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ECONOMIC OBJECTIVES OF REGULATION— THE TREND IN VIRGINIA

MICHAEL J. ILEO* AND DAVID C. PARCELL**

The Virginia State Corporation Commission, like all other utility regulatory agencies, is charged with the responsibility of insuring that utilities which operate under its jurisdiction function in accordance with the goal of promoting the economic welfare of society.¹ The fulfillment of this objective is perhaps the most difficult task faced by any public body, for it involves the resolution of issues as complex as the economic system itself. In order to develop an understanding of the economic role of the SCC, this Article will analyze significant aspects of the promotion of the general economic welfare and the economic objectives of utility regulation.

COMPETITION AND PUBLIC UTILITIES

A long-standing tenet of this country's economic system is that individuals should be free to exercise their property rights within reasonable bounds and on an equal basis. The freedom to exercise such rights naturally was extended to business organizations, for they represent the collective economic interests of individuals. Property rights of business organizations form the basis of competitive capitalism. One noted economist suggests that capitalism and democracy are inseparable, for both require that individuals or firms be free to function independently on an equal basis.²

Freedom to exercise property rights independently implies that business firms will compete in the marketplace. Competition develops because each firm seeks to promote its own economic interest—typically the maximization of profits or present worth. In order to accomplish

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1. Unlike most regulatory agencies, the authority of the Virginia State Corporation Commission transcends a particular facet or area of regulation, for it possesses broad powers over many aspects of business enterprise in the State; therefore, it plays a prominent role in the economy of Virginia. Since a complete discussion of the economic objectives of all aspects of the regulatory powers of the SCC would require a lengthy presentation, this Article will consider only the objectives of public utility regulation.

2. M. FRIEDMAN, *CAPITALISM AND FREEDOM* (1965).

this objective, a firm normally will seek to develop new technologies, new products, cost-minimization techniques, and other innovations, which will enable it to compete more effectively with its rivals. Thus, competition results in a market situation where consumers are able to purchase goods at a price consistent with the costs of production, and where costs provide for a fair return on the resources utilized in the productive process. In this manner, competition among private companies seeking to promote their own interests also promotes the economic interests of society at large as if guided by an "invisible hand."³ Society's interests are promoted because competition fosters cost-minimization and efficient resource utilization.

Within the competitive model, no firm could grow to a size where it could exert undue influence on pricing and output decisions in the marketplace. This is true because perfect competition requires every economic agent in the market to be so small relative to the market as a whole that it cannot exert a perceptible influence on price. Under a competitive framework, with limitations on size, a firm could neither secure the entire market, nor utilize such a position to exploit consumers.

With the emergence of public utilities, it was soon recognized that technology would not restrict the size of the firm because the costs of production would decline as the size of the firm increased. Public utilities have significant economies of scale so that one firm can provide service to a market at a lower cost than two or more competing firms. Since there were few constraints on the size of a utility, a single utility could serve an entire market; thus, the firm possessed the inherent monopolistic capability to exploit consumers, a capability not present in the competitive model. Moreover, with economies of scale, entry into a market by a competing utility would be exceedingly difficult and costly. Further, if accomplished, such entry and the resultant duplication of facilities might result in an inefficient use of society's resources.

In essence, public utilities do not fit the mold of competitive firms because of their inherent tendency toward bigness and natural monopoly which is fostered in part by economies of scale. With the absence of restrictions on size and the ensuing development of uncontrolled economic power, unregulated public utility enterprise was not thought to be in the public interest. In order to insure that society would reap some of the benefits of economies of scale and that economic power

3. A. SMITH, *THE WEALTH OF NATIONS* (1910).

would not be used to society's detriment, a consensus developed which urged governmental control of the rates and services provided by public utilities. In a sense, "[t]he visible hand of public regulation was to replace the invisible hand of Adam Smith in order to protect consumers against extortionate charges, restriction of output, deterioration of service, and unfair discrimination."⁴ This basic philosophy provided the thrust for the development of the regulatory system in the United States and the creation of regulatory agencies such as Virginia's State Corporation Commission.

COMPETITION VERSUS REGULATION

Early regulation of public utilities reflected a belief that the competitive mechanism could not be relied on to protect the public interest. Essentially, it was theorized that a competitive market involving utilities could not survive and would fail to promote the general economic welfare. But this did not mean that regulation would alter the competitive norm for utilities. On the contrary, the primary objective of regulation was—and still is—to produce market results in the utility sectors of the economy closely approximating those conditions which would obtain if utility rates and services were determined competitively. Although it is well recognized that no form of economic regulation can ever be a perfect surrogate for competition in determining market prices for goods and services, there is nearly "unanimous acceptance of the theory that the goal of regulation should be to act as a substitute for the competitive marketplace, with economic efficiency as the ultimate test of effectiveness."⁵ In order to meet this objective, regulatory agencies were granted control over competition between utilities, entry into and exit from utility markets, consolidation and acquisitions, financing requirements, the nature and quality of service, and utility rates.

