

## CHAPTER 5

### RATE ADJUSTMENT MECHANISM

#### 5.1 INTRODUCTION

This chapter describes the annual rate adjustment mechanism underlying the price cap plan. After a brief overview of price cap regulation, the formula and components to be used to adjust prices annually, including the IPI and the productivity factor, are discussed in this chapter. The Z factor adjustment used to adjust rates to reflect approved transition and extraordinary event costs as well as MBRR deferral account dispositions are also described. Further, the rate adjustment process is discussed as well as the Board's approach to sharing earnings in excess of the Board-specified rate of return on common equity (ROE).

#### 5.2 OVERVIEW

The price cap approach replicates the dynamics of competitive markets. In a competitive market, the price of a product reflects the cost of production, the influence of changes in the price of factors of production, and productivity gains. The individual firm takes the price as given and attempts to maximize profits by controlling costs through productivity improvements.

The price cap mechanism operates as a ceiling for distribution service prices which will be adjusted over time for changes in the unit costs of providing these services. The change in unit costs can be divided into the change in the prices of inputs used in the distribution of electricity, less the change in the utility's productivity (i.e., the efficiency of combining inputs into outputs).

The formula for the price adjustment mechanism is:

$$\% \Delta P_j^t = \% \Delta IPI_{LDC}^t - \% \Delta PF + \% \Delta Z_j^t$$

[5-1]

where:

- $\% \Delta P_j^t$  = the percentage change in the  $j^{\text{th}}$ 's utility's price ceiling in year  $t$ ;
- $\% \Delta \text{IPI}_{\text{LDC}}^t$  = the percentage change in Ontario utilities' input prices from year  $t-1$  to year  $t$ ;
- $\% \Delta \text{PF}$  = the productivity factor or index expressed as a constant percent change each year; and
- $\% \Delta Z_j^t$  = the extraordinary event adjustment factor expressed as a percent change from prices in year  $t-1$  to prices in year  $t$  for the  $j^{\text{th}}$  utility. See section 5.4.

Within the term of the first generation PBR plan, in each February starting in 2001 the Board will publish the IPI adjustment for all electricity distribution utilities to apply to their annual PBR rate adjustment (e.g. for year 2 and year 3 of the first PBR plan). The combination of the change in the IPI published annually by the Board (which is applicable to all utilities), and the fixed productivity factor specified by the Board for first-generation PBR, determines the new price ceiling in the absence of any extraordinary costs. These components are discussed below.

### 5.3 THE IPI<sup>1</sup>

The purpose of the IPI adjustment is to allow each utility to pass through changes in the prices of the inputs it purchases, at the rate determined by the *typical* utility's experience with input prices during the previous year. An utility whose own input prices rose less than the input prices of the typical utility would increase its earnings if it chose to adjust its own price cap by the full amount allowed by the Board. On the other hand, an utility whose own input prices rose more than those of the typical utility would experience a reduction in earnings due to the allowed adjustment.

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<sup>1</sup> Board Staff report, "Productivity and Price Performance for Electric Distributors in Ontario," *OEB*, July 6, 1999, contains relevant technical background.

This IPI<sup>2</sup> is specific to the electricity distribution utilities in Ontario. The index comprehensively measures changes in the prices of inputs employed by the utilities including capital, labour and materials. The IPI is the index formed by the addition of sub-indices of input prices weighted by the cost share of each input.

Due to concerns about the year-to-year changes in the price of capital component of the IPI, the price of capital component will be limited to one half of the observed change to help utilities in the transition to price-cap regulation. This will be reflected in the calculation of the IPI, which is described in detail in Chapter 6.

#### **5.4 THE PRODUCTIVITY FACTOR AND EARNINGS SHARING**

The productivity factor accounts for the downward influence on the price of an electricity distribution utility's product from gains in efficiency. That is, the productivity factor measures the potential for improvements in the physical relationship between outputs and inputs inherent in the production process of each utility. A utility whose actual productivity change exceeds the specified benchmark productivity factor could increase its earnings beyond the Board specified ROE ceiling. On the other hand, a utility whose actual productivity change falls below its benchmark productivity factor could experience a reduction in earnings. The resulting ROE could be below the target, market-based ROE, established in Chapter 3.

Due to biases in measuring productivity change based on any one input (e.g., labour) or even a subset of inputs (e.g., labour and materials), a measure of the utilities' productivity has been adopted that is based on a comprehensive assessment of the distributors' inputs. This measure is total factor productivity ("TFP") and is designed to reflect the change in output that cannot be accounted for after taking account of changes in use across all inputs. Thus, while changes in TFP may be due to a number of factors, the intended purpose is to establish broad TFP benchmarks that reflect the experience of Ontario utilities.

