ATLANTIC INSTITUTE FOR MARKET STUDIES

Policy Paper

What's *Still* Missing From Your Wallet?

How Regulation Continues to Distort Gasoline Prices in Atlantic Canada

By Marco Navarro-Génie

Halifax, Nova Scotia,

August 2017

The Atlantic Institute for Market Studies (AIMS)

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Acknowledgments

The author wishes to thank Bobby O'Keefe, who wrote the original 2009 paper. Much gratitude is extended to all those who diligently helped with this paper. Jonathan Wensveen, Robert Creamer, Xavier Malone, Jordan Armstrong, Ryan Scarth, Ray Calitz, Leo Power, Ed Hollett, Alex Whalen, and Jackson Doughart individually and collectively assisted with calculations and editing.

Executive Summary

Government-controlled gasoline prices continue to increase costs for consumers unnecessarily in Atlantic Canada. In 2009, the Atlantic Institute for Market Studies (AIMS) first reviewed the scheme in place in each of the four Atlantic Provinces. In this review, eight years later, the case against allowing government to fix gas prices remains strong. Consumers in Atlantic Canada have paid over $205 million more for gasoline than they would have if the four provincial governments had let the market do its job unhindered.

Nova Scotia offers the best empirical evidence against government-controlled gas prices. After the Nova Scotia government started setting gasoline prices in July 2006, within a year consumers in Halifax saw an average increase of 1.7 cents per litre in the retail price of gasoline while Sydney, Yarmouth, and Truro saw an average increase of approximately 2.6, 2.6, and 2.4 cents per litre. On the basis of the economic case as well as these substantially higher prices, policy-makers in Nova Scotia should move swiftly to eliminate price controls.

The story in New Brunswick and Newfoundland and Labrador is less strong based on price increases alone but it remains compelling. Gasoline prices in New Brunswick increased after July 1, 2006: one cent per litre in Saint John, 1.2 cents a litre in Moncton, and 0.15 cents a litre in Bathurst. In Fredericton, the price of gasoline decreased by an average of approximately 0.2 cents per litre.

Since the introduction of regulation in Newfoundland and Labrador (Nov. 15, 2001), St. John's saw an average increase of 0.1 cents per litre, while Gander and Corner Brook saw an average *decrease* of approximately 1.4 cents and 2.5 cents per litre. In St. John's, by comparison, anecdotal observation shows that competition in the marketplace with no price floor produces a typical price differential of up to 12 cents a litre between retailers in the east end of the capital city and the west end. For Prince Edward Island, adequate data are unavailable for comparison.

Gasoline price controls represent one of a panoply of government interventions in the regional economy that distort markets to the detriment of consumers. Interventions like price controls are based on false or mistaken premises such as the idea that changes in gasoline prices are based on conspiracies rather than changes in supply and demand. Proponents of these interventions also ignore the consequences of government interference. In Corner Brook, for example, forcing retailers to sell gasoline for less than the market-determined price doesn't make the cost disappear. It merely forces the retailer to raise other prices or cut other costs.

The empirical case against regulation in New Brunswick and Newfoundland and Labrador is as strong as the one in Nova Scotia. It is just less blatantly obvious. PEI has suffered from regulation the longest, with great cost imposed since 1991. That is why this paper recommends that all four provinces in Atlantic Canada review their existing government-controlled pricing regimes for gasoline.

Introduction

Governments around the world can and do intervene in the economy to achieve legitimate public policy goals. On occasion, Canadian governments have dictated prices for consumer goods. These have been extraordinary occasions, however, such as in wartime or during a very brief period in the early 1970s in an effort to deal with inflation.

At other times, however, Canadian governments have allowed markets to set prices. Even in an important commodity such as electricity, governments across the country have moved increasingly to a market-based pricing scheme.

Since the early part of this century, provincial governments in Atlantic Canada have set maximum prices for gasoline, and in some cases provincial agencies also set a minimum retail price. Government price controls for gasoline were a political response to demands from some consumers who complained about the price of gasoline.

What makes government control on gasoline prices unusual is that it came in the absence of any evidence to suggest that gasoline prices were the product of anything but natural market forces of supply and demand. There was no public emergency. There was no global crisis. Among those worried about the impact of petroleum consumption on the environment, some even suggested that any government in Canada should impose the extreme measure of setting gasoline prices so high that no one would be able to buy it. They have suggested normal government policy instruments such as fees and charges but none has advocated that governments should dictate standard prices.

What is more, the scheme introduced in Atlantic Canada proved to be costly for consumers. In 2009, the Atlantic Institute for Market Studies (AIMS) published a paper entitled *What's Missing from Your Wallet? How Gas Price Regulation Robs from Consumers,* which analyzed the effects of gasoline price regulation in Atlantic Canada. It found that, as of Feb. 1, 2009, Atlantic Canadians had already paid over $155.6 million more for gasoline than they otherwise would have. The extra cost was due solely to government-controlled pricing. New Brunswickers paid $9.4 million extra; Nova Scotians, $17.8 million; Newfoundlanders and Labradorians, $65.2 million; and Prince Edward Islanders, $63 million.

With the revised figures in this paper, the totals are even more eye-catching. Atlantic Canadians have paid approximately $205.9 million extra because of our regulated regime. Specifically, since regulation was implemented, P.E.I. leads the way with a

total estimated cost to the consumer of $91.1 million. Although it is the smallest province, P.E.I. represents the largest figure as regulation there has been in place the longest (since 1991). In Newfoundland and Labrador, the total estimated cost is $63 million, in Nova Scotia $36 million, and in New Brunswick, $15 million.

A later study, published in the *American Law and Economics Review* in 2011, found that gas price regulation in Atlantic Canada "resulted in higher retail gasoline prices" and "adverse outcomes to consumers." According to the authors, although the implementation of price ceilings "was because of public interest — specifically, because of consumer anger from rising and volatile gasoline prices," their analysis suggests that price regulations benefit firms at the expense of consumers. But should government be in the business of providing economic security blankets to those unhappy with price fluctuations? Paying above market prices year after year to the tune of hundreds of millions of dollars is an enormous cost for the psychological comfort of being spared occasional price fluctuations in the absence of a controlling structure.

