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GOVERNMENT PRICE CONTROLS AND INFLATION: A PROGNOSIS BASED ON THE IMPACT OF CONTROLS IN THE REGULATED INDUSTRIES*

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Government price controls in the United States generally have followed one of two patterns. First, controls have been imposed upon specific industries in order to remedy perceived deficiencies in the pricing practices of the industries affected. The regulation of railroad rates is an example of long standing. Second, controls have been imposed on the economy as a whole, encompassing virtually all prices and regulating wage levels as well. Such controls have been imposed several times during wars, and in recent years have been imposed in peacetime as well.

The United States appears to be moving in radically different directions with respect to these two types of government price control programs. As to the first, the attitude is generally negative and, under the banner of "deregulation," an effort is being made to reduce government involvement in the pricing decisions of industries historically subject to specific economic regulation. At the

* This Article was prepared in connection with a speech delivered by the author on November 5, 1979, for the Robert S. Stevens Lecture series at the Cornell Law School. Portions of the Article are based on an unpublished monograph, *The Impact of Common Carrier Regulation on Competitive Activities*, submitted on behalf of the International Business Machines Corporation to the Federal Communications Commission in Docket 20828 (Computer Inquiry II) on October 17, 1977. The views expressed are those of the author and do not necessarily reflect the views of any other person or organization.

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same time, there is a growing concern about inflation and increasing support for government controls to reduce wage and price increases. The 1970's witnessed the first peacetime imposition of mandatory wage and price controls and the present program, not entirely "voluntary," may evolve into a fully mandatory program if inflation continues at a rapid pace.

Obviously the problem of government price controls is a vast topic and cannot be covered comprehensively in a single paper. The objective here is more limited. There is a substantial body of knowledge concerned with price controls in the regulated industries. It is informative to consider the manner in which these controls have functioned and to determine whether this experience sheds any light on more general efforts at price control. The discussion is essentially in three parts: (1) the application of price controls to monopoly enterprises; (2) the application of price controls to competitive industries; and (3) the implications of this experience in judging the prospects of a large-scale program of government price controls.

I

PRICE REGULATION AND MONOPOLY ENTERPRISES¹

Monopoly is accepted as desirable, if not inevitable, in some limited but important sectors of the economy. Generally described as "natural monopoly" industries, the most prominent are telephone exchange service, electric power supply, and gas transmission and distribution. The unifying characteristic of natural monopoly industries is the ability of a single firm to provide the most economical service to a given area. Within the area reached by the physical facilities of the firm, the introduction of additional suppliers requires a wasteful duplication of plant and a significant increase in cost not normally justified by any benefits to users of the service. Under such circumstances, monopoly is accepted as the most appropriate industry structure and the industry is subjected to regulation as a "public utility."²

¹ This discussion is based on Jones, *An Example of a Regulatory Alternative to Antitrust: New York Utilities in the Early Seventies*, 73 COLUM. L. REV. 462 (1973) and Jones, *Judicial Determination of Public Utility Rates: A Critique*, 54 B.U. L. REV. 873 (1974). See also J. BONBRIGHT, *PRINCIPLES OF PUBLIC UTILITY RATES* (1961); A. KAHN, *THE ECONOMICS OF REGULATION* (1970); C. PHILLIPS, *THE ECONOMICS OF REGULATION* (rev. ed. 1969).

² For a critique of the natural monopoly thesis as applied to electric power, see Primeaux, *A Reexamination of the Monopoly Market Structure for Electric Utilities*, in *PROMOTING COMPETITION IN REGULATED INDUSTRIES* 175 (A. Phillips ed. 1975); Primeaux, *Some Problems*

A. *The General Pattern of Public Utility Regulation*

Most public utility rate regulation occurs in a rigidly defined environment and follows a prescribed pattern. All services of a regulated public utility are offered pursuant to a filed tariff and the company is required to charge customers the prices specified in the tariff for particular services. Most deviations may be corrected retroactively and deliberate deviations may subject the company to substantial penalties.

The accounts of the regulated public utility are maintained in accordance with the requirements of the regulatory agency, usually set forth in a Uniform System of Accounts. All revenues, expenses, capital accounts and depreciation accruals are subject to regulatory scrutiny on a continuing basis.

It is possible, by examining the financial records thus maintained, to determine the revenues, expenses and capital investment of the utility for any past period. From such an examination one may compute the "return" of the company (profits plus interest) and compare this return with the company's capital investment or "rate base."³ If the return appears to be excessive, the regulatory agency or some interested consumer group may seek to reduce the level of the company's rates. If the return appears to be deficient, the company may be expected to seek a rate increase.

The rate proceeding that follows is typically based on some recent past period called a "test year." The accounts of the utility provide a common starting point for all participants. Each party will propose adjustments to the accounts to eliminate or correct improper or unrepresentative entries and to reflect changes, such as higher price or wage levels, that will cause future experience to vary from the experience recorded in the test year. If the variations are sufficiently pronounced, the agency may use an estimated future test year rather than a recorded past test year; but estimates for the future must be grounded in experience, so even here the prior record is pertinent.

With Natural Monopoly, 24 ANTITRUST BULL. 63 (1979). On telecommunications, see J. Meyer, R. Wilson, M. Baughcum, E. Burton & L. Caouette, *The Economics of Competition in the Telecommunications Industry* 181-222 (August 1979). While these challenges are provocative, the author considers the evidence and reasoning to be insufficient to disturb the general consensus that electric power supply (particularly in transmission and distribution) and telephone exchange service (particularly within the local exchange) are natural monopolies.

³ In addition to investment in plant, the rate base includes an allowance for working capital and materials and supplies.

After all adjustments have been made, the regulatory agency will determine the amount of return the utility can be expected to earn under existing rates and compare this return to the company's invested capital or rate base. If the projected return is excessive, the agency will order a rate reduction; if the projected return is deficient, the agency will permit a rate increase. To determine whether a given return on rate base (or "rate of return") is proper, the agency examines the capital costs of the company. The objective is to provide a return sufficiently high that the company will be in a position to attract capital as needed. Thus, the return must be high enough to pay interest on bonded indebtedness, pay stated dividends on preferred stock, and provide a sufficient return on equity to permit the company to sell its common stock on favorable terms (at or above book value).

If a rate increase or decrease is ordered, the company will reprice its services to obtain the necessary increment or decrement, relying on test year data to determine the dollar impact of any rate change. The rate change then will be permitted to become effective if the agency is satisfied that its directions have been properly implemented. At this point, the company once again is operating pursuant to filed tariffs, with which it is obliged to comply, until the cycle of rate review and revision is started anew and carried to completion.

B. *The Ratemaking Process*

1. *Ascertaining the Revenue Requirement*

The initial issue in a rate proceeding is the amount of the company's revenue requirement. The determination of specific rates is not attempted until a decision has been reached on how much revenue is needed to support the firm's total regulated operations. The process employed in ascertaining the revenue requirement has a number of important characteristics.

a. *Continuity.* Much depends on the expectation of continuity — that the historical test year, when adjusted for unrepresentative conditions and known changes, will provide a good guide to the future. Among other aspects, it is generally assumed that any repricing of the company's product will not affect the volume of consumption substantially.

b. *Enforceability.* The determinations of the regulatory agency are generally enforceable. Filed tariffs are explicit and deviations generally can be detected (although sometimes with difficulty).

Service tends to be standardized and any reduction or deterioration in service is subject to regulatory correction.

c. *Cost Accounting.* The costs of the company are ascertainable on a continuing basis and subject to regulatory audit. The Uniform System of Accounts, while not foolproof, leaves the companies little room for manipulation. At this point it may be useful to comment on several specific items that pose distinctive problems.

The allowance for depreciation is said to be inexact because it is dependent on the life of the plant, which can only be estimated. But three characteristics of public utility accounting tend to mitigate this imprecision: (1) utility depreciation accounting is almost invariably straight-line depreciation, so that the only uncertainty is the life of the plant (and perhaps salvage value); (2) for much of utility plant there is a significant body of prior experience that permits reasonably accurate estimates; and (3) where the estimates prove faulty, corrections are relatively easy to implement—depreciation accruals can be revised to reflect changes in expected plant lives without significant impact on either the company or the consumer. The consumer pays once, and only once, for any given plant. If depreciation is initially inadequate, the consumer's rates will be lower in the initial period and higher in the later period. If depreciation is initially excessive, the consumer's rates will be higher in the initial period and lower in the later period.

