

# THE ROLE OF ENTRY IN DEREGULATING GAS AND ELECTRICITY

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For gas and electricity utility industries, the 1980s and 1990s have been marked by an as-yet-incomplete transition from regulation to competition. It is widely believed that the competitive provision of some of the products and services that these industries have traditionally sold in a single, "bundled" product, will prove superior to traditional public utility regulation of the entire bundle. Additionally, it is predicted that these forces of competition will induce efficiency, innovation and lower prices as vigorous rivalry develops among many competing suppliers.<sup>1</sup>

One of the theoretical mainstays of economic analysis of markets has been the belief that entry, or the threat of entry, effectively deters monopolistic behavior under many circumstances.<sup>2</sup> Partly for this reason, the deregulation movement has tended to treat entry as an unmitigated force for competition. In the Department of Justice Merger Guidelines, the greater the ease of entry, the likelier a merger is to be approved.<sup>3</sup> The Federal Energy Regulatory Commission (FERC or Commission) has adopted the same general principles for mergers.<sup>4</sup> And gas and electricity deregulation, which has removed many barriers to supply competition, is

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1. As Mr. Thierer stated:

Throughout this century, regulators have been conducting an experiment in America's electricity market that can be judged only as a failure. A lack of price competition and consumer choices, limited innovations and a lackluster environmental record are some of the deleterious side effects of the current regulated monopolistic system. Consumers and the industry itself stand to benefit in important ways, however, once choice and free-market principles are substituted for the unsuccessful command-and-control methods of a regulated monopoly model.

Adam D. Thierer, *Energizing America: A Blueprint For Deregulating The Electricity Market*, THE HERITAGE FOUNDATION, Background No. 1100, (visited Jan. 23, 1997) <<http://www.townhall.com/heritage/categories/regulation/bg1100.html>>.

2. WILLIAM J. BAUMOL, ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982).

3. U.S. DEP'T OF JUST. AND FED. TRADE COMM'N, *HORIZONTAL MERGER GUIDELINES* (1992).

4. Order No. 592, *Policy Statement Establishing Factors the Commission Will Consider in Evaluating Whether a Proposed Merger is Consistent with the Public Interest*, III F.E.R.C. STATS & REGS, PREAMBLES ¶ 31,044 (1997).

relying on entry to produce competitive markets.<sup>5</sup>

Is it sound policy to rely heavily on entry or the threat of entry to promote competitive outcomes? History and economics suggests that it may not be. Almost 100 years ago, these same industries experienced a transition also widely supported by public opinion and economic analysis and equally sweeping in its impact on firms and customers. This period marked the transition from competition to regulation. In the early 1900s, it was widely believed that government regulation of such markets would be superior to unrestricted, "cut-throat" competition.<sup>6</sup> Elimination of competition would prevent wasteful duplication of facilities and it would stabilize prices. Customers would benefit from lower costs, and therefore lower prices, resulting from services provided by an *entry-protected* monopolist whose prices were subject to government-supervised, cost-based limitations.<sup>7</sup> Entry was the problem, not the solution.

These are opposing conceptions of appropriate social policy toward utility industries. The perceived role of entry in producing beneficial market outcomes is obviously quite different as well. The dramatic turnabout

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5. For example, the California Public Utilities Commission staff recently urged the Commission to "identify competitive and potentially competitive services that should be unbundled from the incumbent utility in order to provide opportunities for new entrants to compete to provide natural gas services so that customers may benefit from potentially lower prices resulting from that competition." STRATEGIES FOR NATURAL GAS REFORM, REPORT TO THE CALIFORNIA PUBLIC UTILITIES COMMISSION BY THE DIVISION OF STRATEGIC PLANNING (Jan. 21, 1998).

6. According to a report by the National Civic Federation in 1907, "Public utilities, whether in public or private hands, are best conducted under a system of legalized and regulated monopoly." MARTIN G. GLAESER, OUTLINES OF PUBLIC UTILITY ECONOMICS 223, (The MacMillan Company 1927) [hereinafter GLAESER]. Glaeser adds: "The evils of a competitive regime of public utility operation were too deep-seated and too flagrant to be eradicated by any policy which stopped short of thorough-going administrative control." *Id.* at 234. The National Electric Light Association reported a similar conclusion in a 1907 study. BURTON BEHLING, COMPETITION AND MONOPOLY IN PUBLIC UTILITY INDUSTRIES 14 (Ernest L. Bogart, et al. Eds; Univ. of Ill. Press 1938) [hereinafter BEHLING]. Behling, an economist, wrote referring to utility markets that "Sometimes competition operates apathetically; in other circumstances it degenerates into costly and bitter rivalry . . . Sometimes the race [that] is termed competition descends into cut-throat tactics, with their resultant instability. Then there is loss from duplicated effort; but competition loses its *raison d'être* when it does not economize resources . . ." See also, BEHLING, at 53-4 for more early opinion concerning the perceived failure of competition in utility markets.

7. The Wisconsin Supreme Court, interpreting the intent of legislation authorizing regulation stated that:

The public utilities law was undoubtedly framed on the theory that certain kinds of business were of such a character that duplication of plants for the purpose of carrying them on was undesirable, because it resulted in an economic waste, the loss from which in the end usually fell upon the consumer . . . Competition in the public utility business in our cities in the end generally resulted in consolidation or an agreement between competing companies as to the rates to be charged. In either event the rates were usually adjusted so as to cover fixed charges, and to yield a return on the cost of constructing the competing plants. These are matters of common knowledge. One of the main purposes of the law was to avoid duplication, and it was thought that by efficiently controlling the rates to be charged by a single utility the consumer would derive the benefit resulting from economy in production.

Wisconsin Traction, Light, Heat, and Power Co. v. City of Menasha, 145 N.W. 231, 233 (Wis. 1914).

leads one to wonder what has changed over the past seventy years. Perhaps cost conditions, technologies, or economic and legal institutions are so different now that such a dramatic policy reversal is warranted. Or perhaps imposition of utility regulation was a mistake that is only now being corrected. Or, of course, perhaps today's move toward deregulation is just a realignment of political forces. In light of the huge volume of economic activity the industries represent, these are important inquiries.

This article addresses these questions by examining the manner in which regulation of gas and electricity is presently being replaced by competition. It also compares the present situation with three case studies of how competition was replaced by regulation years ago in the gas industry. I conclude that the process of deregulation of gas and electricity pays insufficient respect to the interactions among such cost conditions as economies of scale and scope,<sup>8</sup> contracting problems (especially those that arise in the presence of large sunk investments), and entry.<sup>9</sup> The full effects of these interactions are hard to predict, and the economic institutions and market performance they create take time to mature and reach stability. The case studies presented below provide evidence that conditions present in competitive pre-regulation gas and electricity markets produced chaotic and socially undesirable outcomes for many years. In particular, entry by new firms, believed to be the guardian of competition today, presented a bargaining and contracting problem that resisted creative private solutions and for which regulation was ultimately deemed a more effective answer.

Of course, our inability to foresee the future outcomes of today's deregulation policies does not mean that deregulation should be halted: it is far too late for that. It does suggest, however, there will be a continuing need for regulators to assess whether the new markets and institutions that evolve as government controls are indeed the best we can do and to adjust

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8. Economies of scale are present when production by a single firm costs less than production of the same quantity by two or more firms. Economies of scope are present when production of multiple products by a single firm costs less than if separate firms produced the same products alone. For a discussion of the impact of these cost conditions on industry structure, see W. KIP VISCUSI, ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* ch. 11 (2d ed. 1996).