"Ordinary least squares (OLS) estimates of the effects of price ceilings," they found, are "statistically significant (at either the five percent or 10 percent levels of significance) and suggest that the enactment of such regulation is correlated with a 1-1.2 cents per litre rise in self-service retail gasoline prices, controlling for all else."[1]

Since 2009, the case against price controls remains strong. As mentioned, consumers across Atlantic Canada have paid over $205 million more for gasoline than they would have without government-controlled prices (see appendix A). In Nova Scotia, the empirical evidence of higher post-regulation prices is strongest and thus the case for deregulation is most obvious. This paper provides readers with an update of the case against regulation in Nova Scotia and revised numbers for post-regulation prices in New Brunswick and Newfoundland and Labrador as well as an estimate for the regulatory cost in Prince Edward Island.

In the first section, we review the basis for gas regulation in Atlantic Canada. In the second section, we examine the economic case against price controls, showing how these controls distort the market and contribute hidden costs and inefficiencies to the economy. On this basis, all Atlantic Provinces should consider deregulation.

The third section examines the differences in pump prices pre- and post-regulation. Using data from the Kent Group[2] and the U.S. Energy Information Administration,[3] we estimate — by comparing regulated retail prices with unregulated New York Harbour spot prices — what retail prices in several major cities across the region would have

been without regulation, and then calculate how much regulation has either cost or saved Atlantic Canadians.

It should be noted that the price data used throughout this paper are adjusted for inflation, which is to say that all prices are expressed in real terms. Charts appearing later in the paper tracking historical prices have been adjusted and so reflect real-dollar increases or decreases accordingly.

Following the introduction of regulation in Nova Scotia (July 1, 2006), Halifax saw an average increase of 1.7 cents per litre in the retail price of gasoline, while Sydney, Yarmouth, and Truro saw an average increase of approximately 2.6, 2.6, and 2.4 cents per litre. On the basis of the economic case as well as these substantially higher prices, policy-makers in Nova Scotia should move swiftly to eliminate price controls.

The story in New Brunswick and Newfoundland and Labrador is more mixed. Following July 1, 2006, Saint John, Moncton, and Bathurst saw an average increase of one, 1.2, and 0.15 cents per litre in the retail price of gasoline, respectively, while Fredericton saw an average decrease of approximately 0.2 cents per litre. Meanwhile, since the introduction of regulation in Newfoundland and Labrador after Nov. 15, 2001, St. John's saw an average increase of 0.1 cents per litre, while Gander and Corner Brook saw an average decrease of approximately 1.4 cents and 2.5 cents per litre. For Prince Edward Island, adequate data are unavailable for comparison.

The empirical case against price regulation in New Brunswick and Newfoundland and Labrador may be weaker than in Nova Scotia. This paper recommends that these provinces undertake to examine the distortive effects of their regulation models, including the disadvantage to retailers of pump prices considerably below market rates in Gander and Corner Brook.

A note on sources: All of the figures in this paper required the use of multiple sources; the two that provided both Atlantic Canadian pre-tax and NYH spot prices for regular gasoline can be found in footnotes 2 and 3. The CPI indices for Canadian and American goods are sourced from Statistics Canada[4] and the Federal Reserve Bank of St. Louis[5] respectively. The exchange rates used to convert the NYH prices to Canadian dollars are the noon monthly averages captured by Statistics Canada.[6]

The Goals of Price Regulation

In general, government price regulation alters market outcomes that are usually perceived as unfair. It should therefore come as no surprise that, in the Atlantic context, common regulatory objectives include providing a "just and reasonable price," reducing the variance in cost at the pump across the province, and helping rural retailers stay in business.

As the *Nova Scotia Petroleum Products Pricing Act* specifies: "The purpose of these regulations is to ensure just and reasonable prices for specified petroleum products, taking into consideration all of the following objectives: a) preserving availability of specified petroleum products in rural areas; b) stabilizing prices of specified petroleum products; c) minimizing the variances in prices of specified petroleum products across the Province."

Note that what is meant by "just and reasonable prices" does not mean lower prices. Rather, it means prices that have been fixed in a way to achieve three other, non-economic goals:

- preserving availability in rural areas,
- preserving price stability, and
- minimizing price variance.

Therefore, the "just and reasonable" price is simply that which meets these other goals. In effect, even if prices were to double, they would be as "just" and as "reasonable" as market prices. This makes government-controlled prices little more than a word game rather than a policy that actually achieves its objectives.

To be sure, there is nothing wrong with the policy goal of keeping rural retailers in business. The point is that there are better ways to provide incentives to rural markets and their consumers than implementing regulation that effectively subsidizes them by forcing higher retail prices on urban consumers. How "just and reasonable" is gasoline price regulation, and might there be a better way?

The Case Against Price Controls

Although gasoline price-control regimes appear to reduce price volatility, they are still subject to standard economic theory. The price controls actually serve to reduce total economic surplus, distort resources and allocation, produce dead-weight loss, and produce a costly bureaucratic apparatus needed to administer them.

The Price Ceiling

A price ceiling set below market prices tends to induce shortages. When prices rise beyond a level that consumers will pay, consumers buy less. This balances the supply with demand.[7] A price ceiling promotes continued demand for the product (lower prices increase quantity demanded). At the same time, artificially limited prices reduce supply of the product, since a lower price reduces incentives for producers to bring forth the product in a world in which their costs are not restrained like their potential revenue. The result can only be relative shortages as over time, quantity demanded will tend to exceed quantity supplied.

Due to the resulting distortions, a price ceiling inevitably reduces total economic surplus and economic efficiency. This is meaningful in a region struggling to attract more investment and suffering from low productivity. Economic surplus, or total economic welfare, is the sum of consumer and producer surplus. Consumer surplus is the monetary gain obtained by consumers, defined as the difference between a price paid for a product and the maximum price they would be willing to pay.[8] For example, if a consumer were willing to buy a product at $10 and only paid $5, the total consumer surplus that individual would derive in this scenario would amount to $5. By contrast, producer surplus is the excess gap between what a producer received selling a product and the minimum price they would be willing to accept. If a producer obtained $15 for a good or service but was willing to accept $10, the total producer surplus in this instance would also amount to $5.

