rent seeking to asylum expansion in America between 1870 and 1910, we now develop our empirical strategy to test the effects of rent-seeking capacity on institutionalization rates at the US state level.

3 Data and empirical strategy

To examine the role of rent seeking in the rise of institutionalization, we rely on the growth of the populations housed in asylums, as was done by previous contributions to the literature (Grob, 1983; Sutton, 1991). The main difficulty, however, relates to the construction of a measure of rent-seeking effort. Normally, estimates of the time and money allocated to securing rents (e.g., lobbying expenditures) would be ideal. But such data are not available for the case at hand.

However, we do have access to approximate measures of the political clout of the medical profession as a whole. For our purposes, such information suffices because our narrative hinges on the assumption that the physicians involved in the subfield of medicine dealing with the care of the insane wielded strong political clout. If the medical profession as a whole is unable to secure rents, it stands to reason that the subfield of psychiatry likewise was constrained in its ability to secure rents.

Thus, our proxy for rent-seeking effort comes from the dataset of the years in which the various US states adopted different barriers to entry to the medical profession. Hamowy (1979, p. 113) and Baker (1984) provide the most useful information as they specify the dates of enactment for each type of medical licensing law. The categories covered are

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[12] The main problem with sources of financial data is that the definitions change between census documents. For some years, but not all, current expenditures are blended with capital expenditures. For some other years, only one type of expenditure is reported. Comparisons across time therefore are difficult. More problematic is the fact that not all asylums reported financial data. While we have more accurate numbers on patient populations, neither expenditures nor appropriations are reported consistently enough to be relied on herein.

registration requirements,[13] the creation of examining boards,[14] mandatory examinations,[15] mandatory diplomas, the exclusion of substandard degree programs, the enforcement of preliminary education requirements, and the passage of a code of ethics.[16]

We tabulated those laws from 1870 to 1910. In Fig. 2, panels A, B, C, D, E and F, respectively, represent the just-mentioned six types of regulations. The darker the color in the figure, the later the adoption of the entry barrier. The map below also allows us to explain why our dataset ends in 1910. After that year, all 48 continental US states have adopted medical licensing laws (all states have examining boards, for example). Thus, no cross-state variation exists afterwards.

One potential approach would be to count the number of laws in a state as Law and Kim (2005) did when studying whether the imposition of licensing requirements for physicians in the first half of the twentieth century reduced mortality. They summed the regulations (e.g., state licensing board, mandatory examination, internship and science education requirements) to create an (unweighted) index. However, the same method is problematic in our case. Some laws were more important than others. For example, examining boards were the most aggressively lobbied for rule by the medical profession. The main reason was that, by creating a body with the power to punish transgressors, an examining board is able to restrict entry and also to raise other barriers, such as the exclusion of substandard medical colleges. In other words, some of the laws were toothless without the examining board. Thus, we prefer to examine the effects of the laws separately on the assumption that the states giving powers to examining boards are also states with more politically powerful medical lobbies. We also anticipate that examining boards will be the most important of the restrictions.

Our choice of the period, 1870–1910, is determined by the availability of census data on the insane and feeble-minded population. Observations on the insane population in institutions are available going back to 1800 (US Census Office, 1888; US Bureau of the Census, 1926). (We provide further details in in the online supplement.)

However, four issues must be discussed. First, many US territories become states during the 1870–1910 period. The transition to statehood is problematic since most territories had no mental hospitals.[17] Second, some small states (such as Nevada and Delaware) had no asylums prior to the census of 1890. Thus, we are forced to concentrate on states and territories with asylums.[18] However, that focus does not represent a significant weakness because we are interested in asylums and their operating staffs (notably the superintendents and physicians) as rent-seeking organizations.

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[13] Registration laws required physicians (and other healthcare providers in some instances) to register with a county medical society or some other county official in order to practice medicine in the state. However, Hamowy did not report information on registration laws for all states and we had to turn to Baker, (1984) for observations on that variable.

[14] Examining boards largely were used to exclude individuals who did not hold medical school diplomas; the boards also could operate as barriers to entry in conjunction with a code of ethics.

[15] The passing of a licensing examination was required of all candidates seeking to practice medicine in the state whether medical school graduates or not.

[16] The code of ethics did not differ dramatically by state because the empowering of examining boards to revoke, or refuse, certification "effectively" legislated "the code of ethics of the American Medical Association" (Hamowy, 1979, p. 113).

[17] Some territories, such as Dakota, which eventually became two US states, had at least one asylum before statehood.

[18] Otherwise, we would observe infinitely large jumps in care levels from a false zero base.

The third issue is more problematic: institutions for the feeble-minded are reported less accurately. While some feeble-minded people were housed with the insane, many were lodged in separate institutions; we were unable to identify the populations of the feeble-minded for 1870. Populations of the feeble-minded in institutions was smaller than the corresponding institutionalized insane populations, but it was increasing faster from 1880 to 1910, especially in a few states (US Bureau of the Census, 1930). Thus, we faced a tradeoff between losing one year in a panel dataset and adding to the quality of the data. Moreover, it is clear from later census documents that certain institutions existed in 1880 and 1890 (by virtue of their opening dates being reported) but that they failed to return information. Thus, the information about the feeble-minded receiving care is incomplete. We are uncertain as to which results are conceptually superior, so we have opted simply to present results with both definitions of the dependent variable.

The fourth issue is that, starting in 1904, coverages of institutions for the insane differ slightly in census publications. The surveys of 1904 and 1910 include the almshouses that had small (generally less than 50 patients and many with less than 20 patients) insane departments and counted them as separate institutions. Prior surveys did not follow that methodology, thus creating problems of comparability in the raw data over time. The problem is that, in order to make adjustments for consistency, we are forced to remove the poorhouses that maintained wings for the insane in 1904 and 1910 (see more details in online supplement). As such, we felt forced to use both unadjusted and adjusted definitions to present our results.

To tie the role of rent seeking in explaining the rise of institutionalization, we estimate the following baseline regressions using a strategy similar to Anderson et al. (2020) in their assessments of the effect of midwifery regulations and Jayaratne and Strahan (1996) on the effects of branch banking deregulation in the United States:

$$\log\left(insane\right) = \beta_0 + \beta_1 Medical\,Laws_{st} + \beta_2 X_{st} + \beta_3 V_s + \beta_4 V_t + \varepsilon_{st}$$

$$\log\left(insaneplus\right) = \beta_0 + \beta_1 Medical\,Laws_{st} + \beta_2 X_{st} + \beta_3 V_s + \beta_4 V_t + \varepsilon_{st},$$

where s and t are states and years.[19] Our dependent variable is the log of the ratio of the number of insane people housed in asylums to state population. The variable *insane* applies to asylum populations only and encompasses the years 1870, 1880, 1890, 1904 and 1910. The variable *insaneplus* refers to the insane and feeble-minded institutionalized populations in the same years, except for 1870. The same specifications will be estimated separately for the unadjusted and adjusted institutionalization rates (so that we report four sets of results).

