K8.1

EB-2006-0606

UNION GAS LIMITED
COMPENDIUM OF EVIDENCE AND AUTHORITIES FOR ARGUMENT

14 ADJUSTMENTS TO BASE YEAR REVENUE REQUIREMENTS AND/OR RATES

14.1 ARE THERE ADJUSTMENTS THAT SHOULD BE MADE TO BASE YEAR REVENUE REQUIREMENTS AND/OR RATES?

(No Settlement on the risk management component of this issue or the amount of taxes payable by Union as a result of tax changes resulting from changes to federal and/or provincial legislation and/or regulations thereunder; Complete Settlement on all other aspects of the issue.)

All parties agree that only the following additional adjustments (other than those adjustments otherwise set out in this Agreement) should be made to reduce the 2008 base revenue requirement and/or 2008 rates prior to the application of the price cap index:

1. Increase to S&T revenues/margin	$4.3 million*
2. Deferred tax drawdown	$1.9 million
3. Reduction to regulatory cost budget	$1.0 million
4. Phase II GDAR costs that will not be incurred	$1.6 million **

* This adjustment has been made to reflect the elimination of certain S&T revenue deferral accounts, described in 5.1 above. The parties agree that 100% of this amount will be allocated to in-franchise customers, as described in Exhibit D/T1, p. 7 of Union's evidence.

** This adjustment to base rates is being made as a result of the Board's decision to amend the GDAR to treat bill ready distributor-consolidated billing in the same manner as split billing and gas vendor-consolidated billing as described in the Board's December 11, 2007 letter, attached as Appendix D. Union notes that these costs were incorporated into the 2008 interim

3. L/T2.

2 INFLATION FACTOR

2.1 WHAT TYPE OF INDEX SHOULD BE USED AS THE INFLATION FACTOR (INDUSTRY SPECIFIC INDEX OR MACROECONOMIC INDEX)?

2.1.1 Which macroeconomic or industry specific index should be used?

(Complete Settlement)

The parties agree that the inflation factor to be used in Union's price cap index is the actual year over year change in the annualized average of 4 quarters (using Q2 to Q2) of Statistics Canada's Gross Domestic Product Implicit Price Index Final Domestic Demand (GDP IPI FDD). For 2008, the inflation factor calculated in this manner is 2.04%. The inflation factor will be adjusted annually on this basis, as set forth under Issue 12.1 below, with no true ups.

The following parties agree with the settlement of this issue: APPrO, BOMA, CCC, EGD, Energy Probe, IGUA, Jason Stacey, Kitchener, LPMA, OAPPA, SEC, Sithe, Timmins, TransAlta, Union, VECC, WGSPG.

The following parties take no position on this issue: Coral, GEC, PP, PWU, TCPL.

Evidence References:
1. B/T1 p.21-22, D/T1/App A.
2. C32.7.
3. L/T1/S2, L/T4/S1.

The above assessment, which attributes equal weight to each of the five criteria, ranks the GDP IPI FDD and the CPI equally. Board staff however thinks that the GDP IPI FDD should be used as the inflation factor in the IR plan. Board staff recognizes that GDP IPI FDD could be more difficult to explain to ratepayers than CPI. However, Board staff's view is that this potential complexity is offset by the advantages of GDP IPI FDD in terms of coverage, volatility and the simplicity it brings to the calculation/calibration of the X factor.

3.2.3 Implementation Details

Board staff also examined the availability of a provincial and federal version of the GDP IPI FDD, and whether this index should be fixed or variable during the plan term. In addition, Board staff researched whether the index should be an actual or a forecast value.

Canada or Ontario GDP IPI FDD

GDP IPI FDD is published for Ontario and Canada. Board staff notes that the differences between the federal and provincial indices are minor.

GDP IPI FDD Ontario is published annually in April of the following year. The federal version is published annually in February of the following year and also quarterly. Since a rate order needs to be in place by December 15th (for Union and Enbridge in order to implement rates effective January 1st), the inflation adjustment would have a two year lag if an annual index were used.

To avoid this time lag so that rates reflect the most recent inflation trend, Board staff sees the benefit of using the quarterly GDP IPI FDD Canada index. Specifically, a simple average of the annualized changes of the last four quarters should be used.

Union raised concerns over Stats Canada's revisions to the GDP IPI FDD. Board staff understands that published statistical data may be subject to revision by Stats Canada. However, Board staff shares the view of another stakeholder who commented that using an annualized approach (i.e., average of the annual changes for the last four quarters) minimizes the impact of the revisions in a particular quarter. It should be noted that the annual change in GDP IPI FDD published by Stats Canada is also calculated using this methodology.

5.2 WHAT ARE THE CRITERIA FOR DISPOSITION?

(Complete Settlement)

See 5.1 above.

Evidence References:
1. C3.20, C3.21, C11.04.

6 Z FACTOR

6.1 WHAT ARE THE CRITERIA FOR ESTABLISHING Z FACTORS THAT SHOULD BE INCLUDED IN THE IR PLAN?

(No Settlement on whether tax changes resulting from changes to federal and/or provincial legislation and/or regulations thereunder qualify as a Z factor in years 2008 and beyond; Complete Settlement on all other aspects of the issue.)

The parties agree that Z factors generally, have to meet the criteria established in Union's evidence, i.e.,

1. the event must be causally related to an increase/decrease in cost;
2. the cost must be beyond the control of the utility's management, and not a risk for which a prudent utility would take risk mitigation steps;
3. the cost increase/decrease must not otherwise be reflected in the price cap index;
4. any cost increase must be prudently incurred; and
5. the cost increase/decrease must meet the materiality threshold of $1.5 million annually per Z factor event (i.e., the sum of all individual items underlying the Z factor event).

If a proceeding is instituted before the Board, before the term of this IR plan expires, in which changes to the methodology for determining return on equity is requested, then all parties

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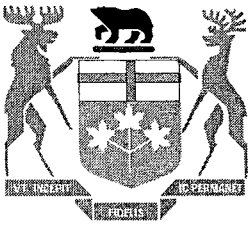

Natural Gas Regulation in Ontario:

A Renewed Policy Framework

Report on the Ontario Energy Board

Natural Gas Forum

March 30, 2005

articulated ratemaking framework. The Board will establish a firm framework to ensure that consistent expectations are held by both utilities and customers.

As a first step, the Board must take account of its legislated objectives, and in particular, the following:

- to protect the interests of consumers with respect to prices and the reliability and quality of gas service
- to facilitate rational expansion of transmission and distribution systems and rational development and safe operation of gas storage
- to facilitate the maintenance of a financially viable gas industry for the transmission, distribution and storage of gas

To fulfil these statutory objectives, the Board must determine the most effective ratemaking framework. Accordingly, it has determined that the gas rate regulation framework must meet the following criteria:

- establish incentives for sustainable efficiency improvements that benefit both customers and shareholders
- ensure appropriate quality of service for customers
- create an environment that is conducive to investment, to the benefit of both customers and shareholders

The Board believes that a ratemaking framework that meets these criteria will ensure that the statutory objectives of consumer protection, infrastructure development and financial viability will be met, and that rates will be just and reasonable. Each of the above criteria is discussed further below.

Sustainable efficiency improvements: It is important that the rate regulation framework creates incentives for the implementation of sustainable efficiency improvements and that it is structured to ensure that ratepayers share the benefits of these efficiencies. Traditional COSR plans generally provide only limited incentives for efficiencies. A PBR framework, on the other hand, is generally recognized to provide efficiency incentives.

enhance the efficiency incentives by extending the term of the plan and to reduce regulatory costs by introducing process reforms. However, COSR requires a utility to forecast its costs and revenues. It is unlikely that a utility could make this forecast with an acceptable level of precision beyond two years, and a two-year term provides a limited efficiency incentive. Setting rates for any longer period would require the Board to consider external measures of cost inflation. As well, to ensure that customers share in the benefits when a utility outperforms its forecasts, some form of earnings sharing would be required.

If external measures of cost and some mechanism for benefit sharing were both added to the framework, the multi-year COSR plan would take on the characteristics of PBR. However, if this quasi-PBR framework were structured with an inadequate consideration of inflation and productivity potential, with z-factors (for non-routine rate adjustments intended to safeguard customers and the utility against unexpected events that are beyond management's control) and with an earnings sharing mechanism within the term of the plan, then the efficiency incentive would be reduced. Likewise, if onerous annual reviews were required, the regulatory costs could remain high. The resulting framework may be less satisfactory than that of a traditional COSR.

On the other hand, some forms of PBR may involve a de-linking of rates and costs, as well as a loss of transparent cost data and cost analysis. The Board does not support a complete de-linking of rates and costs, and it is not prepared to forgo the benefits of a transparent review of costs.

A rigorous multi-year framework can ensure that there is downward pressure on rates and that customers and shareholders benefit from efficiency improvements. The key determinant of success, though, is the particular parameters of the plan. The Board intends to adopt the best aspects of both the COSR and PBR approach. It will therefore focus on specifying its expectations for the specific parameters of the rate regulation framework.

The Board believes that a multi-year incentive regulation (IR) plan can be developed that will meet its criteria for an effective ratemaking framework: sustainable gains in efficiency, appropriate quality of service and an attractive investment environment. A properly designed plan will ensure downward pressure on rates by encouraging new levels of efficiency in Ontario's gas utilities – to the benefit of customers and shareholders. By implementing a multi-year IR framework, the Board also intends to provide the regulatory stability needed for investment in Ontario. The Board will establish the key parameters that will underpin the IR framework to ensure that its criteria are met and that all stakeholders have the same expectations of the plan.

A related matter is whether the IR framework should be comprehensive or targeted – in other words, whether the plan should apply to all costs or only some costs. The targeted approach was tried with the Enbridge plan. The comprehensive approach was used for Union and for Ontario's local electricity distribution companies, and it is the more common approach in other jurisdictions. The Board's view is that the targeted approach did not work effectively because it diluted and distorted the incentives, and that a comprehensive model is preferable. Although a comprehensive approach may involve greater regulatory costs to implement and may be considered by some to involve greater risks, it offers more balanced incentive properties and may be expected to reduce the overall regulatory burden.

Similarly, the Board concludes that the utilities should not alternate between a COSR and an IR framework. Switching between rate frameworks could make robust benefit sharing harder to achieve and introduce confusion and mistrust.

With respect to concerns that incentive regulation should not be used until a stable environment exists, we acknowledge that the industry continues to experience change, but we do not believe that this situation is inconsistent with an IR framework. Rather, the Board is of the view that a properly constructed IR framework should address expected changes and establish a balance of risks and rewards for the utilities.

In addition to the benefits that would accrue during the plan's term, customers could also benefit from productivity improvements through robust rebasing at the beginning of the next plan, as has already been described.

The regulatory challenge is to provide strong incentives to promote efficiency, while at the same time achieving customers' acceptance of the IR plan by ensuring that the benefits of the efficiencies flow to them. In the Board's view, ESMs would reduce the utility's productivity incentives and introduce a potentially costly additional regulatory process – results that are not in accordance with the Board's criteria for the regulatory framework. The Board recognizes that, without an ESM, the determination of the adjustment factor will be particularly important to ensure that customers benefit from productivity gains during the plan's term. For this reason, as noted earlier in this report, the Board has concluded that a generic hearing should be held to determine the annual adjustment mechanism.

The Board views the retention of earnings by a utility within the term of an IR plan to be a strong incentive for the utility to achieve sustainable efficiencies.

The Board does not intend for earnings sharing mechanisms to form part of IR plans.

The Term of the Plan

Stakeholders' Views

On the issue of the optimal term for the ratemaking plan, stakeholders were generally divided into two camps – customer groups generally favoured short terms of two to three years, while the utilities and the School Energy Coalition (SEC) favoured longer terms of five years or more.

Union submitted its view that the term of a plan should be long enough to provide the utility with incentives to pursue productivity improvements, and noted that the "payoff" for some productivity improvement measures may not be realized for some time. In

recognition of these factors, the minimum term of plans approved in some jurisdictions is five years, with some terms as long as 10 years.

The Industrial Gas Users Association (IGUA) suggested that the term be one of the elements negotiated by the parties. IGUA indicated a preference for a shorter term, but said that a longer term may be acceptable if provision were made for an automatic review or reopening of the issue under defined circumstances. SEC proposed an initial five-year term, subject to a single off-ramp. SEC also proposed that, at the end of four years and before any rebasing application, the Board hold a hearing to determine whether it would be appropriate to extend the incentive plan for a further period of up to five years or to require a rebasing exercise.

The Board's Conclusions

The Board's view, shared by most stakeholders, is that the current system of annual rate cases is inefficient – it is costly and time consuming. The challenge for the Board is to implement a regulatory model that contains incentives for utilities to make productivity improvements and that reduces the annual regulatory burden, while ensuring both that customers benefit from productivity improvements and that an appropriate level of transparency is maintained. The Board believes that IR plans must contain longer rate-approval periods to ensure an incentive for utility shareholders to make productivity improvements and to benefit from them.

The Board expects that the term of IR plans will be between three and five years. The Board's view is that three years represents the minimum term that may be expected to give rise to productivity incentives, and its preference is for a plan of five years. The Board is reluctant to approve a term greater than five years at this time, given the importance of ensuring that productivity gains are passed on to customers in subsequent periods. The term of the plan will be determined in the generic hearing on the annual adjustment mechanism.

The Board is of the view that a plan should not be reopened during its term except for the most compelling reasons. Off-ramps are addressed below.

Off-Ramps, Z-Factors and Deferral or Variance Accounts

Various mechanisms can be established as part of the overall ratemaking framework, but designed to operate outside the plan itself. An *off-ramp* is a pre-defined set of conditions under which the plan would be terminated before its end date, usually because of some unforeseen event. A *z-factor* provides for a non-routine rate adjustment intended to safeguard customers and the utility against unexpected events outside of management control. *Deferral accounts* are formalized accounts that track an amount that cannot be forecast. *Variance accounts* are formalized accounts that track a variance around a forecast. These mechanisms are often called risk-mitigation tools, as they create a regulatory "buffer" against unforeseen circumstances.

Stakeholders' Views

Most stakeholders advocated limits on the use of off-ramps, z-factors and deferral or variance accounts. In their view, these mechanisms inappropriately mitigate the utility's risk in an incentive-based system. In general, customer groups would like to see utilities assume more risk by consenting to PBR agreements that eliminate deferral or variance accounts, as well as any side agreements that shelter the utility from unforeseen events. It is recognized that a balance exists between eliminating these mechanisms and allowing shareholders to reap the benefits of good performance. Striking this balance was viewed as more in keeping with the objectives of incentive-based ratemaking.

Union, on the other hand, argued that off-ramps are designed to protect both customers and the utility, and that customers benefit from being served by a financially viable utility. In Union's trial PBR, off-ramps were restricted to a serious decline or significant improvement in Union's financial position. Enbridge's view was that deferral or variance accounts and z-factors provide justifiable regulatory relief from cost elements beyond the control of management.

The Board's Conclusions

The Board's view of off-ramps, z-factors and deferral or variable accounts is guided by the need for an appropriate balance of risks and rewards in the incentive regulation model. As stated earlier, the Board believes that it is appropriate for the utility's shareholders to retain all earnings during the plan's period. The Board believes that this is a very strong incentive. The Board also believes that, as a balancing factor, the utility should assume an appropriate level of business and financial risk.

In the Board's view, an appropriate balance of risk and reward in an IR framework will result in reduced reliance on deferral or variance accounts, and reliance on off-ramps or z-factors in limited, well-defined and well-justified cases only.

Service Quality Monitoring

When a regulated utility seeks cost-saving (efficiency) initiatives under an incentive plan, there is a danger that the quality of service experienced by its customers will suffer. The Board has identified appropriate quality of service as one of its criteria for the ratemaking framework. Service quality indicators (SQIs) have been used in Ontario, but they have been limited to measures such as telephone response time, emergency response and pipeline corrosion surveys. The issue before the Board is how a service quality framework should be developed and regulated.

Stakeholders' Views

Stakeholders generally agreed that quality of service is an important matter. Union suggested that SQIs should relate to those aspects of the utility's service that are important to customers, and that SQI targets should be derived from the historical performance levels of the utility. Enbridge also generally supported SQIs, noting that they provide assurance that operating efficiencies are not achieved at the expense of either customer service or the safe operation of the distribution system.

Union maintained that performance rewards and penalties would be inappropriate. In its view, SQIs are intended to ensure that minimum standards are maintained in an

MINTZ/WILSON

Ex E1 Tab 1
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I = price-adjustments for inflation based on the national GDP final demand implicit price deflator.

X = productivity, input price, average use and stretch factors

Y = pass-through factors including gas and upstream transportation costs and DSM factors

Z = cost factors outside management's control.

Corporate tax changes potentially affect the pricing formula in two ways. Broad tax reductions such as federal corporate tax rate reductions that apply to all industrial sectors and all provinces would be reflected in lower capital costs of all sectors of the economy. As a result of competitive forces, businesses would reduce prices charged on products and services as a result of cost reductions. Thus, broad corporate tax reductions would be reflected in a lower aggregate price index used to adjust rates under the price-cap index. Similarly broad corporate tax increases would be reflected in a higher aggregate price index.

On the other hand, significant corporate tax changes particular to an industry, depending on the overall net effect of changes generally, may not be reflected in price adjustments at the national level. Therefore, such changes should be incorporated in the Z factor as a cost change beyond management's control.

If corporate taxes changes occur only in Ontario, the national price index only partly captures its effects since Ontario's GDP is about forty percent of the Canadian economy.

However, as noted in our previous submission, if other provinces make comparable reductions in their corporate taxes, the national price index should reflect the average provincial tax reduction.

Recent Corporate Tax Changes

For years leading up to 2012, the federal government has passed legislation to reduce corporate income tax rates from 22.18 percent (including the federal surtax) to 15 percent. In 2007, it has also introduced legislation to increase capital cost allowances for several assets including computers, non-residential structures, gas distribution pipelines and liquefied natural gas, as well as accelerated depreciation for manufacturing equipment (the latter is available for 2007 and 2008 at this time).

The provinces have announced similar capital cost allowance increases to maintain a tax base similar to the federal government. Several provinces are also reducing corporate income tax rates and capital taxes, including Saskatchewan, Manitoba, Ontario, New Brunswick and Nova Scotia. Quebec has already begun a process of raising its corporate income tax from 8.9 to 11.9 percent by 2011 as it eliminates capital taxes (the net impact is a reduction in effective tax rates on marginal investments). Quebec has also introduced tax credits for manufacturing and forestry companies.

Effect on the Price-Cap Index

Given that both federal and provincial governments are generally reducing corporate taxes, their effect is to reduce tax costs for all sectors and provinces. This is shown by

the attached table where we model the impact of all federal and provincial corporate tax changes on marginal effective tax rates on capital faced by non-resource companies in Canada[2].

The marginal effective tax rate on capital is a summary measure that assesses the annualized value of corporate income taxes, capital taxes and sale taxes on business purchases as a share of their pre-tax rate of return on capital for marginal investment projects. For example, if a business earns a rate of return on capital equal to 20 percent and pays an effective tax rate on capital equal to 50 percent, the after-tax rate of return on capital is 10 percent.

We have calculated the effects of various federal and provincial corporate tax changes on marginal effective tax rates for 2006-7. The results are shown in table 1 below. Once all federal and provincial level corporate tax changes are implemented, Ontario utilities (electrical, gas and water[3]) will face a 4.2 percentage point reduction in their marginal effective tax rate on capital. However this is less than the Canada-wide average reduction of 5.7 percentage points for all non-resource industries (and less then the Ontario average reduction of 5.2 percentage points for non-resource industries).

[2] Oil, gas and mining companies are not included in the analysis due to lack of new data that we obtain for this analysis from Finance Canada. The corporate tax reductions would also lower their effective tax rates on capital as well.

[3] Finance Canada does not separate these sectors. For the utilities sector, 85 percent of machinery and building assets are in Class 1, which was boosted in rate from 4 to 6 percent in 2007, similar to gas distribution pipelines. We made an adjustment for some other classes, specifically, Class 17 which includes major pipelines and electrical transmission to add them to Class 1 to approximate gas only. The results are not significantly affected.

For existing planned changes from 2007 to 2008, a similar conclusion can be reached that Ontario and industry specific tax changes provides less advantage to utilities than to other sectors.[4]

These results indicate that the effect of an industry specific measure (the increased CCA for natural gas pipelines) is more that offset by the other federal and provincial tax measures introduced in 2007. Thus, we conclude that the national GDP final demand deflator will more than compensate for the effect of corporate tax reductions on natural gas distributors in Ontario.

[4] Federal and provincial budgets in 2008 will likely result in new corporate tax changes that are not possible to include here.

clearly appropriate for the economy as a whole, at the industry or sectoral level it ignores the effects of changes in the costs of other inputs - e. g., purchased materials and services - on prices. An analysis based on unit labour costs and unit capital costs would explain the impact of taxes on the price of an industry's "real value added" (or implicit deflator for its contribution to real GDP). What is needed in this case is the impact of taxes on Union's average unit costs, which includes purchased materials and services as well as labour and capital.

To address this issue, we have calculated the impact of corporate tax changes for 2006-2008 on the unit costs for Union, taking into account the METR on capital and the METR for labour for Union, and indirectly taking into account the effects of taxes on Union's other input costs (through the impact of aggregate tax changes on average costs for the economy as a whole).

Table 2 presents the relevant data for both large Canadian corporations generally and for Union. The results indicate that, although Union is more capital intensive that the average Canadian corporation, the impact of the tax reductions on Union's average unit costs were slightly lower that the impact on all corporations. This is largely due to the significant tax reductions in the manufacturing sector that are not available to Union.

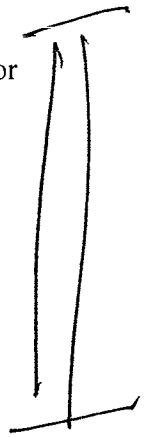

Table 2: Impact of Tax Changes on Prices (after complete pass-through of cost reductions)

All Large Corporations:	2006-2007	2007-2008
Taxes on Capital	-5.7%	-2.8%
Taxes on Labour	-0.2%	-0.0%
Taxes on Cost of Business	-2.1%	-1.0%
Cumulative change	2006-2008	-3.1%
Impact on GDPIPIFDD (after scaling by 0.7)[3]	-1.5%	-0.7%
Effects of GST reductions	-0.2%	-0.4%
Net effect of tax changes on GDPIPIFDD	-1.7%	-1.1%
Cumulative change	2006-2008	-2.8%
Union Gas:		
Taxes on Capital	-2.1%	-2.1%
Taxes on Labour[4]	0.0%	-0.2%
Taxes on purchased material and services.[5]	-1.5%	-0.7%
Taxes on cost of business (58% capital, 25% labour, 17% Materials)	-1.5%	-1.4%
Cumulative change	2006-2008	-2.9%

Impacts Of Tax Changes On The GDPIPIFDD

The overall METR on the cost of business is calculated for large corporations. The corporate sector as a whole generates about seventy percent of GDP. The remainder is produced by unincorporated enterprises, owner occupied housing, governments, and non-commercial entities.

[3] See discussion below.

[4] Taxes on labour are based on data for the Ontario Utilities sector.

[5] Taxes on purchased materials and services are based on the tax impacts on the GDPIPIFDD (before adjusting for GST reductions) shown above.

recent GST reduction, the Bank of Canada would not offset the direct effects of the tax reduction.

For tax reductions that do affect the core inflation rate as well as the GDPIPIFDD, such as recent corporate tax reductions, the Bank would not offset their effects if the inflation rate would otherwise be above the 2% target. If the core inflation rate would otherwise be below the 2% target, then the central Bank may offset the effects of the tax reductions on the core inflation rate.[8] It should be noted that even if the Bank reacts to reductions in GDPIPIFDD inflation below 2%, many factors other than tax impact on the price deflator that the Bank may react to. We would not recommend creating Z factor adjustments for everything that might influence the GDP deflator including regulatory changes, exchange rate effects etc. The purpose of the GDP deflator is to provide a guide as to how much Union's costs can go up in a year – many factors influence the trend, including tax changes and the Bank of Canada's interventions to target inflation. All of these factors are reflected in the GDPIPIFDD.

Even if the Bank of Canada were to intervene to offset the effects of tax reductions on prices, the GDPIPIFDD would nevertheless continue to be the appropriate price measure under Union's price cap formula, without necessitating a Z-factor adjustment. When the central bank introduces an expansionary monetary policy, wages and prices increase as the price index moves back towards the Bank's target. Union's average unit costs would increase in line with the

[8] If the Bank of Canada views a tax change as having a 'one-off' effect on the price level, it would be unlikely to offset these effects. Where the tax change(s) are expected to have a continuing effect on prices, the Bank would tend to offset any significant movement away from its two percent inflation target.

general increase in wages and prices.

