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Utility Deregulation in the United States: A Critical Evaluation

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INTRODUCTION

William Melody has devoted much of his professional career to the critical evaluation of the institutions and methods by which society meets its needs. He has studied a wide range of topics from telecom policy to economic growth in developing economies. Melody has always recognised that academic research must be complemented by an active involvement in education programmes to reach the widest public audience. Throughout his work, he has never hesitated to examine the shortcomings and abuses inherent in the application of neo-classical economics to the problems facing society. His well-known criticisms of marginal cost pricing and the natural monopoly concept as applied by AT&T have been major contributions to the literature, as has his work directed toward rehabilitating costing as a tool for proper pricing.

This contribution examines a number of the results of deregulation of public utility industries in the United States. It endeavours to show how institutional economics, as practised by Melody and others, sheds new light on the nature of the problems and the shortcomings of potential solutions. The deregulation movement grew after 1970 because of a lack of confidence in regulatory institutions as a source of protection, the poor performance of many incumbent public utility managers, the desire of large buyers for price concessions and a belief that pluralistic supply would promote innovation and efficiency. It was widely accepted that emerging competition would put the most efficient infrastructure in place, that market power would not be sustainable in the long run because of new entry, and that any network economies could be easily realised through full interconnection.

Experience in the real world turned out to be quite different. The decline in economic regulation has been matched by a parallel growth in market concentration at national and global levels. Concentration, in turn, has created new opportunities for manipulative pricing and investment strategies that will adversely affect both industry performance and society as a whole. These interrelationships between concentration, pricing, and investment are examined, together with options for reform.

FACTORS PROMOTING CONCENTRATION

Public utility industries have long been recognised as capital intensive systems of supply providing basic necessities in differentiated markets. There are two forms of economic advantage inherent in these systems that will benefit players able to take advantage of them. Network economies arise because public utility production and distribution systems are capable of achieving substantial joint production economies, economies of scale and scope, and gains in the form of improved network functionality. Coordination economies arise from matching diverse usage and demand patterns with a capital-intensive supply system. Both gains require a minimum size and a minimum market share.

Once realised, these economies will permit peak demand to be met with minimum capital investment, new services to be added at successively lower incremental costs and improvements in reliability and flexibility. The prospect of such gains will appeal to both facility-based utilities and to deregulated marketers, brokers and resellers. If a marketer or reseller wants to offer one-stop shopping or rebundled service at the retail level, it must contract for the input as a commodity but must also lease capacity and network components and services. In effect, the marketer or reseller is acting as a network manager who must achieve all inherent network and coordination economies.

Successfully exploiting these features creates an opportunity to exercise market power that will give the firm discretionary control over prices and investment. This market power will further reinforce concentration. It is not unexpected, therefore, that tight oligopoly is becoming a distinctive feature of deregulation. Tight oligopoly exists when the four leading firms, combined, have 60 to 100% of the market and significant barriers to entry exist. A review of recent pricing and investment strategies under tight oligopoly follows.

PRICING STRATEGIES

Pricing can be employed to foreclose entry, retain existing customers, enter new markets, employ new technologies, recover stranded costs, and mitigate price wars. Recent electricity pricing initiatives demonstrate entry foreclosure and customer retention tactics. Residential and small business customers are given standard offers that consist of a low initial price for a given time period. At some future date this price will switch to market-based prices. If the residential customer selects an alternative supplier and is dropped by that supplier (especially at a peak period), the customer can return to the utility but only at a high default price. Under this arrangement there is no incentive for rivals to enter the market at the standard-offer price. Large buyers of electricity will be offered special

contracts that tie them to the incumbent utility for six to ten years in return for a promise to match lower prices offered to other large buyers or the lower prices offered by new entrants.

Pricing to enter new markets, employ new technology, or recover capital and stranded investment requires the skilful application of customer differentiation, price discrimination and cross-subsidisation. The goal will be to shift costs to the basic service customer whenever possible. At the same time, the oligopolist will vigorously resist any regulatory attempt to impose new costing standards on the grounds that these markets are competitive and the information is proprietary. Stranded costs in electricity, for example, can be recovered by the simple expedient of imposing a surcharge on anyone using the grid, whether buying from the incumbent or from a new entrant.

