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**14 Implications of Asymmetric
Regulation for Competition
Policy Analysis**

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Implications of Asymmetric Regulation
for Competition Policy Analysis */

by

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"Exchange service and interexchange service are intrinsically natural monopolies."

Not many economists disagree. What they question is the degree of the cost advantage these natural monopolies afford and whether it is sufficient to warrant regulatory barriers to entry. Let the free market have its way, they blandly proclaim, and if what you say is true the inexorable consequence will be the reestablishment of a single supplier market. They do not acknowledge what surely they know and that is that a combination of regulatory handicapping of the currently 'dominant' supplier and anxieties on that supplier's part that his response to competition will be characterized as anticompetitive altogether precludes the working out of that economic lesson in the real world."

Alvin von Auw
Heritage and Destiny

I. Introduction

There is general support for the idea that natural monopoly markets should be regulated if there are methods of regulation capable of generating net benefits (i.e., as long as the cure is not worse than the disease) and that effectively competitive markets should not be regulated since the benefits of regulating a competitive market to prevent monopoly abuse are zero and the costs are not (i.e., if it ain't broke, don't fix it). ^{1/} This leaves a critical question unanswered: How does one determine whether or the extent to which a market is competitive or monopolistic?

^{1/} Opinion about the efficacy of regulation varies considerably. Oliver Williamson (1976, p. 73) observes that:

The orthodox attitude among economists toward regulation is one of "disdain and contempt." The general reputation is not undeserved...

Milton Friedman (1962, pp. 128-129) states that:

There is unfortunately no good solution for technical monopoly. There is only a choice among three evils: private unregulated monopoly, private monopoly regulated by the state, and government operation...[T]he great disadvantage of either governmental regulation or governmental operation of monopoly is that it is exceedingly difficult to reverse. In consequence, I am inclined to urge that the least of the evils is private unregulated monopoly wherever this is tolerable. Dynamic changes are highly likely to undermine it and there is at least some chance that these will be allowed to have their effect. And even in the short run, there is generally a wider range of substitutes than there seems to be at first blush, so private enterprises are fairly narrowly limited in the extent to which it is profitable to keep prices above cost. Moreover, the regulatory agencies often tend themselves to fall under the control of the producers and so prices may not be any lower with regulation than without regulation.

That seems like a simple question to answer, but the simplicity is deceptive. Counting the competitors would, for example, provide one basis for an answer. 2/ The problem is that it will often provide an erroneous or misleading one. The fact that a single firm operates in a market does not necessarily make the market a natural monopoly and a candidate for regulation. Indeed, if the only reason one firm operates in the market is that entry by other firms has been uneconomically restricted 3/ and regulation is responsible for the restriction, just the opposite conclusion might be warranted. As Alfred Kahn (1971, p. 146) asks in his regulation textbook, "If competitors want to enter, how natural can monopoly be?"

Symmetrically, the fact that several firms operate in a market does not necessarily mean that the market is not a natural monopoly. Part of the answer to Kahn's question is that monopoly can be plenty natural if the basis for competitive entry is inefficient pricing rather than lower costs. The presence of more than one supplier may indicate the economic viability of multiple sources of supply or it may reflect, among other things, inefficient ("politicized") pricing of industry inputs and/or outputs and the existence of what is, in effect, a regulatory cartel. As Almarin Phillips (1982, p. 23) argues:

Through regulation of one kind or another--legislation, injunctions, consent decrees, or regulatory edicts--the pricing and services of AT&T, the BOCs, and other non-Bell participants in the switched network can be arranged so that all are viable. That is, regulations can be formulated to preserve and protect an inefficient structure with many firms. Competition, nonetheless, is

2/ Analysis of market shares is merely a sophisticated way of counting.

3/ Harold Demsetz (1982) explains the concept of properly scaled entry barriers.

just the opposite of this. The idea of competition is to have a market structure that without regulation, induces efficient pricing.

Looks can be deceiving. That will be particularly so when the processes which produce what we observe differ from the processes which underly and justify use of the observations as indicia of economic performance or competitive status or some other phenomenon. In athletics strength-of-schedule considerations affect evaluation of winning percentage as an index of comparative team performance. Analogously, extramarket considerations affect evaluation of market data as indicia of effective competition in economic markets.

"Asymmetric regulation" is the name Richard Schmalensee (1984) has given to the FCC's current policy of subjecting AT&T to more stringent regulation than its rivals in the markets for telecommunications services. ^{4/} This paper examines the implications of asymmetric regulation for competition policy analysis. In particular, it considers how asymmetric regulation affects interpretation of market share data as evidence of effective competition or monopoly power. The basic thesis of the paper is that current regulatory policy substantially weakens what is already a tenuous connection between

^{4/} The FCC has, for all practical purposes, deregulated AT&T's interexchange competitors. AT&T is still subjected to the full panoply of regulatory requirements.

market share and market power. This implies that if decisions about deregulating AT&T are based primarily on the size of its market share, the pace and extent of deregulation are likely to be economically nonoptimal in the sense of "too little-too late" or "too much-too soon" (possibly both).

The paper is organized in the following manner: Section II analyzes the problem of how information relevant to questions about the appropriate extent of government intervention in the marketplace can be discovered. We consider three methods for determining whether provision of any or all long-distance telecommunications services is a natural monopoly: (1) empirical estimation of industry cost relationships; (2) analysis of market shares; and (3) the test of open market competition. Our analysis suggests that of the three, the latter is the only procedure capable of discovering whether the market is a natural monopoly. Competition provides the test of whether monopoly is natural: Does only one firm survive the competitive process?

Implications for policy are discussed in Section III. Our basic conclusion is that if what the FCC wants to know is whether a competitive (i.e., self-policing) industry structure is viable and regulation unneeded, it should "test-market" actual competition. Attempts to achieve some desired configuration of market shares through regulatory means may serve other ends, but they invalidate the use of market information as an indicator of competitive status or comparative efficiency. To promote consumer welfare, the FCC should organize regulation so that feedback information about market processes and outcomes accurately reflects basic economic forces of supply and demand (including the true competitive capabilities of rival firms), while at the same time assuring that consumers are protected from monopoly abuse. From an informational standpoint, the FCC's goal should not be to produce particular

results, but rather a fair test that produces unbiased information. 5/ If an effectively competitive market structure proves natural in an open, equal access environment, then deregulation will be warranted. A "competitive" industry structure which is merely an artifact of regulatory division of the market supplies scant basis for prudent policymaking.

