

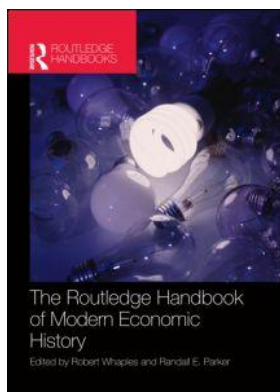
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## 8

# ECONOMIC HISTORY AND COMPETITION POLICY

*Werner Troesken*

This chapter considers the economic history of competition policy in the United States. The discussion is organized around five historical moments: the pre-1880 period; the creation of the Interstate Commerce Commission (ICC) in 1887; the passage of the Sherman Antitrust Act in 1890; the rise of municipally owned utilities and state utility commissions during the nineteenth and early twentieth centuries; and the privatization and deregulation movement of the 1970s and 1980s.

### **Antecedents of modern competition policy**

The American marketplace before 1880 is sometimes characterized as “cowboy capitalism,” a time and place where trade and economic activity was free and unfettered. This is correct only to the extent that one equates regulation with federal activity. Before 1880, most regulation occurred at the state and local level. Municipal governments, for example, regulated everything from the location of marketplaces to interest rates and prices. Laws regulating the location of trade sometimes had a public health rationale or were intended to prevent offensive trades, such as the slaughter of raw meat and the processing of offal, from adversely affecting nearby property owners. At the state level, governments passed bankruptcy laws, mortgage moratoria (usually declared unconstitutional), and other measures protecting farmers and debtors. Later, state laws regulated railroads and corporations (Hughes 1991; Novak 1996).

These state and local measures are sometimes interpreted as ineffectual and irrelevant, and there is some evidence to support such interpretations. For example, state-level antitrust enforcement appears to have been ineffective, though many large industrial enterprises were initially quite fearful of it, with stock prices plummeting on the announcement of prosecution (Troesken 1995). Yet in an era of (relatively) localized markets, a regulatory structure that devolved power to state and local governments might well have made economic sense. In addition, the development of state incorporation laws during this period facilitated the expansion of business and financial markets, and undermined the political corruption associated with the granting of special corporate charters (Bodenhorn 2006; Wallis 2005, 2006). There is also evidence that state regulatory regimes facilitated the development of the early telegraph industry (Nonnenmacher 2001).

## **The creation of the interstate commerce commission and the rise of the modern regulatory state**

A convenient place to start the history of modern competition policy is with the passage of the Interstate Commerce Act (ICA) in 1887. Creating the ICC, the ICA sought to control the rates and competitive practices of interstate railroads. For a long time, traditional histories of the ICA and the ICC portrayed federal regulation of the railroads as a benevolent and rational measure that benefited farmers and other shippers. That story was based largely on four observations. First, state governments could not effectively control the rates charged by interstate railways because they were barred by the federal Constitution from interfering with economic activities that crossed state lines (Hovenkamp 1988). This constitutional obstacle was highlighted in *Wabash v. Illinois* (118 U.S. 557 1886).

Second, during the rapid inflation that accompanied the First World War, the ICC did not allow railroad rates to keep pace with the rising price level, and many private railroads were ruined (Martin 1971). One might interpret this as evidence that shippers had the upper hand at the ICC. Third, prior to federal regulation, there was greater competition on long-haul routes than on short-haul routes, giving rise to the paradoxical result that it could cost farmers more to ship short distances than long ones. Fourth, relative to agricultural commodity prices, railway rates were rising over the late nineteenth century and shipping costs could represent as much as 50 per cent of the final price of agricultural commodities (Higgs 1970). Given all this, it is easy to see why farmers might have pushed for more aggressive federal regulation.

