CANADIAN RETAIL PETROLEUM MARKETS STUDY

A review of competitiveness in the Canadian refined petroleum marketing industry

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Executive Summary

Study Objectives

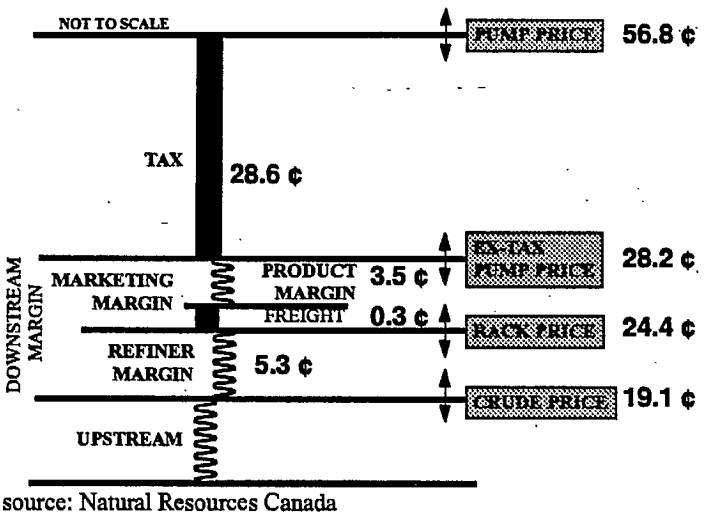
The Canadian Retail Petroleum Markets Study is a joint initiative of Industry Canada, Natural Resources Canada (NRCan), and the Canadian Petroleum Products Institute (CPPI). This study, together with a separate review of the refining sector, forms a comprehensive overview of the competitiveness of the downstream petroleum industry in Canada.

This Retail Petroleum Markets study provides a practical tool for understanding the dynamics of this vital and complex industry, and a foundation for effective policy development.

Pump Price/Margin Model

The study presents a model which serves to illustrate the interrelationships between the many stakeholders who ultimately receive the revenue from the sale of a litre of gasoline.

1996 Average Prices and Margins - Regular Gasoline 10 City Average



source: Natural Resources Canada

The model shows that in 1996, the Canadian retail marketing sector realized an average gross product margin of 3.5 cents per litre on the sale of regular gasoline in a typical major urban market. This margin represents gross income (after wholesale product cost and freight costs) available to provide for retail marketing operations including outlet costs, dealer income, supplier costs and profitability.

The model also illustrates that each sector margin is defined by the price at which feedstock or wholesale product is bought and then sold. Price competition occurs at three distinct levels in this industry, represented by crude, rack, and ex-tax pump

prices. These prices are determined in a competitive marketplace, each with unique dynamics. The resultant margins are therefore a reflection of the state of product supply, demand and other competitive factors existing at the time.

The Canadian retail gasoline marketing sector is but one element of a much larger industry infrastructure, encompassing several marketing channels which provide a range of petroleum products to industrial and domestic consumers. While each of these marketing channels operates in a competitive environment, this study focuses on the retail gasoline sector, due to its prominence in the public and media domain.

The Structure of the Retail Petroleum Products Industry

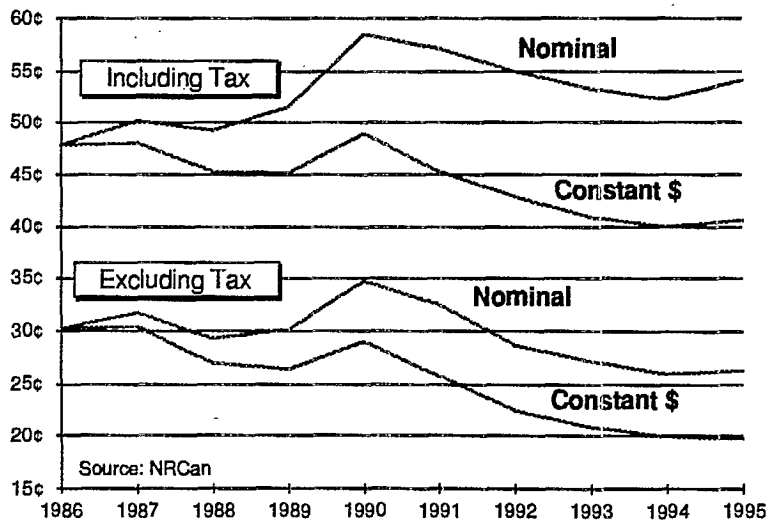
Retail petroleum marketing is typified by the retail "gas station" outlet. Approximately 16,500 retail outlets were in operation in Canada in 1995, compared to about 22,000 in 1989. Dealers have a variety of relationships with their supplier; well over half of all outlets in Canada operate as lessees or independents, and accordingly, the responsibility for deciding upon retail pump prices resides principally at the local dealer level.