Table 3 illustrates how taxes affect the GDPIPIFDD and Union's average costs, with and without the Bank of Canada responding. The first column summarizes the effects of the tax changes on the GDPIPIFDD and Union's costs over the 2006-2008 period, based on the numbers presented in Table 2. The second column shows the effects of the Bank of Canada's neutralizing the impact of the tax changes on the core inflation rate. The final column shows the net impact of the tax changes and this offsetting monetary policy. What is clear is that the small 0.1% difference between the GDPIPIFDD and Union's average costs is not affected by the offsetting monetary policy. There is no need to adjust Union's price cap formula for the actions of the Bank of Canada.

Table 3: GDPIPIFDD and Union's Costs Changes With and Without a Bank of Canada Response

Effects of Tax Changes: Cumulative Changes 2006-2008

	Without Bank of Canada Response	Effect of Bank of Canada offsetting core inflation impact	Net effect of Taxes and Bank's Policies
Impact on core inflation	-2.2%	+2.2%	0%
GST TAX Reduction	-0.6%	0%	-0.6%
Impact on GDPIPIFDD	-2.8%	+2.2%	-0.6%
Impact on Union's Gas Average costs	-2.9%	+2.2%	-0.7%

Note that in both scenarios Union's average cost reductions are 0.1% larger than the reduction of the GDPIPIFDD.

Whether or not the Bank of Canada offsets the effects of the corporate tax reduction on

prices, the real economic consequences are the same. Labour productivity would increase as a result of increased capital formation, and real wages would increase in line with the productivity increase. The only differences are that when the price effects of the tax change are not offset, the real wage increases are generated by price reductions, whereas when the central bank neutralizes the price effects of the tax reductions, real wage increases are accompanied by equivalent money wage increases. In either situation, the GDPIPIFDD would appropriately reflect the combined impact of the tax policies and monetary policies on Union's average unit costs.

adjustment since the inflation measure already reflects the effect of the tax rate change on the unit cost of gas utilities.

Suppose now that the PCI inflation measure is the GDPIPI, as in the Settlement IRM. Since the GDPIPI isn't designed to track the input price inflation of natural gas utilities and the IPD did not anticipate the tax reductions it is possible that the PCI will slow by more or les than is warranted. However, the calculation of any Z factor intended to rectify this problem must consider the extent to which the effect of tax reductions is captured by the slowdown that *does* occur in the GDPIPI. Were the tax reductions in question specific to the gas utility industry, the slowdown in the GDPIPI would be slight and something close to the entire tax reduction might be Z factored. However, the tax reductions under discussion are pervasive and should slow the growth of the GDPIPI materially. The appropriate Z factor adjustment for the tax reductions is thus likely to be substantially less than the gross adjustment that might occur for industry-specific tax reductions.

This analysis suggests that, when considering the appropriate Z factor adjustment for a pervasive reduction in corporate income taxes, a central issue is whether the slowdown in the GDPIPI is much different from the overall slowdown in prices for gas utility inputs. This is an empirical question that is difficult to answer accurately. Similar questions could arise over other imperfections of the GDPIPI as a measure of industry input price growth. The dollars that are potentially Z factorable are apt to be considerably less than the total tax savings and may not pass the materiality threshold. Since, additionally, one goal of incentive regulation is to simplify regulation, PEG believes that it is reasonable for the Board, absent convincing empirical evidence that the GDPIPI will handle the tax reductions inappropriately, to rule that a pervasive reduction in federal and provincial corporate taxes does not warrant any Z factoring.

The OEB assumed just this position in its Decision with Reasons in RP-2001-0029. This proceeding considered the implementation of the price cap plan for Union Gas. The handling of reductions in Ontario corporate income taxes, at a time when other provinces were also lowering such taxes, was one of the implementation issues. The Board acknowledged in its decision that

> There may be instances where a tax change is of such a nature that it may warrant treatment as a Z factor. Such a case may arise when a tax change is of such special and unique application to Union that it could not reliably be expected to be reflected in a Canada-wide index such as the GDPPI.[3]

In the case under consideration, however,

> The Board accepts for now that the changes in the Ontario corporate tax rates are or will be reflected in the GDPPI, and that no Z factor adjustment should be made at this time with respect to the rate schedules currently in effect under the PBR plan. The income tax changes, therefore, are to be considered to be captured in the determination of the PCI.

The tax reductions under consideration in this case appear to be even more pervasive than those the Board considered in rendering this decision.

Conclusions

The Settlement Agreement states clearly that Z factored costs must be net of amounts that that are reflected in other terms of the PCI formula. The tax reductions under consideration for Z factoring in this case seem to apply to most or all firms in Canada's economy and should

[3] Decision with Reasons, RP-2001-0029 (September 20, 2002) p. 79.

produce a material slowdown in GDPIPI growth. The net benefit to consumers of Z factoring these tax reductions is therefore likely to be substantially less than the total value of the reductions. The difference between the slowdown in the GDPIPI and the input price growth faced by Union is a complex and potentially controversial empirical issue. Similar issues may arise during the plan since the GDPIPI is not designed to track industry input price growth. Absent solid evidence that the GDPIPI will respond inappropriately in this instance, it is therefore reasonable for the Board to reject the Z factoring of any part of the tax reductions.

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Investment is found to be strongly influenced by the tax reductions. The estimated coefficient on the tax component of the UCC is large and highly significant by the usual statistical standards (see Annex 1). It implies that a 10-per-cent reduction in the tax component of the UCC would raise the real capital stock by approximately 7 per cent over a five-year period. This estimate is well within the range found in other studies of taxation and investment in Canada and the United States (Table 1 and Annex 2).

Comparison of the Two Approaches

As noted above, a weakness of the regression using annual data is the stylized modelling of the response over time of investment to changes in the tax component of the UCC. A more complete model would include adjustment costs and allow investment to respond over several years to a tax change. Given the relatively small number of annual observations available, it was not feasible to include these features in this study. As a result, the annual approach likely understates the true impact of tax changes on investment. In contrast, the DD approach circumvents the need to model the adjustment process by estimating the investment response over the entire 2000–2004 period, and therefore likely provides a better estimate of the impact of corporate income tax rate reductions on investment.

Table 1
The Sensitivity of Investment to Tax Changes—Summary of Empirical Results

Study	Change in Investment From a 10-Per-Cent Reduction in the Tax Component of the User Cost of Capital
This study	
Annual regressions	3-per-cent increase
Difference-in-differences	7-per-cent increase
Range from other studies[1]	3-per-cent to 11-per-cent increase

[1] See Annex 2 for detailed results of other studies.

Conclusion

The belief that lower corporate income tax rates should lead to more investment is intuitively appealing. It is one of the reasons that tax reductions are considered an important step towards improving Canadian competitiveness. Proving the existence of a relationship between taxes and investment with real-world data is, however, a challenge. Investment is influenced by numerous factors, many of which are also in flux as tax rates change. Identifying and untangling the contributions of the tax and non-tax influences is a demanding process.

A characteristic of the 2001–2004 tax reductions—the fact that some sectors were affected by the reductions and others were not—created an opportunity to conduct an empirical examination of the effects of the rate reductions on investment. The work described in this study took advantage of that opportunity to test the proposition that lower tax rates boost investment.

Using real-world data from Canadian industrial sectors, the study applied two different statistical tools to investigate the investment–tax rate link. Both provided clear evidence that investment was strongly and positively influenced

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by the 2001–2004 corporate income tax rate reductions. A 10-per-cent reduction in the tax component of the user cost of capital is associated with an increase in the capital stock in the 3-per-cent to 7-per-cent range, with the latter being the preferred estimate since it is obtained using a more robust methodology.

The results summarized in this study are consistent with empirical work undertaken by other researchers. As shown in Annex 2, studies undertaken since the early 1990s find a strong link between the user cost of capital, which is directly affected by taxes, and business investment in plant and equipment.

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Last Updated: 2007-12-11

Important Notices

C.D. Howe Institute
Commentary

www.cdhowe.org No. 253 July 2007 ISSN 0824-8001

Fiscal Policy

Lessons in Harmony:

What Experience in the Atlantic Provinces Shows About the Benefits of a Harmonized Sales Tax

Michael Smart

In this issue...

Provincial retail sales taxes are remarkably high on business inputs, including purchases of capital goods that spur growth in productivity and employment. Evidence from Eastern provinces with a Harmonized Sales Tax (HST) suggests that harmonizing provincial sales taxes with the federal GST would eliminate most of this distortion, without leading to an increase in consumer prices.

presumably long-run and permanent. However, my empirical methodology, discussed below, does not allow these long-run effects to be estimated directly.

The necessary implication of high taxes on business inputs under RSTs is that if reform were to be revenue-neutral, then the taxes paid by consumers on their personal expenditures would rise substantially. The analysis of effective tax rates shows that if the GST base were to be adopted, this would be achieved through the broadening of the base to include new homes and, to a lesser extent, some goods and services, rather than through increases in the headline statutory rate of the provincial sales taxes.

This shift in burdens from business to consumers is usually regarded as a major obstacle to such a reform. But all taxes are ultimately paid by some people, somewhere — and never by businesses. That is, we must distinguish between the "statutory burdens" of a tax — who the tax law says must pay the tax — and the true "economic burdens" of a tax. True economic tax burdens depend on how taxes levied on businesses are shifted forward to consumers through higher prices, or shifted backward to factors of production, like labour, capital, and land, through lower wages and rental prices. Estimating true economic burdens is difficult, but it is the key to understanding the ultimate impact of a tax on consumers and on the distribution of real income in the economy.

To give some sense of the true economic distribution of burdens under the RSTs, I examine the relationship between changes in consumer prices and changes in effective tax rates in the harmonizing provinces in the years following the 1997 reform. Again I use comparisons with the non-reforming provinces to control for economic and especially monetary factors that otherwise affected consumer price inflation at the same time. The results show that the pattern of relative price changes among broad categories of consumer expenditures was quite similar to the pattern of relative changes in taxes and business costs induced by the reform — that is, each 1 percent increase in costs induced by taxes leads to approximately a 1 percent increase (or perhaps more) in the price paid by consumers.

Indeed, overall, consumer prices in the harmonizing provinces fell with the 1997 reform, although prices rose somewhat for shelter and for clothing and footwear, so that the reform was slightly regressive. The pattern of tax changes today would presumably be different if harmonization were extended to the remaining RST provinces, since their current tax systems differ from those replaced in the 1997 reform. What is important is that the results are consistent with the notion that taxes are fully shifted forward (or even "overshifted") in most sectors, so that the change in statutory burdens would not result in large distributional effects.

The rest of the paper is organized as follows. The second section describes the sales tax systems of the provinces and discusses the presumed deadweight costs of the RSTs. The third section presents an accounting analysis of the changes in revenues and statutory tax burdens resulting from a hypothetical reform in which RST provinces adopted the federal GST base but without changing their tax rates. Estimates of the effect of the 1997 HST tax reform on investment are presented in the fourth section, and on consumer prices in the fifth section. The sixth section concludes my analysis.

UNION GAS LIMITED

Undertaking of Union Gas
To School Energy Coalition ("SEC")

Union to prepare a chart with assumed effect of tax change on GDP and translate that into the reduced revenue requirement under the IRM formula for Union Gas on a Year-by-Year basis.

We have prepared estimates of the impact of tax changes on the GDP IPI FDD final demand deflator for the 2008-2012 period. Our analysis incorporates all federal and provincial tax changes that affect corporations, including corporate and capital tax rates and CCA changes. Estimates of future tax changes are based on scheduled tax changes as of December 31, 2007.

As we indicated in our testimony, the effects of corporate tax changes on investment and prices are subject to lags. However, it is important to note that lagged adjustments to past tax changes must be taken into account as well as the delayed adjustment to current and future tax changes.

When tax reductions affect prices with a distributed lag, the effects of a tax cut in a particular year gradually affect prices, beginning in that year, but extending over a number of years in the future. This means that prices in a year reflect the effects of not only the (partial) impact of tax changes in that year, but also the delayed effects of tax changes in previous years.

For example, the GDP IPI FDD for 2010 is not just affected by tax reductions occurring in 2010, but by all previous tax changes going back as far as 2001 (with a diminishing impact from the earlier years).

Our analysis, as another example, shows that the 2006 tax changes have little impact on the GDP deflator in 2006. These effects are distributed forward. The tax changes in 2006 put downward pressure on the GDP deflator in 2008 and exert even more downward pressure in 2009. The lagged effect trails off thereafter. Put another way, the 2.04% inflation factor for 2008 is lower than it would otherwise have been without the prior tax changes.

This is important because Union has already reflected historical tax changes in its cost of service as of 2007. Customers have already received the benefit of these tax reductions through reduced costs. To ignore the effect of the historical tax changes on the current GDP deflator and focus only on lag effects from 2008 forwards ignores an important input to the 2008 and subsequent years' inflation factor. It would be illogical and unfair to take into account lags in the realization of inflation factor impacts starting in 2008 but ignore the same impacts spilling over from the prior period. The question, at the end of the day, is whether the deflator is compensating customers through the price cap index in an amount approximately equal to the tax reductions during the IR term. The evidence in Table 1 clearly shows that it is.

Question: March 31, 2008
Answer: April 7, 2008
Docket: EB-2007-0606 / EB-2007-0615

Our estimates of the time pattern of adjustments to tax changes are based on simulations with the FOCUS models of the Ontario and Canadian economies. These simulations were prepared for a study of the economic effects of replacing Ontario's Retail Sales Tax (RST) with a Value Added Tax (VAT) similar to the Federal Goods and Services Tax (GST). This tax reform would involve reductions in the sales tax burden on investment, thereby reducing METRs on capital. We have used the time pattern of the response of capital formation in Ontario in these simulations to derive the weights used in the distributed lag response of prices to changes in the METR on capital. The top section of Table 1 is based on our estimates of the impact of changes on business taxes on the final demand deflator that take account of lagged adjustments to all corporate tax changes over the 2000-2011 period, together with the current effects of the GST reductions. To be consistent with the way the price cap formula works, these results are lagged one year.

The impact that each year's tax rate changes are having on GDP IPI FDD in each year is shown separately. For example, the impact that the 2001 tax rate changes is having on GDP IPI FDD in 2008 is (0.02%), 2009 is (0.02%), 2010 is (0.02%) and 2011 is (0.01%). The tax rate changes for 2000 through 2006 are shown separately on lines 1 - 7 from the tax rate changes for 2007 through 2011 which are shown on lines 8 - 14. The combined total appears on line 15.

In order to explore the effects of anticipatory responses to scheduled future tax reductions, we have also prepared tables based on a more rapid response to the corporate tax changes. In these calculations the full adjustment of the capital stock to the tax reduction is accelerated by three years, with complete adjustment achieved by the seventh year. Since the 5 year tax reduction plan implemented in 2000 also involved scheduled future tax reductions, we assume that the reduction of the adjustment period applies over the complete period 2000-2011. The top section of Table 2 presents these results.

Finally, in order to explore the sensitivity of our results to longer lags, we prepared estimates where the length of the adjustment period is increased by three years. The results are presented in the top section of Table 3.

The lower half (lines 16 to 26) of Table 1 compares the impact tax rate changes will have on Union's rates as a result of how they influence the GDP IPI FDD inflation factor used in the price cap index to the impact the tax rate changes will have on Union's revenue requirement. Line 26 shows that the impact on Union's rates is slightly larger ($0.21 million) than the impact on Union's revenue requirement over the 5 year incentive regulation period.

The base revenue requirement for 2008 that the price cap index is applied against is shown on line 16. It has been held constant as a simplifying assumption. The annual change is dependent on the actual year over year change in the annualized average of 4 quarters (using Q2 to Q2) of GDP IPI FDD.
Line 17 shows the impact tax rate changes are having each year on Union's revenue requirement. The cumulative total appears on line 18. This is the same information as provided in Exhibit E3.1.1.

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Lines 19 - 22 show the impact that the change in GDP IPI FDD is having on Union's rates through the incentive regulation period if only the affects of the 2006 -2011 tax changes are reflected. Lines 23 – 26 show the impact if all tax changes over the 2000 – 2011 period are reflected. Excluding anticipatory affects, the 2006 – 2007 tax changes will start to show up in the GDP IPI FDD inflation factor in 2008, the first year of incentive regulation.

Lines 19 & 23 show the impact GDP IPI FDD changes are having on the price cap index in each year. Lines 20 & 24 show the impact GDP IPI FDD changes are having on rates in each year. The impact in any year of the incentive regulation period is the impact the GDP IPI FDD change is having in that year and prior years. Lines 21 & 25 show the cumulative impact on rates. Line 22 & 26 compare the impact tax rate changes will have on Union's rates as a result of how they influence the GDP IPI FDD inflation factor used in the price cap index to the impact the tax rate changes will have on Union's revenue requirement.

Table 2 provides the same comparison reflecting anticipatory effects. Line 26 of Table 2 shows that the impact on Union's rates is much larger ($9.70 million) than the impact on Union's revenue requirement over the same 5 year incentive regulation period when anticipatory effects are reflected.

Table 3 provides the same comparison without the anticipatory effects and with longer lags. Line 26 of Table 3 shows that the impact on Union's rates is less ($5.48 million) than the impact on Union's revenue requirement over the same 5 year incentive regulation period if anticipatory effects are ignored and longer lags are assumed.

Conclusion

The results presented in Table 1 indicate that, when account is taken of the lags in investment, the effects of tax reductions on the final demand deflator approximately offsets the $80.5 million direct effects of the tax reduction on Union's cash flow position over the 5 year period of incentive regulation.

As indicated in our testimony, it is our view that it is appropriate to make allowance for anticipatory effects, both before and after the incentive regulation period. The results presented in Table 2 indicate that the effects of the tax changes in the final demand deflator would reduce Union's revenue by $90 million.

Finally, the analysis of the sensitivity of the results to an increase in the lag period presented in Table 3 indicates that a 30% increase in the period of adjustment would only reduce the negative impact of the final demand deflator on Union's revenues to about $75 million. Taken as a whole these results indicate that the price cap mechanism adopted by the Board for Union's incentive regulation plan would do its job properly with the corporate tax reduction regime now in place.

Question: March 31, 2008
Answer: April 7, 2008
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Table 1
Impact of Tax Changes on Union Gas without Anticipatory Effects

Line No.			2008 (a)	2009 (b)	2010 (c)	2011 (d)	2012 (e)
	Tax Change Impact on GDP IPI FDD						
1	2000-2001		-0.02%	-0.02%	-0.02%	-0.01%	0.00%
2	2001-2002		-0.05%	-0.04%	-0.03%	-0.03%	-0.02%
3	2002-2003		-0.01%	0.00%	0.00%	0.00%	0.00%
4	2003-2004		-0.07%	-0.05%	-0.04%	-0.03%	-0.03%
5	2004-2005		-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
6	2005-2006		-0.08%	-0.11%	-0.09%	-0.07%	-0.06%
7	**2000-2006 Tax Changes**		**-0.24%**	**-0.24%**	**-0.20%**	**-0.16%**	**-0.12%**
8	2006-2007		-0.24%	-0.21%	-0.28%	-0.24%	-0.19%
9	2007-2008			-0.42%	-0.10%	-0.13%	-0.11%
10	2008-2009				0.00%	-0.02%	-0.03%
11	2009-2010					-0.01%	-0.03%
12	2010-2011						-0.01%
14	**2006-2011 Tax Changes**		**-0.24%**	**-0.63%**	**-0.39%**	**-0.40%**	**-0.37%**
15	**Total Tax Change Impact on GDP IPI FDD**	**L7 + L14**	**-0.48%**	**-0.87%**	**-0.58%**	**-0.56%**	**-0.49%**
16	Base Revenue Requirement ($ millions)	Rate Order Working Papers	873.20	873.20	873.20	873.20	873.20
	Revenue Requirement Impact Associated with Tax Rate Change						
17	Tax Change Impact ($ millions)	Exhibit E3.1.1	-8.29	-10.05	-16.75	-21.56	-23.86
18	**Cumulative Tax Change Impact ($ millions)**	**From L17**	**-8.29**	**-18.34**	**-35.09**	**-56.65**	**-80.51**
	Rate Impact Associated with GDP IPI FDD Change						
	2006-2011 Tax Changes:						
19	Price Change Impact ($ millions)	L14 * L16	-2.13	-5.54	-3.37	-3.47	-3.20
20	Annual Rate Impact ($ millions)	From L19	-2.13	-7.67	-11.04	-14.51	-17.71
21	Cumulative Rate Impact ($ millions)	From L20	-2.13	-9.80	-20.84	-35.35	-53.05
22	Cumulative Difference ($ millions)	L18 - L21	-6.16	-8.54	-14.25	-21.30	-27.46
	2000-2011 Tax Changes:						
23	Price Change Impact ($ millions)	L15 * L16	-4.20	-7.60	-5.10	-4.88	-4.27
24	Annual Rate Impact ($ millions)	From L23	-4.20	-11.80	-16.90	-21.78	-26.05
25	**Cumulative Rate Impact ($ millions)**	**From L24**	**-4.20**	**-16.00**	**-32.90**	**-54.67**	**-80.72**
26	**Cumulative Difference ($ millions)**	**L18 - L25**	**-4.09**	**-2.34**	**-2.19**	**-1.98**	**0.21**

Notes: Distributed lags apply to business taxes. GST impacts appear fully at the time of implementation.

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Table 2
Impact of Tax Changes on Union Gas with Anticipatory Effects

Line No.	Tax Change Impact on GDP IPI FDD		2008 (a)	2009 (b)	2010 (c)	2011 (d)	2012 (e)
1	2000-2001		-0.02%	0.00%	0.00%	0.00%	0.00%
2	2001-2002		-0.06%	-0.05%	0.00%	0.00%	0.00%
3	2002-2003		-0.01%	-0.01%	0.00%	0.00%	0.00%
4	2003-2004		-0.08%	-0.06%	-0.05%	-0.04%	0.00%
5	2004-2005		-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
6	2005-2006		-0.10%	-0.13%	-0.11%	-0.09%	-0.07%
7	**2000-2006 Tax Changes**		**-0.29%**	**-0.27%**	**-0.18%**	**-0.14%**	**-0.08%**
8	2006-2007		-0.25%	-0.26%	-0.35%	-0.30%	-0.23%
9	2007-2008			-0.42%	-0.12%	-0.16%	-0.14%
10	2008-2009				0.00%	-0.02%	-0.03%
11	2009-2010					-0.01%	-0.04%
12	2010-2011						-0.01%
14	**2006-2011 Tax Changes**		**-0.25%**	**-0.69%**	**-0.47%**	**-0.49%**	**-0.45%**
15	**Total Tax Change Impact on GDP IPI FDD**	**L7 + L14**	**-0.55%**	**-0.96%**	**-0.66%**	**-0.63%**	**-0.53%**
16	Base Revenue Requirement ($ millions)	Rate Order Working Papers	873.20	873.20	873.20	873.20	873.20
	Revenue Requirement Impact Associated with Tax Rate Change						
17	Tax Change Impact ($ millions)	Exhibit E3.1.1	-8.29	-10.05	-16.75	-21.56	-23.86
18	**Cumulative Tax Change Impact ($ millions)**	**From L17**	**-8.29**	**-18.34**	**-35.09**	**-56.65**	**-80.51**
	Rate Impact Associated with GDP IPI FDD Change						
	2006-2011 Tax Changes:						
19	Price Change Impact ($ millions)	L14 * L16	-2.22	-6.01	-4.15	-4.27	-3.94
20	Annual Rate Impact ($ millions)	From L19	-2.22	-8.23	-12.38	-16.65	-20.59
21	Cumulative Rate Impact ($ millions)	From L20	-2.22	-10.45	-22.83	-39.49	-60.08
22	Cumulative Difference ($ millions)	L18 - L21	-6.07	-7.89	-12.26	-17.16	-20.43
	2000-2011 Tax Changes:						
23	Price Change Impact ($ millions)	L15 * L16	-4.77	-8.36	-5.75	-5.52	-4.64
24	Annual Rate Impact ($ millions)	From L23	-4.77	-13.13	-18.88	-24.40	-29.04
25	**Cumulative Rate Impact ($ millions)**	**From L24**	**-4.77**	**-17.89**	**-36.77**	**-61.17**	**-90.21**
26	**Cumulative Difference ($ millions)**	**L18 - L25**	**-3.52**	**-0.45**	**1.68**	**4.52**	**9.70**

Notes: Distributed lags apply to business taxes. GST impacts appear fully at the time of implementation.

