

March 4, 2008

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Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2701
2300 Yonge Street
Toronto ON M4P 1E4

Dear Ms Walli:

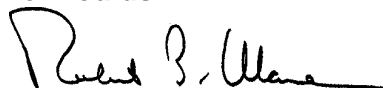
Re: EB-2007-0606/EB-2007-0615

We are counsel to the Consumers Council of Canada. On behalf of our client, and on behalf of counsel to the Vulnerable Energy Consumers Coalition, and the City of Kitchener, we are attaching hereto the Evidence of Dr. Robert Loube on the Tax Change Issue.

Hard copies of Dr. Loube's evidence are being delivered to you by courier.

Yours very truly,

WeirFoulds LLP



Robert B. Warren
RBW/dh

cc All Parties
cc: M. Buonaguro
cc: A. Ryder
cc: J. Gruenbauer
cc: J. Girvan
cc: R. Loube
1016649.1

ONTARIO ENERGY BOARD

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

AND IN THE MATTER OF an Application by Enbridge Gas
Distribution Inc. for an Order or Orders approving or fixing
rates for the sale, distribution, transmission and storage of gas
commencing January 1, 2008.

AND IN THE MATTER OF an Application by Union Gas Ltd.
("Union Gas") for an Order or Orders approving or fixing rates
for the sale, distribution, transmission and storage of gas
commencing January 1, 2008.

AND IN THE MATTER OF a combined proceeding of the
Board pursuant to section 21(1) of the Ontario Energy Board
Act, 1998.

**THE EVIDENCE OF DR. ROBERT LOUBE
ON THE TAX CHANGE ISSUE**

**SUBMITTED ON BEHALF OF THE CONSUMERS COUNCIL OF CANADA
THE VULNERABLE ENERGY CONSUMERS COALITION AND
AND THE CITY OF KITCHENER**

MARCH 4, 2008

Introduction and Summary

Union Gas Limited ("Union") has applied to the Ontario Energy Board ("Board" or
OEB") for approval of rates effective January 1, 2008, using multi-year incentive rate
mechanism. The parties to the case have filed an agreement to settle many but not all of the
issues. I have been asked by City of Kitchener ("Kitchener"), the Consumers Council of Canada

(“CCC”) and the Vulnerable Energy Consumers Coalition (“VECC”) to comment on the outstanding issue of whether changes in the corporate income tax rate should affect the exogenous factor (“Z”) of the price formula, or whether such changes are reflected in the GDP final demand implicit deflator (“I”) and thus should not be part of the Z factor.

My analysis begins with a review of regulatory principles governing the selection of Z factor elements. Next, I discuss the testimony filed by Jack Mintz and Thomas Wilson on behalf of Union. I show that the current testimony is limited and does not support a claim that changes in the corporate income tax should not be part of the Z factor. Third, I discuss the difference between the legal responsibility to pay a tax and the economic burden of the tax. I illustrate this difference with an excise tax and then focus on how the burden of the corporate income tax depends on a large number of factors. I conclude that, because the gas distribution industry is more capital intensive than the industry in general, the impact of changes in corporate income taxes disproportionately affects the natural gas distribution industry, and thus changes in the corporate income tax rate should be reflected in the Z factor.

1. Regulatory Principles and Z factors

The Z factor measures those cost elements that are triggered by an action that is outside the control of the company. Examples of such cost elements include tax changes, changes in regulations, changes in legislative mandates, and natural disasters.¹

¹ See for example, 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, California Public Utility Commission Decision 05-03-023, March 17, 2005; The Regulatory Assistance Project, “Performance-Based Regulation for Distribution Utilities,” for the National Association of Regulatory Utility Commissioners, December 2000; In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, FCC 90-314, October 1990; 47 C.F.R §61.45(d)(1)(vi); Staff Discussion Paper – IR Natural Gas Utilities, January 5, 2007, EB-2006-0209; Investigation by the Department of Telecommunications and Energy on its own motion pursuant to General Laws c 164, § 94, and 220 C.M.R §§ 5.00 et seq. as to the propriety of the rates and

With respect to tax changes, the regulatory principles highlight the need to specify whether the tax has a general impact on all sectors and companies or has a unique impact on the regulated industry. If the tax has a general impact on the entire economy, there is a likelihood that the impact of the tax will be captured by changes in the I factor. However, it is necessary to investigate each type of tax to ensure that it has the property of a general tax. In particular, as I will demonstrate with regard to the corporate income tax, a tax with a general rate may not have a general impact on all industries. In particular, the specific conditions of the gas distribution industry, related to the gas industry's capital intensity, causes the corporate income tax rate to have a differential impact on the gas distribution industry.

