- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

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| In the Matter of the Application of QWEST CORPORATION for a Change in the Productivity Factor for Price Cap Regulation, R746-352 | )<br>)<br>)<br>) | DOCKET NO. 01-049-78<br><br>REPORT AND ORDER |

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ISSUED: December 31, 2001

## SYNOPSIS

The Commission retains a prescribed method to calculate the X factor used in the annual price index, and sets the value of the factor at 4.955 percent for 2002 index calculations.

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By the Commission:

## PROCEDURAL HISTORY

Pursuant to Utah Administrative Code R746-352-4.B.2, Qwest Corporation (Qwest or Company) on October 5, 2001, filed its Application for Change of Productivity Factor seeking to reduce the value of this factor (called the "X factor") to 2.0 percent from the 6.2 percent in effect since June 15, 2001, when the price cap regulation rule, R746-352, was adopted. The direct testimony of William E. Taylor, Ph.D., was filed with the Application.

Following a pre-hearing and scheduling conference held October 23, 2001, the Commission issued its Procedural Order on October 25, 2001. The direct testimony of Lee L. Selwyn, Ph.D., and of Ingo Henningsen, were filed on November 14, 2001, on behalf of the Division of Public Utilities (Division). Qwest filed the rebuttal testimony of Dr. Taylor and of

Philip E. Grate on November 21, 2001. Hearings in this matter were held November 28, 2001. Gregory B. Monson represented Qwest and Kent Walgren appeared on behalf of the Division.

## DISCUSSION, FINDINGS, AND CONCLUSIONS

Pursuant to Utah Code Ann. 54-8b-2.4(5)(a), the Commission has adopted price cap regulation as the means by which the prices of Qwest's tariffed services are adjusted. This form of regulation employs price indices which may be revised periodically to reflect the effects of inflation, productivity, and exogenous factors. Rule R746-352-4-B states:

The Productivity Factor, X, shall measure the amount by which the change in local exchange carrier, or LEC, productivity differs from the change in productivity for the United States economy as a whole plus the amount by which the change in input prices for the United States economy as a whole differs from the change in LEC input prices.

Subpart 1 describes the productivity factor formula:

The value for X shall equal the sum of two values. The first value shall equal the difference between a minuend representing the percent change in historical total factor productivity of local exchange carriers less a subtrahend representing the percent change in historical total factor productivity of the entire United States economy. The second value shall equal the difference between a minuend representing the percent change in the historical input prices of goods and services used to produce the output of the entire United States economy less a subtrahend representing the percent change in the historical input prices of goods and services used to produce output of local exchange carriers.

Subpart 2 sets the value of the X factor at 6.2 percent for the first year in which the price index is in effect. Subpart 2.a. permits the Commission to consider the recommendation of any party to alter the method by which the X factor is calculated.

In its Application, Qwest argues in favor of a method other than that contained in the Rule, but does not advocate the alternative in this Docket. Qwest recommends an X-factor value of 2.0 percent, based on its view that historical total factor productivity differential is about 2.0 percent and that the input price differential is zero. The Division contests this historical view, contends that the input price differential is positive, and opposes lowering the X-factor value.

In testimony, Qwest supports its recommended 2.0 percent X-factor value in several ways. The development of and rationale for an alternative estimation method, the "indirect" method, in which the X factor is defined as "the annual change in a national index of output prices less the annual change in the output price of the telecommunications industry," is chief among these. In support of its recommendation, Qwest cites a 2.6 percent average value of X factors in states where price indices exist, and references both a 1930 - 2000 experience of 2.0 percent and the result of an historical productivity study of 2.0 - 4.0 percent as further support for the reasonableness of its estimate. In Qwest's view, continued reliance on the Rule's "direct" method will be problematical because required data series are difficult to maintain and the Federal Communications Commission has discontinued its total factor productivity studies. With regard to the Division's application of the Rule's direct method, Qwest asserts that incorrect measures of two critical inputs have been employed, unreasonably boosting the X-factor value. If corrected, Qwest asserts, the direct method would give a result in line with its recommendation, but the Company does not present a calculation of the X factor using this method..

As we discuss further below, the Division disputes Qwest's treatment of the two direct-method inputs, disputes Qwest's historical analyses, and argues for retention of the current 6.2 percent X-factor value. The Division testifies that the Company's operating results, in the form of continuing over earnings in this jurisdiction since rate-base, rate-of-return regulation ended in 1997, corroborate its X-factor study results. The Division argues that the direct method is preferred, and, contrary to Qwest's assertion, can be maintained for periodic application, as required by the Rule. Though Qwest's indirect method may be easier to apply, the Division testifies the method is fatally flawed.

As Qwest does not advocate adoption of its alternative method in this Docket, the Rule's direct method is in effect and is the basis for calculation of the X factor. We are, however, able to reach certain tentative conclusions about the indirect method on the basis of the present record, and since we believe Qwest may advocate this method in a future docket, we state them below.

