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Understanding the Rise of Regulation during the Progressive Era: What Role for Austrian Economics?

Marc T. Law, Department of Economics, University of Vermont, Marc.Law@uvm.edu

Abstract

In this article I selectively survey the economic history literature on the rise of regulation in America during the Progressive Era with the goal of identifying how this literature is informed by Austrian economic theory, and how Austrian theory might contribute to our understanding of the origins and growth of the regulatory state. I argue that much of the literature on the origins of Progressive Era regulation is consistent with the positive aspects of Austrian economics, largely because Austrian theory overlaps with public choice theory, the analytical toolkit used by most studies of the rise of regulation. However, the normative implications of Austrian theory regarding the efficiency consequences of regulation are not always supported by the literature on the Progressive Era. I also discuss two ways in which Austrian theory might add to our understanding of the rise of regulation during this period. The first concerns the dynamics of how regulation evolves. The second concerns the role of entrepreneurship within the bureaucracy in shaping the evolution and enforcement of regulation.

JEL Classifications: B53, K20, K23, L51, N41, N42.

Key Words: regulation, economic history, political economy, public choice theory, Austrian economics, Progressive Era.

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Introduction

The Progressive Era witnessed a massive transformation of the role of American government in regulating economic activity. Between 1880 and 1920, local, state and federal governments in America began to regulate the quality and safety of meat, interstate transportation and shipping, product labels, the advertising and marketing of goods and services, professional standards, the prices that public utilities charged for gas and electricity, as well as competition among firms. Major federal regulations enacted during this time include the Interstate Commerce Act (1889), the Sherman Act (1890), various Meat Inspection Acts (1890, 1891, 1906), the Pure Food and Drugs Act (1906), the Federal Reserve Act (1913), and the Federal Trade Commission Act (1914). These laws as well as others spawned regulatory bodies like the Bureau of Animal Industry, the Interstate Commerce Commission, the Food and Drugs Administration, the Federal Reserve System, and the Federal Trade Commission, agencies that had an enduring influence on the US economy throughout the twentieth century. An important task for social science is to explain why government regulation expanded during this time, and to analyze its impact on the allocation of resources.

Economic historians of the Progressive Era have advanced two broad hypotheses to explain the rise of regulation during this period. The first, the so-called Public Interest Theory (PIT), posits that regulation arises to solve market failures (Francis Bator 1958; Arthur Pigou 1920). Applied to the Progressive Era, the PIT argues that technological changes during the late nineteenth century gave rise to large firms with substantial market power as well as new and unfamiliar goods and services about which there was asymmetric information. Public utility regulations, railroad regulation, antitrust legislation, meat inspection requirements, and food labeling laws were enacted to curb the monopoly power of large firms and to reduce informational asymmetries about the safety and quality of goods and services. The second, the Special Interest Theory (SIT), argues that regulation arises to advance private interests at the expense of economic efficiency (Sam Peltzman 1976; George Stigler 1971). SIT proponents argue that the technological changes that gave rise to large firms and new products during the Progressive Era created winner and losers, both of whom had an incentive to use regulation to tilt the competitive playing field in ways that were privately beneficial but socially costly. According to this perspective, railroad regulation, antitrust, meat inspection, and other regulatory initiatives adopted in this period were the product of rent-seeking by special interests that sought to use government to increase entry barriers and reduce competition, harming overall welfare.

At least in the modern economic history literature, both the PIT and the SIT view regulation through the lens of public choice theory: actors are assumed to be rational and self-interested; the logic of collective action favors smaller, homogeneous groups over larger, heterogeneous ones; politicians are vote-maximizers who supply policy (for example, regulation) in exchange for political support; and the potential for regulation to transfer wealth among groups creates opportunities for rent-seeking.¹ Additionally, in both approaches, regulation is an equilibrium outcome of changes in tastes, technology, and institutions. However, the two perspectives differ in their normative implications. Whereas the SIT posits that regulation will tend to reduce efficiency (Peltzman 1976; Richard Posner 1975; Stigler 1971), the PIT takes the view that competition among interest groups and politicians will push regulation toward improving efficiency (Gary Becker 1983; Donald Wittman 1989, 1995). Moreover, while proponents of the SIT generally argue that the market failures identified by the PIT are adequately addressed by private mechanisms or the court system, the PIT argues

¹ The original literature on the PIT simply assumes that government intervenes to solve market failures, without examining the underlying incentives of politicians and interest groups (see, for instance, Bator 1958). Since this literature is generally not historically informed and views regulation as a *deus ex machina*, I will not elaborate on it.

regulation was the best available remedy to these market failures, given the failures of the court system and the imperfections of private solutions that were prevalent during the Progressive Era (Edward Glaeser and Andrei Shleifer 2003; Shleifer 2005).

Methodologically, Austrian economics and public choice theory overlap substantially (Peter Boettke and Peter Leeson 2004; Boettke and Edward López 2002; Daniel Sutter 2002). Much of the economics literature on regulation in general, and Progressive Era regulation in particular, is therefore compatible with important aspects of Austrian theory. Conversely, scholars working within the Austrian tradition have also contributed to our understanding of the rise of Progressive Era regulation in ways that are complementary to more mainstream studies (see, for instance, Jack High and Clayton Coppin 1988, and Murray Rothbard 2017).² Austrian theory, however, is distinguished from the mainstream literature by a greater appreciation for disequilibrium and the dynamics of regulation, analyzing not only how regulation arises, but how it spawns new interest groups, who in turn push for more regulation, setting into motion a path-dependent process of regulatory evolution.³ Additionally, Austrian theory places a greater emphasis on entrepreneurs, the purposeful, individual producers, politicians, and bureaucrats who discover profit opportunities and use their unique knowledge to exploit them. Mainstream approaches, in contrast, are largely silent about disequilibrium, dynamics, and entrepreneurs, focusing instead on the interest group pressures that give rise to the adoption of particular regulations and the static gains and losses implied by these policies.

This article is structured as follows. I begin with a brief discussion of changes in the nature of the American economy and government during the late nineteenth century with the goal of identifying factors that made the Progressive Era conducive to the emergence of regulation. This is followed by a selective survey of the literature on Progressive Era regulation, using the PIT and SIT as organizing frameworks.⁴ I argue that much of this literature, which is based heavily on public choice theory, is consistent with the positive implications of Austrian theory. However, the normative implications of Austrian theory are not always supported by the literature on Progressive Era regulation, which sometimes finds that regulation improves economic efficiency. I then identify two avenues through which Austrian theory might add to our understanding of the rise of regulation. The first concerns the dynamics of how regulation creates new interest groups, and how the growth of new interest groups shapes the path of regulation. The second is the role of entrepreneurship within the bureaucracy, and how entrepreneurial bureaucrats influenced the adoption and evolution of regulatory policy. This is followed by a conclusion.

² In fact, many economists who have studied Progressive Era regulation identify with both public choice and Austrian approaches.

³ A dynamic approach to the study of regulation that considers the path-dependent nature of history is also a characteristic of the new institutional approach to economic analysis. See Douglass North (1990) for instance.

⁴ This survey will focus on three regulatory areas that were of significance during the Progressive Era, namely, food and drugs regulation, animal disease control and meat safety, and railroad regulation. This is clearly not exhaustive. Space constraints preclude me addressing the extensive literature on other Progressive Era regulations like state-level occupational licensing laws, state and federal advertising laws, state and federal antitrust regulation, municipal and state public utility regulation, and state and federal banking regulation. While this is an omission, the broad theoretical frameworks I outline here—specifically, the SIT and the PIT—are applied in all these studies. Additionally, the analysis of these other regulatory domains could potentially benefit from the Austrian insight that I identify in this paper.

US Economy and Government During the Late Nineteenth Century

The late nineteenth century was a period of significant technological and organizational change in the US economy. Westward migration, the expansion of agricultural land, and the mechanization of farming, dramatically increased agricultural output and farm labor productivity. Productivity increases in agriculture allowed labor to be reallocated to manufacturing, contributing to a rise in industrial production and urbanization. Technological changes in manufacturing and the development of new and cheaper sources of power, in turn, gave rise to large firms that were able to attain significant economies of scale in sectors like iron and steel.⁵

The growth of large firms was also facilitated by the development of the US railroad network which expanded by leaps and bounds over the course of the nineteenth century.⁶ As a consequence of competition among railroad lines, and between the railroads and other forms of transportation (i.e. canals and wagons), transportation costs fell, allowing firms to exploit economies of scale. While it is important not to overstate the macroeconomic impact of the railroad (David Donaldson and Richard Hornbeck 2016; Robert Fogel 1964), its development nevertheless influenced the geographic distribution of economic activity and the degree of urbanization. By connecting distant regions of the country, the railroad allowed goods to be shipped between the interior and the coastal cities, increasing regional specialization and urban growth (Atack, Fred Bateman, Michael Haines, and Robert Margo 2010; Hornbeck and Martin Rotemberg 2019; Sukkoo Kim 1995, 2000). Additionally, by facilitating long distance communication (the telegraph accompanied the railroad), the railroad contributed to the rise of the modern multiunit firm (Alfred Chandler 1977).