But, starting in the 1960s, historians began questioning the traditional narrative that federal railroad regulation was all about protecting the well-being of farmers. Kolko (1965), for example, presented evidence that the railroads themselves wanted federal regulation partly as a means of helping forestall more hostile laws at the state level and of helping long-haul railroads collude. During the 1980s and 1990s, economic studies emerged to support this hypothesis. Based on event study methods, these analyses showed that the stock prices of railroads responded positively to the passage of the ICA and to subsequent court decisions affirming its regulatory powers (Binder 1985; Prager 1989). Presumably, if the ICC was designed to protect the interests of shippers, and not the railroads, stock prices would have fallen with passage of the measure. Evidence on how the ICC affected consumer welfare is mixed; depending on how one specifies the demand function, one can find either positive or negative effects on consumer welfare (Zerbe 1980; Winston 1981).

## **The origins and effects of federal antitrust enforcement**

Modern antitrust enforcement began with passage of the Sherman Antitrust Act in 1890, the nation's first federal antitrust statute. Scholars typically appeal to one of three interpretations to explain why the Sherman Act was passed. First, the public-interest interpretation portrays the Sherman Act as a response to broad societal dissatisfaction with the trust movement. As evidence, Thorelli (1955: 133–43) points to the large number of books and articles by contemporary writers criticizing the trust movement. Further evidence for the public-interest interpretation comes from Bork (1966). Bork argues that Congressional debates over the Sherman Act reveal a clear legislative desire to promote consumer interests. In addition, scholars advancing the public-interest interpretation often emphasize the importance of populist farmers and agrarian agitation. As evidence, they cite the many petitions Congress received from farm groups requesting an antitrust law (Letwin 1965: 66–9; Thorelli 1955: 143–5).

These sources of evidence are problematic. The surveys of public opinion cited by Thorelli have been challenged by Galambos (1975), a more recent and systematic study. Surveying a broad cross section of publications from 1880 through 1940, Galambos identifies changes in the public opinion of big business. He finds that during the late 1880s and early 1890s, when Congress passed the Sherman Act, “public antagonism toward the large firm was not at a fever pitch,” though it was slightly higher than it had been during the early 1880s (Galambos 1975: 64–76). Scholars have also challenged Bork’s interpretation of Congressional debates. For example, Grandy (1993) reads the same debates and concludes that the primary goal of Congress was to protect the interests of small businesses, not consumers.

Also, the small business interpretation portrays the Sherman Act as an anticompetitive measure. According to this view, the Act was designed to “hamper the growth of large enterprises whose greater efficiency threatened the small business sector in many industries” (Stigler 1985). Direct evidence of the lobbying efforts of small businesses can be found in the letters of Senator John Sherman, after whom the Sherman Antitrust Act is named. Sherman received numerous letters from small oil refiners asking him to take action against Standard Oil. In response, Sherman introduced a measure amending the Interstate Commerce Act of 1887. If passed, the amendment would have prohibited the railroads from granting Standard Oil special rebates. Small oil companies, who typically did not receive such rebates, claimed the rebates gave Standard an unfair advantage. Besides introducing this amendment, Sherman also tried to appease the demands of the small oil companies by making several speeches denouncing Standard, by introducing antitrust legislation on three separate occasions, and by encouraging Ohio’s attorney general to file an antitrust suit against Standard Oil (Troesken 2002).

Although this evidence clearly shows that small businesses lobbied for antitrust, it does not prove they were the dominant interest group in the political battle over antitrust; it only tells what small businesses wanted out of the battle. Moreover, there are at least two reasons to think the trusts, and not small businesses, were the dominant interest group. First, the same free-rider problems that lead economists to argue that small businesses were more powerful than consumers and farmers should also lead economists to argue that the trusts were at least as powerful as small businesses. Second, business and political historians maintain the trusts possessed significant political power in 1890 (e.g. Josephson 1934; Sklar 1988; Stephenson 1930). Given this power, it seems unlikely that the trusts would have allowed any legislation they found seriously threatening to become law.