The determination of the allowable rate of return also is said to be inexact. There is some truth to this, but the problem is not a serious one. Several factors must be considered: (1) the major part of the capital costs of most utilities is known with considerable precision, since interest on bonds and dividends on preferred stock constitute about fifty percent of the return; (2) the return on equity can only be estimated, but various estimation techniques usually produce results within a limited range (between twelve and fifteen percent in typical cases); and (3) it is possible to check utility rate-making determinations against results in the capital markets. If the utility earns the allowed return and is unable to finance on reasonable terms, the return was too low and should be revised upward. If the utility's common stock starts selling at a substantial premium above book value, this is strong evidence that the return is too high and should be revised downward. As with depreciation, it is important to remember that rate regulation is a continuing process and that the agency can correct its errors in subsequent proceedings.

Brief mention should also be made of the treatment of taxes. In general, taxes are an expense and are allowed as a cost of operation as they are incurred. The Internal Revenue Code, however, through devices such as accelerated depreciation⁴ and the investment tax credit,⁵ may defer or excuse a tax payment. Most regulatory agencies would prefer to allow utilities to deduct tax payments only as and when they are made, but the Code in some instances prevents this course of action by making the special dispensation available only on stated conditions. This places regulatory commissions in an awkward position. Either they accept the congressionally mandated conditions and allow deductions for "phantom taxes" that are not payable currently or may never be paid, or they limit the utility to actual taxes, which means that the tax benefit is forfeited and the "phantom taxes" become real taxes. Most regulatory agencies permit the recognition of "phantom taxes," which increases the return to investors at no expense to consumers. Indeed, consumers typically benefit, since the "phantom taxes" may be employed *sub silentio* as a basis for reducing the allowed rate of return. To check on whether this is actually the case, reference can be made to the comparison of market value and book value of utility shares to determine whether the shares are in fact selling at a substantial premium over book value, thus indicating possible excess revenues.

d. *Realization of Profit.* While the rates of a utility are based on the historical and anticipated costs of the company, there is no guarantee that the company will earn any level of profit. In recent years, primarily as a result of worsening inflation, utilities frequently fail to earn their allowed rate of return. For this contingency, there is no redress. Utility rates are generally fixed on a prospective basis and, until revised in a new proceeding, the tariff rates remain effective even though the utility may be earning more or less than anticipated. One exception to this rule is the automatic adjustment clause — the fuel adjustment clause in electric tariffs and the purchased gas adjustment clause in gas tariffs. These permit upward or downward adjustments, month by month, to reflect changes in the price paid by the utility for fuel or purchased gas. The rationale for special treatment is that these particular expenses represent a large part of the costs of the particular companies, are largely beyond the control of utility man-

⁴ I.R.C. § 167.

⁵ *Id.* § 38.

agements, and are subject to ready ascertainment and verification. These automatic adjustment clauses have been criticized, but they can be implemented by a competent agency staff to eliminate any improper uses and they do protect the financial viability of the utilities against uncontrollable volatility in the energy markets.

e. *Labor Costs.* It should be noted that regulatory commissions rarely become involved in the labor relations activities of the utility. The results of collective bargaining agreements normally are accepted as establishing the proper level of pay for unionized employees, and salary scales for other employees, including executive compensation, are accepted as proper if reasonably related to the pay scale of unionized workers and pay levels elsewhere for employees with similar functions and responsibilities.

f. *Cost Control.* Finally, there is the question of cost control generally (of which labor compensation is one aspect). If costs can be passed along to rate-payers without serious question, is there any incentive to control costs and to conduct efficient operations? There are two incentives for efficient operation. In the short run, it should be recalled, the utility must operate under a filed tariff; it can keep whatever profits it earns and will not be reimbursed for any earnings deficiencies. Since there is almost always a significant delay in changing rates — from several months to several years depending on the regulatory regime and type of case — the utility has a substantial incentive to live within the fixed tariff rates. The phenomenon is known as “regulatory lag” and its influence is well recognized (the exemption of electric fuel cost and purchased gas cost from this influence is a subject of continuing criticism). In the longer term, the company recognizes that technology, consumer preferences and institutional arrangements are not immutable. Accordingly, it seeks to maintain a low-cost posture to be in a favorable position in the face of future adversity. There is also a substantial commitment to growth among utility managements, which usually cannot be achieved without containing costs.

2. *The Determination of Specific Rates*

The revenue requirement is important because it is the starting point in the design of specific rates. Sales in the test year must be repriced in such a way as to yield, in the aggregate, the revenue requirement ascertained by the preceding methodology.

It would be tempting to say that the whole is the sum of its parts, not only in revenues but in costs, and proceed to determine

the cost of each utility service offering. Many utility cases do indeed attempt to divide the total costs of the enterprise among the various services and to price each service accordingly. But the methodology is almost invariably flawed. Because of widespread joint and common costs it is often not possible to arrive at a method of cost allocation that can be defended. For example, the typical telephone instrument is employed in making local calls, intrastate toll calls and interstate toll calls. There is no economically sound basis for allocating the cost of that instrument, or other so-called "traffic insensitive plant," among the three types of service. Similar problems arise in gas and electric distribution with respect to that portion of the distribution plant that is required as a minimum system irrespective of the demand imposed upon it. In general, however, it is easier to allocate gas and electric utility costs on a theory of causation than it is to allocate important aspects of telephone system costs.

Another problem with pricing individual services is that, to be efficient in the economic sense, the price should be fixed at the marginal or incremental cost of providing the service. Marginal cost will differ from an allocation of historical cost for at least three reasons: (1) the problem of joint and common costs previously discussed (aggravated in some cases by so-called "sunk costs" which had to be incurred in the past but may not be required in the future); (2) the disparity between historical costs and current costs resulting from inflation; and (3) the difference between historical costs and current costs resulting from changes in technology and industry practice.

The first factor tends to depress marginal costs in relation to allocated historical costs by ignoring all costs, other than the increment, in pricing a particular service. The second factor, inflation, tends to increase marginal costs in relation to historical costs, because new plant (imposing costs in the form of depreciation, property taxes, return on investment and taxes on return) generally is more expensive, sometimes much more expensive, than existing plant. The third factor, changes in technology and industry practice, may cut either way. In some cases, as in segments of the telecommunications industry, new plant is so much more efficient than old plant that marginal cost is less than historical cost. In other cases, such as electric power, changes in technology designed to meet environmental criteria may increase the price of the plant and lead to marginal costs higher than historical costs.

The impact of these conflicting factors will vary from case to case, but it would be only by contrivance or coincidence that the sum of the marginal costs of all the services would equal the revenue requirement of the company. In electric power, the sum of the marginal costs almost certainly will exceed the revenue requirement. In telecommunications, the opposite is almost certainly the case. In gas supply and distribution, the answer is uncertain depending on whether a particular delivery system is operating at or near capacity and whether expansion is contemplated.