Like government-controlled prices, an artificial price ceiling will lower the range of prices a producer could gain from the sale of a good or service, thus lowering producer surplus. While a price ceiling will also decrease the price for a consumer, it leads to a lower volume of sales as supply decreases relative to a free market equilibrium. Therefore, any gain to consumer surplus is at least partially offset by the reduction in sales, which means that some consumers (who would have presumably been able to purchase the good at the higher market price) are no longer able to

access the good or service. The existence of a price ceiling thus in part produces an additional distortion.

We can assume that a consumer willing to pay a higher price places a higher value on the product than one only willing to pay a lower price. Consequently, we conclude that a price ceiling eliminates purchases by consumers who attach greater value to a good or service and sustains access for consumers who place a lower value on the good or service. Such a situation would suggest that the price ceiling contributes to a sub-optimal allocation of resources.

The Price Floor

In addition to establishing various price ceilings in Atlantic Canadian gasoline markets, the present regulatory regime also imposes a series of price *floors* in some areas.[9] A price floor is a legal minimum price that a producer is entitled to receive. Like a price ceiling, a price floor also leads to declines in economic welfare. In this case, however, the imposition of a price floor reduces consumer surplus.

Raising the price of a good or service above market equilibrium means a consumer inevitably expends more resources on purchasing that good or service. The existence of a price floor means that even if producers were perfectly willing to supply a good or service at a lower price, doing so would be illegal. While a price floor leads to an increase in producer surplus due to a higher legally mandated price, this gain is partially offset by a decline in quantity demanded by consumers.[10]

The Combined Effect of Price Ceilings and Price Floor on Total Economic Welfare

The price regulation regimes in the Atlantic Provinces contain price floors and price ceilings. The provinces have a minimum price for fuel sold at self-service stations and a maximum price for gas sold at full-service stations. As explained, gas subject to a minimum price leads to a loss in consumer surplus, while gas subject to maximum prices leads to a loss in producer surplus. Taken together, these two forms of controls lead to a reduction in total economic welfare. This is not just an abstraction but represents real investment, jobs, and pay, as well as businesses that may be lost, downsized, or prevented from opening. How harsh these effects are depends on how drastically the actual price differs from the mandated price.

It is likely that the maintenance of maximum prices deters investment in production and retail capacity in Nova Scotia's energy sector.[11] This is because a price ceiling reduces profits that can be earned and the rate of return on investment in this industry. Over time, lower levels of investment in the retail and productive arms of the energy sector in Nova Scotia would lead to lower output and productivity in this sector. Furthermore, maximum prices possibly contribute to sub-optimal resource use by consumers. To mitigate the effects of higher prices, consumers might alter the type of transportation they choose to use (for instance, they could choose to take public transport more often than they otherwise would).

In addition, creating the impression that price control yields lower market prices may not be good for the environment. Lower prices (or the impression thereof) encourage greater consumption. In turn, greater consumption of fuels may result in greater pollution without necessarily producing greater social and economic benefits, which then increases the likelihood of adverse conditions to health and the environment.

The Hidden Costs of Price Controls

Price controls also impose hidden fiscal costs on society. In his seminal article, "The Welfare Costs of Tariffs, Monopoly and Theft," Gordon Tullock demonstrated that the cost of a tariff on imports is greater than generally understood.[12] In addition to the adverse effects on consumers and producers who use the taxed good or service as inputs, a tariff also affects economic welfare through the necessity of a bureaucracy to administer the tariff.

Similar reasoning applies to our study: those administering price controls are not engaged in productive economic activity, while the compliance costs it creates for firms would likely lead to reductions in economic welfare.

Moreover, once a price-control regime is in place, there is a good chance that its existence induces wasteful instances of rent seeking. While price controls do lead to a negative outcome for society generally, no doubt someone benefits from them. Those employed administering the regime and others who might individually benefit from price floors and price ceilings have an interest in ensuring that controls continue indefinitely. They have incentives to lobby for continued price controls. The resources they use do not add to economic welfare but instead perpetuate the rents that accrue to them. These rents cannot be used for other, more productive economic activity.

Prices Without Regulation: An Estimate

As pointed out in the 2009 iteration of this paper, comparing regulated prices to exact unregulated prices is simply not possible; we cannot know for certain what gas prices would have been had they been left unregulated. Furthermore, because region-specific variables influence gasoline prices, any comparison between regulated prices in, for instance, Gander, N.L., with unregulated prices in London, Ont., would be misleading. To figure out what prices would have been without regulation and make the necessary comparison, we must rely on estimation.

We first need a reasonable benchmark for comparing regulated with unregulated prices. Luckily, such a benchmark exists. In all four Atlantic Provinces, gas price regulation uses the New York Harbour (NYH) spot price in calculating the price that consumers should pay at the pump. This means that historical trends in pump prices across the region, while being somewhat different from one another, should essentially mirror historical trends in the NYH spot price. Figure 1 compares these historical trends with historical trends in the NYH spot price.

Figure 1

New York Harbour Spot Prices and Retail Prices in St. John's, N.L., Saint John, N.B., Halifax, N.S., and Charlottetown, P.E.I. from 1996 to April 2017[13]

