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Negotiated settlements with a cost of service backstop: The consequences for depreciation [☆]

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ABSTRACT

The movement from traditional regulatory hearings to negotiated settlements represents both a departure from cost of service regulation and a relaxation of regulatory oversight. Under negotiation parties are able to renegotiate inclusions in their cost of service while simultaneously creating a profit margin for the regulated firm where none existed under the cost of service outcome of a traditional hearing. This paper constructs a model to illustrate the existence of positive gains to pipeline and shipper from the re-allocation of expenses through time in the regulated pipeline services market in Canada. Behaviour consistent with the model is observable in anecdotal and econometric evidence gathered from the library of the National Energy Board of Canada, responsible for pipeline toll regulation in Canada. Empirical investigation by Littlechild (2009a) into settlement procedures in the Florida electricity market reveals similar findings; however, this analysis represents the first attempt to model the behaviour formally. The econometric analysis uses new data collected and compiled specifically for this exercise.

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1. Introduction

"Cost of service" has historically been the standard for much economic regulation, but its many faults have led to a variety of less intrusive price-setting mechanisms. One of the most attractive – at least superficially – is the "negotiated settlement" (NS) in which the otherwise regulated firm and a core group of customers negotiate a price without direct intervention of a regulatory authority. This paper explores the appeal of these settlements, which have become increasingly common in certain previously regulated industries. While settlements obviously provide a benefit, relative to the regulated outcome, what is the source? Is it lower litigation costs? More efficient operations? What this paper shows, using the Canadian pipeline market as an example, is that the most substantial part of the benefit appears to be deferral of depreciation. Deferral of costs, does not, of course, imply any

increased efficiency in the conventional manner: it simply transfers costs to future consumers.

Negotiated settlements have been used extensively for many years, but have attracted relatively little academic attention. The US Federal Power Commission (now the Federal Energy Regulatory Commission, FERC), faced with a backlog of some 3000 rate cases in the 1960s, began encouraging utilities and consumers to settle rate cases privately. At the state level, the Florida Public Service Commission (FPSC) pushed for settlement outcomes negotiated between utilities and consumer groups (including the Office of Public Counsel created to represent general public consumer issues) since the 1970s. In Canada, the National Energy Board at the Federal level and the Energy Utilities Board in the province of Alberta began to facilitate similar negotiated outcomes beginning in the mid-1990s. There has also been significant discussion in the UK about moving from price cap regulation of telecom, water, gas, and electric utilities to a system in which the consumers would have significantly more input into the pricing decisions (Littlechild, 2008, 2009b).

In general, negotiated settlement procedures allow for incentive schemes and other tradeoffs between contract consumers and producers. In Canada, the positive responses and preference of pipelines and shippers for NSs over more traditional methods has been cited by the National Energy Board (NEB) as an indication of the achieved benefits over a pure cost of service model.

Contemporary examinations of settlement procedures in Canada and other jurisdictions have been made by Doucet and Littlechild (2006, 2009), Buchmann and Tongren (1996), Morgan (1978), Schultz (1999), and Walker (1986). These examinations

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analyse the outcomes of NSs from the point of view of the regulatory authority and are largely occupied with legal issues of jurisdiction (due to the existence of settlements as an alternative for full litigation) or the reduction in burden and backlog on the regulatory authority.

Littlechild's (2009a) examination of settlement outcomes in the Florida electricity market identifies significant rate reductions accompanying a movement from litigation to NS. These rate reductions were found to be the result of a reduction in the depreciation and amortization expenses allocated to those periods. The conclusion reached by Littlechild (2009a, pp. 32–33) relates the consumers' temporal preferences, in that "jam today in the form of refunds and rate reductions" is preferred by consumers to "lower prices tomorrow".

Similar outcomes are observable in Canada whereupon adopting NS-based tolls in 1996, TransCanada Pipelines (TCPL), its contract consumers and other interested parties agreed to freeze depreciation rates at the 1996 levels. These rates remained frozen until 2001 despite significant demand reductions in the late 1990s which led to a reduction in its forecast economic life. Since the NEB model of regulation is derived from a cost of service base, the implied shorter lifespan combined with a current freeze on depreciation implies a higher disparity between the immediate low prices and the higher future prices. Depreciation rates will inevitably increase to ensure full depreciation over the shorter period. By freezing depreciation rates, the increase in prices is deferred, not avoided.