9. Other studies have reached similar conclusions, for example, Paul L. Joskow, *Restructuring, Competition and Regulatory Reform in the U.S. Electricity Sector*, 11 J. ECON. PERSPECTIVES 120 (Summer 1997). While optimistic about the prospects of electricity deregulation, Joskow nonetheless offers the following caveat:

While the basic model for structural and regulatory reform in electricity is fairly straightforward, the details of the institutional reforms that are necessary to improve on the performance of the present U.S. system are complex. Moreover, much of the pressure for reform in the United States reflects rent-seeking behavior by various interest groups pursuing private agendas that may not always be consistent with efficiency goals. At the same time, there are good public interest reasons to believe that structural and regulatory reforms that foster competition can lead to real cost savings in the long run if appropriate supporting institutional arrangements are put in place.

*Id.* Also, Thomas P. Lyons and Steven C. Hachett, *Bottleneck and Governance Structures: Open Access and Long-Term Contracting in Natural Gas*, 9 J.L. ECON. & ORG. 380, 389 (1993) conclude that "... FERC has paid insufficient attention to the transaction costs of mandatory unbundling." They provide a study of the economic impacts of unbundling by interstate gas pipelines.

regulatory rules as problems arise that cannot be resolved effectively by private contracting and competition. The end result may not be less government oversight than we now associate with traditional public utility regulation, but simply a change in the nature of the responsibilities that regulators bear.

As deregulation proceeds along its current path, the analysis presented here suggests the role of regulators will shift. The shift will be from the traditional one of overseeing entry and providing pricing procedures thought most likely to mimic competitive pricing, to one of assessing firm conduct in all its dimensions both in terms of the efficiencies produced and in terms of its market power potential. The history presented below suggests the advent of utility regulation was prompted by a difficult contracting problem. The view of regulation as an administered contract, most commonly associated with the work of V. Goldberg, is supported here.<sup>10</sup> In that context, today's deregulation is best viewed as an amendment to the basic contract, but not an abandonment of it. If anything, the role of regulators will likely increase in the coming years as the complexity of the "contract" they administer increases. Private, or even government-sponsored, antitrust suits are not likely to be adequate substitutes for the kind of specialized role that regulators will continue to play, for the simple reason that entry and contracting problems specific to these industries seem to turn traditional antitrust analysis, with its emphasis on the protective effects of entry, on its head.

The paper begins with Part I, which provides a brief description of the assumptions and approaches that underlie today's move to de-regulate gas and electricity. This is followed by the second part, which examines the normal role of entry in competitive markets. Conditions are then described under which entry is costly to consumers and fails to produce the salutary effects normally associated with it. Part III gives a detailed case study of three early gas markets: A) Baltimore; B) Chicago; and C) London. The entry problems that occurred in these markets were present in all early utility markets and were principal factors in the move toward regulation. Finally, Part IV offers policy implications of the history and analysis presented here and observations on what to expect in the years ahead as gas and electricity markets are deregulated.

#### I. DEREGULATION BY UNBUNDLING PRODUCTS AND ENCOURAGING ENTRY

Two departures from traditional regulatory procedures characterize today's deregulation in gas and electricity: "unbundling" of the utility product, and removal of entry restrictions into (many of) the markets for the resulting products and services. The stimulus for these changes arises from a recognition that the product traditionally provided by gas and electric utilities, delivered gas service or electric power is in fact a combination

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10. Victor P. Goldberg, *Regulation and Administered Contracts*, 7 BELL J. ECON. 426 (1976).

of numerous services in addition to the gas or power commodity itself. These services include transportation, storage, inventory management, post-meter services, and many others. To policymakers it has seemed plausible that, as with telecommunications products, many of these components, if produced separately, may not exhibit the natural monopoly cost conditions that have been the foundation of traditional utility regulation. If so, consumers may be better served by a regulatory policy that "unbundles" by requiring the utilities to price and offer each service separately, while at the same time permitting all of these services except delivery, believed to be the only true natural monopoly product in the bundle, to be subject to competition.

The benefits expected from unbundling and free entry are competitive supply of the newly unbundled, non-natural-monopoly products with many firms vying to provide them. In theory, costs and prices should fall, and innovations should appear as the forces of rivalry take hold. The utility, shrunk to the limited role of delivery system operator, will continue to provide this natural monopoly product under the supervision of a regulatory commission. The end result should be lower prices and enhanced efficiency for a substantial part of the previously regulated bundle of utility products.

Unbundling and free entry in some, but not all, of the resulting product markets represents an incremental approach to deregulation. This is called "partial" deregulation: an effort to inject as much competition as possible into utility markets without abandoning government control of what is still considered natural monopoly aspects of the industry. The problem with this approach lies in its inadequate attention to how and why products become bundled in the first place. Many competitively provided products in unregulated markets are bundles of physically separable components that are assembled, packaged, and sold as one product. There is nothing inherently bad about this.

Quite the contrary, strong forces of competition, channeled by production and marketing cost constraints and contracting considerations, naturally led to the bundling of components into a final product. In those cases, bundling is socially beneficial and the natural outcome of the rivalry-induced force to minimize costs. Rivalry to provide the particular bundle of products that consumers desire most in terms of cost and characteristics is itself a key dimension of competition in a vast array of markets. Recent allegations relating to Microsoft's product bundling have focused attention on the economics of bundling. Investigation of computer hardware and software markets has taught us that production and marketing costs, the nature of consumer demand, and the ability of new firms to enter existing markets are all important factors that determine product bundles.

In light of these economic forces, it is curious that unbundling has become the starting point for policies designed to move utility markets to a competitive, and presumably more efficient, structure without a clear picture of how costs and competition may in the end rebundle such products. In utility markets furthest advanced toward deregulation, natural gas pro-

duction and transmission, this is precisely what has occurred. Notwithstanding considerable discussion of the potential "convergence" of gas and electricity products, and even of other products such as home security services, cable television, and internet access, there is no convincing picture available now as to how gas and electricity products will be bundled and sold in the future as competition evolves. Nor is there sufficient basis for concluding now that the forces of such rebundling may come to rest at an industry structure that is competitive and conducive of efficient production and exchange.

What is missing from policymakers' basic conception of life after deregulation is an adequate appreciation for the likely interaction among production costs, transaction costs and entry in shaping market outcomes in gas and electricity markets. In deregulated markets, these forces will determine how firms choose which products to produce and package together, and the resulting marketing and contracting methods and costs that will accompany them. Economic analysis can contribute to development of a clearer picture of the likely outcomes of deregulation by assessing, both theoretically and empirically, the strength of scale and scope economies in production of components, the costs of structuring contractual arrangements in these industries, and the role that entry of new firms will likely play.<sup>11</sup>

One source of evidence as to the nature of these economic forces lies in the history of pre-regulation markets. For gas markets, that history indicates that entry of new firms was not a guarantor of competitive outcomes and efficient production. In fact, pre-regulation utility markets suggest just the opposite! In these markets, entry created substantial excess capacity and raised prices. Bargaining and contracting problems associated with entry were quite troublesome in early utility industries. At first, affected firms dealt with them in a number of ways without seeking government enforcement or supervision, mostly without success. Industry incumbents tried to construct private contractual arrangements that mitigated the problems raised by free entry, but these efforts proved to be costly and ineffective. As a result, the continuing problem of free entry played a substantial role in the early push to put government regulation in place.<sup>12</sup>

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11. See, e.g., Paul W. MacAvoy et al., *Is Competitive Entry Free? Bypass and Partial Deregulation in Natural Gas Markets*, 6 YALE J. ON REG. 209, 247 (1989).

12. The fact that incumbent firms, the ones most directly affected by entry problems, strongly endorsed the push to regulate appears to provide support for the "producer capture" theory of regulation. Yet, to the extent that incumbent firms' interest in controlling entry coincided with that of mitigating a costly price-raising phenomenon, that interest is not distinguishable from an efficiency-based explanation for the advent of regulation. The producer capture theory of regulation in general states that regulation is actively pursued and acquired by incumbent firms who seek an effective state-sponsored shield from entry and competition. Once impaneled, regulators are "captured" by the very firms they are charged with controlling. The result is a departure from the public interest that was the ostensible rationale for regulation. For a statement of the producer capture theory in the context of electricity, see Robert L. Bradley, Jr. *The Origins of Political Electricity: Market Failure or Political Opportunism?*, 17 ENERGY L.J. 59 (1996).