MedicalLaws refers to the laws on the books in state s at year t and constitutes our proxy variable for the rent-seeking efforts of the medical profession.[20] Variable V_s controls for time-invariant unobserved heterogeneity at the state level that may have affected institutionalizations; V_t controls for nationwide temporal trends in institutionalizations.[21]

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[19] The years are census years. See online supplement for more details on the special census of 1904.

[20] A specific medical law or regulation is assigned a value of 1 if it was adopted before year t.

[21] In the online supplement, we also asked if similar results are found when using rules restricting the practice of midwifery provided by Anderson et al. (2020). While they supported our overall intuition, most of the midwifery rules were adopted after 1910 (12 states had adopted a rule against midwifery before 1910 and 8 before 1900), which limits its reliability. As such, we report the findings as supplementary results in the supplement.
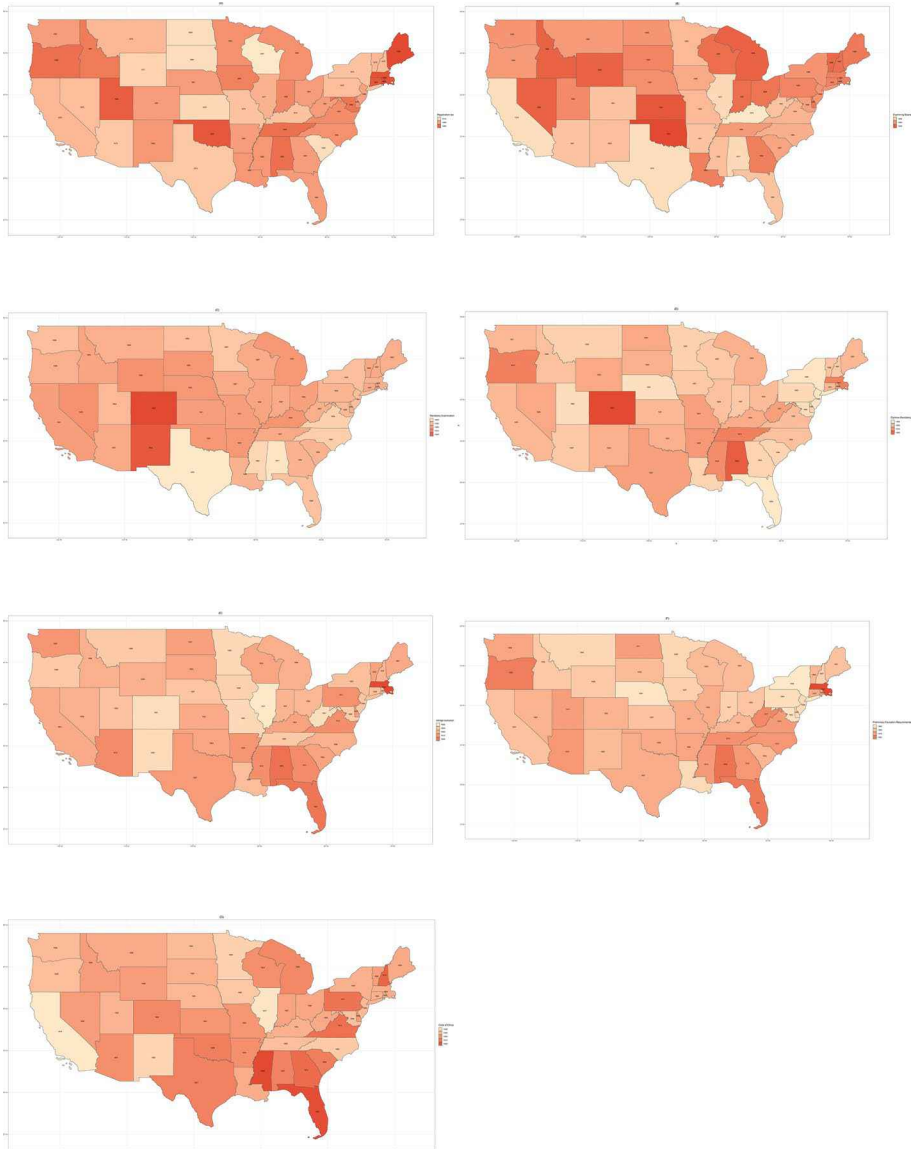
Fig. 2 Map of the adoption of medical laws, 1870–1921

The vector *X* contains our control variables. We follow an empirical strategy similar to Sutton (1991) by entering population over the age of 65, electoral competitiveness, urbanization, and state government revenues variables (adjusted for inflation).[22] Although those

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[22] Sutton (1991) also considered two other explanatory variables that we ended up dropping. The first was the number of Civil War pensioners estimated from federal documents, but he overlooked the fact that Confederate veterans were not eligible for pensions (see more below). He also included a dummy variable for traditional party organization. It was defined as states in which political machines flourished, whether in a one- party or competitive environment. The variable was time-invariant and had a value of 1 for thirteen

measures account for governmental ability to finance asylums, we rely on other variables to approximate public interest forces because they cannot be measured directly. Because the elderly consumed a disproportionate share of the services of asylums, we can expect that variable to be correlated with public interest. A similar correlation is expected with respect to urbanization: larger population density brings insanity into sharper focus for many people and increases the demand for institutionalization.[23]

However, we felt it was necessary to include additional variables to control for public interest forces. First, we added the share of the population under 15 years of age because that demographic subgroup was unlikely to consume mental care services.[24] Second, we entered the African American and foreign-born shares of the population. The former reflects the fact that African Americans received less healthcare than others (Noll, 1995).[25] The latter is included because numerous immigrant groups were labelled as intellectually inferior (Okrent, 2019) so that larger immigrant populations led to stronger nativist pressures to control them. Third, we entered a dummy variable for whether a state granted women the right to vote. Women tended to align with progressive ideas that affected government activities and their sizes (Lott & Kenny, 1999; Miller, 2008). As primary caregivers, we expect that women were likelier to support institutionalization as a substitute for in-home care. Fourth is a dummy variable for whether a state had a welfare agency in order to reflect "progressive" attitudes consistent with a favorable view of institutionalizing the mentally disabled in facilities controlled by the organized medical profession.[26] Lastly, we relied on labor force data from Turner et al. (2007) to estimate the number of dependents per worker. The larger the ratio of dependents to workers, the greater the demand for

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Footnote 22 (continued)

states. However, our fixed-effect estimator captures the effect of such a time-invariant control and we did not include it.

[23] The empirical literature has thrown into contention the link between insanity and urbanization (Sutton, 1991, p. 671). However, it has been entered in previous work as a control variable because it is related to "lower social tolerance for aberrant behavior" as well as the heightened "status of medical and mental health professionals" (Sutton, 1991, p. 671). Furthermore, it is included in the work of Sutton (1991) because the data do not allow for an easy and consistent distinction between city and state institutions (see online supplement). Thus, "a measure of urbanization is a rough proxy for a municipal asylum system" whereby larger urban populations also meant more asylums regardless of whether or not they are mandated by state or city governments (Sutton, 1991, p. 672).

[24] Only 0.2% of asylum patients in the 1920s were younger than age 15 (US Bureau of the Census 1926, p. 27).

[25] When institutions that cared for black populations were operating, they were less well-funded than institutions that cared for white populations (Grob, 1983, p. 26).