Lastly, appeasement interpretations characterize the Sherman Act as “something of a fraud,” because “it did nothing and solved nothing, except to still the cry for action against the trusts” (Friedman 1985: 464). To support this characterization, scholars frequently cite Senator Orville Platt of Connecticut. During the debate over the Sherman Act, Platt argued that his fellow senators were not interested in passing genuine antitrust legislation: they merely wanted something to appease their constituents (Josephson 1938: 460). While Platt implied that legislators passed a weak and ineffective law out of haste and indifference, many subsequent observers imply that legislators did so deliberately. The 51st Congress, they say, would never have passed a genuine antitrust law because “it was dominated at the time by many of the very industrial magnates most vulnerable to real antitrust legislation” (Fainsod and Gordon 1948: 450; Seager and Gulick 1929: 367–70). An event study confirms the appeasement hypothesis: the stock prices of major trust companies did not fall when the Act was passed, and might have even risen. This pattern suggests that investors believed the Sherman Act would not reduce the profitability of the trusts (Troesken 2000).

Evidence on the effects of antitrust enforcement after the Sherman Act run the gamut. If one examines landmark decisions dissolving large industrial enterprises such as Standard Oil and

American Tobacco, stock prices were not greatly affected by the dissolutions, in large part because the affected firms were able to contract around the court rulings at low cost (Binder 1988; Burns 1977; Prager 1992). Case studies of individual trusts suggest that market forces worked faster than antitrust regulators in disciplining monopolistic enterprises (Troesken 1998). In a series of papers, George Bittlingmayer presents evidence that antitrust enforcement is not only ineffective but rather counterproductive. Bittlingmayer (1985) argues that early antitrust enforcement gave rise to the great merger wave of the 1890s and early 1900s. Elsewhere, he shows that the threat of antitrust enforcement gave rise to financial panics during the early twentieth century (Bittlingmayer 1993, 1996). In a study of the antitrust suit against Microsoft, Bittlingmayer and Hazlett (2000) present stock-market evidence that firms in Microsoft's production and distribution chain experienced reductions in market value, suggesting that investors anticipated a breakup would not enhance efficiency but rather reduce it.

One of the few studies to find that antitrust has beneficial effects on consumer welfare is also one of the most creative and convincing. Ashenfelter and Hosken (2008) look at the impact of U.S. merger guidelines. The central difficulty any researcher faces in identifying the effect of these guidelines is building the relevant counterfactual: all mergers above a certain threshold for market power are disallowed, and as a result it is impossible to identify the effect on prices should those mergers have been allowed. Ashenfelter and Hosken, however, look at mergers that were just below the threshold and ask what happened to prices in those cases. They consider five mergers, and in four of the five they find evidence of a modest price increase. It is reasonable to assume that in the case of mergers well above the threshold the price increases would have been even larger.

Another important study suggesting antitrust regulation is effective is Mullin *et al.* (1995). Using an event study, they explore how the stock prices of rival firms and purchasers responded to the antitrust suit launched against U.S. Steel in 1911 and decided (adversely) in 1920. Their analysis, which is a model of how to perform a convincing event study, suggests that the dissolution of U.S. Steel, had it gone through, would have lowered steel prices and increased output.

### **State regulations of public utilities**

Throughout the nineteenth century, only Massachusetts regulated utilities such as gas, electricity, water and sewer, and local transit, and even there the commission had only limited authority. At the same time, state constitutions often forbade local governments from directly regulating rates. It was not until the second decade of the twentieth century that alternative forms of municipal control gave way to state regulation. Between 1907 and 1924, nearly 30 states created state-wide regulatory commissions to govern the behavior of private utility companies (Stigler and Friedland 1962). In the review that follows, three explanations for the rise of public utility commissions are considered, and the effects of those commissions on rates and performance are reviewed.