There are essentially two ways to bridge the gap between marginal cost pricing and the traditionally calculated revenue requirement. In general, economists would prefer to use governmental taxes or subsidies to make possible utility rates at marginal costs: taxing away the excess if marginal prices yield more than the revenue requirement and providing a subsidy if marginal prices yield less than the revenue requirement. Another approach, which has some support in regulatory circles, is to resort to price discrimination, adjusting the rates of customers with relatively inelastic demands to make up any difference, since prices to such customers can be varied without substantially affecting output. In practical terms, this would have radically different impacts in the different utility industries. In electric power, where the sum of marginal costs exceeds the revenue requirement, the utility might be directed to reduce the minimum charge and charges for initial blocks of electricity, since such use is likely to be unaffected by price. In telecommunications, by contrast, where the sum of the marginal costs is likely to be less than the revenue requirement, the additional revenue might be derived by ordering an increase in the fixed monthly charge, since the customer can respond only by ceasing to remain a subscriber. This is an area of great uncertainty, and thus far no regulatory commission has articulated a wholly satisfactory solution to the marginal cost pricing problem. Even so, there is little doubt that price discrimination among different services has been employed to recover a larger proportion of joint and common costs from customers with inelastic demands who are not expected to contract their purchases in response to price increases.⁶

⁶ The design of particular rates can be improved by revising the method of measuring consumption. For example, electric usage is metered, but the metering is inadequate because it fails to distinguish between use during the peak hours, when marginal costs are

Another possibility is to leave the pricing of individual utility services to utility management subject to an overall revenue constraint. This was the widespread regulatory practice ten or fifteen years ago, and the practice recurs today with some frequency. The problem with this approach is that the resulting price structure may discriminate among customer classes to an extent not justified by any legitimate economic considerations. It may also have a distorting effect on the investment program of the utility, inflating capital plant to serve new customer demands that fail to provide revenue sufficient even to cover the marginal costs of service. This is the now famous "Averch-Johnson" effect which has been a subject of great controversy among economists.⁷ The distortion can be significantly reduced, if not eliminated, by carefully reviewing both the investment and pricing policies of the utility.

From this brief summary, which omits many complexities and highly controversial topics, it is apparent that price control is no easy task even under conditions that are particularly favorable:

1. A single firm with a monopoly position;
 2. A relatively standardized service as the basic offering;
 3. Continuing supervision of the prices of the company;
 4. Continuing supervision of the service of the company;
 5. Continuing supervision of the accounts of the company;
 6. A large measure of continuity from one year to the next;
- and
7. The ability to reprice all or most of the utility's services without affecting volume of consumption materially.

Even under these relatively favorable conditions, natural monopoly regulation has been challenged by some as unnecessary, harmful or ineffective.⁸ The historical record of the major public

very high, and use during off-peak hours, when marginal costs are very low. There has been some movement toward time-of-day metering to correct the deficiency, a practice already in effect for interstate toll telephone calls. For most telephone exchanges, however, there is no metering of local calls, and local telephone charges are independent of usage even though increased usage, especially at times of peak demand, imposes additional costs. See R. SCHMALENSEE, *THE CONTROL OF NATURAL MONOPOLIES* 29-33 (1979); J. Meyer, R. Wilson, M. Baughcum, E. Burton & L. Caouette, *supra* note 2, at 103-55.

⁷ The original analyses were included in Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962), and Wellicz, *Regulation of Natural Gas Pipeline Companies: An Economic Analysis*, 71 J. POL. ECON. 30 (1963). For a review of the implications and a bibliography of intervening literature, see E. BAILEY, *ECONOMIC THEORY OF REGULATORY CONSTRAINT* (1973). See also Johnson, *The Averch-Johnson Hypothesis After Ten Years*, in *REGULATION IN FURTHER PERSPECTIVE* 67 (W. Shepherd & T. Gies eds. 1974).

⁸ See generally Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55 (1968); Jordan, *Producer Protection, Prior Market Structure and the Effects of Government Regulation*, 15 J.L. & ECON. 151, 155-64 (1972); MacAvoy, *The Effectiveness of the Federal Power Commission*, 1 BELL

utilities is not without flaws. But on the whole profits have been effectively limited, service has been made widely available, and productivity gains and price levels compare favorably with other sectors of the economy.⁹

II

PRICE REGULATION AND COMPETITIVE INDUSTRIES

A. Causes and Effects of Regulation

The same regulatory controls that have been applied to monopoly enterprises also have been applied to competitive industries. It is illuminating to consider both the causes and effects of this development.¹⁰

The initial problem arose in connection with the railroad industry. In one sense, railroads could be viewed as natural monopolies. Between a single pair of points with limited traffic a single railroad might well be the most economical mode of operation.¹¹ However, railroads were not constructed between single pairs of points, but were developed as lines connecting sequences of multiple points, including common ownership of multiple lines interconnecting with one another. As railroads were constructed

J. ECON. & MGMT. SCI. 271 (1970); MacAvoy & Noll, *Relative Prices on Regulated Transactions of the Natural Gas Pipelines*, 4 BELL J. ECON. & MGMT. SCI. 212 (1973); Moore, *The Effectiveness of Regulation of Electric Utility Prices*, 36 S. ECON. J. 365 (1970); Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548 (1969); Stigler & Friedland, *What Can Regulators Regulate? The Case of Electricity*, 5 J.L. & ECON. 1 (1962). See also Jarrell, *The Demand for State Regulation of the Electric Utility Industry*, 21 J.L. & ECON. 269 (1978).

⁹ See generally Kahn, *Inducements to Superior Performance: Price*, in PERFORMANCE UNDER REGULATION 88 (H. Trebing ed. 1968); Phillips, *The Effectiveness of State Commission Regulation*, in A CRITIQUE OF ADMINISTRATIVE REGULATION OF PUBLIC UTILITIES 71, 79-80 (W. Samuels & H. Trebing eds. 1972); Shepherd, *Utility Growth and Profits Under Regulation*, in UTILITY REGULATION: NEW DIRECTIONS IN THEORY AND POLICY 3, 6-31 (W. Shepherd & T. Gies eds. 1966); Wien, *Fair Rate of Return and Incentives — Some General Considerations*, in PERFORMANCE UNDER REGULATION, *supra*, at 39; cf. Baumol, *Reasonable Rules for Rate Regulation: Plausible Policies for an Imperfect World*, in THE CRISIS OF THE REGULATORY COMMISSIONS 187 (P. MacAvoy ed. 1970) (recognizing general efficiency of utilities while proposing revisions in regulatory approach); Hughes, *Scale Frontiers in Electric Power*, in TECHNOLOGICAL CHANGE IN REGULATED INDUSTRIES 44 (W. Capron ed. 1971) (recognizing efficiency advances in electric power while criticizing some aspects of regulatory policy).

¹⁰ This treatment is not exhaustive, but it does encompass the major competitive sectors to which common carrier regulation has been applicable for substantial periods of time. For a discussion of the inefficiencies engendered by more recent efforts to control oil prices, see STUDY GROUP, *ENERGY: THE NEXT TWENTY YEARS* (H. Landsberg chmn. 1979).

¹¹ See generally A. HADLEY, *RAILROAD TRANSPORTATION* (1885); H. ADAMS, *Relation of the State to Industrial Action*, in RELATION OF THE STATE TO INDUSTRIAL ACTION AND ECONOMICS AND JURISPRUDENCE 59 (J. Dorfman ed. 1954) (originally published in 1887).

and consolidated, there came into being multiple parallel lines between certain points, and even more numerous non-parallel lines connecting pairs of points (or providing competitive connections when considered in conjunction with available water carriers). A pattern emerged in which some points, notably small communities, were served by a single railroad, while larger communities normally were connected by a multiplicity of direct and indirect routes. The problem was complicated by the formation of unstable railroad price-fixing arrangements, which sought to maintain noncompetitive prices among competing carriers but did so with uneven impact. The net result was that small communities and small shippers often were confronted by a single carrier or a group of cooperating carriers, while larger communities and larger shippers were able to obtain more favorable treatment by playing on the competitive instincts of the carriers.¹² While other problems were present, the dominant theme in early federal railroad regulation was the prevention of these kinds of discrimination.¹³

Initial efforts sought to retain competition while attempting to control the discriminatory practices that were the products of the uneven pattern of monopoly and competition.¹⁴ In 1920, the emphasis shifted away from competition (without abandoning it entirely) and toward greater government control.¹⁵ More recently — in 1940,¹⁶ 1958,¹⁷ and 1976¹⁸ — Congress has sought to

¹² See generally G. KOLKO, *RAILROADS AND REGULATION, 1877-1916* (1965); P. MACAVOY, *THE ECONOMIC EFFECTS OF REGULATION: THE TRUNK-LINE RAILROAD CARTELS AND THE INTERSTATE COMMERCE COMMISSION BEFORE 1900* (1965); Harbeson, *Railroads and Regulation*, 27 J. ECON. HIST. 230 (1970); Hilton, *The Consistency of the Interstate Commerce Act*, 9 J. L. & ECON. 87 (1966); Spann & Erickson, *The Economics of Railroad: The Beginning of Cartelization and Regulation*, 1 BELL J. ECON. & MGMT. SCI. 227 (1970). Of all the regulated industries, the railroads are the most difficult to classify. At particular times and with respect to particular routes and particular classes of traffic, the railroads probably have significant natural monopoly characteristics.