[26] We relied on the report on benevolent institutions for 1910 to identify the agencies (US Census Office, 1911, p. 14). We then gathered numerous legal documents, legislative records, session papers and state histories to identify their dates of creation. However, state welfare agencies are coded as dummy variables and they do not address degrees of welfare support. A better variable for public interest would have been pensions to veterans because it captures support for the group most likely to access asylums in the absence of taxpayer-financed support. Sutton (1991) relied on federal pensions. However, that choice was problematic because veterans of the Confederacy's armed forces, who were not eligible for federal pensions, benefited from state level pensions (Eli and Salisbury, 2016), which were not covered by his variable. Normally we could simply add information about state-level pensions to the federal ones to get a more complete picture. However, some southern states provided no relevant information. In the online supplement, we report a robustness check includes veterans receiving pensions with and without adding the state-level pensions to confederate veterans as collected by Eli and Salisbury (2016). Our results are unchanged, but we take them with a grain of salt because of the incompleteness of confederate pensions data and the differences in generosity between programs for which we cannot account.

institutionalization would have been.[27] We also controlled for per capita income (Turner et al., 2007). That income variable is useful because it is expressed in real terms, not on the basis of national deflators, but, rather, on the basis of regional deflators expressed relative to the national price level. The deflators adjust state government revenues per capita for the deflation of the 1890s.[28] Table 1 reports the descriptive statistics of the dataset constructed for this paper.

It will be noted that in the literature, such as in the work of Sutton (1991), the resident populations of almshouses are entered as a control variable. In our empirical analysis, doing the same would introduce a bad control. "Bad controls" occur when a variable could as well be the dependent variable (Angrist & Pischke, 2008, pp. 64–68). In our case, reductions in the sizes of almshouses would indeed lead to increases in asylum populations because one of the conjectured rent-seeking mechanisms was lobbying against almshouses by mental health professionals. As such, for econometric reasons, it would be unwise to enter almshouses as an explanatory variable.

4 Results

Estimates of β_1 entering only the populations of institutionalized insane people are presented in Tables 2 and 3.[29] All standard errors are clustered at the state level. The results cover the period from 1870 to 1910 and include both state and year fixed effects. Regardless of the definition adopted, statistically significant effects of registration laws and examining boards are found. Examining boards always are statistically significant: three times at the 5% level and once at the 10% level. Registration laws are significant only for the adjusted figures (those that assure the greatest methodological consistency).[30] Other laws never are statistically significant.[31]

Unsurprisingly, in both specifications, the share of the population above age 65 affects the level of institutionalization strongly, which is to be expected given the results reported by Sutton (1991), which also are consistent with the fact that rising life expectancy during the period would have increased the number of individuals affected by cognitive disorders associated with old age. The other control variable to offer consistently negative and significant effects is the share of the population of African American origin. That is to be

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[27] We have defined dependents as the sum of individuals below 15 and above 65 years of age.

[28] We relied on the same sources as Sutton (1991).

[29] We also estimated our regressions weighted by population and the results are very similar: examining boards are significant in all specifications.

[30] For these estimates, the year-fixed effects are coded as i.year in Stata, thereby avoiding assuming a linear time trend (each year is unique). However, we also tried using the c.year command to capture the fact that, because of the special census of 1904, the census years are not spaced evenly. When c.year is substituted fort i.year to capture national trends, the coefficients for registration laws always are significant at the 5% level; examining boards always are significant at the 1% level. Some other laws, such as the exclusion of substandard medical schools, become significant at the 10% level and increase modestly the level of institutionalization. The same applies when we used c.year with the population housed in feeble-minded institutions.

[31] In the online supplement, we estimated the effect of regulations against midwives using the data of Anderson et al. (2020). Eight states adopted such prohibitions during the nineteenth century; most states that adopted them did so in the twentieth century, after our period of interest. Thus, we were unwilling to report those results in the main body of the article even if they reinforce our claim because the marginal effects were significant in two out of four specifications and always positive.

Table 1 Descriptive statistics, 1870–1910

	Obs	Mean	St. dev
Log of insane per 100,000	211	4.649	0.691
Log of insane plus per 100,000	180	4.789	0.670
Log of insane adjusted per 100,000	211	4.616	0.679
Log of insane adjusted plus per 100,000	180	4.760	0.656
Log of income per capita	229	8.168	0.527
Log of dependency ratio	229	0.023	0.327
Log of state revenues per person	229	3.418	0.767
Electoral competitiveness	240	0.357	0.169
Log of share of population above 65	234	1.122	0.524
Log of share of population below 15	245	3.520	0.214
Log of urbanization rate	232	3.089	0.783
Cities with more than 25 k	240	2.625	3.958
Log of share of African American population	240	1.328	1.746
Log of share of population foreign-born	242	2.190	1.320
Women suffrage	255	0.039	0.194
State welfare agencies	240	0.446	0.498

Some of the differences in the number of observations are due to the fact that we collected information for all states and territories. In some sources, data for some territories were not available

expected given that historians point to lower levels of healthcare provision to that segment of the population (Grob, 1983; Noll, 1995).

How do the results change if we enter the populations housed in special institutions for the feeble-minded? As we mention above, doing so forces us to omit observations for 1870 for which the censuses returned no details about special institutions. In Tables 4 and 5, we report the results with the modified dependent variable. As can be seen, the effects are the same. The coefficients are very similar in magnitude. For example, the coefficient for examining boards with the unadjusted count is 0.159 when only the insane are counted, as opposed to 0.163 when both the feeble-minded and insane are counted. The level of statistical significance also is consistent across specifications. Examining boards always are significant. Registration laws uniformly become significant once the feeble-minded are counted.

In the results that include the count of feeble-minded individuals in special institutions, some of the control variables that were not significant over the 1870–1910 period become significant over the 1880–1910 period. The main variable that becomes significant is income per capita.[32] Overall, our findings confirm the importance of examining boards. The coefficients we report suggest that a state switching from not having an examining board to having one could expect to see its institutionalized population increase by

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[32] However, a note of caution must be raised regarding the observations for 1870 that we obtained from the work of Turner et al. (2007). To conduct their own study, Turner et al. (2007) had to construct estimates of state-level incomes for 1870 to complement other existing sources. To do so, they had to make some assumptions based on later, or earlier, census years. Thus, it could be that observations on the income levels in 1870 are approximative. However, for our purposes, that possible flaw does not affect the coefficients or significances of the medical laws.