Public utilities were (and are) natural monopolies; a single firm could service a market at lower cost than multiple firms. For example, two competing gas companies would have installed two sets of mains when only one set was required. Many economists claim that, in this context, unfettered markets did not work very well. In the short run, competition led to wasteful duplication of capital and brief price wars. In the long run, competing firms merged, consumer prices rose, and the excess capital remained. According to the traditional public-interest interpretation of utility regulation, lawmakers created state utility commissions to solve the natural monopoly problem. State commissions prevented wasteful duplication by restricting market entry. They protected consumers against producers' monopoly power by regulating rates (e.g. Gessell 1914; Stotz and Jamison 1938).

The natural monopoly explanation for state regulation does a good job helping historians understand some of the economic aspects of pre-regulation utility markets, particularly the high levels of market concentration. Throughout the late nineteenth and early twentieth centuries, a single firm dominated gas markets in most towns. Of the 714 towns the 1890 Census of Manufacturers identifies as having gas service, only 16 had two or more gas companies; of the 827 towns the 1900 Census identifies, only 29 had two or more gas companies (Troesken 1996: 5–6). Furthermore, for those cities in which competition emerged, it typically lasted no more than a few months' time; it did not take competing firms long to realize that merging was a much more profitable course of action. Although there are a handful of antitrust cases involving public utilities, most government officials quickly gave up on the idea that antitrust enforcement could be effectively used to combat market power in utility industries (Troesken 1996: 35–42).

Natural monopoly explanations, however, do a much poorer job accounting for the unique regulatory experience of utilities, the timing of regulatory change, or the politics behind regulation. First, declining average costs (natural monopoly) did not always induce regulation (James 1983). Second, lawmakers created nearly all state utility commissions during the 15 years following 1907. As George Priest (1993: 296) writes, "it is very hard to believe that the average cost curves of gas and electric utilities only began to slope downward after 1907." Finally, the standard natural monopoly/public-interest view assumes that lawmakers created utility commissions in response to the demands of consumers. The assumption runs counter to established historical fact. Utilities, not consumers, lobbied for state utility regulation (Blackford 1970; Troesken 1996: 79–82).

The Chicago School interpretation turns the natural monopoly story on its head. As the Chicago story goes, the problem was not that the market failed. The market worked all too well and utilities lobbied for state regulation because they believed it would undermine the market and promote monopoly (Demsetz 1968; Jarrell 1978). This interpretation suggests that the state acted as an agent for producers: the state brought producers substantial market power when the market failed. The Chicago School interpretation constitutes a powerful critique of economic regulation in general. Economists have long believed utilities provided the quintessential example of market failure: natural monopoly. If regulation failed to improve things in markets that were natural monopolies, it would surely fail in situations where claims of market failure were more tenuous.

The strongest evidence for the Chicago School explanation comes from Jarrell (1978), who isolates the political demand for state utility regulation. Suppose consumers demanded regulation to protect them against monopoly rates. If so, one would expect states where utilities charged the highest rates and earned the most profits to have been the first to create state commissions. Alternatively, suppose utilities demanded regulation to protect themselves against the low rates set by municipal regulators. In that case, one would expect states where utilities charged the lowest rates and earned the lowest profits to have been the first to create regulatory commissions. Jarrell divides states into two groups. Early regulators adopted commissions between 1912 and 1917; later regulators adopted commissions after 1917. After adjusting for cross-state variations in demand and cost conditions, Jarrell finds that electric utilities in early-regulated states charged lower rates and earned lower profits than utilities in later-regulated states.

Given this pattern, Jarrell concludes that municipal authorities set competitive rates that allowed producers a reasonable return while state regulators set rates close to monopoly levels. He rejects the idea that municipal authorities promoted unreasonably low rates after calculating the ratio of average revenue to average cost for each state. For both early-regulated states and later-regulated states, the mean ratio exceeds one. This suggests that on average electric utilities covered their costs.

