

# New York Stock Exchange, Inc.

**Comments to  
Securities and Exchange Commission Concept Release on  
"Regulation of Market Information Fees and Revenues"  
(Release No. 34-42208; File No. S7-28-99)**

## **APPENDIX C-1**

### **Issues Surrounding Cost-Based Regulation of Market Data Prices**

**Prepared: Ms. Bruce McConihe, Principal  
Reviewed: Alan Kolnik, Senior Vice President**

**PHB Hagler Bailly, Inc.  
1776 Eye St, NW  
Washington, DC 20006-3700**

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## **MARKET DATA-THE ORIGINAL CONCEPTION**

Some industries are regulated to promote political considerations including social equity and availability of services and information. It is evident from the 1975 House and Senate Reports that market data falls into this category.

One of the stated purposes of S. 249, the Securities Exchange Act Amendments of 1975 was to develop a communications system designed to provide automated dissemination of last sale and quotation information ("market data"). The legislation envisioned that the initiative for the development of facilities must come from private interests. Congress gave the SEC broad discretionary powers to oversee the development of a national market system with the following objectives:

The goals of this pervasive regulatory authority [of the SEC] would be to insure the availability of prompt and accurate trading information, to assure that these communications networks are

not controlled or dominated by any particular market center, to guarantee fair access to such systems by all brokers, dealers and investors, and to prevent any competitive restriction on their operations not justified by the purposes of the Exchange Act.

Specifically, Congress provided examples of the types of subjects as to which the SEC would have authority to promulgate rules:

...the hours of operations of any tape or quotation system, trading halts, what and how information is displayed and qualifications for the securities to be included on any tape or within any quotation system.

Congress did not envision that the SEC would pervasively regulate market data. The legislative history to the 1975 Amendments clearly states that:

This is not to suggest that under S. 249 the SEC would have either the responsibility or the power to operate as an `economic czar' for the development of the facilities of a national market system must come from private interests and will depend on the vigor of competition within the securities industry as broadly defined.

It is clear from the Senate Report that Congress envisioned that competitive market forces within the industry would emerge to encourage the development of centralized dissemination of market data. This is just what has happened since 1975<sup>1</sup>. As in the evolution of other regulated industries, discussed below, changes in market structure and technological change has made regulatory oversight unnecessary. The Concept Release recognizes that the market has changed in similar ways:

A number of developments in the securities industry, however, led the Commission to initiate its review of the arrangements currently in place for disseminating market data. Each of these developments is attributable, in large part, to improved technology for communicating and organizing information. (Concept Release, p. 4.)

### **Concept Release Proposal**

The SEC staff believes that it will be possible to develop a flexible, cost-of-service approach (hereinafter termed "flexi-COS") to market data fees. Rather than require a strict mathematical calculation of costs in every case, the staff would rely on a "more flexible" determination of costs to determine whether fees are fair and reasonable.

The SEC staff appears to believe that flexi-COS can be implemented in four steps by each SRO:

- 1) Calculate the direct market data costs;
- 2) Calculate the gross common cost pool;
- 3) Apply a "standard" allocation percentage to the gross common costs; and

4) Allocate the total cost of market data among the various networks through which it makes market data available.

The SEC staff appears to believe that these tasks will not be unduly onerous.

According to the SEC staff (Concept Release, page 31), there will be three major benefits from implementation of flexi-COS:

- 1) It could provide a much closer and more objective link between SRO costs and market data revenues.
- 2) It potentially could be implemented in a more efficient manner than a strict cost-of-service approach.
- 3) It could create fair competition by putting all the networks on an equal footing in terms of relevant costs funded by information revenues.

However, this is overly simplistic. While it may appear to be fairly simple to allocate direct costs, a uniform system of accounts would first have to be established in order to begin the process. In other regulated industries, establishment a uniform system of accounts has involved years of formulation and continued adjustment as market structures change. Current accounting systems for the SROs will have to be adapted to conform, so that the relevant costs can be segmented from the general reporting of costs. In addition, there has been no definition offered as to what is deemed a "direct cost." Establishing a definition of "direct cost" will undoubtedly prove controversial.

### **Allocation of Common Costs**

Separation of joint and common costs involves an allocation scheme based on some analysis of costs incurred among the various services. The Concept Release suggests that a "standard" allocation factor be applied to all SROs. There is no rationale for such a global policy in connection with common costs and it is extremely likely that the allocation factor will differ significantly among the SROs depending on the adopted method. It is very likely that size and trading systems of an SRO will be an important factor in the degree to which common cost elements are incurred. Without an in-depth study of the sensitivity of the allocation schemes in order to justify this policy, it is likely that whatever percentage allocation factor is adopted, it will be challenged by both SRO and customer interest groups.

A major issue in dealing with common costs involves the concept of fairness in allocating and proportioning costs. Again, experience in a variety of industries shows that establishing a standard of fairness that is acceptable to all is a Herculean task which, in fact, is rarely completed to the satisfaction of all parties. This being the case, and many examples can be given, the door is left wide open for dispute and litigation by parties that are in fact, or in their own perception, disadvantaged.

### **Production Costs**

**Market data is not created in a vacuum.** The Concept Release does not consider the infrastructure that is necessary to create market data. In ratemaking jargon, this is what is termed as the "**cost of production.**" *The Concept Release only deals with the cost of distribution of market data.* The cost of production includes the process by which each trade and quote data is gathered, verified and delivered to the CTA and the CQS for consolidation. For the NYSE, the production of trade and quote data is a multi-step, multi-purpose process that involves multiple systems and personnel, yielding a last trade price, as well as a trade execution. This is described in more detail below.

*The raw material for the production process is orders.* Before giving rise to a trade report, the orders are delivered to NYSE, either through an electronic network (95 percent) or over the telephone. Most of these orders are market orders or limit orders. Market orders generally give rise to a trade report. Limit orders have the potential to become a component of the current quotation.

*Currently, the total cost of providing market data is not being covered by market data revenues.* In 1998, the NYSE spent \$261.8 million to operate its market and enhance its systems' functionality, capacity, redundancy and reliability.

In calculating the rate-base for cost-based ratemaking, the SEC will have to consider all the elements of production for each SRO. For example, a synopsis for NYSE, far from complete, follows.

The NYSE houses the computers that support its market at two separate locations. All systems are dual-sited for redundancy and back-up purposes. Either site can continue to support the market if the other site is disabled. Similarly, the network distribution to the trading posts on the floor has dual communications and controller rooms. The NYSE provides tight security at all locations. Back-up power capabilities are maintained at all times and can be placed into service in short order. The trading floor includes display systems, order systems, communications systems and many other items of physical plant needed for the operation of the exchange.

All critical systems are designed to provide capacity for market activity that goes well beyond current volume expectations. For instance, at the beginning of 1999, NYSE systems had capacity to handle 600 messages per second or the equivalent of a 2.5 billion shares per day. By the end of 1999, the NYSE's systems capacity program increased to 1,000 messages per second, or approximately 4.2 billion shares per day.

Production costs that account for the entire infrastructure of each SRO must be considered in any allocation of market data costs. Without the infrastructure, there will be no quotes to consolidate. Without the infrastructure, there would be no assurance of the quality of the data. These are important basic elements of the end-product.

## **Revenue Cap**

The Concept Release envisions that the total cost of creating market data will be used to establish an aggregate revenue cap that the Networks will be able to collect for market data. Therefore, it

will be the task of the Networks to establish a fee structure so that this revenue cap is never exceeded. (From the regulatory point of view, this is an additional burden the Network will be entitled to recover).

Specifically, the Concept Release states: "In establishing their fee structures, the Networks would be required to adjust the particular fees charged to different categories of vendors and subscribers so that the fees did not generate a total amount of revenues that would exceed the limit." (Page 30.) Rate design is not an exact science and involves establishing elasticities among customer groups that reflect the value these customer groups place on market data. It will be extremely important to investigate and understand these elasticities when setting fees to the various customer groups, so that the revenue cap is not exceeded.

In connection with the revenue cap, the Concept Release does not discuss the refund process that must occur when the revenue cap is exceeded. If elasticity estimates are incorrect, and more revenue is collected from a customer group than expected, and less revenue is collected from another customer group than expected, which customer group should get the refund? A refund to a select group of customers will be challenged by the customers not receiving a portion of the refund. If fees are subsequently realigned, any increase to a different customer group will likewise be challenged. It is always easier to lower rates to a customer group than to increase them. This type of ratemaking process is inherently unstable and subject to continuous adjustments until the fee structure can be found to "fit" the revenue cap target.

### **Distribution of Market Data Revenues**

The Concept Release anticipates that separate, as yet to be specified, rules would dictate how market data revenues will be distributed to the SROs and therefore, an SRO's cost to produce market data may be left unremunerated. As stated in the Concept Release: "It bears emphasis here that, under this conceptual approach, separate rules would govern the distribution of Network revenues, and **therefore, an individual SRO would not necessarily recover the amount of its total cost of market data in distributions from the Network.**" (Emphasis added, page 31.)

Apparently, the Staff does not feel a need to link market data revenues with costs because the consumer (investor) will pay for these costs through increased fees from other SRO services. The Concept Release states: "If all of these costs were excluded from the cost of market data (and fees were reduced accordingly), the principal consequence would be to force the SROs to rely more heavily on their other sources of funding—transaction fees, listing fees, and regulatory fees." (Page 27.)

Any SRO that does not recoup the costs of providing market data will certainly challenge the set of rules adopted to distribute Network revenues. A regulatory history of judicial decisions that support the right of the SRO to recoup its costs already exists.<sup>2</sup> In addition, there is the real danger that SROs would turn to cost-saving measures that sacrifice the quality of market data as a method of alleviating the losses incurred by a revenue sharing scheme that did not fully compensate them.



Prescribing a regulatory solution in markets that are evolving and where advanced technology is a key facilitator may stifle creative developments in the provisioning of market data. The rate of return regulatory approach assumes that market data will be packaged and sold as it is today. However, market participants, both providers and customer, may evolve to create entirely different market structures, especially when freed from regulations that slow down commercial and technological developments.

### **The Problem of Partial Regulation**

As discussed later, cost-based regulation has traditionally been used to regulate natural monopolies. As such, the regulator looked at the total operations of the utility and determined its total cost of supplying public utility services. The regulator then prescribed an overall revenue requirement to cover total costs plus a rate of return on its asset base. More importance was placed on determination of the revenue requirement than on general rate levels. Rates as a whole were meant to cover costs as a whole.

Bonbright points out that the complexity of the rate structure is due partly to the volume of technical detail and also to the inability of the rate designer to predict the effects of changes in rates on demand for service and the costs of supply.<sup>3</sup> Bonbright states that: "Public utility management and public service commissions have often denied or doubted the value of comprehensive total-cost apportionments even as useful guides to rate design."<sup>4</sup>

The major fallacy of the Concept Release proposal, in this respect, is that total costs will be determined for all SRO activities and a portion of the costs will be allocated to the provision of market data services. Cost-based regulation is not conducive to partial rate regulation. Whatever rate structure is adopted for market data services will importantly impact on the revenue requirement of other services provided by the SROs.

Partial regulation of market data services will inevitably extend into an examination of the costs of the other services provided by the SROs. As discussed below (in Distortions Introduced by Rate Regulation), a quick regulatory solution in moving towards cost-based rates in order to limit profits and potential discrimination, may result in larger market distortions concerning cost recovery in the other services provided by SROs. This regulatory extension beyond market data services was not contemplated by Congress in 1975.

### **Implications of Concept Release Proposal**

The Concept Release Proposal also runs counter to congressional intent. The Conference Report for S. 249 states: "**The Commission was directed [in the Senate bill] to remove existing burdens on competition and to refrain from imposing, or permitting to be imposed, any new regulatory burden `not necessary or appropriate in furtherance of the purposes' of the Exchange Act.**" (Page 94.) If the Commission adopts a cost-of-service regulatory model, as the Concept Release proposes, then there will be significant additional burdens created for the SROs in terms of functionalizing costs, designing rates and allocating market data revenues. There will be winners and losers depending upon the specific model adopted.

In addition, if the Concept Release proposal is adopted, the Commission will be required to estimate the burden imposed by new reporting and recordkeeping regulations imposed by agency rule. The Office of Management and Budget requires that the Commission estimate the annual burden of its new rules to the SROs.<sup>5</sup> These estimates are likely to be challenged by all interested parties, especially the SROs.

Congress did not intend the Commission to be the sole participant in actions undertaken by the Commission, and therefore expanded the scope of direct judicial review of SEC decisions. The Senate bill, which was adopted, allowed intervenors the right to petition the Court of Appeals within 60 days from Commission promulgation of new rules which relate to the operation or regulation of the national market system, a national clearing system, or the SEC's oversight of self-regulatory organizations. This provision is stronger than the House bill version that allowed judicial review only if it could be proven that the Commission abrogated, altered or supplemented the rules of a self-regulatory organization.

Any SRO that feels disadvantaged by the adoption of rules set forth in the Concept Release will utilize the judicial review process made available in the 1975 Amendments. This will be especially true if SROs are not permitted to recoup the revenues to cover their costs as a result of rules adopted for the distribution of market data revenues.