Price leadership or conscious parallelism will be driven by the need to maintain or enhance profits. It will be reinforced by the need to cover the heavy debt burden associated with carrier and utility merger and acquisition programmes. On the other hand, excess capacity and large buyers with oligopsony power will erode such pricing. There are a number of empirical examples of price leadership or conscious parallelism in telecom, primarily among the long-distance carriers (interexchange carriers, or IXCs) where prices were raised in lock-step even though the access fees they paid to the local phone companies fell significantly.

Conscious parallelism can translate into collusive behaviour when constrained supply exists. Constrained supply can be achieved through limitations on access to the network or, in the case of electricity, by taking generators out of service. For example, in California, five times as many power plants were out of service in August 2000 as in August 1999. This aggravated the wholesale price fly-up while facilitating manipulation of bid prices paid to deregulated generators and marketers. These tactics under constrained supply prompted California to claim that it had been overcharged by US\$ 8.9 billion during the period May 2000-July 2001 (Schmitt 2001).

INVESTMENT STRATEGIES

Tight oligopoly facilitates the employment of investment to maintain or expand dominance through mergers, acquisitions, and a variety of alliances and joint ventures. There have been horizontal, vertical and conglomerate mergers in electricity, telecom and natural gas. In electricity, the number of pending and completed mergers increased from US\$ 8.9 billion in 1994 to US\$ 312.5 billion in 2000. In telecom, IXCs have merged vertically, seeking to reach their final

customers directly. Concurrently, the seven original Regional Bell Holding Companies (RBHCs) were reduced to four by merger, with each retaining over 95% of the local exchange market. In natural gas, El Paso Energy acquired Coastal Corporation and other properties to become the largest American pipeline and the world's largest and most broadly based pipeline and natural gas producer. Concurrently, a number of aggressive electricity utilities have created deregulated trading affiliates and acquired generating plants in other service territories as well as outside the United States. The financial markets enthusiastically supported all of these investment programmes, viewing them as part of the utility industries' adaptation to the 'new economy'.

By late 2000, however, it was evident that major segments of the telecom industry were being severely impacted by an economic downturn and the emergence of excess fibre optic capacity. New broadband entrants, competitive local exchange carriers (CLECs) and IXC were particularly hard hit. The incumbent local exchange carriers (ILECs), consisting primarily of the RBHCs, were less adversely affected. These differential effects are shown in the relative fall in stock prices for each group. Between 4 April 2000, and 4 April 2001, share prices for the 28 CLECs and new broadband carriers fell 94%; share prices for five IXCs (including AT&T Wireless) fell 70%; and share prices for the four RBHCs fell 39%. These declines also had broad ramifications for the entire economy. The *Wall Street Journal* estimated that 'The telecom bust ... has wiped out almost \$2 trillion in stock market wealth, losses which are dampening household spending. Billions more stand to be lost on defaulted telecom debt. ...' (Blumenstein et al. 2001).

Additional conclusions can be drawn from this experience. First, financial markets will accelerate a boom and undoubtedly worsen recovery. Second, entry has proven to be an ineffectual constraint on market power at the local exchange level. CLECs, cable companies, and IXCs have had a negligible impact on the market shares of ILECs. Third, the RBHCs – especially as they enter into long-distance and broadband markets – have emerged as the new source of market power in the United States telecom industry, possibly placing them in the best position to enjoy network and coordination economies. Fourth, it is far from clear that rivalry between cable and Digital Subscriber Line (DSL) for broadband customers will approximate to a competitive outcome. Fifth, alliances and joint ventures appear to have fallen into disfavour as the major American and European telecom carriers proceed with financial and organisational restructuring.

Electricity investment has not suffered from excess capacity or a decline in demand. However, there are danger signals for the future. First, new entry into

residential retail markets has been insignificant. This will minimise consumer choice and reinforce incumbent utility market power. Second, greater wholesale price volatility will increase risk and the cost of capital, thereby raising retail prices. Third, the rapid growth of holding companies will strengthen the position of affiliated generators and marketers by giving them access to lower capital costs. Fourth, the organisation of the grid as a common carrier remains to be satisfactorily addressed. Under these conditions, it is highly probable that any threat of excess capacity will be resolved through mergers leading to further concentration.