Table 2 Panel regression of the log of insane (unadjusted) per 100,000 with individual laws, 1870–1910

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Registration	0.0829						
	(0.0671)						
Examining board		0.159**					
		(0.0594)					
Mandatory examination			0.00730				
			(0.0695)				
Diploma mandatory				− 0.0457			
				(0.0609)			
Substandard colleges excluded					0.0744		
					(0.0546)		
Preliminary education requirements						− 0.0157	
						(0.0512)	
Code of ethics							0.0418
							(0.0571)
Log of income per capita	0.206	0.200	0.196	0.202	0.173	0.193	0.198
	(0.151)	(0.142)	(0.152)	(0.150)	(0.149)	(0.148)	(0.147)
Log of dependent ratio	− 0.473	− 0.369	− 0.460	− 0.466	− 0.504	− 0.455	− 0.511
	(0.553)	(0.558)	(0.553)	(0.548)	(0.555)	(0.554)	(0.530)
Log of state revenues per person	0.0466	0.0327	0.0451	0.0513	0.0423	0.0457	0.0431
	(0.0559)	(0.0546)	(0.0559)	(0.0556)	(0.0591)	(0.0557)	(0.0558)
Electoral competitiveness	− 0.0719	− 0.0975	− 0.0765	− 0.0802	− 0.0695	− 0.0786	− 0.0698
	(0.179)	(0.173)	(0.178)	(0.184)	(0.182)	(0.185)	(0.180)
Log of share of population above 65	0.341**	0.348**	0.336**	0.329**	0.307*	0.339**	0.317*
	(0.158)	(0.164)	(0.161)	(0.160)	(0.156)	(0.159)	(0.164)
Log of share of population below 15	− 0.0913	0.00216	− 0.108	− 0.123	− 0.157	− 0.106	− 0.166
	(0.590)	(0.576)	(0.590)	(0.588)	(0.584)	(0.589)	(0.562)

Table 2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of urbanization rate	0.207	0.219	0.209	0.204	0.232	0.206	0.215
	(0.168)	(0.175)	(0.170)	(0.170)	(0.171)	(0.173)	(0.172)
Cities with more than 25 k	0.0143	0.0154	0.0135	0.0130	0.0160	0.0136	0.0140
	(0.0125)	(0.0126)	(0.0124)	(0.0126)	(0.0126)	(0.0124)	(0.0125)
Log of share of African–American population	− 0.211***	− 0.219***	− 0.212***	− 0.212***	− 0.216***	− 0.212***	− 0.214***
	(0.0615)	(0.0615)	(0.0626)	(0.0615)	(0.0615)	(0.0628)	(0.0628)
Log of share of population foreign-born	− 0.191	− 0.182	− 0.181	− 0.178	− 0.188	− 0.180	− 0.179
	(0.149)	(0.154)	(0.157)	(0.156)	(0.158)	(0.156)	(0.156)
Women suffrage	− 0.0985	− 0.105	− 0.0783	− 0.0771	− 0.114	− 0.0790	− 0.0817
	(0.121)	(0.135)	(0.132)	(0.132)	(0.142)	(0.129)	(0.137)
State welfare agencies	0.0132	0.0262	0.0130	0.0175	0.00701	0.0157	0.0156
	(0.0701)	(0.0697)	(0.0729)	(0.0702)	(0.0718)	(0.0698)	(0.0699)
Constant	2.379	2.112	2.512	2.512	2.851	2.532	2.698
	(2.291)	(2.265)	(2.351)	(2.314)	(2.273)	(2.298)	(2.240)
State-fixed effects	YES	YES	YES	YES	YES	YES	YES
Year-fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	204	204	204	204	204	204	204
R-squared	0.851	0.855	0.849	0.850	0.851	0.850	0.850
Number of states	47	47	47	47	47	47	47

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 3 Panel regression of the log of insane (adjusted) per 100,000 with individual laws, 1870–1910

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Registration	0.136** (0.0643)						
Examining board		0.124** (0.0604)					
Mandatory examination			− 0.0116 (0.0678)				
Diploma mandatory				− 0.0579 (0.0572)			
Substandard colleges excluded					0.0215 (0.0604)		
Preliminary education requirements						− 0.0633 (0.0592)	
Code of ethics							0.0211 (0.0615)
Log of income per capita	0.234 (0.152)	0.218 (0.147)	0.210 (0.156)	0.224 (0.154)	0.207 (0.152)	0.210 (0.152)	0.216 (0.152)
Log of dependent ratio	− 0.777 (0.497)	− 0.683 (0.527)	− 0.751 (0.521)	− 0.763 (0.516)	− 0.767 (0.522)	− 0.741 (0.519)	− 0.780 (0.503)
Log of state revenues per person	− 0.0248 (0.0651)	− 0.0367 (0.0672)	− 0.0260 (0.0686)	− 0.0194 (0.0679)	− 0.0276 (0.0691)	− 0.0260 (0.0671)	− 0.0279 (0.0682)
Electoral competitiveness	− 0.0243 (0.167)	− 0.0473 (0.167)	− 0.0281 (0.169)	− 0.0361 (0.173)	− 0.0283 (0.174)	− 0.0429 (0.174)	− 0.0271 (0.171)
Log of share of population above 65	0.363** (0.161)	0.363** (0.168)	0.351** (0.165)	0.346** (0.164)	0.345** (0.158)	0.370** (0.164)	0.344** (0.166)
Log of share of population below 15	− 0.359 (0.556)	− 0.300 (0.561)	− 0.387 (0.574)	− 0.405 (0.574)	− 0.401 (0.571)	− 0.378 (0.572)	− 0.416 (0.549)

Table 3 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of urbanization rate	0.242	0.253	0.247	0.238	0.252	0.228	0.248
	(0.171)	(0.179)	(0.176)	(0.175)	(0.175)	(0.174)	(0.176)
Cities with more than 25 k	0.0151	0.0152	0.0137	0.0131	0.0145	0.0143	0.0140
	(0.0135)	(0.0131)	(0.0131)	(0.0135)	(0.0135)	(0.0134)	(0.0132)
Log of share of African–American population	− 0.236***	− 0.242***	− 0.237***	− 0.236***	− 0.238***	− 0.237***	− 0.238***
	(0.0632)	(0.0664)	(0.0666)	(0.0652)	(0.0659)	(0.0664)	(0.0668)
Log of share of population foreign-born	− 0.0849	− 0.0686	− 0.0683	− 0.0639	− 0.0702	− 0.0650	− 0.0671
	(0.147)	(0.159)	(0.161)	(0.159)	(0.162)	(0.157)	(0.160)
Women suffrage	− 0.0549	− 0.0432	− 0.0239	− 0.0205	− 0.0329	− 0.0231	− 0.0243
	(0.123)	(0.142)	(0.141)	(0.142)	(0.145)	(0.128)	(0.144)
State welfare agencies	− 0.0158	− 0.00513	− 0.0134	− 0.0102	− 0.0167	− 0.00736	− 0.0139
	(0.0778)	(0.0763)	(0.0802)	(0.0776)	(0.0788)	(0.0767)	(0.0771)
Constant	2.956	2.871	3.219	3.178	3.290	3.220	3.283
	(2.321)	(2.350)	(2.404)	(2.379)	(2.337)	(2.368)	(2.299)
State-fixed effects	YES	YES	YES	YES	YES	YES	YES
Year-fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	204	204	204	204	204	204	204
R-squared	0.830	0.829	0.826	0.826	0.826	0.827	0.826
Number of states	47	47	47	47	47	47	47

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 4 Panel regression of the log of insane inclusive of feeble-minded institutions (unadjusted) per 100,000 with individual laws, 1880–1910