The SEC concludes that more rigorous regulation is necessary for market data development. This proposal is counter to regulatory developments in other industries that were originally regulated for competitive structural reasons and which have become deregulated as market structure impediments have been removed. It is unclear that more regulation, especially in the form of cost-of-service regulation, will encourage availability of market data services to significantly more retail consumers. Rather, one could conclude, based on examples from the history of other regulated industries, that adoption of cost-of-service regulation in connection with market data will stifle innovation and technological development.

## **DEMANDS ON THE SEC**

A single government agency does not establish alone the various policies and procedures to which the regulated firms are subject. Government agencies are not the only federal players. Congress, the White House, and the judiciary provide checks on and substantial input into the process. Each of these groups, plus the various special interest groups, have their own agenda for the agency and the regulations. With all of these groups playing a role in forming the regulations, the regulations can often be distorted away from their original purpose.<sup>6</sup>

Regulation in and of itself is complex, and will place substantially more demands on the SEC. This process will be made even more difficult by the presence of both for-profit and not-for-profit entities, as they may (will) need to be treated differently. Regardless of whether the entities being regulated are for-profit or not-for-profit, the regulator must understand the inner workings of the regulated entities. Effective regulation of operating expenses and capital outlays requires a detailed, day-by-day, transaction-by-transaction, and decision-by-decision review of every aspect of the company's operation.<sup>7</sup> "The essence of regulation is the explicit replacement of competition with governmental orders as the principal institutional device for assuring good

performance. The regulatory agency determines specifically who shall be permitted to serve; and when it licenses more than one supplier, it typically imposes rigid limitations on their freedom to compete. ... Instead the government determines price, quality and conditions of service and imposes an obligation to serve."<sup>8</sup> Given this, it is clear that the demands on the SEC will be substantially more than they are currently.

Regulation requires both a structure and enforcement of the rules and regulations established to maintain that structure. As discussed below, there are numerous tasks that would need to be completed by the SEC before regulation could even begin. Then, once regulation begins, there would be an on-going stream of activities that the SEC would need to perform in order to regulate the exchanges.

### **Day 1: Procedures and Rules That Must Be in Place**

It is clear from prior regulatory experience and common sense that if the regulatory commission is to be something more than a rubber stamp, it has to exercise its own judgment about the propriety of the items presented to them as the major components of the cost of service. To do so, the regulatory commission has to become expert itself in these cost and revenue items. In addition, the SEC would need to establish the means by which it can regulate and monitor the SROs.

Once the SEC established the basic principals of cost-based regulation it would apply, it would need to put in place a variety of policies and procedures providing the SROs with the rules and regulations under which they would be operating. For example, the SEC must first determine which method it will use to regulate SROs (traditional rate of return, banded rate of return, price caps, earnings sharing, etc.) and withstand the challenge to adoption of those rules. The method determined and the rules and regulations would need to be widely published for public comment and could be subject to a public hearing.

Within a rulesetting proceeding, the SEC would also need to determine exactly the items it intends to regulate, that is, whether it is going to limit regulation to the price of market data or whether it is going to also regulate other items and fees. The SEC must determine how it is going to regulate, so that all costs are recovered and potential distortions are minimized.

As discussed above, regulation requires that firms be able to classify their costs and earnings into various categories, so rates can be determined or monitored depending on the type of regulation chosen. In order to do this, the categories of costs and rates must be determined.

These various categories of costs and revenues are usually sorted so similar categories are grouped together and assigned numerical codes. All firms in the same industry subject to regulation under the commission would use the same codes regardless of slight differences in accounting methods that may exist. Once the categories are determined, a uniform system of accounts must be put in place so that all firms conform the functionalization of costs in their accounting systems. Such a uniform system of accounts must define each item of cost and revenue.

The SEC must then provide general instructions on how the uniform system of accounts is to be maintained, such as:

- information on which records must be kept
- how they are to be kept
- when reports are to be filed
- what information is to be filed in the reports
- what numbering system is to be used for the accounts
- what the accounting period will be
- how it will deal with unaudited items or extraordinary items
- whether accounting will be done on a cash or accrual basis
- how payroll will be distributed within the accounting system
- how transactions between affiliates and/or competitors will be recorded
- what information will be required for contingent assets and liabilities
- how long-term debt will be accounted for
- how income taxes will be dealt with
- how losses will be categorized.

Using the categories and the uniform system of accounts, the SEC must also determine what items are to be included in the rate base by the firms. Then the Commission must determine which of these costs could be charged directly as operating expenses and thus included in annual revenue requirements dollar for dollar, and which could be capitalized, thus entering the cost of service in the form of annual allowances for depreciation and return on the undepreciated portion of the investment.<sup>9</sup>

Furthermore, since the rate base consists of "plant" (or investment base), it must be determined what "plant" may be included or deducted and if any additional items are to be included. "Plant" includes things such as assets, property held for future use, plant under construction, materials and supplies, non-current assets, deferred maintenance and retirements, investment in non-affiliated companies, deferred charges, and working capital. Furthermore, within each of these, it must be determined by the agency what specifically can be included and what specifically cannot be included in the calculations.

Establishing a rate structure that will provide efficient incentives for all parties is not a trivial undertaking. The objective of rate regulation in other industries has never been solely to minimize the rates to consumers, since very low rates may affect the desirability for the service provider(s) of staying in business or the quality of the product being provided. In addition, minimizing rates may impact the incentive to innovate, so that the company will not be able to improve efficiency and thus lower rates over time. Rate regulation implies that market forces cannot be relied upon, however. Thus a delicate balance must be achieved between providing sufficient incentives for firms to undertake cost-reducing actions, while at the same time ensuring that prices for consumers are not excessive.<sup>10</sup>

Another key concern that must be addressed by the regulators with respect to rate regulation pertains to the role of marginal costs and fixed costs. There are specific identifiable costs that can be attributed to the product that is delivered to the customer - the marginal costs. However, the

firm also incurs substantial fixed costs in terms of "plant and equipment" (computers, access lines, capacity, etc.), a major component of production costs, that must also be covered. The regulators must determine how the SROs will be allowed to allocate these fixed costs. Should the SRO divide them equally among its customers? Should the costs be allocated based on a fixed percentage of the customer's bill? Should different customer classes be charged at different rates or in different ways?<sup>11</sup>

In addition, since each SRO has different assets and operating procedures, the SEC would then have to determine, in a rate case proceeding, the allowed rate base (i.e., asset base) for each SRO. This determination of the rate base would be important, and thus highly contested, due to the fact that the size of the rate base, in conjunction with the rate of return, would determine the amount of revenue the SRO would be allowed to earn on its asset base.

The SEC would also need to determine the rate of return that the SRO will be allowed to earn. Typically, this is based on some notion of the cost of capital of each SRO. The cost of capital will importantly differ according to the capital structure of each SRO. As discussed later, experts generally differ on the selection of an appropriate cost of capital.

Although the SROs are currently non-profit entities and thus in accounting terms they do not earn a profit, in economic terms they earn a "normal profit" or a return on their opportunity cost of being in the business. Normal profit is a return that is equal to the opportunity cost of the entrepreneur's effort, investment, and special skills. At a minimum, a firm must earn a "normal profit" or the firm will exit the industry because it could earn a higher return on its resources in another area. The SEC must establish procedures and methodologies for determining the rate of return that is to be allowed. In addition, the courts have determined that firms must be allowed to earn a "reasonable return" or else it would be considered an illegal "regulatory taking." Since a firm's profit is determined by a variety of factors (price being just one of them), a regulatory agency may have a difficult time in the determination goal of a normal rate of return.<sup>12</sup>

This entire process is made even more complex by having different regulatory standards and provisions based upon the different business structures of the regulated entities, such as not-for-profit organizations and for-profit organizations. Not-for-profit and for-profit and therefore, these differing types of organizations will have different cost and revenue structures cannot be regulated in the same manner. Thus, at a minimum, the SEC would have to establish two sets of uniform system of accounts, two allowed rate of return procedures, price-cap structures, or other cost-of-service regimes, two depreciation schedules, and numerous other cost related items.

As an example of a similar situation, current regulatory bodies in the telecommunication and energy industries, for instance, apply different regulatory rules to entities based on size, regulating the large firms differently from the smaller firms-regulating only the "dominant firms". This requires additional work on the part of the regulatory commission to develop and understand different regulatory regimes for the different sized firms. The difference due to size evolved over time due to the desire by the large firms to have more flexibility in pricing. (See local exchange carriers' regulation as the Federal Communications Commission (FCC) moved to price-cap regulation for the Regional Bell Operating Companies (RBOC's) and GTE, but not for

the smaller carriers. In long distance service, AT&T was regulated more stringently than other long distance providers until 1995.)

If, on the other hand, the Commission wished to utilize the same regulatory structure regardless of whether the firm was for-profit or not-for-profit, there is the likelihood that some party would begin litigation, arguing that such a regulatory structure is not "fair."

Without these policies and procedures determined prior to beginning cost-based regulation of market data prices, the SEC would have no base from which to begin its regulation. Furthermore, the SEC would not know whether such regulation was having its desired impact, as there would be no means of ensuring that "excess profits" were not being earned.

### **Steps in Ratemaking Proceedings**

Establishing general principles to use in setting rates and rate differentials must be clearly linked to the objectives of the ratemaking policy (for instance, the goal of universal availability of market data) and the market environment in which the rates will operate.

The section below describes the typical path followed by regulatory agencies that implement cost-based ratemaking. The SEC will not be able to avoid this process. The logic of establishing the rate base and rate of return that ensures the viability of the industry will need to be followed. The baseline adopted in terms of costs and allowed revenues will have to be justified using acceptable criteria in order that challenges from disaffected parties can be withstood. If not, there is ample prior regulatory and legal precedent for successful challenges to be launched.

Two basic approaches to ratemaking have been pursued - a case-by-case approach and industry-wide rulemaking.

At first, a regulatory agency may pursue a case-by-case approach by considering each proposal individually. The most important proposals concern rate changes and petitions for entry or exit. When the burden of a case-by-case approach becomes too great, a regulatory agency will often turn to an industry-wide rulemaking as a second approach. After performing hearings involving all parties, the regulatory agency provides a general rule to be used for a class of situations.<sup>13</sup>

If the SEC adopts a rulemaking approach to rate regulation (as it implicitly proposes to do in the Concept Release by establishing a cost-of-service), it must then set up a procedure by which rates are initially determined and changed when the firms require rate changes in order to ensure that the return is "appropriate" as measured by the firm's cost of capital. Most agencies that have been or are currently engaged in rate of return regulation use hearings to review the evidence and establish prices. These hearings are often lengthy and contentious, with large volumes of evidence and supporting documentation filed by the parties requesting the change and those opposed to the changes. In addition, the agencies also must conduct formal proceedings, whether oral or written, whenever a rule or rate is changed for the public record. These proceedings are open to any interested party and are conducted and examined by agency staff.

Ratemaking proceedings must answer two fundamental questions: how much money must be raised to operate the system or the firm, and how the amount raised should be allocated to customer groups in rates and fees. The commission must determine whether to use the historical cost or the replacement cost for the valuation of the assets. It must also determine whether it will try to allocate rates and fees based on whether the cost is fixed or varies with the volume produced.

These factors must be determined before the rates can be determined and proceedings can begin. Once the initial guidelines are established, proceedings can begin. Ratemaking proceedings are initiated by the regulatory agency after the regulated firm makes a request or proposes new rates or other changes, or another party requests a rate review, or the agency determines that the firm is earning more than its allowed rate of return. The rate change proposal or request is filed by the firm and is accompanied by volumes of supporting documentation, including a variety of evidence explaining why the proposal is consistent with the underlying statutes and agency rules and cost studies proving the firm's point regarding it not earning its proper rate of return. The cost studies contain volumes of information on costs and revenues, usually based on the prior 12 month period, referred to as the "test-year." This information must also be supported by "sponsoring witnesses," who detail for the commission their findings and the underlying assumptions for their part of the study.

Depending on the industry in question, and the type of costs and revenues incurred, the evidence may also include forecasts regarding future costs and revenues and the accuracy with which these have been forecast in the past, which model is being used to forecast these items, and any other assumptions being made. If the commission or another interested party requests a rate hearing, the firm is given a specified amount of time to collect and submit the information, as described above. Notice must then be given to the general public regarding the upcoming hearings, with specific notice being given to parties who have participated in recent cases at the regulatory agency. This notice, for federal agencies, must be published in the Federal Register, and must be at least a 30 day notice, although there are occasionally exceptions to this rule.

Notice is then followed by a discovery period, so that all participants, including commission staff, can question the regulated firm's witnesses regarding the assumptions underlying their testimony, clarify statements made in the testimony, test the mathematics and statistics, and gather any additional information deemed necessary. Depending on the volume of materials discovery can take a substantial amount of time, during which additional materials may be submitted as well. The process can take several months, if not several years, unless it is not limited by statute, the administrative law judge, or the commissioners. Following the discovery process, hearings are held. These hearings can be held in multiple parts or simultaneously, with discovery (additional requested information) allowed by commission staff, intervenors and by the firm itself. Once discovery is completed, all interested parties are presented with the opportunity to submit rebuttal testimony in the second phase of the hearings. Following the hearings phase, all parties file briefs summarizing and supporting their positions. These are followed by reply briefs responding to the positions of other parties in their briefs. The commissioners and their staffs must then review all of the evidence and testimony from the submissions, hearings, and briefs and determine what can and cannot be included in the rate base, what the appropriate rates are for every item, what the appropriate earnings level is, and

other factors such as the depreciation rate. These opinions are then written and adopted by the commission. The opinion of the commission regarding the rates must follow certain previously established criteria, legal precedent, and economic theory, or parties are likely to request reconsideration of the results. If the Commission denies the parties the opportunity for reconsideration, then the parties can appeal the commission decision in federal court. If the federal court determines that the Commission was in error in its findings, then the decision will be remanded back to the Commission for reconsideration. There can be numerous more reconsiderations, either by the commission itself or by the federal courts.