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Table 3
Impact of Tax Changes on Union Gas without Anticipatory Effects and with Longer Lags

Line No.			2008 (a)	2009 (b)	2010 (c)	2011 (d)	2012 (e)
	Tax Change Impact on GDP IPI FDD						
1	2000-2001		-0.02%	-0.02%	-0.01%	-0.01%	-0.01%
2	2001-2002		-0.04%	-0.03%	-0.03%	-0.03%	-0.02%
3	2002-2003		-0.01%	0.00%	0.00%	0.00%	0.00%
4	2003-2004		-0.06%	-0.05%	-0.04%	-0.03%	-0.03%
5	2004-2005		-0.02%	-0.01%	-0.01%	-0.01%	-0.01%
6	2005-2006		-0.07%	-0.10%	-0.08%	-0.06%	-0.05%
7	**2000-2006 Tax Changes**		**-0.21%**	**-0.21%**	**-0.18%**	**-0.15%**	**-0.12%**
8	2006-2007		-0.24%	-0.19%	-0.26%	-0.22%	-0.17%
9	2007-2008			-0.42%	-0.09%	-0.12%	-0.10%
10	2008-2009				0.00%	-0.02%	-0.02%
11	2009-2010					-0.01%	-0.03%
12	2010-2011						-0.01%
14	**2006-2011 Tax Changes**		**-0.24%**	**-0.61%**	**-0.35%**	**-0.36%**	**-0.33%**
15	**Total Tax Change Impact on GDP IPI FDD**	**L7 + L14**	**-0.45%**	**-0.82%**	**-0.53%**	**-0.50%**	**-0.45%**
16	Base Revenue Requirement ($ millions)	Rate Order Working Papers	873.20	873.20	873.20	873.20	873.20
	Revenue Requirement Impact Associated with Tax Rate Change						
17	Tax Change Impact ($ millions)	Exhibit E3.1.1	-8.29	-10.05	-16.75	-21.56	-23.86
18	**Cumulative Tax Change Impact ($ millions)**	**From L17**	**-8.29**	**-18.34**	**-35.09**	**-56.65**	**-80.51**
	Rate Impact Associated with GDP IPI FDD Change						
	2006-2011 Tax Changes:						
19	Price Change Impact ($ millions)	L14 * L16	-2.09	-5.34	-3.03	-3.13	-2.88
20	Annual Rate Impact ($ millions)	From L19	-2.09	-7.43	-10.46	-13.59	-16.46
21	Cumulative Rate Impact ($ millions)	From L20	-2.09	-9.52	-19.98	-33.56	-50.03
22	Cumulative Difference ($ millions)	L18 - L21	-6.20	-8.82	-15.11	-23.09	-30.48
	2000-2011 Tax Changes:						
23	Price Change Impact ($ millions)	L15 * L16	-3.96	-7.19	-4.59	-4.39	-3.94
24	Annual Rate Impact ($ millions)	From L23	-3.96	-11.14	-15.73	-20.13	-24.06
25	**Cumulative Rate Impact ($ millions)**	**From L24**	**-3.96**	**-15.10**	**-30.83**	**-50.96**	**-75.03**
26	**Cumulative Difference ($ millions)**	**L18 - L25**	**-4.33**	**-3.24**	**-4.26**	**-5.69**	**-5.48**

Notes: Distributed lags apply to business taxes. GST impacts appear fully at the time of implementation.

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3. **Lags**

Intervenors have raised the issue whether lags in the adjustment of prices to reductions in corporate taxes should be offset by an appropriate Z-factor adjustment. It should be noted at the outset that the issue of lagged effects for the GDPIPIFDD is not unique to tax changes. Other factors that impact on costs may be subject to lagged effects of varying degrees.

If there were no costs associated with tracking the lagged adjustments to tax changes (and to other factors) then Z-factor adjustments may, in some circumstances be appropriate. However, tracking the lagged effects of tax changes (and other factors) would be difficult. One would not only have to make allowances for the partial effect of tax reductions on prices when the tax reductions are initiated, but also will have to track the subsequent gradual adjustment of prices to previous tax changes. What this would mean, in practice, is that the Board, in determining the Z-factor adjustment for 2008, would have to determine the impact not only of tax changes implemented for 2008, but also for all previous tax changes where lagged effects have not fully been realized, and, as noted above there is no reason to limit this approach to tax changes.

Moreover, since the input price differential incorporated in Union's price cap formula is affected by the impact of tax reductions implemented during the recent historical period, the Board would have to determine the extent to which the lagged adjustments to previous tax changes, and the current adjustment to current tax changes, deviated from past experience. A

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Ontario

ONTARIO ENERGY BOARD

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DATE: April 8, 2008

BEFORE:	**Gordon Kaiser**	**Presiding Member and Vice Chair**
	Paul Sommerville	**Member**
	Cynthia Chaplin	**Member**

possible Z-factoring of pervasive tax cuts.

I wanted to talk first of all what Z-factoring is all about. It is something that may be appropriate if a price cap or revenue cap index is encharged with adjusting prices for developments in business conditions, and is, for some reason, unable to do so correctly.

When that is done, it is important, in theory, that there not be a double-counting because the price cap index could very well pick up some of the change in business conditions that is affecting the company's unit cost.

So it is important to net that off, and even if that weren't true, that's what is in the settlement agreement. It's very clear that is what is expected to be done.

Now, Z-factoring is certainly an important part of incentive regulation. It can make for more just and reasonable outcomes, and it can reduce some needless operating risks that might make a utility less willing to embark upon a PBR plan.

But it also greatly complicates things. And if part of the goal of incentive regulation is to keep things fairly simple, then there is a certain burden, particularly, in my own view, on the petitioner, to come up with very good evidence that there is a warranted Z-factor that is not double-counting.

Now, as I look at this particular case, I think it is a perfectly legitimate area for a Z-factor discussion. For one thing taxes were not Y-factored, so nominally, it is the responsibility of the price cap index to adjust rates

for changes in the tax rates.

And obviously, a GDP IPI is not expressly designed to track the input price trend of a gas utility, so it is possible that it doesn't do a perfect job with that.

As for the materiality consideration, I have seen numbers thrown around here as high as $80 million. Well, if even a quarter of that were to be Z-factored, that would easily pass the materiality threshold. So obviously, there is nothing wrong with having a discussion about this.

But there can be a little question but that the GDP IPI is going to pick up a substantial portion of the effect of a pervasive tax rate cut such as is under consideration here. So it then becomes very important for the petitioners to make a very good case that it's done, nonetheless, so imperfectly that there is a need for some type of a rate adjustment.

So I say in the report, I use the report (sic) "solid evidence" at one point. At another point I say "empirical evidence". Let me just clarify that.

By "empirical", I just mean that you have to be able to hang your hat on some type of a sharing percentage e, by some means, maybe a reference to some study or something, and not just assert that a very high percentage is warranted.

Now, in response to some interrogatories, I made a few other comments that I might just mention. One is that I definitely, independently came to the conclusion that this whole issue of delays -- lag effects, you might say -- is a

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really complicated issue, because it is true that if there are lag effects that are going to mean that there's going to be inflationary impacts, a delay in the pass-through of the tax cut to the GDP IPI affect, well, then if there were past tax cuts, then that affects things today, as well as the delay in today's tax cuts for the future. It is legitimate to consider both of those simultaneously.

Also, if five years from now, Union through a rate case passes through 100 percent of the tax savings, but the GDP PI for the next plan is still slowed by these tax cuts, then that is a potentially Z-factorable claim for Union.

So, I really kind of think that it's best to stay away from Z-factors based on delayed effects. At least in this case, where there were some pretty good size tax cuts in the previous five years.

MR. MILLAR: Thank you for that. I am going to move on to the other experts now. Before I do that, is there anything else you wanted to add on your own initial report?

DR. LOWRY: No.

MR. MILLAR: Okay. Since you filed that report, you have received reports from Dr. Loube, Dr. Georgopoulos and a reply filing from Doctors Mintz and Wilson; is that right?

DR. LOWRY: Yes.

MR. MILLAR: You have had an opportunity to read these reports and the related interrogatory responses?

DR. LOWRY: Yes.

MR. MILLAR: And have you also had a chance to review

MR. MILLAR: I think the problem is resolved. I'm sorry, Dr. Lowry, could you continue.

DR. LOWRY: Well, for one thing, they showed constructively that the unit cost impact of tax reductions for the typical corporation was very similar to that for Union Gas.

They also presented some evidence about this whole issue of the lag effects, and they showed that there had been a pretty good-sized tax cut in the last five years that was just filtering its way through the GDP PI right now. I thought that was a good point.

And of course I agree with their general attitude that you don't want to get into this issue of delayed effects if you can avoid it.

On the other hand, their calculations did compromise their position a little bit. First of all, they had to acknowledge there is a decent-sized part of the GDP IPI that is not really covering inflation of large corporations.

They also had to acknowledge that in the short run, the tax cut effect, by stimulating investment, is going to increase demand for imports of various types of capital equipment and that that is going to raise the -- temporarily accelerate inflation by affecting the exchange rate.

I would also say that, in general, I didn't find that they tried very hard to rebut some of the tax incident arguments that have been made -- I mean, to this time. I

budget should be $2.8 million.

Is there any reason, in your view, why this should not be brought into account as a base rate adjustment?

DR. LOWRY: Again, it depends on the story behind it.

Ordinarily, once base rates are set, they're not changed even if they become a little stale. Now, in this case, this was part of the settlement. It may just be something that was agreed to, principle or not. But, ordinarily, you don't change base rates once they have been set, and, you know, sometimes there is a little passage of time when it materializes that they were a little high or low.

MR. THOMPSON: Well, I suggest to you, Dr. Lowry, that we should be truing up for costs beyond the control of the company not incurred in the base year. If that's -- first of all, do you agree with that suggestion?

DR. LOWRY: No, not necessarily. You know, I mean, in incentive regulation, sometimes there is a certain amount of insensitivity of the terms to the company's own costs. That's part of the spirit of it. Very often, the utility is absorbing some risk along the way that, year in, year out, will benefit the consumer.

MR. THOMPSON: Well, so what's the proposition? It's just up to the utility to determine what goes in as a base rate adjustment?

DR. LOWRY: No. Again, I don't know what principles were used in this case, but under -- in an incentive regulation plan, there are going to be a certain number of

little developments, some that help the utility and some that hurt it, and we're kind of hoping to move beyond wringing our hands about every single one of them, not to say that this one isn't large enough to be worth considering.

MR. THOMPSON: Well, if I suggest to you that my client will be asserting that the principle to be applied is that we should true up for costs beyond the control of the company, not incurred in the base year, do you have any quarrel with that as a statement of principle?

DR. LOWRY: I am not on board. I am not necessarily opposed to it in all cases, but I think that we need to -- you know, as a practical matter, you have to settle upon some base rates, and sometimes utilities see fit to settle base rates first, and then focus on the rate adjustment mechanism. And before it's finalized, there may be a little bit of -- there may be some developments that make that base rate seem a little high or low.

I wouldn't think it is it generally expected that that be changed, the base rates be changed on the basis of that new information.

MR. THOMPSON: So you don't quarrel with the proposition or you do quarrel with the proposition?

DR. LOWRY: I am not sure. I would generally be reluctant to do that, but I wouldn't say that in every case I would think it a bad idea to adjust the base rates. I mean, particularly if it's something that the parties to a settlement think is important, I could see it being thrown

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into the settlement that there be an adjustment to the base rates.

MR. THOMPSON: Well, we couldn't agree on this item, Dr. Lowry, so we need some principles to guide us to resolve the issue. Can you help us there?

DR. LOWRY: I would say, generally speaking, I wouldn't change the base rates.

MR. THOMPSON: For anything?

DR. LOWRY: Again, we get into this issue that we were talking about this morning about the spirit of incentive regulation and that there should be a healthy reluctance to revisit issues about the incentive plan -- the terms of the incentive plan.

Sometimes they become important enough that, yes, we reopen, but we're looking for some simplicity here and some stronger performance incentives that come from moving the rates away from the company's own unit cost.

MR. THOMPSON: All right. Well, let's move on.

You are aware that Union agreed to a $1.9 million deferred tax draw-down, and a reduction to regulatory cost budget of 1.0 million and GDAR costs that will not be incurred of 1.6 million? All of these amounts are less than the 2.8 on the table here.

DR. LOWRY: Well, all the more reason that Union might have been willing to throw in a few sweeteners.

MR. THOMPSON: All right. Let me move on to the second topic, which is the Z-factor issue with respect to rate reductions over this 2008 to 2012 period.

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MR. THOMPSON: All right. And so assuming that part not passed through -- well, let me ask you. Does the part not being passed through -- let me back up. When you say "pass-through", you're talking about passed through to the inflation factor?

DR. LOWRY: Yes.

MR. THOMPSON: All right. So that's what I call the "filtered-down factor" --

DR. LOWRY: Okay.

MR. THOMPSON: -- and you put that somewhere between zero and 50 percent?

DR. LOWRY: Yes.

MR. THOMPSON: All right. And then there is the second topic about lags, which is what tax reductions are we talking about here, what's the period we're talking about here, and how long -- what impact do those tax reductions have on the GDP PI in a particular period. You have heard that discussion this morning?

DR. LOWRY: I was characterizing that as an unfruitful discussion.

MR. THOMPSON: As a what?

DR. LOWRY: An unfruitful one. It is too complicated in this case, certainly, and one that probably should be set aside as a rationale for Z-factoring.

MR. THOMPSON: Well, let's take cost of service regulation as a starting point.

Would you agree with me that under cost of service regulation, assuming that was applied by Union in 2007,

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MAP 45

UNION / LOUBE

Ontario

ONTARIO ENERGY BOARD

FILE NO.: EB-2007-0606
EB-2007-0615

VOLUME: 4

DATE: April 1, 2008

BEFORE:

Gordon Kaiser	Presiding Member and Vice-Chair
Paul Sommerville	Member
Cynthia Chaplin	Member

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mentioned -- the next two pages, 9 and 10, are an excerpt from the paper I think you mentioned earlier, called "Price Cap Regulation Problems and Solutions" published in Land Economics.

You say on page 10, page 287 of the article, on the left-hand column in the side-barred passage that:

> "Rates can also change because of changes in exogenous factors. However, the exogenous factors should have the singular impact on the telephone industry. For example, a change in the federal excise tax on telephone service is considered to be an exogenous factor, while a change in the corporate income tax rate would not be considered an exogenous factor, because it has a similar effect on all industries."

Correct?

DR. LOUBE: That's exactly what I was talking about, the excise tax that I just mentioned and --

MR. PENNY: With respect --

DR. LOUBE: -- the second part of it being exactly, and I stated over and over again that you have to show special reasons for not holding that second part of the sentence.

MR. PENNY: With respect, sir, you say --

DR. LOUBE: I say exactly --

MR. PENNY: "While a change in the corporate income tax rate would not be considered an exogenous factor --"

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You say nothing there about lags. Am I correct?

DR. LOUBE: You are correct.

MR. PENNY: Thank you. And is it correct, sir, that the telephone industry is a capital-intensive industry?

DR. LOUBE: It is a capital-intensive industry.

MR. PENNY: Would you agree that it is an industry that is more capital-intensive than the average US corporation?

DR. LOUBE: That's correct.

MR. PENNY: And indeed, I think you say that at page 11 of this paper. On the right-hand margin, at the top in the first paragraph, it says: "However these are --"

You're referring to some -- I guess maybe we should back up:

> "Comparing GDP-PI to the producer price index for switching and telephone and telegraph apparatus indices further confirms the post-administered pattern. Producer price indices reflect the changes only in capital equipment prices. However, these are important indicators in a capital-intensive industry."

Correct?

DR. LOUBE: That is correct. And as --

MR. PENNY: Now, your clients, Consumers Association of Canada and the Vulnerable Energy Coalition, filed in our PBR case some years ago, the evidence of Johannes Bauer. Do you know Johannes Bauer?

DR. LOUBE: Yes.

MR. PENNY: Is he a respected regulatory economist?

DR. LOUBE: Yes.

MR. PENNY: And I won't take you through all of these references, but if you would take page 14, because they're all to the same effect.

He says in the middle of the page in the side-barred passage:

> "If the entire industry is affected by one-time changes, for example a tax reduction/tax increase, the market outcome will reflect this event in lower/higher prices."

Then if you would flip the page to 15, there's a side-barred passage wherein which he said, he testified before this Board:

> "As changes that affect the entire economy are generally reflected in the inflation factor, one of the drivers of the price cap index, only factors affecting the natural gas distribution industry ought to be considered."

I take it, from what we have covered earlier, that you would agree with those as being appropriate regulatory principles?

DR. LOUBE: Yes.

MR. PENNY: Thank you. Then in your report, sir, at page 3, where you are reviewing the evidence of Jack Mintz and Tom Wilson, you start the discussion there. Well, obviously not restricted to this part, but about the effective tax rate change on utilities, and their position

for local service rates (Davis 1994). Many other states are contemplating a similar transformation. Legislation pending before Congress (HR 3636) would dictate that states adopt price cap regulation for telecommunications. In addition, there are proposals to regulate the electric and gas industries via price cap schemes.

The structure of price cap regulation includes a price cap formula (including inflation measures, a productivity offset, exogenous factors), price cap indices, actual price indices, and service baskets. The formula determines the allowed average change in the regulated rates. Rates are allowed to increase according to the inflation measure and to decrease with the productivity offset. Price cap plans differ according to the measures of inflation and the productivity offset included in the formula. For example, the FCC plan uses changes in the Gross National Product Price Index as the measure of inflation, while the Office of Telecommunications plan uses changes in the residential price index as the measure of inflation to regulate British Telecom (Littlechild 1983). The measure of the productivity offset can be (1) the productivity change of a specific company, (2) the industry average productivity change, (3) the industry average productivity change less the national productivity change, or (4) the productivity change that represents the best practices of the industry.[2]

Rates can also change because of changes in exogenous factors. However, the exogenous factors should have a singular impact on the telephone industry. For example, a change in the federal excise tax on telephone services is considered to be an exogenous factor, while a change in the corporate income tax rate would not be considered an exogenous factor because it has a similar effect on all industries.

Due to the fact that telephone companies produce multiple services, the price cap formula focuses on price cap indices rather than an individual price. A price cap index is a weighted average of allowed rates. As with all indices, the construction of the price cap index suffers from problems such as (1) the specification of weights, (2) a means of combining new services with existing services, and (3) the identification of new services, especially when new services appear to be old services with new names and different prices.

The FCC price cap model does not construct just one price cap index. Instead, it develops an index for each price cap service basket. These baskets are groups of services. The baskets are designed to prevent unreasonable price discrimination and predatory pricing. Within each basket, the prices charged by the utility are combined into an actual price index. The actual price index is allowed to fluctuate between an upper and lower limit. The limits are defined as the price cap index for the basket plus and minus a given percentage. Finally, the task of the regulator is to ensure that the actual price index is within the basket limits. An example of the relationship between the actual price index and the limits is shown in Table 1.

III. THE TRANSFORMATION TO PRICE CAP REGULATION

Currently most Commissions approve rates that allow utilities the opportunity to recover warranted expenses and to earn a fair return on their investments. The transformation from this environment to price caps involves changing the utilities incentive structure, evaluating the reasonableness of existing rates, and modifying regulatory books and records to reflect the earnings of

the local market. Second, switched charges recover costs associated with use of central office switches. Third, transport charges recover the costs associated with connecting the local central office to the long-distance carrier. Special access is a direct connection from the customer to the long-distance carrier that does not pass through a local switch. Currently, local telephone companies face competition from competitive access providers in the transport and special access markets. Alternative providers will soon provide switched access service.

[2] The change in productivity associated with the best practices in the industry is probably the most desired offset to use because competition forces firms to match the industry leader or suffer the consequences. However, no regulatory commission has adopted this rule.

specifications. The GDPPI has been as a proxy for input price inflation in other price cap plans. However, rather than a five-year forecast, annual inflation data should be used. In addition, the cap should be annually trued-up to reflect the actual inflation data. Triangulation of the proposed productivity offset against other existing plans as well as against Union's own past performance has raised doubts as to the accuracy of the estimate. A reasonable X-factor would likely have to be in the range of 1.4-1.8%.

5. Pass-trough items need to be defined more narrowly. In particular, the proposed ROE adjustment contradicts the intention of price cap regulation and should be eliminated. The QRAM mechanism for the treatment of certain pass-through items is compatible with a price cap environment and can thus be retained. However, there is no compelling reason to abandon the existing treatment of unaccounted for gas (UFG).

6. Non-routine adjustments need to be limited to legislative and regulatory changes affecting specifically the natural gas industry, changes in generally accepted accounting principles, and structural changes in the scope of utility operations (e.g., the elimination of billing from utility operations). Stranded costs should only qualify as a non-routine adjustment after a full hearing. Costs for additional deliverability or of lawsuits also should not qualify for the streamlined non-routine adjustment process, but only be approved in a more detailed review process.

7. An earnings-sharing mechanism should be introduced as a safeguard against misspecification of the plan parameters. The details of this mechanism will depend on the choice of the productivity offset. A higher upfront productivity offset would warrant a sharing formula attributing a higher share of earnings variances to shareholders. A lower upfront productivity offset would require an earnings-sharing formula that attributes a higher share of variances to ratepayers.

utility more flexibility to adjust prices to market conditions.[5] It also uses a simplified process in determining the benchmark against which the utility needs to perform.

3.2 Price cap plans as proxies for market outcomes

Price cap regulation takes advantage of the basic insight that in a competitive market *(ceteris paribus*, that is, all other things equal) the equilibrium market price will increase if the suppliers are affected by input price inflation (**I**). On the other hand, it will decrease if suppliers are forced by competition to increase their productivity (**X**). If both effects are present, the variation of prices over time will be determined by the net effect between inflation and productivity changes (**I-X**). If the entire industry is affected by one-time changes, for example, a tax reduction (tax increase), the market outcome will reflect this event in lower (higher) prices. These relations hold for the entire industry and, hence, reflect average developments. In each period, individual firms may perform better or worse than the average firm.[6] Before we proceed to discuss how price cap plans mimic the outcomes of competitive markets, it may be helpful to illustrate the dynamic relations between market equilibrium and the position of individual firms in more detail.

In a market with multiple suppliers, the equilibrium price is determined by the aggregate performance of all firms. If a firm is able to purchase inputs at prices that are more advantageous than the average procurement prices of the industry it will be rewarded with higher profits. Conversely, if a firm happens to buy at prices that are higher than the industry average its profits will be below the industry average or it may even incur a loss. In the medium and long-run, it is the firms that perform better than the average ("best practice" suppliers) that pressure management of the less efficient firms to improve their performance. Likewise, a firm that is able

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[5] COS with a future test year or regulatory lag models that provide longer time spans between rate cases have similar features.

[6] Somewhat misleadingly, economists refer to the firm that represents the market outcome as the "marginal firm." Firms that perform worse are termed "infra-marginal."

3. Significant cost impacts from lawsuit against the utility related to "judgments against Union respecting the past assessment and collection of delayed payment revenue" and lawsuits related to Y2K issues.

4. Costs related to provide East-end deliverability on the Dawn-Trafalgar transmission system at Parkway for customers who are returned to system gas after being served under direct purchase contracts.

5. Under certain circumstances, costs to provide to provide additional flexibility for customers respecting the amount of volume subject to the 22 day call at Parkway.

6. Rate decreases due to the unbundling of the billing function.

Z-factors in PBR plans are intended to provide a safeguard against factors that are entirely outside of management's control and against which no meaningful precautions exist. As changes that affect the entire economy are generally reflected in the inflation rate, one of the drivers of the price cap index, only factors affecting the natural gas distribution industry ought to be considered. In deviation from other price cap designs, Union bases its price cap plan on a five-year inflation forecast. Nevertheless this inflation measure should reflect anticipated changes to the overall economy. In addition, non-routine adjustments are justified if there are structural changes to the operations of the utility that affect its cost level.

From this perspective, several of the proposed non-routine adjustment factors are too broad-based. The main legitimate non-routine adjustment factors are related to legislative and regulatory change as well as changes in generally accepted accounting principles. However, only changes affecting specifically gas distribution utilities (and not changes affecting the entire economy) should be considered. Should the customer billing function be separated from the utility, the resulting cost impact would also qualify as a non-routine adjustment. It is important

~~DAY 3~~ Vol. 5

Georgopoulos

MAP 53

Ontario

ONTARIO ENERGY BOARD

FILE NO.: EB-2007-0606
EB-2007-0615

VOLUME: 5

DATE: April 7, 2008

BEFORE:	**Gordon Kaiser**	**Presiding Member and Vice Chair**
	Paul Sommerville	**Member**
	Cynthia Chaplin	**Member**

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provided to Board Staff and my friends.

MR. MILLAR: Yes. Mr. Battista will bring them up. It will be Exhibit K5.1, and this is Dr. Georgopoulos' flow chart.

EXHIBIT NO. K5.1: FLOW CHART PREPARED BY DR. GEORGOPOULOS.

MR. KAISER: Thank you.