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Registration	0.140* (0.0724)						
Examining board		0.163** (0.0729)					
Mandatory examination			−0.000639 (0.0686)				
Diploma mandatory				−0.0116 (0.0518)			
Substandard colleges excluded					0.0371 (0.0519)		
Preliminary education requirements						0.0230 (0.0455)	
Code of ethics							0.0337 (0.0574)
Log of income per capita	0.444*** (0.142)	0.416*** (0.136)	0.405*** (0.139)	0.407*** (0.141)	0.395*** (0.145)	0.409*** (0.141)	0.414*** (0.138)
Log of dependent ratio	−1.186 (0.719)	−0.987 (0.761)	−1.138 (0.764)	−1.140 (0.759)	−1.128 (0.774)	−1.138 (0.774)	−1.184 (0.754)
Log of state revenues per person	0.0430 (0.0679)	0.0211 (0.0630)	0.0403 (0.0690)	0.0424 (0.0692)	0.0394 (0.0694)	0.0413 (0.0683)	0.0368 (0.0675)
Electoral competitiveness	−0.0501 (0.150)	−0.0779 (0.145)	−0.0567 (0.156)	−0.0586 (0.160)	−0.0501 (0.159)	−0.0506 (0.160)	−0.0481 (0.154)
Log of share of population above 65	0.310* (0.174)	0.314* (0.181)	0.271 (0.170)	0.270 (0.171)	0.267 (0.172)	0.267 (0.171)	0.260 (0.176)
Log of share of population below 15	−0.782 (0.724)	−0.575 (0.723)	−0.754 (0.746)	−0.759 (0.747)	−0.745 (0.752)	−0.751 (0.756)	−0.805 (0.731)

Table 4 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of urbanization rate	0.135	0.153	0.137	0.136	0.148	0.142	0.141
	(0.179)	(0.193)	(0.181)	(0.182)	(0.184)	(0.185)	(0.183)
Cities with more than 25 k	0.0157	0.0163	0.0134	0.0133	0.0146	0.0132	0.0137
	(0.0131)	(0.0122)	(0.0123)	(0.0124)	(0.0126)	(0.0121)	(0.0124)
Log of share of African–American population	− 0.222***	− 0.226***	− 0.216***	− 0.216***	− 0.218***	− 0.216***	− 0.217***
	(0.0667)	(0.0682)	(0.0685)	(0.0683)	(0.0684)	(0.0690)	(0.0689)
Log of share of population foreign-born	− 0.145	− 0.145	− 0.127	− 0.125	− 0.126	− 0.126	− 0.124
	(0.154)	(0.153)	(0.170)	(0.172)	(0.168)	(0.169)	(0.168)
Women suffrage	− 0.0966	− 0.0849	− 0.0608	− 0.0606	− 0.0765	− 0.0600	− 0.0622
	(0.106)	(0.123)	(0.122)	(0.123)	(0.130)	(0.128)	(0.124)
State welfare agencies	− 0.0173	0.00327	− 0.00419	− 0.00319	− 0.00744	− 0.00664	− 0.00384
	(0.0709)	(0.0684)	(0.0748)	(0.0701)	(0.0699)	(0.0693)	(0.0694)
Constant	3.009	2.558	3.272	3.274	3.300	3.218	3.389
	(2.425)	(2.340)	(2.500)	(2.492)	(2.499)	(2.507)	(2.490)
State-fixed effects	YES	YES	YES	YES	YES	YES	YES
Year-fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	173	173	173	173	173	173	173
R-squared	0.877	0.879	0.872	0.872	0.872	0.872	0.872
Number of states	47	47	47	47	47	47	47

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 5 Panel regression of the log of insane inclusive of feeble-minded institutions (adjusted) per 100,000 with individual laws, 1880–1910

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Registration	0.151*						
	(0.0776)						
Examining board		0.132*					
		(0.0685)					
Mandatory examination			− 0.0238				
			(0.0652)				
Diploma mandatory				− 0.0206			
				(0.0458)			
Substandard colleges excluded					− 0.00680		
					(0.0509)		
Preliminary education requirements						− 0.0198	
						(0.0474)	
Code of ethics							0.0206
							(0.0575)
Log of income per capita	0.448***	0.415***	0.396***	0.409***	0.409**	0.404***	0.412***
	(0.149)	(0.142)	(0.147)	(0.149)	(0.153)	(0.145)	(0.145)
Log of dependent ratio	− 1.373*	− 1.199	− 1.292*	− 1.323*	− 1.324*	− 1.323*	− 1.350*
	(0.709)	(0.754)	(0.752)	(0.744)	(0.753)	(0.746)	(0.746)
Log of state revenues per person	− 0.0213	− 0.0399	− 0.0215	− 0.0206	− 0.0241	− 0.0252	− 0.0264
	(0.0705)	(0.0710)	(0.0765)	(0.0757)	(0.0747)	(0.0747)	(0.0743)
Electoral competitiveness	− 0.0116	− 0.0359	− 0.0146	− 0.0220	− 0.0201	− 0.0242	− 0.0135
	(0.150)	(0.149)	(0.155)	(0.159)	(0.159)	(0.158)	(0.154)
Log of share of population above 65	0.338*	0.330*	0.294*	0.293*	0.296*	0.299*	0.289
	(0.172)	(0.181)	(0.169)	(0.171)	(0.168)	(0.169)	(0.173)
Log of share of population below 15	− 0.928	− 0.752	− 0.872	− 0.905	− 0.899	− 0.901	− 0.929
	(0.741)	(0.747)	(0.758)	(0.761)	(0.765)	(0.762)	(0.750)

Table 5 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log of urbanization rate	0.162	0.177	0.165	0.162	0.162	0.160	0.167
	(0.182)	(0.194)	(0.185)	(0.185)	(0.185)	(0.186)	(0.187)
Cities with more than 25 k	0.0146	0.0144	0.0121	0.0119	0.0119	0.0123	0.0123
	(0.0132)	(0.0119)	(0.0123)	(0.0125)	(0.0123)	(0.0124)	(0.0123)
Log of share of African–American population	− 0.247***	− 0.249***	− 0.239***	− 0.240***	− 0.240***	− 0.240***	− 0.241***
	(0.0654)	(0.0691)	(0.0687)	(0.0681)	(0.0686)	(0.0683)	(0.0690)
Log of share of population foreign-born	− 0.0377	− 0.0333	− 0.0164	− 0.0144	− 0.0184	− 0.0191	− 0.0169
	(0.130)	(0.135)	(0.149)	(0.148)	(0.147)	(0.147)	(0.146)
Women suffrage	− 0.0471	− 0.0281	− 0.00935	− 0.00826	− 0.00556	− 0.00913	− 0.00932
	(0.117)	(0.135)	(0.137)	(0.138)	(0.139)	(0.133)	(0.137)
State welfare agencies	− 0.0250	− 0.00476	− 0.00636	− 0.00891	− 0.0103	− 0.00889	− 0.0106
	(0.0743)	(0.0722)	(0.0777)	(0.0740)	(0.0742)	(0.0731)	(0.0736)
Constant	3.330	3.035	3.594	3.616	3.609	3.661	3.685
	(2.460)	(2.437)	(2.533)	(2.543)	(2.568)	(2.581)	(2.546)
State-fixed effects	YES	YES	YES	YES	YES	YES	YES
Year-fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	173	173	173	173	173	173	173
R-squared	0.867	0.866	0.861	0.861	0.861	0.861	0.861
Number of states	47	47	47	47	47	47	47

Standard errors in parentheses

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

somewhere between 13.1 and 17.7%.[33] The effect is not negligible. The registration laws, when significant, appear to have an effect ranging from 14.5 to 16.3%.