### **On-going Work of the SEC**

Cost-of-service ratemaking would create a new set of burdens for the SEC, focused around determining the appropriate costs (on an on-going basis), rates of return, and requests for rates changes, challenges to the rates and proposed changes, and so on.

For example, in addition to rate hearings, regulatory agencies must conduct other proceedings in order to establish and enforce the rules and regulations under which the regulated firms operate. The procedures to establish these rules and regulations differ between regulatory agencies, with some conducting hearings in front of an administrative law judge and others being purely written proceedings. Regardless of the format however, these proceedings may also be lengthy with volumes of information submitted by the parties regarding the proposed rules. Commission staff members and the commissioners then must review all of the evidence and comments submitted and determine the appropriate rules.

The Commission would also need to adjudicate complaints and determine the reasonableness of the introduction of new services. Adjudication of complaints can be a substantial undertaking, depending on the nature of the complaint and the need to review evidence submitted by both the complainant and the firm involved. Review of new service offerings would also be necessary under rate of return regulation, as a new offering would impact how costs would be allocated and revenues earned.

Regulation cannot be carried out in a vacuum of information. Thus if the SEC were to adopt any regulatory scheme, whether it is the one proposed in the Concept Release or some other method, the SEC would need data and information to be filed by those that it regulates. This would increase the workload of the SEC because the data and information must be reviewed. The SEC must estimate the additional workload requirements to be in compliance with the Paperwork Reduction Act.

Under the Paperwork Reduction Act, agencies must estimate the paperwork burden involved with their actions and have that approved by the Office of Management and Budget. In 44 USC Section 3501, it states that "the purposes of this chapter are to - (1) minimize the paperwork burden for individuals, small businesses, educational and nonprofit institutions, Federal contractors, State, local and tribal governments, and other persons resulting from the collection of information by or for the Federal Government."



The change in regulation proposed under the Concept Release would result in additional paperwork burdens in the form of additional accounting work, audits, rate hearings, cost studies, and other activities associated with cost-of-service regulation. This burden is to be estimated in terms of time and financial resources so that parties potentially subject to the burden have opportunity to comment and so that the estimate can be incorporated into the economic (cost/benefit) analysis that is to be performed by the regulatory agency.

According to 44 U.S.C. Chapter 35, Section 3506 (c)

(c) With respect to the collection of information and the control of paperwork, each agency shall

-

(1)(B)(iii) inform the person receiving the collection of information of -

(I). the reasons the information is being collected;

(II). the way such information is to be used;

(III). an estimate, to the extent practicable, of the burden of the collection; ...

(1)(C) assess the information collection burden of proposed legislation affecting the agency;

(2)(A)(i) evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (ii) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information...

(2)(B) for any proposed collection of information contained in a proposed rule (to be reviewed by the Director under section 3507 (d)), provide notice and comment through the notice of proposed rulemaking for the proposed rule and such note shall have the same purposes specified under subparagraph (A)(i) through (iv)

Rate of return regulation places numerous demands on the regulatory agencies and the parties involved on an on-going basis, as the parties try to respond to the regulations and changes in the environment. The various types of proceedings and the volumes of documentation involved make the demands placed on a regulatory agency by rate of return regulation substantial, and they become even more substantial the more firms enter the industry and thus need to be regulated. In addition, as the firms in an industry move towards competition, as technology and economic conditions are allowing many previously regulated entities to do, it becomes even harder to regulate the firms under an agency's jurisdiction.

The SEC will need to determine how it will "certify" the SROs and what it will do if firms petition to enter the industry as exchanges. Currently several ECNs have filed or are considering filing for exchange status. The SEC must, therefore, have rules in place regarding what the ECNs must do in order to become SROs and how they will be dealt with from the perspective of cost-based regulation. Since the ECNs are currently part of the NASDAQ cost-pool, their costs would need to be separated out along with their revenues. This would mean that each time an ECN filed

for exchange status, a new cost proceeding would have to be performed in order to determine the new SRO's rate base and how the NASDAQ's rate base will be changed as a result.

The SEC would also need to monitor and enforce compliance with its rules and regulations. This could be done by audits conducted by commission staff and proceedings when complaints are filed. These rules, reporting requirements and penalties must be established before regulation begins in order for firms to be able to have certainty in their transactions.

In order to perform all of the additional tasks, undoubtedly, the SEC would incur significant additional costs. Some of the sources of additional costs that would be incurred by the SEC are listed below:

- Accounting staff to maintain and audit information for uniform system of accounts.
- Staff to answer requests from SROs regarding filings/uniform system of accounts.
- Attorneys to ensure filings/uniform system of accounts; to participate in rate hearings, to write comments regarding rule changes and new rules, litigation, and other legal proceedings that arise from regulatory action.
- Additional attorneys at both the regulatory agency and the firms involved to ensure enforcement of the new rules and regulations imposed. Although this already takes place, additional resources would be necessary for the additional requirements.
- Economists to determine suggested rate of return (or other measures such as the proper price-cap or productivity factors) in proceedings.
- Additional lobbying staff for discussions with SROs regarding potential new rules and regulations.
- Additional programmers/data entry personnel to maintain and organize data.
- Personnel to review and understand any forms that needed to be filled out, and any additional paperwork that would be required as a result of additional regulations.
- Attorneys, accountants, and economists to write the appropriate rules and evaluate the information provided by the regulated entities.

### **The Federal Courts**

For both the rules and regulations that must be in place on Day 1 and for the on-going activities of the SEC, there is then the possibility of review by the federal courts. Following the adoption of the policies and procedures by the SEC, the regulated firms have three options:

- Accept the rules and regulations as they are
- Request reconsideration by the commission; and/or
- Take the issue to the federal courts.

If a request for reconsideration is filed or a suit is brought, additional work is required of the commission to defend actions or to re-think its previous decision. The commission, under reconsideration, and the courts can then either reverse the original rules and regulations or accept them, or, as is often the case, accept part of the original rules and regulation, but require that others be re-examined. Moreover, if the SROs were to initially request reconsideration and be

rejected, they still have the option of requesting review by the courts, thus, adding potentially another step to the process.

The courts have played a major role over the past several decades in regulation, with court rulings setting the definitions under which firms are regulated and precedent under which regulatory agencies operate. Although the courts give deference to the expert agency (regulatory agency) with regard to technical issues, the courts ensure that the determination by the agency adhere to the statutory guidelines under which the regulation was made. Moreover decisions by the courts, furthermore, are universal and apply to all regulated industries as one regulated entity. For example, the decision in *Hope v. Federal Power Commission* regarding the interpretation that "fair value is the end product of the process of rate-making not the starting point" is applicable to all regulators in their interpretation of "fair value."<sup>14</sup>

## **DISTORTIONS INTRODUCED BY RATE REGULATION: A HISTORICAL PERSPECTIVE**

Regulation is an economic, legislative and legal concept. The legislature usually determines which industries will be regulated. These decisions are usually based on consideration of two classes of issues:

- Economic characteristics of the industry
- Prevailing social goals and political considerations.

However, the legislative policy adopted must conform to existing legal concepts and procedures. It is inevitable that there is an inconsistency between the economic criteria justifying regulation on one hand and the legislative and legal concepts on the other hand. Although distinctions can always be made between regulated and unregulated industries on the basis of economic characteristics, this distinction is frequently a matter of degree.

In the period 1877-1934, the Supreme Court ruled that there were certain industries sufficiently "affected with a public interest" to justify regulation by legislatures. These industries dealt with grain elevators,<sup>15</sup> banking,<sup>16</sup> insurance companies,<sup>17</sup> and insurance agents.<sup>18</sup> In addition, the Supreme Court recognized the right of legislatures to regulate the suppliers of gas, electricity, water, and transport services because these companies operated under governmental franchises giving them the right to make use of public streets or condemn private property.

As Chief Justice Taft wrote for the unanimous Supreme Court in 1923:<sup>19</sup>

Businesses said to be clothed with a public interest justifying some public regulation may be divided into three classes:

(1) Those which are carried on under the authority of a public grant of privileges, which either expressly or impliedly imposes the affirmative duty of rendering a public service demanded by any member of the public. Such are the railroads, other common carriers and public utilities.

(2) Certain occupations, regarded as exceptional, the public interest attaching to which, recognized from earliest times, has survived.... Such are those of the keepers of inns, cabs, and grist mills....

(3) Businesses which though not public at their inception may be fairly said to have risen to be such and have become subject in consequence to some government regulation.... In the language of the cases, the owner by devoting his business to the public use, in effect grants the public an interest in that use and subjects himself to public regulation to the extent of that interest....

Economic regulation over industries based on industry characteristics was justified under three circumstances:

(1) Situations in which competition, as a practical matter, cannot exist or survive for long, and therefore, an unregulated market will not produce competitive results. This situation would encompass what is termed "**natural monopolies.**"<sup>20</sup>

(2) Situations in which active competition exists, but where, because of imperfections in the market, competition does not produce one or more competitive results. In this case, the market process is expected to produce ruinous competition, such as in the airline and trucking industries where there was a need to maintain price stability and restrict entry. (Industries exhibiting "**structural market imperfections**").

(3) Situations in which competition exists, or could exist, and has produced or may be expected to produce competitive results, but where in light of other policy considerations, competitive results are unsatisfactory in one or more aspects. Policy considerations include universal access, social equity or economic stabilization. The regulation of market data would be an example of this category ("**regulatory public policy**" industries.)

Each of these three situations suggests different kinds of regulatory approaches to mitigate the various problems they pose. Regulation of the natural monopoly industries embodies four principal components:<sup>21</sup>

- 1) Control of entry;
- 2) Price fixing;
- 3) Prescription of quality and conditions of service;
- 4) Obligation to serve all customers.

Regulation of industries exhibiting structural market imperfections or where public policy issues require regulation to focus on performance and price stabilization (price fixing and control of entry). Examples of this kind of regulation include:

- airlines
- trucking

- railroads
- buses
- cable television
- oil
- natural gas

According to Kahn, in most of these cases (industries with market imperfections), the original rationale for regulation was not natural monopoly characteristics but the belief that unregulated competition would be destructive of the quality, continuity, reliability and safety of service.<sup>22</sup> The destructive structural quality of competition was not only intra-industry competition but inter-industry competition-between different transportation modes and between cable and off-the-air broadcasting, for example. Much of this occurred during the Depression and involved price stabilization of milk, for example, and establishment of codes of fair competition to involve much more self-regulation of industry rather than direct government control.<sup>23</sup> The public policy rationale can be seen in instances where public safety and quality of service concerns prompt the regulation of an industry.

As noted by Kahn, regulation of industries, not the nature of public utilities, as such, creates consequences in the development of the industry. Kahn states:

Licensure of entry has certain implications and tendencies wherever it is practiced, whether over gas pipelines, radio and TV stations, community antenna television (CATV), doctors, or barbers. Government price-fixing has similar consequences whether it is for electricity, post office services, farm products, or air travel; and so has governmentally-enforced division of the market, whether by licensing motor carriers or assigning output quotas to individual oil wells. Private, collective price-fixing and market-sharing are subject to similar tensions and tendencies, whether by maritime shipping conferences, boards of fire insurance underwriters, stock exchange members, or real estate boards-although these implications and consequences will vary with the circumstances of the industry to which they are applied.

This purpose [reviewing economic principals and tendencies of regulated industries] must not be interpreted as reflecting a **belief that any simple set of rules can answer all problems of regulatory policy. On the contrary, each regulated industry (in fact, each unregulated one, too) in particular situations, like the decision to regulate in the first place, can only be done on the basis of full consideration of the special characteristics of the industry in question-its technology and other conditions of supply, the nature of the market-and the varying mix of public purposes, economic and other, that regulation is supposed to serve.** But the job is likely to be very badly done if it is not informed by a clear grasp of the common economic principles and considerations.<sup>24</sup> (Emphasis added.)

### **Traditional Natural Monopoly Regulation-The Process**

Price regulation is the key element of natural monopoly regulation. As such, regulators have sought to prevent discrimination among customers. In administering price regulations, regulators have tried to assure adequate earnings to the public utility so that the industry can continue to develop and expand in accordance with consumer demand.

## Revenue Requirement

The basic standard of price (rate) regulation is the revenue requirement standard, or the rate base/rate of return standard. Regulators must permit public utilities to set rates at levels which will recover operating expenses and an opportunity to earn a reasonable rate of return on the utility property assigned to provide service to consumers.