As a consequence of these as well as other developments, large multiunit firms in industries like meatpacking, food manufacturing, and oil refining gradually displaced smaller local businesses (Kim 1999). These national multiunit businesses developed new products like margarine, dressed beef, and canned foods that were sold to consumers along with long-standing, locally-produced goods like butter, locally-slaughtered meats, and fresh fruits and vegetables (Susan Strasser 1989; James Young 1989). Meanwhile, the emergence of chain stores and the rise of national newspapers and magazines changed the ways that goods and services were marketed to households (Kim 2001; Godfrey Lebhar 1963; Daniel Pope 1983).

American government also experienced a qualitative shift in the late 1800s (Stephen Skowronek 1982). During the antebellum period, government in America was small and highly decentralized. Regulation of economic activity was minimal and left primarily to local governments and their respective courts. The limited administrative functions of government required little expertise or specialized knowledge. Under the spoils system, political parties assigned government jobs to workers who were selected principally on the basis of partisan loyalties. After the Civil War, however, the locus of the regulatory activism shifted away from localities towards states and the federal government. As a result of civil service reform, the spoils system was eliminated, and a merit-based, professionalized bureaucracy gradually took over government's administrative functions, first within the federal government, and eventually at the state-level (Ronald Johnson and Gary Libecap 1994; Anirudh Ruhil and Pedro Camões 2003). Increasingly, "experts", often with university degrees, assumed important roles within this growing cadre of government employees. Along with these structural changes came new ideas about the proper role of the state, and how government could be used to aid particular interests (for instance, farmers in distress) or to solve socio-economic problems (Daniel

⁵ For a general overview of developments in agriculture and industry during this period see chapters 15 and 17 of Jeremy Atack and Peter Passell (1994) as well as Atack (1986).

⁶ The total miles of railroad track in America increased from 30 in 1830 to 55,000 in 1870 to over 160,000 by 1890. See Atack and Passell (1994, 429-430).

Rodgers 1998). Accordingly, changes in the American economic landscape during the late 1800s were accompanied by important changes in the nature of government.

The PIT and the Rise of Regulation

According to the PIT, regulation is adopted to solve market failures. Market failures like monopoly power, asymmetric information, and externalities create a potentially productive role for government (Bator 1958). Given that the late nineteenth century witnessed the expansion of large, national firms at the expense of small, local ones, as well as the introduction of new and unfamiliar goods and services, is it possible that regulation was adopted to curb the market power of large firms and reduce informational asymmetries regarding new products? And given the changes in the nature of government that occurred during this period—in particular, the rise of a professionalized civil service with expert knowledge as well as changes in attitudes about the role of the state—did government regulation become a viable mechanism for dealing with these market failures?

Early scholarship, mostly by historians, of Progressive Era regulation is somewhat consistent with this public interest perspective. These largely narrative accounts argue that the abuse of dominant position by large firms like Standard Oil, the railroads, and the large meatpackers drove the adoption of laws like the Sherman Act and the Interstate Commerce Act. Historians working from this perspective, sometimes called the “Progressive View”, have also argued that the Pure Food and Drugs Act of 1906 as well as the Meat Inspection Act of 1906 were adopted to curb food adulteration and to ensure the safety and quality of meat (John Hicks 1931; George Mowery 1958; Fred Shannon 1945).⁷ However, these accounts do not fit neatly within an economist’s conception of the PIT since the analytical framework is not explicitly one of efficiency. While concerns about, for instance, “monopoly abuses” or “product safety” play a role in their analyses, Progressive View historians see politics as a struggle between “elites” and “the people” and regulation as an attempt to curb the economic and political power of the elites over the people (John Higham 1965). Laws like the Sherman Act, the Interstate Commerce Act, or the Meat Inspection Act are perceived by these scholars not primarily as mechanisms for reducing market power or eliminating informational asymmetries (i.e. solving market failures), but as a means of restraining the political power of large corporations.

More recent scholarship by economists has argued that the rise of Progressive Era regulations like state pure food regulation, truth-in-advertising regulation, occupational licensing, and meat inspection, is consistent with the PIT (see, for instance, Zeynep Hansen and Marc Law 2006; Law 2003, 2006; Law and Kim 2005; Alan Olmstead and Paul Rhode 2015). These accounts differ from the Progressive View in the following respects. First, in this body of work, the public interest is defined in terms of economic efficiency. Second, this scholarship uses the framework of public choice theory and views regulation as the product of self-seeking behavior by organized interest groups who solve their collective action problems in order to obtain regulation (Becker 1983). Third, while these studies recognize the potential for market mechanisms and the courts to solve market failures, they argue that private solutions were, for a variety of reasons, unable to work effectively during this period. Regulation may have been the best available mechanism at the time for dealing with the market failures that were arising in a rapidly industrializing and increasingly urban economy where the courts were unwilling to punish large, politically powerful manufacturers, and

⁷ A more recent example of this approach is Elizabeth Sanders (1999), who argues that agrarian interests in combination with organized workers were major progressive constituencies in favor of railroad regulation, antitrust, and other regulatory initiatives during this period.

cheating on product quality was not easy for consumers to detect (Glaeser and Shleifer 2003).⁸ Fourth, this body of scholarship is not merely narrative but also attempts to explicitly test the PIT against alternative hypotheses using data. Finally, in some instances, there is an attempt to quantify the benefits of regulation.

Consider, the following examples as illustration. Law (2003) examines the adoption of state pure food laws, regulations aimed at requiring food manufacturers to accurately label their products. During the late nineteenth century, advances in chemistry made it possible for food manufacturers to adulterate (i.e. cheapen through the addition of impurities) their products in ways that were difficult for consumers to detect (Jesse Park Battershall 1887; Young 1989). This created a “lemons problem” (George Akerlof 1970) where asymmetric information about product quality reduced consumers’ willingness to pay for foods and resulted in adulterated products dominating the market. In such an environment, manufacturers of traditional (i.e. non-adulterated) foods as well as consumers stood to benefit from regulation compelling food manufacturers to accurately label their products. Reputation mechanisms were insufficient to induce manufacturers not to adulterate their products because food adulteration had become so sophisticated that consumers could not easily detect cheating. Additionally, as noted earlier, the court system was an ineffective arena for punishing manufacturers. State regulators, who were trained chemists, had a comparative advantage in successfully detecting adulteration and punishing firms that failed to label their wares accurately. Accordingly, in various states, a political coalition of concerned consumers (partially spearheaded by the growing home economics movement) and manufacturers of traditional foodstuffs successfully sought state-level pure food laws that required accurate labeling of product ingredients (Lorraine Swainston Goodwin 1999). Using data on food prices and food consumption at the state level, Law (2003) finds that the evidence is more consistent with the PIT than with other possible hypotheses for regulation. Additionally, the adoption of regulation at the state-level is positively correlated with proxies for the presence of traditional food manufacturers and concerned consumers.

Olmstead and Rhode’s (2015) masterful account about the Bureau of Animal Industry’s efforts to ensure the safety of meat is also consistent with the PIT. Founded in 1884, the Bureau of Animal Industry (BAI) was an organization within the US Department of Agriculture that was charged with preventing diseased animals from being used as food. Prior to the creation of the BAI, the quality and safety of meat products was regulated by a mix of state laws and court rulings. Conflicts among state laws, as well as ambiguity in court rulings about livestock inspection, gave rise to a situation where it was possible for ranchers, shippers, and meat packers to pass along diseased meat. Additionally, reputation mechanisms were insufficient to police quality. The major meat packers, notwithstanding their substantial investments in sunk capital which, theoretically, should have ensured quality, frequently sold diseased meat. Since the links between animal diseases and human health were poorly understood, consumers could not easily tell if they had been sold meat from a sick animal.