In emphasizing the lobbying activities of public utility companies, the Chicago School interpretation captures a critical piece of the politics behind utility regulation. On the other hand, at least two general questions remain unanswered. First, if it were merely the lobbying of efforts of producers that gave rise to state utility regulation, why were utilities so much more successful than producers in other industries in securing regulation? Surely producers in other industries wanted monopoly profits just as much as utilities. Second, if state regulation granted utilities a sure road to monopoly profits, why did utilities wait over half a century to lobby for it? Surely utilities in 1860 desired monopoly profits as much as utilities in 1910.

In addition, although Jarrell's central finding is unassailable – it is clear utilities lobbied for state regulation – other aspects of his analysis are problematic. First, his evidence on the rates charged by municipal authorities is not evidence of municipal behavior but of the rates the courts allowed; municipal authorities often tried (but were blocked by the courts) to set much lower rates. Second, in calculating his revenue-to-cost ratios, Jarrell combines states that allowed municipal rate regulation with states that prohibited municipal rate regulation. This is inappropriate. Some state constitutions prohibited local governments from regulating utility rates without special enabling legislation, while in other states municipal governments possessed regulatory powers. Third, Jarrell's revenue-to-cost ratios are averages, and only speak to the performance of the mean firm. This is unfortunate because firms below the mean were the firms most affected by municipal regulation. It is likely that these below-the-mean firms were the ones that pushed the hardest for state regulation as a means of supplanting municipal control. If so, this would run counter to Jarrell's claim that municipal regulation was efficient and non-confiscatory (Troesken 1996: 87–9). Beyond all this, a more recent econometric analysis of the adoption of state regulatory commissions cuts against Jarrell's earlier analysis (Neufeld 2008).

Over the last 30 years, a third explanation for the creation of state utility commissions has emerged. This explanation sees state regulation as a solution to a fundamental long-term contracting problem (Goldberg 1976; Williamson 1985). The following example highlights the underlying logic. To sell gas, a gas company had to invest substantial resources in a system of mains. The investment was irrevocable. Once the mains were in the ground, the gas company could not move or sell them. Strictly speaking, the mains represented an asset-specific or non-redeployable investment. If, after the company installed its mains, the city imposed onerous price regulations or taxes, the company was stuck. It could not move or resell its mains. As a result, before installing its mains, the gas company required assurances that the city would not impose onerous regulations or taxes *ex post*. Alternatively, municipal authorities had to grant the gas company the right to use public roads to lay mains. For the city, this right represented an irrevocable investment. Once the gas company exercised its right to use public property and install its mains, the city could not meaningfully revoke that right. If the company's rates or service failed to satisfy the city, the city was stuck. As a result, before granting this property right, the city demanded a commitment that the utility would not charge excessive rates or provide poor service *ex post* (Jacobson 1989; Troesken 1996: 5–7).

According to the relational contracting interpretation, utility industries were never organized as markets, for the same reason that firms are not organized as markets: positive transaction costs. Non-redeployable investments forced utilities and municipalities to create long-term, binding contracts. Before state utility regulation, state charters and municipal franchises embodied these contracts and supplanted the market. The charter and franchise governed the behavior of both the municipality and the utility. The state charter set strict limits on the city's regulatory authority. The municipal franchise dictated the price and quality of the company's gas. State utility commissions functioned similarly. Like state charters, they prevented the city from imposing onerous regulations. Like municipal franchises, they prevented the gas company from

charging high rates. Hence, the arrival of state regulation represented a change in the way cities and utilities contracted, not a move from pure and unfettered competition to widespread state intervention (Troesken 1996: 5–7).

Several pieces of evidence support the relational contracting interpretation. First, there is strong evidence of opportunistic behavior on the part of municipal authorities in the years prior to state regulation. Local politicians frequently used the promise of lower utility rates to garner votes, and, while legal protections such as substantive due process limited the ability of local governments to enforce such rates, securing legal protection through the courts was neither cheap nor timely (Troesken 1996: 76–7). Second, state regulation was associated with increased private investment in utility industries, which is consistent with the hypothesis that state regulation was functioning as a commitment mechanism (Troesken 1997; Hausman and Neufeld 2002). Case studies of specific utility industries provide clear evidence that municipal franchises and state charters were working just as the relational contracting interpretation would suggest (Priest 1993; Wilcox 1910). Moreover, it is easy to reconcile much of the corruption associated with the granting of municipal franchises to public utility companies with a relational contracting view (Troesken 2006).