To determine the level of the revenue requirement of the utility involves four major processes:

- 1) Establishing a uniform system of accounts;
- 2) Determination of allowable operating costs;
- 3) Determination of the value of asset base used to provide the service; and,
- 4) Determination of a fair rate of return.

The following sections will describe each of these processes.

### *Uniform System of Accounts*

Before any of these processes can be undertaken, the regulators must have in place an accepted uniform system of accounts so that the utility's financial statements reflect commonly accepted rules for allocating expenses and revenues to functional categories.

Massachusetts was the first state to order its regulatory commission to develop a uniform system of accounts: in 1876 for railroads; in 1885 for gas companies; and in 1887 for electric utilities. The legislatures of New York and Wisconsin followed Massachusetts, giving authority to the state commissions to prescribe the accounting practices of public utilities in 1905 and 1907, respectively.

Public utilities and their associations also developed their own uniform system of accounts. In electric, the National Electric Light Association developed the first important standard classification of electric accounts. In 1907, the Association of American Railway Accountants developed a similar set of accounting classifications for the railroads, in conjunction with the ICC. The ICC developed a system of accounts in 1913 for the telephone industry. Today, virtually all public utilities conform their financial data in accordance to an industry-accepted standard uniform system of accounts.

An important element of a uniform system of accounts is the allocation of costs (administrative and property) that is used in common to serve different customer classes, provide different services, or supply both interstate and intrastate services. Any cost allocation method involves elements of arbitrariness and the results obtained may vary significantly depending on the allocation method chosen.

**Potential market distortion:** The telephone industry provides a good example of the market distortions that can occur due to allocation of joint and common costs:

...a large portion of the costs of providing access to the telephone network are recovered in charges for *using* the system, even though those costs are largely independent of usage: customers impose access costs on the system when they are connected to it, regardless of whether they then proceed to place or to receive calls. This practice has two adverse consequences, each the counterpart of the other. **On the one hand, the basic monthly service charge is far too low: people are encouraged to become customers-and, even more flagrantly undesirable, to order additional lines-when the value to them of that access is less than the cost to society of providing it.** And, on the other side, the charges for using the long distance network are artificially inflated (on the order of 60 percent), because customers are required by the jurisdictional separations and settlements process to contribute to costs that would not be avoided if that usage were curtailed. **The result is very inefficient: the artificial, 60 percent tax discourages people from making calls by grossly exaggerating the cost burden that they place on society when they do so.**<sup>25</sup>

## Allowable Costs

### *a) Operating Costs*

The most important component of a public utility's rate level is operating expenses and capital outlays. Truly effective regulation of operating costs and capital outlays would require regulators to participate in the utility's moment-to-moment, transaction by transaction decision-making process in connection with every aspect of a utility's business. This is not possible. As noted below, there is no reason to believe that the regulators are better decision-makers.

The regulated industry comes, in the end, to have two masters: its own management and the regulatory agency. Essential functions of management are duplicated. Managerial decisions are reviewed. Where the regulatory agency finds them to be wise, it allows them to stand. Where it finds them to be unwise, it exercises a veto power. It thus acts to protect management against the consequences of its own mistakes.

If there were assurance that the business judgment of commissioners would be superior to that of managers in more than half of the cases (weighted by their importance), we might conclude that duality of management would produce a net gain. But commissioners, in fact, are unlikely to be the better businessmen. And even if they were, there would be offsetting costs.<sup>26</sup>

Therefore, historically regulators can do little more than review the major decisions by the utility and rule on the prudence of the incurrence of costs on an ex-post basis. When costs have been disallowed by the regulators and challenged by the utility, the courts have generally allowed costs to be passed through to the consumers, except in cases of obvious mismanagement and gross negligence. As noted by the court in the West Ohio Gas Co. case:

Good faith is to be presumed on the part of the managers of a business.... In the absence of a showing of inefficiency or improvidence, a court will not substitute its judgment for theirs as to the measure of prudent outlay.<sup>27</sup>

### *b) Depreciation as a Cost*

Depreciation involves the gradual deterioration of a utility's assets used in the provision of the service the utility provides. Depreciation occurs because of:

- physical deterioration of the assets through the passage of time;
- functional deterioration due to technology change or significant growth in demand.

The purpose of depreciation is to recover through the utility rates, the costs invested in the physical plant that contributes to the production of the utility's revenues. The depreciation process attempts to match capital recovery with capital consumption. Depreciation depends on: the value of the asset; the estimated service life; and the method used to in distributing the asset value over the life of the asset.

There are two methods to select the value of the asset: original cost and replacement cost. Original cost does not reflect the time-value use of the asset. Replacement cost is highly controversial as to what constitutes the replacement value of the asset.

Also controversial is the estimated service life of the asset. Methods include a combination of looking at historic retirement data and engineering estimates of future service lives. The service life can be set by negotiations between the utility and the regulator. Service life may also be based on tax policy.

The distribution of the asset over time may employ one of several methodologies. The straight line method applies the same annual depreciation charge in each year over the life of the investment. Under this method, the annual depreciation charges will total the original cost of the property, after considering removal costs and salvage value. The sinking fund method of depreciation is one in which a reserve is set up on the utility's financials and equal charges assigned to it each year. It is assumed that the utility is able to invest and earn an income on the depreciation charges. The accelerated method of depreciation includes sum-of-years' digit and double declining balance methods. The accelerated methods assume that an asset makes a greater contribution to revenues in the early years and that service values decline over time.

Although the use of depreciation is fairly routine in public utility regulation, methods of obsolescence are not well-established.

Investment that has been stranded generally occurs due to technological change or significant changes in demand. For privately-owned public utilities, the question is who pays for the stranded asset—the ratepayer, for whom the investment was made, or the stockholder.

### *c) Rate of Return*



The most highly controversial of the cost elements that regulators deal with is the matter of what level of profits will be allowed on the utility's investment to provide services to consumers. Determination of rate of return by regulators involves what constitutes "fair." In 1909, the Supreme Court concluded that a fair rate of return involved two components: 1) a return on invested capital; and 2) a return on risk. In connection with the Consolidated Gas case, the Supreme Court stated:

There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprise. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. There may be other matters which in some cases might also be properly taken into account in determining the rate which an investor might properly expect or hope to receive and which he would be entitled to without legislative inference. The less risk, the less right to any unusual returns upon the investments. One who invests his money in a business of somewhat hazardous character is very properly held to have the right to a larger return without legislative inference, than can be obtained from an investment in Government bonds or other perfectly safe security.<sup>28</sup>

The Supreme Court has listed factors for considering a fair rate of return which includes: comparisons with other companies having comparable risks in operations and revenue; attraction of capital; current financial and economic conditions; the cost of capital; the risks of the business; the capital structure of the utility; the competence of management; and the utility's financial history.

In determining a fair rate of return, the problem that arises is that the regulator is trying to predict a competitive outcome. Ultimately, there is no quantitative way to precisely measure the "correct" rate of return. In the end, the process requires the exercise of a great amount of judgment and judgments will differ as to the result.

There are significant problems attendant in attempting to measuring the cost of capital for a public utility. Questions arise as to:

1. Whether to attempt to measure the cost of capital of the individual firm or to select a representative group of firms to capture an industry average.
2. At what point in time should the cost of capital be measured—a past or future period.
3. What basis will the cost of equity is determined and the basis for rate base (usually original cost) to which it is applied.
4. How to design a system of rewards and incentives. What standards of performance exist to distinguish results attributable to good or bad management, and how to relate performance to rewards.

There are a number of methodologies to measure/estimate the cost of capital, and depending on the methodologies chosen, the result will differ significantly. For example:

To cite AT&T's 1981 rate case before the FCC, seven witnesses presented the estimates of the cost of equity capital shown in Table 9-5, ranging from 12.50 to 17.60 percent. The FCC's trial staff recommended a cost of equity of 14.25 percent, the administrative law judge found 14.60 percent and the full commission allowed 17.40 percent. Here, as is true with many other aspects of regulation, the quality of the commission is crucial.<sup>29</sup>

<b>Estimates of the Cost of Equity Capital</b>	
<i>Witness</i>	<i>Cost</i>
Dwyer	16.40-17.60%
Curley	15.50-16.00
Friend	15.33-16.00
Gordon and Gould	14.50
Kosh	13.00
Langsam	12.50-13.50
FCC Trial Staff	14.25
ALJ Luton	14.60
Full Commission	17.40
Source: <i>In re American Tel. &amp; Tel. Co.</i> , 86 FCC2d 221 (1981).	

### **Problems with Cost-Based Regulation**

The difficulty in implementation of cost-based regulation is that regulators must use quasi-scientific tools that involve judgment and decisions to attempt to mimic a competitive market environment. These judgments invariably influence the market outcomes and create distortions in the marketplace. In addition, the process is backward-looking in that it develops prices based on historic information and market structures. In an industry experiencing rapid change due to technology, it is not possible for regulators to anticipate future market structures (in terms of supply and demand) in setting prices. Prices based on cost-of-service will never reflect current market conditions, but rather the regulators best approximation of what might occur.

The Concept Release (page 12, footnote 48) bases its endorsement of cost-based pricing on the following selected statements from noted regulatory economist, James Bonbright:

[O]ne standard of reasonable rates can be fairly said to outrank all others in the importance attached to it by the experts and public opinion alike—the standard of costs of service, often qualified by the stipulation that the relevant cost is necessary, true (i.e., private and social) cost or cost reasonably or prudently incurred.<sup>30</sup>

Further, the Concept Release (page 12, footnote 49) cites Bonbright as endorsing cost-based regulation as necessary in the monopoly context because it precludes excessive profits and it precludes underfunding a service. The cited Bonbright statement is:

Rates found to be far in excess of cost are at least highly vulnerable to the charge of unreasonableness. Rates found well below costs are likely to be tolerated, if at all, only as a necessary and temporary evil. For if rates are not compensatory, they are not subsidy free.<sup>31</sup>

These citations were taken from Bonbright's chapter explaining the cost of service as a basic standard of reasonableness. In the next chapter, Bonbright discusses value of service as an ancillary standard. Bonbright states that some claim that the failure of the cost principle is that it does not give direct weight to value of service to the consumers as distinct from the cost of production to the producers. Bonbright states:

Cost of service is itself affected by the values that people place on it and hence by the demands that they make for services of different kinds and in different amounts. By way of illustration, consider the practice of electric and gas utilities in charging higher rates for service supplied at peak-time periods. Differential pricing of this nature is quite justified-indeed, it is required-by strict cost principles, since increments in the output of service during peak periods impose additional capital outlay upon the company. These cost differentials would not exist except for differences in the consumer demand for service at different periods of time.<sup>32</sup>

### **Example of Market Distortions-The Natural Gas Industry**

There have been notable periods in the history of regulation where backward looking regulation based on historic costs has produced severe market distortions. The most notable is the natural gas shortages that occurred in the 1970s. Wellhead gas regulation began in 1954 after the Supreme Court ruled that the FPC had the responsibility to control prices on sales by gas-field producers to interstate pipelines.<sup>33</sup>

Until the late 1960s, the Federal Power Commission ("FPC") regulated the field price of gas of independent natural gas producers based on the traditional rate base for each individual company. Costs were segregated among the three principal functions: exploration and development, production and gas pricing. Thereafter, it was necessary to assign the identifiable costs and to allocate the joint costs to particular products. The cost of gas produced and sold had to be allocated between jurisdictional (interstate) and nonjurisdictional (intrastate sales).

### **Administrative Difficulties**

The process became apparently infeasible to administer. The largest producers, accounting for 91 percent of production, totaled 266 out of approximately 4,300 producers selling gas on an interstate basis. The FPC attempted to lessen its administrative burden by releasing independent producers from maintaining accounts in accordance with the uniform system of accounts and from submitting certain reports. This measure did not alleviate the burden of the FPC's obligation to determine separate rate approvals for each producer. It resulted in the FPC having 3,276 producer rate-increase filings under suspension awaiting hearings.<sup>34</sup> The FPC ultimately rejected

this regulatory approach and concluded: "if our present staff were immediately tripled, and if all new employees would be as competent as those we now have, we would not reach a current status in our independent producer rate work until 2043 AD-eighty-two and one-half years from now."<sup>35</sup>

### **Market Distortion**

As an alternative approach, in 1960 the FPC set two-price, regional ceilings (one for recently discovered and developed but not committed gas and lower prices for old gas, already committed to buyers) based on average historical costs of developing established supplies. After considerable expert opinions by producers and FPC staff, the FPC picked an estimate (16.5¢/Mcf) based on the middle of the experts' estimates and the FPC staff. This ceiling soon determined the development activity which produced the historic costs, which in turn determined the final price. Producers did not develop gas that would cost more than 16.5¢/Mcf since they would not be able to recoup their investment. Fixing the future price of gas in 1960 dollars distorted the interfuel competition and resulted in gas prices lower than comparable oil and coal prices. Demand for gas soared as pipelines attempted to secure 15-year reserves. This created a reserve shortage for regulated gas. By 1972 there were not enough committed gas reserves to allow production to meet all current demand, and operating shortages began to occur. The FPC then had to allocate gas in a priority scheme to customers. By the time the gas shortage became evident it was too late to recognize and adjust and more regulation was added to allocate the shortage among customers.

