

Irregular Incentives

By Mark A. Cicchetti

Does current regulation allow utilities to have their cake and eat it too?

Public utility regulation lacks a formal proxy for the economic profits that can be earned in an effectively competitive market if a firm is efficient or innovative. After all, public utility regulation operates on a cost-plus basis. If a utility is efficient or innovative and lowers its costs, its typical reward is to have its rates reduced. This is a perverse incentive to motivate a utility to produce at the most efficient level. In addition, since regulation operates on this cost-plus basis, a utility can increase its net income, all other things being equal, by overinvesting in (or "gold-plating") its system, another perverse incentive.

Recognizing these flaws of regulation, academicians, utility executives, regulators, and legislators have tried over the last several years to implement incentive regulation plans that correct such perverse incentives. However, under many of the earnings-sharing or price-regulation incentive plans, the rewards for efficient production are not tied directly to measures under a company's control. In fact, such plans could prove highly detrimental to ratepayers and competitors of the regulated company and its affiliates.

Under a typical earnings-sharing plan, a utility has the opportunity, after sharing, to earn above its cost of equity. In some cases, the amount can be significantly higher. Although certain factors, such as refinancing from higher- to lower-cost long-term debt, can be removed from a sharing formula, events such as a reduction in a company's cost of equity, declining production costs, or a booming economy obviously could produce returns to a company that are significantly above its cost of equity. Under such a scenario, any returns above the cost of equity would be earned without an associated company-controlled improve-

ment in efficiency. This scenario engenders monopoly profits as the solution to the monopoly profits problem—the reason why the company was regulated in the first place!

Under price-regulation plans, the same result could occur through manipulations such as price squeezes or price increases on services with inelastic demand. Generally, price-regulation plans allow a regulated company to charge prices within a predetermined band. This is done with the understanding that such prices may result in a return on common equity above the company's cost of equity. In fact, the opportunity to earn a return above the cost of equity is usually considered the incentive to minimize costs. Although many price-regulation plans include a productivity offset, they also generally include an inflation factor that could offset the productivity factor if a company operates in a declining cost environment. Furthermore, the productivity factor could prove either much too high or much too low. Finally, under an incentive plan having "sharing points," or a maximum allowed return on common equity, the company faces the same type of perverse gold-plating incentive as under traditional regulation.

An incentive regulation plan that ties an appropriate reward for efficient production to specific efficiency gains is a better proxy of an effectively competitive environment. What's more, it is superior to an incentive plan that rewards circumstances beyond the company's control or self-serving manipulation. This is particularly true if no earnings cap is associated with the reward for efficiency. Rewards for efficient production should be tied to specific actions. A suitable incentive plan does not preclude appropriately derived flexible prices for certain products or services where warranted.

Common inequity

To understand how earnings-sharing and price-regulation incentive plans can harm utility ratepayers and competitors, one must understand the effect of market structure on a firm's return on common equity.

"Market structure" is the range of conditions (such as the number of firms, the economies of scale or scope, the type of product sold, and the demand for a product) that may affect a firm's behavior and performance. Market structure is best thought of as a line stretching between purely competitive markets and natural monopoly. Purely competitive markets are characterized by minimal economies of scale or scope; no single supplier has a natural cost advantage over other suppliers. In the short run, a firm can earn economic profits (that is, a return above its cost of capital) only if it is efficient or innovative. In the long run, a firm cannot earn above its cost of capital due to the ease of entry into and exit from the market. If a firm in an effectively competitive environment is earning above its cost of equity, new firms will try to share those profits.

Another way to look at it is to recall that in economics

"long term" is defined as the period of time necessary to change production processes. In the long term, economists like to say, a firm's competitors will match its efficiency by changing their production processes.

Incentive regulation that ties rewards for efficient production to gains in efficiency is a better proxy of effective competition.

Natural monopoly markets, by contrast, are marked by substantial economies of scale or scope and decreasing average costs. This means that one supplier can always serve the market at lower unit cost than two or more suppliers. Entry barriers are severe, because the single most efficient provider will always be able to price below any potential entrant. Left unregulated, a natural monopoly will not produce competitive results. Assuming an industry is a natural monopoly, regulation benefits society by increasing output while reducing price and economic profits. Regulators do this by backing away from the objectives of allocative efficiency and marginal-cost pricing, and by establishing a "fair-return" price. Although this does not produce a socially optimum price and output, it is an improvement over an unregulated natural monopoly.