The most important function of the regulatory agency is the determination of utility rates and, hence, utility profits. As regulation is substituted for competition, administrative rate control replaces the competitive pricing mechanism which provides the signaling device by which firms decide to expand or contract output, offer new services, retract or change existing services, enter or leave a market, and make

4. Adams, *The Role of Competition in the Regulated Industries*, 48 AM. ECON. REV., May, 1958.

5. P. Rosoff, E. Lowry & E. Wirth, *The Role of the Economist in Regulatory Decision-Making*, May, 1972 (unpublished mimeograph available from author).

other decisions. Prices in conjunction with costs determine the profitability of a firm's operation generally or in a particular line of commerce. If profits increase in a particular market as a result of a rise in price, competitive firms will react by expanding output in that market in order to increase profits. In other words, the competitive pricing mechanism serves to inform firms as to the existence of shortages and surpluses and, hence, functions to allocate resources among competing uses.

The theoretical competitive model envisioned by economists provides the general norm by which the appropriateness of the level of utility rates or prices can be ascertained. In a competitive market which is in long-run equilibrium, price will be at a level identical to long-run marginal and average cost, where cost is defined to include a fair return on capital employed. When a market reaches competitive equilibrium, the price reflects the full cost of production, including the value of resources utilized and the value consumers place on the corresponding product. When such a situation exists, resources are allocated in an efficient manner, thereby enabling society to achieve the most productive use of its resources consistent with consumer demand.

Based on the competitive model, the general economic objective of utility regulation has been the provision of adequate service and the establishment of rates which provide a utility the opportunity to cover all costs including a fair return on the capital or rate base employed. Such rates are consistent with the competitive norm and achieve, in a sense, an equitable economic balance between the specific interests of the firm and the consuming public—the balance implicitly envisioned by the “invisible hand.”

It would be a mistake, however, to conclude that regulators need only be concerned with equating price to average cost in order to achieve the objectives of regulation as found in the competitive model. Sound regulatory practice requires a great deal more. Yet, despite the fact that competition and a regulatory system in its image are far more intricate mechanisms than is indicated by the determination of a general rate which reflects costs and a fair return, it is only within recent times that regulators have begun to scrutinize the complexities of the regulatory system. This is not to say that regulators were reluctant to assume the burdensome responsibilities necessary to achieve the competitive norm. Rather, history indicates that regulators initially were required to resolve questions dealing more with procedural and organizational issues.

In large part these issues have been resolved.⁶ Now, with the rise of the consumer movement and the consequent interest in the regulatory process, the greater understanding of the objectives of regulation, and the availability of procedures by which the performance of the regulatory process can be assessed, regulators are assuming the mounting responsibilities associated with meeting the economic objectives of regulation. Consequently, regulators are now concerned chiefly with the purpose and results of regulation, rather than its procedural problems.

EMERGING ROLE OF THE ECONOMIST

Perhaps the most striking evidence of the new trend toward an increasing level of technical sophistication embodied in the regulatory process is the emerging role of the economist. Not very long ago, professional economists had little, if any, direct impact on the outcome of regulatory proceedings. This situation was unusual when it is considered that economists had developed much of the theoretical justification for the creation of the regulatory system and had provided some of the structural guidelines for its operation. Although the regulatory system is a process governed by law, it nevertheless was designed to function as an economic system.

In contrast to the situation which prevailed several years ago, the role of the economist in regulatory matters has assumed increased importance.⁷ In today's regulatory proceeding, it is not unusual to find economists sitting beside counsel for commission staffs, intervenors or protestants, as well as the applicant. Although the economist is concerned principally with the presentation of expert testimony, he frequently assists counsel in the development of cross-examination and in the preparation of the entire case.

The dimensions and various aspects of this changing role have been articulated by several noted writers in the economic arena:

The economist, as an expert, has been playing an ever-increasing role in regulatory hearings. . . . Traditionally, he has appeared in rate of return cases, for utilities and for regulatory agencies. Con-

6. These non-economic issues include the structure and operations of the regulatory agency and the requirements of due process—investigations, notices, hearings, analysis of the record, findings, orders, and appeals.