DR. GEORGOPOULOS: Again, to outline the basic mechanism, if you see the first stage, there's a reduction in the corporate tax rate, and that leads to a reduction in user cost of capital, which stimulates investment and capital investment.

Now, I understand there were some discussions on this mechanism here, but I take this early stage of the mechanism as given. I accept this stage here.

So moving on to the next step, the higher level of capital leads to increased productivity, which will lead to a reduction in unit costs. Again, there could be some issues involved with this, but, generally, this is well accepted -- this is accepted economic theory, so I am willing to take Dr. Mintz's and Dr. Wilson's evidence on this as correct.

Now, what I have a lot of disagreement with is the next step, the reduction in the price level. They mentioned that through competitive forces, prices will fully drop to take -- well, the tax cut will fully be passed on to consumers. This is what I would like to focus on and here, this is not a tax issue we're talking about

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here. This is economics, in the sense that we're dealing with prices adjusting to cost changes.

So this is what I have a disagreement with.

MR. SHEPHERD: Can you tell us, specifically, in this component that the translation from unit cost to prices, can you tell us what parts of that you disagree with the Union Gas experts.

DR. GEORGOPOULOS: Sure. Well, as Dr. Mintz and Dr. Wilson mentioned, the competitive forces would drive down prices fully, so there would be no more gains to corporations.

Now, for that to happen, we would have to be in a world of what we call perfect competition. And with perfect competition, this is a specific market structure and the characteristics of it are that you have many sellers selling homogenous products, and they're price takers and they're earning normal profits.

Now, in this setting, if you have a reduction in unit costs, profits are going to be earned. And standard economic theory says that, well, with the existence of positive profits, you will have new entrants coming in to capture these profits. And in this context, since this is a reduction in the corporate tax rate across Canada, we're talking about firms leaving the unincorporated sector into the corporate sector, and we're talking about foreign investors coming into Canada.

So given that there are no frictions, given that there are no entry barriers to come in, the fact that there is

CROSS-EXAMINATION BY MR. PENNY:

MR. PENNY: Yes. I just provided an excerpt to keep the paper to a minimum, but if anyone wants a full copy of this for any reason, I have one, so I can make it available.

Just on the -- Professor Georgopoulos, I am Michael Penny, by the way.

DR. GEORGOPOULOS: Nice to meet you.

MR. PENNY: I am counsel to Union Gas.

Just on the point that you mentioned at the end there, is user cost of capital, is that a relevant consideration in inflation forecasting, if you know?

DR. GEORGOPOULOS: Well, I don't know. I mean I haven't seen studies on it.

MR. PENNY: When you did this review, did you find any reference to cost of capital at all?

DR. GEORGOPOULOS: No, I did not.

MR. PENNY: All right. Thank you. And then going back to the beginning, if I could for a moment, you said that from your perspective, this was not a tax issue. I think you said prices adjust -- it's an issue about how prices adjust to cost changes. Is that right?

DR. GEORGOPOULOS: Yes.

MR. PENNY: So I take it your concern is equally applicable to any change in cost? Not just changes in tax costs?

DR. GEORGOPOULOS: That's correct.

MR. PENNY: Is it equally applicable to increases and

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decreases in costs?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And so if economic forces in the economy, say, drive the price of wages up or down, you're saying that those reduced or increased wages are not necessarily going to be fully passed through? Is that correct?

DR. GEORGOPOULOS: It depends on the market structure.

MR. PENNY: Fair enough. Fair enough. But across the board, you are not confident that they are fully passed through?

DR. GEORGOPOULOS: On aggregates.

MR. PENNY: Yes.

DR. GEORGOPOULOS: That's correct.

MR. PENNY: All right. And similarly, in other types of prices -- let's say the price of energy, just to take another example. If we are talking about materials and services, your position is that changes in the cost of materials aren't necessarily fully passed through either, again depending on the sector you are looking at.

DR. GEORGOPOULOS: Well, if you are -- if you are an industry where you are relying a lot on inputs from these products that are -- that I mentioned, they're determined by, their price is determined by world supply and world demand, that will cause price rigidity downwards.

MR. PENNY: Let's leave aside the world market for a moment. I take your point. But if we just sort of try and take the archetypal simple economic theory position -- which is what I understood you to be articulating -- as I

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understood it you are saying in the archetypal, simple economic theory position of less than perfectly competitive market, that the price changes in material costs are not going to be fully realized in the marketplace either.

DR. GEORGOPOULOS: Under certain circumstances of imperfect competition.

MR. PENNY: Yes. All right. Well, I may come back to that. Thank you.

Now, you told us you are an assistant professor, and that's at Atkinson College?

DR. GEORGOPOULOS: That's correct.

MR. PENNY: What is Atkinson College?

DR. GEORGOPOULOS: Atkinson College is a faculty of liberal and professional studies, and it originally was formed in the, I think, late '60s to accommodate mature and part-time students.

MR. PENNY: All right. Thank you.

Now, sorry, I should have said at the outset as well that I am going to be making reference probably to your evidence and probably to this excerpt that I passed out, but I think, depending on how it goes, those are probably the only two things you need handy, so I just wanted to make sure you have that available to you.

At pages 2 and over to 3 of your report, you say that data on tax changes exists, and on the GDP deflator. I think this is maybe getting at a point you were making at the tail end of your evidence. So it is possible to conduct empirical research, but --

MR. PENNY: My question to you, sir, was: Were you aware of that research report when you wrote your evidence?

DR. GEORGOPOULOS: Yes.

MR. PENNY: All right. And you didn't cite that either?

DR. GEORGOPOULOS: No.

MR. PENNY: Your examination-in-chief actually has, you will be glad to know, reduced the amount of cross-examination I have for you today, sir. So I am flipping through my pages, because you have, in some cases, acknowledged things that I was going to ask you to acknowledge in any event.

Just, again, sticking with the theory for a minute, I take it, then, that you agree that reduction in the marginal effect of corporate tax rate provides a stimulus to capital investment?

DR. GEORGOPOULOS: Yes.

MR. PENNY: You agree that as investment in capital is realized - in other words, as businesses supply workers with more computers or install newer and better equipment and so on - that labour productivity improves?

DR. GEORGOPOULOS: Yes.

MR. PENNY: As labour productivity increases, unit costs decline?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And I appreciate that your concerns relate to the extent to which, and the timing of how average unit costs declining transfers through to prices in the market.

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But you are not saying, I take it, Professor Georgopoulos, that some of that reduction in average unit cost is -- that none of it is passed through. You are just uncertain as to how much and how long it takes?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And I didn't see in your CV any consulting work for the Department of Finance. You have done no consulting work with the Department of Finance?

DR. GEORGOPOULOS: No.

MR. PENNY: I think you will agree that the Department of Finance has lots of qualified economists of their own and has access to senior economists?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And would you agree that to the extent that the Canadian economy is less than perfectly competitive, that's not a unique perspective that was discovered by you? I think you described that as being accepted economic theory, that you don't actually have perfectly competitive markets; is that right?

DR. GEORGOPOULOS: Yes, yes.

MR. PENNY: And you agree that the Department of Finance is likely aware of that?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And --

DR. GEORGOPOULOS: But I am going by the statement of Dr. Mintz and Dr. Wilson on the argument that they make, that a reduction in the unit costs will be fully passed on to consumers in the form of lower prices. That is what I

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am focussing on, their statement.

MR. PENNY: Will you also agree, sir, that the Canadian government is unlikely to have been reducing corporate income taxes since 2000 for the sole purpose of making shareholders of Canadian corporations richer?

MR. SHEPHERD: Excuse me. Dr. Georgopoulos has been very clear he is not a tax expert, so asking him to speculate on what the Canadian government thinks I think may be just a step too far.

MR. PENNY: Well, Mr. Chairman, Professor Georgopoulos has gone well beyond, in my submission, the area of his expertise. If he doesn't know, he doesn't know. But I think it is, given his claim to understand at least basic principles of economics and how prices are passed through, a fair question to put to him.

MR. KAISER: Your question again was?

MR. PENNY: My question was whether Professor Georgopoulos would agree that the Canadian government is unlikely to have been reducing corporate taxes since 2000 for the sole purpose of making shareholders of Canadian corporations richer.

DR. GEORGOPOULOS: I can't comment on that.

MR. PENNY: All right. Thank you.

Would you agree or can you agree that the likely purpose of those corporate tax reductions was to stimulate investment?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And are you prepared to agree that that

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policy was likely conducted in the reasonable belief that it would raise the standard of living of all Canadians?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And at page 4, you talk about barriers to entry, and you alluded to this in your examination-in-chief. I think you said that Canada is highly restrictive on foreign investment, or words to that effect.

Are you -- you also cite a study in footnote 1 the Koyama and Guilherme working paper.

As I understand, just dealing -- well, let me deal first with your comment. Your comment that Canada -- about the restrictiveness of Canada on foreign investment, that's based on the -- essentially based on the requirement for Investment Canada approval for foreign takeovers?

DR. GEORGOPOULOS: Yes.

MR. PENNY: Is it fair that the basis --

DR. GEORGOPOULOS: Not only takeover. Just...

MR. PENNY: Okay. Investment?

DR. GEORGOPOULOS: Greenfield investments.

MR. PENNY: And can I have it from you that the Koyama and Guilherme assessment of Canada's restrictiveness on foreign investment is also based on the -- principally on the Investment Canada requirement for approval?

DR. GEORGOPOULOS: Sure.

MR. PENNY: Sir, do you know how many applications for foreign investment have been turned down by Investment Canada, say, in the last decade?

DR. GEORGOPOULOS: No, I don't.

MR. PENNY: Do you know if any applications for foreign investment that have been turned down by Investment Canada in the last decade?

DR. GEORGOPOULOS: Just because they haven't been turned down doesn't mean --

MR. PENNY: I appreciate you can give an explanation, but can I have a question to my answer first? And then you can give a explanation.

DR. GEORGOPOULOS: Sure.

MR. PENNY: My question was whether you are aware of any applications for foreign investment in Canada that have been turned down by Investment Canada.

DR. GEORGOPOULOS: I am not aware.

MR. PENNY: Thank you.

DR. GEORGOPOULOS: May I respond?

MR. PENNY: Yes. If you want to say something, please do. I just wanted an answer to my question first.

DR. GEORGOPOULOS: There are sufficient barriers that will even prevent firms from even trying to invest.

So the number of rejections does not necessarily reflect the degree of difficulty of getting in, to investing in Canada.

MR. PENNY: Now, at page 5, you talk about the Canadian economy being characterized by firms having differing degrees of price-setting powers.

I take it that you have not conducted any study or research about which sectors have these price-setting powers, or attempted to quantify the extent of the price-

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setting powers?

DR. GEORGOPOULOS: No, I have not.

MR. PENNY: To the extent that Canadian firms have price-setting powers, though, I take it you are saying that would influence the extent to which they pass on all changes in their costs, not just tax costs?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And the GDP IPI FDD, that is one of the national price indices for the Canadian economy; correct?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And it reflects -- in the context, of course, of the parameters that are set for that particular index -- but it reflects the reality of the Canadian economy as a whole, and that would include the extent to which it may or may not be perfectly competitive.

DR. GEORGOPOULOS: Sorry. I don't understand that. Maybe you could rephrase?

MR. PENNY: Well, maybe I can try it a different way. The GDP IPI FDD, it doesn't assume perfect competition, does it?

DR. GEORGOPOULOS: No.

MR. PENNY: It is just a measure of what happens in the Canadian economy?

DR. GEORGOPOULOS: That's correct.

MR. PENNY: To the extent the Canadian economy is less than perfectly competitive, that is just part of what shows up in the GDP deflator.

DR. GEORGOPOULOS: Yes, that's correct.

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this in your examination-in-chief -- at page 6, you say that:

"Another determinant of price stickiness is world supply and demand."

And you talk about commodities and natural resources being priced in US dollars, right?

DR. GEORGOPOULOS: Mm-hmm.

MR. PENNY: You will agree that Canada is a major exporter of commodities and natural resources?

DR. GEORGOPOULOS: Mm-hmm.

MR. PENNY: Will you agree that Canada is a small open economy?

DR. GEORGOPOULOS: Yes.

MR. PENNY: We have a floating exchange rate?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And would you agree that understanding the relationship between the exchange rate and the trade account, that is the exchange rate channel, is a key element in monetary and trade policy for Canada?

DR. GEORGOPOULOS: Yes.

MR. PENNY: So for example, as the world price of oil increases, the Canadian dollar appreciates?

DR. GEORGOPOULOS: Yes.

MR. PENNY: And as the Canadian dollar increases, I think you have already agreed, that tends to lower inflation in Canada?

DR. GEORGOPOULOS: To a certain extent.

MR. PENNY: Just on this question of lags, would you

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agree with me that if a tax cut in 2008 takes time to filter through to the national economic index, it necessarily follows that a tax cut in, say, 2006 or 2005 also takes time to flow through to the national economic indices?

DR. GEORGOPOULOS: Yes.

MR. PENNY: All right. Thank you. Those are all of my questions.

DR. GEORGOPOULOS: May I respond to a few other comments?

MR. KAISER: Go ahead.

DR. GEORGOPOULOS: I wasn't sure of the exact procedure here, so, just the papers that you have alluded to here, the Michael Smart paper, I was aware of it, but I don't think it is relevant --

MR. PENNY: Sorry, Mr. Chairman. With respect, I asked my questions. I got my answers. If Mr. Shepherd wants to conduct re-examination, then that's his prerogative. But it doesn't seem to me appropriate for the witness to take the opportunity at the end of my cross-examination to go back over answers he has already given, to give further elaboration, in my respectful submission.

MR. KAISER: Well, I thought he was saying he may not have had an opportunity to fully answer your questions, but we can do it through re-examination. Do you want to pick up the baton, Mr. Shepherd?

MR. SHEPHERD: Thank you, Mr. Chairman. Does the Board wish to ask questions first or do you want me to go

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The conclusion was that -- this Department of Finance study concluded that there was clear evidence that investment was strongly and positively influenced by the 2001-2004 corporate income tax reductions. A 10 percent reduction in the tax component of the user cost of capital is associated with the increase in capital stock in a 3 to 7 percent range.

One of your comments, I think it was to Mr. Shepherd, you made the note -- and this was before there was any consequent reduction in price. You had to have this first step of there being an increase in the capital stock, which I guess you point out in your flow diagram, and then subsequent to that there would be a potential reduction in price in the GDP IPI.

Do you have any idea how long it takes each of these to two steps to take place, or is that just a matter of guesswork?

DR. GEORGOPOULOS: Guesswork. It depends on the scale of the operation. Again, there is the planning stage, the strategy, how much capital you can invest and where, and then there is the implementation of capital. And I should note, when you are purchasing capital, if anything, that may cause a rise in factor prices.

MR. KAISER: Right.

DR. GEORGOPOULOS: Right? But I am abstracting from that. But here, what we're having is a productivity change, which accumulates -- which means capital will go up, okay. Sorry, capital has gone up which has led to

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productivity increase.

And essentially what that has done is that has increased the capacity of production in the economy. You hear the Bank of Canada talking about where demand is relative to capacity. Capacity is the stock of capital we have in the economy, labour and technology.

So capital stock increases, that's a long-run result, and, as a result, our overall supply in the economy has gone up and, for a given demand, prices drop.

How long that takes, I don't know.

MR. KAISER: Do you take Professors Mintz and Wilson to say, in the five-year period of this IR plan, we have a potential $80 million cost reduction, and of course on an economy-wide basis, it is much larger, but they are saying that we should have confidence that within that time frame, the full amount of that tax reduction within that time frame, will be captured in the GDP IPI in that time frame. Is that how you understand their theory?

DR. GEORGOPOULOS: Yes. Do I have confidence in it? Not without empirical evidence.

MR. KAISER: Right.

DR. GEORGOPOULOS: I am not sure how they came up with the numbers, too.

MR. KAISER: We understand that this economy is not perfectly competitive. And you say that an economy-wide corporate tax -- with an economy-wide corporate tax reduction, prices will not fully fall to the perfect competition level; that is, a level where the full fall

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will reflect consumers getting the full benefit of the corporate tax, i.e., in the five-year period that I have been referring to.

There are lots of studies of the degree of competition in the Canadian economy over many years. Do you have any -- and lots of studies of the degree of barriers to entry by different industries in this country.

Do you have any -- and I come to this, because you referred to this study of the foreign investment review restrictions, where the authors compared Canada to a bunch of other countries, and I think we were the ninth most restrictive compared to however many it was.

Do you have any evidence you can put on the record as to the degree of competitiveness of the Canadian economy within that kind of a ranking, similar to the study you referred to on FIRA?

DR. GEORGOPOULOS: I don't have any evidence offhand I could think of. There may be studies out there that have quantified the barriers.

MR. KAISER: Thank you. Mr. Shepherd, did you have any re-exam?

MR. SHEPHERD: Well, thank you, Mr. Chairman. The Board Members have done virtually all of my re-direct. I have just two questions.

RE-EXAMINATION BY MR. SHEPHERD:

MR. SHEPHERD: This is following up on something Ms. Chaplin asked you.

Do monopolists and oligopolists, people who have

RP-1999-0017

IN THE MATTER OF the *Ontario Energy Board Act*, 1998,

AND IN THE MATTER OF an Application by Union Gas Limited for an order or orders approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission and storage of gas in accordance with a performance based rate mechanism commencing January 1, 2000;

AND IN THE MATTER OF an Application by Union Gas Limited for an order approving the unbundling of certain rates charged for the sale, distribution, transmission and storage of gas.

BEFORE: George Dominy
Presiding Member and Vice Chair

Malcolm Jackson
Member

DECISION WITH REASONS

July 21, 2001

2.314 In regard to VECC's concern that flexibility costs may be over-recovered, Union submitted that the concern was unfounded since costs are measured by foregone M12 revenues. Should volumes increase, there will be an increased need for M12 capacity or a substitute and therefore, delivery flexibility costs would increase as revenues increase.

Board Findings - Non-routine adjustments (Z-Factors)

2.315 Most parties agreed that a provision for non-routine items is appropriate for a price-cap plan. The Board accepts this and the view of Dr. Bauer that Z-factors provide a safeguard against events entirely outside of management's control and against which no meaningful precautions exist.

2.316 The Board agrees with the intervenors that the use of Z-factors limited to changes in legislative and regulatory requirements and generally accepted accounting principles specific to the natural gas business is appropriate.

2.317 In principle, the Board believes that in the long run economy-wide changes are captured in economy-wide indices, such as the GDPPI, and therefore are captured in the price cap. It must be noted, however that the GDPPI is a Canada-wide index, whereas ideally, if the index is to reflect the changes in costs to Union, the Board would want an index for the region of Ontario served by Union. Furthermore, the Board recognizes that changes in costs can take some time to be reflected in the GDPPI. In determining base rates, it is important to reflect the impact of known changes. In setting rates for subsequent years under the PBR plan, some cost changes related to unforeseen externally driven events which are not specific to the industry and have an economy-wide impact may be appropriately considered to be covered by revenues resulting from application of the price cap. The introduction of thresholds, off-ramps, and the customer review process provide a protection for both the Company and the customer in the instance that there are significant major impacts resulting from such changes.

2.318 For example, in the case of changes in provincial income taxes, the Board doubts that this will be fully reflected in a Canada wide GDPPI and in any event would be concerned about a time lag involved. The Board directs Union to track the effect of changes in the Ontario Income Tax and to bring forward the cost changes to be considered through the customer review process as an adjustment to rates.

2.319 Several parties questioned the propriety of including stranded costs in a Z-factor mechanism without a more detailed regulatory review. The Board shares this concern.

2.320 The Board will not pre-approve either stranded costs or litigation costs in general as Z-factors. However, the Company is free to bring before the customer review process any proposals related to the recovery of stranded costs or the recovery of litigation costs that the Company could not have reasonably foreseen.

2.321 Union has proposed that costs to provide east-end deliverability on the Dawn-Trafalgar transmission system at Parkway for customers who are returned to system gas after being served under a direct purchase contract be eligible for Z-factor treatment. The Board notes that in the Settlement Agreement related to unbundling issues parties agreed that the costs associated with managing the east-end obligation for return to system would be recorded in a new deferral account and that all prudently incurred costs would be recovered from system customers. In the case of an "abnormal" return to system Union would immediately inform the Board and other parties and make proposals for an alternative treatment, should one be required.

2.322 Union has also proposed that under certain circumstances costs to provide additional flexibility for customers respecting the gas that is subject to the 22-day call at Parkway, and rate changes related to the impact of unbundling customer billing, be considered for Z-factor treatment. The Board notes that parties agreed that recovery of the costs for the 20% system-wide solution "meets the definition of a non-routine adjustment and that rates will be adjusted to recover these amounts separate and apart from any rate adjustments arising from Board's decision on Union's PBR proposal." The Board accepts this agreement, but is not prepared to pre-approve the Z-factor

RP-2001-0029

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Sched. B;

AND IN THE MATTER OF an Application by Union Gas Limited for an order or orders approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission, and storage of gas for periods commencing January 1, 2001, and January 1, 2002;

AND IN THE MATTER OF the customer review process and other mechanisms approved by the Ontario Energy Board in its decision in RP-1999-0017.

BEFORE: Malcolm Jackson
Presiding Member

George A. Dominy
Member

Paul B. Sommerville
Member

DECISION WITH REASONS

September 20, 2002

5. PASS-THROUGH AND NON-ROUTINE ADJUSTMENTS

5.1 ONTARIO INCOME TAX AND TAX RATE FOR INVENTORY CARRYING COST

5.1 There are three issues addressed by intervenors concerning the role of Ontario income taxes in Union's rates over the PBR term. One issue is whether the Applicant should be compelled to make a one-time non-routine adjustment to the price cap element of the PBR formula to reflect the fact that Ontario corporate income taxes have decreased over the last two years of the trial PBR plan.

5.2 A second issue is the interpretation of the Board's decision in RP-1999-0017 as it concerned a $900,000 reduction in the revenue requirement for Union arising from tax decreases which had been fully implemented in May 2000. Thirdly, there is a question as to the tax rate to be used in the calculation of deferral accounts, most particularly, the deferral account created to capture the carrying costs related to inventory of gas. The Board will deal with the later two issues at the conclusion of this section of the Decision.

5.3 The Board's Decision in RP-1999-0017 did not dispose of the issue as to whether material changes to corporate taxation rates should be treated as mid-term Z-factor adjustments or conversely, could be considered to be captured and reflected in the GDPPI as part of the overall economic environment.

5.4 Instead, the Board required Union to "track the effect of changes in the Ontario Income Tax, and to bring forward the cost changes to be considered through the CRP as an adjustment to rates." The Board expressed some doubt that tax changes applicable only to Ontario would be adequately reflected in the GDPPI.

5.5 The Applicant asserts that the decreases in corporate income taxes are captured in the GDPPI, which has been selected by the Board as the index to be used in ascertaining the inflation factor relevant to the PBR formula, and that no non-routine adjustment should be made. Some intervenors have suggested that the decreases in Ontario income tax cannot be presumed to have been incorporated in the GDPPI, at least not within an appropriate time frame, and that the decreases should be dealt with as a non-routine adjustment. It has also been suggested that the fact that the GDPPI is a national index, reflecting national price fluctuations, blunts its efficacy as a reflection of specific Ontario tax reduction measures.

5.6 In response to the Board's direction Union presented expert evidence to the effect that the Ontario Tax changes outlined in the various filings have been, or are likely to be reflected in the GDPPI. In their opinion, all tax adjustments which are of general application within Ontario find their way into indices such as the GDPPI sooner or later. The experts testified that such changes in tax rates, as are part of the record in this case, are reflected in such indices either prospectively, or after a lag period: prospectively, insofar as the economy reacts to tax changes upon the announcement by the provincial government of its intention to change tax rates; and after a lag, when effects of the tax changes work their way through the economy after enactment.

5.7 The experts testified that the reflection of changes in tax rates in indices such as the GDPPI is even more certain when the tax change affects a significant portion of the national economy, and when like changes are being implemented in numerous jurisdictions across the nation. The Ontario economy represents a very significant portion of the overall Canadian economy which is reflected in the GDPPI and Ontario corporations are responsible for over 40% of the corporate profits generated in Canada. The experts suggested that this fact makes it likely that the national index, the GDPPI, will reflect the Ontario changes in corporate tax rates.

5.8 Further, they noted that numerous other jurisdictions in Canada had made reductions in tax rates over the relevant period. In their view, this widespread reduction in tax rates across the country makes it very likely that the index would reflect this aspect of the economic environment.

5.9 Union submitted that the danger of permitting or requiring it to approach changes in tax rates through the Z factor mechanism is that such adjustments would lead to a double counting of the changes to the extent that they were already reflected in the GDPPI.