To assess the robustness of our results, we modified our main results in three ways. First, we entered state-specific time trends,[34] allowing us implicitly to account for features of the legal environment that may vary differently over time. The downside of such a test is that our sample is relatively small (47 states over four or five time periods); the specification increases dramatically the number of parameters to be estimated. However, the parameter-estimation problem runs against us finding significant results. To economize on space, we placed these result tables in the online supplement to this article. In spite of the limitations mentioned above, we found examining boards remain statistically significant in most settings, although registration laws no longer are significant. In fact, some laws become significant. Most notably, codes of ethics are consistently significant at the 5% level. That is unsurprising because codes of ethics established the criteria for examining boards' reviews.

Second, we modified our regressions to include the number of physicians and surgeons reported in censuses for each state between 1870 and 1910. That is an imperfect measure of interest-group influence because the laws are correlated with the number of physicians. However, a supply-side contribution must be considered: more medical school graduates and physicians lead to more diagnoses, particularly of marginal cases.[35] If physicians are entered, the pattern of results remains the same even though the supply of physicians has a significant effect. However, in order to keep the article short, we placed this table in the online supplement to this article.

Third, we attempt to rule out the possibility that asylum expansion preceded the adoption of medical licensing regulations. Given that similar forces may have been pushing both the expansion of the asylum system and the adoption of regulations at the state level, reverse causality is a possibility. Thus, we conduct a falsification test whereby we constructed "fake" versions of medical laws. Those "fake" laws were coded as 1 if a state adopts a law in the ten years after year t and 0 otherwise.[36] By entering those "fake" variables alongside their correctly coded counterparts in our regressions, we can conclude that reverse causality is a problem if the estimated coefficients on the fake variables exceed zero. The full results, which can be consulted in the online supplement, show that the vast majority of the coefficients return as insignificant or, in any case, not very far from zero. The only two that are significant concern registration laws when the feeble-minded are counted. However, both coefficients are negative rather than positive.

Across all three attempts to assess the robustness of our results, examining boards remain statistically significant with sizable coefficients suggesting increases in institutionalization averaging roughly 15%. How can we contextualize that finding? Three facts are of use here. Two of those lead us to believe that our findings are robust economically. The third suggests that our results offer a strong complement to the literature emphasizing public interest forces.

The first fact is that our measure of rent seeking is an indirect one. We possess no tools to measure rent-seeking activities directly in the field of psychiatric care. Ideally, a measure of lobbying expenditures would have been preferred. Seminal works in the field of mental

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[33] Assuming that a state switched from 0 to 1 (i.e., not having an examining board to having one), the percentage impact of the law on institutionalization (because they are logged) is $100*[\exp(\beta_1) - 1]$ as proposed by Halvorsen and Palmquist (1980).

[34] We thank Gregory Niemesh for this useful suggestion.

[35] We thank Allison Shertzer for this insightful comment.

[36] For instance, Illinois created its examining board in 1877. The "fake" is coded as 1 for the observations for 1870 and 0 for 1880, 1890, 1904, and 1910.

health history (Grob, 1992, 2014, 1983; Pressman, 2002; Rothman, 1971, 2002) provide numerous examples of rent seeking, but nothing that can be codified in an econometrically viable manner. For that first reason, we believe that our estimates represent a cautious assessment of the role of rent seeking. The fact that examining boards have a consistently significant effect—regardless of specification—reassures us that such is the case.

The second element of contextualization is that our dependent variable understates the gains from rent seeking. Physicians were not attempting to seek rents by getting more patients. They were attempting to get more patients because it attracted more public funding, which, in turn, meant higher incomes for asylum-based physicians. However, because our analysis implicitly assumes stable funding per patient at the state level, we do not capture the importance of the gains in income. Yet, per capita funding *did* increase. National-level data suggests mild increases in per capita funding during the period (US Bureau of the Census, 1906, p. 41; US Bureau of the Census, 1926, p. 89). Unfortunately, reliable estimates of expenditures at the state-level are hard to find for the late nineteenth century.[37] As such, we were unable to produce a relevant measure of physicians' rent-seeking gains and thus are missing an important margin of action for them. Qualitative sources such as Noll (1995) and Grob (2014) point to the efficiency of well-organized medical lobbies in acquiring extra per capita funding. The limited data that we have suggest that significant increases in such funding materialized.

The third element is that our results account only for a minor share of the increase. On average, rent seeking as proxied by examination boards accounts for 32% of the increase for the average state between 1870 and 1910. While not negligible, it is clear that rent seeking is a supporting actor in asylum expansion.

Our evidence implies that public and private interest forces are complements. Asylum physicians were a component of the coalition favoring asylum expansion. However, other components were needed for the coalition to achieve its goal. If certain components could be peeled off, asylum expansion would be slowed down. In our results, the share of the population above 65 years of age consistently was significant and positive. As the welfare of that sub-population was a key motivating factor underlying support by progressive social reformers for asylum expansion, that result is unsurprising. The failure to pass key welfare programs—especially those related to old age and infirmity— was a proximate cause of rising institutionalization (Sutton, 1991). In order to obtain welfare support for the elderly through the second-best option that asylum expansion represented, progressive social reformers joined forces with asylum physicians. However, where and when more direct welfare programs existed, the reformers would have been less inclined to join coalitions pushing for asylum expansion. That conjecture is illustrated well by pensions for (Union) Civil War veterans (Holcombe, 1999). While he did not account for the effect of Confederate pension systems[38] (something that may bias his estimates), Sutton (1991) noted that the larger the number of Civil War pensioners, the slower the pace of asylum growth. That correlation can be explained in terms of

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[37] We attempted to create such a measure using the special reports in the censuses of 1880 and 1890. However, the published financial measures are not consistent over time and do not encompass a methodologically consistent set of hospitals. Moreover, little to no information about the financial conditions of private asylums is provided. Even less information exists about special institutions for the feeble-minded.

[38] Confederate veterans were not allowed to receive federal pensions. Whatever pensions they received were funded by state legislatures and were considerably less generous than for Union veterans (Eli and Salisbury, 2016).

the bootleggers and Baptists theory of regulation (Yandle, 1983). When other welfare programs were available, Baptists (i.e., progressive social reformers) felt less compelled to ally themselves with the bootleggers (i.e., asylum physicians). When those programs were unavailable, the urge to form an alliance was stronger. In essence, the public and private interest forces were necessary ingredients for asylum expansion.

5 Conclusion

From 1870 to 1910, asylums in America gradually became centralized as state governments took over the provision of mental healthcare from local and private institutions. The expanding role of state governments in such treatment led to the rapid expansion of the institutionalized population. Most explanations for that expansion are rooted in public interest justifications.

In this paper, we argue that a complementary public choice explanation can be found in the vested interests of physicians and asylum superintendents in centralizing care at the level of state governments and expanding taxpayer-financed asylum networks.