¹³ See S. REP. NO. 46, 49th Cong., 1st Sess. 215 (1886).

¹⁴ Interstate Commerce Act of 1887, ch. 104, 24 Stat. 379 (currently codified in scattered sections of 49 U.S.C.).

¹⁵ Transportation Act of 1920, ch. 91, §§ 406-441, 41 Stat. 456 (currently codified in scattered sections of 49 U.S.C.) (amending Interstate Commerce Act of 1887). See H.R. REP. NO. 456, 66th Cong., 1st Sess. (1919); S. REP. NO. 304, 66th Cong., 1st Sess. (1919); I. I. SHARFMAN, *THE INTERSTATE COMMERCE COMMISSION 177-244* (1931).

¹⁶ Transportation Act of 1940, ch. 722, 54 Stat. 898 (currently codified in scattered sections of 49 U.S.C.).

¹⁷ Transportation Act of 1958, Pub. L. No. 85-625, 72 Stat. 568 (currently codified in scattered sections of 49 U.S.C.).

¹⁸ Railroad Revitalization and Regulatory Reform Act of 1976, Pub. L. No. 94-210, 90 Stat. 31 (to be codified in scattered sections of 45, 49 U.S.C.).

move back toward increased reliance on competition, emphasizing the competition between railroads and other modes of surface transportation (motor and water).¹⁹

Meanwhile, influenced to some extent by the problems of the railroads and to some extent by the anticompetitive philosophy generated by the Great Depression, Congress brought motor carriers (1935),²⁰ water carriers (1940),²¹ and freight forwarders (1942)²² under regulation. None of these industries had natural monopoly characteristics at the time regulation was initiated or at any later time.²³ Airlines were subjected to similar regulatory controls in 1938,²⁴ relying in part on natural monopoly theory but with no evidence that airlines in fact possessed natural monopoly characteristics.²⁵ Most subsequent studies agree that the airline industry is not a natural monopoly.²⁶ In another area, the Supreme Court in 1954 brought natural gas producers under economic regulation by extending to them a statute clearly de-

¹⁹ See S. REP. NO. 595, 94th Cong., 2d Sess. (1976); S. REP. NO. 499, 94th Cong., 2d Sess. (1976); H.R. REP. NO. 2832, 76th Cong., 3d Sess. 87-89 (1940); 104 CONG. REC. 10822, 10841-43, 10858-59, 12524, 12531, 15528 (1958). See also P. MACAVOY & J. SNOW, *RAILROAD REVITALIZATION AND REGULATORY REFORM* (1977).

²⁰ Motor Carrier Act of 1935, ch. 498, 49 Stat. 543 (currently codified at 15 U.S.C. § 77c and scattered sections of 49 U.S.C.).

²¹ Transportation Act of 1940, ch. 722, 54 Stat. 898 (currently codified in scattered sections of 49 U.S.C.).

²² Interstate Commerce Act of 1942 (Part IV), ch. 318, 56 Stat. 284 (currently codified in scattered sections of 49 U.S.C.).

²³ Jones, *Antitrust and Specific Economic Regulation: An Introduction to Comparative Analysis*, 19 A.B.A. ANTITRUST SECTION 261, 279-99 (1961). See also J. MEYER, M. PECK, J. STENASON & C. ZWICK, *THE ECONOMICS OF COMPETITION IN THE TRANSPORTATION INDUSTRIES* 211-22, 235-38 (1939); Moore, *Deregulating Surface Freight Transportation*, in *PROMOTING COMPETITION IN REGULATED MARKETS* 55 (A. Phillips ed. 1975); Peck, *Competitive Policy for Transportation*, in *PERSPECTIVES ON ANTITRUST POLICY* 244 (A. Phillips ed. 1965).

²⁴ Civil Aeronautics Act of 1938, ch. 601, 52 Stat. 973.

²⁵ Jones, *supra* note 23, at 300-12.

²⁶ See R. CAVES, *AIR TRANSPORT AND ITS REGULATORS* 55-97 (1962); G. DOUGLAS & J. MILLER, *ECONOMIC REGULATION OF DOMESTIC AIR TRANSPORT* 6-18 (1974); W. JORDAN, *AIRLINE REGULATION IN AMERICA 195-96*, 242-43 (1970); L. KEYES, *FEDERAL CONTROL OF ENTRY INTO AIR TRANSPORTATION* 73-99 (1951); Eads, *Competition in the Domestic Trunk Airline Industry: Too Much or Too Little?*, in *PROMOTING COMPETITION IN REGULATED MARKETS* 13 (A. Phillips ed. 1975); Eads, Nerlove & Raduchel, *A Long-Run Cost Function for the Local Service Airline Industry: An Experiment in Non-Linear Estimation*, 51 REV. ECON. & STAT. 258 (1969); Gordon, *Airline Costs and Managerial Efficiency*, in *TRANSPORTATION ECONOMICS* 61 (1969); Keyes, *A Reconsideration of Federal Control of Entry Into Air Transportation*, 22 J. AIR L. & COM. 192 (1955); Phillips, *Air Transportation in the United States*, in *TECHNOLOGICAL CHANGE IN REGULATED INDUSTRIES* 123 (W. Capron ed. 1971).

signed for the regulation of natural gas pipelines.²⁷ Natural gas pipelines have strong natural monopoly characteristics; natural gas producers do not.²⁸

There is a growing consensus that all of these regulatory programs have been monumental failures, in some cases bordering on disaster.

The railroad problem is familiar to any student of American history. An intrinsically efficient and effective mode of transportation has been maintained at (or over) the brink of financial collapse for more than sixty years.²⁹ Increasingly large shares of traffic have been yielded to other (often less efficient) modes of transportation.³⁰ Service standards have deteriorated to the point where major safety hazards are presented in routine operations and trains must be run at substandard speeds to prevent derailments.³¹ The rate of innovation has been hampered, particularly in the implementation of known advances in technology, which some railroads can afford and others cannot.³² The most recent blot on a dismal record was the collapse of the Northeastern railroads leading to the consolidation of most of them into a quasi-governmental corporation (Conrail).³³

²⁷ Phillips Petroleum Co. v. Wisconsin, 347 U.S. 672 (1954).

²⁸ S. BREYER & P. MACAVOY, ENERGY REGULATION BY THE FEDERAL POWER COMMISSION 59-64 (1974); P. MACAVOY, PRICE FORMATION IN NATURAL GAS FIELDS (1962); McKie, *Market Structure and Uncertainty in Oil and Gas Exploration*, 74 Q.J. ECON. 543 (1960).

²⁹ A. FRIEDLAENDER, THE DILEMMA OF FREIGHT TRANSPORT REGULATION 177-79 (1969); G. HILTON, THE TRANSPORTATION ACT OF 1958, at 10-14 (1969); A. MARTIN, ENTERPRISE DENIED: ORIGINS OF THE DECLINE OF AMERICAN RAILROADS, 1897-1917 (1971); J. NELSON, RAILROAD TRANSPORTATION AND PUBLIC POLICY 193-232, 374-411 (1959); D. PEGRUM, TRANSPORTATION ECONOMICS AND PUBLIC POLICY 476-83 (rev. ed. 1968); U.S. TASK FORCE ON RAILROAD PRODUCTIVITY, IMPROVING RAILROAD PRODUCTIVITY 83-85 (1973); Nelson, *The Changing Economic Case for Surface Transport Regulation*, in PERSPECTIVES ON FEDERAL TRANSPORTATION POLICY 5-39 (J. Miller ed. 1975); Prince, *Railroads and Government Policy*, 48 VA. L. REV. 196-98, 236-37 (1962); Weller, *Access to Capital Markets*, in THE FUTURE OF AMERICAN TRANSPORTATION 83 (E. Williams ed. 1971). See also H. LEVINE, NATIONAL TRANSPORTATION POLICY: A STUDY OF STUDIES (1978).