### **Distortions Introduced by Rate of Return Regulation**

Natural monopolies typically involve industries with high levels of capital investment, such as in the electric utility industry. Regulators have historically used rate of return regulation to protect the consumer from the utility fully exploiting its potential monopoly power by charging rates above competitive levels. The negative character of a regulatory process that concentrates on the rate of return on the utility's asset base creates several perverse incentives and adverse consequences. This regulatory model removes incentives for the utility to make improvements in efficiency because any inefficiencies existing in the utility operation can be simply passed on to the consumer. This regulatory model encourages the utility to increase its expenses—higher salaries, higher input material costs, etc. There are few incentives built into rate of return regulation to reward the utility for increased efficiency gains and lower prices to consumers.

In addition, rate of return regulation provides incentives for utility management to make capital investments which may not be economic from a cost-benefit point of view in order to expand the rate base upon which it earns a rate of return. These incentives induce utility management to adopt excessively capital-intensive technology, like investment in nuclear power plants. In regulatory economics, this tendency to increase the rate base in order to increase returns is called the Averch, Johnson and Wellisz ("A-J-W") effect, named for the economists who highlighted this tendency in the electric utility and natural gas pipeline industries.<sup>36</sup>

Examples of the A-J-W effect are listed below and reflect market conditions in the late 1960s.<sup>37</sup>

1. The resistance of many public utility companies to full peak-responsibility pricing, which would tend to hold down the expansion of demand at the peak and the consequent justification for capacity.<sup>38</sup>
2. A willingness to maintain a large amount of standby capacity, in excess of peak requirements.
3. A resistance to the introduction of capital-saving technology. One public utility engineer has insisted that the natural gas transmission companies have insufficiently developed underground storage in the Northeast, preferring instead to expand the more capital-intensive pipeline capacity as the principal means of meeting peak winter demands. This same problem has been posed in the field of communications, where satellites seem to promise very great capital savings over ordinary terrestrial (and under water cable) facilities.
4. A reluctance to lease facilities from others. The Communications Satellite Corporation (Comsat), which was set up in 1962 as the United States' chosen instrument for installing and operating an international satellite communications network in cooperation with other countries, is essentially a carriers' carrier: the only ultimate consumer authorized thus far (NASA). The possibility of its taking over an increasing share of communication business is therefore dependent on the patronage and decisions of the common carriers, who would have to lease channels from it and use them in turn to take care of their customers' demands. But the carriers, it seems generally conceded, have less incentive to use the Comsat facilities than to construct their own, the cost of which would go into their rate bases: to the extent that they took the former course, they would make no profit on that portion of the communications operations; all they could do would be to include the rental charges in their own cost of service and get them back dollar for dollar. The latter course, in contrast, would mean greater aggregate profits. This lack of incentive to use leased facilities would seem to be a clear manifestation of the A-J-W distortion and could well, given the peculiar institutional arrangements of the satellite part of the industry, result in overinvestment in economically less efficient facilities and a serious retardation in the development of satellite technology.

### **The Litigious Nature of Rate of Return Regulation**

Another problem of rate of return regulation is that it is very litigious. This results in unduly lengthy and costly regulatory proceedings. A description of this lengthy process follows:

as we begin in sheer disgust to move away from the debacle of valuation, we will probably substitute a new form of Roman holiday-long drawn-out, costly, confusing, expert-contrived presentations, in which the simple directions of the Hope and Bluefield cases are turned into veritable witches' brews of statistical elaboration and manipulation.... We do not need to do this sort of thing to regulation; we do not need to do it to ourselves. The behavior of investors will tell us, day by day, all we need to know about `comparability'.<sup>39</sup>

The typical telecommunications rate case in the 1960s took just under a year to complete. However, more complex cases can be much more lengthy as described below.

The record in the Phase 1A "Interim Decision and Order" in the FCC's telephone investigation (Dkt. No. 16258, FCC 67-776, 5 July 1967) consisted of 101 exhibits (3,471 pages) submitted by the Bell System, the commission's staff and the 103 interveners; 5 exhibits (42 pages) submitted by "nonparties"; 76 volumes of transcript (10,499 pages); and briefs and prepared findings of fact filed by 12 parties (1,011 pages). There were three days of prehearing conferences, seventy-one days of hearings (sixty-six witnesses), and two days of oral arguments before the full commission. (The record was certified to the full commission for decision without an initial decision, in this case, by the Telephone Committee.) Phase 1A was completed in approximately **twenty months** (not including the subsequent time for a rehearing on certain issues).<sup>40</sup>

The SEC has experienced one rate-type case in the Instinet proceeding. NASD filed proposed fees for Instinet on June 17, 1983. Instinet protested the fees on July 15, 1983. On August 16, 1983, the SEC issued an order preliminary finding that the NASD's proposed fee limited access to services, and granting Instinet conditional relief. The SEC instituted proceedings to determine the appropriateness of NASD's fees. The SEC requested general cost information from NASD in August 1983. In October 1983, the SEC requested additional information from NASD. NASD could not provide more detailed information concerning the allocation of costs of operating the NASDAQ system due to the nature of the NASDAQ system. NASD requested and was granted a hearing on December 14, 1983.

Instinet insisted that NASDAQ's proposed fees must be cost-based and calculated by allocating the percentage of system use of each quotation service offered by the NASD (a "functional analysis") to ensure the reasonableness of NASD's proposed fees. NASD used a value-of-service approach in determining its fees.

The Instinet proceeding highlights the complexity of determining a cost-based rate. The attempt to determine an appropriate rate began in August 1983 and through various proposed rate schemes was ultimately approved in October 1990, over seven years later.

### **Cost of Regulation**

The costs associated with cost-based regulation are enormous. One estimate is that for every dollar spent by the federal government in regulating industries the regulated firms and other government agencies spend forty dollars.<sup>41</sup>

Economist James McKie likens regulatory involvement to the tar-baby effect-every attempt to eliminate some utility problem puts the regulators into even more activities. For example, examination of profits leads to an assessment of costs, which leads to an investigation of service quality, which leads to a study of the volume of output, etc., until the regulators are entirely covered in tar and cannot move.<sup>42</sup>

## **THE PASSING OF REGULATION-DEREGULATION**

Government regulation of private business raises many difficult questions and issues. One of the most important issues is the balance between government control and private property rights and

those interactions in the marketplace itself. A major area of disagreement among stakeholders concerns the necessity for and the effectiveness of regulation. As Kahn noted:

...something of a consensus was already emerging in the early 1970s among disinterested students that regulation has suppressed innovation, sheltered inefficiency, encouraged a wage/price spiral, promoted severe misallocation of resources by throwing prices out of alignment with marginal costs, encouraged competition in wasteful, cost-inflating ways, and denied the public the variety of price and quality choices that competitive market would have provided.<sup>43</sup>

The "passing of regulation" in many industries occurred because of the change in market structures and general economic conditions since the beginning of general regulation, during after the Depression. Specific industry circumstances prompted the legislative initiatives to deregulate specific industries.

In the airline industry, competitive entry began in the intrastate markets where new entrants were not subject to regulation. One of the first markets entered by unregulated competitors was the California market,<sup>44</sup> and specifically the San Francisco-Los Angeles route. The effect of the new entry was tremendous, both in terms of price reduction to air passengers but also in terms of sheer growth in usage:

There are striking contrasts between the performance of this market and the performance of similar markets in the United States regulated by the CAB. For example, although the number of passengers traveling by air in the United States as a whole has increased between the years 1959 and 1964 by approximately 50 percent, the number of travelers passing between Los Angeles and San Francisco by air has increased almost 300 per cent. Although the average jet coach fare level in the United States is approximately 5.5 cents per mile over the stages considerably longer, and cheaper to operate, jet coach fare for the 350-mile trip from San Francisco to Los Angeles is approximately 3.9 cents per mile. Although the lowest fare between Boston and Washington, served only by CAB-certified trunk carriers, is \$24.65, Pacific Southwest Airlines, using the same modern turbo-prop equipment, carries passengers between Los Angeles and San Francisco, only 59 miles closer together, for \$11.43. The jet fare is only \$13.50.<sup>45</sup>

In telecommunications, MCI's entry into the long distance market as an unregulated competitor illustrates the same point. MCI offered service between St. Louis and Chicago at a much lower rate than the Bell companies and Western Union. It also offered flexible service terms which were not available from the regulated carriers. The FCC welcomed this new entry because it believed that new entrants would be developing new, specialized markets rather than competing for existing business.

In proposing a policy favoring the entry of new specialized common carriers, we took a degree of competition oriented toward the development of new communications services and markets and the application of improvements in technology to changing and diverse demands. Thus, we are not faced with the question of whether we should increase the number of carriers which are to be served a fixed market with the same services. ...Rather we anticipate that the new carriers

would be developing new services and would thereby expand the size of the total communications market.<sup>46</sup>

### **Creamskimming-The Problem of Partial Deregulation**

Allowing selected entry into markets where prices are regulated creates an opportunity for new entrants to "creamskim" the most profitable (or vulnerable) customers from the regulated utility's load obligation. This results in the regulated utility with a less profitable customer base.

Creamskimming presents an opportunity where the regulated utility has the obligation to serve markets and customers. Regulated rates represent generalized averages set to cover the revenue requirements of the utility. Therefore, it will be obvious that some markets and some customers will be paying higher prices to support the need to serve less profitable markets and customers. This creates an opportunity for the new entrant to select the markets where the regulated price is higher than the actual cost to serve those customers. Allowing the selective entry by competitors does distort the marketplace in which the regulated utility operates. The experience of this in regulated industries prompted regulators to move to the deregulated, market-driven price model. As Kahn observes: "What we do know however is that competition-creamskimming or not-is usually a more effective institutional mechanism than regulated monopoly for probing the elasticity of demand and encouraging the application of new technology."<sup>47</sup>

As described in the following industry summaries, regulated industries, once subject to rate regulation, are now presented with the opportunity to depart from their cost-of-service rates, and to charge market-based rates. Some of the major regulated industries include:

- electric
- natural gas pipelines
- telecommunications
- oil pipelines
- airlines
- cable TV

### **Airlines**

#### *Forces that moved the Airline Industry Away from Regulation*

There are two major factors that pressured Congress into deregulating the airline industry. The first was the advent of jet engines and their subsequent adoption into the commercial airline market, which changed the cost structure under which the industry operated. The other factor was the energy crisis in the 1970s, which also impacted the cost structure for airlines. Both of these factors combined resulted in the airlines pressuring Congress for the ability to set prices in response to changes in the economic environment in which they were operating.

#### *Major Initiatives*

Airline Deregulation Act of 1978



### *Airlines Industry History*

The Civil Aeronautics Act of 1938 stated that the purpose of regulating airfares was not only to prevent uncompetitively high prices but also to prevent "competing carriers from engaging in rate wars." The Civil Aeronautics Board (CAB) was established to set rates and entry conditions on interstate air transport.

From 1938 to 1978, the CAB attempted to manage competition in the airline industry through close control of entry and exit of airlines, route allocation, rates, and mergers.<sup>48</sup> During the 1940s, the Civil Aeronautics Board fostered rapid growth of the national airways with no particular rationale other than "strengthening" the smaller carriers.<sup>49</sup>

The CAB set airfares based on average industry costs, rather than airline specific revenue requirements. To encourage development and growth of the industry, the CAB structured airfares such that the long haul routes subsidized the short haul routes. The logic of this price structure was that short haul customers had price-effective travel substitutes (automobile, train, bus, etc.) and therefore, price must be set below average cost in order to expand the markets.

Since there was no price competition, competition among the airlines centered on service competition. Because the CAB set an average industry price, service quality became an issue. The CAB would grant certificates to competing airlines on particular routes if service on that route was inadequate. The CAB also put restrictions on overbooking and other service-related elements.

The CAB clearly discouraged price competition among competing airlines. For instance, TWA proposed to introduce "Siesta Sleeper Seats" on its first-class transcontinental flights, which reduced the total number of seats on its flights. United and American protested the proposal on the grounds that they would have to offer the same service. The CAB ruled that TWA could offer the innovative service, but subject to a 20 percent surcharge.

Competitive entry began in markets not regulated by the CAB or state agencies, primarily targeting price competition. This was especially true in the California market. Pacific Southwest Airlines (PSA) entered the Los Angeles - San Francisco market in 1959 charging airfare below the CAB certified carriers (United, TWA, and Western Airlines). Within three years, PSA's market share increased from 13 to 43 percent.

The advent of jet engines and the carriers' investment in such equipment led the CAB to engage in utility-type rate regulation, beginning with the proceeding in May 1956, "General Passenger Fare Investigation."<sup>50</sup> It took CAB four years to complete the proceeding.<sup>51</sup> Despite the length of the proceeding, regulation appeared to work, because productivity gains and economic growth had covered the efficiency losses caused by regulation until the late 1960s. But changes in basic economic conditions and aircraft technology beginning in 1969 resulted in a decline in industry profitability.<sup>52</sup>

In 1975, airline regulation began to unravel, with hearings in Congress and legislation proposed by President Ford.<sup>53</sup> The result was the Airline Deregulation Act of 1978, which was the first

major legislative recision of federal regulatory authority in peacetime, and it gave momentum to reform in the other industries. The Airline Deregulation Act allowed price competition among airlines and free entry. It disbanded the CAB in 1984.