First, asylum expansion and centralization by state governments reduced competition from non-medical forms of care for the insane available from almshouses without psychiatric wards. Second, it allowed asylums and asylum-based physicians to more easily secure increases in the demand for their services. Their privileged relationships with state governments essentially meant that they regulated themselves with the help of the state while also influencing the course of public policy towards the insane and feeble-minded. In essence, rent-seeking efforts from key interest groups constitute a potent complementary explanation for the expansion of asylums.

To test that hypothesis, we rely on data on laws passed to restrict access to the medical profession as a proxy variable for the political clout wielded by the mental healthcare subfield. Where the medical profession as a whole was weak politically and thus was unable to secure legal barriers to entry, the subfield of mental healthcare also had less political influence. The greater the influence, the greater the ability to lobby state governments to vote funds for the institutionalization of the insane. We find that rent-seeking capacity is a strong factor in explaining the rise of institutionalization in the United States between 1870 and 1910. Examining boards, the key enforcement tool for restricting entry into the medical profession as well as for introducing related restrictions, are, ceteris paribus, consistently associated with increases in the sizes of the asylum populations in the US states.

Our explanation for the rise of public asylums for psychiatric patients constitutes the first public choice application to the topic of mental healthcare. It also highlights how public and private interest forces can be complements. Successful expansion of asylums required a coalition of bootleggers (asylum-based physicians) and Baptists (progressive social reformers). As a result, we also contribute to the economic history literature on the effects of medical regulations. A large number of studies exists on the outcomes of medical regulations adopted in the late nineteenth and early twentieth centuries. However, less attention has been paid to the process that led to the adoption of those regulations. Our article contributes to expanding this aspect of the economic history literature. We believe that the theoretical framework (and data) herein can be expanded to answering other questions,

such as the stringency of early involuntary commitment laws and the factors behind the rise of sterilization and other intrusive policies grounded in eugenics.

References

Anderson, D. M., Brown, R., Charles, K. K., & Rees, D. I. (2020). Occupational licensing and maternal health: Evidence from midwifery laws. *Journal of Political Economy, 128*(11), 4337.

Anderson, D. M., Charles, K. K., & Rees, D. I. (2019). Re-examining the contribution of public health efforts to the decline in urban mortality. *American Economic Journal: Applied Economics* (**Forthcoming**).

Angrist, J. D., & Pischke, J. S. (2008). *Mostly harmless econometrics*. Princeton University Press.

Anonymous. (1879). State board of charities: Its twelfth annual report. *The Buffalo Commercial*, January 27th: 1.

Anonymous. (1883). Places to increase insanity: A report read at the state charities aid association. *New York Times*, December 13th: 3.

Anonymous. (1892). An act vindicated: The state's care of its insane. *The Buffalo Commercial*, June 2nd: 8.

Baker, R. (1999). *The American medical ethics revolution: How the AMA's code of ethics has transformed physicians' relationships to patients, professionals, and society*. John Hopkins University Press.

Baker, R. B., Washington, H. A., Olakanmi, O., Savitt, T. L., Jacobs, E. A., Hoover, E., & Wynia, M. K. (2008). African-Americans physicians and organized medicine, 1846–1968: Origins of a racial divide. *Journal of the American Medical Association, 300*(3), 173–197.

Baker, S. L. (1984). Physician licensure laws in the United States: 1865–1915. *Journal of the History of Medicine and Medical Sciences, 39*(2), 173–197.

Burnham, J. C. (2015). *Healthcare in America: A history*. John Hopkins University Press.

Costa, D. L. (1998). The Evolution of Retirement. *Evolution of retirement: An American economic history 1880–1990* (pp. 6–31). University of Chicago Press.

Cutler, D., & Miller, G. (2005). The role of public health improvements in health advances: The twentieth-century United States. *Demography, 42*(1), 1–22.

DeLorme, C. D., Frame, W. S., & Kamerschen, D. R. (1997). Empirical evidence on a special-interest-group perspective to antitrust. *Public Choice, 92*(3–4), 317–335.

Dowbiggin, I. R. (1997). *Keeping America sane: Psychiatry and eugenics in the United States and Canada, 1800–1940*. Cornell University Press.

Duncan, G. (1874). The insane poorhouse. *Memphis Daily Appeal*, January 20th: 1.

El-Hai, J. (2005). *The lobotomist: A maverick medical genius and his tragic quest to rid the world of mental illness*. Wiley.

Eli, S., & Salisbury, L. (2016). Patronage politics and the development of the welfare state: Confederate pensions in the American south. *Journal of Economic History, 76*(4), 1078–1112.

Emery, J. H. (2010). Un-American or unnecessary? America's rejection of compulsory government health insurance in the progressive era. *Explorations in Economic History, 47*(1), 68–81.

Foucault, M. (1964). *Histoire de la Folie à l'ÂgeClassique*. Editions Gallimard.

Geloso, V. (2020). Collusion and combines in Canada, 1880–1890. *Scandinavian Economic History Review, 68*(1), 66–84.

Grob, G. N. (1983). *Mental illness and American society, 1875–1940*. Princeton University Press.

Grob, G. N. (1992). Mental health policy in America: Myths and realities. *Health Affairs, 11*(3), 7–22.

Grob, G. N. (2014). *From asylum to community: Mental health policy in modern America*. Princeton University Press.

Halvorsen, R., & Palmquist, R. (1980). The interpretation of dummy variables in semilogarithmic equations. *American Economic Review, 70*(3), 474–475.

Hamowy, R. (1979). The early development of medical licensing laws in the United States. *Journal of Libertarian Studies, 3*(1), 73–119.

Hamowy, R. (2008). *Government and public health in America*. Edwar Elgar Publishing.

Hannon, J. U. (1984a). The generosity of antebellum poor relief. *Journal of Economic History, 44*(3), 810–821.

Hannon, J. U. (1984b). Poverty in the antebellum northeast: The view from New York State's poor relief rolls. *Journal of Economic History, 44*(4), 1007–1032.

Hannon, J. U. (1985). Poor relief policy in antebellum New York State: The rise and decline of the poorhouse. *Explorations in Economic History, 22*(3), 233–256.

Hannon, J. U. (1997). Shutting down welfare: Two cases from America's past. *Quarterly Review of Economics and Finance, 37*(2), 419–438.

Holcombe, R. G. (1999). Veterans interests and the transition to government growth: 1870–1915. *Public Choice, 99*(3–4), 311–326.

Horpendahl, J. (2020). *Bootleggers, Baptists, and ballots: coalitions in Arkansas alcohol-legalization elections*. Public Choice.

Hunter, J. M., Shannon, G. W., & Sambrook, S. L. (1986). Rings of madness: Service areas of 19th century asylums in North America. *Social Science and Medicine, 23*(10), 1033–1050.

Jarvis, E. (1842). Statistics of insanity in the United States. *The Boston Medical and Surgical Journal, 27*(7), 116–121.

Jarvis, E. (1855). Report on insanity and idiocy in Massachusetts by the commission on lunacy. Massachusetts commission on lunacy.