7. Generally, this trend is national in scope, but it applies to hearings before the Commission as well. Even in cases involving the smallest utilities, one typically finds the presentation of expert economic testimony.

tinuing to do this, he is now finding increasing call upon his services in proceedings related to pricing, rate levels, rate structure, competition and related matters.⁸

The greater prominence of economists in regulatory proceedings results from the broader issues being studied by regulatory agencies in recent years: "The increased incidence of proceedings containing issues which require more attention from economists may reflect the changing character of regulation brought about by the changing nature and diversification of utility operations."⁹

It has been suggested that the economist's expanded role in rate proceedings was initiated with what has been termed the "administrative phase" of rate regulations: "The *Hope Natural Gas* case of 1944 marks the beginning of the administrative phase. . . . The Supreme Court held that the procedure and method of determining both the rate base and the rate of return should be left to the Commission."¹⁰ The *Hope* decision imposed an expanded burden on regulatory agencies, since it meant that commissioners had to be informed and advised more completely as to the objectives of regulation. Thus, the role of the economist was expanded in order to assist regulatory agencies in meeting this added responsibility.¹¹ Alfred Kahn offers the following reflection: "The most important thing the *Hope Natural Gas* decision did was to invite regulatory commissions to break out of the mold into which they had been confined for forty-five years by *Smyth v. Ames* and start thinking about the economic requirements of effective public utility regulation."¹²

For several years after *Hope*, questions concerning the determination of rate base received the bulk of attention from regulatory agencies. This development is changing: "While the property valuation problem has received too much emphasis, determination of the rate of return has received too little. In recent years, however, the combined effects of the *Hope* decision and of inflation have been to shift regulatory atten-

8. Lapinsky, *The Role of the Economist in Regulatory Hearings*, 90:8 PUB. UTIL. FORTNIGHTLY 37 (1972).

9. *Id.*

10. C. PHILLIPS, *THE ECONOMICS OF REGULATION* 133 (1969).

11. The *Hope* decision is generally thought to have initiated the "end-result" test: Fair and reasonable rates were those rates which were consistent with the competitive norm. Regulators became responsible for determining such rates and, thus, the expertise of professionals was required. See *FPC v. Hope Natural Gas Co.*, 320 U. S. 591 (1944).

12. Kahn, *Inducements to Superior Performance Price*, in *PERFORMANCE UNDER REGULATION* 88 (H. Trebing ed. 1968).

tion from the rate base to the rate of return.”¹³ The growing emphasis on the rate of return concept, of course, was primarily responsible for the emergence of the economist in regulatory proceedings. It is only natural that an economist should be consulted since his training and expertise are aptly suited for an evaluation of the many economic considerations which are important in determining a fair rate of return for a particular utility at any point in time.

There is every indication that the economist's role will continue to expand. One author has asserted that:

As to the increasing importance of economists and econometrics in regulation, there can be little dispute. Because of the changing nature and diversification of utility operations, regulation *has* changed greatly in recent years. Return on rate base has given way to return on capital; and marginal rates are the wave of the future.¹⁴

The outlook for the economist's role in regulatory proceedings is even brighter than in the recent past:

Perhaps the best way to prove this general conclusion is to survey attorneys who practice in the relevant field of law, as to their awareness and use of economic theory and analysis. It is not too bold to suggest that attorneys' locker room talk now includes long-run incremental cost, cross-elasticities, and other such economic terms. . . .¹⁵

This view is shared by other authorities who have indicated that professional economists should play a far greater role in the regulatory process than they do now; they suggest that lawyers might have to allow economists to participate more fully in regulatory proceedings.¹⁶ One author notes that, in order to bring about improvement in the general regulatory area, “there is a need to rid the process of legalistic thinking . . . and to inject effective economic analysis of costs and demand into the system.”¹⁷

13. C. PHILLIPS, *supra* note 10, at 260.

14. Welch, *Are Lawyers Wrecking Regulations?*, 90:8 PUB. UTIL. FORTNIGHTLY 7 (1972).

15. Lapinsky, *supra* note 8, at 40.

16. Donahue, *Lawyers, Economists, and the Regulated Industries: Thoughts on Professional Roles by Some Recent Economic Literature*, 70 MICH. L. REV. 195-200 (1971).

17. Massel, *The Regulatory Process and Public Utility Performance*, in PERFORMANCE UNDER REGULATION 126 (H. Trebing ed. 1968).