After decades of scientific investigation, and bureaucratic lobbying for stronger federal regulation, the BAI successfully eradicated a number of livestock diseases that potentially affected humans, including bovine tuberculosis, Texas fever, and hog cholera. Olmstead and Rhode show that the net benefits of the BAI’s regulatory efforts—which involved controlling the transportation of animals across state lines as well as for export, undermining state authority, and condemning property without compensation—were overwhelmingly positive. For instance, the authors estimate that the benefit-to-cost ratio of eliminating Texas fever was between 9 to 1 and 20 to 1, while the ratio for eliminating foot and mouth disease was as high

⁸ Legal historians are of the view that late nineteenth century courts were ineffective arbiters of justice, and that their judgements were often subverted by politically powerful business interests. See Lawrence Friedman (1985), Morton Horwitz (1992), and Duane Lockhard and Walter Murphy (1992).

as 40 to 1. Given that it is unlikely that these gains could have been achieved without the BAI, Olmstead and Rhode's case study is supportive of the PIT interpretation of the regulatory state.

The SIT and the Rise of Regulation

According to the SIT, regulation is the product of lobbying by special interests who seek to use the state to shift rents to themselves, generally at the expense of economic welfare. Since Stigler (1971), economists have recognized the potential for regulation to establish entry barriers that raise prices and profits of incumbent firms. The SIT therefore focusses on the potential for regulation to generate private benefits for certain groups, and the misallocation that results from this rent-seeking activity.

Historians like Gabriel Kolko (1963, 1965) were among the first to argue that Progressive Era regulation represented a triumph of special interests over the public interest. Proponents of this perspective, sometimes known as the "Revisionist View", argued that laws like the Interstate Commerce Act, the Meat Inspection Act, and the Pure Food and Drugs Act were adopted not to help the general public, but to benefit big business. In his classic study of the railroads, Kolko (1965) argued that the Interstate Commerce Act (ICA) was adopted to enforce a cartel agreement among the railroads. In other work, Kolko (1963) maintained that the 1906 Meat Inspection Act was adopted at the behest of the large Chicago packers, who wanted to enhance their export markets through mandatory government inspection. Revisionist accounts of Progressive Era regulation are therefore consistent with capture of the regulatory apparatus by large industrial firms that used the coercive powers of government to advance their own interests.

A large body of scholarship by economists also argues that regulation was adopted to benefit private interests. However, these studies differ from the Revisionist View in several important respects. First, like the modern PIT studies mentioned earlier, the SIT analyzes regulation through the lens of public choice economics, which views regulation as an equilibrium outcome in a political marketplace where organized interests must overcome their collective action problems in order to lobby successfully for policy. Second, scholars working in this vein are more nuanced in their identification of the winners and losers of regulation. In particular, unlike the Revisionist View, the modern SIT approach acknowledges that the beneficiaries of regulation need not be large industrial firms. Small firms, often the losers of technological and organizational change, have an incentive to seek regulation that tilts the competitive playing field back towards themselves (Donald Boudreaux and Thomas DiLorenzo 1993; Boudreaux, DiLorenzo, and Stephen Parker 1995; DiLorenzo 1985; Ruth Dupré 1999; Thomas Ross 1986; Alex Tabarrok 1998). Indeed, more often than not, the benefits of regulation are shared among multiple interest groups, who form a winning coalition in favor of regulation (Thomas Gilligan, William Marshall, and Barry Weingast 1989; Libecap 1992). Third, the modern SIT takes a stand on the economic efficiency consequences of regulation. In particular, it argues that regulation harms welfare and that the market failures that regulation was aimed at correcting were either absent or adequately addressed by the private sector without regulation.⁹ Finally, modern SIT studies of regulation, like modern PIT studies, often combine narrative and statistical evidence.

Gilligan et al.'s (1989) analysis of the origins of the ICA furnishes an example of this approach. As discussed earlier, the US railroad network grew substantially during the

⁹ For instance, Libecap (1992) posits that the large meat packers had no incentive to sell diseased meat because of their large investments in sunk capital, while DiLorenzo (1985) argues that since the prices for many industrial products were falling during the late nineteenth century, there is no evidence that large firms were exploiting their monopoly power. Dominick Armentano (1982) believes that the enforcement of antitrust law has historically harmed economic efficiency.

nineteenth century. While the expansion of the railroad reduced transportation costs overall, not all groups benefited. In particular, while long-haul rates fell, due to competition among the railroads as well as with canals and wagons, railroads were able to charge near-monopoly prices on short-haul routes. This situation provoked reaction among farmers in parts of the Midwest and in the western regions of states like New York and Pennsylvania, who did not benefit from competition among long-distance railroad lines, and therefore paid high prices to ship their products to eastern markets. Several states enacted laws regulating railroad rates in the 1870s and 1880s in response to politically-influential farming interests that wanted to curb the monopoly power enjoyed by railroads over short-haul routes (Mark Kanazawa and Roger Noll 1993). The railroads, in turn, challenged the constitutionality of state-level railroad rate regulation, claiming that it violated the commerce clause of the Constitution. In *Munn vs. Illinois*, the Supreme Court in 1877 upheld the authority of state governments to place “direct burdens” on private property “affected with a public interest”. However, the authority of state governments to regulate railroads engaged in interstate trade was narrowed in 1886 by the court’s decision in *Wabash, St. Louis & Pacific Railroad Company vs. Illinois*, which ruled that only the federal government had the authority to place “direct burdens” on interstate commerce (Atack and Passell 1994, 658).

Lobbying for railroad rate regulation therefore gravitated to the federal level. While, as noted earlier, scholarship by historians has focused on either a pure public interest or pure industry capture explanation for the ICA, Gilligan et al. (1989) argue that the ICA was the product of pressure from multiple interest groups. According to these authors, the ICA was not merely an attempt to reduce the monopoly power of the railroads (as Progressive historians have argued). Nor was it purely a mechanism for enforcing a cartel among the railroad companies (as Kolko believed). Instead, Gilligan et al. (1989) show that the ICA was designed to placate two politically powerful interest groups: short-haul shippers (i.e. farmers who did not benefit from competition among long-distance railroad lines) who sought lower short-haul rates, and the railroads themselves, who wanted regulation to facilitate collusion over long-haul rates. Gilligan et al. (1989) demonstrate that the bicameral nature of Congress, in particular the need to obtain majorities in both the House and the Senate, combined with the configuration of interests in the two Congressional chambers, required that railroad regulation advance the interests of the short-haul shippers as well as the railroads.

Libecap’s (1992) study of the origins of federal meat inspection and antitrust is another illustration of the SIT approach. According to Libecap, political pressure for meat inspection and antitrust emerged in response to the consolidation of the meat packing industry in Midwestern cities like Chicago. As a result of the introduction of refrigerated rail cars, it became possible to slaughter meat in the Midwest and transport beef carcasses (“dressed beef”) to eastern markets. This was significantly cheaper than shipping live cattle to eastern markets (Mary Yeager 1981). A coalition of interests, specifically, cattle raisers in western states and local slaughterhouses in eastern markets, desired meat inspection and antitrust regulation simultaneously. Cattle raisers wanted meat inspection and antitrust in order to counter claims that Midwestern cattle were diseased and to reduce the perceived monopsony power enjoyed by the large Chicago packing firms, who were among the largest purchasers of live cattle. Local slaughterhouses, meanwhile, sought the two types of regulation in order to substantiate their claims that “dressed beef” was unwholesome, and to reduce the market power enjoyed by the large Chicago packers. The centralization of the meat packing industry and its effect on the competitive playing field therefore contributed to the nearly simultaneous emergence of federal meat inspection (the 1891 Meat Inspection Act) and federal antitrust regulation (the 1890 Sherman Act).¹⁰

¹⁰ Along these lines, Werner Troesken (2002) argues that the desire to protect small, inefficient firms was a key motivation behind Senator Sherman’s advocacy of a national antitrust law. Stock market

Austrian Economics and the Rise of Regulation

To a large degree, the modern literature on the rise of the regulatory state during the Progressive Era is consistent with the positive aspects of Austrian economic theory. Austrian theory, like the public choice economics that underlies the literature on regulation, views politics as a form of exchange. Joseph Schumpeter (1942), Ludwig Mises (1945), and Friedrich Hayek (1944), for instance, wrote about rational ignorance of voters, the role of interest groups, and the problem of collective action, anticipating the ideas of scholars like Anthony Downs (1957), James Buchanan and Gordon Tullock (1962), and Mancur Olson (1965, 1982).¹¹ These ideas are central to most studies of the rise of regulation. While Austrian theory lacks a formal welfare calculus, it nevertheless shares the SIT's skepticism of regulation with respect to economic efficiency. For instance, Hayek (1944, 1945) and Israel Kirzner (1985) have argued that because it suppresses or distorts the price system in generating specific knowledge about time and place and replaces decentralized with centralized decision-making, regulation will misallocate resources. More recent scholarship like Samuel DeCanio (2015) also highlights the role of widespread voter ignorance in giving special interests an opportunity to mold regulation for private purposes.