³⁰ See BUREAU OF TRANSPORT ECONOMICS AND STATISTICS, ICC, INTERCITY TON-MILES: 1939-1959 (Statement No. 6103, 1961), corrected and supplemented by BUREAU OF ECONOMICS, ICC, TRANSPORT ECONOMICS, Jan. 1966, at 2 and *id.*, May 1966, at 5 and *id.*, Sept.-Oct. 1971, at 4, 7; [1974] ICC ANN. REP. 120-21. From 1939 to 1973, the railroads' share of intercity ton-miles declined from 62.3 percent to 38.4 percent.

³¹ There were 10,423 reportable railroad accidents in 1976, an increase of 30% over the prior year. TRAFFIC WORLD, July 25, 1977, at 32.

³² See A. FRIEDLAENDER, *supra* note 29, at 88-98; P. MACAVOY & J. SLOSS, REGULATION OF TRANSPORT INNOVATION (1967); U.S. TASK FORCE ON RAILROAD PRODUCTIVITY, *supra* note 29, at 65-82, 284-86, 307-11; Gellman, *Surface Freight Transportation*, in TECHNOLOGICAL CHANGE IN REGULATED INDUSTRIES, *supra* note 9, at 166.

³³ Regional Rail Reorganization Act of 1973, Pub. L. No. 93-236, § 301, 87 Stat. 985 (currently codified in scattered sections of 45 U.S.C.). Two important Midwestern rail-

The trucking industry is more prosperous and dynamic than the railroads, benefiting to a significant degree from regulatory mismanagement of its major competitor. But the results of truck regulation can best be described as bizarre. Because of restrictions on entry and other regulatory controls, the regulated truckers operate as a cartel, exacting monopoly profits from shippers.³⁴ Yet the statute is riddled with exceptions, and 55 to 60 percent of intercity truck movements are exempt from economic regulation.³⁵ The nature of both the exemptions and the regulatory requirements has created a level of inefficiency condemned by numerous observers.³⁶ The motor vehicle—which has as its major virtue an intrinsic capacity for flexibility—is locked into narrowly defined routes, carrying restricted commodities, and often operating empty or at less than full capacity. The irrational nature of the regulatory regime and the trucking cartel that it fosters and protects has spawned a vigorous illegal truck industry, able to maintain profitable operations against an inefficient and cartelized regulated truck industry.³⁷

Regulation of the airlines has followed a similar pattern. The nature of CAB regulation has been not unlike the administration of an airline cartel, inflating prices at the expense of consumers.³⁸ The only difference is that a cartel might have been ex-

roads, the Milwaukee and the Rock Island, are undergoing dismemberment as a result of insolvencies.

³⁴ A. FRIEDLAENDER, *supra* note 29, at 74-75; T. MOORE, TRUCKING REGULATION (1976); Annable, *The ICC, the IBT and the Cartelization of the American Trucking Industry*, 13 Q. REV. ECON. & BUS., Summer 1973, at 33, 42; Farmer, *The Case for Unregulated Truck Transportation*, 46 J. FARM. ECON. 398 (1964); Moore, *supra* note 23; Moore, *The Beneficiaries of Trucking Regulation*, 21 J.L. & ECON. 327 (1978); Sloss, *Regulation of Motor Freight Transportation: A Quantitative Evaluation of Policy*, 1 BELL J. ECON. & MGMT. SCI. 327 (1970).

³⁵ [1974] ICC ANN. REP. 121.

³⁶ See Gellman, *supra* note 32; Miller, *Effects of Regulation on Truck Utilization*, 13 TRANSP. J. 5 (1973); Moore, *supra* note 16; Nelson, *The Effects of Entry Control in Surface Transport*, in TRANSPORTATION ECONOMICS, *supra* note 26, at 381. See also ICC, EMPTY/LOADED TRUCK MILES ON INTERSTATE HIGHWAYS DURING 1976 (1977); REGULATION OF ENTRY AND PRICING IN TRUCK TRANSPORTATION (P. MacAvoy & J. Snow eds. 1977).

³⁷ ICC Chairman O'Neal claimed that sham agricultural cooperatives were diverting 350 million dollars of annual revenues from regulated carriers. NAT'L ASS'N OF REGULATORY UTIL. COMM'RS, BULL. No. 25, at 25 (1977). See generally BUREAU OF TRANSPORT ECONOMICS AND STATISTICS, ICC, GRAY AREA OF TRANSPORTATION OPERATIONS (1960).

³⁸ See *Oversight of Civil Aeronautics Board Practices and Procedures: Hearings Before the Subcomm. on Administrative Practice of the Senate Comm. on the Judiciary*, 94th Cong., 1st Sess. 38-58 (1975) (statement of Thomas E. Kauper); R. CAVES, *supra* note 26, at 140-68; G. DOUGLAS & J. MILLER, *supra* note 26, at 80-103; W. JORDAN, *supra* note 26, at 57-156; Eads, *Competition in the Domestic Trunk Airline Industry: Too Much or Too Little?*, in PROMOTING COMPETITION IN REGULATED MARKETS, *supra* note 23, at 13; Gordon, *supra* note 26; Keeler, *Airline Regulation and Market Performance*, 3 BELL J. ECON. & MGMT. SCI. 399 (1972); Smiat,

pected to do the job better, leading to higher profits for the industry and possibly lower prices for consumers. Public and industry disenchantment led to the Airline Deregulation Act of 1978.³⁹

The natural gas story also is well known.⁴⁰ Federal ceilings on natural gas producer prices resulted in an imbalance between supply and demand. For years, natural gas was consumed more rapidly than new supplies could be obtained. The result was a reduction of supply to the point where neither peak nor annual demands for gas could be met. Industries dependent on gas supplies were curtailed in their operations and were shut down completely for limited periods. Residential consumers of gas were not far removed from interruptions in supply that could work major hardships. Natural gas users, deprived of supplies, imposed additional demands on other energy sources, aggravating energy problems elsewhere. Again public and industry dissatisfaction led to a legislative program of deregulation.⁴¹

B. *The Problems of Regulation*

While these industries and the problems they present vary widely in many particulars, they have one thing in common. In each case an effort was made to apply public utility controls to an industry lacking monopoly characteristics. There are intrinsic difficulties in such an approach which seriously jeopardize the success of the effort and which in most cases can be expected to produce unsatisfactory results.

Helliesen & Eichner, Inc., *The Intrastate Air Regulation Experience in Texas and California*, in *REGULATION OF PASSENGER FARES AND COMPETITION AMONG THE AIRLINES* 41 (P. MacAvoy & J. Snow eds. 1977); Snow, *The Problems of Airlines Regulation and the Ford Administration Proposal for Reform*, in *id.* at 3; Note, *Is Regulation Necessary? California Air Transportation and National Regulatory Policy*, 74 *YALE L.J.* 1416 (1965).

³⁹ Pub. L. No. 95-504, 92 Stat. 1705 (1978) (to be codified in scattered sections of 49 U.S.C.).

⁴⁰ See S. BREYER & P. MACAVOY, *ENERGY REGULATION BY THE FEDERAL COMMISSION* 72-88 (1974); R. HELMS, *NATURAL GAS REGULATION: AN EVALUATION OF FPC PRICE CONTROLS* (1974); P. MACAVOY & R. PINDYCK, *PRICE CONTROLS AND THE NATURAL GAS SHORTAGE* (1975); Erickson & Spann, *Supply Response in a Regulated Industry; The Case of Natural Gas*, 2 *BELL J. ECON. & MGMT. SCI.* 94 (1971); Hughes & Francis, *Regulation and the Energy Crisis*, in *A CRITIQUE OF ADMINISTRATIVE REGULATION OF PUBLIC UTILITIES*, *supra* note 9, at 217, 219-34, 277-86; Kitch, *Regulation of the Field Market for Natural Gas by the Federal Power Commission*, in *THE CRISIS OF THE REGULATORY COMMISSIONS*, *supra* note 9, at 169; MacAvoy, *The Regulation-Induced Shortage of Natural Gas*, 14 *J.L. & ECON.* 167 (1971); MacAvoy & Pindyck, *Alternative Regulatory Policies for Dealing with the Natural Gas Shortage*, 4 *BELL J. ECON. & MGMT. SCI.* 454 (1973).