ECONOMICS OF REGULATION

The emerging role of the economist in the regulatory process reflects a changing and maturing pattern of utility regulation. It is appropriate to make a tripartite inquiry: what has caused a need for economic analysis; what are these technical economic issues which face regulators; and have the tasks which confront regulators truly become more complex? In some respects the issues are no more complex than they were at the dawn of regulation. The new emphasis simply represents a deeper understanding of fundamental issues and their complexities. However, in other respects, the issues are new and more complex than ever before. In order to answer these questions fully, attention must again turn to a consideration of the competitive model, the normative exemplar of regulation. In this regard, the following five areas will be examined: (1) equilibrium price levels; (2) absence of discriminatory pricing; (3) freedom of market entry; (4) managerial and technological efficiency; and (5) efficient resource allocation.

Equilibrium Price Levels

Competitive market equilibrium provides the norm for the determination of fair utility rates. Such equilibrium is attained when a market clears, that is, when neither a surplus nor a shortage prevails in the market.¹⁸ The price which accompanies such a market condition is defined as an equilibrium price—a price at which the product demand of consumers is matched exactly by the product offered for sale by suppliers. At competitive equilibrium, market price stabilizes at a level which provides firms with revenues sufficient to cover operating expenses and capital costs, including a return to equity investors commensurate with the "opportunity cost" of equity capital—the return which could be earned by the equity investor in an alternative investment prospect of comparable risk.

When shortages or surpluses emerge in a competitive market (distortions at a disequilibrium price), competitive forces are set into motion which correct the distortions. For example, a surplus exists when market price is greater than the equilibrium price so that suppliers are anxious to sell more products than consumers are willing to buy. Since producers

18. In electric utility industries, a surplus indicates excess capacity, that is, the ability to produce more power than is required at peakload. A shortage may be exhibited by a "brown-out."

are unable to sell all their products at the existing price, firms will compete for sales, thereby bidding the price down and driving it to equilibrium. Conversely, market shortages are corrected by a similar mechanism.

Forces are always acting to disturb existing market equilibriums and to create new ones, with different equilibrium outputs, prices, and demands. The market distortions (shortages and surpluses) which constantly arise are eliminated continually in a never-ending manner by the competitive price mechanism. Because of constantly changing tastes, income levels, costs, technology, and many other economic as well as social factors, competitive equilibrium must be viewed as a dynamic as opposed to a static condition. Since regulation is a substitute for competition, it should function in a dynamic manner as well.

One of the major criticisms of the regulatory process is that it has functioned too slowly and has not been a dynamic process. Regulatory lag often results in a situation where the rates, when finally determined, are outdated and have no relationship to the current situation of a utility. For example, it may take a utility three months to recognize that its rates are inadequate, another three months to develop and file a rate application, another three months for the rate hearing and order to be issued, and yet another three months for the new rates to be instituted. Because a year has passed it is only remotely conceivable that the new rates, based on a year-old situation, will reflect the utility's current status; this may also aggravate an existing market distortion. Moreover, an extended period in which market distortions prevail serves only to retard general economic growth, misallocate society's resources, encourage inefficiencies, and create other economic malfunctions, all of which are detrimental to the interests of utilities and consumers.

Because of the lack of procedural responsiveness in rate determinations, it is likely that shortages and surpluses will continue to prevail in markets for utility services. In order to correct market distortions, the concepts of "annual review" and "continuous surveillance" have been proposed for adoption in the regulatory process. Both concepts envision a procedure by which regulatory agencies would be informed continually as to the economic status of utilities under their jurisdictions. Thus informed, regulators would be better equipped to correct market distortions as they arise in a manner analogous to that contemplated in the competitive model.

The State Corporation Commission recognized quite clearly the problems created by the absence of a continual process of regulation. Accordingly, the Commission adopted a formal and comprehensive system of annual review. The system requires that utilities file various economic and accounting data on an annual basis, including data on past operations and estimates of future conditions.¹⁹ In the words of the Commission:

The system of annual review called for is viewed by the Virginia Commission as an integral part of its continuing efforts to improve the responsiveness and quality of regulation in Virginia . . . Since the Virginia Commission will be in a position to deal promptly with difficulties as they arise, all interests will be better served. Virginia consumers will be better protected against the possibility of excessive rates and inadequate service because this Commission will possess the continual stream of information necessary for such a determination. On the other hand, utilities will be better protected against the possibility of rates which are inadequate and detrimental to their financial integrity . . .²⁰

The adoption of annual review will provide the SCC with the data necessary to function harmoniously with the economic objectives of regulation, since the continuous process of regulation will more closely mirror the dynamics of competition. Rate adjustments can be made to correct shortages, surpluses, and malfunctions which result from extended periods of disequilibrium.