Is Regulation Necessarily Inefficient?

Whether regulation improves or impairs economic efficiency is ultimately an empirical matter. A problem shared by many studies of regulation, including those that take an explicitly Austrian approach, is that they place too much emphasis on how particular interest groups stood to gain or lose from regulation, and too little on how regulation affected the overall allocation of resources. For instance, the fact that industry was often publicly in favor of regulation is presumed to be evidence of industry capture of the regulatory apparatus.¹² Underlying this interpretation is an assumption that if industry benefits from regulation, regulation must reflect industry capture. This assumption is problematic for two reasons.¹³ First, the fact that regulation benefits some segments of industry does not mean that other groups, for instance, consumers, do not. Indeed, regulation that solves a market failure will often be beneficial for some producers as well as some consumers, which is more consistent with a public interest interpretation of regulation than regulatory capture (Law 2003). Second, regulation inevitably advantages some producers and harms others, even within the same industry. For instance, large firms may be better positioned to absorb the fixed costs associated with regulatory compliance, which helps large firms by reducing competition from smaller ones. This need not, however, imply that the net impact of regulation on welfare is negative. Federal meat

event study evidence presented by Troesken (2000), however, indicates that the passage of the Sherman Act did not significantly harm the large trusts, unlike the state antitrust laws that preceded it. Accordingly, the trusts may have benefited from the Sherman Act to the extent that it pre-empted stronger antitrust enforcement at the state-level.

¹¹ Schumpeter (1942, 258-262) understood that voters have an incentive to be rationally ignorant about policies that do not directly affect them, and that this situation creates opportunities for interest groups and politicians to exploit voters. Hayek (1944), meanwhile, understood how the problem of concentrated benefits and diffuse costs allows special interests to obtain policies favorable for themselves. In particular, he wrote (1944, 17): "innumerable interests ... could show that particular measures would confer immediate and obvious benefits on some, while the harm they caused was much more indirect and difficult to see ...". Mises (1945/1978, 5-6) argued that policies aimed at helping one set of producers will inevitably create new special interest groups who also seek a share of the spoils. See Boettke (1995) and Boettke and Leeson (2004) for a fuller discussion of the Austrian antecedents to public choice ideas.

¹² This assumption is implicit throughout Rothbard (2017), for instance.

¹³ See Daniel Carpenter (2014) for a thorough discussion of the methodological challenges associated with detecting industry capture of regulation.

inspection, for instance, may have benefited the large meat packers and harmed smaller ones because it had a disproportionate impact on raising the costs of smaller packers and protecting the reputational capital of larger ones, but this should not be taken as evidence of capture of the BAI by large firms if inspection ultimately improved the overall functioning of the market for meat (Olmstead and Rhode 2015).¹⁴

More generally, many studies of regulation are too quick to reject the possibility of a market failure and to dismiss the potential for government regulation to improve on economic outcomes in an environment like the Progressive Era where the court system was highly politicized and private solutions to market failures also worked imperfectly.¹⁵ While regulation may, indeed, have harmed efficiency in some instances (e.g. antitrust), the evidence from the origins and effects of food labeling laws and animal disease control would suggest that that this was not always the case. Future studies of Progressive Era regulation—whether Austrian inspired or otherwise—need to take more seriously the “comparative institutionalist” insight that regulation, the court system, and market mechanisms are among many imperfect solutions to market failure, and that, in the institutional environment that characterized the Progressive Era, regulation may have sometimes been the least bad alternative (Glaeser and Shleifer 2003).

Disequilibrium and Dynamics

One way in which Austrian theory goes beyond mainstream approaches is in its concern with disequilibrium and dynamic analysis. As discussed, the SIT and PIT view regulation as an equilibrium outcome arising from changes in technology, institutions, and preferences. However, as noted by Mises (1945), anticipating Olson (1982), government regulation, by creating winners and losers, often create new special interest groups, who in turn, lobby for a different set of regulations in order to increase their rents. The result is that a given regulatory policy, once enacted, is not stationary but will change with the proliferation of new interest groups who enter the political arena with their own sets of demands.

Economic history would seem to be a fertile testing ground for this dynamic approach to understanding the political economy of regulation. Indeed, a handful of studies do incorporate these insights. Anne Krueger’s (1996) study of the evolution of the US sugar program and Bruce Benson’s (2002) analysis of the history of US trucking regulation are noteworthy examples. Both scholars find that regulation, once adopted, takes on a path-dependent life of its own as new interest groups form, and the initial policy is shaped in ways that its framers never intended. Given that much scholarship on regulation tends to look at the adoption of a given piece of regulation and then stops, there is clearly scope for more work that incorporates Austrian insights about how regulatory policy, by tilting the playing field, creates new interest groups, who, in turn, lobby for new regulation or changes in regulatory enforcement. Consider, for instance, the regulation of railroads. While the Interstate Commerce Commission (ICC)

¹⁴ Rothbard (2017, 235-241) argues that federal meat inspection benefited the large packers at the expense of the smaller ones, and takes support for the law by the large packers as evidence of industry capture, without seriously discussing the issue of diseased meat and its welfare consequences.

¹⁵ Coppin and High (1999, 31), for instance, assert that since there was no health crisis associated with adulterated food, and because the only consumers who agitated for regulation were “a small number of middle class women”, there was no public interest rationale for food regulation. This interpretation is problematic for several reasons. First, food adulteration can be a source of market failure even absent a health crisis (the issue is asymmetric information about product ingredients). Second, given the problem of collective action, it is not surprising that only a small segment of highly-motivated consumers was actively involved in the push for food regulation. Third, Coppin and High do not adequately address the evidence of widespread adulteration that was not easily detectable *ex post* (and hence not easily solved by market mechanisms) and the fact that the courts were reluctant to punish manufacturers who made false claims about product ingredients. See Law (2003).

initially favored long-haul railroads (see Gilligan et al. 1990; Robin Prager 1988), it gradually came to be captured by shippers, refusing to raise railroad rates in spite of increases in costs (Wallace Mullin 2000), eventually forcing the railroads into insolvency (Albro Martin 1971). This turn of events would not be predicted by mainstream approaches, with their emphasis on the static gains and losses arising from regulation. Accordingly, by forcing us to consider how regulation of railroad rates created an incentive for a new interest group (in this instance, long-haul shippers) to solve their collective action problem in order to push the ICC to mandate lower long-haul rates, an Austrian-inspired approach may yield a better understanding of how regulation changes over time.

Food and drugs legislation furnishes another regulatory domain that might benefit from a dynamic, Austrian analysis. As mentioned, the original purpose of regulation in this arena was to ensure the integrity of product labels (i.e. prevent adulteration and misbranding), a task that was, under the Pure Food and Drugs Act of 1906, vested in the Bureau of Chemistry, an office within the US Department of Agriculture. While drugs fell within the organization's regulatory purview, the Bureau of Chemistry's initial preoccupation was with foods. Over time, however, the focus of this organization, which was re-named the US Food, Drugs, and Insecticide Administration in 1927 (and shortened to the US Food and Drugs Administration (FDA) in 1930), shifted away from food and toward pharmaceuticals, in particular, to policing the therapeutic claims printed on product labels and in product advertising (Law 2006). As a consequence of the 1938 Food, Drugs, and Cosmetics Act and the 1962 Kefauver-Harris Drug Amendments, the agency gained gatekeeping authority over pharmaceuticals, first over safety, and subsequently over efficacy. Post 1962, no pharmaceutical product can be sold to consumers in the United States without explicit pre-market approval of safety and efficacy by the FDA. Once again, existing theories of regulation that focus on the static gains and losses from regulation cannot account for this dramatic, path-dependent, increase in regulatory authority over time nor for the shift in the FDA's focus from foods to pharmaceuticals, and from the adulteration and misbranding of products to more general concerns about safety and efficacy.

The path-dependent process through which government authority expands has been noted by Austrian scholars like Robert Higgs (1987), who argue that "crisis" events like wars and depressions create opportunities for government officials to expand their authority. According to Higgs, crisis events create a demand on the part of the public for government to "do something" to resolve the crisis. After the crisis has passed, however, the size of government does not return to its previous level because the bureaucrats and interest groups that benefit from this expansion in government activity provide political support for its continuation. Additionally, Higgs argues that because the general public is systematically misled about the true costs of the government response to the crisis, voters misperceive the net benefits of government action, which in turn generates ideological change in favor of more government intervention. As a consequence, following each crisis, the size and scope of government ratchets upwards permanently onto a higher growth path.