5.10 Union offered examples from other regulatory contexts in which the regulator determined that only tax changes which uniquely or disproportionately affect the utility should be treated as a non-routine adjustment. Union submitted that the rationale for this approach was that the economy-wide price index reflected general tax changes and thus, to treat general tax changes as a Z-factor would be to double count their effect.

5.11 Union stated that the experience of other regulators showed that attempting to account for lead and lag effects of tax changes in economy-wide price indices would require reflection of not only current tax changes in present and future price caps but also the impacts of past tax changes in present and future price caps. Union also suggested that there was no recognized or reliable methodology to measure lead or lag effects.

5.12 Addressing the issue that the change was in provincial income tax rates, while the GDPPI reflects national price fluctuations, Union's experts stated that four-fifths of corporate profits are earned in three provinces, each of which is reducing corporate income tax rates in comparable degrees. Therefore, the economy-wide GDPPI would be significantly affected by these simultaneous reductions and "... there is no basis for an adjustment."

5.13 Union also asserted that attempting to correct the price cap for leads or lags would induce strategic behaviour and litigation thereby reducing the simplicity of setting the price cap.

Board Findings

5.29 There may be instances where a tax change is of such a nature that it may warrant treatment as a Z factor. Such a case may arise when a tax change is of such special and unique application to Union that it could not reliably be expected to be reflected in a Canada-wide index such as the GDPPI. It may also be true that the parties, when assessing the current PBR plan and designing its successor, will want to consider alternate methodologies for determining the inflation factor.

5.30 The Board notes that the use of an actual GDPPI, which the Board has chosen for expediency and to avoid significant debate within a CRP, means accepting that changes in other costs too may have a lag affect on rates. Its fairness over time would appear to rely on consistently using the same approach, including consistently choosing comparable data on which to base the I-factor determination.

5.31 The Board accepts for now that the changes in the Ontario corporate tax rates are or will be reflected in the GDPPI, and that no Z factor adjustment should be made at this time with respect to the rate schedules currently in effect under the PBR plan. The income tax changes, therefore, are to be considered to be captured in the determination of the PCI.

5.32 In respect of the second issue relate to taxes, the Board notes that the Applicant has not implemented the Board's direction to decrease its base revenue by $900,000 to reflect the adjustment of corporate income tax which took effect in May 2000 and which is necessary to determine an appropriate base from which to go forward. That direction appeared in paragraph 2.169 of the RP-1999-0017 Decision with Reasons.

5.33 An adjustment of this type is necessary in order to make the base in 2000 "normal" for the future period when rates will be in effect. Union has suggested that because the Board asked it to track changes in corporate income taxes for presentation and consideration by the Board in its future assessment of the acuity of the GDPPI in capturing tax changes, it decided to delay or forego the implementation of the Board's direction.

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Ontario Energy Board

Commission de l'Énergie de l'Ontario

RP-2004-0188

2006 ELECTRICITY DISTRIBUTION RATE HANDBOOK

REPORT OF THE BOARD

2005 MAY 11

tax information disclosure, addressed later in this section, will allow for adequate monitoring of these issues.

With respect to the third point, the Board accepts the evidence of Dr. Mintz that in a competitive market tax reductions will tend to lead to lower prices, but does not agree with his conclusion that the tax savings of disallowed expenses should be passed on to ratepayers. Such an approach takes no account of the increased expenditures from which the tax savings arise. Presumably in a competitive market, if an entity incurs a cost from which a tax reduction is gained, the increased cost works its way into prices as well. A unilateral allocation of the tax savings to the ratepayers would seem to be an inappropriately simplistic application of the competitive market principle.

With respect to the fourth point, the Board does not agree that the link between PILs and the stranded debt is relevant. All tax revenues are used for some purpose, whether to fund programs or repay debt. To the extent tax deductions are allowed, there will necessarily be a reduction in funds available for those other purposes. The relationship between PILs and the stranded debt is no different. This conclusion is supported by the fact that the express purpose of PILs was to put municipal distributors on an equivalent basis with tax paying distributors. The fact that PILs payments are allocated to the stranded debt is a function of provincial policy and is not necessarily a permanent feature. Finally, the Board notes that PILs from distributors are not the only, or largest, source of funds currently paying down the stranded debt.

For all of these reasons, the Board rejects the proposal by Schools, and concludes that tax savings arising from disallowed expenses, including purchased goodwill and charitable donations, will not be allocated to ratepayers. Ratepayers have not paid for the expense through rates, and therefore are not entitled to the tax benefit.

Fair market value "bump"

The Ministry of Finance required the re-valuation of distributor assets to market value, effective October 1, 2001. This Fair Market Value Bump, or FMV Bump, adjusted the

1 of 3 DOCUMENTS

In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, Part 1 of 3

CC Docket No. 87-313

RELEASE-NUMBER: FCC 89-91 37691

FEDERAL COMMUNICATIONS COMMISSION

4 FCC Rcd 2873; 1989 FCC LEXIS 860; 66 Rad. Reg. 2d (P & F) 372

April 17, 1989 Released; Adopted March 16, 1989

CORE TERMS: regulation, carrier, productivity, cap, rate of return, tariff, exogenous, consumer, formula, competitive, notice, tentatively, interstate, ratepayer, innovation, network, telecommunication, depreciation, monitoring, commenter, customer, regulated, annual, differential, pricing, basket, reply, tentative, shifting, earning

ACTION:
[1]**

REPORT and ORDER and SECOND FURTHER NOTICE of PROPOSED RULEMAKING

OPINION:

[*2876] By the Commission: Commissioners Patrick, Chairman; and Quello issuing separate statements; Commissioner Dennis concurring and issuing a statement at a later date.

I. INTRODUCTION

1. For the past two years we have been evaluating our current approach to regulating dominant carriers' rates for interstate basic service offerings to determine if our policies continue to further the objectives they originally were designed to achieve. Our current approach is based on the following theory: that limiting a dominant carrier's profit on invested capital to "normal" levels is the most effective means of restraining its market power, enhancing consumer welfare, and furthering the public interest in just, reasonable, and non-discriminatory rates. For more than twenty years we have been administering an increasingly elaborate regulatory system based on this theory. During that time circumstances in telecommunications markets have changed dramatically. Our examination of these changes and our experience administering this system lead us to conclude that our approach actually impedes, rather than facilitates, **[**2]** the achievement of our statutory goals with regard to the regulation of the American Telephone and Telegraph Company (AT&T) and local exchange carriers (LECs).

2. We also have been considering whether our statutory goals are more likely to be achieved by implementing an alternative regulatory approach, commonly referred to as incentive regulation. In comparison with existing regulation, this approach is more likely to help strengthen the **[*2877]** competitiveness of American industry in domestic and international telecommunications markets, and, most importantly, help ensure that consumers share in the benefits of the information age through lower rates and a wide array of high quality services.

3. In this Order, we find that incentive regulation represents an improvement over our existing regulation of AT&T and the LECs. We adopt rules implementing incentive regulation for AT&T on a mandatory basis. We will begin to apply those rules in May of 1989 in conjunction with our review of a tariff filing by AT&T conforming to those rules. AT&T is directed to make that filing on 45 days' notice, to be effective July 1, 1989.

4. In this Order, we also propose a plan and schedule **[**3]** for implementing price cap regulation for LECs. Under our proposal, price cap regulation would be mandatory for all depooled, Tier 1 LECs, and optional for all other depooled LECs. Although it may be possible to implement the proposed plan as early as January 1, 1990, it is more likely that implementation would occur in conjunction with the LECs' next annual access tariff revisions, which currently are scheduled to be filed on March 30, 1990, to be effective July 1, 1990.

n402 NTIA Comments at 9-10 & App. A.

n403 Id. at App. A at 5.

n404 USTA Reply at 31 n.79; Pactel Reply at 71-72.

n405 USTA Reply at 31 n.79.

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192. A third set of commenters prefers the use of an industry-specific cost index. Most states that commented on this issue advocate the development and use of a telephone industry-specific cost index. The DC PSC wants us to develop a telephone company based cost index, or at least raise the productivity offset to compensate for the use of the GNP-PI, which they claim is higher than an actual cost index would be. n406 The Maryland PC also proposes development of an industry-specific cost index, objecting to the use of GNP-PI because telephone company price increases have lagged behind overall inflation. n407 The Ohio PUC suggests we use GNP-PI for the initial four-year period of price caps, but solicit comments on the development of an industry specific cost index, developing the index during that initial four years. n408 Ad Hoc also is willing to accept use of the GNP-PI, but prefers the use of an industry-specific index. n409

n406 DC PSC Comments at 10. See Wisconsin PSC Comments at 6-7.

n407 Maryland PC Comments at 16-17. Contra USTA Reply at 30-31; Pactel Reply at 69-70.

n408 Ohio PUC Comments at 14-15.

n409 Ad Hoc Comments at 23.

iii. Discussion

193. None **[**185]** of the commenters in this proceeding have persuaded us to discard the GNP-PI as the measure of inflationary changes faced by dominant carriers. In proposing the GNP-PI, we sought an index that would reflect changes in the costs that carriers face and that would not exhibit volatility attributed to inflationary pressures in one or two sectors of the economy. We also sought an index that could not be influenced by individual carriers or groups of carriers. While we recognized that no existing index perfectly reflects the cost changes faced by the industry, we found that a broad-based **[*2973]** index would best match the criteria we sought in a carrier inflation indicator. Based on a review of these factors and the arguments presented by parties, we continue to believe the GNP-PI is the best option among existing indexes for measuring the cost of inflation for the purposes of our price cap formula.

194. As we stated in the Further Notice, the GNP-PI summarizes price changes in all sectors of the economy. n410 This characteristic is important in several respects. First, the broad-based nature of the GNP-PI means that changes to the statistic cannot be substantially influenced **[**186]** by inflationary pressures experienced by only one or two economic sectors. Furthermore, the carriers themselves can do little to influence changes to the GNP-PI. Finally, the broad-based GNP-PI better reflects the inflationary pressures faced by carriers than does a narrower index focusing on prices faced by consumers or manufacturers.

n410 Further Notice, 3 FCC Rcd at 3390 (para. 348).

195. In contrast to the GNP-PI, the CPI and PPI reflect fewer sectors of economic activity and thus, by their very nature, are more volatile and are less likely to reflect the costs faced by carriers. n411 Arguments that contracts for certain goods and services are tied to CPI increases, or that PPI sub-indexes should be employed, are beside the point. Not all contracts are tied to the CPI, nor does the PPI or its sub-indexes measure exactly the cost change of every input a carrier uses. In searching for an index that reflects the totality of the inflationary pressures faced by carriers, the broad-based GNP-PI is superior to indexes that reflect only consumer prices or the prices faced by manufacturers.

n411 Id. at 3391 (para 350) & n.773.

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[*3001] iii. Discussion

248. To ensure that ratepayers are better off under price cap regulation, and to pass on directly to them gains resulting from efficiency improvements that we expect will result under a price cap system, we proposed to add the Consumer Productivity Dividend (CPD) of 0.5 percent to the productivity factor. The CPD ensures that consumers are the first beneficaries of added efficiency under price caps, since prices will be 0.5 percent lower than otherwise. Only after AT&T achieves this degree of efficiency will it be in a position to reap rewards. As a result, the CPD essentially represents a guarantee that under a price cap system, inflation-adjusted rate reductions will exceed the historical average under rate of return.

249. We remain convinced that a CPD of 0.5 percent provides the best balance of shareholder and ratepayer interests. This level represents a degree of added efficiency that appears achievable by AT&T, and will at the same time constitute a significant benefit to consumers. n545 No commenter has given any data supporting an argument that the CPD should be either higher or lower. There is good reason to avoid setting the CPD either [**237] too high or too low. If it is too low, ratepayers may not reap direct short run benefits from price caps in the form of lower rates. . As we have previously discussed, competition for AT&T's services is not sufficient by itself to ensure that ratepayers receive an immediate benefit, absent the CPD. n546 If it is set too high, AT&T may be compelled to cut its prices below its costs, and thereby threaten its own profitability and disrupt the competitive forces that do exist. Thus, setting the CPD too high is not a costless insurance policy, as the New York DPS argues.

n545 The productivity adjustment ensures that ratepayers receive the same benefits from technological advances under price caps as they would have under rate of return regulation, and the CPD adds further protection for ratepayers.

n546 See Section III.C.1.b, supra.

250. Furthermore, we find that the present discounted value of the CPD for the next four years should not be passed through in the form of up-front rate cuts. As several parties argue, such cuts might drive initial price cap rates below the zone of reasonableness. Also, by lowering the price cap each year, the CPD as proposed ensures that real [**238] prices will fall each year.

251. The alternatives to price caps proposed by several parties all provide somewhat weaker incentives to efficiency than do price caps, and may not generate as many consumer benefits. Most require some sharing of savings based on a carrier's performance, with consumers sharing in profits only after a carrier has managed to earn a targeted rate of return. A price caps plan for AT&T that includes a productivity factor in which we have a high degree of [*3002] confidence and the CPD, not only gives AT&T an incentive to be as efficient as possible, but also ensures that consumers, not carriers, get their share of efficiency gains first. Relative to the proportional "sharing" mechanisms, the price cap system places consumers at the head of the line. Because the sharing mechanisms the parties propose may give lesser incentives to efficiency, they provide lower consumer benefits than our Consumer Productivity Dividend for AT&T. The parties that urge use of financial adjusters as a way of sharing productivity gains under price caps argue that the LECs, not AT&T, lack effective competition to restrain pricing and overall rate of return. Thus, they argue, [**239] the sharing mechanism in the financial adjusters is necessary as a protection for ratepayers. However, AT&T faces competition to varying degrees for some of its services, which provides a constraint on AT&T's prices and earnings. The protection for ratepayers provided by the financial adjusters is purchased at the price of reduced efficiency incentives. Although not strong enough by itself to protect ratepayers, the competition AT&T faces provides a measure of protection for ratepayers, and lets us avoid the reduced efficiency incentives which would result from using financial adjusters. In a later section of this Order, we discuss further the possible application of these sharing mechanisms to the LECs.

252. In addition, we reject suggestions that we simply freeze rates, with no adjustment for inflation or productivity. We find that rate freezes, while of some benefit to consumers, raise substantial legal concerns under our statutory system of carrier-initiated rates, and may not permit the carrier to recover legitimate cost increases. Rate freezes may also cause rates to depart from costs in a random and unpredictable manner.

d. Exogenous Costs

i. Summary of Further [**240] Notice

253. In the Further Notice we proposed that price cap levels should vary, not only in response to changes in inflation and to expected improvements in productivity, but also in accordance with changes in certain exogenous costs. We

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defined "exogenous costs" n547 as costs which change due to changes in laws, regulations, or rules, or due to other administrative, legislative, or judicial changes beyond a carrier's control. n548 We tentatively found that we must adjust the cap for such costs in order to assure that the price cap formula does not lead to unreasonably high or unreasonably low rates.

n547 We also referred to these costs as "exogenous factors" and "Z costs."

n548 3 FCC Rcd at 3383 n.738.

[*3003] 254. We proposed to treat the following as exogenous cost changes: changes in access charges paid by AT[T] changes in costs due to tax law changes; changes in the rate of flow-back of excess deferred taxes; changes in expense levels due to the expiration of current amortization programs; changes due to amendments to Part 36 of this Commission's Rules, the Jurisdictional Separations Manual; n549 and changes due to amendments to Part [**241] 32 of this Commission's Rules, the Uniform System of Accounts (USOA). n550 We proposed not to extend exogenous cost treatment to changes in depreciation expense caused by changes in depreciation rates, nor to changes in international accounting rates. In this section we first address several issues raised by the parties concerning theoretical and practical aspects of using exogenous cost factors to adjust the price cap. We then discuss the exogenous costs named in the Further Notice, n551 as well as several additional exogenous cost factors proposed by commenting parties.

n549 47 C.F.R. §§ 36.001 et seq.

n550 47 C.F.R. §§ 32.001 et seq.

n551 We do not discuss here those exogenous cost factors which would apply only to local exchange companies.

ii. General considerations

255. Ad Hoc contends that our proposal to allow adjustments for a variety of exogenous cost factors will allow significant double counting of costs. By "double counting" Ad Hoc means that cost changes which affect the industry generally, and which are thus reflected in the GNP-PI, may also be treated as exogenous cost factors. n552 To avoid double counting, Ad Hoc suggests that carriers be required [**242] to petition for all exogenous cost adjustments except for adjustments to reflect changes in access tariffs. Such petitions, Ad Hoc argues, should be granted only if the carrier demonstrates that the cost change at issue is not reflected in the GNP-PI. n553

n552 Ad Hoc Comments at 29-30.

n553 Id. at 37.

256. We agree that we should not treat as exogenous cost factors those cost changes which are already adequately reflected in the GNP-PI. We do not, however, share Ad Hoc's belief that the only way to prevent double counting is to require a special showing each time a carrier seeks an exogenous cost adjustment. In our view, there are some types of cost changes which are imposed on the carrier by governmental action and which are unique to common carriers. These are not likely to be reflected in the GNP-PI, and therefore [*3004] can be identified by type as exogenous. There are other types of costs which would ordinarily be reflected in the GNP-PI, but which might, under unusual circumstances, warrant exogenous treatment on a case-by-case basis. In our discussion, below, of the different types of costs for which we or others have proposed exogenous treatment, we include [**243] the question of possible double counting in our analyses.

257. Several parties raise questions about the manner in which exogenous cost changes are calculated. Michigan PSC Staff urges us to define the manner in which each exogenous cost adjustment is to be calculated, in order to assure that the formula will be uniformly applied. n554 DC PSC complains that the Further Notice did not adequately explain how we will assure that both direct and indirect benefits associated with changed regulatory requirements will be passed on to consumers. . GTOC asks that we clarify the manner in which the return-on-investment component of an exogenous cost change will be calculated. n555 The calculation and allocation of exogenous costs are discussed in Section III.C.1.e., below. Consistent with the use of historical, rather than forecast, costs in our formulas, AT&T should use its

actual rate of return on interstate investment during the base period to calculate the return-on-investment component of exogenous costs.

n554 Michigan PSC Comments at 22.

n555 GTOC Comments at 49-52. GTOC argues that our discussion of exogenous costs implies that we are referring to changes in revenue requirement and not merely to changes in expense. GTOC points out that, if we do intend to adjust for changes in revenue requirement, then we must provide a way to calculate the return component of that revenue requirement. GTOC notes as an example the recent Separations Manual change involving the use of dial equipment minutes. According to GTOC, 42 percent of the revenue requirement reduction associated with this change is due to return on investment and taxes. GTOC also argues that if exogenous cost changes are not intended to include return on investment, then they will not be fully captured. GTOC suggests that we continue to prescribe a rate of return for use in calculating exogenous cost changes, and that we continue to use the current prescription for the next four years or until we determine that represcription is necessary. Id.

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258. DC PSC argues that carriers should be required to forecast the value of any exogenous cost change which can be reasonably estimated in advance. DC PSC believes that requiring carriers to adopt preliminary estimates of exogenous cost adjustments is necessary to avoid jurisdictional cost shifting. n556 Pactel states that if a cost change clearly will occur **[*3005]** and accurately can be predicted, that change should be included for the period during which a tariff will be in effect. Changes which cannot be predicted should, according to Pactel, be included in the next annual filing after the changes occur. n557 As discussed at III.C.1.e.i., infra, our requirement that the PCI be continuously updated should address the concerns of these parties.

n556 DC PSC Comments at 11-13. The DC PSC states a particular concern that, if carriers are not held to forecasts of cost changes due to changes in jurisdictional separations rules, then joint boards which adopt separations changes might have to reinvestigate the dollar effects of their actions in later years.

n557 Pactel Comments at 40.

iii. Access charges

259. No commenting party opposes treating access charges paid **[**245]** by AT&T as exogenous costs, though a few express some skepticism about our assumption that access costs are wholly beyond AT&T's control. n558 ACTA and PRTC propose that AT&T be required to adjust the price cap for access charge changes quarterly, rather than annually. They believe that annual adjustments would foster predation in a time of falling access prices, while offering insufficient opportunity for cost recovery in the case of rising prices. n559 In addition, several parties argue that, in order to prevent AT&T from allocating access cost adjustments unfairly among its services, we should specify the manner in which AT&T must flow access cost changes through to particular services or rate elements. n560

n558 See ACTA Comments at 12 n.12; Bell Atlantic Comments at 11-13.

n559 ACTA Comments at 13-14; PRTC Comments at 23-25.

n560 MCI Comments at 65-67; New York DPS Comments at 22-23; US Sprint Comments at 21; Cable & Wireless Reply at 14-15; MCI Reply at 26-27.

260. We adopt our proposal to treat switched and special access charges as exogenous costs. The rates which the LECs charge to AT&T for local exchange access are determined by tariffs filed by the LECs and **[**246]** reviewed by this Commission. Although actions taken by AT&T may have an impact on some of the costs which the LECs seek to recover through their access rates, the regulatory process through which this Commission decides whether to suspend, reject, or investigate an access tariff, or to allow it to take effect as filed, is beyond AT&T's control. Furthermore, because access charges are both unique to telecommunications companies and, for AT&T, very large, the impact on AT&T of changes in the price of access would not be adequately represented by the GNP-PI. For these reasons, changes in rate levels charged to AT&T for switched and special access will be considered as exogenous cost changes which trigger adjustments to AT&T's price caps.

[*3006] 261. While we agree that there is a possibility that undue distortions in the relationship between AT&T's costs and its prices could occur if significant access cost changes were not passed through in a timely fashion, we do not

agree that quarterly filings are necessary to avert this possibility. We believe it will be more efficient to address the necessity for midyear adjustments to AT&T's price cap index at the time that access charge [**247] changes are allowed to take effect. The allocation of access cost adjustments among AT&T's services is discussed in detail in Section III.C.1.e., below.

iv. Tax law changes

262. Summary of Further Notice. In the Further Notice we tentatively found that, because tax law changes are imposed by government action and not controllable by carriers, changes in tax liability due to changes in the tax laws should be flowed through to the price caps. We proposed that carriers use historical, rather than projected, costs in calculating the adjustment for tax law changes. n561 We also proposed that price caps should be adjusted in the event of a change in the rate at which a carrier is flowing back to the ratepayers excess deferred taxes. n562

n561 3 FCC Rcd at 3215 (paras. 404-05).

n562 Deferred taxes represent tax expenses which are deferred to a future accounting period pursuant to the tax normalization methods described in Section 32.22 of this Commission's Rules, 47 C.F.R. § 32.22. The Tax Reform Act gave rise to excess deferred taxes when it reduced the corporate tax rate. Because of this tax rate reduction, a portion of the deferred taxes which were included in the cost of regulated service prior to 1987 at the old rate will now never have to be paid. Pursuant to Section 203(e) of the Tax Reform Act, common carriers flow back these excess deferred taxes to ratepayers following the "average rate assumption method." That method spreads the return to the ratepayers of excess deferred taxes over a period of years which corresponds roughly to the life of the asset

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263. Pleadings. All carriers commenting on this issue believe that tax law changes should be treated as exogenous costs in calculating the PCI. n563 In support of this view, SWB asserts that exogenous treatment of tax law changes satisfies the two objectives of the exogenous cost adjustment. According to SWB, those objectives are (1) to maintain the relationship between price and cost; and (2) to hold carriers responsible for operational decisions and for the ordinary risks of doing business. n564

n563 See, e.g., NYNEX Comments at 28; SNET Comments at 10; SWB Comments at 31; BellSouth Comments at 23.

n564 SWB Comments at 31.

[*3007] 264. Ad Hoc, API, TCA, and DC PSC all oppose allowing an exogenous cost adjustment for changes in the tax laws. Ad Hoc, supported by TCA, argues that changes in the general tax laws affect all industries in a manner which directly affects the GNP-PI. n565 Therefore, according to these parties, allowing an exogenous cost adjustment for tax law changes constitutes double-counting. API adds that, in discussions with BLS, it was apprised that changes in tax laws are generally factored into indexes such as the GNP-PI. n566 DC PSC agrees that [**249] there may be double-counting and notes that, under our proposal, they might even be able to adjust rates for increases in social security taxes. n567

n565 Ad Hoc Comments at 28; TCA Reply at 19 n.39.

n566 API Comments at 24.

n567 DC PSC Comments at 13.

265. Several carriers dispute the contention that tax law changes are reflected in the GNP-PI. BellSouth asserts that there is no a priori reason why a tax increase necessarily results in an inflation increase, and that the empirical question whether industry-specific or broad-based tax changes are determinants of changes in the GNP-PI has not been answered on the record in this proceeding. BellSouth also states that, because utilities traditionally serve as tax collectors for all levels of government, they are subject to a variety of assessments unique to the business world. BellSouth contends that this type of tax should continue to be passed on to ratepayers, just as it is under rate of return regulation. n568

n568 BellSouth Reply at 56-57.