The year following deregulation was difficult for airlines as they adjusted to the new market structure and dealt with unfavorable economic conditions. However, the airlines quickly began to adjust to the competitive market and take advantage of the economies of scale present in the industry through the hub-and-spoke system. The shift away from the system that had developed under regulation highlighted the brought about by regulation.<sup>54</sup> Although the competitive responses of the airlines to deregulation were varied, the deregulation of the industry, from a consumer's perspective, has generally been a success, with lower rates and more choices. There is, however, some question with regard to service quality.

## **Natural Gas**

### *Forces that moved the Natural Gas Industry Away from Regulation*

Several factors built up over time to move in the natural gas industry away from rate of return regulation. The movement began with the regulators finding that firm specific regulation of natural gas wellheads was impossible. Thus the FERC moved to area-wide regulatory proceedings. This move was followed by the energy crisis in the early 1970s when OPEC reduced the supply of oil and gas. Price controls established by the Administration in the 1970s led to firms declining to seek new sources of natural gas, leading to further distortions in the market and to further pressures for competition. All of these combined began the movement towards deregulation. The move has continued over the past few decades by findings in economics showing that competition leads to a more efficient market. In addition, the deregulatory movement has been pressured by competition and by pricing in the electricity market, which is also undergoing a move towards competition.

### *Major Initiatives*

1960s - "Area-wide" rate cases

1978 - Natural Gas Policy Act of 1978: "wellhead" price deregulation

1984 - Order No. 380: abolished minimum bills for purchased gas

1985 - FERC initiated open access to natural gas pipelines

1989 - Natural Gas Wellhead Decontrol Act: set timetable for completing wellhead deregulation by January 1, 1993.

1985 - Order No. 436: began to reduce regulation for those areas that were competitive

1991 - FERC proposed that pipelines be required to separate their business of selling gas from their business of transporting gas for others

1992 - Order No. 636: further competition amongst suppliers

### *Natural Gas Industry History*

The Natural Gas Act of 1938 (NGA) gave the Federal Power Commission (FPC) jurisdiction over the interstate transmission of natural gas and its sale in interstate commerce for resale. Specifically, the NGA stated that its provisions were not to apply "to any other transportation or sale of natural gas or to the local distribution of natural gas."

The FPC did not regulate the field price of natural gas until 1954. In 1954, the Supreme Court (in the Phillips decision) instructed the FPC to determine that the prices paid for natural gas in the field by pipelines were "just and reasonable." The Supreme Court reasoned that NGA was intended to close the gap in regulation by the inability of local and state regulators to control the price of gas.

There was in fact no evidence that natural gas producers had market power over prices. In fact, the industry had approximately 4,300 producers selling gas. As many as 266 producers accounted for 91 percent of the production.

The Phillips decision instructed the FPC to conduct full rate cases for each producer. In adhering to the court rulings, the FPC found that regulating gas prices at the wellhead was next to impossible.<sup>55</sup> The FPC became bogged down in its first substantive case, with thirty-two intervenors and four cost separate studies, taking four years to render a decision.<sup>56</sup> Given this problem, the FPC ultimately rejected this regulatory approach and adopted temporary ceiling price guidelines in each of the major gas-producing areas. The FPC began proceedings to determine "just and reasonable" rates on an area-wide basis.<sup>57</sup> The first (and only) FPC test case proceeding for area-wide pricing lasted five years, during which the FPC set a two-tiered pricing scheme based on one price for "old" gas, already committed to pipelines, and another price for "new" gas, as yet uncommitted. The FPC was challenged on its pricing scheme in court and the Supreme Court did not rule for another three years.

The temporary ceiling price for new gas was set based on average historical costs of developing new supplies. The FPC picked the mid-range of the estimates of the producers and FPC staff at 16.5 ¢/Mcf. This price was the key driver to development of future gas reserve development because producers would not develop gas that cost more than 16.5 ¢/Mcf to produce.

By capping the price of new gas, the FPC made gas the fuel of choice due to its relative low price when compared with oil and coal. As a result, demand for gas soared and gas reserve levels declined precipitously. This created a gas shortage and by 1972 there were not enough committed gas reserves to allow production to meet all current demand. Operating shortages occurred and the FPC had to allocate gas based on a priority scheme to end-use customers.

The energy crisis of the 1970s and the distortions caused by regulations led a nationwide natural gas shortage, as the combination of established procedure, liberal rules of intervention, and adjudicatory precedent thwarted efforts to change.<sup>58</sup> Between 1969 and 1973, Congress considered several proposals to reform regulatory procedures. But it was not until 1978, with a

great deal of difficulty, that the Natural Gas Policy Act of 1978 was passed and signed into law. Unfortunately, as a result of political compromise, this law was relatively inflexible.<sup>59</sup> It did however, begin the process of deregulation by "decontrolling" wellhead prices of natural gas.

Concern and debate over the market disorder that was emerging began to undermine political support for further deregulation as called for in the Natural Gas Policy Act. However, members of the Federal Energy Regulatory Commission (FERC, formerly FPC) were in favor of further deregulation and letting the marketplace discipline the actions of the companies.<sup>60</sup> In May 1984 the FERC issued Order No. 380, which abolished minimum bills for purchased gas, and overnight created a nationwide market of buyers and sellers.<sup>61</sup> Following this, in May 1985, the FERC issued a notice of proposed rulemaking that called for a complete restructuring of the pipeline sector of the industry.<sup>62</sup> The FERC's proposal opened access to pipeline transportation, which facilitated competition at both the production and consumption ends of the gas business.<sup>63</sup> FERC Order No. 436, which succeeded in implementing non-discriminatory, open-access transportation to replace all the existing, experimental programs. Order No. 436 also allowed transportation and sales to become distinct products and services, the unbundling of products and services allowed competition to develop.

In 1989, Congress built on this result, further deregulating the natural gas industry by repealing all remaining price controls on wellhead or 'field' sales of natural gas. Congress did not completely deregulate natural gas, however. It retained jurisdiction over transportation through pipelines but allowed competition at the ends, at that time. Order No. 636, adopted in 1992, allowed for further competition in the industry amongst suppliers. Furthermore, the competition emerging in the electric industry is putting pressure on the natural gas industry to keep prices down as the goods are to some extent substitutes.

## **Electric Industry**

### *Forces that moved the Electricity Industry Away from Regulation*

By the 1970s, the coal- and nuclear-fired plants used to generate electricity generally needed to be very large, exceeding 500 Megawatts capacity, in order to exploit economies of scale. The capital demands for such a large plant needed to be spread over a large consumer base for the utility to recoup its investment. Since then, technological and organizational innovations in electric power generation have blunted the electric industry's natural monopoly characteristics and reduced the need to restrain competition in the generation of electricity.<sup>64</sup> The efficient size of plants is now much smaller and this combined with the requirement to interconnect with non-affiliated power producers were allowed to interconnect, leading to competition in the production of electricity. This competition has put pressure on the regulators to change, and in some cases remove, regulations.

### *Major Initiatives*

1978 - Public Utility Regulatory Policies Act: encourages cogeneration and small power production

1988 - FERC issued three proposed rules designed to encourage greater competition in the market for generating electricity

1992 - Energy Policy Act: contains significant changes in Federal regulations governing electric utilities

### *Electricity Industry History*

By 1900, the electric power industry was in its infancy. Frequently, two or three electric generating plants that were not interconnected would serve a city's population. Initially, competition was relied upon to serve the public interest. In this infancy period, six electric companies served New York City, five electric companies served Duluth, Minnesota, four electric companies served Scranton, Pennsylvania and 45 electric companies had the legal right to serve Chicago.

During the period 1910 to 1920, electric companies consolidated into holding companies to capitalize on potential economics of scale and to maximize profits. Technology changed the ability of electric companies to serve customers over larger geographic areas. As a result, local and state regulation of electric companies became increasingly more difficult. In 1935, Congress passed the Federal Power Act which conferred on the Federal Power Commission regulatory authority of wholesale electric rates in interstate Commerce. The justification for this extension of regulation was that electricity was then being generated and sold intrastate. The FPC regulated electric utility rates based on a cost-of-service standard.

Until the late 1960's, utilities were able to keep rates stable while providing for increased profits because of substantial increases in scale economies, technological improvements, and only moderate increases in input prices.<sup>65</sup> However, a number of significant events occurred in the late 1960s and through the 1970s, both economic and technological, that changed the industry and resulted in the shift towards competition.

In response to competitive developments in the 1970s and 1980s, Congress enacted Title VII of the Energy Policy Act of 1992. A goal of this Act was to promote greater competition in bulk power markets by encouraging new generation entrants.<sup>66</sup> Using the standards adopted by Congress, increased competitive entry has occurred. For example, in Order No. 888 adopted in 1996, the FERC adopted rules designed to remove impediments to competition in the wholesale bulk power marketplace<sup>67</sup> by allowing electric utilities to depart from traditional cost-based rates and adopt market-based rates upon a showing of a competitive marketplace. In addition, state regulatory commissions also have been adopting or are evaluating retail competition or other regulatory alternatives.

### **Telecommunications**

#### *Forces that moved the Telecommunications Industry Away from Regulation*

Technological change, actions taken by the Federal Communications Commission and the courts, and the break-up of AT&T in 1984 have allowed many new firms to enter the

telecommunications industry.<sup>68</sup> Two of the major innovations that have made competition feasible are microwave technology - making communications possible without the natural monopoly characteristics of wires - and fiber optic cables - making it possible to transmit large amounts of data and voice communications for less cost than using copper wires.

### *Major Initiatives*

1957 - Hush-a-phone Decision: Court allowed non-electric device to be attached to phone.

1968 - Carterfone Decision: FCC required AT&T to explain exactly how network would be damaged by use of non-AT&T device by subscribers to network.

1969 - "Applications of MCI for Construction Permits" FCC Docket 16509-19: Allowed MCI to build private line network between St. Louis and Chicago.

1971 - "Specialized Common Carriers" FCC Docket 18920: Other carriers following MCI applied for permits; FCC combined into one rulemaking that changed the way in which telecommunications services were supplied.

1982 - Modified Final Judgement of the DOJ and AT&T settlement adopted; went into effect January 1, 1984, suit had been filed in 1974.

1989 - Price cap regulation for AT&T adopted by FCC in place of rate-of-return regulation.

1991 - Price cap regulation for interstate services provided by Regional Bell Operating Companies and GTE adopted by FCC.

1995 - AT&T declared non-dominant in most areas of long distance, allowed to file rates on 1-day notice like all other long distance carriers

1996 - Telecommunications Act of 1996 amending the Communications Act of 1934, within subsequent FCC regulation action to implement Telecommunications Act of 1996.

### *Telecommunications Industry History*

Deregulation has also been occurring in telecommunications products and services. The telecommunications industry began as a patent-protected monopoly followed by a period of intense competition in the 1890s and early 1900s, during which numerous competitors emerged at the local level to compete with AT&T. As AT&T and the industry evolved, AT&T acquired many of the telephone companies offering local service at the time in an attempt to improve its position in the industry.

Given the political climate of the time and under a threat by the Department of Justice to begin antitrust proceedings, AT&T requested and in 1913 received federal regulatory protection of its monopoly in long distance service and curbs on competition in local service. From 1913 through

1956, a system of economic regulation developed. Regulations were developed and enforced by the Interstate Commerce Commission and state commissions.

Congress enacted the Communications Act of 1934 and created the Federal Communications Commission (FCC).

The FCC was empowered to regulate interstate telecommunications services among other matters, leaving state level matters to the state utility commissions. The regulations extended to prices and quality of service, with different services subsidizing others as costs fell quickly for long distance services, but rose for local services, while the commissions held rates fairly constant.

Technologies developed that provided new opportunities for telecommunications, which ultimately undermined the regulatory system and the subsidies which existed. The new technologies and competition were initially rebuffed by the regulators, but were ultimately allowed in the late 1960s. The emergence of competition led to action by the Department of Justice under the antitrust laws that ultimately led to the break-up of AT&T and competition in retail long-distance services and equipment.

Following the break-up of AT&T, the FCC continued to regulate prices. However, in 1989 as carriers pushed for more freedom in pricing due to changing economic conditions, the FCC adopted incentive regulation in the form of price caps. Over time, as competition has developed in equipment and long distance services, the FCC has removed and reduced the regulations to which the firms have been subject.

As competition developed in long distance and in private systems, pressure arose to allow for competition at the local level. Congress worked for some time on forming legislation that would allow competition within the local monopolies, before passing such legislation, which was signed into law on February 8, 1996. The legislation required that all states open local telecommunications markets to competition. Although regulation is still a part of the telecommunications industry, it has moved from rate of return regulation to rules and regulations allowing for entry in a historically regulated industry.

## **Cable Television**

### *Forces that moved the Cable Television Industry Away from Regulation*

Three factors can be cited for the regulatory roller coaster in cable television. The first is the gradual movement by Congress to recapture its policy-making role, given that the FCC had been attempting to regulate cable television for three decades without explicit legislative guidance. The second is that changes in technology impacted the industry, with the introduction of satellites, videocassette recorders, and new cable technologies. The third factor has been interest-group politics and the self-interest of legislators.<sup>69</sup>

### *Major Initiatives*

1972 - Consensus Agreement: called for the parties to support copyright legislation that granted a compulsory license for such broadcast signals as the Commission might authorize.