As to the effects of public utility commissions on rates, the evidence is mixed and much less supportive of the Chicago School view than is often thought. In a seminal paper, Stigler and Friedland (1962) set up a natural experiment. They analyze the prices and profits of electricity utilities during the early twentieth century. During that period, regulatory regimes varied across states. Some states had utility commissions while others did not. Stigler and Friedland find that rates and profits were not significantly lower in states with utility commissions. From this, they conclude that state regulation failed to reduce rates from monopoly levels. In drawing this conclusion, Stigler and Friedland assume that, in states without regulatory commissions, utilities operated without any regulatory constraints and were, therefore, able to charge monopoly rates. This is a problematic assumption. Even in states without regulatory commissions, municipal regulations put limits on the behavior of utility companies. Sometimes local authorities directly regulated rates, but most of the time local governments used franchise contracts to put limits on utility rates (Troesken 1996: 55–78).

Moore (1970) and Meyer and Leland (1980) estimate demand and cost equations to isolate the effects of regulation. Moore uses a cross section of electric utilities operating in 1962. He finds that state regulation lowered rates from monopoly levels by only 3 per cent. Meyer and Leland pool data from 48 states over the period 1969 to 1974. These data, and the estimating procedure, allow for the possibility that the effectiveness of regulation varies over time and across space. Allowing for this possibility distinguishes Meyer and Leland's study from earlier work. They find "pervasive irregularity" in the impact of state utility commissions across states and "widespread and substantial benefits being conferred by rate of return regulation" (Meyer and Leland 1980: 562). A study of the effects of state regulation on gas rates in Chicago finds that it was effective in reducing rates below monopoly levels (Troesken 1996: 83–6).

### **The rise of public ownership in utility industries**

Between 1880 and the 1930s, thousands of cities and towns in the United States municipalized their utility systems. While the electric, gas, and water industries all experienced sharp growth in the number and proportion of municipally owned companies during this period, growth was especially pronounced in the water industry. The number of municipally owned water companies increased by a factor of 26, from 293 in 1880 to 7,832 in 1932; and the proportion of municipally owned companies increased from 43 per cent in 1890 to 68 per cent in 1920.



Growth in the proportion of municipally owned companies did not stem solely from the fact that municipalities installed water systems at a faster rate than private enterprises. During the early twentieth century, roughly one-third of all municipally owned water companies had been privately owned at one time (Troesken 1997; Troesken and Geddes 2003).

The existing literature suggests three classes of possible explanations for the widespread municipalization of private utility companies during this period. The first class of explanations appeals to the standard arguments about market failure in the presence of declining costs, externalities, or capital market imperfections (e.g. Carey 1900; Zueblin 1918; Thompson 1925). Of the traditional market failure explanations, those appealing to natural monopoly have the least explanatory power. Natural monopoly cannot explain why there was a sudden wave of public acquisition around the turn of the century; as noted earlier, it seems unlikely that utilities only began to exhibit scale economies around 1900. Natural monopoly also cannot explain why municipal ownership was chosen in lieu of regulation to solve the problem of declining costs. Finally, natural monopoly cannot explain why municipal ownership was so much more common in the water industry than in the gas and electric industries, which also exhibited substantial scale economies.