Early regulations were principally concerned with controlling entry. Regulatory price controls followed as a necessary adjunct to the strong measure, government-enforced entry protection required to eliminate the effects of imitative, extortionate entry. This early history, recounted in detail below, should help us discern more accurately the economic character and purpose of emerging methods of contracting and the policies and motives of incumbent firms and entrants in deregulated markets.

## II. ECONOMICS OF ENTRY

Firms normally enter a market anticipating an acceptable return on invested capital. That expectation is based on a perception that incumbent firms' prices and profits are high, or on a belief that the entrant can operate more efficiently than some or all incumbents. Such entry can make markets more efficient by replacing relatively high-cost firms with cheaper ones. Entry, or the threat of it, keeps prices as low as possible, a benefit to consumers, and provides a natural mechanism for innovation and offering of new products.

In the "typical" market, absent an efficiency or profit reason for doing so, entry by a new firm would appear to be irrational. Moreover, lacking these justifications it would be socially undesirable as well because it moves resources away from more highly valued uses in other industries or firms. Thus, social interests and those of individual firms would seem to be beneficially aligned by this kind of entry.

There is another source of gain that entrants may enjoy in certain circumstances: the prospect that an incumbent firm will buy them out with a payment that exceeds their entry costs. The prospect of such a gain could produce rational entry, from the point of view of the entrant, even though it would not be socially justified. Though rational, such entry does not enhance market efficiency and leads to higher long-run costs and prices. In other words, these conditions and the entry they induce create a conflict between social interests and those of individual firms.

Fortunately, the beneficial kind of entry seems to describe most markets better than the latter. This is because the economic conditions under which anti-social entry can occur are tied to a specific set of conditions that relate to contracting costs, sunk investments, and the impact these have on pricing and strategic decisions. A sunk investment is one that cannot readily be reversed or shifted to alternative uses. In general, entry for the purpose of obtaining a buyout from the incumbent firm(s) can be successful for the entrant, only if the incumbents' *best response* to the entry, once it has occurred, is to pay the entrant to terminate its sales. Payment can be rational for incumbents if the entrant's threat to stay in the market, even at very low prices, is credible, and if the cost to incumbents of such low prices is greater than simply paying the entrant to leave.

In order to make a "price war" threat effective, an entrant must credibly signal his intention to stay in the market at low prices. This is where sunk investments matter. For if, in order to make any sales, the entrant must invest in facilities that have little or no value in any other use, the

commitment to stay in the market, even at low prices, is made once such assets are created and employed in the target market.<sup>13</sup>

The presence of sunk investments is not in itself sufficient to induce entry-for-buyout. A further condition is the entrant's ability to identify target incumbents' customers with precision. If the incumbent is a monopolist, that may be easy, but if there are many incumbents, the loss inflicted on each by an entrant's arrival may be low enough that no single incumbent finds buyout to be a rational response. The strength of an entrant's price war threat is diminished in that circumstance. General Motors (GM), for example, has a considerable sunk investment in plants, facilities, tooling, etc. But an entrant producing automobiles will draw customers not only from GM but also from Chrysler, Ford, Toyota, and Honda. Thus, it is unlikely that any of these would find that its best response is to buy out the entrant.

Effective legal and contractual protections to the kind of commercial extortion that entry-for-buyout represents are available to incumbents in many instances. Consider again the entrant hoping to obtain a buyout payment from GM. Such an entrant might tap only GM customers if it imitated all of the characteristics of GM autos precisely, including the nameplates. Under those conditions, the entrant's low price might attract GM customers only, and the resulting sales loss to GM might be a powerful lever with which to win a buyout payment. But patent and trademark protections prevent that kind of imitative entry and extortion.<sup>14</sup>

Eric Rasmusen has constructed a game theory model that delineates conditions under which "entry-for-buyout" will succeed.<sup>15</sup> In his model, a monopolist faces a single entrant. The conditions under which the incumbent's best response is to buy out the entrant center on the sunk investments required of new firms affect the nature of price rivalry once the entrant is in. If post-entry prices fall to average variable costs, the incumbent can ignore the entry threat only if he enjoys a variable cost advantage since, in that case, post-entry rivalry will compel the entrant to exit on his own, or by logical extension, not to enter in the first place.

If neither the incumbent nor the entrant enjoys a variable cost advantage, then the entrant, having already invested in sunk-cost facilities, will stay in the market even at depressed prices that do not fully recoup allocated costs. If this is the case, the incumbent must hope that the entrant's expected buyout price will not cover his investment cost. If it does not, and if the entrant can foresee that it will not, he will not enter.

Since a buyout payment is the subject of bilateral bargaining, model-

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13. For an analysis of putting in place credible commitments as a means to signal a firm's intentions, see Oliver E. Williamson, *Credible Commitments: Using Hostages to Support Exchange*, 73 AM. ECON. REV. 519 (1983).

14. See, e.g., HAROLD DEMSETZ, *THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES* 141 (1997), for a discussion of controlling "imitative" entry.

15. Eric Rasmusen, *Entry for Buyout*, 36 J. INDUS. ECON. 281, 281-99 (1988); See also L. Pepall, *Imitative Competition and Product Innovation in a Duopoly Model*, 64 ECONOMICA 265, 265-79 (1997).



ing it in terms of expected demand and cost conditions adds a considerable level of complexity to the entry-for-buyout model. Rasmusen notes, however, that while it may appear that an incumbent could attempt to commit (before investment by an entrant) to make only a "low" (possibly zero) buyout payment should entry occur, this commitment is not optimal if entry occurs anyway. Since it is not, the commitment will be ignored by potential entrants. In that circumstance, no pre-entry reputation or signaling by an incumbent can stop entry. Moreover, if an entrant's average variable costs equal the incumbent's, buyout of the entrant is the incumbent's best response.

It should be noted that the entry-for-buyout problem described theoretically here, and in historical context below, has no direct connection to the cost condition normally associated with regulation--economies of scale. The important factors are the presence of sunk investments and an entrant's ability to target an incumbent's customers. Thus, the role of anti-social entry in the advent of regulation stands apart from the traditional natural monopoly explanation, which centers on the presence of economies of scale so large that one firm can serve the entire market at lower cost than could two or more firms. Harold Demsetz and others have demonstrated that the natural monopoly cost condition alone need not result in government regulation.<sup>16</sup> Armed with good information and low transaction costs, private contracting and "competition for the field" may solve the apparent natural monopoly dilemma, low cost provision by a single firm, but monopoly pricing where only one firm operates. In either case, the role of regulation is seen as a response to situations where private contracting cannot economically resolve bargaining problems.

Rasmusen's model highlights that entry-for-buyout is at bottom a contracting problem, for if the incumbent could contract with customers to preclude them from turning to an entrant, the threat of entry would be harmless. Entry-for-buyout works only where such contracting, or its alternative, joint ownership with customers, is costly to implement.

The main features that drive Rasmusen's results, sunken investments by incumbents and entrants, and variable-cost pricing when entry occurs, seem certain to have been present in early utility markets.<sup>17</sup> The historical description presented below makes it abundantly clear that, in many instances, entrants appeared solely for the purpose of winning a payment from the incumbent utility. Rasmusen's model explains how natural economic forces could create such behavior.