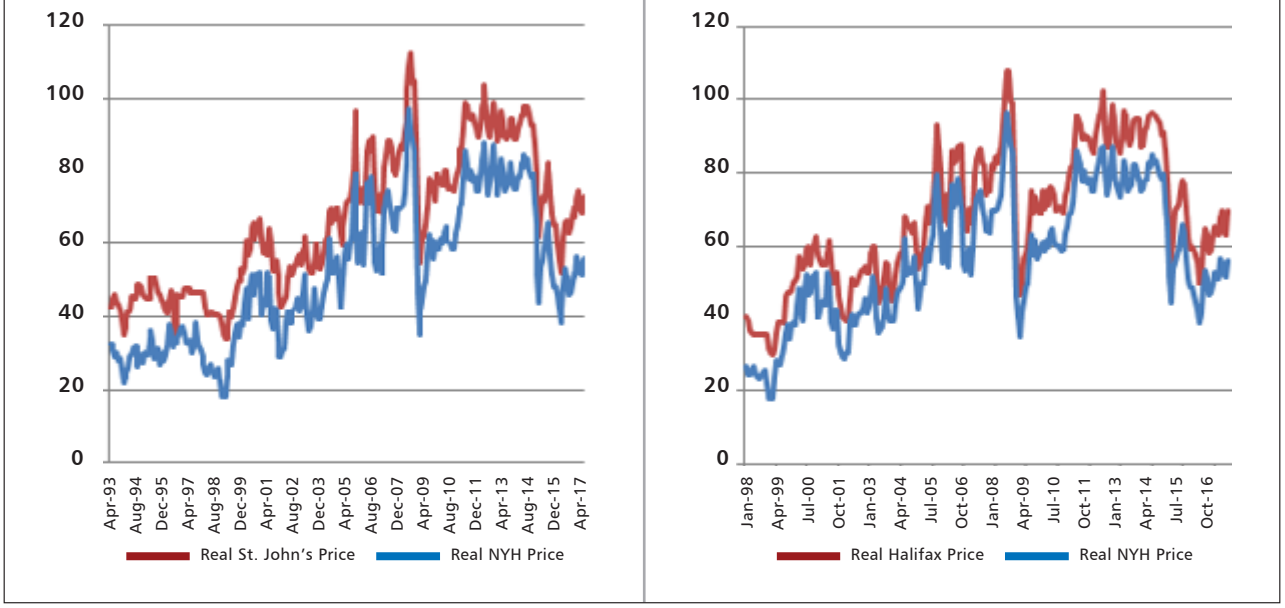
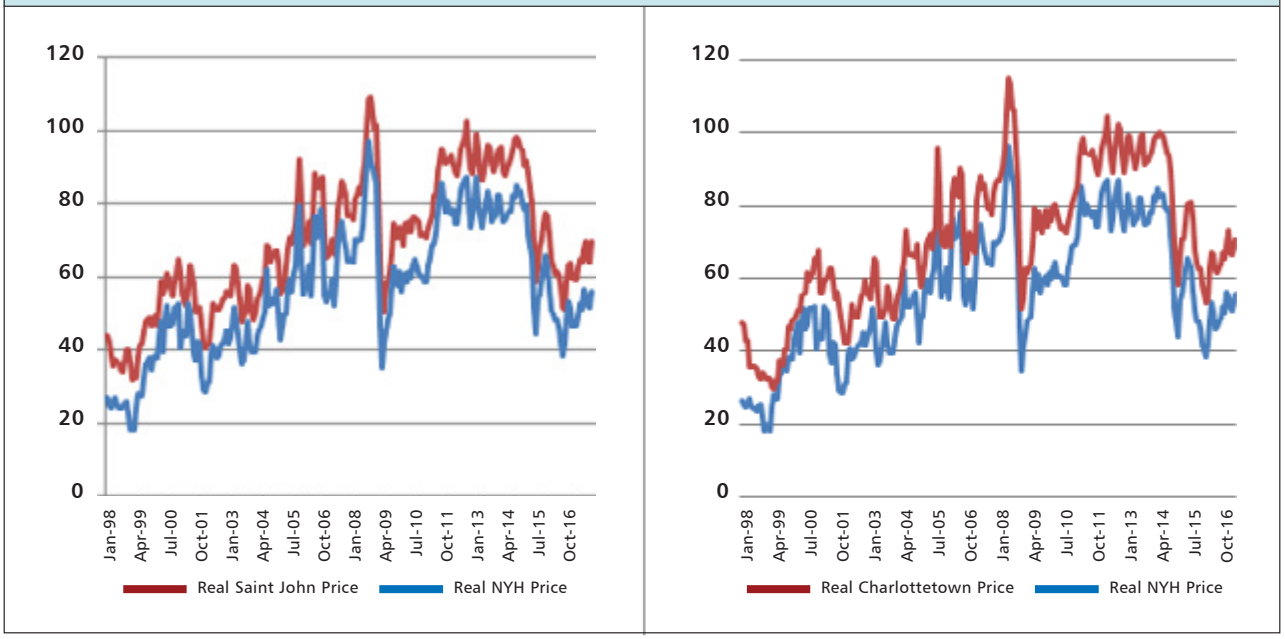


Figure 1 Continued



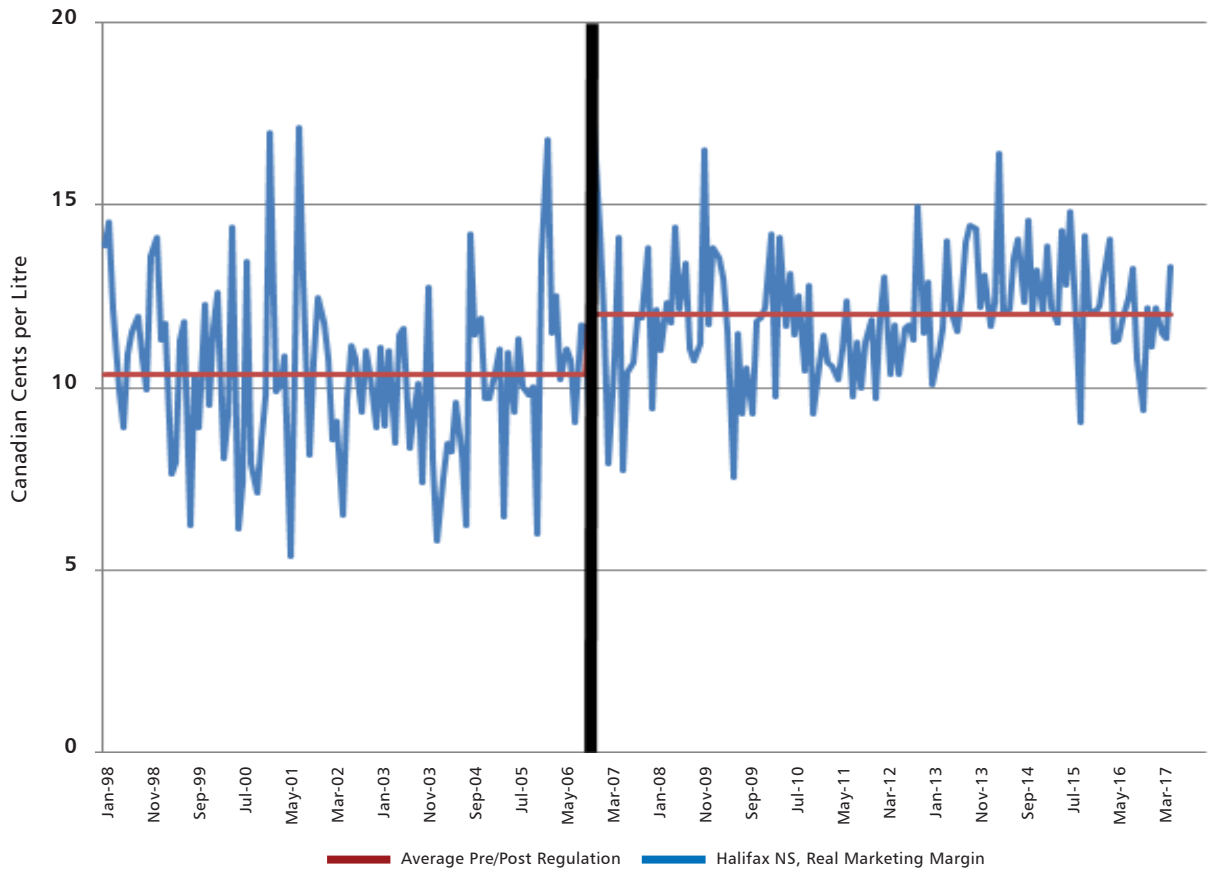
As we can see, from left to right the figures above show how pre-tax retail prices in St. John's, N.L., Halifax, N.S., Saint John, N.B., and Charlottetown, P.E.I, before and after regulation was introduced, have and continue to be virtually in lockstep with NYH spot prices. This tells us that the NYH price is a reasonable benchmark for comparing prices, and thus for estimating what prices would have been had they been left unregulated.