II. Natural Monopoly: The Problem of Authentication 6/

The defining characteristic of a natural monopoly industry is cost subadditivity. 7/ Subadditivity implies that costs of supplying a given set of outputs will be lower if production is carried out by a single firm rather than by two or more firms. Cost subadditivity may pose a policy dilemma, for if technically efficient (i.e., least cost) supply requires production by a

5/ The flavor of this policy prescription has been well captured by Commissioner Dennis Patrick in remarks before the Federal Communications Bar Association. Patrick (1984, p. 7) observes that:

[T]he Commission cannot create competition: the demand, supply, and cost characteristics that will support competition either exist or they do not at any given point in time.

Patrick assumes such conditions do exist in the interexchange market, but he (1984, pp. 6-7) warns that:

Failure to recognize the impact of our continuing regulations could lead us to misjudge how competitive a market really is absent regulatory intervention. Our misjudgment would become apparent only after decontrol, when the market returned to its natural equilibrium, undisturbed by our regulatory intervention.

6/ Thomas Sowell (1980) analyzes the characteristics of different processes of authentication.

7/ The concept of subadditivity is defined and explained in W. Baumol et. al. (1982).

single firm, that firm may possess monopoly power. 8/ Regulation may then be imposed as a means of preventing exploitation of market power, while simultaneously obtaining the cost savings associated with single-firm organization.

That, of course, is an idealized portrayal of regulation. Actual regulation shares the "trait of imperfection with all other other real economic institutions. In particular, the idea that regulation is needed to prevent the prices of long-distance telephone services from exceeding their economic costs ignores that, historically, regulation has been an important reason why prices have exceeded costs. 9/ The view that regulation and competition are

8/ Market power depends on the absence of close substitute products.

9/ As John Wenders (1984, p. 20) has argued:
Contrary to what actually happened legally, from the standpoint of economics the real defendant in the Department of Justice's antitrust case was not AT&T. The real defendant was the regulatory cartel of which AT&T was certainly a part. This cartel was made possible by the industry's rapid technological change and other fortuitous features of the telecommunications market, and evolved over the years for the purpose of effecting the huge and growing subsidy from toll to local telecommunications services. This politically popular subsidy not only created huge welfare losses, but, as happens with all cartels, also set in motion the corrective forces of competition, the defense of which caused AT&T to run afoul of the antitrust laws. This, of course, was as it should be. From the standpoint of economic welfare, the competition which is important in any industry is competition which is directed at relieving the monopoly power which distorts economic efficiency...The real monopoly power present in the telecommunications industry was created and fostered by the political process which regulated this industry.

potential substitutes also ignores other important functions that competition performs and regulation does not. 10/

Schmalensee (1984, pp. 3-4) recommends that:

As a permanent, long-run policy, the Commission's choice should be between regulation of a single supplier of telecommunications services (if natural monopoly elements are important) and unregulated competition (if they are not).

10/ Competition not only forces prices to reflect costs, but also leads costs to be minimized. If costs are higher than they need to be, the fact that prices reflect costs should be of little consolation to consumers or regulators. Similarly, if products consumers would prefer to buy are not offered for sale, the fact that the prices of those that are offered for sale reflect costs should again offer little consolation.

It is equally true that regulation may perform certain functions that competition does not. For example, regulation may permit political transfers through price manipulation, what Richard Posner (1971) has described as "Taxation by Regulation." Gerald Faulhaber (1975, p. 972) argues that:

If the public authorities desire both subsidizing prices and economies of scale, then the coercive authority of the government must be employed to restrict or prohibit entry into the market. Thus, even when the public enterprise enjoys increasing returns to scale, if the regulators adopt a pricing policy of subsidization, ... entry must be restricted.

The problem with restricting entry is that it means excluding potentially more efficient suppliers and foregoing the beneficial effects of potential competition. It is possible to achieve social goals without foregoing the benefits of open entry through a more explicit scheme of taxes and direct subsidies. As Baumol et al. (1982, pp. 365-366) argue:

[O]bjectives not automatically taken into account by market forces may nevertheless be pursued...by a policy that relies upon general financial inducements, not case-by-case intervention and direct controls...The costs of the pursuit of the special objectives are borne by society as a whole, not by particular classes of consumers who have the burden thrust upon them by cross subsidies either voluntarily adopted by or imposed upon firms by the authorities.

This presumes that there are practicable methods for determining whether "natural monopoly elements" are important. We consider three methods for ascertaining whether the telecommunications industry cost function exhibits subadditivity: (1) empirical estimation of industry cost relationships; (2) analysis of market shares; and (3) the test of open market competition.

A. Empirical Estimation: In principle, one way to determine whether an industry cost function displays subadditivity is to measure it directly using econometric tools. ^{11/} There are, however, several difficulties with this approach that preclude its providing a solid foundation for policymaking in the instant setting. First, the task itself, while describable, is dauntingly difficult and will usually prove impossible to carry out. As Baumol, Panzar and Willig (1982, pp. 170-172) note in their book on contestable markets, an unfortunate attribute of the subadditivity condition that unavoidably complicates empirical tests to determine whether or not it is satisfied is that it is a "global" not a "local" concept. They (1982, p. 171) explain that:

[U]nlike the property of scale economies at y [some set of outputs], subadditivity at y cannot be conclusively assessed from data about costs only in the vicinity of y . The cost surface must be scrutinized not merely in the neighborhood of that point, but also all the way to the axes and the origin. This is a very demanding task for empirical work because it is likely to require data well outside the range of available observations. If in recent decades a firm has produced no quantities varying by more than say 25 percent from its current output, then there will be no statistical data (except perhaps for some obsolete figures) that can indicate the shape of the cost function anywhere near the origin or the axes. Thus, the data requirements of a statistical test of subadditivity can be very severe indeed.

^{11/} Economists' policy prescriptions generally presume (perhaps without basis) that cost relations can be (or have been) accurately estimated.

The reason global measurement is required is to test whether many small firms or medium-sized firms or a combination of the two can produce more cheaply than can a single producer.

: The second problem with econometric authentication processes is that the state of the relevant art, both in general and specifically in terms of the instant problem, is not such as to inspire or permit great confidence in its findings. On the general merits of using econometric tools to measure economic cost relationships, John S. McGee (1974, p. 68 and p. 88) remarks that:

When I began to study economics, I had high hopes that statistical analysis would solve these and other mysteries. Such a hope was naive then; it is naive now. Apart from expense, there are intractable problems involving accounting data; the determination and allocation of administration, planning, and other crucial costs to the outputs being measured; the interdependence of costs from one production period with those of others; and so on. All in all, such studies are at least as likely to mislead as to inform. At best, they would inform only about the irrelevant past.