2. The Testimony of Jack Mintz and Thomas Wilson

The testimony of Mintz and Wilson examines the impact of the tax changes on utilities and on all other industries. The tax changes include a reduction in the general federal rate, increases in capital cost allowances and provincial tax changes. Table 1 in their evidence reports the impact of the tax changes. It shows that the effective tax rate change on utilities is less than the effective tax rate change for all other industries. Mintz and Wilson conclude that because the effective tax rate change for all other industries is greater than the effective tax rate change for the utilities, "the national GDP final demand deflator will more than compensate for the effect of corporate tax reductions on natural gas distributors in Ontario."²

However, the effective tax rates discussed refer to the legal responsibility to pay a tax. These effective tax rates may or may not be related to the final financial burden of the tax and the impact of the tax on the prices of gas distribution companies relative to all other

charges set forth in the following tariffs: M.D.T.E. Nos. 34 through 68, filed with the Department on April 27, 2005 by Bay State Gas Company, Order No. D.T.E. 05-27, November 30, 2005.

² Mintz and Wilson, page 5.

companies in the economy. To support their conclusion, it is necessary to show that the industry price changes are similar to the reported effective tax rate changes. Their testimony does not demonstrate the existence of a direct relationship between price changes and reported effective tax rate changes and, therefore, does not support their conclusions.

3. The Legal Responsibility to Pay a Tax and the Economic Burden of the Tax

The legal responsibility to pay a tax is set by statute. The corporate income tax must be paid by corporations. On the other hand, the economic burden of the tax, also known as the tax incidence, is determined by the interaction of the various market forces with an economy. These forces include: the supply and demand for a commodity, the market power of firms, the relative openness of the economy to international forces, and the ability to substitute one factor of production (such as capital) for other factors of production (such as labor, raw materials and land). I begin my discussion of tax incidence with an example of an excise tax and then address the more difficult issue of the corporate income tax.

4a. The Tax Incidence of an Excise Tax

Suppose Ontario imposes a 50 cent per cubic meter excise tax on natural gas. The legal responsibility to collect and pay the tax is placed on Union and Enbridge, but the tax incidence of the tax will fall on both consumers and on the company, depending on the elasticity of demand for gas.³

Chart 1 illustrates the impact of the tax when the demand is not perfectly inelastic, and Chart 2 illustrates the impact of the tax when the demand is perfectly inelastic. In both charts the supply curves shifts upward by 50 cents. However, in Chart 1 the price increases by only

³ This analysis is borrowed from Jonathan Gruber, Public Finance and Public Policy, Worth Publishers, 2004.

30 cents to \$1.80. Thus, only 30 cents of the 50 cent tax increase has been shifted forward to the customers. The other 20 cents is shifting backward on the company. The company pays the required 50 cents to the government. The 50 cents is the difference between the price of \$1.80 and the \$1.30 that the company retains. The quantity purchased decreases to 90 cubic meters. On the other, in chart 2, with a perfectly inelastic demand curve, the price increases to \$2.00. The entire burden of the tax increase is shifted forward to the customers. The company still receives \$1.50 and sells 100 units. The comparison of Charts 1 and 2 shows that the ability to shift the burden of a tax depends on the elasticity of demand for the product.

4b. The Corporate Income Tax

There is no general consensus regarding the tax incidence of the corporate income tax.⁴ For example, the Harberger model asserts that the corporate tax is a tax only on the income received from capital.⁵ The Harberger model uses a two sector economy consisting of the corporate sector and the non-corporate sector. The tax initially reduces the return on capital in the corporate sector. Resources flow out of the corporate sector into the non-corporate sector so that the post tax rate of return is the same for both sectors. As the resources shift, prices in the corporate sector increase, but prices in the non-corporate sector decrease. The result is that the general level of prices may not increase because of the offsetting tendency of the two sectors. The only tax shifting that occurs is that the burden of the tax is shifted from

⁴ See J. Gregory Ballentine, Equity Efficiency and the U.S. Corporation Income Tax, The American Enterprise Institute for Public Policy Research, Washington D.C, 1980; John Whalley, "The Incidence of the Corporate Tax Revisited, Working Paper 97-7, prepared for the Technical Committee on Business Taxation, October 1997, <http://www.fin.gc.ca/taxstudy/wp97-7e.pdf>.