On their face, market failure arguments based on externalities have greater explanatory power, at least in the case of water. It seems plausible that distributing pure water generated large positive externalities by reducing the risk of epidemic diseases such as typhoid fever, and by reducing the risk of conflagrations like the Great Chicago Fire. The distribution of gas and electricity exhibited no such community-wide benefits. If externalities were substantial, and private companies found it harder to internalize them than public enterprises, this could account for the inter-industry variation of public ownership. When Progressive-Era reformers championed the cause of municipal ownership, they often picked up on this line of thought, arguing that municipal ownership was particularly common in the water industry because there were serious public health concerns associated with distributing pure water. According to Progressive-Era reformers, municipal water companies were more likely than private companies to make socially beneficial, but presumably unprofitable, investments in water-purification systems because they were guided by political rather than economic motives (Troesken 1999).

The externality argument is problematic in four ways, however. First, it is not clear why public enterprises would have been able to better internalize the positive spillovers associated with distributing pure water than were private enterprises. Although it is possible that subsidizing private companies was politically unpopular and therefore unlikely, this line of thought suggests a contractual or political failure, not a market failure. Second, historically, all water companies, regardless of ownership regime, were legally liable to pay damages if the water they distributed caused typhoid epidemics. And there were several cases at the turn of the twentieth century in which companies were held liable for distributing tainted water. That companies had to pay damages for typhoid epidemics suggests that at least some of the externalities associated with distributing impure water would have been internalized by the firm. Third, a recent study suggests that public water companies did no better at reducing typhoid rates than did private companies. The same study also reports evidence that, as of 1900, private water companies were 2.5 times more likely than municipal companies to have invested in water-filtration systems (Troesken 1999). Finally, one could argue that fire risks were falling during the period of municipalization due to new building technologies and materials – undercutting the idea that municipal companies were necessary to better protect cities against fire.

Cutler and Miller (2006) suggest a third market failure explanation for municipal ownership, arguing that financial market imperfections make it difficult for private companies to raise the necessary capital. Municipalities, they claim, have an easier time raising the money necessary to

fund an adequate water system. As evidence for this position, one might point to the fact that municipal ownership in the water industry was positively correlated with city size: water companies in large cities were more likely to have been municipally owned than were companies in small cities. There is also evidence that during the late nineteenth and early twentieth centuries private water companies were reluctant to extend water mains outside of the most densely populated areas of cities and towns, so that the people located on the periphery of cities and towns, which were less densely populated, often went without service (Troesken 2001; Troesken and Geddes 2003).

Nonetheless, the difficulties with this line of thought are twofold. First, in utility industries other than water, the correlation between city size and municipal ownership is negative, not positive. It is not clear why capital market imperfections should have impinged any more on water companies than on gas companies. Second, the assumption that cities would have had an easier time raising capital than private utility companies seems inconsistent with legal history: like private corporations during the nineteenth century, municipalities were incorporated by state governments and were typically subjected to state-imposed debt limits. The only way cities could borrow in excess of these limits was to petition state legislatures for special exemptions (Friedman 1985: 528–9).

Another class of explanations for the rise of municipally owned water companies builds on Pashigian (1976), who considers the wave of municipal takeovers that struck the urban transit industry during the mid-twentieth century. Pashigian finds that public acquisition was driven by over-zealous regulation on the part of local authorities that were captured by the riders of transit systems. These regulations undermined the profitability of local transit markets, and drove private providers into bankruptcy, necessitating municipal takeover and subsidy. Along the same lines, Peltzman (1971) reports evidence that publicly owned electric companies charged slightly lower rates than private companies largely because private companies faced a heavier tax burden. The same processes may have driven the municipal acquisition of other private utilities.

Two pieces of evidence speak in favor of a regulation-based explanation. First, broadly speaking, local governments did become more aggressive in their regulation of local utilities around the turn of the twentieth century, and this coincided with at least part of the municipal ownership movement (Troesken 1996: 55–78). Furthermore, previous research shows that increased zealotry on the part of municipal regulators discouraged private gas companies from entering specific markets and ultimately forced many local governments to construct municipally owned gas works. Second, the municipal acquisition of private waterworks was often preceded by draconian policies on the part of local politicians (Troesken 1997). For example, in Kansas City, Kansas, local authorities simply tried to seize the National Waterworks Company (a private enterprise) without paying any compensation, while elsewhere local authorities enacted confiscatory rate ordinances.