On my reading of both theory and the evidence, statistical cost and engineering studies teach us precious little about even the relationship between business size and cost. If he likes, an optimist can await the day when we will have learned a lot about costs. I think he will have a very long wait.

Even those who are more favorably disposed toward this approach admit that there are serious difficulties in applying it. 12/

12/ In the exchange from which the McGee quotes are drawn, F.M. Scherer (1974, p. 97) grants that "the problems in measuring scale economies are tough."

In terms of telecommunications cost studies, specifically, Phillips (1982, p. 11), a close student of the industry who believes there is compelling evidence of cost subadditivity, nevertheless disclaims that:

Econometric tests are, of course, fraught with technical difficulties. It is indeed questionable whether matters of so grave a concern as the structure of the telecommunications industry should be based on them alone.

According to D.S. Evans and J.J. Heckman (1983, p. 149):

[N]one of these studies can provide decisive evidence that the telephone industry is or is not a natural monopoly. The most reasonable conclusion that can be made from the available evidence on the cost characteristics of the telephone industry is that there is weak evidence that this industry is not a natural monopoly. (emphasis added)

These authors subsequently note the possibility that "more sophisticated studies with better data may reverse our finding that the telephone industry is not a natural monopoly or may find that particular telephone services can be provided most efficiently by a single firm."

The third difficulty with econometric authentication arises because actual estimates conflict. Thus, even if one were willing to rely upon this method of authentication, there would still be a problem because there is no consensus in the literature about the answer to the question at issue. Compare Phillips' summation of what the evidence shows with Evans and Heckman's.

Phillips (1982, p. 11):

Numerous examinations of AT&T's and Bell Canada's operating costs are virtually uniform in rejecting the hypothesis of constant returns to scale. The more sophisticated of these explain observed costs in terms of output rates for several telecommunications services [i.e., they test for economies of scope], factor and materials input prices, and one or more proxy variables

to capture the effects of technological change... [T]here is remarkable consistency in the overall conclusion that the scale coefficient significantly exceeds the unity value associated with constant returns to scale...

[T]he results of the econometric studies are consistent with independent engineering and other nonstatistical estimates of cost functions. In addition to strict scale economies, the latter suggest the presence of economies of scope and of economies of traffic density. Further they confirm the econometric evidence that subadditivity in costs pertains to interexchange transmission as well as to the local exchange services.

Evans and Heckman (1983, pp. 147-148):

Having examined the major Bell System econometric studies relied upon by Rosse, we conclude that (a) the Vinod studies rely on an inappropriate statistical technique; (b) the Christensen study uses an invalid and irrelevant aggregate measure of telecommunications outputs; and (c) none of these studies provide credible evidence concerning whether a single firm can provide any or all telecommunications services more efficiently than several firms... The most comprehensive of the Bell Canada studies--the Fuss and Waverman study--rejects the hypothesis that there are scale economies in private line service and other telecommunications services. ^{13/} The most reasonable conclusion one can make from the studies reviewed by Rosse is that, to the extent these studies shed any light at all on the issue of whether a single firm can operate any or all telecommunications services more efficiently than several firms can, they suggest that the provision of telephone service by a single firm may not be the most efficient arrangement available to society.

Given pointed conflicts in expert opinion (real or, potentially, fabricated) and judicial-regulatory-political inability to judge the merits in technical

^{13/} Waverman (1975), however, concludes that the industry is a natural monopoly on the grounds that there are important transactional efficiencies associated with single-entity organization. Problems of cost allocation and recovery have obviously been a prime focus of public policymaking under the new industry organization in telecommunications. Ironically, these problems would not (or at least need not) exist under integrated monopoly. Indeed, integration is generally posited as a solution for the kinds of difficulties now confronted in this area. See Oliver Williamson (1971 and 1979), Roland McKean (1971) and F.M. Scherer (1980, pp. 300-305).

disputes, there seems little prospect for econometric resolution of the 'existence of natural monopoly' question.

B. Analysis of Market Shares: Market share is a frequently cited measure of market power. If an industry really were a natural monopoly, the inevitable result of unregulated (i.e., real) competition would be a single firm and that firm would obviously possess a 100 percent market share. It does not follow that a high market share implies market power or that an unconcentrated industry structure implies effectively competitive performance. High market share may be a necessary but is not a sufficient condition for market power. 14/

AT&T's market share has been cited as evidence (and as a source) of its market power and a decline in its share has been suggested by some as a condition for deregulation. 15/ The premise that makes loss of market share a requirement for deregulation is that such a loss signals increased competition and reduced need for regulation. That this is actually (or only) the message share data transmit is by no means obvious.

One possibility is that a firm may sacrifice market share by simply not competing as vigorously as it otherwise might. It would, in fact, have positive incentives to do that if loss of market share were made a condition for being freed from regulation. In that case, what is actually reduced competition would be interpreted as increased competition on the basis of

14/ Low market shares may be consistent with market power in the presence of effective cartelization. Economists generally argue that effective cartelization in a large-numbers (low market share) setting is unlikely without government involvement.

15/ See Comments of MCI in AT&T Deregulation Inquiry (Docket No. 83-1147).

market share data and (ironically) a signal to deregulate. That kind of perverse outcome stemming from strategic responses to judgmental criteria is what economists refer to as a signaling problem. 16/

Market power is the ability to raise prices above costs without suffering serious competitive consequences. In price theoretic terms, market power is measured as the inverse of the elasticity of demand a firm confronts. 17/ Market share/concentration ratio measures are simply observable structural characteristics of markets which indicate in rough terms what a firm's elasticity of demand would be if it could be directly observed. Most analysts argue that a large market share is not sufficient to show market power because it does not take into account the ability of market entrants or other market participants to offset monopolistic output restrictions. 18/ Inferences based on current market shares will generally understate the actual elasticity of demand a firm confronts and hence overstate the actual extent of its market power.