⁴¹ The resulting legislation was the Natural Gas Policy Act of 1978, Pub. L. No. 95-621, 92 Stat. 3350 (to be codified in scattered sections of 15 U.S.C.).

1. *The Problem of Price Level*

The method of determining the proper price level for a monopoly enterprise cannot be applied to a competitive industry without straining the methodology to the breaking point.

First, instead of a single firm there are multiple firms, each with different investments and expenses. A price level that is satisfactory for one firm will provide excessive revenues for another firm with lower costs, and deficient revenues for a third firm with higher costs. To set prices at the high end of the range is to administer the industry as a cartel to the detriment of consumers. To set prices at the low end of the range is to condemn the higher cost firms to inadequate earnings which almost certainly will lead to inadequate service. This problem has been present since the inception of railroad regulation and has not been satisfactorily resolved in the case of railroads or any other industry with multiple competing firms.⁴²

Second, the assumption that services will remain relatively stable in the face of changes in price levels is wholly unwarranted in a multi-firm industry. If prices are set too high, service volumes will expand artificially to soak up the excess revenues (as has happened repeatedly in airline regulation).⁴³ If prices are set too low, services will be curtailed in an effort to maintain financial solvency (as has happened repeatedly in railroad regulation).⁴⁴ Moreover, wholly apart from such general shifts, individual firms may revise service offerings in unpredictable ways in an effort to achieve a competitive advantage.

⁴² The Transportation Act of 1920, ch. 91, 41 Stat. 456, introduced a program under which railroad rates were to be fixed for the railroad system as a whole, with recapture of "excess earnings" from strong roads and provision of financial support for weak roads. This program proved unsatisfactory, and was repealed by the Emergency Railroad Transportation Act, ch. 91, 48 Stat. 211 (1933). See P. LOCKLIN, *ECONOMICS OF TRANSPORTATION* 404-11 (7th ed. 1972). The CAB attempted to set industry-wide rate levels for air carriers in General Passenger Fare Investigation, 32 C.A.B. 291 (1960), and Domestic Passenger Fare Investigation, No. 21866 (C.A.B. 1970-74), *partially reprinted in* CAB, *DOMESTIC PASSENGER-FARE INVESTIGATION, JANUARY 1970 TO DECEMBER 1974* (1976) (particularly Phases 6B, 7 and 8).

⁴³ See R. CAVES, *supra* note 26, at 251-52, 331-55; G. DOUGLAS & J. MILLER, *supra* note 26, at 39-57; W. FRUHAN, *THE FIGHT FOR COMPETITIVE ADVANTAGE: A STUDY OF THE UNITED STATES DOMESTIC TRUNK CARRIERS* 124-52 (1972); W. JORDAN, *supra* note 26, at 34-56; Eads, *supra* note 38; Keeler, *supra* note 38; Phillips, *supra* note 26.

⁴⁴ In addition to abandonments of entire lines and discontinuations of passenger service, there have been impairments in service attributable to shortages of freight cars, inadequacies in terminal and switching facilities, and insufficient maintenance of main-line tracks (contributing to derailments and requiring limitations on train speed).

Third, some of the critical variables that are required in order to establish an appropriate price are almost unknowable in competitive situations. A monopolist, with experience in a reasonably assured market, can predict the volume of its output and the service lives of its equipment with some measure of certainty. But if service offerings are subject to competition, the volume to be sold and the service lives of the equipment involved will be dependent on the relative success and rate of innovation among competitors, factors that are difficult to predict. The cost of capital, a difficult problem even for monopolies, is greatly complicated when a multiplicity of firms is involved. The prospect for error, therefore, is substantially increased.

Fourth, and particularly significant in connection with the prior point, the opportunities for living with, or correcting, errors are greatly reduced in multi-firm industries. In a monopoly situation, a price that is set too high or too low is not without effect. Consumers will be exploited in the first instance and investors deprived in the second. But the long-term viability of the industry normally is not affected. The error will become evident in the agency's review of the company's financial position, and the price level will be revised (albeit with some delay). The availability of new capital to the company may be temporarily impeded in the event of inadequate earnings,⁴⁵ but even this effect is moderated if there is confidence in the investor community that there will be a timely upward revision in the monopoly firm's price level. In the case of multi-firm industries, the line of causation from the agency's determinations to the industry's earnings is obscured by the competitive actions and reactions of the affected firms. It is often unclear whether the agency will, or can, correct its errors. The changes in price and service triggered by an initial erroneous agency decision may make it unfeasible to reverse that decision. The chronic errors in price ceilings applicable to railroads (too low),⁴⁶ airlines (too high),⁴⁷ and natural gas producers (too low)⁴⁸ provide eloquent testimony on this point. No such chronic and damaging errors have afflicted the regulated monopoly enterprises for significant periods of time.

⁴⁵ See generally Joskow & MacAvoy, *Regulation and the Financial Condition of the Electric Power Companies*, 65 AM. ECON. REV. 295 (1975).

⁴⁶ See note 29 *supra*.

⁴⁷ See note 38 *supra*.

⁴⁸ See note 40 *supra*.

Finally, the decisional process in multi-firm price level regulation has failed to develop any meaningful solutions to the problems presented. For years, price levels in the motor carrier industry were regulated by reference to an "operating ratio" (ratio of certain expenses to total revenues) which had no demonstrated relationship to any matter of regulatory concern.⁴⁹ The deficiencies in the operating ratio have led to its subordination in the regulatory process,⁵⁰ but the substitute methodology defies description.⁵¹ Railroad rate levels are regulated largely by findings: (1) that existing rate levels are inadequate, (2) that proposed higher levels either are marginal or inadequate, and (3) that the proposed higher levels will be permitted, but with designated exceptions and limitations.⁵² Natural gas producer price regulation attempted to employ conventional methodology, but the cost factors were so elusive that almost any result could be justified—and widely disparate results were in fact "justified" within very short time spans.⁵³ The conventional methodology employed in airline price regulation was applied with more rigor, but the determinations of the agency and the operations of the industry had little relation to one another; predicted earnings levels generally failed to materialize in the airline industry.⁵⁴

⁴⁹ See NATIONAL ECONOMIC RESEARCH ASSOCIATES, *METHODS FOR TESTING THE REASONABLENESS OF MOTOR CARRIER EARNINGS* (1967); Stelzer, *Rate Base Regulation and Some Alternatives*, PUB. UTIL. FORT., Sept. 25, 1969, at 17, 22-25.

⁵⁰ See Goodman, *Recent Trends in Transport Rate Regulation*, 70 MICH. L. REV. 1225, 1249-56 (1972); Levine, *A Historical Analysis of the Criteria to Determine the Revenue Need of Motor Common Carriers*, 40 ICC PRAC. J. 158 (1973).

⁵¹ Compare General Increase, July 1972, Eastern Central Territory, 343 I.C.C. 1 (1973) with General Increase, Rocky Mountain Territories, 341 I.C.C. 821 (1972) and General Increase, East-South Territory, 341 I.C.C. 735 (1972).

⁵² See, e.g., Ex Parte No. 310, Increased Freight Rates and Charges, 1975, Nationwide, ICC Orders of Mar. 21 and Apr. 8, 1975.

⁵³ In June 1974, the FPC set the price of "new" natural gas (transactions on or after January 1, 1973) at 42 cents per Mcf. National Rates for Natural Gas, 51 F.P.C. 2212, 4 PUB. U. REP. (PUR) 4th 401 (1974). In December 1974, on rehearing, the price was increased to 50 cents per Mcf. 52 F.P.C. 1604, 8 PUB. U. REP. (PUR) 4th 209 (1974). The FPC's orders were sustained in *Shell Oil Co. v. FPC*, 520 F.2d 1061 (5th Cir. 1975). In July 1976, the FPC established a price of \$1.01 for gas newly dedicated in 1973 and 1974, and a price of \$1.42 for gas dedicated on or after January 1, 1975. National Rates for Natural Gas, 15 PUB. U. REP. (PUR) 4th 21 (1976). In November 1976, on rehearing, the FPC reaffirmed the \$1.42 price for post-1974 gas, but reduced the price for 1973-74 gas to 93 cents per Mcf. 17 PUB. U. REP. (PUR) 4th 317 (1976). The FPC's orders were sustained in *American Public Gas Ass'n v. FPC*, 567 F.2d 1016 (D.C. Cir. 1977), cert. denied, 435 U.S. 907 (1978).