A concern with any regulation-based explanation of public acquisition is that it seems to assume irrationality or imperfect foresight. Given the high levels of idiosyncratic investments in the water industry, private investors would have likely demanded credible assurances from local authorities that unduly burdensome regulations would not be enacted *ex post*. Indeed, there is clear evidence from the gas industry that private gas companies demanded such assurances before they entered local markets (Troesken 1997). Additionally, it is not clear how a regulation-based explanation of public ownership could account for the inter-industry variation in public ownership.

A third explanation of municipal ownership builds on the relational-contracting literature already discussed in reference to state utility commissions. In particular, one might think of municipal ownership as a form of vertical integration. To see this, consider two recent studies.

Comparing the ownership of telephone systems across several countries, Levy and Spiller (1995) find that publicly owned telephone systems are most common in those nations that cannot commit to stable and reasonable regulatory policies. Comparing the ownership of urban gas systems across U.S. cities and towns in 1911, Troesken (1997) finds the same pattern: municipally owned gas companies were most common in those towns that could not credibly commit to stable and reasonable regulatory policies. According to these studies, there is a clear parallel between the city that buys its own gas company because it cannot commit to treating a private gas company fairly *ex post* and the manufacturer that acquires a potential supplier because it cannot commit to treating that supplier fairly. Although the relational-contracting literature implies that municipal ownership was probably efficient in that it reduced transactions costs, such strong efficiency implications are not a necessary part of such interpretations. Municipal ownership might well have been a second- or third-best option.

### **The privatization and deregulation movements of the 1970s and 1980s**

The history of regulation has an odd circular quality in that many of the regulatory mechanisms created during the nineteenth and early twentieth centuries were dismantled a half-century later. For example, after creating state public utility commissions between 1900 and 1930, state governments during the 1970s and 1980s abandoned or curtailed their use of these commissions on a wide scale. The available evidence suggests that, with some important exceptions, deregulating utilities had beneficial effects (Joskow 1997; Peltzman 1989; Winston 1981). Similarly, by the turn of the twenty-first century, the same governments that had municipalized water (and other utility) systems a century earlier were now privatizing those systems and returning them to the institutional environment that had governed private water companies for much of the nineteenth century. Again this appears to have been done with positive results (Galiani *et al.* 2005; Vitale 2001).

What explains the circularity of public utility regulation and governance? At least three possibilities suggest themselves. The first possibility is that technological changes altered the viability of alternative governance regimes over time. The second possibility is that ideological changes altered the preferences of voters and policy makers. During the early twentieth century, these ideological changes led policy makers to favor state-oriented solutions; by the late twentieth century, these changes led policy makers to favor market-oriented solutions. The third possibility appeals to the work of Mancur Olson (1982), who argues that over time institutions tend to ossify and slow economic growth as entrenched interest groups work to secure a greater share of society's resources. Olson's work suggests that transitions in regulatory and governance regimes – whether from market-oriented to statist, or vice versa – can dramatically improve the operation markets.

The available evidence suggests that the circularity of public utility regulation has not been driven by ideological mistakes or technological changes, but instead by the desirability and necessity of occasional regime changes in public utility markets. More precisely, corruption was endemic to public utility markets; it existed, in some form, across all regulatory and ownership regimes. In addition, for any type of governance regime (e.g. state regulation or municipal ownership) corruption grew increasingly severe over time, and eventually became politically untenable. When corruption reached this point, politicians intervened and replaced the existing and utterly corrupt governance regime with a new regime. The institutional change broke the fully matured and corrupt relationships of the old regime, and replaced them with new corrupt relationships that also eventually matured and flourished, but this maturation took much time, and, at least initially, the new governance regime was associated with much less corruption than the old regime (Troesken 2006).

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