16/ On the economics of signaling, see Michael Spence (1974). The specific disabilities of market share/concentration ratio measures as policy signals were one of the principal criticisms leveled against the failed industrial deconcentration legislative proposals of a decade ago. Those proposals called for the breakup of firms with large market shares in concentrated industries. Rather than promote competition, such laws would have discouraged it by providing disincentives for firms to compete and grow. Note also that a firm's market share (and the industry concentration ratio) is not solely a matter of its own doing, depending also on the behavior of its rivals as well as the government in the case of regulated industries. That point is relevant to our discussion as well.

17/ Elasticity is a measure of demand sensitivity. If demand is very sensitive to price changes (because of the availability of substitute products), elasticity is large and its inverse is small.

18/ William Landis and Richard Posner (1981, p. 947) note that "market share alone is misleading" and that there are pitfalls in mechanically using market share data to measure market power. They argue that an appropriate measure of market power "will attempt to capture the influence of market demand and supply elasticity."

A more fundamental criticism of the market share approach is that it infers ineffective competition on the basis of a measure that may in fact reflect effectively competitive behavior. As Landis and Posner (1981, p. 976) note:

The firm that by dint of cutting costs and price obtains a large market share should not be condemned as an unlawful monopolist. It should always be open to a defendant in an antitrust case to rebut an inference of market power based on market share by showing that its market share is the result of low prices.

In modern economic analysis, focus has shifted from the number of actual competitors in a market as a determinant of industry performance to conditions of entry and the presence (or absence) of size economies as determinants of industry structure. ^{19/} Relationships between industry structure, firm behavior and performance are reciprocal, but modern analysis suggests that absent unwarranted barriers to competition, industries will tend to be structured in the manner that maximizes efficiency. In the absence of protection from competition, large firm size is not a demerit but should be taken as evidence of efficiency. Firms that do a good job satisfying consumer preferences tend to grow and become large or, in more value-laden terminology, "dominant."

In unregulated markets, the economic meaning of a large market share is ambiguous. A large market share may imply the presence of monopoly power. Alternatively, a large market share may reflect provision of good service, indicating effectively competitive behavior and no problem of monopoly. In regulated markets, the significance of market share as a measure of either

^{19/} See Harold Demsetz (1974) and M. Smirlock et. al. (1984).

market power or competitive effectiveness is attenuated. Regulation renders market share data less meaningful in either sense.

Suppose a market is effectively monopolized and effectively regulated. In that case the incumbent will have a 100 percent market share and no power to raise prices above competitive levels. Suppose that instead of limiting a monopolist's price to the competitive level, regulation requires rate-averaging, that is, that the incumbent charge uniform prices in different market segments despite different costs of serving the segments. Under that arrangement, prices will exceed marginal costs in some areas and marginal costs will exceed prices in others. In the latter areas, below-cost pricing deters entry so that the incumbent again has a 100 percent share but again possesses no market power. 20/ In other areas, above-cost pricing attracts entry so that the incumbent's market share in these areas will decline. That decline is, however, of limited significance since it is merely a byproduct of economically inefficient pricing. Indeed, what causes the decline in one set of markets is precisely what prevents it in the other set. In this regard, note the inconsistency in requiring loss of market share for deregulation in the face of pricing policies that prevent such a loss from occurring. 21/

20/ As Landis and Posner (1981, p. 976) note:

In this case the causality between market share and price is reversed. Instead of a large market share leading to a high price, a low price leads to a large market share; and it would be improper to infer market power simply from observing the large market share.

21/ A similar inconsistency is entailed in requiring ex ante cost reductions to justify price reductions that lead to ex post cost reductions because of fixed cost spreading. To require, as a precondition for price cutting, the cost savings price cutting induces is obviously to preclude such cuts.

Regulatory handicapping works in similar fashion. If one firm is forced to bear higher costs than others (e.g., through differential "loading" of fixed costs) or is forced to meet regulatory requirements that put it at a competitive disadvantage vis a vis its rivals, it may lose market share and its rivals may gain share. These changes are again of limited significance since they reflect the effects of regulation rather than competitive performance. They do verify the ability of competitors to enter and successfully exploit market opportunities presented by inefficient pricing.

It is, of course, perfectly legitimate to argue that entrants would have entered and prospered without asymmetric regulation, but the point is that that cannot really be known or is at least less convincingly known in the presence of such regulation. Baumol et. al. (1982, p. 351) define an industry to be a natural monopoly if the cost-minimizing industry structure is a single firm. Competition provides the market test of whether a monopoly enterprise is actually a natural monopoly--Can it succeed in remaining alone in an open market? If competition is restricted, there can be no such test. Thus, a 100 percent share is of little probative significance if entry is blockaded. Similarly, an industry with a "competitive" structure may not be all that competitive if competition had little to do with the determination of that structure and regulation had a lot to do with it. Replacing a regulated monopoly with a regulatory cartel would place the telephone industry approximately where the airline industry was prior to deregulation.

Regulatory attempts to create a "preferred" market structure spoil the market test. Economic history suggests they are unnecessary and regulatory

history suggests they are likely to be costly and ill conceived. 22/ The merger movement in the 1890's and the subsequent experience of the resulting consolidations have several lessons to offer to proponents of regulatory market share management. Most of the large mergers of that era consolidated more than 50 percent of the capacity in their respective industries into a single firm.

George Stigler (1968, p. 102) reports that:

...[T]he mean share of the market controlled by the mergers studied by the Industrial Commission was 71 percent (one in the 25 to 50 percent range, 11 in the 50 to 75 percent range, and 10 in the 75 to 100 percent range). In the ninety-two large mergers studied by Moody, the distribution by share of market was similar: seventy-eight controlled 50 percent or more of the output of the industry; fifty-seven controlled 60 percent or more; and twenty-six controlled 80 percent or more.

Yale Brozen (1982) has studied the perishability of the market shares of these dominant firms. He (1982, p. 217 and p. 219) concludes that:

Turn-of-the-century combinations were often created in order to monopolize and, less often, to economize and improve service to customers. Where managements tried to use dominant positions to extract supracompetitive prices, however, the consolidations did not long remain dominant or viable. Only where they quickly gave up monopolizing and price-raising activities and turned their attention to improving efficiency, product

22/ John Meyer et. al. (1980, p. 184) note that:

The concept of "regulation creating a better market structure" relies, at its base, on the assumption that regulation has the capability to modify and create the market structure it seeks. This inevitably raises the question of whether regulation can, in the long run, really modify market structure in important ways. In industries other than telecommunications, there is considerable evidence that attempts to modify market structure through regulation have often failed. For an economic critique of FCC attempts to create a preferred industry structure in broadcasting, see R. Noll et. al. (1973).

quality, product design, and marketing, and succeeded in matching or exceeding actual and would-be competitors, did they endure.