### III. ENTRY PROBLEMS IN EARLY GAS AND ELECTRICITY MARKETS

In their early years, gas and electricity markets developed in three distinct but parallel stages.<sup>18</sup> In the first stage, pioneering firms established

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16. Harold Demsetz, *Why Regulate Utilities?* 11 J.L. & ECON. 55 (1968).

17. BEHLING, *supra* note 6, at 37-8: "Public utility capital is to a high degree immobile and specialized . . . and the introduction of competition compels a fight to the death for the available business."

18. A number of economic histories are available of early utility markets. For example, see

plants and distribution systems and began offering their "new" product to consumers. These firms typically received non-exclusive franchises from city governments for the use of city streets.<sup>19</sup> In the second stage, cities realized that the first franchises were reaping monopoly profits. To aid consumers (taxpayers), city governments began granting competing franchises.<sup>20</sup> New firms entered these markets, sometimes duplicating the plants and distribution systems already in place, and competed for the customers of the incumbent firm. This period of free entry produced a continuing cycle of rate wars between the incumbent and entrants, followed by consolidation of all firms into a single incumbent, followed by yet more entry, rate wars, and a repeat of the cycle. Competition was fierce, but almost always short-lived.<sup>21</sup> Consolidation did not deter more entry.<sup>22</sup> If anything, it induced entry as promoters discovered that incumbent firms' best response was to buy them out. An early gas industry publication makes it quite clear that entry-for-buyout was a well-known phenomenon at the time: "Many utility companies were promoted with no purpose other than to discommode the incumbent company and to force the latter to pay a fancy price to regain exclusive control."<sup>23</sup>

In the third period of industry development, incumbent firms, supported in many instances by consumers, persuaded state legislatures<sup>24</sup> to control entry in utility markets. These controls typically went hand-in-

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BEHLING, *supra* note 6 and GLAESER, *supra* note 6. Two recent studies include Werner Troesken, *The Sources of Public Ownership: Historical Evidence from the Gas Industry*, 1 J.L. ECON. & ORG. 1, (1997), and George L. Priest, *The Origins of Utility Regulation and the 'Theories of Regulation' Debate*, 13 J.L. & ECON. 289 (1993). Both of these conclude that regulation evolves in response to contracting problems and is usefully viewed as a quasi-public contract among producers, customers, and entrants administered by government commission.

19. GLAESER, *supra* note 6, at 218. "... cities welcomed franchise seekers as public benefactors. The franchise was regarded as a necessary inducement to begin a much needed service. The cities wanted to grow and, realizing that the new improvements would greatly enhance realty values, they were anxious to have the services extended."

20. The realization that franchises were quite valuable also led to widespread corruption among local government officials. *See id.* at 231.

21. "Competition which was relied upon to insure for the public reasonable rates and satisfactory service proved to be elusive and non-enduring and failed to measure up to expectations. It continually was disappearing as a result of bankruptcies, consolidations, and formal or informal agreements.... Whereupon, the public paid for the competitive folly in high rates to cover dividends on unused, unnecessary investment, and watered stock." BEHLING, *supra* note 6, at 20.

22. Perhaps the most dramatic example of the outcome of this process is the gas market in New York. By the time commission regulation was instituted in that state in 1907, The Consolidated Gas Company of New York was a consolidation of seventy different companies. *See* GLAESER, *supra* note 6, at 222.

23. BEHLING, *supra* note 6, at 21.

24. Cities in many instances sought to maintain control of the situation by continuing to regulate utility firms via franchises to use city streets. Legally, these were treated as though they were contracts between the city government and a private firm. Intractable bargaining problems such as: the appropriate duration of a franchise; its degree of protection from competition; and adaptability of authorized rates to ongoing economic changes made such franchises ineffective in satisfying both sides purposes. The collapse of this vehicle of exchange added to the momentum to regulate utilities via state commission.

hand with statutory ceilings on utility prices. Problems with adapting these statutes to new conditions led to formation of state regulatory commissions charged with administering entry controls and rate ceilings on a continuing basis.<sup>25</sup> By 1920, most states had such commissions. The problem of entry-for-buyout played a prominent role in the creation of state commissions, as illustrated by the following passages from three early influential state commission reports and decisions.

#### Massachusetts:

Experience shows that exploitation of a new company in a territory already occupied does not necessarily depend for its financial success upon the sale of electricity to the city and its citizens. That is by no means the only source of profit to such a company. It has been repeatedly demonstrated that the profits of a new concern do not so much depend upon its dealings with the public as upon the relation which it may be able to establish with the company first in the field.

If the request of the new company be granted, it may naturally be expected that for a time both city and commercial lighting will be offered by both companies at considerably less than present rates, but such competition under the conditions in this case, is sure to be expensive, even though for a time apparently economical or profitable. We may confidently expect, first losses, then profits; losses in the conduct of business and the struggle for a control of the situation; profits in the later union or consolidation; losses for a time in the supply of electricity, to be converted later into new capitalization as a perpetual and irremediable burden of the public. The temporary advantage to a portion of the public . . . as a whole, through the larger capital demanding a return, much of it representing unnecessary duplication of properties as well as losses . . . .<sup>26</sup>

#### Wisconsin:

Competition in this service therefore usually means a bitter struggle and low rates, until one of the contestants is forced out of the field, when the rates are raised to the old level if not above it, or to a combination or understanding of some sort between them which also ultimately results in higher rates. In this way it often happens that the means which were thought to be the preventative of onerous conditions [i.e., entry by new firms] become the very agents through which such conditions are imposed. In fact active and continuous competition between public utility corporations, furnishing the same service to the same locality, seems to be out of the question.<sup>27</sup>

#### New York:

A business, which supplies to a community a public utility like gas, or electricity for light or power, is one in which free and full competition between two companies engaged in the same business cannot be expected to prevail permanently. Experience has, we think, amply demonstrated the fact that

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25. GLAESER, *supra* note 6, at 250-1.

26. 1904 Mass. Gas. & Elec. Comm'n Ann. Rep. 24, as quoted in William M. Wherry, Jr., *Public Utilities and the Law*, 210-1(1928), [hereinafter Wherry].

27. In re Application of La Crosse Gas and Electric Co., 2 Wis. R.C. Reports (1907) (as quoted in WHERRY, *id.*).

when there is more than one such company in a municipality engaged in the same business, while active competition may prevail for a more or less brief period, the companies generally find it to their interest to reach an understanding either as to prices or division of territory, and in the great majority of cases the two companies either become one or the control of both passes into the hands of the same parties. . . . After the almost inevitable consolidation, understanding or division of territory, however, the service often becomes poor, and prices are raised in an effort to make the city and its inhabitants bear the burden involved in paying returns on the unnecessary capital invested in duplicated plants.<sup>28</sup>

The following pages describe the gas market evolution in Baltimore, Chicago, and London. The events and problems in these particular cities were widespread and occurred in essentially every major area which, at the time, was large enough to support installation of gas and electricity services. These histories provide a more detailed account of the general statements above. In addition they demonstrate that the entry-for-buyout problem described by Rasmusen's model was a prominent one at the time and central to the move to abandon competition in favor of regulation.

#### A. Gas Service in Baltimore

Baltimore, Maryland was the first city in the United States to enjoy gas street lighting.<sup>29</sup> In late 1816, the Gas Light Company of Baltimore (Company) obtained permission from city officials to use public thoroughfares for laying its pipes. In addition, it obtained a one-year contract to provide gas illumination. The contract stipulated that the price of gas could not exceed that of other forms of illumination. In early 1817, the Gas Light Company received an incorporating charter from the State Assembly.<sup>30</sup>

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28. Lockport Light, Heat & Power Company 12 (1907), 1 P.S.C. Reports. (as quoted in WHERRY, *id.*).