TFP has been used extensively in the application of PBR in many regulated industries,

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<sup>2</sup>Differences between the IPI and the CPI are discussed in detail in the staff technical report, as well as the Board's Decision on RP-1999-0034. Research documented in the staff technical report notes that the input prices (excluding line losses) for Ontario utilities' rose approximately 1 per cent per year below the Consumer Price Index ("CPI") over the period 1988-1997. Some variation across the utilities was evident with a few experiencing input price changes about 1 per cent above and below the mean but most were relatively tightly clustered around the mean. Significantly, appreciable differences in the IPI by size of utility were not found.

including electricity. The PF and IPI are based on empirical data analysis of Ontario electricity distribution utilities. The results of these efforts to measure TFP for Ontario utilities are reported in the staff technical report on productivity<sup>3</sup>. The report showed that the average annual change in TFP across Ontario utilities was 0.86 per cent with a median of 1.14 per cent over 1988 to 1997. For the most recent five year period (1993 to 1997), the average annual change in TFP was 2.05 per cent, with the median of 1.97 per cent.

In order to preserve simplicity and to help ease utilities into the PBR framework, the Board has specified a single productivity factor ("PF") of 1.50 per cent that all utilities must realize within their price-cap for the first generation PBR term. This means that, on average, customers of utilities would experience a decline of 1.50 per cent in their rates relative to the electricity distribution utilities' industry costs. Beyond that, the utility then has the opportunity for higher ROE above the target MBRR. Associated with the 1.50 percent PF is a specified target on a utility's ROE which has been set at 9.88 per cent for 2000. This ROE target will be updated annually using the Board's established methodology for determining ROE and will be set in time for the rate adjustments using the price cap for March 1, 2001 and March 1, 2002. Utilities whose actual productivity change falls below the target of 1.50 per cent would experience ROE below the target ROE (i.e., the MBRR).

If the utility's realized productivity change is sufficiently high enough to generate ROE in excess of the Board specified target (i.e., 9.88 per cent), it would retain all earnings below the 9.88 per cent target, and share any after tax excess earnings with customers on a 50/50 basis. Any excess earnings to be shared with customers will first be used to reduce any outstanding transition or extraordinary event costs and approved disposition of deferral account balances. If there is still an excess earnings amount remaining to the account of the customer, it will be returned to customers in the form of a credit or rebate. Thus, each utility has an incentive to find incremental efficiencies above the target.

## **5.5 THE Z FACTOR**

A Z factor has been incorporated into the PBR rate mechanism to address extraordinary events, transition costs and deferred revenue requirement necessary to move towards or to a MBRR.

### **5.5.1 Transition and Extraordinary Event Costs**

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<sup>3</sup> Board staff report, "Productivity and Price Performance for Electric Distributors in Ontario," OEB, July 6, 1999.

In order for transition or extraordinary event costs to be included in the Z factor, the costs must satisfy all four tests set out below:

- Causation – the expense must be clearly outside of the base upon which rates were derived.
- Materiality – the cost must have a significant influence on the operation of the electricity distribution utility, otherwise they should be expensed in the normal course and addressed through organizational productivity improvements.
- Inability of Management to Control – to qualify for Z factor treatment, the cost must be attributable to some event outside of management's ability to control.
- Prudence – the expense must have been prudently incurred. This means that the option selected must represent the most cost-effective option (not necessarily least initial cost) for ratepayers.

Transition cost related to corporate reorganization and to the transfer by-law whereby the municipal corporation acquires the assets of the municipal electricity distribution utility will not be recovered through rates.

In the following section, the eligibility of costs (extraordinary and transition) is first addressed. In order to track both cost and revenue associated with qualifying costs, accounts 1570, "Qualifying Transition Costs", and 1572, "Extraordinary Event Costs", are provided in the APH. These "balancing accounts" are discussed below. A sample calculation of the specific amount to be recovered in a specific year is shown in Chapter 6.

#### *5.5.1.1 Eligibility Criteria*

The above four criteria will be applied to determine the eligibility of costs for Z factor recovery. When an electricity distribution utility indicates it wishes to apply for Z factor recovery, it must submit evidence that the costs/revenues which were incurred/received meet the four standards outlined below in its annual application.

*Causation*

Transition costs should be directly related to operational requirements created by industry restructuring. A significant portion of the expenditure should be demonstrably linked to addressing new operational requirements, as opposed to upgrading current procedures and systems to gain efficiencies under the guise of addressing transition costs. To qualify as a transition cost, 75% of the costs should be directly and demonstrably linked to restructuring requirements.

For extraordinary event related costs, the revenue or expense must be clearly outside of the base upon which rates were derived.