Some leading firms with large market shares have believed that they could behave monopolistically. The market informed them of their error and, frequently too late for the health of their enterprises, taught them and other businessmen that the attempt to monopolize is more often the road to losses than to profits, absent the government as an ally.

Analysis of market share data often provides the starting point for an economic evaluation of market competition. Traditional antitrust enforcement still relies heavily upon market share data and related information. Modern analysis strongly suggests that one cannot unambiguously equate declining market shares with improved industry performance, particularly when market shares are determined in whole or part by regulation (or strategic responses to regulation) rather than by competition.

C. "Competition as a Discovery Procedure" 23/: The theory of perfect competition posits a market in which there are a large number of buyers and sellers trading a homogeneous good, in which knowledge about consumer tastes, production techniques and trade opportunities is complete, and in which there are no restraints on the movement of prices and resources. Lack of realism in a scientific model is not necessarily a vice and can be a virtue. 24/ There are purposes for which the theory of perfect competition supplies a useful

23/ See Friedrich A. Hayek (1978). This subsection draws heavily on Hayek's work.

24/ See Milton Friedman (1971).

tool of analysis. It defines a type of market equilibrium that provides a basis for predicting the effects of changes in supply and demand in comparative static terms. 25/

There are other purposes for which this type of model is unsuited and, therefore, inadequate for purposes of explanation and understanding. 26/ One such is the idea that it provides useful benchmarks against which real markets can be compared to gauge their "competitiveness." As William Allen (1982, p. 43) observes:

[T]here are fatal difficulties in using abstract conceptualization of a never-never world of atomistic, equilibrated uniformity as a guide in grading and possibly circumventing and constraining the ever-evolving, adjusting real world--a world of risk and uncertainty, experimentation and research, disequilibrium and change, sweat and strain. In such a world, it is naive to suppose that we have available a simple neat measuring rod of market behavior and influence, enabling us readily to identify the bad and the beautiful, distinguishing "monopolists" from "competitors."

The basic shortcoming of the theory of perfect competition as a theory of rivalry or competitive process (as opposed to market equilibrium) is that it assumes what it should explain. The productive capabilities of producers (including their ability to persuade consumers to buy what they are trying to sell) and the wishes and desires of consumers (including what kinds of products and services they want to buy and how much they are willing to pay) "cannot properly be regarded as given facts but ought rather to be regarded as

25/ See Paul Samuelson (1947).

26/ On the importance of appropriate model selection for competition policy analysis, see Richard Schmalensee (1979).

problems to be solved by the process of competition." 27/ It is only through the process of competition that these facts will be discovered.

In his famous essay on "The Use of Knowledge in Society," Hayek (1948A, p. 77) explains that:

If we possess all the relevant information, if we can start out from a given system of preferences, and if we command complete knowledge of available means, the problem which remains is purely one of logic. That is, the answer to the question of what is the best use of the available means is implicit in our assumptions...This, however, is emphatically not the economic problem which society faces...The economic problem of society is not merely a problem of how to allocate "given" resources--if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data." It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality.
(emphasis in original)

It clearly makes little sense to evaluate the economic organization of an industry on the basis of how well it comports with a theoretical ideal, which is ideal only in terms of solving a problem different from the one we actually face and are really interested in solving.

A related but distinct line of criticism is that of Joseph Schumpeter, who argues that, in the long run, it is product rather than price competition (narrowly construed) that is of primary importance for expanding consumer

27/ See Hayek (1948B, p. 96).

welfare. 28/ In Schumpeterian terms, "the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them." 29/ He (1950, p. 84) argues that:

[I]n capitalist reality as distinguished from its textbook picture,...the competition which counts is that...from the new commodity, the new technology, the new source of supply, the new organization (the largest-scale unit of control for instance)--competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. That kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door, and so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly; the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff.

On both the Hayekian and Schumpeterian views, competition is an evolutionary process of discovery and selection, rather than simply a method for allocating given means among known ends. An important implication of the idea that competition is a discovery procedure is that closed monopoly (or its less efficient first-cousin, the regulatory cartel) is a procedure for remaining ignorant. No single organization can possess all the knowledge and skill that are relevant for production of any but the simplest goods and services. Restricting competition, particularly by restricting market entry

28/ Product competition itself frequently possesses an important price dimension. For illustration, suppose a firm produces a windshield wiper that lasts twice as long as its rivals', but is only half again more expensive. That product innovation effectively lowers the price of the service (viz., windshield wiping).

29/ See Schumpeter (1950, p. 84).

by new firms, reduces the chance that better products or lower-cost methods of production will be discovered and subjected to a market test.

Phillips (1982, p. 22) argues that:

So long as a natural monopoly with scale, scope and density economies has the incentive to offer new, technologically possible services, it is always more efficient to have the services provided by that monopoly--subject to reasonably effective regulation--than to have the same services carried by new entrants.

The problem with that argument is, first, that regulation itself may operate to inhibit technical innovation by removing the profit incentive to innovate. 30/ If a firm's profits are restricted, its incentives to lower costs will be reduced. And the more effective regulation is, the more it will work to reduce such incentives. Second, actual pricing under regulated monopoly in telecommunications cannot be defended on efficiency grounds, including the efficiency with which politically inspired cross-subsidies are carried out. 31/ Phillips himself explains attempts to enter the industry in part on the basis of faulty incentives provided by pricing decisions under the regulated monopoly regime. These are, as he argues, properly "regulatory issues," but if the efficacy of closed monopoly depends on the existence of "reasonably effective regulation," poor regulatory performance in practice weakens the case for closed monopoly. Phillips' policy prescription amounts to an argument that if

30/ Regulated firms may nevertheless do some innovating if utility maximization in the presence of a profit constraint leads managers to substitute technical innovation for profits.

31/ James Griffin estimates the economic welfare losses associated with current inefficient pricing practices to be on the order of \$1 billion per year. He (1982, p. 66) concludes that "the existing degree of cross subsidization of local service by long-distance service cannot be justified by welfare economics."

we knew we had a natural monopoly (which we do not know) and if a natural monopoly had adequate incentives to innovate (which it may not, given effective profit regulation) and if a regulated monopoly could be relied upon to price efficiently (which historically it did not), then regulated (and in some cases closed) monopoly would be more efficient than alternative modes of organization.