29. This section draws from GEORGE T. BROWN, THE GAS LIGHT COMPANY OF BALTIMORE, A STUDY OF NATURAL MONOPOLY (1936) [hereinafter BROWN]; See also W. TROESKEN, WHY REGULATE UTILITIES? THE NEW INSTITUTIONAL ECONOMICS AND THE CHICAGO GAS INDUSTRY, 1849-1924 (1996) [hereinafter TROESKEN].

30. At that time, incorporating charters granted a business organization authority "to be" (a general incorporation), "to do" (a specific authority to engage in defined activities), or "to use" (authority to use public facilities such as streets as part of the overall corporate activities). For sometime, legislatures granting such charters used them as de facto means of regulating all types of businesses, including early gas, electricity, and phone companies. See GLAESER, *supra* note 6, at 197-202. Glaeser faults the move from specific to general charters as precipitating the chaos in markets that eventually call for regulatory commissions:

[I]t is . . . a mistake to assume that the adoption of general incorporation laws brought about an improvement in the machinery of regulation. As a matter of fact, the first effect was a recession in the vigor of regulation. Under such laws a small number of persons, by simply filing a certificate, could organize a public utility corporation and be subjected to very little control of their operations. The era of free competition among utilities should really be associated with this system. It is small wonder that abuses crept into corporate organization and management. Even the power of eminent domain was often used by rival companies to defeat legitimate and sound en-

The Company began operation in February of 1817. Despite having adequate funds, the Company was slow to install new facilities as fast as the City Council requested them. It claimed that laying mains and pipes just for street lighting was not economically feasible in neighborhoods where no private sales were likely to be made.

Sensing that public opinion was turning against the Company (its introduction of meters to measure gas usage angered many customers), a group of investors unsuccessfully sought to obtain a charter for a new Baltimore gas company in 1834. Surviving this first attempted entry, with its meters in place, the Company prospered. Revenues and the number of customers increased. In 1851, another firm sought and received permission from the City Council to use public streets to lay new pipelines. The Company responded by lowering its price from \$4.00 per mcf (thousand cubic feet) to \$3.00 per mcf. With this price drop, it easily won the annual city street lighting contract. This award effectively blocked the new firm before it had sunk money into facilities.

Though the Company's price cut deterred this second attempted entry, the episode was a turning point for it and for future potential entrants. First, it underscored the importance of the Company's relationship with large customers, including the City Council. Second, it signaled to potential entrants that the Company would cut prices significantly should they enter. Yet this expectation did not deter future entry. On the contrary, the rate of entry became much greater.

The lower gas price of 1851 induced rapid expansion of gas consumption. Following another aborted attempt to organize a new company in 1858, and an unsuccessful proposal that the city construct its own gas works, the City Council and the Gas Light Company entered into a contract in 1859 to more clearly delineate each other's obligations. The main features of the agreement were:

1. The Company would lay gas mains wherever and whenever the City Council requested, with the cost to be borne by the company but not to exceed \$10,000 per year.

2. The Mayor and City Council promised to assume the cost of all mains laid by the Company to satisfy the ordinance if they authorized any other gas company to use thoroughfares where the Company already had laid its mains.

3. If the City purchased the gas mains, the Company could deduct from the sale price eighteen dollars for every attachment [these were spurs that connected homes and businesses to the mainlines in the street] to the mains; and in the future would pay eighteen dollars for each new attachment until repayment was returned to the city treasurer.

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terprises by blocking construction, or to force one of them to purchase needed properties at exorbitant prices. The reaction set in after it was recognized that the system involved social waste and that the inevitable outcome of competition would be consolidation.

GLAESER, *supra* note 6, at 203-4.

4. The Mayor and City Council could repeal the ordinance at any time. However, in case of repeal, the City would repay the actual cost of the mains, minus the refunds.

Although this agreement was a negotiated exchange, it bore the markings of what later would become government-imposed regulations. The fact that the City Council was a party to this agreement did not mean that it was a government regulation. Rather, it represented the outcome of bargaining between the Company and its largest customer, the City Council of Baltimore. The terms of the agreement applied only to street lighting, not to the gas service the Company provided to private homes and businesses.

The 1859 contract resembled later regulations in several ways. First, the City's promise to protect the Company's investment by compensating the Company if any new firm was allowed to install competing facilities is somewhat like a certificate of public convenience and necessity, which in later years signified a utility's right to a particular territory. Second, the Company's obligation to install facilities wherever the City requested prevented the Company from leveraging any site-specific advantage into better terms for new service. The "mandatory" certificate of public convenience and necessity contains an identical requirement. Finally, the City's right to buy Company facilities at cost foreshadows cost-based pricing regulation. Any effort to price above cost created the possibility of forfeiture of ownership of the resulting profit stream.

The terms of the agreement were also notable because they provided a protective framework within which the City and Company could transact in the future. No specific references were made to prices or to the quantity the Company would supply each year. Instead, the terms protected each side if the other party sought to extract unreasonable terms.

This private, post-investment agreement between The Company and its largest customer did not prevent further extortionate entry. Another effort to procure a charter occurred in 1859, this time for the Peoples' Gas Light Company. The Maryland Assembly was receptive to the idea. The Gas Light Company's response to Peoples' pending entry was swift, it immediately lowered its price to \$2.50 per mcf. Whether this action influenced Peoples' promoters is not clear. However, internal disagreements as to which securities firm would handle issuance of the stock delayed the raising of capital. Before the internal dispute could be settled, the Civil War distracted all concerned. The new company shelved its plans.

Following the War, the Company reminded the City Council that it could not grant the new company permission to use city streets without compensating the Company. Uncertainty over obtaining this permission from the City likely played a part in Peoples' continuing failure to raise the capital needed to build a gas plant.

The Company continued to prosper for a number of years. It regularly distributed ten percent dividends. It declared a one-for-two stock dividend in 1869, however, economic success attracted more promoters. That same year, a group of New York promoters, "typical of the bands of

promoters who were going from city to city, eager to organize gas companies so that the citizens could 'enjoy the free play of competition' in the gas industry,"<sup>31</sup> made another effort to use the Peoples' charter. The prospectus these promoters issued described the "need of another gas company in Baltimore, the success of competition in other cities, and the enormous profits enjoyed by all such ventures."<sup>32</sup> The last two claims taken together strike an economist as paradoxical. Competition should prevent "enormous" profits. If however, the "success of competition" in markets with large sunken investments leads to buyout of the entrant, then the source of such profits is more easily understood.

The promoters raised enough capital to build a gas plant and planned to begin construction. The Company responded in two ways. First, it persuaded the City Council to bid for its property. This effort failed when citizens pressured Council members not to buy the company. Then shareholders of the Company obtained an injunction, halting Peoples' construction on the grounds that it had not obtained permission from the City to lay pipelines.

The Company terminated its lawsuit on November 21, 1870. Stockholders voted to sell control of their firm to a group led by Mr. S. L. Husted, another New York promoter. Thus, New York promoters now owned both the incumbent company, Company, and the entrant, Peoples'. Following the change in ownership, the Gas Light Company made no further effort to hinder the entrant's activities. Using its exclusive contract with the City, it was able to force Peoples' to operate only in a new, undeveloped section of the City. Peoples' paid \$1,000,000 to the Company for this privilege. Thus the two companies divided the City into exclusive territories.

Notwithstanding this separation, after several years of sales, Brown states that:

Although gas companies in other cities were exposed to ruinous competition, Baltimore still had not seen the play of competitive forces. Nevertheless, the price of gas in Baltimore was equal to or lower than that in any city of the country, with the exception of Philadelphia where the gas works were municipally owned.<sup>33</sup>

Promoters formed a new company, Consumers Mutual Gas Light Company (Consumers Mutual), in 1876. Company organizers knew just which levers to pull to recruit support for their charter. The organizers included provisions in their application promising that any earnings above ten percent would be distributed to customers. The organizers also promised never to merge with any other gas company. That such a promise was

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31. BROWN, *supra* note 29, at 40.