266. NYNEX argues that the claim of double-counting is incorrect because the GNP-PI does not reflect cost changes currently, but only after the economy has had a chance to [**250] react to those changes. According to NYNEX, a price cap formula which did not account for tax law changes on a current basis would result in improper market signals, including demand distortions and inappropriate reallocation of resources in the general economy. n569

n569 NYNEX Reply at 43. In NYNEX's view, allowing a separate exogenous cost change for tax law changes is no different from what happens in rate of return regulation. Under rate of return, carriers adjust rates to reflect tax changes; later, operational costs reflect the reaction of the economy to those changes. NYNEX believes that to change this policy would be "unduly burdensome . . . and likely to require lengthy administrative procedures." Id. at n.73.

[*3008] 267. Pactel and USTA contend that Ad Hoc misunderstands the differing functions of the GNP-PI and the exogenous cost adjustments. They state that the GNP-PI accounts for general changes in the level of input prices faced by carriers, while the exogenous cost adjustment is for specific cost changes that would not be reflected in the GNP-PI. Thus, they claim, the effect of tax changes on price levels in the economy is reflected by the GNP-PI, but [**251] the change in a carrier's own tax liability is not reflected by the GNP-PI and must therefore be recognized through a separate cost adjustment. n570

n570 Pactel Reply at 72-73; USTA Reply at 42-43.

268. New York DPS seeks assurance that state and local tax law changes will also be treated as exogenous cost factors. In this regard, New York DPS contends that a recent repeal in New York of property tax assessments on central office equipment will, when fully implemented, reduce interstate telephone costs in New York State by about $ 60 million. n571

n571 New York DPS Comments at 21.

269. Several parties seek amplification of certain aspects of our proposed treatment of tax law changes. BellSouth, Bell Atlantic, and NYNEX all ask us to make clear that carriers may "gross up" cost changes due to changes in income tax laws. They claim that the impact of tax cost changes must be calculated in this way in order to recognize a special characteristic of income tax expense, namely, that it is not tax deductible. n572 NYNEX and Bell Atlantic imply that if we do not allow them to gross-up tax cost changes when they calculate the PCI, we will cause them to violate depreciation [**252] and investment tax credit normalization requirements of the Internal Revenue Code. BellSouth simply urges us to "adjust [our] procedures and formulas accordingly, if necessary" to assure that carriers remain eligible for accelerated depreciation and investment tax credits. n573

n572 BellSouth Comments at 23 n.27; NYNEX Comments at 29-30; Bell Atlantic Reply at 7 n. 15.

n573 BellSouth Comments at 61.

270. NYNEX also requests that we clarify that changes in tax liability are to be represented by changes reflected on the financial statement and not by changes reflected on the company's tax return. NYNEX states that calculating exogenous cost changes by using liability reflected on the tax return could cause any changes involving accelerated depreciation to flow through in violation of the Internal Revenue Code. n574 Finally, NYNEX asks us [*3009] to confirm its understanding that tax costs include both current and deferred taxes.

n574 NYNEX Comments at 29.

271. Ameritech argues that we should also treat as an exogenous cost any increase in tax liability that a carrier might experience due to the general repeal of the investment tax credit. Ameritech states that [**253] as the pool of unamortized investment tax credits is amortized, the amount of tax expense reduction due to the investment tax credit will decline. Ameritech contends that, because the initial price cap rates will reflect past, higher levels of investment

tax credits, the decline of the investment tax credit constitutes an exogenous cost increase which must give rise to an adjustment like that which we proposed for changes in the rate of flow-back of deferred taxes. n575

n575 Ameritech Comments at 34 n.16.

272. Discussion. It appears that our proposal to treat tax law changes as exogenous was at once overly-simplified and too complex. We agree with the parties who contend that treating tax law changes of all sorts as exogenous would likely result in significant "double-counting" of cost changes already reflected in the GNP-PI. At the same time, we believe that if there are tax law changes which affect AT&T uniquely or disproportionately, and which are sufficiently large that endogenous treatment would render price cap rates unreasonably high or low, then those changes should be treated as exogenous cost adjustments. We therefore do not adopt our proposal. Instead, tax law **[**254]** changes will be presumed to be endogenous, but AT&T will be permitted to request exogenous treatment. n576

n576 Failure by AT&T to propose exogenous treatment of an unusual tax decrease would provide reason for an investigation of AT&T's annual filing.

273. An entity as large as AT&T, with employees and property spread throughout the country, is subject to many different kinds of taxes imposed by a multitude of taxing jurisdictions. These taxes change routinely from time to time, and are part of every company's ordinary risk of doing business. The overall effects of such tax law changes on prices are, to some extent, reflected in price indexes.

274. In one sense, BellSouth is correct that questions about how, to what extent, and when tax law changes are reflected in the GNP-PI are empirical questions which are, as yet, unanswered. However, BellSouth's implication that those answers could easily be discovered is not correct. The flow-through of corporate taxes to prices, and thus to price indexes, **[*3010]** has long been a complex and controversial topic in the literature of public finance. n577 We cannot, and need not, resolve that debate here.

n577 See generally, R. Musgrave & P. Musgrave, Public Finance in Theory and Practice, Chs. 13, 14 & 19; The Changing Distribution of Federal Taxes: 1975-1990, Congressional Budget Office, Oct. 1987; A. Atkinson & J. Stiglitz, Lectures on Public Economics.

[255]**

275. The parties who argue that the GNP-PI may reflect the impact of tax law changes on the prices AT&T pays for the goods and services it buys, but that it does not reflect the impact of those changes on the carrier's own tax expense, take too restricted a view of the GNP-PI and its role in our price cap formula. First, it is incorrect to view the GNP-PI as merely a measure of the costs of the things AT&T must purchase. As a very broadly based price index, it measures changes in all of the costs which affect prices in the economy. Tax costs are among that broad totality of costs. Second, we do not use the GNP-PI in our formula to represent the percentage by which each, or any one, type of cost faced by AT&T will rise or fall. Rather, it is used to indicate how AT&T's prices should be allowed to rise or fall in response to the rising and falling of all of its costs, whether paid to outside suppliers, to its own managers, workers, creditors and shareholders, or to the tax collector.

276. Since we are not adopting our proposal to treat tax law changes as exogenous cost adjustments, we do not discuss in detail all of the pleadings which addressed technical aspects of that proposal. **[**256]** We do note, however, that we never intended to place carriers in violation of the Internal Revenue Code, and that any exogenous tax changes which we do allow will be required to be calculated and applied in a manner consistent with the tax laws.

v. Separations Manual Changes

277. Summary of Further Notice. In the Further Notice we proposed to require adjustments to the PCI for changes in interstate costs due to changes in the Jurisdictional Separations Manual. n578 We proposed that such changes be calculated based on historical costs.

n578 Part 36 of this Commission's Rules, 47 C.F.R. §§ 36.1 et seq.

1 of 4 DOCUMENTS

In the Matter of Policy and Rules Concerning Rates for Dominant Carriers; PART 1 OF 3

CC Docket No. 87-313

RELEASE-NUMBER: FCC 90-314; ERRATUM DA 90-1543

FEDERAL COMMUNICATIONS COMMISSION

5 FCC Rcd 6786; 1990 FCC LEXIS 5301; 68 Rad. Reg. 2d (P & F) 226

October 4, 1990 Released; Adopted September 19, 1990; As Corrected October 31, 1990

CORE TERMS: productivity, cap, carrier, regulation, earning, offset, formula, rate of return, sharing, basket, interexchange, customer, interstate, exogenous, notice, offering, ratepayer, zone, tariff, pricing, mid-size, short term, commenter, backstop, depreciation, inflation, band, minute, consumer, stabilizer

ACTION:
[**1]

SECOND REPORT AND ORDER

JUDGES: By the Commission: Commissioner Duggan concurring in part and dissenting in part and issuing a separate statement.

OPINION:
[*6787] I. INTRODUCTION AND BACKGROUND

A. Statement of purpose

1. This Report and Order adopts a new system of regulating the interstate common carrier services of the Nation's largest local exchange carriers (LECs). These companies, in providing the critical telecommunications link between a customer's premises and the interexchange networks, have until now been regulated under a "cost-plus" system of regulation, in which rates the LECs can charge for services are based on costs plus a return on invested capital. By our action today, the "cost-plus" system of regulation will be replaced for the largest of the LECs on January 1, 1991, with an incentive-based system of regulation similar to the system we now use to regulate AT&T. Incentive regulation will reward companies that become more productive and efficient, while ensuring that productivity and efficiency gains are shared with ratepayers.

2. In designing an incentive-based system of regulation for the largest LECs, our objective, as with our price caps system for AT&T, is to [**2] harness the profit-making incentives common to all businesses to produce a set of outcomes that advance the public interest goals of just, reasonable, and nondiscriminatory rates, as well as a communications system that offers innovative, high quality services. To accomplish this objective, the plan we adopt for LECs modifies the tariff review process to set a ceiling, or cap, on the prices LECs can charge for their interstate offerings. The price cap is subject to an annual adjustment that ensures prices will drop in real, inflation-adjusted terms. LECs that can outperform the productivity level embedded in the annual adjustment mechanism are rewarded with the ability to retain reasonably higher earnings than would be available under the former regulatory system. Depending upon their achieved returns, their ratepayers share in those earnings. Those LECs able to decrease prices beyond the required level can retain an even greater amount of earnings.

3. Price cap regulation of LECs, as we have designed it, is intended to produce rates within a zone of reasonableness. Higher earnings will be shared with, or returned to, ratepayers. The checks and balances built into the system [**3] ensure that, with periodic review and adjustment, price cap regulation can serve as a long term mode of regulation for the LECs subject to it. In this respect, we view price cap regulation no differently than many of the state gov-

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SBA Supplemental Comments at 5, 18; IDCMA Supplemental Reply at 1; Boeing Computer Supplemental Reply at 2; DC People's Counsel Supplemental Reply at 1-2.

n56 E.g., MCI Supplemental Reply at 4-6; TCA Supplemental Reply at 5-6; Ad Hoc Supplemental Reply at 9; Executive Agencies Supplemental Reply at 11; Comptel Supplemental Comments at 2-3; Corporate Committee Supplemental Comments at 21-22; DC PSC Supplemental Comments at 9-10; Missouri PSC Comments at 1-2; Michigan PSC Comments at 1; NARUC Reply at 1, 4-5; Local Telecom Comments at 7; Metropolitan Reply at 11-14; Iowa Comments at 2-4.

[44]**

E. Summary of the Order

45. The Order is divided into the following substantive sections. The first section discusses the operative portions of a price cap regulatory system. We begin with a discussion of the capping mechanism, including the sharing and adjustment device. Next, we discuss the services that price cap regulation will apply to. In the baskets and bands discussion, we review necessary limits to LEC pricing flexibility. We then discuss our use of actual rates as a basis for launching price cap regulation. The next sections discuss eligibility requirements, tariff review standards, and issues relating to small companies that will continue to be regulated under rate of return.

46. The Order next reviews the monitoring requirements we will impose. We discuss expanded service quality requirements, our current monitoring efforts, as well as the performance review that we will undertake after the third year of price cap regulation. We also briefly discuss how the price cap system affects other existing regulatory programs. We conclude with a discussion of our legal authority to adopt price cap regulation for LECs.

II. THE PRICE CAP PLAN

A. The Price Cap Index **[**45]**

47. The Price Cap Index (PCI) is designed to limit the prices carriers charge for service. By employing a regulatory system that shifts our focus to prices while permitting retention of some reasonably higher earnings, we provide carriers an incentive to become more productive, and to offer new services. To provide a quantitatively achievable incentive for the LECs, the price cap mechanism includes components that reflect historical LEC productivity, and then requires them to out-perform historical trends. These factors are the productivity offset and the Consumer Productivity Dividend. The establishment of an objective productivity hurdle that applies to prices in each year of the plan provides the LECs an incentive to be more productive, since an improved productivity performance above the amount required by the formula permits them to generate and retain higher earnings.

48. The PCI contains three components. The first two, a measure of inflation less a productivity offset, represent the amount by which carrier productivity has historically exceeded productivity in the economy generally. The value attached to the PCI is further permitted to move up or down in response **[**46]** to specific exogenous cost changes. Exogenous cost changes are generally outside the carrier's managerial control and are often the product of this Commission's own regulatory actions.

49. In broad terms, the PCI is the first test of whether a carrier's tariff filings qualify for streamlined review. By setting price limits that are defined by changes in input costs, the formula controls aggregate rates charged by carriers from fluctuating beyond a "zone of reasonableness". The component parts of the formula -- the measure of inflation, the productivity offset (including the Consumer Productivity Dividend), and the specific exogenous factors -- are discussed below. n57

n57 The PCI for the LECs, like that of AT&T, will be initialized at a level of 100, consistent with its structure as a fixed weight, or Laspeyres, index. See Appendix F.

1. GNP-PI

50. As the Commission found in adopting price cap regulation for AT&T, we believe that the Gross National Product Price Index (GNP-PI), regularly calculated by the U.S. Department of Commerce, is the best inflation adjuster available for use in the price cap index. In proposing the GNP-PI, the Commission sought an index that **[**47]** would reflect changes in costs that carriers face and that would not exhibit volatility attributed to inflationary pressures in one or two sectors of the economy. The Commission also sought an index that the LECs could not influence or manipulate. While we acknowledge that no **[*6793]** existing index perfectly serves these purposes, we find that a broad-based index best matches the criteria we seek in an indicator that measures changes in the cost of factors of production. After

considering various other indicators, including the Consumer Price Index (CPI), the Producer Price Index (PPI), and the Gross National Product deflator (GNP deflator), we are persuaded that the GNP-PI is the best option available. While we adopted the 75-day GNP-PI estimate for AT&T, we find that different considerations are determinative here, and that the 45-day estimate is more appropriate for LEC use. As the LECs noted in earlier pleadings, n58 the use of the 75-day estimate would leave them inadequate time to incorporate the GNP-PI for their annual tariff filing in April. Accordingly, we are adopting the 45-day GNP-PI estimate for use by price cap LECs.

n58 See, e.g., Centel Comments at 9; GTOC Comments at 37-39 and App. 5; Pactel Comments at 19; USTA Comments at 39; NYNEX Comments at 34; Rochester Reply at 16-17; US West Comments at 46. AT&T made no such argument. See AT&T Price Cap Order, 4 FCC Rcd at 2974 n. 414.

[48]**

51. In adopting price caps for AT&T, the Commission determined that the CPI and PPI reflect fewer sectors of economic activity than does the GNP-PI, and thus are more volatile and are less likely to reflect the costs faced by carriers. n59 The Commission suggested that the broad-based GNP-PI is superior to indexes that reflect only consumer prices or the prices faced by manufacturers. Further, the Commission rejected the use of a current-weight index like the GNP deflator, since such an index cannot be used to compare the present cost of an item with its cost in a previous period.

n59 AT&T Price Cap Order, 4 FCC Rcd at 2972-74 (paras. 193-97). The CPI measures the prices urban consumers (about 80 percent of consumers generally) pay for most goods and services for everyday living. The CPI does not include government-provided services (e.g., Medicare) or goods used by industry but not by consumers. The PPI measures changes in the net revenue received by producers, covering all manufactured and processed goods. It does not include retail sales or services.

52. The GNP-PI, like the CPI, is a fixed weight index, and allows period-to-period comparison **[**49]** based on an historical base period. n60 While the CPI summarizes price changes that occur in goods and services that consumers purchase, the GNP-PI summarizes price changes that occur in all sectors of the economy, not just consumer items. The expenditure categories and the weights within CPI, based on consumer items, cover only about 65 percent of the changes considered by the GNP-PI. This is because the CPI includes nothing but final sales to consumers, while most of the LECs' purchases are of intermediate and capital goods. While the GNP-PI does not mirror the LECs' expenditures exactly, it does encompass investment goods as well as consumption expenditures. n61 Over the last thirty years, the CPI and GNP-PI have been highly correlated, with the CPI's movements generally matched by GNP-PI movements about 80 percent as large. The CPI is far more volatile, due in part to its emphasis on categories that have larger weights in consumers' budgets than their importance in the economy as a whole, such as large increases for energy and medical care. LEC commenters support the use of the GNP-PI. n62

n60 The historical base period is currently 1982; the base period is adjusted about every ten years.

n61 Further, to the extent that the LECs purchase their factors of production in numerous roughly competitive markets, the GNP-PI's failure to capture their precise factor mix is not crucial. The GNP-PI is a broad-based index that reflects price experience in numerous markets, unlike a narrower index like the CPI which may be subject to forces not relevant to the LECs.

n62 See, e.g., CBT Comments at 5; SWB Comments at 7; Bell Atlantic Comments at 4. But see Ad Hoc Comments and ICA Comments, ETI Report at 3 (recommending that we reexamine the GNP-PI to be sure it is a useful measure of LEC input costs).

[50]**

53. With regard to the GNP deflator, the Commission stated that it was not convinced that the correlation between the GNP deflator and the AT&T predivestiture index, the major assertion made by commenters supporting use of the GNP deflator, overcomes the difficulties of adopting a current year weight mechanism for use as a price index. n63 The use of a current year weight means that the index cannot be used to measure price changes on a period-to-period basis, since changes in the quarterly composition of GNP can affect the GNP deflator even if there were no changes in prices. n64 As the Commission stated in adopting price caps for AT&T, the Commerce Department itself advises against using the GNP deflator as a price index. n65

n63 A current-year-weight, or Paasche, index will fluctuate according to changes in the relative composition of the GNP, as well as to changes in prices. See Appendix F.

Joint Cost rules, we must require an exogenous cost adjustment to be made whenever regulated investment is reallocated to nonregulated activities.

n184 See Second Further Notice, 4 FCC Rcd at 3019 (para. 301).

e. Expiration of amortizations

173. We find that expirations of amortizations to correct existing depreciation reserve deficiencies, which under rate of return would create downward pressure on rates at the time the amortizations expire, should be considered exogenous costs under price caps, as some parties argue. n185 As we stated in the Second Further Notice, it would be unfair to ratepayers who are now bearing the cost of the amortization program if rates were not adjusted downward at the end of the program. n186

n185 See, e.g., Executive Agencies Comments at 7; Rochester Comments at 4; NY DPS Comments at 11-12; Ohio PUC Comments at 13.

n186 Second Further Notice, 4 FCC Rcd at 3017-3018 (para. 292). We do not resolve every issue raised by parties on the regulatory treatment of amortizations. When the Commission reviews its amortization program, these issues will be considered. See Rochester Comments at 4 (whether future amortizations of depreciation reserve deficiencies should be given exogenous treatment).

[149]**

f. Access charges

174. Changes in interstate access rate levels that the LECs impute to themselves in the provision of interstate services will be considered as exogenous cost changes that trigger adjustments to their price caps. n187 This treatment is symmetrical to the exogenous treatment afforded AT&T for access charge changes.

n187 These services include corridor services and interstate-intraLATA services.

175. As we noted in the Second Further Notice, we have required those LECs that provide access for originating or terminating their interstate basic service offerings to charge themselves the same tariffed access rates that they charge independent interexchange carriers. n188 While we agree with SBA that the LECs can control changes in the cost of access, the pass through of LEC access costs will not leave LECs without incentives to make their interexchange operations more efficient. n189 Interexchange operations are subject to a separate cap, under the rules we adopt today, and must achieve productivity growth each year if prices are to generate the same or increased earnings. As in the case of all price capped services, by "beating" the productivity benchmark, **[**150]** the LEC can retain higher earnings. Furthermore, if we did not require identical exogenous treatment for both AT&T and the LECs with regard to changes in access, we would risk the creation of an anomalous situation by disrupting the competitive parity we have sought to ensure by requiring the LECs to charge themselves the same rate for access as that charged to independent interexchange carriers. Accordingly, to account for this cost to the LECs, we must treat changes in access charges paid by them as exogenous costs, exactly as we do for AT&T. n190

n188 See Second Further Notice, 4 FCC Rcd at 3187 (para. 646). These rates are subject to Commission review.

n189 SBA Comments at 28-29.

n190 We decline to adopt USTA's suggestion to make exchange access costs incurred in the provision of joint services exogenous for the secondary carrier. USTA Comments at 24-25. See also US West Comments at 26-27. Since access charges are being made exogenous solely to provide parity to the regulation of interexchange service providers, we cannot extend exogenous treatment to any and all circumstances in which a LEC pays access charges.

g. Tax law changes

176. **[**151]** We find that tax law changes are presumptively endogenous, despite the arguments of a number of LECs that the GNP-PI will not reflect the costs of tax law changes. As explained in the Second Further Notice, the GNP-PI is a very broad-based price index that measures changes in all costs -- including tax costs -- that affect prices in the economy. n191 To grant LECs exogenous treatment of tax changes that are already accounted for in the GNP-PI

would be to "double-count" their effect, a result that is inconsistent with the goals of price cap regulation to encourage cost based rates. Indeed, we have tried to avoid the possibility of such "double-counting" in our treatment of tax law changes for AT&T by presuming such tax changes to be endogenous.

n191 Second Further Notice, 4 FCC Rcd at 3010 (para. 275).

177. Nevertheless, if there are tax law changes imposed at any level of government that uniquely or disproportionately affect LECs (as a class or individually), LECs may request exogenous treatment. We note that a number of parties appear to advocate this treatment. n192 As with AT&T, the LECs that request exogenous treatment for such changes must **[**152]** overcome the presumption that tax law changes are endogenous.

n192 See, e.g., Justice Reply at 18; NYDPS Comments at 14; Ohio PUC Comments at 9-10.

178. LECs argue that tax law changes should be given expedited treatment as exogenous because they are reflected only gradually in the GNP-PI when they should be recognized at the time they change. n193 The timing and extent to which tax law changes are reflected in the GNP-PI are empirical questions that are unknowable. As stated in the Second Further Notice, the flow-through of corporate taxes to prices, and thus to price indexes, has long been a complex and controversial topic in the literature of public finance that cannot, and need not, be resolved as part of this price cap proceeding. n194

n193 Rochester Comments at 4-5. Accord Centel Comments at 22-24; SWB Comments at 35; Ameritech Comments at 25-26; Centel Reply at 25.

n194 Second Further Notice, 4 FCC at 3009 (para. 274). BellSouth argues that investment tax credit amortizations, and the flow back of excess deferred taxes under Section 203(e) of the Tax Reform Act of 1986, should be given immediate exogenous treatment. See BellSouth Comments at 45-46. We note that neither of these tax requirements were made exogenous in the case of AT&T price caps, and that BellSouth has offered no showing as to why these tax requirements should be made exogenous for LECs. Furthermore, BellSouth is the only company that has requested this treatment. Accordingly, we reject BellSouth's argument.

[**153]

179. Finally, we deny BellSouth's request to provide specific recitation of the various Internal Revenue Code sections that are referenced by a statement that we made in the Second Further Notice to the effect that nothing in the price cap proceeding is intended to place carriers in violation of the Internal Revenue Code. n195 Listing some code sections might create the mistaken impression that we have somehow selected certain sections of the code that we do not intend to cover. This is not our intention. Rather, our intention is that no section of the Internal Revenue Code, including those specifically noted by BellSouth, be violated by our price cap rules.

n195 See Second Further Notice, 4 FCC Rcd at 3010 (para. 276).

h. Equal access costs

180. We will require that costs of converting to equal access be treated as endogenous. We do not agree with PRTC that endogenous treatment of costs associated with equal access conversion is tantamount to changing the rules on carriers in mid-stream. n196 While it is true that under rate of return regulation, the Commission allowed carriers to recover equal access costs, the necessity for this support, **[**154]** at least for the largest LECs, has greatly diminished. For the largest carriers, conversion has been largely completed, and its associated costs are embedded in existing rates. This being the case, there is little need to encourage these LECs to convert to equal access by treating the costs of their conversions as exogenous. Indeed, we believe that the difficulty of assessing equal access costs, and the corresponding risk that these carriers could willfully or inadvertently shift switched access costs into the equal access category, argues against exogenous treatment of these costs.

n196 PRTC Comments at 28-30; PRTC Reply at 19-20.

Canadian Radio-television and Telecommunications Commission
Conseil de la radiodiffusion et des télécommunications can

Telecom Decision

Ottawa, 1 May 1997

Telecom Decision CRTC 97-9

PRICE CAP REGULATION AND RELATED ISSUES

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I INTRODUCTION

A. Background

1. In Review of Regulatory Framework, Telecom Decision CRTC 94-19, 16 September 1994 (Decision 94-19), the Commission determined that, among other things, earnings regulation would be replaced with price cap regulation for the Utility segment, effective 1 January 1998.