1975 - Satcom I Satellite launched

1977 - Home Box Office Decision: emphasized the rights of viewers to receive programs they desired and for which they were willing to pay.

1977 - 1979 - FCC authorized use of space satellites to relay video programming.

1984 - Cable Communications Policy Act of 1984: barred regulation in communities where there was "effective competition," which was defined by the FCC to be more than three broadcast stations

\*1992 - Cable Television Consumer Protection and Competition Act: mandated highly activist regulation of cable by the FCC and local authorities.

1996 - Telecommunications Act of 1996: relaxed the 1992 rules considerably.

### *Cable Television Industry History*

Regulation in the cable television industry has been different from standard utility regulation. In cable television, historically franchises were not controlled by rate of return regulation; rather, franchise agreements typically included a starting price schedule, along with a provision that the franchisee must receive permission to raise rates, with the approval of the city council.<sup>70</sup> These approvals did not involve the elaborate rate cases of public utilities. Given this and the trends toward deregulation during the 1970s and 1980s, cable television rates were deregulated in 1984 (Cable Communications Policy Act of 1984), in any community where the FCC found "effective competition" to exist.<sup>71</sup> The FCC determined that "effective competition" existed wherever there were three or more broadcast stations, thus effectively deregulating the vast majority of cable systems.

The 1984 Act, however, did not open cable markets to competition. As a result, complaints were voiced regarding cable rates and "in both news stories and popular discourse, it [was] an article of faith that the deregulation of cable television rates..., unleashed a price spiral that harmed customers."<sup>72</sup>

Press accounts of rising cable rates made re-regulation of cable an important political issue. Although the introduction of competition was the preferred solution, it was seen as a long-term solution, with the only short-term solution being re-regulation of rates. Thus, rates were re-regulated in the Cable Television Consumer Protection and Competition Act of 1992 over a Presidential veto. Following enactment of the 1992 Act, there was a great deal of negative publicity over the enactment of rate controls in 1993.<sup>73</sup>

As a result of the negative attitude towards rate controls and prior Commission action, although the 1992 Act required the FCC to create rate guidelines, it did so via declining rate caps, rather



than using rate of return formulas.<sup>74</sup> The declining rate caps had a productivity factor that was abandoned by the FCC shortly after its adoption, along with other strict regulations, as the FCC moved towards deregulation. Thus, by the time the Communications Act of 1996 was adopted, removing price regulation from cable services, the FCC was already moving towards that result. Although there were problems with pricing in the cable industry and re-regulation was an attempt to deal with the problems, rate of return regulation was not seen as the appropriate response as evidenced by the negative reaction and the swift action of Congress to deregulate rates in 1996.

## **Oil Pipelines**

### *Forces that moved the Oil Pipeline Industry Away from Regulation*

Deregulation of oil pipelines occurred as a result of an experiment by the FERC, formulated based on the agency's experience with natural gas and electricity. When jurisdiction was transferred to FERC in 1977 over oil pipeline regulation, the requirement to regulate using cost-of-service regulation was burdensome, thus the FERC decided to try implementing market-based rates. This action was further supported by the Energy Policy Act of 1992.

### *Major Initiatives*

1992 - Energy Policy Act

1993 - Order 561, FERC Docket No. RM93-11-000: Authorizing market rates for oil pipelines

### *Oil Pipeline Industry History*

Regulation of oil pipeline companies engaged in interstate transportation is done by the FERC under the Interstate Commerce Act and the Energy Policy Act.<sup>75</sup> Jurisdiction over oil pipelines was transferred to FERC in 1977 from the Interstate Commerce Commission, who had regulated them since 1906 under the requirements of the Hepburn Act. The Hepburn Act required regulation of rates and certain other activities, but did not require review of or approval of construction or acquisition, and abandonment or sale of facilities.<sup>76</sup> From 1906 through 1977, oil pipeline rates were fixed according to a cost-of-service methodology grounded upon use of a valuation rate base.<sup>77</sup> When jurisdiction was transferred in 1977, the FERC was required to regulate oil pipelines under the provisions of the Interstate Commerce Act as it existed on October 1, 1977. Thus, despite changes in the Interstate Commerce Act, regulation of oil pipelines did not change.

Following the statutory requirements, the FERC established a cost-of-service methodology. This took several years to develop and implement due to legal proceedings and court decisions.<sup>78</sup> As a result of the problems experienced in trying to implement cost-of-service regulation, the FERC authorized market-based rates for one company in an effort to determine if such rates could be legally utilized if the company was not shown to have market power.<sup>79</sup> This move towards competition was followed in 1992 by passage of the Energy Policy Act which required FERC to

"promulgate regulations establishing a `simplified and generally applicable ratemaking methodology.'"<sup>80</sup>

The final rules adopted in FERC Order 561 recognize several ways of establishing just and reasonable rates. The main method the Commission adopted is indexing of oil pipeline rates. This, it is believed, will eliminate the need for much future cost-of-service litigation. In order to avoid problems, however, rates may be subject to cost-of-service review when an oil pipeline company claims it is significantly under-recovering its costs, or when its rates become excessive in relation to actual costs. Thus, the rules in Order 561 comply with the requirements contained in the Act of 1992 and yet move the industry towards deregulation.

The FERC in issuing Order 561 determined that it is in the public interest to continue with the process of reforming and simplifying its regulatory processes under the Interstate Commerce Act. Although pipelines are still subject to some regulations regarding safety and other matters, FERC has steadily moved away from price or rate of return regulation and towards competition.

## **Postal Service**

### *Forces that moved the Postal Service Industry Away from Regulation*

Although the Postal Rate Commission is still utilizing cost-of-service rate of return regulation, there is a proposal before Congress to allow for incentive-based regulation among other factors in an effort to reorganize the postal service. This bill has resulted from the trends seen in other industries and the pressure resulting from the overnight delivery services and the availability of computer technologies, such as electronic mail and electronic bill payment.

### *Major Initiatives*

1999 - H.R.22: Postal Modernization Act of 1999: would allow incentive regulation and other measures by the Postal Rate Commission in its regulation of the United States Postal Service. It is still in committee.

### *Postal Service Industry History*

Prior to 1970, prices for mail services were set by law by Congress. Since 1970, the U.S. Postal Service has been regulated by the Postal Rate Commission, which was created by the Postal Reorganization Act for the primary purpose of setting postal rates.<sup>81</sup>

The Postal Rate Commission has jurisdiction over changes in postal rates, fees and mail classifications proposed by the U.S. Postal Service. In setting rates, the Postal Rate Commission currently utilizes cost-of-service type regulation including public hearings due to its statutory requirements. Recently the Postal Rate Commission has been requesting that it be allowed to use price-cap regulation. In February 1999, the House of Representatives held hearings regarding postal reform and the proposal to modernize the Postal Service and alter the way it participates in the nation's economy.<sup>82</sup> The bill in question, H.R. 22 (1999) had three major innovations, including the establishment of "a new, `price cap' rate setting mechanism applicable to

`noncompetitive' mail," allowing the "Postal Service freedom to set rates for its `competitive' products," and authorizing the Postal Service "to establish a private corporation to operate subject to normal commercial laws."<sup>83</sup> Although this bill has not yet passed, it too supports the trend towards deregulation and competition, rather than towards stricter regulations.

## **Railroads**

### *Forces that moved the Railroad Industry Away from Regulation*

Deregulation of railroads began with Congress granting Amtrak, established by Congress in 1970, the freedom to change rates without receiving approval from the Interstate Commerce Commission. Railroads were then given the freedom to abandon routes without regulatory permission in the mid-1970s. In response to the economic conditions and competition from other sources, in 1976, Congress moved to allow railroads more freedom in setting rates. When this proved to be not enough, Congress moved to further deregulate railroads with the Staggers Rail Act of 1980.<sup>84</sup>

### *Major Initiatives*

1976 - Railroad Revitalization and Regulatory Reform Act

1980 - Staggers Rail Act

### *Railroad Industry History*

Railroad rates were, along with airline rates, amongst the first to be deregulated. Railroads were regulated under the Interstate Commerce Act until 1980, when Congress passed and the President signed the Stagger's Rail Act. The Stagger's Act set forth a new policy for regulating the railroad industry, including the establishment of reasonable rates through competition and demand for services; minimum use of Federal regulatory control; promotion of a safe and efficient rail transportation system by allowing rail carriers to earn adequate revenues; to provide rate regulation where there is an absence of effective competition; and to encourage energy conservation.<sup>85</sup> In adopting the Stagger's Rail Act, Congress effectively deregulated prices for rail services, as it authorized rail carriers to establish any rate for transportation or other service provided by the carrier. The exception was that if the carrier has market power (dominance) in a certain route, then the rate has to be "reasonable."<sup>86</sup> The Act does provide further guidance for those exceptions, setting standards and procedures to be used in determining whether a carrier has such power and then how rates will be set for such routes. Within these restrictions, Congress authorized freedom to change prices as long as they did not go out of the minimum and maximum bounds of "reasonableness."

Railroads were regulated by the Interstate Commerce Commission until its dissolution in December 1995, at which time jurisdiction was transferred to the Department of Transportation and the Surface Transportation Board. The Surface Transportation Board, as the regulatory board currently in charge of railroad issues, does monitor and evaluate railways, but its powers are limited. While railroads have a common carrier obligation to provide rail service upon request

(49 U.S.C. 11101(a)), they can provide that service under rates and service terms agreed to in a confidential transportation contract with the shipper (49 U.S.C. 10709) or under openly available common carriage rates and service terms (49 U.S.C. 11101).

Rates and service terms established by contract are not subject to Surface Transportation Board regulation, except for limited protections against discrimination with respect to contracts for the transportation of agricultural products. 49 U.S.C. 10709. A railroad's common carriage rates and service terms must be disclosed upon request (and published for agricultural products and fertilizer), and advance notice must be given for increases in these rates or changes in the service terms.<sup>87</sup> The Board has jurisdiction to adjudicate complaints challenging the reasonableness of a railroad's common carriage rates only if the railroad has market dominance over the traffic involved. 49 U.S.C. 10701(c)-(d), 10704, 10707. Although there is currently some discussion underway that would require competitive access to railways, which would require different regulations,<sup>88</sup> the trend in railroads has been towards a deregulated industry.

### **Water and Sewer Utilities**

Unlike the other previously discussed industries, water and sewers are not subject to federal price controls, although they are subject to clean water standards as enacted by the federal government and enforced by the Environmental Protection Agency. These environmental regulations are becoming stricter, as federal water quality requirements are increased.<sup>89</sup> Regulation of water and sewer rates is by the state utility commissions in most states. However, the extent of such regulation varies, with five states and the District of Columbia not regulating rates and states such as Idaho regulating rates for only one percent of Idaho's water utilities, with most of the unregulated systems belonging to and run without profit by homeowners associations and municipalities.<sup>90</sup> In Florida, however, the Public Service Commission regulates 1,316 water and wastewater systems in the state.

Regulation of water and sewer is not currently undergoing much change, as sufficient competition has not developed yet for those systems to pressure rate makers. Nor is competition expected to develop as it has in other utilities in rates and operations, although in California, they are experiencing some competition for new service areas and for purchasing existing systems. Change is also happening in Florida where the state legislature adopted two changes affecting the industry, both changes dealing with exemptions from regulation by the Commission. One allows an exemption for the sale for resale of bulk water supply to governmental authorities or regulated utilities and the other deals with non-potable irrigation water.<sup>91</sup> Thus, although not seeing changes as big as those in other industries, changes are happening and they are moving towards competition and deregulation.

### **Major Economic Deregulatory Initiatives: 1971 - 1989**

1971 Specialized Common Carrier Decision (FCC - Private Line Telecommunications)

1972 Domestic satellite open skies policy (FCC)

1975 Abolition of fixed brokerage fees (SEC)

1976 Railroad Revitalization and Reform Act

- 1977 Airline Cargo Deregulation Act
- 1978 Airline Deregulation Act  
Natural Gas Policy Act
- 1979 Deregulation of satellite earth stations (FCC)  
Urgent-mail exemption (Postal Service)
- 1980 Motor Carrier Reform Act  
Household Goods Transportation Act  
Staggers Rail Act  
Depository Institutions Deregulation and Monetary Control Act  
International Air Transportation Competition Act  
Deregulation of cable television (FCC)  
Deregulation of customer premises equipment and enhanced services (FCC)
- 1981 Decontrol of crude oil and refined petroleum products (Executive Order)  
Deregulation of radio (FCC)
- 1982 Bus Regulatory Reform Act  
Garn-St. Germain Depository Institutions Act  
AT&T Settlement (Modified Final Judgement - breaking up AT&T)
- 1984 Space commercialization  
Cable Television Deregulation Act  
Shipping Act
- 1986 Trading of airport landing rights
- 1987 Sale of Conrail  
Elimination of fairness doctrine (FCC)
- 1988 Proposed rules on natural gas and electricity (FERC)  
Proposed rules on price caps (FCC)
- 1989 Elimination of natural gas price controls<sup>92</sup>

### **Alternative Forms of Regulation**

Although many regulatory agencies historically used rate of return regulation, most have been moving away from this strict form of regulation, allowing firms more freedom to react to changes in economic conditions and technology. Rate of return regulation provides incorrect incentives and distorts the market. As a result, regulators have been moving towards incentive regulation and competition in order to provide firms with the proper incentives to operate their businesses efficiently. An example of this movement towards alternative regulatory plans was seen in local telecommunications during the period following divestiture through the 1990s.<sup>93</sup> The movement from regulated monopoly to managed competition has taken different routes in the states.