32. BROWN, *supra* note 29, at 40 (quoting *Prospectus of Peoples Gas Light Co.* (Peabody Library, Baltimore, MD.)).

33. BROWN, *supra* note 29, at 45.

necessary suggests that even at this early date, state legislators had become familiar with the problem of sham entry. The promise never to merge with any other company seemed to demonstrate the "sincerity" of an entrant's intentions. It looked like a credible commitment to competition.

Consumers Mutual began to operate in 1878. It charged \$2.00 per mcf, fifty cents less than either incumbent. Within two weeks, both incumbents had lowered their price to \$1.50 per mcf. This "competitive era" of gas supply in Baltimore lasted for about two years. On June 7, 1880, stockholders of all three firms approved a consolidation. The new company became The Consolidated Gas Company of Baltimore (Consolidated). The company's gas price was \$2.00 per mcf, fifty cents above the recently competitive price.

To accomplish this merger, Consumers Mutual had secretly amended its charter shortly after it began operations to let it merge with another firm. That Consumers Mutual was able to abandon its promise not to merge, highlights the difficulty of arranging an enforceable private contract mechanism to control entry-for-buyout. Enforcement of such a promise by dispersed, unorganized consumers was virtually impossible. In addition, once the entrant has invested its money into facilities, even the incumbent may wish to see such a promise removed.

In 1881, another group of investors tried to start a new gas company, The Equitable Gas Company of Baltimore (Equitable). Consolidated, the incumbent firm lobbied lawmakers in an effort to prevent Equitable from getting a charter until it had raised the total capital cited in its charter. Equitable tried to begin plant construction after having raised only \$5,000 of the \$2,000,000 it deemed necessary to operate.

Failing in its legislative effort, Consolidated dropped its gas price to \$1.00 per mcf, but only in those parts of the city where Equitable threatened entry. Three months later, Consolidated extended this price across the entire city. The rate war lasted only three months. Then Consolidated and Equitable reached a "pooling agreement" which limited Equitable's service area and required it to buy its gas supply from Consolidated. The companies set the gas price at \$1.75 per mcf. This was \$.25 per mcf lower than before Equitable's entry, but \$.75 per mcf higher than rates during the price war. The year was 1885.

The ease with which Equitable had raised capital, built a small plant and distribution system, and reached favorable merger terms with Consolidated told other promoters that Consolidated had little ability to fend off opportunistic entrants. Within a matter of weeks, the Chesapeake Gas Company of Baltimore (Chesapeake) appeared. The new firm raised capital easily, and it began to construct a plant and distribution system. As in previous episodes, the incumbent lowered its price. As an enticement, Chesapeake canvassed new customers at the unheard of rate of \$.50 per mcf. Consolidated matched this offer, but Chesapeake forged ahead and began building a gas plant and tore up city streets to lay more gas mains.

To Baltimore citizens, Chesapeake's hasty entry, its absurdly low price, and another round of torn-up streets were the last straws in the cha-



otic roller-coaster ride of entry, price war, and consolidation they had experienced for almost thirty years. In 1886, Maryland passed three laws, the purpose of which were:

1. To end all "paper companies"—gas companies which had charters but had not erected works;
2. To prevent the formation of new gas companies in Baltimore City, Baltimore County, or Anne Arundel County;
3. To permit the Equitable Gas Company to consolidate without any mention of any particular concern.<sup>34</sup>

Since Chesapeake's operations lay mostly in Equitable's territory, competition for customers was most intense between these two companies. Finding it difficult to induce Equitable customers to switch, Chesapeake turned to a different tactic: it purchased enough Equitable stock to gain control of its Board. Chesapeake then forced Equitable to lower its price to \$.35 per mcf. This price forced the Equitable company to cease operations, leaving only Chesapeake and Consolidated. After a year of competition, these two companies merged in 1889.

While merger talks were still underway, news leaked that the consolidated company was planning to raise the price of gas to \$1.50 per mcf (a full \$1.00 increase for many consumers). Baltimore citizens were furious about this possibility and persuaded the State Assembly to set a maximum price for gas in Baltimore of \$1.25.

With the passage of laws which prevented the formation of new gas companies in Baltimore and setting a maximum price, the Maryland State Assembly initiated public regulation of gas companies. In the years following these gas laws of 1886, legislative control of prices proved to be an unwieldy way of adapting prices to changing economic conditions. Similarly, the form of entry restriction and the requirement that an entrant obtain a special charter from the state, meant that this protection could be withdrawn at the whim of legislators. In addition, a loophole was found in the entry protection in 1904. In that year, Mr. Charles Schrieber formed the Baltimore Suburban Company (Suburban) as a sole proprietorship for the purpose of entering the Baltimore market as a gas distributor. The Maryland Court of Appeals confirmed that the State's 1886 laws did not apply to firms not organized as corporations and allowed the Suburban Company's entry.<sup>35</sup> Consolidated quickly bought Suburban and Maryland amended its laws to prohibit individuals from entering the gas business without legislative approval.

In 1907, the State of New York became the first state to empanel a Public Service Commission to supervise entry and prices for gas companies (as well as for electric and railroad companies). Following New York's lead, the Maryland Assembly considered establishing a public utility commission.

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34. Brown, *supra* note 29, at 58.

35. Brown, *supra* note 29, at 92.

In 1910, it passed the Public Service Commission Act<sup>36</sup> in a form virtually identical to that of the pioneering New York law. According to Brown:

To imagine that the members of the legislature were conscious of the fact that they were casting aside the idea of competition and inaugurating the new policy of control by state action is to attribute to most of the members too keen a sense of what was actually occurring. Indeed, there were very few who thought that the principle of competition would not operate in the gas business. The belief was prevalent that only the inordinate desire of the promoters for gain caused the companies to amalgamate and the price of gas to be raised.<sup>37</sup>

*B. Gas Service in Chicago*<sup>38</sup>

Chicago's gas service began in the mid-nineteenth century. In February of 1849, the Chicago Gas Light and Coke Company (Gas Company) obtained a corporate charter from the state legislature. This charter gave the company permission to manufacture and sell gas in Chicago and to use city streets to lay mains and pipelines without the city council's permission. These rights were to last in perpetuity. For a lesser period, ten years, the company would enjoy the exclusive right to sell gas in Chicago. The charter did not set the price the company could charge. The price of gas (for street lamps) was set by negotiations between the city and the Gas Company at \$2.50 per mcf. The Gas Company set the price to private consumers at \$3.00 per mcf. Service started in 1850 for 125 consumers and 99 street lamps on the city's south side.

During the 1850s, Chicago's population grew from 30,000 to 100,000. In 1853 and 1854, the Gas Company expanded by moving into neighborhoods on the north and west sides of town. Its gas manufacturing capacity and miles of pipeline increased steadily. In 1855, the legislature amended the Gas Company's charter to let it raise more capital for further expansion.

In 1855, a second gas company was formed. The charter granted the new company, People's Gas Light and Coke Company (People's), the right to manufacture and sell gas in Chicago beginning in 1859, when Gas Company's exclusive contract expired. People's could begin operations sooner if it obtained Gas Company's permission. The charter provided that People's would set its price at \$2.00 per mcf for street lamps and no more than \$2.50 for private consumers, prices lower than Gas Company's. In response, Gas Company negotiated a renewal of its ten year contract with the city. Its new contract included a reduced price of \$2.00 per mcf for street lamps.