The adoption and implementation of annual review requires the SCC and its staff to assume additional burdens. A continuing process of regulation necessarily implies that cost analyses of utilities must be conducted much more frequently. In addition, debt and equity costs must be reviewed continually to gauge changes in the cost of capital. The proper handling of these responsibilities will require that the SCC be provided with additional resources and personnel. However, the benefits to be derived from annual review, both for consumers and utilities, will far exceed the marginal increase in costs necessary to accomplish the objective of maintaining equilibrium price levels. Obviously, these

19. The data includes actual and projected capital structure, debt cost, equity costs, and other information. See Letter from Commissioners Catterall, Bradshaw and Shannon to C. Jackson Grayson, Jr., 8-12, June 9, 1972, on file with the SCC. [hereinafter cited as Commissioners' Letter].

20. *Id.*

additional responsibilities necessitate a greater reliance on the technical expertise of accountants, engineers and economists.

Absence of Discriminatory Pricing

Under conditions of competitive equilibrium, prices in each market reflect an equality with long-run marginal and average costs, including a fair return on capital employed. When price exceeds average cost, firms are able to earn profits in excess of a fair return. Excess profits provide the signaling device which stimulates the productivity of present firms and attracts additional firms to a market, thereby increasing output, reducing price, and eliminating excess profits. In other words, under competition, excess profits are eliminated by increases in the output of existing firms and by the entry of new firms. Conversely, when price is lower than average cost, firms leave the market and output diminishes.

In monopolistic markets, the threat of market entry from new firms is minimal, so that a monopolistic firm is able to charge a price in excess of average cost. The use of monopoly power, which results in excess profits, causes harm to consumers and society generally.

Utilities typically possess monopoly power. For example, electric utilities are granted exclusive territorial franchises. In addition, in some product markets (lighting, for example) there are virtually no substitutes for electric power except in the case of a customer-owned generating facility. Because of the resultant absence of any serious threat of actual or potential competition, in either geographical or product markets, utilities have the capability to engage in monopolistic pricing.

In other geographical and product markets, utilities face competition. In the heating markets, for example, gas and electric utilities compete for business. Under such circumstances, it is conceivable that utilities will engage in predatory pricing; that is, they might establish a price which is less than long-run marginal or average cost. Since no new firm could compete effectively with the existing producer, predatory pricing operates to foreclose potential competition. The existing price yields less than a fair return which, obviously, discourages the entry of prospective firms.

Both monopolistic and predatory pricing are forms of price discrimination. It is quite possible that a utility could engage in both forms of discriminatory pricing and still maintain revenues just sufficient to yield an overall fair return. In essence, the revenues generated by monopo-

listic pricing policies would subsidize the markets where predatory pricing practices yield something less than a fair return. Although the collective revenues of the utility are sufficient to cover overall operating and capital costs, these revenue requirements are raised in an inequitable manner—utilizing a cost of service basis—among ratepayers, since an inequality exists between costs and prices. Just as with the establishment of disequilibrium prices, discriminatory pricing produces market distortions and their attendant adverse economic effects.

Although the extent of discriminatory pricing among utilities is subject to question, the fact that it exists is generally accepted. Typically, it is referred to as "value of service" pricing;²¹ it has been justified on bases other than costs and a fair return.²² Although there may be good reason for using value of service or discriminatory pricing, the practice is at odds with the competitive norm. Despite this, such practices rarely have been analyzed by regulatory agencies. FCC Commissioner Kenneth Cox has noted:

Traditionally, pricing problems have not been at the forefront of Federal Communications Commission activity; even today such issues as the fair rate of return, revenue requirements, and jurisdictional separations standards tend to take precedence over issues raised by particular pricing problems. Under the statewide theory of rate making, state commissions rarely address problems relating to the specific pricing practices of the communications common carriers.²³

21. An example of value of service pricing may be considered. Suppose the costs of providing telephone service to a household and to a law firm are identical. However, since attorneys transact a great deal of business by telephone and their incomes are dependent on the availability and quality of telephone service, it is felt that telephone service is more valuable to a law firm. Hence, telephone rates charged law firms might be greater than those charged households despite the equivalence of costs.

Another example would be the case of an electric company charging very large power users rates which are lower than the costs of providing the service. The value of service is less because a large user has the ability to install its own power generating facilities. For a thorough examination of discriminatory pricing, see J. BONBRIGHT, *PRINCIPLES OF PUBLIC UTILITY RATES* 369-85 (1969).

22. Suppose the poor are charged rates lower than the costs to serve them. Suppose rates in a particular geographic area are kept low in order to promote economic growth and full employment. These practices are difficult to condemn. But many economists would argue that regulators should not be in the business of resolving questions concerned with social welfare.