Higgs (1987) applies his framework primarily to federal government spending in the post-World War One period. However, one could potentially apply Higgs' model to the growth of the federal regulatory authority over time. Indeed, in the context of food and drugs regulation, it is noteworthy that the passage of each major piece of federal legislation—the 1906 Food and Drugs Act, the 1938 Food, Drugs and Cosmetics Act, and the 1962 Kefauver-Harris Drug Amendments—followed a crisis-like event. Law and Libecap (2006) and Carpenter and Gisela Sin (2007), respectively, present evidence suggesting that the flurry of muckraking journalism about the dangers of patent medicines (in 1905) and the elixir sulfanilamide tragedy (in 1937) played important roles in creating effective political constituencies in favor of the 1906 and 1938 laws, while Peter Temin (1980), Jeremy Greene and Scott Podolsky (2012) and numerous others have argued that concerns about the risks

of thalidomide made it possible for the 1962 Drug Amendments to be enacted. Did other crises—or perceptions of crisis—play a role in the rise of other regulations in America's economic past? To what extent were these crises followed by the formation of new interest groups in favor of the expansion of government authority? Are voters misled about the costs of government intervention, and does this induce ideological change in favor of more regulation? Future work should investigate the applicability of Higgs' theory as an explanation for expansions of federal authority in other regulatory domains.

Bureaucratic Entrepreneurship and the Rise of Regulation

The Austrian emphasis on entrepreneurship may also contribute to our understanding of Progressive Era regulation, in particular the role of entrepreneurs within the bureaucracy in lobbying for greater authority and in enforcing regulation. Austrian theorists like Kirzner (1997) argue that entrepreneurship, at least in the private sector, is a discovery process, specifically of previously-unnoticed profit opportunities. Randall Holcombe (2002) argues that politicians can also be viewed as Austrian entrepreneurs who find profit opportunities in political markets. Peter Klein, Joseph Mahoney, Anita McGahan, and Christos Pitelis (2010) use Austrian conceptions of entrepreneurship to develop a theory of public sector bureaucratic behavior. Accordingly, it seems worthwhile asking whether an Austrian approach to entrepreneurship sheds light on our understanding of bureaucratic behavior during the Progressive Era, especially since, as noted earlier, it was precisely during this period when a professionalized civil service took root in America.

A weakness of the regulatory literature is that, while the bureaucracy is where the “rubber hits the road” with respect to regulation, it is both under-theorized and under-evidenced, at least by mainstream economists, and seldom studied by economic historians.¹⁶ Typically, SIT and PIT studies of regulation assume the existence of a bureaucracy that has the capacity to enforce regulation in some manner, but in these studies the bureaucracy is not treated as an actor in the same way that producers, consumers, and politicians are. In the mainstream economics scholarship that does explicitly analyze the bureaucracy as an actor, one of two polar approaches is usually taken. On the one hand, the bureaucracy is viewed as its own autonomous interest group that seeks to maximize its budget (William Niskanen 1971). On the other hand, it is argued that politicians can solve their agency problem with respect to bureaucrats, and any autonomy enjoyed by the bureaucracy is merely evidence of agent-shirking that has been minimized in an optimal contract between bureaucrats and their political masters (Matthew McCubbins, Noll, and Weingast 1987; Weingast 1984; Weingast and Mark Moran 1983).¹⁷

Austrian writings on the bureaucracy share with these studies the assumption that bureaucrats are purposeful goal-oriented actors, just like ordinary consumers and producers in the marketplace. Consistent with the principal-agent literature, Mises (1944) also recognized that bureaucrats are constrained by their political masters who set rules that limit their autonomy.¹⁸ However, within these constraints, bureaucrats form coalitions with interest groups, and selectively choose and implement policies and regulations in order to gain power and prestige, a process that is facilitated by the informational advantage they possess over

¹⁶ A notable exception is Johnson and Libecap (1994) who examine the origins and evolution of the federal civil service system from the late nineteenth century to the present day, with a specific focus on the rise of the civil service as its own interest group.

¹⁷ Pablo Spiller (1990) takes a more intermediate position.

¹⁸ “Bureaucratic management is management bound to comply with detailed rules and regulations fixed by the authority of a superior body. The task of the bureaucrat is to perform what these rules and regulations order him to do. His discretion to act according to his own best conviction is seriously restricted by them ...” (Mises 1944, 48).

the politicians who oversee them (Albert Breton and Ronald Wintrobe 1982). In a sense, they are much like Austrian entrepreneurs in the private sector who discover previously unexploited profit opportunities. However, in the Misesan approach, there is a presumption that because decision-making within the bureaucracy “cannot be checked by economic calculation”, the bureaucracy is ultimately a source of inefficiency (Mises 1944, 48). Similarly, Klein et al. (2010, 4) argue that, because bureaucrats cannot use “privately appropriated benefits as a criterion for success” (i.e. they are not true residual claimants), and are subject to weaker competitive forces than private sector entrepreneurs, there is no guarantee that bureaucratic entrepreneurship will promote efficient outcomes. The tendency towards inefficiency is also reinforced by the fact that bureaucratic output and government policy objectives are not easily measured, and bureaucrats are constrained by their political superiors in ways that private sector entrepreneurs are not (Klein et al. 2010; James Wilson 1989).¹⁹ This is in contrast with private sector entrepreneurship, where residual claimant status, strong competitive forces, the absence of politically-imposed constraints, and the existence of relative prices as an objective source of information about value, lead to the discovery of new profit opportunities, cost savings, and innovative products that improve overall economic welfare.

Carpenter’s (2001) authoritative study of the expansion of bureaucratic autonomy during the Progressive Era would suggest that neither of the mainstream approaches is entirely adequate. On the one hand, the budget-maximizing theory of bureaucracy suffers from a problem of observational equivalence. Growth of the regulatory bureaucracy is consistent with budget maximization by an agency that is able to exploit its bargaining position vis à vis its political overseers, but it is also consistent with a regulatory agency that is granted additional authority and resources precisely because it has successfully solved some kind of market failure. The principal-agent approach, on the other hand, takes too narrow a view of the relationship between politicians and bureaucrats. According to McCubbins et al. (1987), politicians set the agenda and design institutions to ensure that their bureaucratic agents do their bidding. A problem with this perspective is that it ignores the fact that bureaucrats, by developing expertise and building networks, are often able to shape the political agenda by influencing the preferences of not only the public but also their political masters. The Austrian approach, in contrast, which recognizes the role of entrepreneurial competition among bureaucrats who are able to build coalitions in favor of their preferred policies and use their informational advantage to select policies that advance their own agendas, perhaps comes closest to capturing the behavior of the Progressive Era regulators described by Carpenter (2001), but the Austrian presumption that bureaucratic decision making must result in inefficiency is not always warranted.

Consider, for instance, the expansion of the regulatory ambit of the Bureau of Chemistry within the Department of Agriculture and the origins of the Pure Food and Drugs Act of 1906, a story that, in Carpenter’s (2001) telling, is illustrative of bureaucratic autonomy arising as a result of expertise and coalition formation. As one of the first scientific agencies within the federal government, the Bureau of Chemistry, under the direction of Dr. Harvey Wiley, undertook numerous studies of the nature and consequences of food adulteration, eventually developing a national reputation for expertise in this area. Notwithstanding the evidence of widespread food adulteration, industry opposition to federal regulation was intense and several pure food bills failed to be enacted by Congress. Wiley thus embarked upon a coalition-building exercise, gaining the support of a variety of interest groups, including the Women’s Christian Temperance Union, the National Consumers’ League, and even the American Medical Association. These efforts shaped the preferences and agendas of political

¹⁹ For related reasons, there is a presumption among Austrian theorists that entrepreneurship among politicians will tend to favor predatory over productive outcomes. See Holcombe (2002) for a fuller discussion.

officials, who eventually acquiesced with the enactment of the 1906 law.²⁰ Accordingly, Carpenter's analysis suggests that neither the budget-maximizing theory, with its merely self-serving view of bureaucratic objectives, nor the agency theory, with its emphasis on political control of bureaucratic behavior, are adequate to explain the expansion of federal regulatory authority over food purity.