IMPACT ON THE POOR

Deregulation has attempted to handle the impact of rising prices for electricity and natural gas by introducing federal and state welfare or energy assistance programmes for the poor. During the winter of 2000, there was a 30% increase in the number of people requesting such aid. It is clear that this problem will worsen over time as residential rates rise while industrial rates for electricity decline. In telecom, the problem not only involves the consequences of rising rates for local basic phone service, but also the need to assure adequate service in rural markets and the need to bridge the digital divide between low-income families and the rest of the economy. The universal service fund appears to be the principal effort to maintain service in rural, high-cost telecom markets.

THE CHALLENGES FOR INSTITUTIONALIST REFORMERS

This overview of the outcomes of deregulation points to the need for new inquiries into both industry performance and public policy reform. It is no longer sufficient to rely on tailoring reality to fit the axioms of neo-classical economics. The Melody legacy will be a rich source of knowledge for everyone carrying on this task. Of particular value will be William Melody's efforts to create meaningful cost-of-service standards for controlling cross-subsidisation as part of public policy reform (see Melody 1971; 1976a; 1976b).

United States utility policy is currently at an impasse. The popular response to the US electricity crisis is to call for price caps, but price ceilings are only an interim stopgap that does not mitigate oligopolistic pricing practices. In telecom, the principal constraint appears to be reliance on excess capacity and intermodal rivalry between cable and DSL to control market power. Proposals have been made to protect consumers through the introduction of countervailing power, municipal ownership and structural reform. Countervailing power has been employed on a very limited basis through buyer aggregation to purchase electricity and natural gas. The difficulty is that when aggregation is applied only to

residential customers, the poor load factors of these customers greatly diminishes their bargaining power and their ability to participate in joint production economies. California introduced a form of countervailing power when it purchased electricity directly from deregulated suppliers. The problem, of course, is that overpayment may occur under conditions of constrained supply. Municipal ownership is staging a modest recovery as at least 12 cities (ranging from Seattle, Washington, to Glasgow, Kentucky) have created new, high-speed fibre networks to serve their citizens. This has prompted cable and local telephone companies to convince nine state legislatures to prohibit municipal provision of telecom services. California also entered public ownership by creating a California Power Authority in 2001 with US\$ 5 billion in bonding authority to finance power generation projects. This could serve as a yardstick to measure the performance of deregulated merchant generators.

Structural separation of networks has received significant attention. The proposals vary from functional separation with nominal changes in actual ownership to full structural separation with complete independence in ownership, management and financing. Anything less than full structural separation, especially for power grids and pipelines, creates a potential for manipulative strategies. In telecom, voluntary separation and divestiture are taking place among IXC's because of financial difficulties. At the same time, the Pennsylvania Public Service Commission has mandated full structural separation of the local phone network from the marketing of services on that network. A final decision is still pending. In New York, structural separation was successfully applied to the Rochester Telephone Company in 1995, with the local network and basic service remaining under regulation while the parent holding company was free to provide a host of deregulated services.

The Enron scandal has shown that market failure and remedial public intervention must be considered in a holistic context. Enron moved on a number of fronts to rapidly establish itself as the largest American trader in electricity, natural gas, broadband communication, and ancillary services. Through aggressive political lobbying it was able to exempt its lucrative derivative trading activities from federal oversight. At the same time, it was able to manipulate profits, disguise corporate losses, persuade the independent auditor to destroy records, and possibly fix the prices for trading contracts and hedging derivatives at artificially high levels. Regrettably, a badly fragmented system of residual regulation was incapable of constraining Enron's aggressive strategies. Enron collapsed completely in 2001 creating the largest bankruptcy in American history. Many sectors were adversely affected and there have been demands for reform. Unfortunately, salvage

efforts appear to focus only on selected parts of the Enron problem, such as accounting reform and improved auditing. What is absent is a recognition of the full panoply of steps needed to prohibit Enron-type behaviour in the future.

On balance, all of these partial solutions leave the door open for the followers of William Melody and institutional economics to make a major contribution. The problems created by deregulation have hardly begun to be resolved.