

Price Cap Regulation Compared to Traditional Regulation

Although the public interest has been served well by traditional regulation there are several aspects of rate base regulation that have led some observers to question whether it is still appropriate for the telecommunications industry. Most of this criticism has focused one or more of the following issues: (1) the lack of strong incentives to minimize costs; (2) lack of productivity improvement; (3) costs of regulation; and (4) the trend towards increased competition, and the associated problems with mixing competition and regulation. Recognising this has lead the FCC to conclude:

... it is prudent to implement regulatory systems that are better able than rate of return to operate effectively in an environment marked by competition and technological change. [FCC, In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, Order on Reconsideration, CC Docket No. 87-313, FCC 89-91, p.19.]

Characteristics of the price caps system: the alternative form of regulation preferred by the FCC

A typical price cap regulatory system has four basic characteristics: First, the regulator establishes an acceptable set of prices, which can be thought of as the starting point, or initial price cap. With certain minor exceptions (where price floors are an issue), the regulated firm can sell its services at essentially any price below or equal to this cap. In some cases, the firm is allowed to retain whatever profits it earns while operating within this pricing constraint. Otherwise, any excess profits are shared with ratepayers. A price floor may also be set, in an effort to prevent anti-competitive pricing behavior. Second, in a multiproduct industry, the regulator may not establish a specific maximum price for each and every service. Rather, it may group related services and products into distinct categories, sometimes referred to as "baskets." An overall ceiling is established for the prices that can be charged in the aggregate for all of the services or service elements within each basket. This is typically accomplished by calculating a weighted average of the current or anticipated prices of the various items. The firm is typically allowed to change prices for the individual items (raising some and lowering others) as long as the aggregate index, or weighted average of prices, does not exceed the aggregate price cap index established by the regulator for that particular basket. Third, the regulator may allow the price cap to be adjusted over time by a predetermined adjustment factor external to the firm. Ideally, the cap is tied to an index of industry-wide input prices and industry-wide productivity. The idea is to have prices change over time in a manner that simulates the pattern in competitive markets, where the market-clearing price level will reflect the net effect of input cost inflation, which tends to push costs and prices upward, and technological improvements and productivity increases within the industry, which tend to push costs and prices downward. Fourth, rather than deal with breakdowns in the price cap system on a purely ad hoc or emergency basis, regulators typically provide for a periodic review of the system at set intervals. At such times, the effects of the price cap formula are reviewed by the regulator and the price cap changed or the system modified as needed. The review usually focuses upon the profit conditions of the firm, much like a traditional rate case, although attention

may focus on the achieved return on equity, rather than on the return on rate base. In many instances, as in the FCC version, the review process includes a provision for revenue sharing. Performance standards and quality may also be monitored.

The main goal of a price cap system as an alternative form of regulation

The main goal of a price cap formula is to eliminate, or at least weaken, the linkage between cost and rates, without greatly deviating from the desirable results which would normally be anticipated under traditional regulation or, for that matter, under effective competition (since traditional regulation is designed to simulate the results of competition). Once the price cap is in place, it is fixed for a specified period, usually a year. In turn, the firm is expected to produce with the cost-minimizing input mix, invest in cost-effective innovation, and adjust optimally to changes in input cost conditions. The reason for this behavior is rooted in economic incentive. Since the firm is allowed to retain as profit (or, at least, a portion of the profit) any cost reductions achieved relative to the price cap, it will choose (in theory) to produce efficiently.

With an appropriate price cap formula, prices are controlled by the price cap formula; in turn, this reflects the normal variations in the prices of inputs used by the firm, offset by the expected productivity improvements encompassed by the formula. This contrasts with traditional regulation, where prices remain constant between rate cases, and are varied within the context of a rate case based upon whatever changes have occurred in costs and productivity since the prior proceeding.

With a price cap system, prices are regulated by focusing on the changes in the overall level of costs that the firm faces (inflation of input costs), and subtracting the impact of productivity or expected productivity growth as it impacts the industry generally.

Although the price cap should logically rise if the prices of a firm's inputs rise, the price cap is not linked directly to changes in the specific cost of service of the firm in question. Thus, Company-specific cost changes do not necessarily lead to price changes, and management is not given mixed incentives.

Whenever management reduces costs, the benefits will immediately and directly flow to stockholders (since revenues and the price cap remain unchanged). The same can be said about traditional regulation between rate cases; however, when a rate case does occur, incentives are diluted, because these cost savings will be redirected to the benefit of ratepayers. Thus, one can argue that a price cap system provides stronger, more lasting incentives for management to cut costs and increase efficiency, at least in comparison with a scenario in which there are frequent rate cases, or the ever-present threat of a regulatory proceeding to roll back rates due to excess profits.