A similar story can be told for the growth of regulatory authority under the BAI, another one of the first scientific agencies within the federal government (Olmstead and Rhode 2015). Officials within the BAI were among the first to undertake scientific studies of cattle diseases and their relationship with food safety. The agency leveraged its expertise over cattle diseases to build a political constituency in favor of stricter regulation and greater federal authority over the inspection and transportation of meat. This increase in authority was not granted overnight, but arose in dribs and drabs, more often than not in spite of intense opposition from industry groups as well as politicians. By the early decades of the twentieth century, however, the BAI gained substantial authority over the interstate transport of meat products, and industry eventually became willing to comply with BAI rules. The agenda and policy preferences of the industry, the public, and politicians over meat safety were therefore perhaps more influenced by the bureaucrats within the BAI than the other way around, and as demonstrated by Olmstead and Rhode (2015), the net impact of the BAI's enforcement efforts on welfare was overwhelmingly positive.

Regulators like Dr. Wiley at the Bureau of Chemistry or his counterparts at the BAI were truly Austrian entrepreneurs: purposeful individuals seeking to take advantage of "profit opportunities" created by incomplete markets (in these instances, asymmetric information about food ingredients or meat safety). However, unlike ordinary entrepreneurs who create new products and discover cost savings, bureaucratic entrepreneurs build political coalitions in favor of new policies and enforce those policies. Additionally, while ordinary entrepreneurs are motivated by the pursuit of economic profit, the bureaucratic entrepreneur's objective function is less obvious. Carpenter (2001) suggests that individuals like Wiley were "reputation maximizers" but this is not an objective function that is easy to operationalize. Mises (1944) argues that bureaucrats seek power and prestige, but what that entails remains vague as well. What is apparent, however, is that, bureaucratic entrepreneurs played a key role in shaping the regulatory agenda during the Progressive Era, and that a better understanding of the causes and consequences of regulation will require a greater focus on their activities.

More light might be shed on bureaucratic behavior through an analysis of another important but under-studied aspect of regulation, namely regulatory enforcement. Relatively few economic historians have examined the nuts and bolts of how regulation, once enacted, is actually enforced. This is an important omission, since the effectiveness of regulation and its impact on economic outcomes depends critically on enforcement. Law's (2006) analysis of enforcement of the Pure Food and Drugs Act during the first three decades of the twentieth century is among the few studies of regulatory enforcement during the Progressive Era.²¹ In

²⁰ Wiley's entrepreneurship in building a coalition in favor of national food regulation and ensuring that his agency, the Bureau of Chemistry, was granted enforcement authority, has also been analyzed by Coppin and High (1999). However, as discussed in footnote 15, Coppin and High take the view that there was no failure in the market for foods. Accordingly, in their view, Wiley's entrepreneurial efforts were entirely self-serving.

²¹ Coppin and High (1999) analyze the first few years of enforcement of the 1906 Pure Food and Drugs Act and argue that, under Wiley, the Bureau of Chemistry (which became the FDA) selectively enforced the law to reward firms and industries that supported Wiley's efforts to secure federal food regulation and harm those that did not. Additionally, they argue that Wiley's enforcement efforts often reflected his own peculiar perspective about what constituted "purity". Wiley's impact on enforcement, however, was relatively short-lived, as he resigned from the agency in 1912. Subsequent leaders of the agency turned out to be more successful and neutral enforcers of the law who did not share Wiley's idiosyncratic views. See Law (2006).

this study, Law (2006) finds that, although the Pure Food and Drugs Act was difficult to enforce through the courts, the fledging FDA was quite successful in helping firms improve the reliability and safety of their products.²² In particular, by offering technical assistance to food manufacturers in ways to reduce spoilage, and providing them with quality certification services, the young FDA leveraged its early-established expertise in food chemistry to obtain regulatory compliance from food processing and manufacturing firms even though it was a very small, budget-constrained agency. It is significant that this “advisory approach” to regulatory enforcement was not specified by the Pure Food and Drugs Act (i.e. nothing in the law required the agency to offer advisory services to firms in the way of technical assistance or quality certification). Rather, it was an agency innovation, an example of bureaucratic entrepreneurship built upon the FDA’s science-based reputation. In this setting, the FDA’s efforts to enforce a law designed to reduce informational asymmetries in the market for foods benefited both producers and consumers of manufactured foodstuffs and played an important role in improving the reputation of canned and processed foods in the US. Had the agency been less entrepreneurial and more constrained in its enforcement role to merely prosecuting violators in the courts, it is doubtful that it would have been as successful obtaining regulatory compliance from industry.

Of course, there is no guarantee that entrepreneurship on the part of the bureaucracy will lead to benign outcomes as identified by Carpenter (2001), Law (2006) and Olmstead and Rhode (2015) in the case of the food and drugs regulation or regulations regarding animal disease control and meat safety. In other domains, for instance antitrust, regulatory enforcement may have had negative consequences for economic welfare (Armentano 1982), vindicating the Austrian view that bureaucratic management will misallocate economic resources. What then accounts for bureaucratic successes of the early FDA and the BAI? One possible explanation is that regulators at the early FDA and BAI actually possessed a comparative advantage in knowledge production and information during this time. Misesian and Hayekian arguments about the inevitable failure of government planning rest on the assumption that private actors possess information and knowledge that government actors do not. This assumption may not be valid in these specific cases since, as noted earlier, both the early FDA and the BAI were on the cutting edge of knowledge production about sanitary practices in meatpacking and quality control in food manufacturing. Accordingly, future analyses of bureaucratic behavior should take seriously the Austrian insight that access to specific knowledge is essential for rational economic calculation, without making the Austrian assumption that only private actors can possess this knowledge.

Another explanation for the success of these agencies may be that they were relatively insulated from political influence. There is a tradition in public administration that argues that government agencies work best when they are “above politics”.²³ One mechanism through which agencies gain independence is through a reputation for expertise or professionalism. Politicians may find it harder to meddle with regulators who have a reputation as expert public servants in a given policy domain. The history of food and drugs regulation and meat inspection suggests that the early bureaucrats at the FDA and BAI had successfully cultivated this reputation through their entrepreneurial activities as coalition builders, which may have afforded them the autonomy to act on their specialist knowledge without having to be too concerned with the political consequences.²⁴ An important task for future scholars is to identify

²² As mentioned earlier, enforcement of the Pure Food and Drugs Act was initially vested in the Bureau of Chemistry, an agency within the US Department of Agriculture.

²³ Gary Miller (2000) and Miller and Andrew Whitford (2016), for instance, argue that the effectiveness of bureaucracy requires it to be insulated from political influence.

²⁴ Carpenter (2010) argues that the FDA’s reputation for scientific expertise, which it carefully cultivated over the course of the twentieth century, enabled the agency to wield considerable power

how bureaucratic expertise, knowledge, entrepreneurship, and the overall political environment interact to shape the effectiveness of bureaucracy and its impact on economic outcomes in other regulatory domains.

Conclusion

This article selectively surveys the economic history literature on the rise of regulation in America during the Progressive Era with the goal of identifying how this literature is informed by Austrian theory, and how Austrian theory might contribute to a deeper understanding of the origins and growth of the regulatory state. I argue that much of the existing literature on the origins of Progressive Era regulation is consistent with the positive implications of Austrian economic theory. Austrian economics complements and overlaps with public choice theory, the set of analytical tools that underlies most of the modern economic history literature on the rise of regulation. Additionally, a large body of scholarship, taking its cue from the special interest theory of regulation, argues that Progressive Era regulation benefited private interests at the expense of economic welfare. This normative view of regulation is shared by Austrian theory, which argues that regulation, by replacing the decentralized decision-making of the price system with centralized and hierarchical control, distorts resource allocation and harms efficiency. Whether or not Progressive Era regulation was a net positive or negative for economic performance is ultimately an empirical matter, for which the evidence remains mixed. More detailed empirical studies of the impact of regulation on economic outcomes that take account of the imperfections of alternative solutions to market failure—whether private, court-based, or regulatory—are therefore needed for a complete assessment of whether the normative implications of the Austrian view are supported.

I identify two areas in which Austrian theory might add to our understanding of Progressive Era regulation. The first concerns the dynamics of regulatory evolution. An important insight from Austrian theory is that regulation, once enacted, will facilitate the formation of new interest groups, who, in turn, will demand further regulation. Given that much of the regulatory apparatus created during the Progressive Era remained in place throughout the twentieth century and even beyond, an important task for future scholars is to use these insights to analyze the evolution of regulation over time. The second deals with the role of the bureaucracy, in particular, the impact of entrepreneurs within the regulatory bureaucracy. Mainstream economic theories of bureaucratic behavior are insufficiently nuanced to account for the expansion of regulatory authority over a wide range of regulatory domains during the Progressive Era. In particular, they are unable to account for how bureaucratic entrepreneurs were able to build political coalitions and exploit their expertise to shape the preferences of their political masters and the voting public, and how these regulatory entrepreneurs contributed to the growth and enforcement of regulation. A careful analysis of the bureaucracy that takes seriously Austrian insights regarding entrepreneurship, information, and knowledge production has the potential to generate important insights regarding the successes and failures of regulation in America's past.