⁵ Arnold C. Harberger, "The incidence of the corporation income tax," Journal of Political Economy, vol. 70 (June 1962).

only the corporate sector to the income received from capital in both the corporate and non-corporate sectors.

Two streams of criticism of the Harberger model developed based on removing certain basic assumptions in the model. First, the Harberger model assumed perfect competition in both industry sectors. However, if the markets contain only a small number of firms and these firms have cost characteristics that are different from the normal competitive firm cost relationships, it is possible to show that some of the burden of tax can be shifted forward to consumers.⁶ Second, the Harberger model assumed that the total savings available to an economy was fixed. Relaxing this assumption allows for the discussion of open economies where there are capital movements between countries. One implication of relaxing this assumption is that a small country's tax policy would not impact the return on capital. Without such a change, the burden of the tax could be shifted forward. However, in small open economies, domestic producers would not be able to sustain prices that are different from those generated in international markets. Thus, it is incorrect to assert, that "the corporate tax is far more likely to be shifted forward in higher prices charged to consumers than shifted back to owners of capital given the openness of Canada's markets to international trade and investment."⁷ Instead, the corporate income tax is more likely to be shifted to the least internationally mobile factor, labor. Increases in the corporate income tax would be associated with decreases in Canadian wages and decreases in the corporate income tax would be associated with increases in Canadian wages.

⁶ See, for example, Sergio Bruno, "Corporate Income Tax, Oligopolistic Markets and Immediate Tax Shifting: A Suggested Theoretical Approach," *Public Finance* 25(1970); G.D. Myles, *Public Economics*, Cambridge University Press, 1995.

⁷ Jack M. Mintz, "Corporate Tax Adjustments and the Determination of Electricity Rates in Ontario," page 10.

In reviewing the various changes in assumptions, Whalley concludes that “a range of further complications has come into play, including debt issuance, the distinction between large and small firms, active and passive firms, and foreign-controlled firms, and the role of the foreign tax credit.”⁸ Even though understanding all of these factors can become very complicated, attempts to integrate these problems are ongoing. For example, Randolph has developed a model that is an extension of the original Harberger model.⁹ It focuses on multinational shifts in capital and shifts between various sectors of domestic economies. The model contains three corporate sectors. The first corporate sector produces internationally traded goods for which there are perfect domestic and foreign substitutes. The second corporate sector produces internationally traded goods for which there are imperfect substitutes. The third corporate sector produces non-tradable goods such as gas distribution services. There are two non-corporate sectors, one producing tradable goods and the other producing non-tradable goods. His analysis shows that prices in the non-tradable corporate sector would not change in proportion to the changes in the prices of other sectors. In particular, if the non-tradable corporate sector is more capital intensive than the tradable sectors, then the price increases faster with tax increases and decreases faster with tax decreases than in the tradable sectors. This finding implies that the inflation factor in the price cap formula would not compensate for the effect of corporate tax reductions on natural gas distributors in Ontario. Denying a Z factor treatment of the corporate tax would artificially increase the price for gas distribution services. On the other hand, implementing a Z factor adjustment for the corporate tax change would be the proper adjustment procedure in this case.

⁸ Whalley, *opt. cit.*, page 13.

⁹ William C. Randolph, “International Burdens of the Corporate Income Tax,” Working Paper 2006-09, Congressional Budget Office, Washington, D.C.