How a price cap formula differs from traditional cost-of-service regulation

When a price cap system is initially instituted, it closely resembles traditional regulation, since the price cap will most likely be based upon the existing tariffs, or some traditional measure of a reasonable set of prices. Over time, however, the two systems can diverge somewhat. The price cap approach allows the firm to vary its overall price level in accordance with industry-wide factors, while traditional regulation allows it to vary its price level in accordance with Company-specific data (in a rate case).

For instance, by subtracting the effect of productivity growth or expected productivity growth in the telecommunications industry (i.e., by use of an offset), an incentive

mechanism is included which requires the telecommunications firm to at least keep up with overall productivity in the industry, in order to maintain its profitability. If it fails to keep pace with the industry, the price cap will gradually be lowered, and profits will decline.

The general formula can be written as,

$$\text{Rate}_{\text{new}} = \text{Rate}_{\text{old}} \times [1 + (\text{Percent Change in INPUTCOST} - \text{Percent Change in TFPTEL})],$$

where INPUTCOST = the cost of inputs used by telecommunications firms such as BA-MD, and TFPTEL = the total factor productivity of the U.S. telecommunications industry.

By including a factor for inflation, the firm will be allowed to gradually increase its prices, consistent with the general pattern of increasing input prices. However, if the firm experiences an increase in costs which is less than the norm reflected in the formula, it pockets the difference. Whether this increase in profits is an advantage or disadvantage of the price cap system depends upon your perspective, as well as the reasons underlying the discrepancy between the firm's costs and the inflation index.

The firm's costs may increase by less than the inflation rate included in the formula, simply because the formula relies upon a nationwide data source, but local wages and costs happen to increase by less than the national average. If so, the net effect could be viewed as a windfall to the stockholders, to the detriment of ratepayers. No price cap formula is perfect, and there will undoubtedly be situations in which the formula fails to accurately reflect the actual conditions facing the firm. When this happens, the result can be excess or deficient profits for reasons unrelated to management's efforts. On the other hand, the firm's costs may increase by less than average, because management responds to the plan by making a greater than average effort to squeeze out fat, and trim costs to the bone. In that case, the increase in profits may be viewed less as a windfall, and more as the reward for unusual managerial effort.

In this regard, in a competitive market, while the immediate benefit of cost savings flows to stockholders, eventually these benefits are shared with customers. The interaction of supply and demand, and the pressures of competition, tend to push market prices down to the level of costs incurred by a well managed, efficient firm.

The importance of timely reviews of the price cap

A periodic review provides one of the best means of ensuring that consumers benefit from whatever efficiency improvements are induced by the price cap plan.

Even if there is no formal profit sharing mechanism, the regulator can periodically monitor the situation, and if necessary lower the price cap or modify the formula, to ensure that some of the reduced costs are passed on to customers. Another element in such a review can be an audit of the firm's service quality, and the subsequent imposition of sanctions if acceptable standards of quality have not been met. Such a review process also is beneficial to the firm and its shareholders. When the firm is experiencing profit losses because of forces beyond management control, a timely review can provide it with the opportunity to argue for higher allowable prices, in the form of an increase in the price cap, or revision to the price cap formula.

Negatives associated with this necessary review process

The presence of the review process introduces the possibility of strategic behavior by the firm, which could dilute the desired incentives, and reduce the potential cost reductions. For this reason, the review process should be carefully developed. The review ideally focuses on monitoring profits and the factors which explain changes in those profits, with any change in the price cap held at bay as long as possible. This kind of profits evaluation should minimize strategic behavior, since there is a significant risk of such behavior being detected. Of course, if the price cap has been optimally designed, with an appropriate inflation, productivity, and other elements, such periodic profit reviews would be routine, with few surprises and no need to take any further regulatory action.

The price-cap mechanism used in the interstate regulation of Bell Atlantic and certain other local exchange companies (LECs)

Since January 1, 1991, a version of price-capping has been part of the mechanism used by the Federal Communications Commission (FCC) in regulating the LECs owned by the Bell Operating Companies and GTE; others may participate at their option. Since the Company is already subjected to this system of regulation, it is worthwhile to discuss it at least briefly.

Covered services are grouped in the following four baskets: non-traffic-sensitive access or carrier common line (CCL), switched traffic-sensitive access, trunking (special access), and interstate intraLATA toll. Price caps provide a ceiling on the aggregate pricing within each basket. The price caps themselves are adjusted annually to compensate for the rate of inflation, a productivity offset, and exogenous costs (except for the CCL basket adjustment, which is a special case). The productivity offset was set at 3.3 percent, except that LECs could opt to accept a higher, 4.3 percent, offset in exchange for a higher level of retained excess earnings.