⁵⁴ As former CAB Chairman John E. Robson observed several years ago: "Only three times in the past 26 years, and never in the past decade, has the industry earned the presently allowable 12 per cent return on investment." *TRAFFIC WORLD*, July 18, 1977, at 14.

2. *The Problem of Service Quantity and Quality*

As previously indicated, price and service are opposite sides of the same coin. For any given quantum of service rendered by a particular firm, there is an associated cost and price. This relationship facilitates monopoly regulation, since the regulatory agency can increase prices to cover more expensive services it wishes to mandate and it can reduce prices to reflect savings achieved by reduced service costs. In multi-firm industries, the price-service relationship often produces perverse results.

At the one extreme, the regulatory agency may be unable to achieve service improvements because the firm involved pleads poverty. The plea may be a valid one because, subjected to competition by stronger firms, the particular firm is experiencing inadequate earnings. Yet the regulatory agency may be unable to channel additional revenues to a particular firm without raising prices generally, thereby providing windfalls to more favorably situated firms. At the other extreme, a firm with high earnings may be in a position to augment its service beyond the point the regulatory agency deems justified, increasing the cost of that firm and of others compelled by competitive conditions to emulate the actions of the initiator. Yet the agency may be reluctant to intervene (or statutorily restricted from doing so) because service competition among multiple firms is considered a virtue. The two examples are not hypothetical: the first has been a major factor in the long history of service problems in the railroad industry;⁵⁵ the second depicts the stimulation of wasteful competition in the airline industry.⁵⁶ Of course, if revenues are kept at inadequate levels for prolonged periods, even more acute service problems may be anticipated. If prices do not reflect true economic costs, investors will not assist in the rehabilitation of the railroads;⁵⁷ and under prior regulatory controls natural gas producers were reluctant to sell their product to interstate pipelines or to augment their supplies.⁵⁸

3. *Problems Associated with Particular Prices and Services*

Thus far the discussion has proceeded from the perspective of the firm as a whole: the general level of prices and services. As

⁵⁵ See notes 29 & 32 *supra*.

⁵⁶ See note 43 *supra*.

⁵⁷ See note 29 *supra*.

⁵⁸ See note 40 *supra*.

in the case of monopoly enterprises, however, most industries involving multiple regulated firms are engaged in serving different classes of customers, offering differentiated services at distinct prices.

The problem of differential pricing presents some of the same complexities here as it does in the case of monopoly enterprise. But in the context of competing firms the issue is more pressing, since the reduction of a particular price by one firm may seriously impair the earnings of its rivals and may even threaten their survival. As a practical matter, this threat cannot be ignored by the regulatory agency. It feels a responsibility for the "health" of the adversely affected rivals, in part simply because they are subject to its jurisdiction and in part because the impairment of earnings, or possible discontinuance of operations, may reduce or eliminate service to some classes of customers. In most multi-firm regulated industries, therefore, the principal focus of price regulation is not on protecting consumers from monopolistic exploitation, but on protecting rivals from vigorous price competition. This phenomenon has been most pronounced in the regulation of rail, motor and water transportation,⁵⁹ but has occurred as well in airline regulation and in some other multi-firm contexts.⁶⁰

In general, the initiator of the price reduction seeks to defend it on the ground that the incremental revenues to be derived exceed the incremental costs to be incurred. Opponents of the price reduction argue that pricing on such a basis disadvantages firms that are limited in their operations to the area of competition and must recover their total costs, and not merely their incremental costs, from the services in issue. They contend that the initiator's price reduction should be disallowed unless it covers not only incremental costs, but some appropriate share of the unallocated overhead of the initiating enterprise. The regulatory agencies generally adopt the position of the opponents and restrict price competition accordingly.⁶¹ Thus, the competitive rivalry

⁵⁹ See W. ALLEN & B. HYMSON, *THE INTERSTATE COMMERCE COMMISSION'S STAFF ANALYSIS OF THE COST AND BENEFITS OF SURFACE TRANSPORT REGULATION* (1977) (citing additional unpublished studies); G. HILTON, *supra* note 29, at 47-78; J. MEYER, M. PECK, J. STENASEN & C. ZWICK *supra* note 23, at 243-73; U.S. TASK FORCE ON RAILROAD PRODUCTIVITY, *supra* note 29, at 36-47, 191-97; Friedlaender, *The Social Costs of Regulating the Railroads*, 61 AM. ECON. REV. PAPERS & PROC. 226 (1971); Gellman, *supra* note 32; Moore, *supra* note 16; Nelson, *supra* note 29, at 7; Nelson, *Toward Rational Price Policies*, in *THE FUTURE OF AMERICAN TRANSPORTATION* 115 (E. Williams ed. 1971).

⁶⁰ See note 38 *supra*.

⁶¹ For a major decision on this issue, see *American Commercial Lines, Inc. v. Louisville & Nashville Ry. Co.*, 392 U.S. 571 (1968). On the prologue to this decision, see W. JONES, *REGULATED INDUSTRIES* 678-705 (2d ed. 1976).

that is permitted in the multi-firm regulated industry may be narrowly circumscribed by the regulatory agency.

A similar problem may be presented by new service offerings. Those disadvantaged by the offering will seek to prevent it by urging that it does not permit the initiator to recoup the total costs of the offering or that it contravenes some other aspect of regulatory policy.⁶² Moreover, where multiple firms are engaged in competitive relationships, the scope of those relationships is often defined by the regulatory agency. A firm may be authorized to serve one geographical area, or one type of customer or service demand, but not others. Allegations of unauthorized violations of these boundaries are frequent in the multi-firm industries, particularly the transportation industries.⁶³

The net effect of this type of regime is that the energies of the regulated firms tend to be directed, not so much to the provision of improved service or lower prices, but to the prevention of actions by others that may provide improved service or lower prices. The competitive rivalry is suppressed in the marketplace and intensified in the regulatory arena. This diversion of energy and attention is not conducive to innovation, improved economic performance or increased consumer welfare.

III

GENERAL WAGE-PRICE CONTROLS

A. *The Relevance of the Regulatory Experience*

Government price controls applied to specific industries have been far from satisfactory. Regulation of natural monopolies under favorable conditions has proven to be a difficult task, and in the competitive industries price controls have had perverse, and sometimes devastating, effects. Is this regulatory experience relevant in evaluating economy-wide wage and price controls?⁶⁴ Undoubtedly there are differences. But are the differences material?

⁶² See, e.g., *Grain in Multiple Car Shipments—River Crossings to the South*, 321 I.C.C. 582 (1963), *on remand from partial judicial reversal*, 325 I.C.C. 752 (1965).

⁶³ See, e.g., *Eastern Central Motor Carriers Ass'n*, 314 I.C.C. 5 (1961), *aff'd*, *Cooper Jarrett, Inc. v. United States*, 226 F. Supp. 318 (W.D. Mo. 1964), *aff'd per curiam*, 379 U.S. 6 (1964).

⁶⁴ For surveys of general wage-price controls subsequent to World War II, see CONGRESSIONAL BUDGET OFFICE, *INCOMES POLICIES IN THE UNITED STATES* (1977); C. GOODWIN, *EXHORTATION AND CONTROLS: THE SEARCH FOR A WAGE-PRICE POLICY, 1945-1971* (1975).

1. *Differences in Scope*

Regulatory measures are concerned with specific industries, and are viewed as exercises in microeconomic policy, while general wage-price controls are concerned with the economy as a whole, and are considered to be an aspect of macroeconomic policy. But every general wage-price guideline has to be applied with some attention to the context of its application. As the controls are elaborated, distinctions and exceptions are made that result in essentially an industry-by-industry, and sometimes a firm-by-firm, approach.