4c Lags in the adjustment process associated with shifting the burden of the corporate income tax

The immediate impact of a decrease in the corporate income tax is to increase the income of owners of corporate capital. An adjustment process must take place in order for the change in the corporate income tax to affect other variables in the economy. This adjustment process is very complicated affecting the investment decisions of many firms, international finance and trade flows and the supply and demand for labor. The length of the adjustment period has important consequences for this proceeding. If for the sake of the argument the final impact of the adjustment is on prices, then a short adjustment period would support denying a Z factor treatment of the corporate tax decrease and a long adjustment period would support approving a Z factor treatment of the corporate tax decrease.¹⁰ Below I review the statements of Drs. Lowry, Mintz and Wilson with regard to the lag. I also present the analysis contained in the Economic Report of the President. Comparing those statements and analysis, I conclude that it is necessary, at a minimum, to pass at least seventy-five percent of the corporate tax reduction through the Z factor.

With regard to the length of the adjustment process, Dr. Lowry admits that “I cannot provide accurate estimates of these lags¹¹.” Even after admitting that he cannot predict the length of the lag, Dr. Lowry adds that “my intuition as an economist suggests that the slowdown in inflation that is due to corporate tax cuts will be completed within five years of the cuts.¹²” In addition, his intuition is supported by review of the Bank of Canada’s analysis of the impact of an indirect tax on prices rather than an analysis of the impact of change in a

¹⁰ The final impact of the corporate tax change may also be to change the return on non-corporate capital, wages, or increase the revenue of the United States treasury. United States revenue increased because Canadian tax payment can be counted as foreign tax credits against a United States tax liability. If the foreign tax credit is reduced then the United States tax liability increases.

¹¹ PEG Response to CCC Interrogatory #1, filed 2008-02-22, EB-2007-0606/0615, Exhibit E4, Tab 2, Schedule I, Page 1 of 1.

¹² Id.

direct tax on prices.¹³ Thus, Dr. Lowry is recommending that the Board deny treating the corporate tax decrease as a Z factor based on his intuition and on the review of an indirect tax impact rather than on the impact of a direct tax

Union's witnesses, Drs. Mintz and Wilson, are also unable to identify a particular time frame in which the tax shifting would take place. They assert that the process will take time but do not specify how much time. Instead, they state that "the exact timing is difficult to determine since: a) some corporate tax changes were pre-announced (eg. Under the federal 5-year tax reduction plan announced in November 2000); and, b).the timing of investments may be affected by other factors, such as the state of the business cycle."¹⁴

On the other hand a detailed analysis of the lag process presented in the Economic Report of the President suggests the lag takes place gradually over a long time. That analysis supports the claim that "initially 100 percent of the burden of a capital tax increase is borne by owners of capital, since they have already invested in the capital currently in place. Five years after the tax increase, about a quarter of the tax burden has shifted to workers. Ten years after the tax increase, workers have taken on over 40 percent of the burden"¹⁵ Thus this report asserts that only 25 percent of tax would be shifted by the end of five years compared to Dr. Lowry's intuitive proposal of 100 percent in five years and the failure of Drs. Mintz and Wilson to present any precise number.

Based on my review of these alternative analyses, I recommend that, at a minimum, seventy-five percent (75%) of the corporate tax reduction should be treated as a Z factor, and

¹³ PEG Response to CCC Interrogatory #2, filed 2008-02-22, EB-2007-0606/0615, Exhibit E4, Tab 2, Schedule 2, Page 1 of 1

¹⁴ Union Gas Limited, Answer to Interrogatory from City of Kitchener ("Kitchener") and Consumers Council of Canada ("CCC"), Exhibit 3.2.3