Sharing of excess profits in the FCC plan

Earnings sharing is an integral part of the plan and interacts with the higher productivity offset option to create added incentives for LECs to lower their rates and increase their efficiency. According to the FCC:

If a LEC selects the 3.3 percent productivity offset and outperforms it, the LEC will be entitled to retain all of its earnings up to 100 basis points (or 1 percent) above the unitary rate of return established for rate of return carriers. A carrier using the 3.3 percent productivity offset to establish prices must share with its customers 50 percent of its earnings between 100 and 500 basis points (1 to 5 percent) above the unitary rate of return, and 100 percent of earnings in excess of 500 basis points above the unitary rate of return. Based on the 11.25 percent unitary rate of return currently in effect, this mechanism allows a carrier that dramatically exceeds the productivity requirements of the price cap formula to reach an effective equivalent of up to 14.25 percent rate of return. [FCC, In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, Order on Reconsideration, CC Docket No. 87-313, FCC 91-115, p. 5]

By optionally selecting a higher 4.3 percent productivity offset and simultaneously lowering its rates a further 1 percent, a LEC was allowed to retain all earnings up to 200 basis points above the unitary rate of return and half its earnings in the band between 200 and 600 basis points above the unitary ROR--thereby earning as much as a 15.25 percent return. The FCC notes as follows:

Thus, under the sharing mechanism, carriers that are able to produce significantly greater than anticipated gains in productivity, as evidenced by earnings well above those expected in a rate of return environment, are required to share the benefits of their performance with ratepayers in the form of rate decreases. [Id., pp. 5-6.]

The four "baskets" of services are each subject to its own price cap. The LEC does not have total pricing flexibility within each basket

As the FCC puts it,

To further protect ratepayers from substantial price changes, our price cap rules identify service categories within the baskets, and limit the annual price movements in these categories to plus or minus 5 percent per year, adjusted for changes in the cap. The traffic sensitive basket is subdivided into three service categories: local switching, local transport, and information. The special access basket contains four categories: (1) voice grade, WATS, metallic, and telegraph; (2) audio and video; (3) high capacity and Digital Data Service; and (4) wideband data and wideband analog. Our price cap rules also create separate subindices for two offerings within the high capacity and Digital Data Service category, one for DS1 and one for DS3 services. These separate subindices limit price movements of DS1 and DS3 services to plus or minus 5 percent per year, adjusted for changes in the price cap. [Id. pp. 6-7.]

It is thus clear that the FCC plan circumscribes price movements rather closely and does not allow large price cuts in one service to be offset by large price increases in one or more other services, even within the same basket. Furthermore, the baskets themselves have been fairly narrowly defined. Access service, for instance, includes three major baskets, and numerous subcategories within these baskets.

Successes of the FCC plan

The FCC plan is quite complex in its application, and some carriers have fared better than others. To date, the reviews have been mixed. The overall impact has been to push FCC regulated rates down, in keeping with the overall pattern of increasing traffic volumes, improved technology, and other factors which are tending to push down costs and rates in this type of industry. The reduction in LEC prices has not been as dramatic as recent experience in the computer and consumer electronics industries, but the price cap system has nevertheless resulted in significant price reductions.

According to a recent article on the subject, during the first three years of the plan, LEC access rates declined by \$2.9 billion and LEC access pricing dropped an aggregate \$564 million below the index. At the same time, LEC returns on equity remained above the

cost of equity, averaging 12.25 percent in 1992 and 12.93 percent in 1993. [William A. Blase and Robert G. Harris, "Price Cap Reform for Local Telephone Access," Public Utilities Fortnightly, December 1, 1994, p. 43.] Except for the effect of certain non-recurring items, LEC earnings during 1994 and 1995 have been even higher, with some firms' earnings approaching or exceeding 20% on equity. Thus, ratepayers benefited from lower prices, while the LECs continued to enjoy ample profits.

Recently, the FCC revisited its price cap system, and made a number of revisions. Most significantly, the FCC concluded that its price cap scheme used X-factors (offsets below overall inflation) that were too low. Upon reconsideration, the FCC set the minimum X-factor at 4.0%. Higher X-factors of 4.7% and 5.3% can be chosen by the LEC, if they want to limit, or eliminate, the extent to which excess profits are shared with customers. Interestingly, most of the Regional Bell Operating Companies have selected the highest offset factor, 5.3%. While this allows them to avoid profit sharing, this benefit is only significant if the carrier believes it can achieve greater productivity growth than 5.3%, and thus can expect to earn excess profits that it would like to keep (rather than share with customers). Accordingly, the fact that so many of the RBOCs have selected the highest X-factor is quite significant--suggesting that they each believe they can exceed the 5.3% target during the near term future.