Economists have shown that in certain cases costs can be subadditive (i.e., an industry can actually be a natural monopoly), but there may nevertheless be no set of prices sustainable against entry. 32/ Phillips (1982, pp. 22-23) concludes that "where prices are not sustainable...barriers to entry must be included within the regulatory set." 33/ For unsustainability to justify restraints upon economic freedom, empirical estimates of cost parameters showing that 'possible' circumstances are 'actual' circumstances are necessary. If such a demonstration is virtually impossible given impossible-to-fulfill data requirements, the limited power of existing econometric tools, the nature of governmental processes of authentication and, in particular, the potential for obfuscatory exploitation of complexity abounding therein, unsustainable natural monopoly can never succeed as a policy rationale.

Without empirical support, the unsustainable natural monopoly rationale for entry restrictions assumes the quality of religious argument for it

32/ See Baumol et al. (1982, pp. 221-224).

33/ In a recent paper, Richard Zerbe (1984) proffers the same advice.

requires that one take on faith the existence of certain cost relations and discount any potentially salutary effects of actual or potential competition. Absence of evidence implies that a policy of free entry also rests on faith, but as Baumol et. al. (1982, p. 222) aver, "cases in which entry may lead to some social inefficiency should not be taken to tilt the scales against the presumption that freedom of entry is socially beneficial." The burden of proof should always be on those who would restrain such freedom. The advantages of the competitive approach have been well summarized by Baumol et. al. (1982, p. 222) as follows:

[F]reedom of entry, indeed the mere threat of incursions by entrants into the market, may effectively discipline the monopolist, even if entry is never successful. It can force the monopolist to curb his avarice and forgo profits he might otherwise have enjoyed...Potential competition can also force the monopolist to produce with maximal efficiency, and to hunt down and utilize fully every opportunity for innovation. Perhaps most surprising of all, it can induce the monopolist to institute those (Ramsey) prices which welfare theory has shown to be requisites of Pareto optimality under a profit constraint. In short, the threat of entry can force virtuous behavior upon the monopolist, for if he behaves badly his monopoly becomes vulnerable. In our analysis, it is freedom of entry alone that is capable of accomplishing all these things. (emphasis in original)

Assuming what a real theory of competition would explain, the theory of perfect competition analyzes how well a particular (generally infeasible) form of market organization solves a problem different from the one we actually face. The same criticism can be made about the theory of regulated monopoly. That theory purports to demonstrate how regulation can protect consumers from monopoly exploitation given all the information about consumer preferences and producer costs that is similarly taken as given in the theory

of perfect competition. 34/ If that information were truly given or could be costlessly produced, the question of appropriate industry organization would be a matter of little consequence. It is precisely because knowledge is a scarce good that economic organization matters and that interesting problems of comparative institutional choice arise.

The actual performance of regulation is nothing to write home about. On the view espoused here, regulatory failure is not the result of economic illiteracy or faulty bureaucratic incentives, although those would certainly need to be included on any list of important contributing factors. 35/ The real source of failure is that without the presence or threat of competition, a regulator cannot know what needs to be known for regulation to work in even a mediocre way, or, for that matter, to determine whether regulation is even needed.

The telecommunications industry (or parts of it) may be a natural monopoly, but ultimately the only way of determining whether that is so (or continues to be so in the future) is to allow free competition. Free competition is competition which permits firms to succeed or fail primarily on the basis of consumer judgments expressed directly in the marketplace, rather than, say, governmental judgments which mainly reflect the legal pleadings and political lobbying of industry participants and the structure of incentives confronting regulators and politicians.

34/ That theory also takes as a given the competence of the state to achieve desired goals, that is, it assumes that the structure of incentives confronting regulators will lead them to behave in ways that promote desired goals. See G. Stigler (1975).

35/ See Roger Noll (1971).

Phillips may be right—competition in telecommunications may be an impossibility, but, paradoxically, the only way of discovering whether that is so is to permit competition. Hayek (1978, p. 180) advises that:

[C]ompetition is valuable only because, and so far as its results are unpredictable and on the whole different from those which anyone has, or could have, deliberately aimed at...The market leaves the particular combination of goods, and its distribution among individuals, largely to unforeseeable circumstances—and, in this sense to accident. It is, as Adam Smith already understood, as if we had agreed to play a game, partly of skill and partly of chance. This competitive game, at the price of leaving the share of each individual in some measure to accident, ensures that the real equivalent of whatever his share turns out to be, is as large as we know how to make it. (emphasis in original)

III. Policy Implications

Our conclusion is that the best way of discovering whether competition works is to try it. The ultimate proof of whether a self-policing industry structure is viable lies in the pudding of free competition. Allen (1982, p. 44) suggests that:

It is entirely sensible to look at market performance rather than market structure, to assess real productive results of real market behavior rather than market organization on the basis of static and bloodless criteria.

One advantage of an approach that focuses on performance rather than structure is that plausible strategic responses lead to greater competition rather than less (viz., lower prices rather than higher). As noted earlier, one disadvantage of utilizing market share as an indicator of market competitiveness is that less actual competition can lead to incorrect inferences of increased competition. For illustration, suppose AT&T judges that to be freed from regulation it needs to lose 30 share points. One way to achieve that goal would be to adopt an umbrella pricing scheme that provides

an opportunity for its rivals to grow. 36/ That strategy implies higher prices for consumers, but it leads to a fall in AT&T's market share and the incorrect inference that the market is in some meaningful sense more effectively competitive. 37/

In contrast, strategic gaming of judgmental criteria that focus on competitive performance would lead to greater competition. If AT&T wanted to behave strategically, the way to do so if competitive performance were the decisionmaking criterion for deregulation would be to compete like crazy. But that is precisely what is needed to determine if a self-policing industry structure is viable. If such a structure were not viable, surely it would be better to discover that before giving AT&T freedom to raise prices at its discretion.

A. Test-Marketing Competition: The practical policy question is how to arrange a market experiment that provides a relatively unbiased test for the presence of natural monopoly elements, while simultaneously protecting consumers from any monopoly fallout. In switched services, a meaningful experiment and valid test results probably require widespread availability of so-called "equal access" and, just as importantly, an end to access cost

36/ Government agencies with an institutional stake in the survival of particular firms may not object to such behavior. They may well seek to instigate it.