2. *Differences in Focus*

Wage-price controls are concerned with maintaining existing wage and price levels, or restraining the rate of increase in these levels, and accordingly do not require the degree of surveillance imposed in specific industry regulation. But underlying both general wage-price controls and specific regulation is the phenomenon of change. Inflationary forces are pushing costs up in a nonuniform manner, and technological and institutional developments are also affecting costs in a nonuniform way. The net effect is that, in both contexts, particular companies will be seeking to revise prices (almost always in an upward direction) because of changes in costs. In both cases, practical implementation requires individualized responses.

3. *Differences in Standards*

The standards to be applied are not the same under general wage-price controls and specific industry regulation. Granted that there is some variation in standards, not only between the two types of programs but also within each type of program, is not the central question the same: to what extent is a price increase justified? Conventional public utility regulation responds to this question by asking whether projected revenues are sufficient to

On the Nixon Administration's program, see M. KOSTERS, *CONTROLS AND INFLATION: THE ECONOMIC STABILIZATION PROGRAM IN RETROSPECT* (1975); R. LANZILLOTTI, M. HAMILTON & R. ROBERTS, *PHASE II IN REVIEW: THE PRICE COMMISSION EXPERIENCE* (1975); J. POHLMAN, *INFLATION UNDER CONTROL?* (1976); *WAGE AND PRICE CONTROLS: THE U.S. EXPERIMENT* (J. Kraft & B. Roberts eds. 1975); A. WEBER, *IN PURSUIT OF PRICE STABILITY THE WAGE-PRICE FREEZE OF 1971* (1973).

See also Trebing, *The Economic Consequences of Wage-Price Guidelines*, FED. RES. BANK ST. LOUIS REV., Dec. 1978, at 2.

cover all legitimate costs, including capital costs. Specific regulation in competitive sectors sometimes has tried to use the same methodology, usually without success, but also has turned to some of the same factors that are employed in general wage-price programs: emphasis on historical relationships and protection of previous profit margins (expressed as a mark-up over costs). In an economy characterized by fluidity, there is no assurance that such haphazard methodologies will yield satisfactory answers. Indeed, the answers often will be perverse: perpetuating financial stringency for firms initially in a low-profit posture and permitting excessive returns for firms initially in a high-profit posture.

4. *Differences in Duration*

General wage-price programs typically have been temporary in character, responding to particular crises, while specific industry regulation is of a continuing character. This may have been the pattern in the past, but are not contemporaneous inflationary pressures of a more durable nature, calling for a sustained program if any is to be adopted? Indeed, it is precisely the prospect that wage and price controls may become a permanent institution that makes the results of specific industry regulation more relevant than the crisis-oriented controls of World War II or the Korean conflict. It should also be emphasized that wartime controls also have a more limited objective than peacetime controls: they are considered to be successful if they defer inflation until the war has been concluded. But would peacetime controls be regarded as successful if the result is renewed and more rampant inflation after each period of price stability achieved under intermittent implementation of controls?

To assess the probability that wage-price controls may be employed on a continuing basis, and the role such controls might be expected to play, it is necessary to examine the causes of inflation to which wage and price controls might be expected to respond.

a. *Excess Demand.* Inflation may be caused by "excess demand" — the generation of purchasing power, through growth of money supply and of credit, more rapidly than the ability of the economy to produce goods and services. This appears to be the principal cause of both past and present inflation, and the remedy clearly is to reduce excessive growth of purchasing power. There may be reluctance to apply the remedies of fiscal and monetary stringency because of their effect in slowing the economy and in-

creasing unemployment. But using wage and price controls as a substitute implies either of two consequences: (1) maintaining such controls indefinitely, or (2) imposing such controls temporarily until the condition of excess demand has been abated. Since past inflation has not sufficed to limit governmental authorities in the generation of excess demand, is it reasonable to assume that a control program can be effectively linked with abatement of excess demand? In the face of recession and unemployment, will not the government be under pressure to set in motion forces producing excess demand? The prognosis is that controls, if employed at all, will need to be reactivated from time to time to be effective in this context.

b. *Cost Push*. Inflation often is also attributed to a "cost push" phenomenon: powerful firms and labor unions push up costs and prices that trigger upward adjustments in costs and prices throughout the economy. There are both theoretical and empirical objections to this explanation of inflation,⁶⁵ but for present purposes its validity will be assumed. To strike at this source of inflation, either of two courses must be followed: (1) structural reforms must be made with a view to eliminating the power of the unions and firms deemed to be responsible for inflation, or (2) more or less permanent controls must be directed at restraining the wage and price behavior of these unions and firms over an indefinite period. The second course of action is the one here challenged. Powerful unions and firms are least likely to be restrained by simple across-the-board controls, since by hypothesis they begin from a posture of advantage. Any general program, applied equally to all, will do nothing to restrain their relative advantage. But to apply wage and price controls to powerful unions and firms in a more rigorous manner involves an industry-by-industry approach, which probably would not differ materially from past specific industry regulation in either objective or method.

c. *Factor Prices*. Finally, inflation may be the product of increases in specific factor prices, particularly raw materials such as food and fuel, and increases triggered by inflation itself, such as higher interest rates. Wage and price controls are largely irrelevant to this source of inflation, since there is little choice but to permit

⁶⁵ See, e.g., Dalton & Qualls, *Market Structure and Inflation*, 24 ANTITRUST BULL. 17 (1969). This review of the literature reveals the highly dubious nature of any relation. Dalton and Qualls's conclusions to the contrary are not supported by the studies reviewed.

these increased costs, which are largely uncontrollable, to be reflected in prices. If it is believed that these increases are being augmented by excessive charges by middlemen, the problem becomes one aspect of the more general phenomenon of "cost push" inflation previously discussed. Moreover, with respect to fuel costs at least, it is likely the the problem will not be transitory.

5. *Differences in Application*

General economic controls apply to wages as well as prices, while specific industry regulation does not concern itself with wages in any significant way. Partly for this reason, the present discussion has focused almost entirely on prices. The addition of wage controls simply makes the problem more difficult rather than less. My impression is that standards for establishing wage levels by government decree are even less certain than standards for determining prices. But I will happily leave this aspect of the problem for consideration by others.

B. *The Prognosis for General Controls*

A general program of wage and price controls poses problems that seriously impede effectiveness. To control price without controlling the nature of the product permits price increases to be imposed through product variation. To declare price limits without a system analogous to filed tariffs on particular products makes evasion almost impossible to detect; it also makes remedies for past overcharges difficult to apply in many cases. To attempt to reach judgments based on costs without controlling accounting methods is to invite self-serving manipulation in an area where such manipulation is notorious. In all of these respects, a price administration authority would be working with significantly less authority than the typical regulatory agency. To expect it to succeed where the regulatory agencies have fared so poorly requires an enormous leap of faith.

It should be clear, finally, what the price of failure is. Government regulation of prices may result in price levels that are too high or too low compared to the levels that would be achieved by competitive markets. The consequences of low prices — prices inadequate to cover legitimate costs and to attract needed capital — are predictable. Service will deteriorate, necessary capital improvements will not be made, and ultimately shortages will occur. Rationing will be required in the short run and government sub-

sidization will be required in the long run. This is probably the more serious risk in a program designed to keep prices down. But wage-price programs also may cause prices to rise above levels needed to cover costs and attract necessary capital as particular firms and industries profit from the complexities and inadequacies of the program. In such an event, output will be restricted in a manner analogous to a cartel's restriction of output, with resultant misallocation of resources and suboptimal economic performance.

Whether prices are set at too high or too low a level, the result will be inefficient performance and a decline in the nation's productivity. The one point on which there is a consensus — whether the theory of inflation is excess demand, cost push, or raw material scarcity — is that declining productivity can only make matters worse. Low productivity necessarily widens the gap between income and expectations, and increases inflationary pressures. If productivity is impaired, the result almost certainly will be more inflation, not less, over the long term, with frustrations mounting as the gap between income and expectations grows ever wider. This is the most dangerous aspect of wage-price controls: that by adversely affecting productivity they may disable us from pursuing the only course — improvement in productivity — that is likely to provide any meaningful relief from inflationary pressures.