23. Cox, *An Appraisal of Regulatory Policies in Communications*, in *ESSAYS ON PUBLIC UTILITY PRICING AND REGULATION* 317-18 (H. Trebing ed. 1971).

Even if regulatory agencies allow value of service pricing, there nevertheless should be some inquiry into its justification, the nature and purpose of the discrimination, its deviation from competitive pricing, and its economic impact. The compilation of data necessary for such an analysis is termed a cost of service study, a procedure which determines the cost of serving different geographical markets and customer classes within such markets. Utility rates set in accordance with a cost of service philosophy closely parallel non-discriminatory prices which would exist under competitive conditions.

Regulatory agencies have not considered specific pricing problems because of the extreme difficulties of conducting a complete cost of service study. First, only the major utilities have the resources and technical expertise essential for the accumulation of the necessary data by service categories. Second, the costs of such an undertaking are often staggering. This view was articulated in a recent communication by the SCC regarding its proposal to the Federal Price Commission:

Regarding the assignment of costs to service categories in pro-forming operating expenses, this Commission believes it would be unreasonable and impractical to compel all fixed and transportation utilities which will be bound by the terms of this proposal to perform a full-scale and precisely designated cost of service study in rate applications. While this Commission reserves the right to require utilities to perform and present the findings of a cost of service study in rate applications, it has exercised its prerogative only when the circumstances warranted a cost of service study because of the considerable cost, time, and complexity of such an undertaking. The continuance of this policy is proposed by this Commission. Therefore, when in this Commission's judgment, the assignment of costs to service categories is reasonably possible of determination and such information is necessary for this Commission to render a decision in accordance with the terms of its proposal, this Commission will require that a cost of service study be performed by the applicant and will determine the nature and precision of that study as conditions warrant.²⁴

Clearly, while the SCC acknowledges the usefulness of cost of service studies, it also recognizes the time, information, and cost constraints on the performance of such undertakings.

24. Commissioners' Letter, *supra* note 19, at 6.

A cost of service study and its subsequent rate analysis requires greater technical expertise than any study project in regulatory economics. But the accounting, engineering, and economic expertise necessary to perform such studies does exist and, therefore, it will no longer suffice to argue that technological expertise is unavailable. There remains, however, a second obstacle. Regulators must be provided with the additional staff and resources necessary to conduct cost of service studies. Such support will be forthcoming only if the current public interest in regulatory efficiency represents more than just a whim. Indeed, economists argue that such support is essential if fundamental objectives of regulation are to be realized.

Freedom of Market Entry

In a competitive environment, firms are attracted to new markets because they believe that such a venture will be profitable. If the prospective entrant is able to enter a market with a new technology or cost-minimization technique, his cost of production will be less than that of existing firms. Therefore, the new firm's price will be lower than the existing market price, and consumers will realize the benefits of the technological advance.

When discriminatory pricing of a predatory nature is utilized in utility markets, entry is restricted and technological innovation is retarded. When market price is lower than current production costs, prospective entrants have little incentive to develop cost-saving techniques which will enable them to enter the market on a competitive basis. For example, consider the following situation: Suppose a new firm is formed which would install and operate electric generating facilities for large industrial and commercial customers at a cost lower than that currently incurred. Clearly, the entry of the new firm should be encouraged because it has favorable competitive attributes. However, if existing electric rates were set on a predatory basis—that is, designed specifically to forestall potential competition in this market—the new firm would never materialize and the cost-saving technology would be lost to society.

Any firm, utilities included, is able to price on a predatory basis in some markets if it is able to charge monopolistic prices in other markets. This is the only way the firm can generate revenues sufficient to maintain an adequate level of profitability. Thus, the maintenance of discriminatory pricing schemes—part monopolistic, part predatory—inhibits

potential competition and retards the pace of economic progress to the detriment of society generally. One writer has argued that:

[T]he experiments in public regulation during the last two decades have been singularly unsuccessful in that the creation of a fourth branch of government has, in many cases, resulted in undue restriction of entry, encouragement of mergers and consolidations, sanction for anticompetitive rate and service agreements, erosion of interindustry competition, and suppression of unregulated competition.²⁵

Twelve years later, a similar view was expounded by the President's Council of Economic Advisors: "Regulation has too often resulted in protecting . . . the *status quo*. Entry is often blocked, prices are kept from falling, and the industry becomes inflexible and insensitive to new techniques and opportunities for progress."²⁶ Restrictions on entry, whether emanating from predatory pricing practices or from the reluctance of regulators to issue certificates of public convenience and necessity, must be discouraged. This important regulatory goal can be realized only when cost of service data can be developed on both existing and prospective firms.²⁷