After some initial difficulty in raising capital, People's began operat-

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36. 1910 Md. Laws 180

37. BROWN, *supra* note 29, at 62.

38. This section draws from two sources: WALLACE RICE, 75 YEARS OF GAS SERVICE IN CHICAGO (1925); and LLOYD WENDT and HERMAN KOGAN, LORD OF THE LEVEE: THE STORY OF BATHHOUSE JOHN AND HINKY DINK (1945).

ing in 1862. Even before any significant sales rivalry developed, People's and the Chicago Gas Light Company agreed to divide the city into two exclusive territories. Gas Company received the north and south sides of town; People's occupied the west side. To effect this separation, Gas Company sold some of its west side facilities to People's.

In 1871, fire destroyed much of the city, including the facilities of both gas companies. Perhaps partly in response to this opportunity, several new companies appeared in the early 1870s. Some of these companies competed with the incumbents. Others entered growing suburban areas of Chicago not served by any gas company. The Hyde Park Gas Company was one of the companies serving the suburb of Hyde Park. A manufacturing firm, the Pullman Company, built its own gas plant in 1880 to service its factory buildings. People's Gas Light, which served the territory where the Pullman plant was located, successfully sued Pullman claiming that the plant was beyond the authority in Pullman's corporate charter. As a result, Pullman sold the plant to People's, which removed all usable parts and dismantled the rest. Some years later, People's bought and dismantled the Hyde Park Gas Company.

Despite entry by several new gas companies during the 1870s, none posed a significant threat to the incumbents, primarily because the new firms entered unoccupied areas. But in the 1880s, entry began to threaten established territories. Consumers Gas Fuel and Light Company (Consumers), incorporated in 1881, received permission in 1882 from the City Council to lay mains and pipelines *anywhere* in the city. Consumers began operating in both incumbents' territories. In response, Gas Company (occupying the north and south sides of town) lowered its price from \$1.75 to \$1.25 in the fall of 1883. People's (serving the west side) lowered its price to \$1.50.

The lowered prices hurt Consumers, which had difficulty attracting customers. In 1886, it filed for bankruptcy, but was reorganized and continued to operate, in part by selling gas to the incumbents.

More entrants were organized in 1885. The Equitable Gas Light and Fuel Company was formed in August and the Illinois Light Heat and Power Company in November. Equitable's charter provided that it would never merge with any other company, while Illinois Light Heat and Power proposed to manufacture and sell gas to existing companies but not to lay mains to distribute gas directly to consumers. Also organized in 1885 was the Calumet Gas Company.

In 1886, Gas Company, one of the original firms, invaded People's territory on the west side. Peoples sued, citing the companies' prior written territory allocation. According to Rice,<sup>39</sup> the courts initially issued an injunction halting Gas Company's invasion, but then determined that the previous agreement violated public policy. This court decision<sup>40</sup> foreshadowed prolonged rivalry between the two firms, but ownership changes in-

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39. RICE, *supra* note 36, at 35.

40. Chicago Gas Light Co. v. People's Gas Light Co., 13 N.E. 169 (Ill. 1887).

tervened before such rivalry could develop.

The ownership change was the formation of the Chicago Gas Trust in 1887. The "Gas Trust" (Trust) was a consolidation of all eight gas companies operating in Chicago. Although there were eight companies, only four were independent organizations, The Chicago Gas Light and Coke Company, Peoples Gas Light and Coke Company, Consumers Gas Company, and the Equitable Gas Light and Fuel Company. The Trust operated these four concerns as ostensibly separate companies. According to Rice, "this . . . attempt at a general consolidation was the beginning of complicated litigation that ran on for nearly ten years. One after another, the courts nullified every expedient that lawyers could devise under then-existing statutes for effecting consolidation."<sup>41</sup> The litigation was resolved by a state law in 1897, which permitted consolidation.<sup>42</sup>

The presence of the Trust did not slow entry by new firms. In fact, the Trust gave new gas companies an easy target to exploit and gain public acceptance (and thereby city council approval) for new ventures. In 1889, for example, Henry Watson, a stone mason from Alton, Illinois, organized The Mutual Gas Company. According to Wendt and Kogan:

[T]he following week. . . Mike [Ryan, a Chicago City councilman] had another ordinance, this time for the old Hyde Park Mutual Fuel Company. The same monotonous charges were raised again, but Ryan insisted that the company intended to offer low gas rates and would light Chicago streets at seventy-five cents for 1,000 cubic feet, considerably under the one-dollar rate of the Gas Trust. . . . [S]ubsequent investigation disclosed that the Henry Watson, of two prior defeats, was again the promoter. He had only \$200,000 to back his company, a wholly inadequate amount, and the press shouted that here was another fictitious company, organized for the sole purpose of sandbagging the seven [sic] companies which formed the Gas Trust.<sup>43</sup>

Watson nonetheless received permission from the city council to lay mains on the south side of town. Having obtained this authority, he built a gas plant, but no distribution system, and sold gas to incumbent companies at "exorbitant" prices. In 1894, encouraged by his success, he decided to try to distribute gas in competition with the Trust. He formed The Universal Gas Company and again sought permission to lay mains. City council debate was quite heated between council members who had a financial interest in Universal, and those who had a share of the Trust. After an initial veto by the Mayor, the measure succeeded. Soon after construction was completed, the Trust purchased Watson's Universal Gas Company.

In 1895, the Ogden Gas Company was formed and given a fifty year franchise by the city council with the now-usual provision forbidding merger with another company. In addition, Ogden promised (via the

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41. RICE, *supra* note 36, at 36.

42. 1897 Ill. Laws 2, 8; *People's Gas, Light & Coke Co. v. City of Chicago*, 194 U.S. 1 (1904).

43. WENDT and KOGAN, *supra* note 36, at 89.

terms of its franchise) to sell gas to private users for 90 cents per mcf and to pay the city 3.5 percent of its gross income. In an effort to deal with Ogden, the Trust also formed a new company, the Municipal Gas Company. Municipal's only purpose was to compete with Ogden. To do this, it leased facilities from Trust member companies in the areas where Ogden operated. A price war between Ogden and Municipal ensued. The price charged by both eventually fell to 40 cents per mcf but, despite heavy losses, neither would withdraw from the field. Trust found that it could not keep up the war for reasons related largely to public relations. Trust customers in areas served by Ogden paid 40 cents, while other Trust customers paid \$1.00 or more. The latter interpreted this to mean that they were being overcharged. The Trust bought Ogden in 1900, and rates in all areas rose to \$1.00. Wendt and Kogan describe the episode:

The Ogden Gas ordinance called for a ceiling of 90 cents per 1,000 cubic feet as compared with the \$1.20 rate charged by the Gas Trust, but this fooled nobody. It was part of the sandbagging technique to force the Gas Trust to buy up the ordinance . . . . [If the Gas Trust failed to purchase the ordinance and the Ogden Company commenced business,] the ceiling could readily be removed by amendment. Both measures [appeared] to the public to be exactly what they were, brazen shakedown ordinances.

The legislation of 1897<sup>45</sup> not only consolidated all Trust firms into a single firm, but stipulated that the price of gas should be no higher than the lowest price previously charged by any of the Trust's members. The rate for 1906 - 1911 was 85 cents per mcf. It had become common for gas companies to set prices for street lighting (under contracts with the city), and derivatively for consumers, for five-year periods. Before the five-year period beginning in 1911, the City Council retained accountants and engineers to value People's property and to estimate the costs of manufacturing and distributing gas. These experts determined that the price for that period should be seventy-seven cents per mcf and they recommended this price to the city council. The council demanded this rate but People's resisted, choosing instead to challenge the city's right to investigate its financial and operational affairs and therefrom to demand a specific price. The Illinois Supreme Court found the city's claimed power over such information invalid.<sup>46</sup>

The bad relations between the city and People's, borne of this litigation, highlighted the problem of finding a mutually acceptable way of determining the price to be charged by a monopolist gas company. The solution adopted in Illinois, like that in most other states, was to form the

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44. *Id.* at 119.