*Materiality*

Z factor treatment is reserved for costs which have a significant influence on the operation of the utility. As a guideline, an expense will be considered material if it involves 0.25 per cent of a utility's net assets (i.e., .0025 x net assets). Therefore, materiality will differ depending on the size of the utility.

*Inability of Management to Control*

In some circumstances, an activity is not within management's control (e.g. a requirement to conform to a change in regulation or a tax change). Options are sometimes available for management to address a problem, each with various tradeoffs between cost and effectiveness. The utility will be required to supply the details of management's plans for addressing extraordinary event and transition costs in support of the utility's request for special cost recovery. The Board may limit the recovery of certain costs associated with activities.

For transition costs, management has a fair amount of discretion to determine its response to meeting the new operational environment facing distribution utilities. Utility management should actively consider the actions being proposed by other utilities and the associated costs in determining its plans to address industry restructuring requirements.

*Prudence*

In supporting the prudence of the expense, the utility will need to justify the reasonableness of the cost relative to other options that the utility may have had. For example, if the utility must replace their billing system to deal with billing requirements for the new market, the cost incurred must be justified relative to other options that the utility may have, such as outsourcing, purchase of a new system, or revision of the

existing system.

#### *5.5.1.2 Board Authority to Review*

The Board reserves the right to review and adjust the amounts claimed under Z factor or transition cost treatment at any time during the term of the PBR plan.

#### *5.5.1.3 Balancing Account*

Those costs that pass the four-part test outlined above should be included in accounts 1570, "Qualifying Transition Costs", and/or 1572, "Extraordinary Event Costs" of the Board's Uniform System of Accounts ("USoA") contained in the APH. In support of a rate adjustment, the utility must indicate the amounts booked to these accounts in the previous year and provide evidence that these amounts satisfy the four criteria listed above. Utilities must also propose a disposition amount for these accounts. The utility must also provide the basis upon which the disposition amount should be allocated to each rate class, including a discussion of the merits of alternative allocations considered. The disposition amounts allocated to each rate class from the deferral account should then be tallied, and a rate class specific Z factor revenue requirement adjustment determined. The application for deferral account disposition shall be filed at least three months prior to the deadline for the annual rate adjustment filing with the Board (December 1, 2000 for the 2001 rate adjustment). The resulting revenue should be credited to accounts 1570 and/or 1572 as applicable.

#### *5.5.1.4 Disposition Account*

The size of the prospective rate adjustment will not be subject to a predefined limit. The absence of a predefined disposition limit will give individual utilities the flexibility to set the rate rider with due consideration to other rate-related customer impacts.

The Board may either adjust the class-specific rate adjustments directly based on the information provided, or may seek additional information from the utility and/or may request a review and report from the Board's Energy Returns Officer on cost eligibility and the derivation of the rate rider.

### **5.5.2 Deferred MBRR**

In moving to a market based rate of return a utility must undertake an analysis of the rate

impact. The APH allows a utility to establish a Deferred Rate Impact Account (account 1574) should a utility find it necessary to mitigate MBRR rate impacts. A Z factor mechanism can be used to recover in future years amounts deferred and booked into the account. If the utility opts to use account 1574 and a Z factor to spread the impact to subsequent years of the plan, the deferred revenue requirement will be assigned to rate classes on the same basis as the MBRR, as outlined in the section on establishing initial rates (Chapters 3 and 4). The Board requires that the utility file information on the deferred revenue balance and the proposed allocation to rate classes at least three months prior to the annual rate adjustment.

### 5.6 AMALGAMATION AND RATE HARMONIZATION

When utilities amalgamate they are required to submit an application to the Board for approval (Mergers, Acquisitions, Amalgamation and Divestitures Guidelines). Upon approval of the amalgamation the new utility must file a rate harmonization plan. The process to harmonize overall rates between or among distribution utilities following amalgamation should reduce the differences in rates by lowering those that are higher and raising those that are lower. However, any harmonization plan must be limited to  $\pm 5\%$  per year rate change. Table 5-1 illustrates the calculation for two amalgamating utilities of equal size over a three-year process. Note that in year three, the full 5% adjustment is not necessary.

| <b>Table 5-1</b>   |           |           |
|--|-----------|-----------|
| <b>Illustration Of Pricing Flexibility For Amalgamations</b> |           |           |
|  | Utility A | Utility B |
| Initial Rate   | \$30.00   | \$40.00   |
| Year 1   | \$31.50   | \$38.10   |
| Year 2   | \$33.08   | \$36.28   |
| Year 3   | \$34.64   | \$34.64   |

Some amalgamating distribution utilities may experience unique circumstances that require greater flexibility in harmonization than is provided here. Utilities finding themselves in these circumstances may apply to the Board in their annual filing for greater



flexibility. Such applications should clearly state the rationale and impact of the requested flexibility.