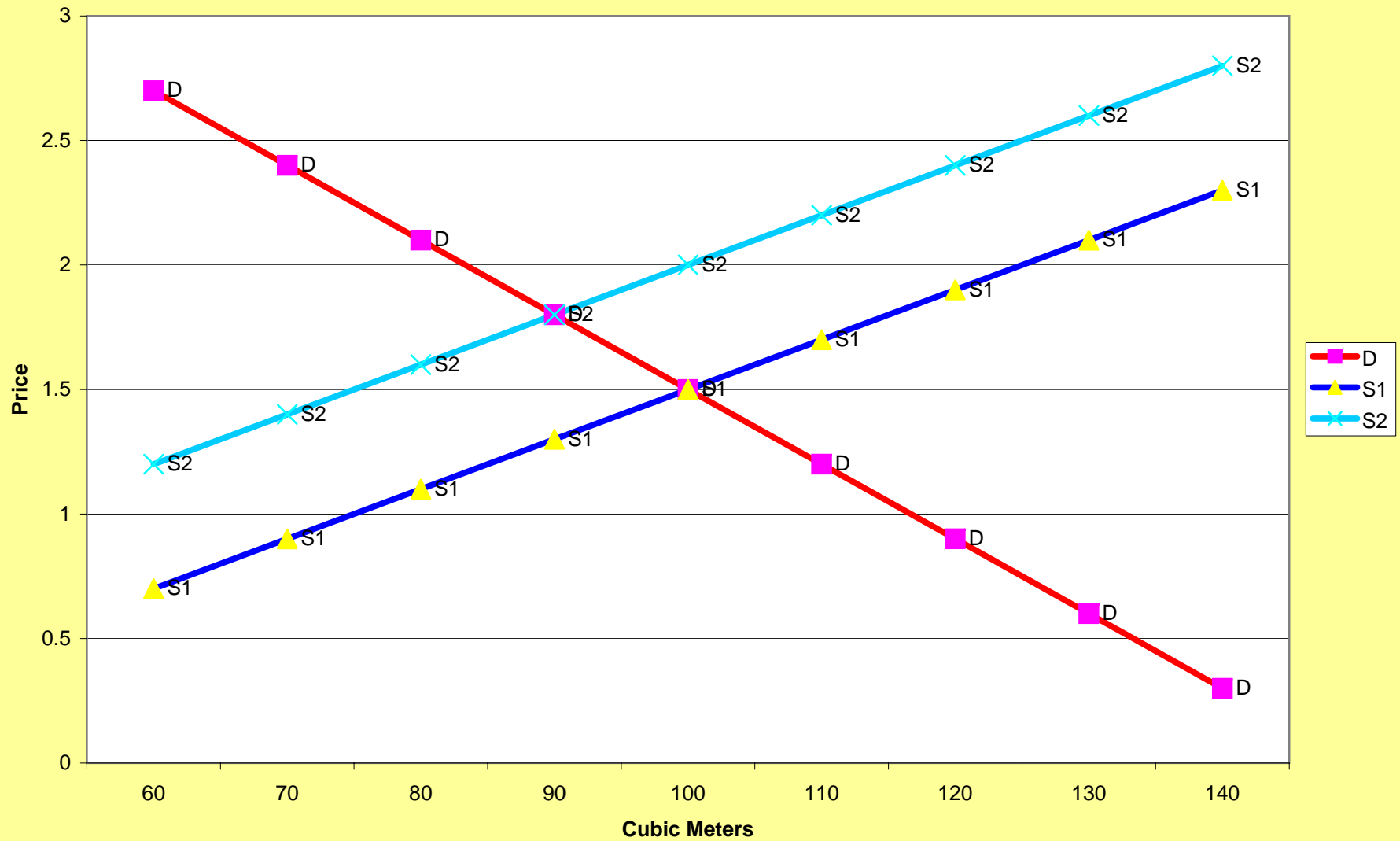
¹⁵ Economic Report of the President, transmitted to Congress, February 2004, United States Government Printing Office, Washington: 2004, pages 111-112.

that, at a maximum, twenty-five percent (25%) of the corporate tax reduction could be treated as if it affected the inflation factor.