Marketing Margins Before and After Gas Price Regulation in Nova Scotia: Halifax, Yarmouth, Sydney, and Truro

To make this estimate, one need only calculate the marketing margin, or average gap, between NYH spot prices and retail prices of a given city before and after regulation.[14] For example, Figure 2 shows the average gap between NYH spot prices and retail prices in Halifax from 1998 to April 2017. This encompasses 8.5 years before regulation was introduced and approximately 11 years after.

Figure 2

Marketing Margins Before and After Regulation in Halifax from 1998 to April 2017



Sources: Statistics Canada, U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

As we can see, prior to regulation there was much greater variation in marketing margins between NYH prices and retail prices in Halifax. In other words, there were higher highs and lower lows. Important to note, however, is that when compared to the higher highs, the lower lows are much more frequent, making for a lower average marketing margin. This means that, although gasoline was on occasion more expensive, it was often less expensive, too. In the 8.5 years before regulation, gasoline in Halifax cost on average 1.7 cents a litre less than it did in the 11 years after regulation.

Halifax, however, was not the only city in Nova Scotia that saw an average increase in the retail price of gasoline. Sydney, Yarmouth, and Truro did as well. Table 1 shows the difference in marketing margins before and after gas price regulation in the four most populous cities in Nova Scotia.

Table 1

Marketing Margins in Halifax, Sydney, Yarmouth, and Truro Before and After Regulation from 1998 to April 2017[15]

	Nova Scotia			
	Halifax	Sydney	Yarmouth	Truro
Pre-Regulation	10.33698	11.31667	12.058449	10.30335
Post-Regulation	12.01465	13.90667	14.660823	12.7026
Difference	1.677665	2.590002	2.602374	2.399254
Provincial Average	1.864395347			

Sources: Statistics Canada (population weights[16]), U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

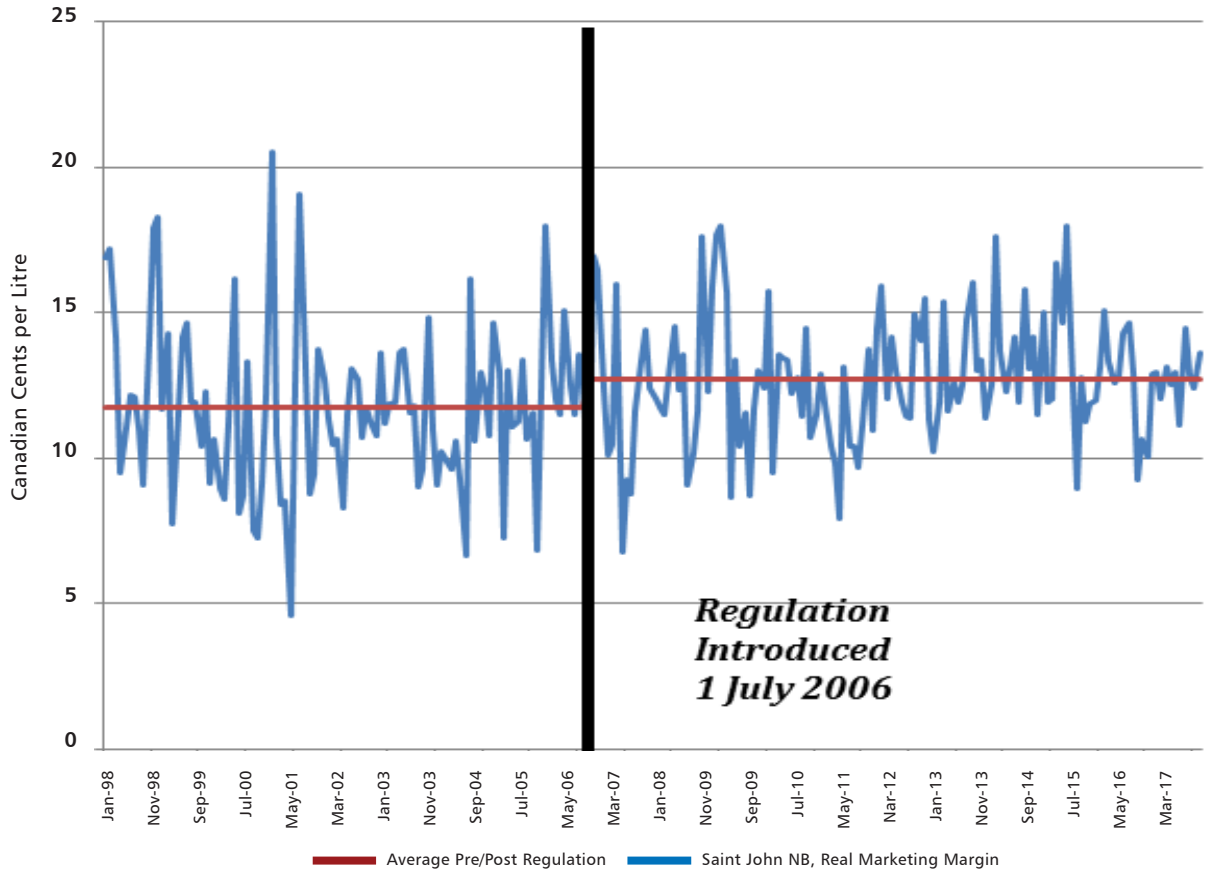
As shown in Table 1, Sydney, Yarmouth, and Truro saw an even higher average in post-regulation increase than Halifax. Whereas Sydney and Yarmouth saw an average increase of approximately 2.6 cents per litre, Truro saw an increase of approximately 2.3 cents. Provincially speaking, therefore, Nova Scotia's gas price regulation is responsible for an additional cost of about 1.9 cents per litre.