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over the American pharmaceutical industry, and contributed to the FDA becoming the most powerful regulatory agency in the world.

Works Cited

- Akerlof, George A. 1970. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84 (3): 488-500.
- Armentano, Dominick T. 1982. *Antitrust and Monopoly: Anatomy of a Policy Failure*. New York: John Wiley and Sons.
- Atack, Jeremy. 1986. "Firm Size and Industrial Structure in the United States during the Nineteenth Century." *Journal of Economic History* 46 (2): 463-475.
- Atack, Jeremy, Fred Bateman, Michael Haines, and Robert Margo. 2010. "Did Railroads Induce or Follow Economic Growth: Urbanization and Population Growth in the American Midwest." *Social Science History* 34 (2): 171-197.
- Atack, Jeremy and Peter Passell. 1994. *A New Economic View of American History*. Second Edition. New York: W.W. Norton.
- Bator, Francis. 1958. "Anatomy of Market Failure." *Quarterly Journal of Economics* 72 (3): 351-371.
- Battershall, Jesse Park. 1887. *Food Adulteration and Its Detection*. New York: E. and F.N. Spon.
- Becker, Gary. 1983. "A Theory of Competition among Pressure Groups for Political Influence." *Quarterly Journal of Economics* 98 (3): 371-400.
- Benson, Bruce. 2002. "Regulatory Disequilibrium and Inefficiency: The Case of Trucking Regulation." *Review of Austrian Economics* 15 (2): 229-255.
- Boettke, Peter J. 1995. "Hayek's *The Road to Serfdom* Revisited: Government Failure in the Argument Against Socialism." *Eastern Economic Journal* 21 (1): 7-26.
- Boettke, Peter J. and Peter T. Leeson. 2004. "An 'Austrian' Perspective on Public Choice." In *Encyclopedia of Public Choice*, edited by Charles Rowley and Friedrich Schneider, 351-356. Boston: Kluwer.
- Boettke, Peter J. and Edward J. López. 2002. "Austrian Economics and Public Choice." *Review of Austrian Economics* 15 (2): 111-119.
- Boudreaux, Donald J. and Thomas J. DiLorenzo. 1993. "The Protectionist Roots of Antitrust." *Review of Austrian Economics* 6 (2): 81-96.
- Boudreaux, Donald J., Thomas J. DiLorenzo, and Stephen Parker. 1995. "Antitrust Before the Sherman Act." In *The Causes and Consequences of Antitrust*, edited by Fred S. McChesney and William F. Shughart, 255-270. Chicago: University of Chicago Press.
- Breton, Albert and Ronald Wintrobe. 1982. *The Logic of Bureaucratic Conduct*. Cambridge: Cambridge University Press.
- Buchanan, James, and Gordon Tullock. 1962. *The Calculus of Consent: The Logical Foundations of Constitutional Democracy*. Ann Arbor, MI: University of Michigan Press.
- Carpenter, Daniel P. 2001. *The Forging of Bureaucratic Autonomy: Reputation, Networks, and Policy Innovation in Executive Agencies, 1862-1928*. Princeton, NJ: Princeton University Press.
- Carpenter, Daniel P. 2010. *Reputation and Power: Organizational Image and Pharmaceutical Regulation at the FDA*. Princeton, NJ: Princeton University Press.
- Carpenter, Daniel P. 2014. "Detecting and Measuring Capture." In *Preventing Regulatory Capture: Special Interest Influence and How to Limit It*, edited by Daniel Carpenter and Davis A. Moss, 57-68. Cambridge: Cambridge University Press.
- Carpenter, Daniel P. and Gisela Sin. 2007. "Policy Tragedy and the Emergence of Regulation: The Food, Drug, and Cosmetics Act of 1938." *Studies in American Political Development* 21 (1): 149-180.
- Chandler, Alfred. 1977. *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Belknap Press of Harvard University.

- Coppin, Clayton A. and Jack High. 1999. *The Politics of Purity: Harvey Washington Wiley and the Origins of Federal Food Policy*. Ann Arbor, MI: University of Michigan Press.
- DeCanio, Samuel. 2015. *Democracy and the Origins of the American Regulatory State*. New Haven, CT: Yale University Press.
- DiLorenzo, Thomas J. 1985. "The Origins of Antitrust: An Interest Group Perspective." *International Review of Law and Economics* 5: 73-90.
- Donaldson, David and Richard Hornbeck. 2016. "Railroads and American Economic Growth: A Market Access Approach." *Quarterly Journal of Economics* 131 (2): 799-858.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Dupré, Ruth. 1999. "If It's Yellow, It Must Be Butter: Margarine Regulation in North America since 1886." *Journal of Economic History* 59 (2): 353-371.
- Fogel, Robert. 1964. *Railroads and Economic Growth: Essays in Econometric History*. Baltimore, MD: Johns Hopkins University Press.
- Friedman, Lawrence M. 1985. *A History of American Law*. New York: Simon and Schuster.
- Gilligan, Thomas W., William J. Marshall, and Barry R. Weingast. 1989. "Regulation and the Theory of Legislative Choice: The Interstate Commerce Act of 1887." *Journal of Law and Economics* 32 (1): 35-61.
- Gilligan, Thomas W., William J. Marshall, and Barry R. Weingast. 1990. "The Economic Incidence of the Interstate Commerce Act of 1887: A Theoretical and Empirical Analysis of the Short-Haul Pricing Constraint." *RAND Journal of Economics* 21 (2): 189-210.
- Glaeser, Edward and Andrei Shleifer. 2003. "The Rise of the Regulatory State." *Journal of Economic Literature* 41 (2): 401-425.
- Goodwin, Loraine Swainston. 1999. *The Pure Food, Drink, and Drug Crusaders, 1879-1914*. Jefferson, NC: McFarland.
- Greene, Jeremy A. and Scott H. Podolsky. 2012. "Reform, Regulation, and Pharmaceuticals: The Kefauver-Harris Amendments at 50." *New England Journal of Medicine* 367 (16): 1481-1483.
- Hansen, Zeynep K. and Marc T. Law. 2008. "The Political Economy of Truth-in-Advertising Regulation." *Journal of Law and Economics* 51 (2): 251-269.
- Hayek, Friedrich A. 1944. *The Road to Serfdom*. Chicago: University of Chicago Press.
- Hayek, Friedrich A. 1945. "The Use of Knowledge in Society." *American Economic Review* 35 (4): 519-530.
- Hicks, John D. 1931. *The Populist Revolt: A History of the Farmer's Alliance and the People's Party*. Minneapolis, MN: University of Minnesota Press.
- Higgs, Robert. 1987. *Crisis and Leviathan: Critical Episodes in the Growth of American Government*. New York: Oxford University Press.
- High, Jack and Clayton A. Coppin. 1988. "Wiley and the Whiskey Industry: Strategic Behavior in the Passage of the Pure Food Act." *Business History Review* 62 (2): 286-309.
- Higham, John. 1965. *History: Professional Scholarship in America*. New York: Harper Torchbooks.
- Holcombe, Randall G. 2002. "Political Entrepreneurship and the Democratic Allocation of Economic Resources." *Review of Austrian Economics* 15 (2): 143-159.
- Hornbeck, Richard and Martin Rotemberg. 2019. "Railroads, Reallocation, and the Rise of American Manufacturing." NBER Working Paper No. 26594.
- Horwitz, Morton. 1992. *The Transformation of American Law, 1870-1960*. Oxford: Oxford University Press.
- Johnson, Ronald N. and Gary D. Libecap. 1994. *The Federal Civil Service System and the Problem of Bureaucracy*. Chicago: University of Chicago Press.
- Kanazawa, Mark and Roger Noll. 1993. "The Origins of State Railroad Regulation: The Illinois Constitution of 1870." In *The Regulated Economy: A Historical Approach to Political*