37/ Wenders (1984, p. 35) suggests that:
No one concerned with economic welfare in the telecommunications market can logically argue that...toll rates should be kept high and that the States and the FCC should practice handicapped regulation and umbrella pricing in toll markets.

handicapping. 38/ Current access pricing is not cost-based, but rather subsidizes certain interexchange carriers whose network access is technically inferior and certain local telephone services. 39/ On the assumption that no carrier would buy inferior access at a price reflecting what it actually costs to produce (because no consumer would), the nature of competitive rivalry under equal access conditions will differ significantly from that which exists now. 40/ That suggests the limited significance of current market data, on the one hand, and a logical starting point for the test-marketing of competition, on the other.

38/ In other areas (e.g. private lines), equal access is not an issue.

39/ Access pricing through regulatory and political processes has proven susceptible to exploitation through brinkmanship. The government's commitments to competition and universal service have proven irresistible targets for such tactics. Few with the power to hold those commitments hostage have failed to try to exercise it. And few who have tried have failed to make gains as a result, thereby encouraging others to try. A fundamental problem is, as the NTIA has observed in its comments in the AT&T deregulation inquiry, that the FCC, perhaps through no fault of its own, may be incapable of mollifying all the contesting interests. It is not clear what it would prove if it could. The purpose of regulatory reform is presumably not to sustain a cartel of certain producers and consumers with the FCC as a cartel manager. It is to provide an institutional framework that allows buyers and sellers in the marketplace to play the major role in determining an appropriate allocation of resources within the industry. Phillips (1983, p. 292) suggests that:

In brief, and on a piecemeal basis at that, the FCC--and even more so the Department of Justice--seems to be seeking rates that will sustain the emerging and increasingly inefficient organizational structure of the telecommunications industry. They should be doing just the opposite. They should be looking for an efficient organizational structure so that efficient rates could be developed.

40/ See Brian Sullivan (1983).

The basic outline of a test-marketing experiment is clear, having been undertaken in other industry settings, most notably in air transportation. 41/ The experiment would involve establishing a zone of reasonableness within which AT&T would be free to act without Commission approval. 42/ The zone would provide for relief from regulations which require approval for pricing changes, new service offerings and new facilities construction. The zone could expand if competition thrives or it could contract if a monopoly industry structure proves natural in a contestable, equal access environment.

B. Downward Versus Upward Pricing Flexibility: A zone of reasonableness can provide for greater downward than upward pricing flexibility if fears of monopoly pricing so warrant. This would need to be carefully considered since anomalies in the current structure of rates make marked upward revisions in rates for some services economically desirable. If those anomalies were removed or dealt with separately, there would appear to be several advantages in a zone of reasonableness for pricing decisions that provides only for downward pricing flexibility.

Suppose the upper boundary of a zone of reasonableness for pricing decisions were set at current rates with provision for adjustments to reflect changes in the purchasing power of the dollar and in direct assignment of access costs. Note, first, that under this approach AT&T's ability to exploit its market power by raising prices would be limited. Any real (as opposed to nominal) rate increases would require FCC approval and presumably plausible

41/ See Elizabeth Bailey et. al. (1984).

42/ Kahn (1984) and the Department of Justice (1984) have offered specific proposals.

cost justification. Furthermore, if rate ceilings were indexed to direct assignment of access costs, AT&T would be prevented from exercising any market power by simply not lowering rates when access costs are directly assigned (i.e., when such costs are no longer borne by AT&T).

The principal fear of deregulation is that AT&T will be able to raise rates and not suffer sufficiently immediate adverse consequences in terms of loss of business. There is no reason why deregulation cannot proceed in phases with upward pricing flexibility deferred until a competitive track record is established. Sequential decisionmaking avoids the problem of having to describe all possible contingencies and appropriate adaptations in advance. Events are allowed to unfold and policy responses are keyed to what actually happens. A ceiling approach insures that consumers are made no worse off as a result of deregulation since what is being deregulated is price cutting not price gouging. This also has important implications for the question of rate deaveraging.

Effective competition leads prices to reflect costs. This implies that a regime of averaged rates may not be sustainable in the face of competition. The reason is simply that consumers who confront rates that exceed costs will tend to migrate to lower-priced competitive alternatives and that may make it difficult to maintain below-cost rates. Competition may be incompatible with broadly averaged rates. Assuming the upper boundary of a zone of reasonableness for pricing decisions were periodically adjusted to reflect changes in the purchasing power of the dollar, gradual rate deaveraging could occur without trauma. As time passes, it is likely that technical advance and fixed cost spreading will generate cost reductions. With downward pricing flexibility, AT&T would thus be able to deaverage its rates by lowering prices

selectively rather than by raising them selectively. Downward deaveraging, like downward pricing flexibility, leaves no one worse off relative to their current position.

A zone of reasonableness with no upward pricing flexibility would also discourage predatory pricing, the topic to which we now turn.

C. Downward Pricing Flexibility and the Question of Predation: When there is a nontrivial probability that natural monopoly elements are important, standards of fair competition assume special significance because of the possibility that firms may fail naturally as a result of effective competition rather than unnaturally as a result of unfair exclusionary behavior. ^{43/} Optimal standards of fair pricing should seek to balance the costs of two different types of errors--costs associated with reductions in competition resulting from a failure to discern predation when it is really occurring and costs associated with reductions in competition resulting from a finding of predation when it is not really occurring. The costs of Type I errors are the higher prices that result because competitors have been driven

^{43/} Gary Becker (1971, p. 95) notes that:

For at least the last 200 years, economists have been trying to understand why some industries are competitive and others monopolistic. And for almost an equally long period, two competing explanations have been offered: one stresses the technological conditions that make monopoly inevitable, the other stresses the incentives to collude and suppress competition.

from the market. The costs of Type II errors are the higher prices that result because competitive rivalry has been stifled. 44/

In modern economic analysis the success of a predatory strategy is posited to depend on the credibility of the predator's threat to rivals. Because predatory pricing does not, in general, pose a credible threat in strategic terms, most economists reject predatory pricing as a likely exclusionary strategy. 45/ It has been suggested that a predatory pricing threat may be more credible if the would-be predator operates from a protected monopoly position for that may provide a means for offsetting losses incurred from below-cost pricing. If a firm lacks such a protected position, it is logically precluded from using it to acquire or sustain other monopoly positions.