Marketing Margins Before and After Gas Price Regulation in New Brunswick: Saint John, Fredericton, Moncton, and Bathurst

To some extent, data for New Brunswick tell a similar story. Figure 3 shows the average gap between NYH spot prices and retail prices in Saint John from 1998 to 2017 — again, 8.5 years before, and about 11 years after regulation was introduced.

Figure 3

Marketing Margins in Saint John Before and After Regulation from 1998 to April 2017



Sources: Statistics Canada, U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

As in the case of Halifax, in Saint John there was much more variation in marketing margins between NYH spot prices and retail prices prior to regulation. Again, there were higher highs and lower lows — the latter being more frequent. As a result, like Halifax, Saint John also saw an average increase of one cent in the retail price of gasoline following regulation.

But while Halifax and Saint John saw the same average increase in retail prices, Fredericton, Moncton, and Bathurst did not. Table 2 shows the difference in marketing margins before and after gas price regulation in New Brunswick's four most populous cities.

Table 2

Marketing Margins in Saint John, Fredericton, Moncton, and Bathurst Before and After Regulation from 1998 to April 2017[17]

	New Brunswick			
	Saint John	Fredericton	Moncton	Bathurst
Pre-Regulation	11.7119844	12.41123531	11.8935431	13.2095677
Post-Regulation	12.7266079	12.1750565	13.0822628	13.3629965
Difference	1.01462349	-0.23617881	1.18871964	0.15342874
Provincial Average	0.692271192			

Sources: Statistics Canada (population weights[18]), U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

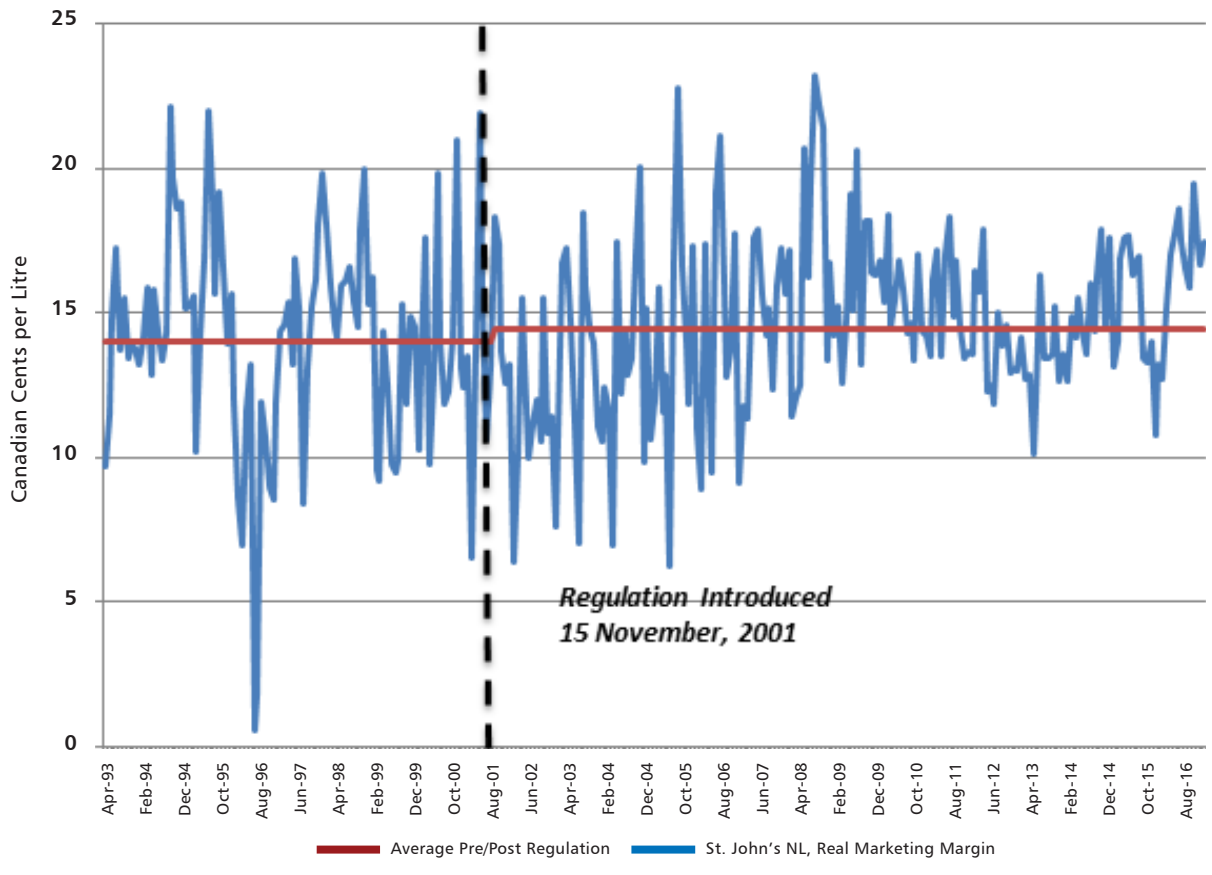
Like Saint John, Moncton and Bathurst also saw an increase in the price of gasoline following the introduction of regulation — at 1.2 cents and the significantly smaller figure of 0.15 cents per litre, respectively. However, unlike Saint John, Moncton, and Bathurst, Fredericton saw a 0.24 cents per litre decrease in the average price of gasoline.