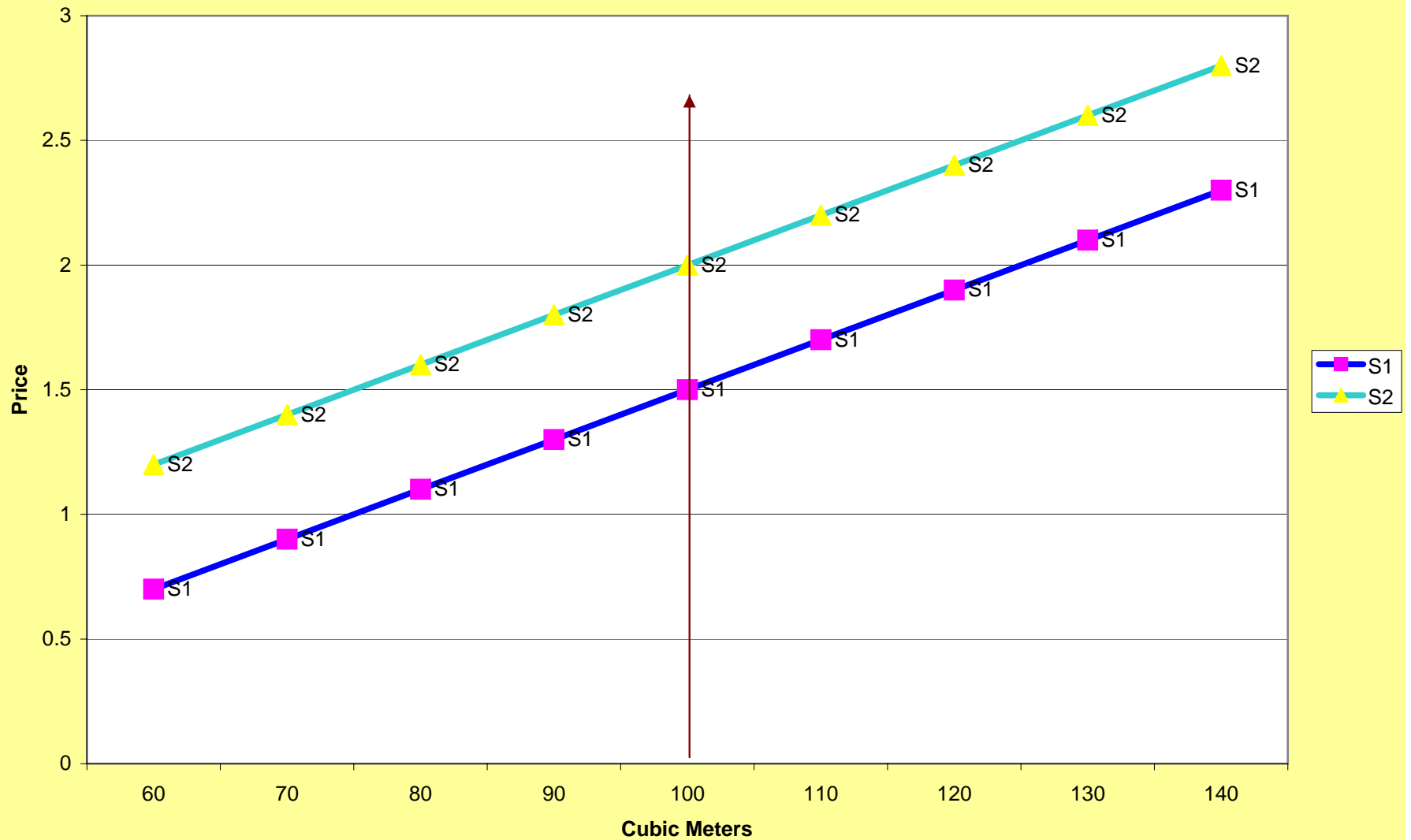
Conclusions

While certainty cannot be expected with regard to the corporate tax incidence, three conclusions can be reached. First, the initial impact of the corporate income tax change would be its effect on the income received from capital. A decrease in the tax rate increases capital earnings initially. With time the initial impact will be affected by adjustments in other markets. The speed of adjustment is uncertain but there will be some lag. Therefore, the outcome in year one would be more favorable to capital and less likely to impact consumers and labor. Second, the extreme assumption that the inflation factor completely offsets the corporate tax rate cannot be supported. Third, the capital intensity of the gas distribution industry implies that changes in the corporate income tax affect the price of the gas distribution industry more than prices in other industries. This relationship supports the position that the corporate income tax should be part of the Z factor in any price cap formula that the Board may wish to adopt in this proceeding.

The impact of a 50 cent tax on natural gas



The impact of a 50 cent natural gas tax with an inelastic demand curve



cu meters	D	S1	S2	
	60	2.7	0.7	1.2
	70	2.4	0.9	1.4
	80	2.1	1.1	1.6
	90	1.8	1.3	1.8
	100	1.5	1.5	2
	110	1.2	1.7	2.2
	120	0.9	1.9	2.4
	130	0.6	2.1	2.6
	140	0.3	2.3	2.8

cu meters	S1	S2
60	0.7	1.2
70	0.9	1.4
80	1.1	1.6
90	1.3	1.8
100	1.5	2
110	1.7	2.2
120	1.9	2.4
130	2.1	2.6
140	2.3	2.8