Managerial and Technological Efficiency

Implicit in improved efficiency is the understanding that a business enterprise is able to produce the same output with fewer resources or greater output with existing resources. In essence, improved efficiency means increased resource productivity. Firms which function under competitive market conditions are encouraged to improve efficiency through the introduction of cost-minimization techniques and technological advances. This encouragement results from an ever present competitive factor—the possibility that an existing or potential rival will introduce cost-saving technology and thereby gain a competitive advantage. The competitive firm is, therefore, compelled to seek more efficient production techniques, for it continually confronts the possibility that its market position will be eroded by a rival. Efficient production benefits consumers by allowing lower prices. In addition, cost-

25. Adams, *supra* note 4, at 258.

26. 1970 ECONOMIC REPORT OF THE PRESIDENT 107.

27. Prospective entrants should also be required to show that they are indeed more efficient and simply not engaging in predatory practices.

savings techniques benefit the entire society to the extent that they free resources to be used in other productive endeavors.

Within a regulated environment, the competitive impetus spurring innovation is minimal because entry must remain at least semi-restricted if economies of scale are to be realized. The innovative spirit must emanate from the utilities themselves. Regulators can encourage technological advance by closely supervising utility costs and by insuring that utilities are rewarded for developing and introducing new technologies.

There is clear evidence that the State Corporation Commission shares this viewpoint. In the explanation of its annual review procedure regarding expense projection statements to be submitted by utilities, the SCC stated:

The Commission will also allow utilities to pro-form other expenses extending 12 months beyond the test period. Pro-formed expenditures which are peripheral to actual operations, but are important to the success of the utility, such as those for research, development, safety, and environmental protection will be allowed by the Commission, if in this Commission's judgment the expenditures are adequately specified and are reasonable for the continued growth of the utility and generally in the public interest. This Commission will not allow pro-formed expenditures which are of a promotional or informational nature which are not supported by tangible evidence that the utility is in fact doing what it claims.²⁸

...

If experience shows in a particular instance that a utility realized greater expenses over the pro-formed period than anticipated, the Virginia Commission will be provided with the information to recommend that a new hearing be held to determine the cause of the difficulty and if a rate increase is required. Conversely, the same will be true if a utility experiences productivity gains which were not provided for in the pro-forma adjustments which may imply that a rate decrease is in order. However, this does not mean that the Virginia Commission believes that all productivity gains should accrue to consumers in the form of lower rates. On the contrary, this Commission is of the view that the utility itself should share in the benefits derived from increases in productivity as a reward for instituting action which reduces the necessity for rate increases in the future.²⁹

28. Commissioners' Letter, *supra* note 19, at 6.

29. *Id.* at 11.

Efficient Resource Allocation

The price mechanism is the vehicle by which scarce resources in our economy are allocated to alternative sources of employment. In competitive industries, prices are determined by the free interplay of the forces of supply and demand. The equilibrium prices which emerge as a result of this process reflect the market value which consumers place on the goods and services produced and the market value of the resources utilized in producing these commodities. Since an equality exists between prices and costs, full production costs also reflect market values. If, at any point in time, prices in a particular industry are at a level which enables firms to exceed operating and capital costs, resources will be attracted to the industry. With the influx of resources, the output or supply of the industry will increase; this results in a reduction in price. Since the product will be more abundant, its value, as well as the value of the resources used to produce it, will decrease. Thus, the price mechanism has allocated resources in a manner to eliminate excessive profits and resulting excessive rates of return. When resources are allocated in a manner such that they earn only a fair return commensurate with the risk they bear, then they are being allocated efficiently.

Competitive markets encourage an efficient allocation of resources. Market distortions—product shortages or surpluses—are corrected continually by changes in prices which reallocate resources to eliminate such distortions. In this regard, the regulatory process was designed to be a surrogate for competition. When the resources devoted to public utility enterprises are provided with the opportunity to earn only a fair return, efficient resource allocation is encouraged and society can expect that the supply of utility services will be equivalent to that which would exist under competitive conditions.

The principal task of the regulatory process is to insure that the resources available to society are allocated to the public utility sector of the economy in an efficient manner. When resources are allocated in an inefficient manner, society's resources are being squandered. For example, if a power plant continually operates at only 10 percent of capacity, the resources utilized in constructing and operating the plant have been allocated inefficiently since they could have been employed in some other market where output shortages prevail. On the other hand, if the power plant is continually forced to operate in excess of its designed capacity, additional resources should have been allocated

to increase its output capabilities. Of all the problems which confront regulatory agencies, questions concerning efficient resource allocation are the most difficult to resolve. However, resources will be allocated and utilized efficiently when equilibrium prices are constantly being set, when there is an absence of discriminatory prices, when entry is encouraged, and when technological advances and cost-minimization techniques are promoted. When all these objectives are realized, the goal of efficient resource allocation will be achieved.