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- Economy*, edited by Claudia Goldin and Gary Libecap, 13-51. Chicago: University of Chicago Press.
- Kim, Sukkoo. 1995. "The Expansion of Markets and the Geographic Distribution of Economic Activity: Trends in US Manufacturing Structure, 1860-1987." *Quarterly Journal of Economics* 110 (4): 881-908.
- Kim, Sukkoo. 1999. "The Rise of Multiunit Firms in US Manufacturing." *Explorations in Economic History* 36 (4): 360-386.
- Kim, Sukkoo. 2000. "Urban Development in the United States, 1690-1990." *Southern Economic Journal* 66 (4): 855-880.
- Kim, Sukkoo. 2001. "Markets and Multiunit Firms from an American Historical Perspective." In *Multiunit Organization and Multimarket Strategy (Advances in Strategic Management, Vol. 18)*, edited by Joel A.C. Baum, and Henrich R. Greve, 305-326. Bingley, UK: Emerald Group Publishing Limited.
- Kirzner, Israel. 1985. *Competition and the Discovery Process*. Chicago: University of Chicago Press.
- Kirzner, Israel. 1997. "Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach." *Journal of Economic Literature* 35 (1): 60-85.
- Klein, Peter G., Joseph T. Mahoney, Anita M. McGahan, Christos N. Pitelis. 2010. "Toward a Theory of Public Entrepreneurship." *European Management Review* 7: 1-15.
- Kolko, Gabriel. 1963. *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916*. New York: Free Press.
- Kolko, Gabriel. 1965. *Railroads and Regulation, 1877-1916*. Westport, CT: Greenwood.
- Krueger, Anne O. 1996. "The Political Economy of Controls: American Sugar." In *Empirical Studies in Institutional Change*, edited by Lee Alston, Thráinn Eggertsson, and Douglass C. North, 169-218. Cambridge: Cambridge University Press.
- Law, Marc T. 2003. "The Origins of State Pure Food Regulation." *Journal of Economic History* 63 (4): 1103-1130.
- Law, Marc T. 2006. "How do Regulators Regulate? Enforcement of the Pure Food and Drugs Act, 1907-38." *Journal of Law, Economics, and Organization* 22 (2): 459-489.
- Law, Marc T. and Sukkoo Kim. 2005. "Specialization and Regulation: The Rise of Professionals and the Emergence of Occupational Licensing Regulation." *Journal of Economic History* 65 (3): 723-756.
- Law, Marc T. and Gary D. Libecap. 2006. "The Determinants of Progressive Era Reform: The Pure Food and Drugs Act of 1906." In *Corruption and Reform: Lessons from America's Economic History*, edited by Edward Glaeser and Claudia Goldin, 319-342. Chicago: University of Chicago Press.
- Lebhar, Godfrey M. 1963. *Chain Stores in America, 1859-1962*. Clinton, MA: Colonial Press Inc.
- Libecap, Gary D. 1992. "The Rise of the Chicago Packers and the Origins of Meat Inspection and Antitrust." *Economic Inquiry* 30 (2): 242-262.
- Lockhard, Duane and Walter F. Murphy. 1992. *Basic Cases in Constitutional Law*. Washington DC: CQ Press.
- Martin, Albro. 1971. *Enterprise Declined: The Origins and Decline of American Railroads*. New York: Columbia University Press.
- McCubbins, Matthew D., Roger G. Noll, and Barry R. Weingast. 1987. "Administrative Procedures of Instruments of Political Control." *Journal of Law, Economics, and Organization* 3 (2): 247-277.
- Miller, Gary J. 2000. "Above Politics: Credible Commitment and Efficiency in the Design of Public Agencies." *Journal of Public Administration, Research, and Theory* 10 (2): 289-324.

- Miller, Gary J. and Andrew B. Whitford. 2016. *Above Politics: Bureaucratic Discretion and Credible Commitment*. Cambridge: Cambridge University Press.
- Mises, Ludwig. 1944. *Bureaucracy*. New Haven, CT: Yale University Press.
- Mises, Ludwig. 1945. "The Clash of Group Interests." Reprinted in *The Clash of Group Interests and Other Essays by Ludwig Von Mises*, edited by Richard Eberling (1978), 1-12. New York: The Center for Libertarian Studies.
- Mowery, George E. 1958. *The Era of Theodore Roosevelt, 1900-1912*. New York: Harper.
- Mullin, Wallace P. 2000. "Railroad Revisionists Revisited: Stock Market Evidence from the Progressive Era." *Journal of Regulatory Economics* 17 (1): 25-47.
- Niskanen, William. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton.
- North, Douglass C. 1990. *Institutions, Institutional Change, and Economic Performance*. Cambridge: Cambridge University Press.
- Olmstead, Alan L. and Paul W. Rhode. 2015. *Arresting Contagion: Science, Policy, and Conflicts Over Animal Disease Control*. Cambridge, MA: Harvard University Press.
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Olson, Mancur. 1982. *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*. New Haven, CT: Yale University Press.
- Peltzman, Sam. 1976. "Towards a More General Theory of Regulation." *Journal of Law and Economics* 19 (2): 211-240.
- Pigou, Arthur C. 1920. *The Economics of Welfare*. London: Macmillan.
- Pope, Daniel. 1983. *The Making of Modern Advertising*. New York: Basic Books.
- Posner, Richard A. 1975. "The Social Costs of Monopoly and Regulation." *Journal of Political Economy* 83 (4): 807-828.
- Prager, Robin A. 1988. "Using Stock Price Data to Measure the Effects of Railroad Regulation: The Interstate Commerce Act and the Railroad Industry." *RAND Journal of Economics* 20 (2): 280-290
- Rodgers, Daniel T. 1998. *Atlantic Crossings: Social Politics in a Progressive Age*. Cambridge, MA: Harvard University Press.
- Ross, Thomas W. 1986. "Store Wars: The Chain Tax Movement." *Journal of Law and Economics* 29 (1): 125-137.
- Rothbard, Murray N. 2017. *The Progressive Era* (edited by Patrick Newman). Auburn, AL: Mises Institute.
- Ruhil, Anirudh V.S. and Pedro J. Camões. 2003. "What Lies Beneath: The Political Roots of State Merit Systems." *Journal of Public Administration Research and Theory* 13 (1): 27-42.
- Sanders, Elizabeth. 1999. *Roots of Reform: Farmers, Workers, and the American State, 1877-1917*. Chicago: University of Chicago Press.
- Schumpeter, Joseph A. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper and Row.
- Shannon, Fred A. 1945. *The Farmer's Last Frontier: Agriculture, 1860-1897*. New York: Farrar and Rinehart.
- Shleifer, Andrei. 2005. "Understanding Regulation." *European Financial Management* 11 (4): 439-451.
- Skowronek, Stephen. 1982. *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920*. New York: Cambridge University Press.
- Spiller, Pablo T. 1990. "Politicians, Interest Groups, and Regulators: A Multiple-Principals Agency Theory of Regulation, or 'Let Them Be Bribed.'" *Journal of Law and Economics* 33 (1): 65-101.

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- Stigler, George. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science* 2 (1): 3-21
- Strasser, Susan. 1989. *Satisfaction Guaranteed*. Washington, DC: Smithsonian Institution Press.
- Sutter, Daniel. 2002. "The Democratic Efficiency Debate and Definitions of Political Equilibrium." *Review of Austrian Economics* 15 (2): 199-209.
- Tabarrok, Alex. 1998. "The Separation of Commercial and Investment Banking: The Morgans vs. the Rockefellers." *Quarterly Journal of Austrian Economics* 1 (1): 1-18.
- Temin, Peter. 1980. *Taking Your Medicine: Drug Regulation in the United States*. Cambridge, MA: Harvard University Press.
- Troesken, Werner. 2000. "Did the Trusts Want a Federal Antitrust Law? An Event Study of State Antitrust Enforcement and Passage of the Sherman Act." In *Public Choice Interpretations of American Economic History*, edited by Jac C. Heckelman, John C. Moorhouse, and Robert M. Whaples, 77-104. New York: Kluwer Academic Publishers.
- Troesken, Werner. 2002. "The Letters of John Sherman and the Origins of Antitrust." *Review of Austrian Economics* 15 (4): 275-296.
- Weingast, Barry R. 1984. "The Congressional-Bureaucratic System: A Principal Agent Perspective (with Applications to the SEC)." *Public Choice* 44 (1): 147-191.
- Weingast, Barry R. and Mark J Moran. 1983. "Bureaucratic Discretion or Congressional Control? Regulatory Policymaking by the Federal Trade Commission." *Journal of Political Economy* 91 (5): 765-800.
- Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books.
- Wittman, Donald. 1989. "Why Democracies Produce Efficient Results." *Journal of Political Economy* 97 (6): 1395-1424.
- Wittman, Donald. 1995. *The Myth of Democratic Failure: Why Political Institutions Are Efficient*. Chicago: University of Chicago Press.
- Yeager, Mary. 1981. *Competition and Regulation: The Development of Oligopoly in the Meat Packing Industry*. Greenwich, CT: JAI Press.
- Young, James Harvey. 1989. *Pure Food: Securing the Federal Food and Drugs Act of 1906*. Princeton, NJ: Princeton University Press.