Between 2001 (when TCPL defaulted to a litigated outcome) and 2003 (just before the firm returned to a NS procedure) the effective depreciation rate used in its toll setting rose from 2.64% to 3.65%.² This represents a reduction in the average anticipated economic life of assets from ≈ 38 years to ≈ 27.5 years. During the 2002 toll hearing, when the NEB eliminated some of the incentive schemes negotiated by TCPL, there was another jump in composite depreciation rate (from 2.89% to 3.65%).

The 38 year average anticipated economic life imputed from the effective depreciation rate prior to 2001 warrants further explanation. Under the Generally Accepted Accounting Principles in Canada, the longest allowed depreciation period for any class of assets is 40 years. The pipeline's small assets (computers or office equipment) are depreciated over a period significantly less than 40 years. These assets will therefore reduce the reported effective depreciation rate as it is an average of specific asset class depreciation rates weighted by each class' contribution to the asset base. This implies that, despite the fact that the effective depreciation rate imputed a 38 year economic life, in fact the majority of large pipeline assets were expected to last 40 years or more in 1996.

Baumol (1971), using the framework developed by Littlechild (1970), illustrates that given socially optimal and profit-maximizing depreciation rules, there is a positive relationship between depreciation expense and the shadow price on capacity. In the TCPL case we observe the opposite. While the complexity of the regulated market violates some of the assumptions imposed by the Baumol model, it is not intuitively apparent why TCPL would allow the depreciation expense to remain at 1996 levels when presented with contract non-renewals. Instead, these non-renewals should have prompted an increase in the depreciation rate. One might be inclined to write this off as an anomaly, but the TCPL outcome is not isolated. Littlechild's (2009a) survey of the Florida electricity market also identifies several outcomes with a

negotiated settlement leading to reduced depreciation leading to a reduction in the utility's cash flow.

Burness and Patrick (1992) model the issue of optimal depreciation under regulatory constraint as a linear control problem with an upper and lower bound on the depreciation expense (defined due to regulatory restrictions). They find that, under a very broad set of conditions, a back-loaded toll (where depreciation expenses are set higher in later periods) is optimal. The model also predicts that, given an inflated cost of capital in its cost of service, a profit-maximizing regulated firm will choose a back-loaded depreciation path.

This could be taken to imply that a regulator may wish to allow for a positive margin on the cost of capital in order to entice this type of behaviour; however, the result is not altogether convincing in the case of regulated firms or utilities in the energy or energy transportation sectors. The Burness and Patrick model implicitly assumes that the costs of the regulated firm represent the entire cost of a finished product (or equivalently, that the demand function faced by the regulated firm is fixed across time periods). Transportation and other utility industries represent only a portion of the final cost of a delivered good or service, thus it is also necessary to account for the time path of other costs in deriving a total surplus or policy implication (alternatively, one could take the view that the demand function faced by the pipeline is changing through time due to external costs faced by the consumers who pay to transport on the system).

In much of the current theoretical work in the area of natural resources it is generally assumed that firms extracting non-renewable natural resources face an increasing marginal cost through time (Sweeney, 1993). Empirical work (mainly in the area of coal extraction) has been done to verify this assumption but the results are generally extensible (Harris, 1993). Given this it may be that the deferral of depreciation exacerbates rather than mitigates temporal cost asymmetries in the final delivered good and would have negative efficiency implications.

The remainder of this paper is laid out as follows. First a simple mathematical framework is constructed based on actual accounting procedures used under National Energy Board (NEB) jurisdiction in order to identify the nature of possible pipeline and shipper gains resulting from NSs. The implications of the theoretical framework are then tested using econometric methods followed by some concluding remarks. While this examination is specific to the NEB case the results should be generally consistent with many of the other jurisdictions contemplating or having already moved from a litigated cost of service based outcome to a settlement or other light handed regulatory approach.

The contribution of this paper is its focus on the motives of the pipeline and shippers. With specific reference to depreciation methodology the incentives to the pipeline and shippers bare close examination. Under a litigated outcome the NEB requires that a depreciation methodology be substantiated by evidence supporting the assumptions on which the methodology is based while in a hearing, depreciation methodology is freely set and no information to substantiate the effective rate is required. Given public interest considerations and the lack of representation by future consumers the implications of deferring depreciation bare close examination under a settlement outcome where a depreciation rate may be set without providing supporting evidence.

2. An overview of NEB regulation

Both before and after the introduction of NSs, the NEB employed a formal litigation procedure (litigation is currently a default outcome if negotiations fail to produce a satisfactory outcome), based on the established cost of service (COS) model with a focus on

² NEB (2003), RH-1-2002, TransCanada Pipelines Limited, Tolls application, July.

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