45. RICE, *supra* note 36.

46. *Sutter v. The People's Gas Light & Coke Co.*, 120 N.E. 562 (Ill.1918); *Mills v. Peoples Gas Light & Coke Co.*, 158 N.E. 814 (Ill. 1927).

Illinois Public Utility Commission in 1913 to oversee entry and territory allocation among gas companies and to determine "just and reasonable" prices. The Chicago City Council challenged the state's jurisdiction, but was unable to overcome the political and economic forces that made state commission regulation attractive to both consumers and utilities.<sup>47</sup>

### C. Gas Service in London

As the following synopsis shows, gas service in London experienced much the same cycle of entry, temporary rate competition, and consolidation.

At first, competition was met by competition, but under the Government of Lucas and after his death in 1830, that of William Parry Richards, the Imperial (Gas Company) adopted a policy of negotiating monopoly districts with newcomers, thus buying off competition. It was not until threatened by companies, and there was reason to believe they could not be bought off by districting agreements, that the Court (i.e., the company's board of directors) did not give serious consideration to reducing the price of gas. This attitude was, of course, an invitation to promoters of competitive undertakings. The decision to reduce price in an attempt to resist buying out an entrant, welcome as it was to the public, suggested to certain landowners an easy way of appreciating the value of their properties. It was not long before the Company found it desirable to begin negotiations for a canal-side site at Shoreditch, which was offered to them for six thousand pounds, and which, if they declined to purchase, would be offered to the North London Gas Company (North London). Another plot of land, in this case at Fulham, was quickly bought up to save it from being acquired by the Borough of St. Marlybone Company. It is interesting to note that neither the North London nor the Borough of St. Marlybone Companies ever came into being, though the latter progressed as far as promoting a bill in Parliament.<sup>48</sup>

The government-sponsored solution was to protect exclusive territories and install government oversight of pricing. The following is a letter to a doubting gas company executive from Sir William Congreve, a member of Parliament:

I cannot but imagine that you must be quite mistaken . . . as to the object of the conference which was proposed to you the other day, and which certainly, if rightly comprehended, must be deemed a benefit to the Companies themselves, while it is calculated to avoid much inconvenience and nuisance now endured by the public from the plurality of mains belonging to the different companies now passing through the same streets. The intended arrangement goes in fact to secure to you unmolested the full benefit of all you now possess without danger of being deprived of this possession either by the caprice of your customers or

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47. TROESKEN, *supra* note 29, ch. 7.

48. STIRLING EVERARD, *THE HISTORY OF THE GAS LIGHT AND COKE COMPANY, 1812-1949*, at 170-2 (1949).

by the exertions of a successful rival; . . . In short it gives you a complete monopoly over the whole district secured to you, whereas at present you hold neither district nor trade but as you are successful in competition with other speculators who may from many circumstances not within your own control be able to undersell you. Now in return for this beneficial privilege which the new Act will grant you (for it is one of these rare instances where not only all the existing competitors for the supply of the public are to derive advantage but the public also are to be benefited) in return, I say, for all this, all that is required of you is to supply your district with good gas for a certain fair price to be calculated and fixed by the consent of all parties, which price will at all times be open to fresh adjustment according to the existing state of things.<sup>49</sup>

The evolution of utility markets in Baltimore, Chicago, and London from competition to regulation were not isolated cases.<sup>50</sup> From 1900 to 1920, virtually all local utility markets in the United States shifted from open competition to some form of government-sponsored entry control and pricing regulation.<sup>51</sup> Entry-for-buyout played a substantial role in that evolution.

In general, the early role and work of regulatory commissions was viewed by many as a solution to chaotic, floundering markets that could not sustain competition. Commissions were "scientific" and "just and reasonable" in the determination of rates, service standards, and entry control. An early observer wrote that:

Each of the three pioneer commissions was of extraordinarily high caliber and as a result the regulatory movement was off to an auspicious start. By 1909 most people who were concerned with the subject, in and out of the industry, had begun to look favorably upon regulation by state commissions.<sup>52</sup>

Over time, economists' studies of regulatory commission behavior and the performance of regulated utilities revealed problems with commission regulation and identified economic perversities and distortions attending regulation-based pricing.<sup>53</sup> Such studies helped persuade policymakers to take another look at the desirability of utility regulation.

#### IV. CONCLUSION

The analysis and history presented here suggest that intricate relations between economies of scale and scope, contracting costs, and free entry

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49. *Id.* at 149-50.

50. CHARLES WHITING BAKER, *MONOPOLY AND THE PEOPLE*, 62-4 (1890); CLYDE LYNDON KING, *THE REGULATION OF MUNICIPAL UTILITIES*, 56-72 (1914).

51. See Table A-1 in George J. Stigler & Claire Friedland, *What Can Regulators Regulate? - The Case of Electricity*, 5 J.L. & ECON. 13 (Oct. 1962).

52. FORREST McDONALD, *INSULL* 121 (1962).

53. Examples of such studies include: G. Hilton, *The Consistency of the Interstate Commerce Act*, IX J.L. & ECON. (1966); T. Keeler, *Airline Regulation and Market Performance*, 3 BELL J. ECON. & MGMT. SCI. (1972); and S. Peltzman, *An Evaluation of Consumer Protection Legislation: The 1962 Drug Amendments*, 81 J. POL. ECON. (1973).

will complicate the task of moving gas and electric markets from regulation to competition. As deregulation progresses, we can expect a prolonged period of instability as firms experiment with production, product offerings, marketing techniques, and contracting methods. Regulatory commissions will likely continue to play a prominent role as this industry evolution occurs. It is probably best, therefore, not to view deregulation as a withdrawal of government from utility markets, but rather as a shifting of responsibilities. Where yesterday's regulatory commissions acted principally as a mediator between a protected monopolist and consumers by taking a relatively active role in approving investments and setting prices, tomorrow's regulators will write, monitor, and enforce rules to govern the new competition in all its possible dimensions. They will continually be called upon to assess a firm's conduct in terms of its efficiency effects and market power potential and adopt rules accordingly. This shift in regulators' roles may not, in the end, represent a reduction in government's role in gas and electricity markets. To go forward with the plan of partial deregulation, regulators will need to remember a number of lessons from history:

1. Not all episodes of low prices, or "price wars" are good for consumers. In particular, low prices offered by firms just entering a market might be viewed with some suspicion. This is an especially difficult lesson to heed. Yet, the history recited above gives us fair warning of the hazards of welcoming each and every entry of new firms and low-price contests.

2. Successful efforts to enact long-term contracts as a means to protect large sunken investments may mean that competitive forces will not act in accordance with the traditional model of perfect competition, such as firms continually engaging each other in a price rivalry. Instead, we may see episodes of intense competition, followed by periods where the winner of such contests is the only provider for a long period.

3. Many different combinations of product offerings are likely to appear as the industries (gas and electricity, or both combined) grope for that combination which permits stability in terms of pricing, costs, contracting, and entry. Along with the experimentation with products, we can expect to see a prolonged period of mergers and spin-offs as firms seek to position themselves in evolving product markets.

4. Entering firms will seek to serve high-profit markets and customers first. This is natural and rational but may have important impacts on the costs of incumbent firms, especially those that remain under a regulatory mandate to serve high-cost customers. We cannot expect such a situation to persist. The role of regulators in sorting out markets and its authority over firms in these markets will need to be continuing in the future.

5. Regulators and antitrust officials, when confronted with allegations of the use of new types of contracts to exercise market power, should carefully consider the basic contracting problems facing the parties at question. Is the objectionable arrangement solving a problem that cannot be solved at lower cost with less objectionable methods? If so, the benefits of the arrangement should be carefully weighed against the costs it imposes in terms of facilitating market power. In many ways, we can expect this to be



the central analysis to be performed in gas and electricity in the years to come. It is not a new one. The same issue is raised in many antitrust contexts.