44/ In his exchange with Professors Areeda and Turner on predatory pricing policy, F.M. Scherer (1976, p. 874 and p. 902) supplies these illustrative warnings:

I can think of no surer way to encourage passive noncompetitive behavior on the part of firms with market power than to adopt a rule leaving open only those responses to new entry that are ineffective or self-defeating. A "deterrence challenged must yield" rule would undoubtedly engender repetitions (for different reasons, to be sure) of the Canadian cement industry experience, where passivity by the dominant firm in the face of new entry lead to a 55 percent capacity utilization rate during the late 1960's.

...67 years of sluggishness, as in the American steel industry would be an appalling price to pay for a policy that encouraged passivity by the dominant firm...The United States Steel Corporation was organized in 1901 but did not begin defending its position with noticeable vigor until 1968.

45/ See, for example, John S. McGee (1980), Roland Koller II (1971) and Richard Posner (1976).

In OPP Working Paper #8, Daniel Kelly (1982) suggests that telecommunications markets may exhibit characteristics that make predatory behavior profitable, but that divestiture solves most of these problems. The MFJ stripped AT&T of its protected position by vesting control of the Bell System's local exchange ("bottleneck") facilities with the new regional holding companies. In his recent decision sustaining the FCC's imposition of separate subsidiary requirements on the BOC's, 46/ Circuit Judge Richard Posner found that:

The basic source of AT&T's monopoly power was not the manufacture of telecommunications equipment or even the ownership of the nation's long-distance lines; it was the operating companies' control of access to the telecommunications network. The inheritors of the Bell monopoly are the operating companies rather than AT&T.

Kelly recommends that transitional deregulatory measures identify the potential for anticompetitive conduct and take steps to limit such behavior if the benefits exceed the costs. Given AT&T's desire to be freed from regulation, it would appear to lack incentive to engage in predatory behavior. Indeed, it has a strong interest in avoiding predatory behavior. This view is shared by William McGowan, Chairman of MCI. In a recent New York Times interview (12 Feb 84), he is quoted as saying that:

There's room for a lot of people in this business.
There's room for them. There's room for us. No one is coming in with the idea of losing money.

46/ See Illinois Bell Telephone Company et. al. v. FCC, Nos. 84-1145, 84-1382, 84-1475, slip opinion at 13 (7th Circuit, June 29, 1984).

The article reports that Mr. McGowan "isn't even afraid of AT&T" and "feels AT&T's aggressiveness will be limited, especially since the one way AT&T will become unregulated is by reducing its market share." As Mr. McGowan puts it:

Why would they lower prices to regain a monopoly when they are trying to get out from under regulation?

Note that deregulation providing for no upward pricing flexibility discourages predatory pricing by removing the prospect of a payoff to below-cost pricing. It would be economically irrational to suffer losses with no prospect of gains. ^{47/} The presence of regulatory constraints on discretionary price increases (price ceilings) mutes the question of how rapidly competitive pressure can be brought to bear in the unlikely event that unwarranted price increases are attempted in open markets.

AT&T currently possesses a large share of the interexchange market, but that market is one which, as a result of divestiture and removal of regulatory barriers to entry, may now be contested by many different firms. This implies that if AT&T were to attempt to lever its current position in the interexchange market into dominant positions in other markets, it would (more) quickly lose its dominance in the interexchange market. One might well question the wisdom and likelihood of a business strategy whose success is improbable in any event given the large number, size and economic stature of prospective prey and, moreover, whose execution leads, necessarily, to its failure. Cross-subsidization attempts by AT&T would constitute tremendous strategic business opportunities for its rivals. Saddling AT&T with below-

^{47/} This is the basis for Baumol's (1979) proposal that price reductions by a monopolist in the face of entry be made quasi-permanent.

cost business and attacking where it tries to make up the difference has been one of the factors accounting for AT&T's rivals' rapid growth to date. Cross-subsidization represents an economically irrational business tactic in open markets.

D. Standards for Downward Pricing Flexibility: In the law and economics literature, a marginal cost standard for fair pricing has achieved some currency. ^{48/} A marginal cost test does a reasonably good job of balancing the costs of possible decision errors described earlier. In addition, prices that cover relevant marginal costs will generally not exclude equally efficient rivals and they are incompatible with cross-subsidization attempts. No subsidy can occur as long as the price of a product exceeds the costs directly attributable to its production. To the contrary, when prices exceed marginal costs, a surplus is generated which can contribute to recovery of otherwise nonallocable costs.

In economic discussions of fair pricing, second-best considerations (in particular, problems of fixed cost recovery) are generally submerged to simplify analysis. In telecommunications, problems of fixed cost recovery loom large. Implementation of economically efficient pricing has proven politically infeasible in the short run and the long-term prospects for a full-blown system of flat fee access charges remain unclear. This implies that conventional fair pricing standards need to be adjusted to reflect the existence of a cost recovery constraint and be capable of drawing relevant

^{48/} See McGee (1980).

economic distinctions when confronted with pricing proposals that are necessarily more complex than regulators are used to seeing (or may wish to see).

Posner (1977) is highly critical of regulatory policy for its historical failure to draw economic distinctions which should be drawn. Among other things, he faults regulation's tendency to equate discrimination with a difference in rates and nondiscrimination with rate uniformity, as well as its failure to distinguish multipart pricing from price discrimination. He conjectures that part of the reason for regulatory suspicion of price differences is that they are often triggered by the threat or actuality of competition in a subset of relevant business segments. They "look like" a discriminatory response to competition, although they may be easily rationalized in terms of the economics of supply and demand. Other factors the same, an increase in supply relative to demand (associated with, say, new entry) implies a lower equilibrium price. In that circumstance it would be a mistake to characterize the incumbent's price reduction as predatory. In economic terms what may actually be happening is that the new firm's addition to supply is driving down the best price available to the incumbent. Rate differences which arise from the need to meet competition in contested market segments (or to anticipate it in potentially contested segments) are neither unreasonably discriminatory nor predatory. They are competitive.

Posner (1977, p. 261-262) remarks that:

Multipart pricing resembles but must be distinguished from price discrimination. Under price discrimination, price varies with willingness to pay. But the purpose of price discrimination is not to enable fixed costs to be recouped in a manner that permits marginal purchasers to be served; it is to maximize the excess of revenues over costs. Multipart pricing is designed to maximize output consistently with avoiding a deficit; price

discrimination is designed to maximize profits regardless of output consequences.

Multipart tariff proposals that result in increased contribution to overhead cost recovery improve the economic welfare of all consumers, not just those who take advantage of the price cuts. That suggests the wisdom of adopting an increased contribution standard for judging whether such tariffs serve the public interest.

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