Marketing Margins Before and After Gas Price Regulation in Newfoundland and Labrador: St. John's, Gander, and Corner Brook

Like Halifax and Saint John, St. John's, Newfoundland and Labrador also saw an average increase in the retail price of gasoline after the introduction of regulation. However, unlike in the case of Halifax and Saint John, this increase was relatively small. Figure 4 shows the average gap between NYH spot prices and retail prices in St. John's from 1993 to April 2017.

Figure 4

Marketing Margins in St. John's Before and After Regulation from 1993 to April 2017



Sources: Statistics Canada, U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

Again, prior to the introduction of regulation in 2001, there was much more variation in the average price of gasoline in St. John's (higher highs and lower lows).

Table 3

Marketing Margins in Saint John's, Gander, and Corner Brook Before and After Regulation from 1993 to 2010 and 1998 to 2003[19]

	Newfoundland and Labrador		
	St. John's	Gander	Corner Brook
Pre-Regulation	**14.02867068**	**15.34584394**	**15.04140803**
Post-Regulation	**14.42572325**	**13.95820155**	**12.53783321**
Difference	**0.397052569**	**-1.387642391**	**-2.503574817**
Provincial Average	**-0.39249381**		

Sources: Statistics Canada (population weights[20]), U.S. Energy Information Administration, Kent Group, Federal Reserve Bank of St. Louis.

However, Newfoundland and Labrador has seen the best outcome of regulation among provinces with available data. In the capital of St. John's, the average gas price was 0.4 cents more expensive per litre after regulation — significantly less than the disparity in Halifax, Moncton, and Saint John. Prices in Gander and Corner Brook have actually been lower in the post-regulation era, at 1.4 cents and 2.5 cents per litre respectively.

Gas Price Regulation in Prince Edward Island

Prince Edward Island has had gasoline price regulation in place for 26 years, dating back to 1991. Unfortunately, sufficient data do not exist to perform a rigorous comparison with the time before price control was introduced.

As a result, all we can do is make the informed observation, based on the above findings (and especially those of New Brunswick, P.E.I.'s closest neighbour) that something roughly similar possibly occurred after regulation came into effect — that is, less variance in average prices (fewer higher highs and lower lows) but at the potential cost of an increased average price per litre in P.E.I.'s most populous cities, Charlottetown and Summerside.

We can make an informed estimate of the regulatory cost in PEI based on price data in the prior version of this paper and a linear progression. While this is not an exact measure, we are not aware of significant changes to pricing policies in the province since the last measure, so prior data serve as a reasonably reliable proxy. What differentiates PEI from other provinces is the long-standing nature of its regulatory regime, dating back to 1991, and thus imposing a very high total cost to the consumer.

In PEI and in the other provinces, the research for this paper has uncovered a fact all too common in analyzing the efficacy of regulators: a lack of available, accessible data. The compilation of the figures above requires sourcing from a private-sector organization (Kent Group) for price data, and Statistics Canada tables for volume data, as well as author calculations, and various analytical assumptions to arrive at the costing you see here.

A truly transparent system would display price data in an easily accessible format on the respective provincial regulators' websites. These data should include what is tabulated in this paper, namely, a proper accounting of where the money goes: refining margin, marketing margin, provincial tax, federal tax, etc.

Such a display would help consumers be informed when making requests of their elected representatives. Gas price regulation has persisted with little public understanding of how it works and where the money is distributed.

While some data are available from some regulators, the focus should be on making it accessible and easy to understand.

Conclusion

On the basis of the price difference alone, it is likely that removing gasoline price regulation altogether would be a sensible policy in Nova Scotia. Both the major urban centre and smaller markets have seen increased prices in the post-regulation era. For New Brunswick and Newfoundland and Labrador, this price difference is not seen in each example. In P.E.I., there are not enough available data to say conclusively though we have made what we believe to be a reasonable estimate.

However, there remains a strong economic argument for removing regulations in all four provinces. Principally, regulations artificially distort the true price for a litre of gasoline as set by the market. Where regulations push prices above market value, they disadvantage consumers; where they push prices below market value, they disadvantage distributors. Because a market price more accurately reflects the resource supply as well as consumer demand, it is the best gauge of what the ultimate cost at the pump should be.

Additionally, government controls impose a cost on the economy that market-determined prices do not. Provincial regulatory bodies place a burden on the local taxpayer to fund these organizations directly or indirectly. The cost of regulation, in other words, is not just in its distortion of the market price in either direction, but also in the actual process of facilitating the regulation.

Anyone inclined to say that the cost of having the price of gasoline regulated is a small price to pay might be right.[21] A few extra cents aren't going to break the bank. But the point is less the few extra cents and more the question of adding one more extra cost to an already overtaxed commodity.

A litre of gasoline in Atlantic Canada is already heavily taxed. The dollar that buys the gasoline is already taxed on the Atlantic Canadian average at a rate of 26 percent. This means that to take $1 home after tax, you need to make $1.35. Even before you buy the fuel, you are already paying 35 cents in tax.

Gasoline then gets hit by two different pairs of taxes at the provincial and federal level (see table below). The provincial excise tax on gasoline averages out an extra 19 cents per litre plus an extra five cents federal excise tax in Atlantic Canada for a total of 24 cents. Adding more tax to that injury, the combined federal and provincial sales tax (HST) adds another 15 percent to the whole. Once we account for the extra cost of the price-rigging regulation and income tax, only 45 percent of the $1.35 amount a consumer needs to earn to get $1 after tax is the value of the actual fuel purchased.