Jayarante, J., & Strahan, P. E. (1996). The finance-growth nexus: Evidence from bank branch deregulation. *Quarterly Journal of Economics, 111*(3), 639–670.

Katz, M. (1984). Poorhouse and the origins of the public old age home. *The Milbank Memorial Fund Quarterly. Health and Society, 62*(1), 110–140.

Katz, M. B. (1996). *In the shadow of the poorhouse: A social history of welfare in America*. Basic Books.

Kiesling, L. L., & Margo, R. A. (1997). Explaining the rise in antebellum pauperism, 1850–1860: New evidence. *Quarterly Review of Economics and Finance, 37*(2), 405–417.

Klein, D. B., Powell, B., & Vorotnikov, E. S. (2012). Was occupational licensing good for minorities? A critique of Marc Law and Mindy Marks. *Econ Journal Watch, 9*(3), 210–233.

Kolko, G. (1965). *Railroads and regulation, 1877–1916*. Princeton University Press.

Krueger, A. O. (1974). The political economy of the rent-seeking society. *American Economic Review, 64*(3), 291–303.

Law, M. T., & Kim, S. (2005). Specialization and regulation: The rise of professionals and the emergence of occupational licensing regulation. *Journal of Economic History, 65*(3), 723–756.

Law, M. T., & Marks, M. S. (2009). Effects of occupational licensing laws on minorities: Evidence from the progressive area. *Journal of Law and Economics, 52*(2), 351–366.

Leeson, P. T. (2019). Do we need behavioral economics to explain law? *European Journal of Law and Economics, 48*(1), 29–42.

Leeson, P. T., King, M. S., & Fegley, T. J. (2019). Regulating quack medicine. *Public Choice, 182,* 273–286.

Libecap, G. D. (1992). The rise of Chicago packers and the origins of meat inspection and antitrust. *Economic Inquiry, 30*(2), 242–262.

Lindert, P. H. (2004). *Growing public: Volume 1 the story: Social spending and economic growth since the eighteenth century*. Cambridge University Press.

Lombardo, P. A. (2008). *Three generations, no imbeciles: Eugenics, the Supreme Court, and Buck vs. Bell*. John Hopkins University Press.

Lott, J. R., Jr., & Kenny, L. W. (1999). Did women's suffrage change the size and scope of government? *The Journal of Political Economy, 107*(6), 1163–1198.

Luchins, A. S. (1988). The rise and decline of the American asylum movement in the 19th century. *Journal of Psychology, 122*(5), 471–486.

Lund, C., Breen, A., Flisher, A. J., Kakuma, R., Corrigall, J., Joska, J. A., Swartz, L., & Patel, V. (2010). Poverty and common mental disorders in low and middle income countries: A systematic review. *Social Science and Medicine, 71*(3), 517–528.

March, R. J., & Geloso, V. (2020). Gordon Tullock meets Phineas Gage: The political economy of lobotomies in the United States. *Research Policy, 49*(1), 103872.

McChesney, F. S., & Shughart, W. F., II. (1995). *The causes and consequences of antitrust: The public choice perspective*. University of Chicago Press.

Miller, G. (2008). Women's suffrage, political responsiveness, and child survival in American history. *Quarterly Journal of Economics, 123*(3), 1287–1327.

Moehling, C. M., Niemesh, G. T., Thomasson, M. A., & Treber, J. (2020). Medical education reforms and the origins of the rural physician shortage. *Cliometrica, 14*(2), 181–225.

Murray, J. E. (2007). *Origins of American health insurance: A history of industrial sickness funds*. Yale University Press.

Newman, P. (2019a). Public interest or public choice? The beef trust and the 1906 meat inspection act. In *SSRN working paper*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3363155

Newman, P. (2019). Personnel is policy: Regulatory capture at the federal trade commission, 1914–1929. *Journal of Institutional Economics, 15*(6), 1037–1153.

Noll, S. (1995). *Feeble-minded in our midst: Institutions for the mentally retarded in the south, 1900–1940*. University of North Carolina Press Books.

Okrent, D. (2019). *The guarded gate: bigotry, eugenics, and the law that kept two generations of Jews, Italians, and other European immigrants out of America*. Scribner.

Olmstead, A. L., & Rhode, P. (2015). *Arresting contagion*. Harvard University Press.

Pressman, J. D. (2002). *Last resort: Psychosurgery and the limits of medicine*. Cambridge University Press.

Rothman, D. J. (1971). *The discovery of the asylum: Social order and disorder in the new republic*. Little, Brown, and Company.

Rothman, D. J. (2002). *Conscience and convenience: The asylum and its alternatives in progressive America*. Routledge.

Starr, P. (1982). *The social transformation of American medicine: The rise of a sovereign profession and the making of a vast industry*. Basic Books.

State Charities Aid Association. (1906). *Fourteenth annual report of the state charities aid association to the state commission in lunacy*.

Stewart, E. M. (1925). *The cost of American almshouses*. Government Printing Office.

Stigler, G. J. (1971). The theory of economic regulation. *Bell Journal of Economics and Management Science, 2*(1), 3–21.

Sutton, J. R. (1991). The political economy of madness: The expansion of the asylum in progressive America. *American Sociological Review, 56*(5), 665–678.

Troesken, W. (2006). Regime change and corruption: A history of public utility regulation. *Corruption and reform: Lessons from America's economic history* (pp. 259–282). University of Chicago Press.

Tullock, G. (1967). The welfare costs of tariffs, monopolies, and theft. *Economic Inquiry, 5*(3), 224–232.

Turner, C., Tamura, R., Mulholland, S. E., & Baier, S. (2007). Education and income of the states of the United States: 1840–2000. *Journal of Economic Growth, 12*(2), 101–158.

US Bureau of the Census. (1906). *Insane and feeble-minded in hospitals and in institutions, 1904*. Government Printing Office.

US Bureau of the Census. (1914). *Insane and feeble-minded in hospitals and in institutions, 1910*. Government Printing Office.

US Bureau of the Census. (1919). *Statistical directory of state institutions for the defective, dependent, and delinquent classes*. Government Printing Office.

US Bureau of the Census. (1926). *Patients in hospitals for mental disease, 1923*. US Government Printing Office.

US Bureau of the Census. (1930). *Mental patients in state hospitals, 1926 and 1927*. Government Printing Office.

US Census Office. (1888). *Report on the defective, dependent and delinquent classes population of the United States*. Government Printing Office.

US Census Office. (1911). *Benevolent institutions, 1910*. Government Printing Office.

Valenstein, E. S. (1986). *Great and desperate cures: The rise and decline of psychosurgery and other radical treatments for mental illness*. Basic Books.

White, W. A. (1903). The geographical distribution of insanity in the United States. *Journal of Nervous and Mental Disease, 30*(5), 257–279.

Wright, D. (1997). Getting out of the asylum: understanding the confinement of the insane in the nineteenth century. *Social History of Medicine, 10*(1), 137–155.

Yandle, B. (1983). Bootleggers and Baptists: The education of a regulatory economist. *Regulation, 7,* 12–16.

Ziliak, S. T. (2002). Pauper fiction in economic science: "Paupers in almshouses" and the odd fit of Oliver Twist. *Review of Social Economy, 60*(2), 159–181.