INFLATIONARY IMPACT OF RATE INCREASES

One economic aspect not previously discussed concerns the inflationary impact of utility rate increases. The Commission notes:

One aspect of a regulatory framework without a definite provision for annual review is often overlooked. This centers on the inflationary impact of public utility rate increases. Since utilities appear infrequently before regulatory agencies for rate relief, they typically will seek, when they do appear, rate increases which seem inordinately large. Moreover, since the utilities view the regulatory process as a last resort, they typically are in need of a large increase when they do appear. In recent years, this situation has been particularly acute. Many utilities attempted to cope internally with the staggering pace at which inflation mounted. By 1971, however, most utilities found that despite their efforts in 1968, 1969, and 1970, the severity of inflation continually eroded their profit positions. And as one would expect, not only was there a rash of rate increase requests but they typically were for rather large amounts.

Regulatory agencies, everywhere, were faced with exceedingly difficult situations. On the one hand, as public agencies, they felt an obligation to help curb the course of inflation. On the other hand, they had an obligation to try to correct the deteriorating financial conditions of many utilities. Since inflation had been so severe, many utilities required large increases to maintain their financial integrity, to maintain and improve the quality of service, and to provide for growth and development. But the granting of such large increases is inconsistent with the goal of curbing the rate of inflation.

Under normal circumstances, public utility rate increases do not contribute significantly to inflation. But the last several years have not been normal. With virtually all utilities seeking large rate

increases simultaneously, which in large part are justified, the inflationary impact on the national economy would be considerable if all requests are even partially granted. It would appear that the Price Commission recognized this very difficult situation and took steps to include utilities in the Economic Stabilization Program. The task, however, of establishing guidelines to meet the goals of regulation as well as the goals of national economic policy has been left to the individual regulatory agencies.³⁰

Minimization of the inflationary impact of utility rate increases is consistent with the goals of sound regulatory practice. This follows because firms in a competitive environment will seek to raise prices only as a last resort, for they fear the loss of business to a rival which does not raise price. Maintenance of equilibrium market prices through an annual review procedure will serve to minimize the inflationary impact of utility rate increases while accomplishing the other economic objectives.

CONCLUSION

For economists, it is refreshing to note that the SCC has instituted procedures which should facilitate the accomplishment of the economic objectives of regulation.³¹ Consumers as well as utilities should appreciate that the SCC's new policies will be beneficial to the economy of Virginia. However, these comments should not be interpreted to mean that the SCC has gone as far as it should. There remain the questions of actual attainment of equilibrium prices, elimination of market distortions, studies of price discrimination, promotion of efficiency, and the ultimate test, allocation of resources. Annual review will provide the vehicle and some of the data necessary to analyze and deal with these complex economic issues. But there exists little doubt that additional resources must be devoted to the regulatory process if all the objectives of regulation are to be met. If the recent past can be viewed as indicative of the future, then the prospects are good that these objectives will be accomplished if sufficient resources are made available to the SCC to facilitate thorough consideration of complex economic problems.

As regulators become more involved in analyzing the economic performance of regulation and dealing with its economic complexities,

30. *Id.* at 8-10.

31. In the past, economists have led the critical charge against regulatory agencies. See, e.g., W. SHEPHERD & T. GIES, *UTILITY REGULATION: NEW DIRECTIONS IN THEORY AND POLICY* (1967).

economists and other professionals will find an increasing demand for their expertise. This does not mean that economists have all the answers or all the tools necessary to reach the answers. But the economist does possess a keen understanding of the proper functioning of the regulatory process and applicable analytical techniques. Moreover, economists may gauge the performance of the regulatory process. In recent times, for example, regulators have assumed increasing responsibility for determining the environmental impact of utility operations and new ventures. Economic tools such as cost-benefit analysis can be used to develop dollar estimates of the costs and benefits of alternative investment projects. Such information will provide regulators with hard economic data upon which decisions can be based.

Ultimately, the merits of any regulatory decision depends on the judgment of regulators. If regulators are informed as to the objectives of regulation, understand the complexities in reaching those objectives, and are provided with the resources and expertise necessary to solve problems and gauge the performance of regulation, then they will be able to make decisions consistent with the goals of regulation. There is every indication that this has been and is occurring in Virginia.