2. In Implementation of Regulatory Framework - Splitting of the Rate Base and Related Issues, Telecom Decision CRTC 95-21, 31 October 1995 (Decision 95-21), the Commission stated that, commencing in early 1996, it would hold a proceeding to consider the issues associated with the implementation of a specific price cap regime that would apply to BC TEL, Bell Canada (Bell), The Island Telephone Company Limited (Island Tel), Maritime Tel & Tel Limited (MT&T), MTS NetCom Inc. (MTS) (formerly Manitoba Telephone System), The New Brunswick Telephone Company, Limited (NBTel), NewTel Communications Inc. (NewTel) (formerly Newfoundland Telephone Company Limited) and TELUS Communications Inc. (TCI) (formerly AGT Limited) (the telephone companies).

3. On 12 March 1996, the Commission issued Price Cap Regulation and Related Issues, Telecom Public Notice CRTC 96-8 (PN 96-8), initiating a proceeding, including an oral public hearing, to determine the form of price cap regulation for the telephone companies' Utility segments to be implemented effective 1 January 1998. The Commission directed the telephone companies to file information and proposals, and invited submissions from interested parties on this matter. The Commission stated that it would examine the third rate rebalancing component (as stated in Decision 95-21) and other issues, such as accelerated depreciation expense, which could have a significant impact on the rates for services in the Utility segment prior to the implementation of price caps (going-in rates). The Commission also stated that it would initiate a follow-up proceeding in 1997 to finalize the going-in rates for each telephone company (the follow-up proceeding).

4. On 10 June 1996, Stentor Resource Centre Inc. (Stentor) on behalf of BC TEL, Bell, Island Tel, MTS, MT&T, NBTel, and NewTel filed evidence including proposals regarding the form of price cap regulation to be established. In addition, MTS, although a party to Stentor's submission, filed specific evidence which took into account MTS' structural and economic characteristics. TCI filed a separate submission regarding a proposed price cap regime.

5. The following interveners filed evidence: AT&T Canada Long Distance Services Company (AT&T Canada LDS) (formerly Unitel Communications Company); Canadian Business Telecommunications Alliance (CBTA); Canadian Cable Television Association (CCTA); Call-Net Enterprises Inc. (Call-Net); Consumers' Association of Canada, Fédération nationale des associations de consommateurs du Québec and the National Anti-Poverty Organization (CAC/FNACQ/NAPO); Consumers' Association of Canada [Manitoba], and the Manitoba Society of Seniors Inc. (CAC/MSOS); and the City of Calgary (Calgary).

6. The Telecommunications Workers Union, the Communications Energy and Paperworkers Union of Canada, the Atlantic Communications and Technical Workers Union, the International Brotherhood of Electrical Workers and the Telecommunications Employees Association of Manitoba filed evidence relating to quality of service. By letter dated 12 September 1996, the Commission indicated that evidence related to the quality of service should be filed in the proceeding initiated by Review of the Quality of Service Indicators, Telecom Public Notice CRTC 94-50, 21 October 1994 (PN 94-50).

life characteristics proposed during the follow-up proceeding, and the consequent impact on the depreciation reserve deficiency (DRD) or surplus, will be considered for implementation with the going-in rates on 1 January 1998. Any DRD, as determined in the follow-up proceeding, would be reflected in the going-in revenue requirement as of 1 January 1998 by amortizing the DRD on a straight-line basis over the average remaining service life of each company's assets as of that date.

27. In addition, the toll contribution rates effective 1 January 1998, which will also be determined in the follow-up proceeding, will take into account, among other things, (1) the revenues from the maximum $3 increase in the rates for basic residential local service as described above, and (2) the determinations made in Telecom Order CRTC 97-590, 1 May 1997, regarding the scope of contribution paying services and the appropriateness of the existing treatment of Direct Access Lines.

28. In Decision 97-8, the Commission froze the toll contribution rates for all the telephone companies during the price cap period in order to maintain a subsidy that will allow residential rates in high-cost areas, where competition will likely not evolve as quickly, to remain affordable and, at the same time, will not hinder the development of effective competition. However, in the case of TCI, when its shareholder entitlement (which relates to the additional tax deductions arising from privatization) is completely amortized at the end of 1998, TCI will be required to reduce its contribution rate, effective 1 January 1999, which will then remain frozen for the remaining price cap period.

III PRICE CAP FORMULA

A. Introduction

29. The price cap formula is composed of three basic components which, in total, reflect changes in the industry's long-run unit costs and determine the maximum allowable change in prices, on an annual basis, for a basket of capped services. These are inflation index, productivity offset and exogenous factors. The formula could also include other factors which relate to the recovery of any going-in revenue requirement shortfall during the price cap period and to quality of service.

B. Inflation Index

30. In PN 96-8, the Commission identified the general criteria to be used to select the appropriate measure of inflation in a price cap plan, namely: (1) it should attempt to accurately reflect the changes in the telephone company's costs; (2) it should be available from an independent source, on a timely basis; and (3) it should not be subject to manipulation.

31. In addition to the criteria identified in PN 96-8, Stentor considered that the inflation index should (1) be broad based such that it reflects output price changes of a large bundle of goods and services, (2) be consistent with a total factor productivity (TFP) measure for the economy as a whole and (3) not be subject to significant revisions. Based on these criteria, Stentor proposed that inflation in the price cap formula be measured by the GDP-PI. Stentor stated that this measure is the broadest available measure of output price changes in the Canadian economy and is produced on a timely basis by Statistics Canada. Stentor also stated that the GDP-PI is closely related to the Business Sector TFP produced by Statistics Canada. The economy-wide TFP is discussed below in Section C, Productivity Offset (X-factor). Stentor suggested that, while the GDP-PI is subject to revisions, the impact of revisions to this index has been historically negligible.

32. TCI proposed criteria for selecting the measure of inflation that were generally consistent with those proposed by Stentor. However, TCI proposed the use of the Consumer Price Index (CPI) as its inflation measure. TCI stated that the CPI is well-understood by all parties, available from an independent source on a timely basis, and subject to neither periodic revisions nor manipulation by participants in the price cap plan.

33. Call-Net stated that the use of the GDP-PI would result in a bias in the PCI. Call-Net also suggested that, if the Commission used Stentor's proposed approach to price caps, Call-Net's proposed input price differential should be included and Statistics Canada's Business Sector Output Price Index should be used as the measure of inflation. Call-Net stated that the Business Sector Output Price Index is a more consistent measure of economy-wide output price growth and is consistent with the Business Sector TFP.

34. The Commission agrees with Stentor that using Call-Net's proposed inflation measure and input price differential in the PCI would yield the same results as those derived using Stentor's proposed measures for these variables. The Commission notes that the same results are achieved because a higher (or lower) Business Sector Output Price Index relative to the GDP-PI will generate a higher (or lower) input price differential and X-factor by the same amount, thereby leaving the PCI unchanged. In the Commission's view, the use of the GDP-PI would not result in a bias in the PCI as suggested by Call-Net.

35. Further, the Commission notes that the Business Sector Output Price Index (1) is published by Statistics Canada with a significant lag, (2) is not understood as well as the GDP-PI, and (3) is still considered experimental.

36. The Commission notes that the GDP-PI is more widely used than other inflation measures in price cap plans for the regulated telecommunications industry in the United States (U.S.).

37. The Commission also notes that most parties preferred the GDP-PI to the CPI for two main reasons: (1) the CPI has a narrower coverage in that it measures the average price level of goods and services purchased by consumers, rather than the average price level of domestic output in the economy and therefore, is more volatile than the GDP-PI and more subject to atypical price changes in one or two sectors of the economy; and (2) the GDP-PI, although not directly associated with the Business Sector TFP, is more consistent with this economy-wide TFP measure.

38. In light of the above, the Commission is of the view that the GDP-PI is a more appropriate measure of inflation than the other measures that were proposed in this proceeding for the telephone companies' PCIs.

39. In Teleglobe - Review of the Regulatory Framework, Telecom Decision CRTC 96-2, 2 February 1996 (Decision 96-2), the Commission approved the use of the CPI as a measure of inflation in the price reduction commitment regime for Teleglobe Canada Inc. (Teleglobe). The Commission notes that, in contrast to the telephone companies' productivity offset, Teleglobe's productivity offset was not calculated using TFP or a TFP differential. Rather, Teleglobe's proposed 6% productivity offset was estimated using the percentage decrease in average unit revenue for telephone services as a whole (which was 3.0%) plus CPI (which was 2.8%) over the period 1989 to 1994. Therefore, the Commission considers that the use of the CPI in Teleglobe's price reduction commitment was appropriate in the context of Decision 96-2.

40. With respect to updating the PCI, the Commission notes that Stentor proposed to use as a proxy for the annual change in inflation the percent change in GDP-PI for the fourth quarter of a given year relative to the fourth quarter of the previous year. The Commission is of the view that it would be more appropriate to use the percent change in the GDP-PI over the entire year relative to the previous year to avoid the problem of seasonality. The Commission notes that the figures for the previous year's GDP-PI are generally available at the end of February. Given that a five-year lag generally exists between the initial and final figures of GDP-PI, the Commission would not expect the telephone companies to adjust their PCIs due to revisions in the GDP-PI.

41. Therefore, the Commission directs the telephone companies, when filing updates to their PCIs (as identified in Part IV of this Decision), to use the most recently published GDP-PI calculated as described above. These submissions are to be filed by 31 March of each year.

C. Productivity Offset (X-factor)

1. General

a. Introduction

42. The productivity offset or X-factor, in general, includes the following components: (1) the industry TFP; (2) the economy-wide TFP; (3) the input price differential defined as the difference between the industry and economy-wide input price growth rates; and (4) the consumer productivity dividend (stretch factor). The first three components constitute the basic offset. In addition to the above, Stentor and TCI proposed that a competition adjustment be made to their productivity offset for the onset of local competition.

43. In reaching its determinations on a reasonable productivity offset, the Commission examined evidence and studies on historical TFP, in order to first establish an accurate productivity baseline, i.e., a level that the telephone companies would be expected to achieve without (1) a change in the form of regulation and (2) the emergence of local competition. The Commission then assessed the impact of a change in regulation from rate base/rate-of-return to price caps and of local competitive entry in order to determine a productivity offset that balanced the interests of consumers and shareholders, while providing the telephone companies with incentives to be more efficient.

44. With respect to the measurement of the X-factor, the Commission considers that the time period used to estimate TFP and the various components of the productivity offset should reflect the long term in order to capture the sustained effects of productivity growth and to mitigate the effect of one-time events and short-term fluctuations on annual TFP.

b. Industry-wide Versus Company-specific X-factors

Cost Comparisons and Rate Rebalancing, filed in the proceeding leading to Decision 95-21, showed that total company TFP does not have a substantially different impact on local service costs and toll service costs; therefore, there is no need to separate the impact of productivity growth on capped versus non-capped services.

97. Calgary also argued that TCI's reliance on the historical price changes of local services and toll services (especially on the relative price changes between these two classes of service) assumes that these relative prices will continue to change at the same rate in the future. Calgary submitted that these relative price changes will not continue to change at the same rate after the third step of rate rebalancing in January 1998.

98. The Commission notes that cross-subsidization from toll to local services existed to a great extent during the period 1988 to 1995 and that, as a result, local and toll service prices differed significantly from their respective true costs. Therefore, the Commission is of the view that historical local prices should not be used as a basis for determining the productivity offset for capped services.

99. In light of the above, the Commission considers it more appropriate to use the company-wide TFP (as proposed by Stentor) as a proxy for the Utility segment TFP.

8. Productivity Offset (X-factor) Summary

100. In light of the determinations included in this Section, the Commission approves an industry-wide productivity offset (X-factor) of 4.5% for the telephone companies during the price cap period. This productivity offset is derived as follows:

Industry (Historical) TFP 4.2%
less: Economy-wide TFP 1.0%
plus: Input Price Differential 0.3%
Basic Offset (sub-total) 3.5%
plus: Stretch Factor 1.0%
Competition Adjustment 0.0%
Total Target X-factor 4.5%

D. Exogenous Factors (Z-factor)

101. Most parties agreed that an exogenous adjustment, or Z-factor, should be used to flow-through costs associated with events that result from conditions uniquely applicable to regulated telecommunications utilities.

102. TCI proposed a tax-factor (T-factor) to limit the circumstances under which the price cap plan could be varied for exogenous factors. TCI stated that the T-factor in its price cap plan would deal with industry specific taxes or tax-like orders, and changes in its effective tax rate as its additional tax deductions (ATDs) are depleted during the price cap period.

103. TCI also noted that in AGT - Issues Related to Income Taxes, Telecom Decision CRTC 93-9, 23 July 1993, and in City of Calgary - Application to Review and Vary Telecom Decisions CRTC 93-9 and 93-18, Telecom Decision CRTC 94-22, 4 November 1994, the Commission stated that it intended to adjust TCI's rates in future years, as necessary, to reflect any difference between the amount of ATDs used for regulatory purposes and the amount ultimately permitted by Revenue Canada. TCI also proposed that the T-factor be used to account for changes in ATDs that could occur through the Revenue Canada appeal process.

104. MTS proposed that any future unknown costs associated with the privatization of the company be treated as an exogenous factor to be recovered through an adjustment to the PCI.

105. The Commission determines that a Z-factor or exogenous factor adjustment will be considered for inclusion in the PCI for events or initiatives which satisfy the following: (1) they are legislative, judicial or administrative actions which are beyond the control of the company; (2) they are addressed specifically to the telecommunications industry; and (3) they have a material impact on the Utility segment of the company.

106. The Commission considers TCI's proposed T-factor, which deals with industry specific taxes or tax-like orders and changes in its effective tax rate as its ATDs are depleted during the price cap period, to be subject to the same criteria applicable to exogenous factor adjustments.

107. With respect to changes in ATDs that could occur through the appeal process with Revenue Canada, on 10 January 1997, TCI informed the Commission that the company had reached a settlement with Revenue Canada

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Mailed 3/22/05

Decision 05-03-023 March 17, 2005

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Southern California Gas Company for Authority to Update its Gas Revenue Requirement and Base Rates. (U 904 G)	Application 02-12-027 (Filed December 20, 2002)
Application of San Diego Gas & Electric Company for Authority to Update its Gas and Electric Revenue Requirement and Base Rates. (U 902-M)	Application 02-12-028 (Filed December 20, 2002)
Investigation on the Commission's Own Motion into the Rates, Operations, Practices, Service and Facilities of Southern California Gas Company and San Diego Gas & Electric Company.	Investigation 03-03-016 (Filed March 13, 2003)

(See Appendix B for a list of appearances.)

DECISION ON SOUTHERN CALIFORNIA GAS COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY'S PHASE 2 POST-TEST YEAR 2004 RATEMAKING, EARNINGS SHARING, INCENTIVE PROPOSALS, AND 2004 INCENTIVE PROPOSALS

previously adopted mechanism,[52] a Z-factor, should be continued. The nine criteria[53] for a Z-factor's occurrence are:

1. The event must be exogenous to the utility;
2. The event must occur after implementation of rates;
3. The costs are beyond the control of the utility management;
4. The costs are a normal part of doing business;
5. The costs must have a disproportionate impact on the utility; ||*
6. The costs and event are not reflected in the rate update mechanism; ||*
7. The costs must have a major impact on overall costs;
8. The cost impact must be measurable; and
9. The utility must incur the cost reasonably.

No one opposes the continued use of a Z-factor. Aglet has a different post-test year ratemaking proposal, but alternatively supports ORA who would maintain a $5 million "deductible" for all events before applying a Z-factor. SoCalGas and SDG&E would exclude the deducible for government mandates. ORA cites the SoCalGas example of a change in carbon monoxide inspection services.[54] We need not tinker with the

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[52] Ex. 155 cites to D.96-09-092 in A. 93-12-029 filed by Southern California Edison. It in turn cited and did not modify the Z-factors as adopted in D.94-06-011 and originally recognized in D.89-10-031. See Findings of Facts 24 and 25, D.96-09-092 (68 CPUC 2d, 275, 311).

[53] The restatement here is a further paraphrasing of SoCalGas and SDG&E's paraphrasing of prior decisions. The intention here is to avoid the specific jargon of PBR proposals by the applicants. The underlying analysis and the Commission's prior adoption of these criteria are found in the appropriate portions of D.89-10-031, D.94-06-011, and D.96-09-092.

[54] Ex. 333, p. 2-15, lines 1-13.

ELECTRIC AND GAS UTILITY PERFORMANCE BASED RATEMAKING MECHANISMS (SEPTEMBER 2000 UPDATE)

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California Public Utilities Commission

September, 2000

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or penalty is $1 million. The benchmark will be 1.28 outages per year. Each intermediate 0.015 unit is worth $50,000 in rewards or penalties.

There are no deadbands for any of the system reliability performance indicators.

Call Center Telephone Response Time

This performance indicator measures SDG&E's responsiveness to customer telephone inquiries. The benchmark is 80% of calls answered in 60 seconds, as measured on an annual basis. There is no deadband. For each 0.1% change in performance results, the incentive increases by $10,000 up to a maximum reward or penalty of $1.5 million.

Service Guarantees

This component provides a credit to customers if SDG&E does not meet its scheduled appointment time for service visits at the customer's premises. Basically, the customer may receive a credit for between $15 and $50 if SDG&E does not arrive within its scheduled time frame and does not notify the customer in advance. The amount of the credit depends on the type of service visit.

II.A.6 SDG&E Base Rate PBR Z-Factors and Exclusions

SDG&E is afforded "Z-factor" treatment for certain significant costs associated with highly unusual events. Z-factor treatment is allowed for costs which meet nine criteria, previously adopted for Edison and SoCalGas. These criteria are:

- The event causing the cost must be exogenous to the utility.
- The event must occur after implementation of the PBR.
- The utility cannot control the costs.
- The costs are not a normal cost of doing business.
- An event affects the utility disproportionately.
- The PBR update rule must not implicitly include the cost.
- The cost must have a major impact on the utility.
- The cost impact must be measurable.
- The utility must incur the cost reasonably.

When a potential Z-factor event occurs, SDG&E must file an advice letter and establish a memorandum account for the event. SDG&E's shareholders absorb the first $5 million

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In the Matter of Alternative Regulatory Frameworks for Local Exchange Carriers.; In the Matter of the Application of Pacific Bell (U 1001 C), a corporation, for authority to increase intrastate rates and charges applicable to telephone services furnished within the State of California.; Application of General Telephone Company of California (U 1002 C), a California corporation, for authority to increase and/or restructure certain intrastate rates and charges for telephone services.; And Related Matters [PART 1 OF 2]

Decision No. 89-10-031, Investigation No. 87-11-033 (Filed November 25, 1987), Application No. 85-01-034 (Filed January 22, 1985; amended June 17, 1985 and May 19, 1986), Application No. 87-01-002 (Filed January 5, 1987) Investigation No. 85-03-078 (Filed March 20, 1985), OII 84 (Filed December 2, 1980), Case No. 86-11-028 (Filed November 17, 1986), Investigation No. 87-02-025 (Filed February 11, 1987), Case No. 87-07-024 (Filed July 16, 1987)

California Public Utilities Commission

1989 Cal. PUC LEXIS 576; 33 CPUC2d 43; 107 P.U.R.4th 1

October 12, 1989

(See Appendix A in Decision 88-08-024 for appearances.) (Additional appearances are listed in Attachment D.)

PANEL: [*1]

G. Mitchell Wilk, President; Frederick R. Duda, Stanley W. Hulett, John B. Ohanian, Patricia M. Eckert, Commissioners

OPINION: INTERIM OPINION ON PHASE II OF I.87-11-033

I. Summary of Decision

In this decision, we adopt an incentive-based regulatory framework for Pacific Bell (Pacific) and GTE California Incorporated (GTEC); smaller local exchange carriers are not included at this time. Rates established under this new regulatory framework will become effective on January 1, 1990, based on compliance filings which Pacific and GTEC must file in Investigation (I.) 87-11-033 no later than October 26, 1989. These compliance filings, in addition to proposing startup revenue adjustments to recalibrate rates to authorized market-based rate of return levels, will also include the 1990 effects of previously authorized interLATA and intraLATA SPF-to-SLU shifts.

This new regulatory framework is centered around a price cap indexing mechanism with sharing of excess earnings above a benchmark rate of return level, which is similar to GTEC's proposal presented in the Phase [*2] II proceeding. In addition, several rate design changes are made. Pacific's proposal to expand the local calling area from the current eight miles to 12 miles is adopted, as is its proposal to eliminate the charge for residential Touch Tone service. Since the revenue effects are not known, implementation of these two rate design changes is deferred until the supplemental rate design proceeding.

For pricing purposes, the local exchange carriers' services are divided into three categories: Category I services whose rates can be changed only with Commission approval (basic monopoly services); Category II services with downward pricing flexibility (discretionary or partially competitive services); and Category III services which have the maximum pricing flexibility allowed by law (enhanced services, Yellow Page directory advertising services, inside wiring services, and any services found in the future to be fully competitive).

As recommended by the Division of Ratepayer Advocates (DRA), downward pricing flexibility is granted for those local exchange carrier services which are deemed to be discretionary or partially competitive. In addition to the services for which pricing [*3] flexibility was granted in Phase I of this proceeding, we determine that flexibility is warranted for current information access services, high speed special access services, and billing and collection services. The ini-

tial price caps for such services will be set at the rate level in effect at the time pricing flexibility for a particular service is implemented; floors will be based on direct embedded costs.

To ensure that the local exchange carriers do not favor their own competitive services, we also adopt the widely supported principle that monopoly utility services should be unbundled and made available on a nondiscriminatory basis to potential competitors, though we recognize that there may be appropriate limitations in applying this principle on a service-by-service basis, such as technical or system integrity considerations, economic feasibility, or customer privacy concerns. The local exchange carriers are required to impute the tariffed rate of any function deemed to be a monopoly building block in rates for any bundled tariffed service which includes that monopoly function. Pacific and GTEC must demonstrate as part of any future request to receive pricing flexibility **[*4]** for specific discretionary or partially competitive services or to offer additional enhanced services or other new services that such proposals comply with the adopted principles of unbundling, nondiscriminatory access, and imputation.

In the price cap indexing approach adopted, we agree with GTEC that an index which is not company-specific should be used, in order to bypass the complexity, controversy, and (most importantly) discouragement of operating efficiency which would accompany a company-specific indexing method such as proposed by DRA. Following a startup revenue adjustment similar to that suggested by DRA, prices for the utilities' basic monopoly services and rate caps for flexibly priced services will be indexed annually according to the Gross National Product Price Index (GNP-PI) inflation index reduced by a productivity adjustment of 4.5%. The productivity adjustment is chosen slightly higher than historical levels to ensure that ratepayers receive a portion of the benefits expected to accrue from incentive regulation. This productivity target will challenge Pacific and GTEC to be at least 4.5% more efficient in their operations than is the economy as a whole. **[*5]**

The indexing formula also allows for rate adjustments for a limited category of exogenous factors whose effects will not be reflected in the economywide GNP-PI. While all such costs cannot be foreseen completely, we recognize that the following factors may be reflected in rates as exogenous factors: changes in federal and state tax laws to the extent they affect the local exchange carriers disproportionately, mandated jurisdictional separations changes, and changes to intraLATA toll pooling arrangements or accounting procedures adopted by this Commission.

In a departure from a pure price cap indexing model, we adopt a sharing mechanism effective January 1, 1990 designed to provide protection to both ratepayers and shareholders from risks that the indexing method may over- or underestimate revenue changes needed to keep the utility financially healthy. In the adopted sharing mechanism, any utility earnings above a benchmark rate of return set 150 basis points higher than the expected market-based rate of return will be shared equally between shareholders and ratepayers. A cap on returns equal to 500 basis points above the market-based rate of return is also established **[*6]** above which all excess earnings would be returned to ratepayers. This structure is adopted to create a strong incentive for the utility to achieve and then exceed the adopted productivity target while protecting ratepayers. Any shared earnings will be returned to ratepayers through a surcredit on bills for basic end user monopoly services.

The expected market-based rate of return is found to be 11.50% for 1990; as a result, the benchmark rate of return is set at 13.00%. In a departure from traditional ratemaking practices, we do not adopt capital structures for Pacific and GTEC.

In order to prevent cross subsidies of new speculative telecommunications services at the expense of basic ratepayers, we adopt a policy that such services should be excluded from the sharing calculation (so that losses from such speculative services cannot reduce sharable earnings which would otherwise be returned to ratepayers). Consistent with this policy, all enhanced services authorized to date are given this below-the-line treatment, in which shareholders bear all risks but also retain all profits from these services. We conclude that below-the-line treatment for such services is reasonable **[*7]** because it will maximize incentives to the local exchange carriers to compete vigorously in the development of these new services (with resulting societal benefits) while protecting both ratepayers and would-be competitors by preventing cross subsidies from basic monopoly services. The Part 64 cost allocation rules adopted by the Federal Communications Commission (FCC) are adopted for use in separating the costs of services given below-the-line treatment.