There are a variety of alternative plans that have been adopted by the states including:

- banded rate of return
- rate case moratoria
- earnings-sharing

- revenue-sharing
- price caps
- social contracts and rate freezes
- pricing flexibility for competitive services, and deregulation

Within each of these various plans there are a variety of attributes that might be included, such as classifying services by level of competition, flexible pricing of services, price caps, and revenue sharing with ratepayers.

Classifying services by level of competition means that service providers are allowed to classify, and thus price, services differently based on the amount of competition faced by the provider for that service. Flexible pricing of services is similar in that it allows providers to price services in response to economic conditions, rather than having to incur a full rate hearing. Price caps set a maximum price for a good or service, with the cap changing over time based on a formula. Revenue sharing with ratepayers results in the incremental revenues above a certain amount being shared with the ratepayers. Although the states have taken different routes and are adopting different incentive regulation plans and different aspects within the plans, they are all moving away from traditional rate of return regulation towards more flexible systems that allow for greater economic efficiency in the industry.

## Conclusions

As seen in all of the industries discussed above, although the rate of movement towards deregulation and competition has differed, industries that have historically been subject to rate of return regulation are allowing competition to set market prices and to discipline the marketplace. Changes in economic conditions and technology have been the impetus for much of the change, but with these pressures legislatures and regulators have accepted more competition and less regulation. Moreover, Congress and federal and state regulatory agencies are taking an active role in moving these industries towards competition and away from stricter forms of regulation. Although there have been some instances of new regulation has been introduced in the past 30 years, the predominant general movement, even in those industries, has been towards minimal price regulation.

## Footnotes

<sup>1</sup> See, e.g., the Concept Release: "All participants in the U.S. markets have access to a consolidated, real-time stream of market data for any of the thousands of equity securities and options that are actively traded. The information for each security is "consolidated" in that it is continually collected from the various market centers that trade the security and then disseminated in a single stream of information." (Page 4.) "Under this regulatory framework, the SROs have developed and funded the systems that have been so successful in disseminating a highly-reliable, real-time stream of consolidated market data through out the United States and the world." (Page 4.) See also, "The NYSE historically has operated and regulated one of the largest and most prestigious markets in the world and has, as well, taken a leading role in the regulation of its members, which include most of the largest broker-dealers." (Page 23.)

<sup>2</sup> See e.g., *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 414 (1922); *Central Kentucky*

Natural Gas Co. v. Railroad Commission, 290 U.S. 264 (1933) in which the court set aside as confiscatory a rate prescribed by the commission; and Breyer (1982, p. 398) notes that the Supreme Court has stated that rates are "just and reasonable" that "enable the company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed. (Spulber, p. 173.) "We [Supreme Court] cannot accept respondents' suggestion, that the `just and reasonable' language in 210(b) was intended to require that the purchase rate be set at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest." (American Economic Review Paper.)

- 3 Bonbright, James C., Albert L. Danielsen, David R. Kamerschev, Principles of Public Utility Rates, Public Utilities Reports, Inc. 2<sup>nd</sup> edition 1988 op. cit., p. 373.
- 4 Ibid., 376.
- 5 5 CFR 1320.11, 44 U.S.C. 3507(d).
- 6 Viscusi, W. Kip, John M. Vernon, and Joseph E. Harrington, Jr. Economics of Regulation and Antitrust, DC Heath & Co. Lexington, MA, 1992, p. 13.
- 7 Kahn, Alfred E., The Economic of Regulation Principles & Institutions, Vol. I & II (MIT Press: 1995) pp. 29-30/I. (Hereinafter cited simply as Kahn).
- 8 Ibid., p. 20/I.
- 9 Ibid., pp. 26-27/I.
- 10 Viscusi, p. 6.
- 11 Ibid., p. 6.
- 12 Ibid., p. 307.
- 13 Ibid., p. 307.
- 14 Hope Natural Gas v. Federal Power Commission 320 U.S. 591 (1944)
- 15 Munn v. Illinois, 94 U.S. 113 (1877).
- 16 Noble State Bank v. Haskell, 219 U.S. 104 (1911).
- 17 German Alliance Insurance Company v. Lewis, Superintendent of Insurance of the State of Kansas, 233 U.S. 389 (1913).
- 18 O Gorman & Young, Inc., v. Hartford Fire Insurance Co., 282 U.S. 251 (1931).
- 19 Wolff Packing Company v. Kansas, 262 U.S. 522, 535-537.
- 20 Natural monopolies are industries where costs will be lower if they consist in a single supplier (such as electric utilities, gas utilities, etc.).
- 21 Kahn, op. cit., p. 3/I.
- 22 Ibid., p. XVI.
- 23 Ibid., p. 10/I.
- 24 Ibid., p. 13-14/I.
- 25 Alfred Kahn, "Some Thoughts on Telephone Access Pricing," (New York: NERA, 1983) p. 3-

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- <sup>26</sup> Clair Wilcox, *Public Policies Towards Business*, 4<sup>th</sup> ed. (Homewood, Ill.: Richard D, Irwin, 1971), p. 477-8.
- <sup>27</sup> *West Ohio Gas Co. v. Public Utilities Commission* 294 U.S, 63, 72 (1935).
- <sup>28</sup> *Wilcox v. Consolidated Gas Co.*, 212 U.S. 19, 48-49 (1909).
- <sup>29</sup> Charles F. Phillips, Jr., *The Regulation of Public Utilities* (Arlington, VA., Public Utilities Reports, Inc., 1993), p. 400.
- <sup>30</sup> James C. Bonbright, et. al, *Principles of Public Utility Rates* (2<sup>nd</sup> ed. 1988), p. 109.
- <sup>31</sup> Ibid.
- <sup>32</sup> Ibid., p. 137.
- <sup>33</sup> *Phillip Petroleum Company v. Wisconsin*, 225 US 625 (1954).
- <sup>34</sup> Ibid.
- <sup>35</sup> Ibid.
- <sup>36</sup> Harvey Averch and Leland L. Johnson, "Behavior of the Firm under Regulatory Constraint", *American Economic Review*, (December 1962), L11: 1052-1069; Stanislaw H. Wellisz, "Regulation of Natural Gas Pipeline Companies: An Economic Analysis," *Journal of Political Economy* (February 1963), LXXXI: 30-43.
- <sup>37</sup> As taken from Kahn, op. cit., pp. 50-54/II.
- <sup>38</sup> William Shepherd and Thomas Gies, *Utility Regulation, New Directions in Theory and Policy* (New York: Random House, 1966), pp. 242-243.
- <sup>39</sup> In re *Phillips Petroleum Company*, 35 PUR3d 199, at 210.
- <sup>40</sup> Charles F. Phillips, Jr., "Phase 1A of the Telephone Investigation," *Publication Utilities Fortnightly* 80 (31 August 1967): 16.
- <sup>41</sup> Murray L. Weidenbaum, *Business, Government, and the Public*, 2<sup>nd</sup> ed. (Englewood Cliffs, NJ: 1981).
- <sup>42</sup> James McKie, "Regulation and the Free Market: The Problem of Boundaries," *Bell Journal of Economics*, Spring, 1: 6-26, 1970.
- <sup>43</sup> Kahn, op. cit., p. XVI.
- <sup>44</sup> Ibid, Vol. II, p. 218/II.
- <sup>45</sup> Michael E. Levine, "Is Regulation Necessary? California Air Transportation and Natural Regulatory Policy," *Yale Law Journal* (July 1965), LXXIV: 1416-1447.
- <sup>46</sup> FCC, In the Matter of Establishment of Policies, etc., Docket No. 18920.
- <sup>47</sup> Kahn, op. cit., pp. 231-232/II.
- <sup>48</sup> Vietor, Richard H.K., *Contrived Competition: Regulation & Deregulation in America*, Belknap Press, 1992, p. 23.
- <sup>49</sup> Ibid., p. 30.



- <sup>50</sup> Ibid., p. 38.
- <sup>51</sup> Ibid., p. 38.
- <sup>52</sup> Ibid., p. 41.
- <sup>53</sup> Ibid., p. 52.
- <sup>54</sup> Ibid., p. 61.
- <sup>55</sup> Vietor, p. 112. Between 1956 and 1960, the FERC had only decided 10 cases and had a backlog of 2900 pending cases, History of the Natural Gas Industry, [www.nrri.ohio-state.edu/gasweb/history.htm](http://www.nrri.ohio-state.edu/gasweb/history.htm), p. 3.
- <sup>56</sup> Ibid., p. 112.
- <sup>57</sup> Ibid., p. 113.
- <sup>58</sup> Ibid., p. 115.
- <sup>59</sup> Ibid., p. 124.
- <sup>60</sup> Vietor, p. 139.
- <sup>61</sup> Vietor, p. 146.
- <sup>62</sup> Vietor, p. 147.
- <sup>63</sup> Vietor, p. 147.
- <sup>64</sup> Economic Report of the President 1999, p. 213.
- <sup>65</sup> FERC Docket No. RM95-8-000, Order No. 888, Final Rule, Issued April 24, 1996, p. 13.
- <sup>66</sup> FERC Order No. 888, p. 29.
- <sup>67</sup> FERC Docket No. RM95-8-000, Order No. 888, Final Rule, Issued April 24, 1996, p. 1. A generating utility allowed to sell its power at market-based rates could move more quickly to take advantage of short-term or even long-term market opportunities than those laboring under traditional cost-of-service tariffs, which entail procedural delays in achieving tariff approvals and changes, p. 25. In addition, the FERC estimated in Order 888 that "the potential quantitative benefits from the Final Rule will be approximately \$3.8 billion to \$5.4 billion per year of cost savings, in addition to the non-quantifiable benefits that include better use of existing assets and institutions, new market mechanisms, technical innovation, and less rate distortion, p. 3.
- <sup>68</sup> Economic Report of the President, 1993, p. 182.
- <sup>69</sup> The Communications Act: A Legislative History of the Major Amendments 1934 - 1996, Max D. Paglin, Editor, Pike & Fisher, Inc., 1999.
- <sup>70</sup> Hazlett, Thomas, Public Policy towards Cable Television: The Economics of Rate Controls, AEI Press, 1997, p. 47.
- <sup>71</sup> Hazlett, p. 55. Rates in California had been deregulated in 1979. Hazlett, p. 53.
- <sup>72</sup> Hazlett, p. 3.
- <sup>73</sup> Hazlett, p. 66.

- <sup>74</sup> Hazlett, p. 47, footnote omitted.
- <sup>75</sup> [www.ferc.fed.us/oil/oil2.htm](http://www.ferc.fed.us/oil/oil2.htm).
- <sup>76</sup> FERC Docket No. RM93-11-000, p. 7.
- <sup>77</sup> FERC Docket No. RM93-11-000, p. 7.
- <sup>78</sup> FERC Docket No. RM93-11-000, p. 10 - 11.
- <sup>79</sup> FERC Docket No. RM93-11-000, p. 11.
- <sup>80</sup> FERC Docket No. RM93-11-000, p. 13 - 14.
- <sup>81</sup> [www.prc.gov/howeare.htm](http://www.prc.gov/howeare.htm).
- <sup>82</sup> Testimony of The Honorable Edward J. Gleiman, Chairman on behalf of the Postal Rate Commission Before the U.S. House of Representatives Committee on Government Reform Subcommittee on the Postal Service, February 11, 1999, p. 2.
- <sup>83</sup> Testimony of The Honorable Edward J. Gleiman, Chairman on behalf of the Postal Rate Commission Before the U.S. House of Representatives Committee on Government Reform Subcommittee on the Postal Service, February 11, 1999, p. 2.
- <sup>84</sup> <http://encarta.msn.com/find/Concise.asp>
- <sup>85</sup> Summary of The Staggers Rail Act of 1980, S.1946, Public Law: 96-448 (10/14/80).
- <sup>86</sup> Summary of The Staggers Rail Act of 1980, S.1946, Public Law: 96-448 (10/14/80).
- <sup>87</sup> Annual Report of the Surface Transportation Board, September 1997,  
[http://www.stb.dot.gov/Publications/AnnRpt.htm#\\_1\\_3](http://www.stb.dot.gov/Publications/AnnRpt.htm#_1_3).
- <sup>88</sup> "Reregulation by a New Name - Forced Access" Association of American Railroads Policy Paper.
- <sup>89</sup> California Public Utilities Commission, Water Division, [www.cpuc.ca.gov/divisions/water/water\\_division.htm](http://www.cpuc.ca.gov/divisions/water/water_division.htm).
- <sup>90</sup> Idaho Public Utilities, 1999 Annual Report, p. 50.
- <sup>91</sup> Florida PSC Annual Report, p. 58.
- <sup>92</sup> Ibid., p. 303 (Updated table from Economic Report of the President, January 1989.)
- <sup>93</sup> In February 1996, all states were required by federal law to remove barriers to entry in local telecommunications.