Or, put differently, for every dollar of price-regulated fuel one puts into a vehicle in Atlantic Canada, 55 percent of the income needed to buy the fuel goes to the provincial or federal government.

Table 4

Atlantic Canada Fuel Price Breakdown

	Provincial Excise Tax	Provincial Sales Tax	Federal Excise Tax	Federal Sales Tax	Total Tax	% Tax	Market Price	Pump Price
Nova Scotia	$0.16	$0.10	$0.10	$0.05	$0.40	35.70%	$0.72	$1.13
Newfoundland & Lbrd.	$0.33	$0.12	$0.10	$0.06	$0.60	44.00%	$0.77	$1.37
New Brunswick	$0.16	$0.10	$0.10	$0.05	$0.40	35.90%	$0.71	$1.11
P.E.I.	$0.13	$0.10	$0.10	$0.05	$0.38	34.00%	$0.73	$1.10
Atlantic Canada Average	$0.19	$0.11	$0.10	$0.05	$0.45	37.40%	$0.73	$1.18
Canadian Average	$0.15	$0.06	$0.10	$0.05	$0.43	36.20%	$0.75	$1.18

Source: Jeff Bowes, "19th Annual Gas Tax Honesty Report," Canadian Taxpayers Federation, 2017. Available at http://www.taxpayer.com/media/2017-GTHD-EN.pdf.

In short, only two-thirds of one's hard-earned dollar (already taxed 26 percent on the average) accounts for the actual value of fuel in Atlantic Canada.

While price controls are anathema to freer markets, one must also consider how increased fuel costs have an impact on the low-income members of our society. Policy-makers also ought to ask themselves about imposing greater costs on hard-working single parents or the elderly who are often on fixed incomes.

The presence of gasoline price controls in Atlantic Canada represents one more piece in the rather large panoply of small and large government interventions that distort or add frictions in the wider marketplace, add contradiction, and often confusion. While each of these by itself may not seem directly harmful, the cumulative effect advances the notion that it is legitimate for governments to control prices and reinforces the ill-advised idea that more government is the better solution to most problems.

Perhaps more pointedly in the public interest should be to question whether government resources ought to be directed to establish and implement policy tackling an expression of public anxiety for as natural a process as price fluctuation in light of a natural disaster. However minor an intervention gasoline price controlling may seem today, using the compulsion of government to force distributors and retailers to sell at a set price remains illegitimate in a free society.

Since we are calling on all four Atlantic Provinces to abolish the price-controlling scheme on gasoline, requesting accessible and intelligible data in the future may seem like a moot point. However, for as long as they keep the practice going, and while some data are available from some regulators, we invite them to focus on making data accessible and easy to understand. The four authorities charged with gas regulation (the EUB, PUB, UARB, and IRAC) need to make data publicly available and in plain sight so that consumers can be properly informed about what is being regulated on their behalf.

We conclude that all four Atlantic Provinces should look closely at liberating the gasoline retail market from price regulation, allowing the market to set the ultimate prices for gasoline at the pumps.

A small but important message to send to businesses and investors in the rest of Canada and the world — people to whom these issues matter when making business decisions — would be that Atlantic Canadian governments are more willing to follow the rules of the market instead of the whims of electors and the elected.

Appendix

Table A1

Estimation of Costs of Regulation

	NB	NL	PEI	NS
Total consumption under regulation until 2009 (L)[22]	2,588,400	4,292,800	3,471,500	2,985,200
Total cost until 2009[23]	$9,401,789	$65,259,199	$63,092,632	$17,868,951
Total consumption since 2009 (L)[24]	9,049,160	5,631,997	1,641,380	9,754,327
Extra unit cost since 2009 CPL	0.6923	-0.3924	N/A	1.864
Total cost since 2009	6,264,733	-2,209,996	28,041,169	18,182,066
Total cost since beginning of regulation	**15,666,522**	**63,049,203**	**91,133,801**	**36,051,017**

Endnotes

1. Anindya Sen and Anthony Clemente, "Retail Gasoline Price Ceilings and Regulatory Capture: Evidence from Canada," *American Law and Economics Review* vol. 13, no. 2 (September 2011): 534, 560.
2. Kent Group: http://charting.kentgroupltd.com/.
3. U.S. Energy Information Administration: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EER_EPMRU_PF4_Y35NY_DPG&f=M.
4. Statistics Canada (CPI): http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=3260020&pattern=&csid=.
5. Federal Reserve Bank of St. Louis: https://fred.stlouisfed.org/series/CPIAUCSL.
6. Statistics Canada (exchange rates): http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1760064&pattern=&csid=.
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13. Throughout this paper, retail prices have been adjusted for inflation and are therefore presented in real terms.
14. The marketing margin on gasoline is the gap between the NYH price and the retail price. If the gap between the NYH price and the price we pay on average widens, then regulation is costing consumers money. If it narrows, then regulation saves consumers money.
15. Whereas the data used for Halifax begin in January 1998, the data used for Sydney, Yarmouth, and Truro begin in July 1998, or roughly five months later. This is because data for the latter three cities are not available prior to July.
16. Statistics Canada: http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=1005018&Geo2=PR&Code2=10&Data=Count&SearchText=corner%20brook&SearchType=Begins&SearchPR=01&B1=All&Custom=&TABID=1.
17. 8.5 years pre-regulation, most current post-regulation: January 1998-April 2017 (F, M, B, July 1998 start).
18. Statistics Canada: http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=1005018&Geo2=PR&Code2=10&Data=Count&SearchText=corner%20brook&SearchType=Begins&SearchPR=01&B1=All&Custom=&TABID=1.
19. 8.5 years pre- and approximately 16 years post-regulation for St. John's (April 1993-March 2010); three years pre-/post-regulation for Gander and Corner Brook (November 1998-October 2004).
20. Statistics Canada: http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=1005018&Geo2=PR&Code2=10&Data=Count&SearchText=corner%20brook&SearchType=Begins&SearchPR=01&B1=All&Custom=&TABID=1.
21. The Nova Scotia Utility Review Board calculates that the price-controlling program directly cost $207,486 for the fiscal year 2016-2017.
22. Figures taken from the original version of this paper, *What's Missing from your Pocket?*
23. *Ibid.*
24. Statscan CANSIM 405-0002.

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