We approve Pacific's proposal to upgrade its network through replacement of electro-mechanical and electronic switches and associated analog carrier interoffice facilities. This step is fully consistent with our commitment to give all ratepayers an opportunity to participate fully in the Information Age. We do not believe, however, that such preapproval would be appropriate for Pacific's planned deployment of fiber technology in the feeder infrastructure. If it chooses, Pacific may make such investments at its own expense and risk.

Application of GTE California Incorporated (U 1002 C) for review of the operations of the incentive-based regulatory framework adopted in Decision 89-10-031; In the Matter of the Application of Pacific Bell (U 1001 C), a corporation, for review of the regulatory framework adopted in Decision 89-10-031; And Related Matters

Decision No. 94-06-011, Application No. 92-05-002 (Filed May 1, 1992), Application No. 92-05-004 (Filed May 1, 1992), Investigation No. 87-11-033, Application No. 87-05-049, Investigation No. 85-03-078, Application No. 85-01-034

California Public Utilities Commission

1994 Cal. PUC LEXIS 456; 55 CPUC2d 1; 153 P.U.R.4th 65

June 8, 1994, Filed

Daniel J. McCarthy and Michael D. Sasser, Attorneys at Law, for Pacific Bell, applicant; Earl Selby, Law Offices of Earl Nicholas Selby, for Communication Workers of America, District 9 AFL-CIO, interested party; (See Appendix D of D.93-09-038 for additional appearances.)

PANEL: [*1]

Daniel Wm. Fessler, President; Patricia M. Eckert, Norman D. Shumway, Jessie J. Knight, Jr., Commissioners

OPINION: FINAL OPINION

Summary

Today's order establishes the modified structure of the new regulatory framework (NRF). In fine-tuning NRF, we adjust Pacific's productivity factor to 5.0% for use in the price cap index in 1994 and 1995. We also reset the market-based rate of return (ROR) to 10.0%. In accordance with the framework, we adjust the benchmark ROR 150 basis points above the market-based rate to 11.5%, the floor ROR 325 basis points below the market-based rate to 6.75% and the ceiling ROR 500 basis points above the market-based rate to 15.0%. We have modified the framework's indicator of changed economic conditions to a two-part trigger mechanism. As such, the new trigger will operate at a 150 basis-point threshold with a requirement of three-year long-term rate forecasts indicating similar movement. **[*2]** Additionally, we have modified the sharing mechanism to incorporate a type of "reverse taper" approach. Under this approach, the ratepayers and Pacific split earnings 50/50 over the new benchmark ROR of 11.5% up to the ceiling ROR of 15.0%, after which the sharing allocation will be 30/70 between the ratepayers and Pacific respectively. In our judgment, this modification will better motivate the company to make a special effort toward earnings over the benchmark ROR in order to seek a higher percentage of the earnings beyond the ceiling.

Moreover, we replace the Gross National Product Price Index (GNPPI) with the Gross Domestic Product Price Index (GDPPI) as the inflation index of the NRF, clarify the Z factor guidelines and approve several settlement agreements between Pacific and DRA resolving issues of gain on sale of land, dues, donations and political advocacy, research development and deployment, the monitoring program and service quality. We also approve settlement agreements between GTEC and DRA resolving research development and deployment and service quality issues.

I. Background

In Decision (D.) 89-10-031, dated October 12, 1989, the California Public Utilities **[*3]** Commission (Commission) adopted an incentive-based NRF to replace traditional cost-of-service regulation for Pacific and GTEC. To advance the Commission's articulated regulatory goals, n1 the NRF coupled incentives for the state's two largest local exchange carriers (LEC) with safeguards for captive ratepayers and broad-based Commission monitoring.

Among the nonexclusive list of other exogenous factors cited in the Phase II decision are "changes in federal and state tax laws to the extent they affect the local exchange carriers disproportionately." *(33 CPUC 2d at 137.)*

D.92-04-079, which addresses the Z factor eligibility of a tax law change, interprets the "disproportionate impact on local exchange carriers" requirement to be a key element of all Z factor analysis. In that proceeding, we noted:

"There are two basic requirements which every Z factor must meet: that the event is exogenous, or beyond management's control; and that the effect disproportionately affects telephone utilities." (Id., supra, at 2.)

We stressed in the Phase II decision that there should not be any double-counting between Z factor adjustments and the inflation index. Essentially, the disproportionate impact test is simply a restatement of the requirement that the cost at issue be something other than a normal cost of doing business. If an event of nationwide significance affects all businesses approximately the same, or proportionately, then it would follow that the costs associated with that event become normal costs of business **[*101]** which are not eligible for Z factor treatment. The test provides a useful gauge for distinguishing between LECs' specific costs and those costs incurred by firms throughout the economy.

Citing its own witness as authority, GTEC contends in its Opening Brief that it is the burden of a party seeking a Z factor adjustment to establish that a particular exogenous cost is not fully reflected in the economy-wide inflation index. GTEC at 11. DRA notes that in D.89-10-031 we determined "the utility would bear a strong burden to show that any requested Z factor adjustment reflects only cost increases beyond those which will be picked up in the economywide inflation factor." (Id. at 181.) DRA also states that to date, the Commission has "placed the burden solely on the NRF utilities." n79 Therefore, DRA assumes that GTEC is proposing that we now shift the burden of proof. We seek to make no changes from the Phase II decision in that regard. However, GTEC's comments on the PD suggests that we should clarify this issue.

n79 Emphasis in the original.

Although GTEC claims on brief that:

"the NRF permits any intervenor and DRA to propose negative (or positive) 'Z' factor adjustments **[*102]** during the annual price cap filing. The Commission may also order the utility to respond to such 'Z' factor proposals." n80

n80 GTEC Opening Brief at 16.

DRA and BCH/LA/TCA appropriately point out that interested parties only have the opportunity to protest the annual advice letter price cap filings of the LECs, and must challenge requested Z factor adjustments by that method. In fact, nothing in the NRF permits interested parties to propose their own Z factor adjustments as part of the price cap process. Consequently, DRA is on point that the NRF utilities are the moving parties in price cap advice letter filings. It also rightfully notes that DRA and any other intervenor has an obligation to produce evidence which supports or defends their Z factor positions. We accept the assertions of DRA and BCH/LA/TCA that the vast majority of negative Z factors to date have resulted from Commission orders and not utility-related efforts. Nevertheless, we reiterate that we expect the companies to come forward with negative Z factors as well as positive ones. Therefore, we reject GTEC's proposal to shift the burden of proof on Z factors.

The disproportionate impact test is clearly **[*103]** a critical factor in our framework in the tax law change context. However, we are not yet ready to state that in all circumstances the cost must fall disproportionately on local exchange carriers in order to be eligible for Z factor treatment. We concur with GTEC that there is significance to the role of the Z factor in relation to its service categorization, i.e., whether it is a Category I or Category II service. In the vast majority of circumstances the requirement that a cost be something other than a normal cost of doing business will rule out Z factor treatment for costs which do not disproportionately affect local exchange carriers. If the cost does fall disproportionately on LECs, we may consider the next criterion.

f. Is the Cost Caused by the Event Reflected in the Economy-Wide Inflation Factor (GDPPI) Used in the Annual NRF Price Cap Proceeding?

As stated above, D.89-10-031 notes "the difficulty in isolating changes in utility costs from changes affecting the economy as a whole." (Id. at 1.) However, even if a cost is not reflected in the inflation index, it is not eligible for Z factor treatment if it is within the utility's control. If a cost is not reflected **[*104]** in the inflation index because other businesses subject to the cost have found ways to reduce or eliminate the cost, the granting of Z factor treatment for that

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cost would reduce NRF utility incentives to operate efficiently. Reducing the utility's incentives would negate one of the main purposes of the NRF program. After determining that a cost is either not reflected or not double counted in the inflation index, we continue on to the next criterion.

g. Does the Event Have a Major Impact on the Utility's Overall Costs?

The Phase II decision states that "[w]e expect that adjustments through the Z factor would be sought only if there were major impacts on the utility's costs . . ." and finds that "[t]he incentive-based regulatory framework is likely to be more effective than rate-of-return regulation . . . because it guarantees that rates will decline in real terms (absent very large exogenous costs) . . ."; 33 CPUC 2d at respectively 138, and 220 (Finding of Fact 109), see also, 212.

In D.92-03-080 (Emergency resolution directing utilities to accept payments from customers tendering money orders issued by Pan American Money Order Company, and related matters), we apply **[*105]** the major impact test and state: "Based on GTEC's own admission that it will not incur major losses, we must conclude that GTEC's request for a Z factor adjustment is moot . . ." (Id. at 6.) Finding of Fact 7 of that decision states that "[t]he [NRF] . . . provides for the recovery of major exogenous events beyond the utilities' control through a Z factor adjustment . . ." (Id. at 7.)

Accordingly, if the alleged Z factor event does not have a major impact on a utility's costs, it is not eligible for Z factor treatment. However, if the event will have a major impact on a utility's costs, we consider the next criterion.

h. Can Actual Costs be Used to Measure the Financial Impact of the Event, or Can the Costs be Determined with Reasonable Certainty and Minimal Controversy?

The Phase II decision states that "actual costs already incurred should be relied upon if feasible to measure impacts of exogenous events . . ." and that "exogenous costs should be measured relative to the prior year's conditions, including revenues, to the extent possible." *(33 CPUC 2d at 161;* see also D.89-12-048, supra, 34 CPUC 2d at 176.)

If actual costs cannot be used, the Commission must **[*106]** ascertain whether the financial impact can be determined with reasonable certainty and minimal controversy. (Id.; see also, D.92-04-079, supra, at 4.) If the costs cannot be determined with reasonable certainty and minimal controversy, the request for Z factor treatment should be deferred. As stated in D.89-10-031:

"If future cost changes are known with a high degree of certainty, we would be willing to consider inclusion of such cost changes on a forecasted basis. However, if the fact that a cost change will occur during the upcoming year is known but estimates of its magnitude are speculative, we expect local exchange carriers to defer requesting that such changes be recognized in rates until their magnitude can be determined with reasonable certainty and minimal controversy." *(33 CPUC 2d at 161.)*

If actual costs can be used to measure financial impact, or if with reasonable certainty and minimal controversy the financial impact can be determined, the cost may be eligible for Z factor treatment.

i. Are the Costs Proposed for Z Factor Treatment Reasonable?

The Phase II decision specifies that we must evaluate "the extent to which external events should be reflected **[*107]** in revenue levels through the Z factor . . .; this requirement should be similar to the evaluation of these factors in a general rate case." *(33 CPUC 2d at 52.)* Moreover, the need to review the reasonableness of the cost reflected in the Z factor is noted in D.92-03-080, supra, which indicates in part that "any major exogenous events beyond GTEC's control found to be reasonable costs and not fully reflected in the economywide GNPPI, are recoverable through a Z factor adjustment." (Id. at 3-4.) While we do not believe that D.92-03-080 embraces all the Z factor criteria, the case does highlight the need for some form of reasonableness review before costs associated with exogenous events are reflected in rates.

In sum, before a cost item is eligible for Z factor treatment, the utility must demonstrate: (1) the cost is the result of an exogenous event; (2) the event occurred after the implementation of NRF (or, if pre-NRF, the event caused costs which the initial Phase II decision ordered to be flowed into rates); (3) the cost is clearly beyond management's control; (4) the cost is not a normal cost of doing business; n81 (5) the event has a disproportionate impact on telephone **[*108]** utilities; n82 (6) the cost is not reflected in the economywide inflation factor (GDPPI), or at least that the requested adjustment will not double count the portion of the cost that is reflected in the inflation factor; (7) the item has a major impact on the utility's costs; (8) actual costs can be used to measure the impact of the change, or the impact can be measured with reasonable certainty and minimal controversy; and (9) the costs proposed for Z factor treatment are reasonable.

Rulemaking on the Commission's Own Motion into the Third Triennial Review of the Regulatory Framework Adopted in Decision 89-10-031 for GTE California Incorporated and Pacific Bell

Decision No. 98-10-026, Rulemaking No. 98-03-040 (Filed March 26, 1998)

California Public Utilities Commission

1998 Cal. PUC LEXIS 669; 82 CPUC2d 335

October 8, 1998

[*1] (See Appendix A for List of Appearances.)

PANEL: Richard A. Bilas, President, P. Gregory Conlon, Jessie J. Knight, Jr., Henry M. Duque, Josiah L. Neeper, Commissioners

OPINION: FINAL OPINION

1. Summary

This decision modifies some elements of the new regulatory framework (NRF) regulation of Pacific Bell (Pacific) and GTE California, Incorporated (GTE), but continues others. It continues suspension of the inflation (I) minus productivity plus stretch (X) portion of the price adjustment formula. It suspends sharing effective January 1, 1999, but continues the reporting of earnings. It permanently eliminates annual depreciation reviews and approvals effective January 1, 1999. It phases out existing Z factor adjustments; eliminates new Z factor adjustments; and continues streamlined advice letter consideration of a very limited set of exogenous costs by a new, limited exogenous (LE) cost mechanism. It continues residential rate caps just as all rate caps and floors are continued, subject to change by future Commission decision. It orders that any application filed pursuant to Ordering Paragraph 7 of D.96-09-089 ("franchise impact claim") contain certain information on applicant's efforts to mitigate [*2] any alleged reserve deficiency. Except as changed herein, it continues current rules and procedures for the consideration of changes to Category 1 rates, and Category 2 ceilings or floors. It invites parties and the public to serve information by September 1, 2000 to facilitate Commission issuance of the next NRF Order Instituting Rulemaking (OIR). Finally, it finds that The Utility Reform Network (TURN), the Greenlining Institute (GI) and the Latino Issues Forum (LIF) may file requests for intervenor compensation within 60 days, and orders that any such requests comply with the preliminary ruling of the Administrative Law Judge (ALJ). The proceeding is closed.

2. Background

2.1. The New Regulatory Framework

For many decades, Pacific and GTE were regulated under cost of service, or rate of return, regulation. Under that regulation, the Commission set rates based on a review of each utility's costs, investments, necessary return and corresponding revenue requirement needs.

In November 1987, the Commission undertook an investigation of alternatives to cost of service regulation for Pacific and GTE "that might better serve California under current conditions." n1 (Order [*3] Instituting Investigation (OII or I.) 87-11-033.) The Commission partitioned the investigation into three phases.

n1 Notice of En Banc Hearing, dated August 11, 1987, page 1, cited in Exhibit 8 at page 8.

Phase I considered pricing flexibility for services subject to limited competition. As a result, Pacific and GTE were granted limited downward pricing flexibility for vertical services, CentraNet/Centrex features, and high speed digital

sults in increased burden on the Commission (because we may, in some circumstances we do not now foresee, still estimate depreciation rates and accruals), we accept this as an unintended consequence of this decision and as part of our changing role. That is, some increased burden on the Commission here may be a necessary tradeoff in shifting risk to management and shareholders of depreciation decisions.

6.2.3. Annual Depreciation Report

ORA asks that we order Pacific and GTE to submit an annual depreciation report to ORA (including such information as depreciation reserves, plant balances, depreciation rates and depreciation expenses) after **[*88]** the utilities first meet with ORA to determine the necessary information. Among other things, ORA asserts it needs this report "to continue monitoring technological advancements and deployment." (Exhibit 10, page 21.)

We decline to order a new depreciation report. We think there are better ways to monitor technological advances and deployment than to examine depreciation. Moreover, we will no longer review and approve depreciation schedules. Thus, we see no reason why we should order a new annual report to be submitted to ORA on depreciation. Rather, we believe the NRF reports now required of Pacific and GTE are adequate and reasonable.

We generally seek to reduce the regulatory burden on utilities and the Commission, and are not convinced by ORA that sufficient reason exists here for such report. Nonetheless, if ORA continues to believe the report is necessary, ORA may use its existing authority to secure the data from Pacific and GTE. ORA should meet with Pacific and GTE to identify, the necessary information and develop a reporting format. If ORA develops a report and reporting format, but Pacific and GTE refuse to provide the data, ORA may bring the issue back to us in a future **[*89]** NRF review, or other appropriate proceeding, for an order. ORA must there propose a more specific report, with more specific reasons why such report is necessary and reasonable.

TURN asks that the annual report requested by ORA be made available to parties other than ORA. Since we decline to order the annual report, TURN's request is moot. If ORA uses its authority to request data or a report, TURN may request a copy from Pacific and GTE of any data responses or report submitted to ORA.

6.2.4. Adverse Consequence by Application

As a result of this decision, increases in depreciation rates will not increase rates to ratepayers, absent a truly compelling showing to the contrary. Should a truly adverse consequence result, we do not here modify previous orders regarding rate increase applications, and Pacific and GTE may file for relief by application to the extent there allowed. As applicant, of course, each utility incurs the burden of proof. Moreover, any such showing will need to be particularly compelling. It must be especially compelling because we have authorized lives close to the lives requested by Pacific and GTE since implementation of NRF in 1990, and, in some cases, have **[*90]** authorized even shorter lives. It must also be particularly compelling because of our decision here to shift the risks and rewards of such decisions to management and shareholders. Therefore, we will be particularly skeptical of any such application. We suggest Pacific and GTE think thoroughly about such application before one is filed. If one is filed, we will give consideration to ORA's proposal, if renewed there, to amortize the effect over three years.

6.2.5. Other Proposals

We decline to adopt DOD/FEA's proposal to apply depreciation review and approval only to plant for services over which the utilities have market power. First, for the reasons stated above, we permanently eliminate depreciation review and approval. Second, to paraphrase GTE, it is not at all apparent how plant could be divided between services for which Pacific and GTE have market power, and services which are competitive. (Exhibit 9, page 18.) No allocation schemes can perfectly separate this plant, and we are not persuaded that this exercise would generate sufficient benefits to outweigh the costs and impreciseness of the results, as well as overcome all the other the reasons we reject depreciation reviews **[*91]** and approvals.

7. Z Factors

The fourth issue is:

> Should the criteria for Z factor recovery be modified for Pacific and GTE, and if so, how? Should Z factor adjustments be completely eliminated?

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7.1. Position of Parties

Pacific, GTE and ORA basically recommend eliminating the Z factor mechanism. Except for some matters already authorized (e.g., expense limit increase authorized in D.91-04-066, merger refunds authorized in D.97-03-067), Pacific says the Commission should allow adjustments for cost recovery only on a case-by-case basis in separate proceedings limited to two situations: (1) a Commission or other government-mandated expenditure that Pacific would not otherwise make in the normal course of business, or (2) an offsetting intrastate rate adjustment due to a jurisdictional cost shift that resulted in an interstate rate adjustment. GTE says Z factors are inconsistent with a market-based system. ORA recommends elimination of Z factors prospectively, with continued application of those already ordered by the Commission, or pending resolution, until they have expired.

CMA recommends retaining Z factors for government mandated and other exogenous costs, with **[*92]** recovery of those costs from services not sufficiently subject to market forces. Joint Commenters support continuation of Z factors, as refined in previous NRF reviews. Joint Commenters say this is the one element of the price cap mechanism that has consistently provided savings to ratepayers. If the Commission seeks to streamline the process, Joint Commenters recommend limiting future Z factor adjustments to those matters known and measurable at this time. TURN has no position on whether and how Z factor criteria should be modified, but urges the Commission to ensure that "pay back" rate decreases which are currently "in the pipeline" not be affected by this decision. TURN specifically cites ratepayers receiving the benefits of decreasing expense recovery for Post Retirement Benefits Other Than Pensions (PBOPs). DOD/FEA recommend retaining Z factors, but applying adjustments only to services over which Pacific and GTE retain market power.

7.2. Discussion

7.2.1. Eliminate New Z Factors

The Z factor adjustment was designed as a means for recovering exogenous costs (i.e., costs outside a utility management's control) in a routine, reasonably simple manner. Among other things, **[*93]** it was intended to satisfy the NRF goal of low cost, efficient regulation. Standards for Z factor eligibility were developed in D.89-10-031. (See *33 CPUC2d 43, 137-8.)* We established a comprehensive framework for streamlined Z factor analysis based on nine criteria in D.94-06-011. (See *55 CPUC2d 1, 36-41.)*

Nonetheless, despite our best efforts to the contrary, many Z factors have been the subject of contention, and some Z factor adjustments await our decision. It is now time to further streamline and simplify NRF, promoting our goal of low cost, efficient regulation.

Therefore, we eliminate consideration of new Z factor adjustments effective immediately. We do this because we are persuaded by Pacific and others that, consistent with removing the upper and lower bounds on earnings, it is time to shift to shareholders more of the risk of cost changes previously recoverable by the Z factor. As Pacific says regarding its proposal to eliminate Z factors:

> "To the extent that it is appropriate to shift more business risks to shareholders, eliminating the Z factor mechanism is sound public policy." (Exhibit 1, page 20.)

> "If Pacific **[*94]** Bell desires no upper limits placed on its earnings, then it must be willing to accept more risk in other areas." (Exhibit 3, page 22.)

We also eliminate new Z factor recovery because it treats Pacific and GTE asymmetrically compared to their competitors. No competitor is so easily able to recover cost increases outside its control.

Moreover, we agree with ORA when it says:

> "...it is appropriate to simplify the regulatory process and reduce litigation and controversy for exogenous cost recovery within the Z factor framework in this transitional period to a competitive market." (Exhibit 10, page 32.)

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Thus, elimination of new Z factor recovery shifts risks to shareholders, is consistent with our removing the upper and lower bounds on earnings, reduces asymmetry, simplifies the regulatory process, and is compatible with our promotion of competition, as we continue through this transitional period to a fully competitive market.

7.2.2. Limited Exogenous (LE) Factor Mechanism

Our elimination of new Z factor adjustments means we will no longer authorize recovery for exogenous cost changes, such as Commission-adopted Financial Accounting Standards Board accounting changes, changes [*95] in intraLATA toll pooling, or changes in federal or state tax laws. We will, however, allow continuation of a streamlined process for requests in two narrow areas: requests for recovery of cost increases or decreases resulting from (1) matters mandated by the Commission and (2) changes in total intrastate cost recovery resulting from changes between federal and state jurisdictions. These requests may be by advice letter on October I each year. To distinguish this process from the Z factor mechanism, we designate this as the LE (limited exogenous) factor mechanism. n21

> n21 As explained later in this order, we continue Z factor treatment only for those items currently under consideration or implementation, until implementation is complete. For consistency, efficiency, and mitigation of the number of rate changes ordered per year, we retain use of the October 1 filing convention for LE factor adjustments.

We allow these two exceptions because they remain potentially significant exogenous events outside utility management [*96] control. To further streamline the process, we limit rate changes for Commission-mandated cost changes (either increases or decreases) to only those costs for which an LE factor adjustment is authorized in the underlying Commission decision. That is, not every Commission-mandated cost change will necessarily be reflected in rates, unless considered by the Commission at the time the program or event causing the cost change is authorized, and the change is therein approved for LE factor recovery. Moreover, in considering whether the cost will be allowed, we will consider whether the cost is unique to Pacific and/or GTE, or is a cost generally borne uniformly by all carriers in the industry.

We decline to adopt Pacific's recommendation to also include mandates of government entities other than the Commission. Competitors of Pacific and GTE are also subject to mandates of other government entities. Pacific and GTE need, and should have, no special protection relative to their competitors.

In comments on the draft decision, GTE alleges that an LE adjustment for Pacific and GTE is justified here because of asymmetry by government entities other than the Commission in treatment of Pacific [*97] and GTE compared to competitors. For example, GTE says rulings of the Federal Communications Commission or other federal entity concerning number portability obligations may disproportionately impact the incumbent local exchange carriers as a result of their incumbent status.

We are not persuaded that this justifies LE treatment. In its original comments on Z factor adjustments, GTE recommended that "all Z factor adjustments should be eliminated." (Exhibit 8, page 36.) In its reply comments, GTE did not support Pacific's exceptions, but said: "...'z' factors should be eliminated in a clean, sweep..." (Exhibit 9, page 27.) ORA similar recommended elimination of Z factors prospectively, and in its reply comments did not support Pacific's proposal for continuing adjustments in two areas.

We adopt a middle ground between the recommendations of Pacific, GTE and ORA. Moreover, we are not persuaded that the treatment by other entities, if different, is sufficiently significant to justify LE treatment for Pacific and GTE.

We also decline to adopt Pacific's exact language on the second LE factor (i.e., changes in total cost recovery). Pacific's proposal is unclear, and appears to be too narrow, [*98] limiting rate adjustments to those that "resulted in interstate rate adjustments." Pacific excludes, for example, potentially necessary rate adjustments resulting from changes in interstate cost allocations. We adopt a clearer, less narrow statement that provides for recovery of cost changes related to our jurisdiction (intrastate) due to changes in allowed cost recovery between federal and state regulators.

Finally, we authorize recovery by advice letter to promote low cost, efficient regulation. An application sets in motion more formal and complicated procedures that are unnecessary for what should be matters of limited, or no, controversy.

7.2.3. Criteria