Because utilities must meet the peak demand for their products or services, they generally have significant excess capacity during periods of normal demand. This requires a high level of facilities investment, which means that the unit costs of production will probably decrease over a wide range of output. The result is a socially optimum price that is below average cost. Pricing here would likely result in bankruptcy. Therefore, regulators set a "fair-return" price that allows a utility to recover the reasonable and prudent costs associated with providing utility service, including an appropriate return on common equity.

The telephone experience

Most earnings-sharing and price-regulation incentive plans are in place for telecommunications companies. The cost and demand functions associated with providing local exchange service continue to exhibit the characteristics of natural monopoly. Large fixed investments are necessary to provide homogenous local exchange service to large numbers of customers, and the obligation to serve does not allow free exit. In addition, no practical alternatives to the local exchange companies currently exist for basic telephone service.

By contrast, other telecommunications markets have seen technological advances that have lowered costs, enabling at least several firms of efficient size to compete to supply high-volume customers. Consequently, adequate

protection for ratepayers and competitors must ensure that the regulated company's profits associated with basic monopoly services are sufficiently constrained either by effective competition or adequate regulation. An incentive regulation plan that potentially allows a regulated monopoly supplier to generate hundreds of millions of dollars a year above its cost of equity for reasons not related to specific efficiency gains is not in the public interest, yields excessive compensation, and provides a source of funding to subsidize competitive services that would not be available if the company operated in an effectively competitive environment.

A generally accepted rule is that regulation should act as a proxy for competition. A more appropriate incentive regulation plan would provide a proxy for the economic profits a firm could earn in a competitive environment and would be tied directly to company efforts to increase production efficiency.

Rewards for a job well done

A regulatory incentive plan that provides a proxy for economic profits earned in an effectively competitive environment and ties rewards to measures under a company's control can be created. An efficiency-based incentive regulation plan for a regulated telecommunications firm can be created by determining the company's per-access-line cost of providing basic local exchange service, based on the amount invested, and then calculating the operating and maintenance expenses and the capital costs associated with investment. These categories relate to the company's rate base, net operating income, and cost of capital used in rate base regulation. The amounts used should be company-reported costs and not commission-allowed costs, since a regulatory commission can select exactly which costs it wants to target to provide an efficiency incentive.

Next, the regulatory commission would create a regional (state or national) rural/urban index of similar costs for the local exchange providers serving the designated area. Finally, the commission would determine what percentage of cost savings the company would receive (in addition to its cost of providing service) if the company produced at a cost below the average cost of the index. Such an index could be created for any regulated industry. The concept applies to all companies under a regulatory commission's jurisdiction, since all regulated firms face the same perverse regulatory incentives.

The regulatory commission would be able to adjust the index or the company's results for outside factors where warranted—for example, if a company experienced unique costs attributable to uncommon circumstances. No earnings cap would be associated with earnings from cost savings and, therefore, no motivation would exist to gold-plate rather than economize. There would be less likelihood of unwanted results related to earnings-sharing and price-regulation plans, because the company's reward would

be tied directly to efficiency gains and not to revenue production, as under some current and proposed incentive regulation plans. Additionally, industrywide costs and productivity improvements, including those associated with technological advances, would be reflected in the regional index, eliminating the need for inflation and productivity offsets.

Unregulated industries experience technological gains and productivity improvements. For a firm facing effective competition in an unregulated industry to earn economic profits, it must be especially efficient or innovative compared to its competitors. Therefore, an efficiency-based incentive plan is a better proxy of the competitive environment than the typical earnings-sharing and price-regulation plans in place or proposed. Of course, under any incentive regulation plan, regulators should continue to monitor acceptable service quality.

The carrot and stick of competition

Relatively recent regulatory decisions allowing entry into markets where technological advances were assumed to have reduced or eliminated natural monopoly aspects have made regulated utilities keenly aware of economic and uneconomic bypass.

Economic bypass occurs when a regulated utility's product or service can be provided more efficiently by a competitor. The gains associated with bypass through trade between a customer and the utility's competitor are preserved by society because the customer's demands are met by the lowest-cost provider. Assuming a regulated utility is operating in a natural monopoly market and its prices are set appropriately (that is, not above the reasonable and prudent costs associated with providing service and not below long-run incremental cost), economic bypass could not occur.

Uneconomic bypass occurs when the customer's needs could be met more efficiently by the regulated utility supplier, but the firm's price is higher than its competitor's. This may happen if the utility's price reflects inefficiencies or is set at a point above its true cost. The customer will then seek to bypass the regulated firm's excessive price.

Existing and potential competitors ready to attack inefficient prices make an efficiency-based incentive plan more feasible now that entry into contestable markets is acceptable.

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