Qwest's preferred method of determining the X factor is not equivalent to the method specified in Rule R746-352. Moreover, the mathematical derivation it offers to show that the total factor productivity method is equivalent to its long-run average price change trend method relies on the assumption that, for the industry as a whole, economic profits must be zero. This assumption is not met in practice. Furthermore, record evidence shows that this assumption is not met for Qwest in particular. Given this, the method cannot produce an X factor that captures industry level productivity, and thus does not meet the requirement of our Rule.

Moreover, the indirect method implicitly assumes that the way that local exchange carriers decide to allocate resources plus the level of risk that investors associate with the industry have not changed significantly during the study period, which begins in 1929. For all but recent years during this period, the rate-base, rate-of-return form of regulation has been in place. Under this form of regulation, the allowed rate of return can be assumed to approximate zero economic profit. The record seems to indicate that with the recent change in the form of regulation, the assumption no longer holds. Therefore, the method may be inappropriate.

We turn now to points of dispute in the application of the direct method. The first dispute is how to measure industry output. The Division advocates dial equipment minutes (DEMs); Qwest, the number of access lines. Testimony suggests that neither is ideal for the purpose. Thus, the Division cites approvingly a source Qwest relies upon to make the point that the best output measure would be a weighted average of the number of calls, revenues, DEMs, and access lines. The record contains no information on the number of calls, and only Qwest-specific rather than industry revenues, so a weighted average cannot be constructed. We therefore must deal with admittedly unsatisfactory measures.

The Division testifies that the use of DEMs produces an estimate of the total factor productivity differential of 4.79 percent. Qwest's several approaches using access line count yields a range for this value of 2.1 to 3.4 percent. These estimates are not directly comparable because Qwest does not calculate an estimate using line counts in the direct method. Based on the record, we can substitute access line count for DEMs into the Division's direct method and thereby arrive at an estimate of total factor productivity. Doing so produces 2.3 percent. In the absence of the ideal weighted average measure of industry output, we determine to average the DEMS and the access line measures, or the average of 4.79 percent and 2.3 percent. Doing this yields a total factor productivity measure of 3.545 percent. Given the record, we determine this to be a reasonable estimate and one that is acceptable to us for the 2002 price index.

The second dispute is the proper measure of capital cost. The measure Qwest proposes derives from Value Line's Index of 875 Industrials; the Division proposes Moody's Baa bond series. We observe that the model does not use a capital cost value as such, only the change in this value from a representative year. Though we agree with Qwest that the investor's opportunity cost reflects investment options in both debt and equity instruments, we find good reason to reject the specific measure it proposes, namely, the Value Line Industrials Index. This Index includes companies of substantially greater risk and earnings volatility than incumbent local exchange carriers, and it does not include public utilities. As a Commission, we rejected cost of capital estimates which likened public utilities to industrials even as late as the last general rate case for this utility. Further, we note that ILEC stock may not trade and there is no specific surrogate for them. On balance, therefore, we will allow the use of the Moody's Baa measure in the calculation of the productivity factor for the present Docket.

The third dispute concerns measurement of input price differentials. The Division computes an input price differential of 1.41 percent. Qwest asserts that the proper differential is zero. Qwest conducts a number of statistical tests to determine whether the null hypothesis that the actual estimate is zero can be rejected. It finds that, at a 5 percent significance level, the null hypothesis cannot be rejected for certain time periods. Qwest presents actual estimates, however, of 2.3 percent for the period 1985 to 1992, 1.46 percent for 1984 through 1993, and 1.32 percent for 1985 through 1998. Nevertheless, the Qwest recommendation is zero. Thus, the record shows support for five estimates of the input price differential, zero, 1.32, 1.41, 1.46, and 2.3 percent. The positive input price differentials that Qwest presents in the course of its statistical analysis and the 1.41 percent that the Division directly provides are the best linear, unbiased estimates the record contains. Therefore, we find unconvincing Qwest's assertion that the positive estimates are not statistically different from zero. Qwest provides these estimates as but an aspect of its argument for a recommended zero input price differential, rather than advocating their use here. On the other hand, the Division's 1.41 percent has ample support in the record. We find that 1.41 percent is a current and reasonable estimate of the input price differential, and conclude that this figure should be used to calculate the 2002 X factor.

## ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED that:

1. The Total Factor Productivity component of the 2002 price index shall be 3.545 percent.

2. The Input Price Differential component for the 2002 price index shall be 1.41 percent.

3. The X factor shall be 4.955 percent.

4. Pursuant to Utah Code Ann. § 63-46b-13, an aggrieved party may file, within 20 days after the date of this Order, a written request for rehearing or reconsideration by the Commission. Pursuant to Utah Code Ann. § 54-7-15, failure to file such a request precludes judicial review of the Order. If the Commission fails to issue an order within 20 days after the filing of such a request, the request shall be deemed denied. Judicial review of this Order may be sought pursuant to the Utah Administrative Procedures Act (Utah Code Ann. §§ 63-46b-1 *et seq.*)

DATED at Salt Lake City, Utah this 31st day of December, 2001.

/s/ Stephen F. Mecham, Chairman

/s/ Constance B. White, Commissioner

/s/ Richard M. Campbell, Commissioner

Attest:

/s/ Julie Orchard
Commission Secretary

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