Ancillary or non-petroleum revenue is an increasingly important feature of the retail gasoline marketing industry. Convenience store, car wash, and the traditional automotive service bay, are examples of ways in which outlet petroleum sales are augmented by other revenues, which potentially allow for reduced margins at the gasoline pump.

Historical Trends

Changes in the average gasoline prices in Canada have remained at or below the "All Items" Consumer Price Index (CPI), nine of the past ten years. From 1986 to 1995, ex-tax pump prices declined by 4 cents per litre measured in nominal dollars, and declined by 10 cents per litre measured in constant dollars.

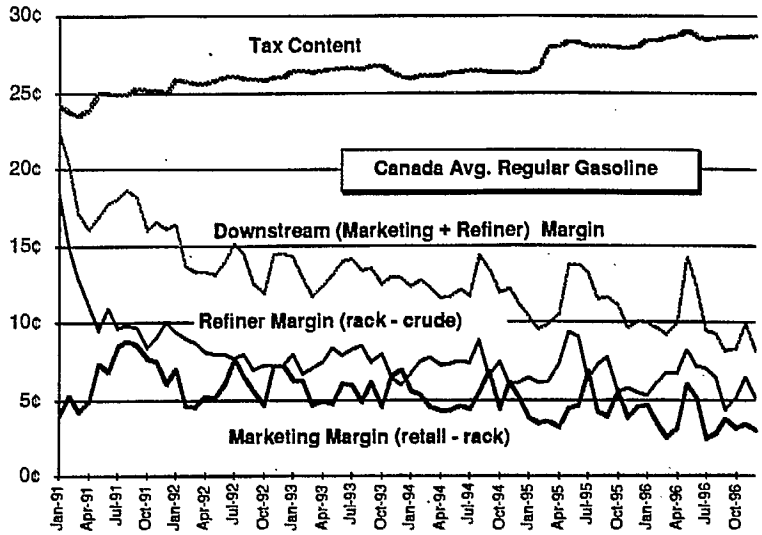
Annual Gasoline Price in Cents per Litre



Source: Natural Resources Canada (Nominal $), Statistics Canada (Constant $)

The "tax-included" nominal pump price increased over this same period, however. From 1991 to 1996, the average tax content of regular gasoline pump prices in major Canadian cities increased by about 5 cents per litre, while (average) combined gross refiner and gross marketing margins decreased by about 7 cents per litre.

Monthly Margins in Nominal Cents per Litre



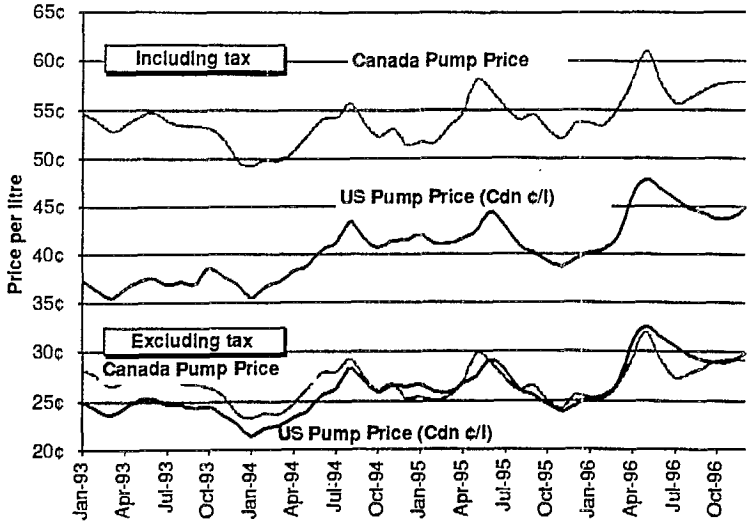
source: Natural Resources Canada

Despite an upwards trend in world crude prices since 1991, both refiners and marketers have experienced a decline in margins as a result of price competition at the rack and at the retail pump. This has both resulted in, and has been a result of several factors including:

- improved refinery utilization and efficiency, as a consequence of refinery plant rationalization (closures) and a modest demand increase;
- improved retail outlet sales performance as a consequence of retail outlet rationalizations and demand increases; and
- emphasis on ancillary revenue sources as a means to augment petroleum revenue and offset outlet operating costs.

As a result of these trends, Canadian average ex-tax pump prices in major markets have been virtually identical to those of the United States since mid-1994.

Comparison of Canada, US Monthly Pump Prices



source: Natural Resources Canada

Selected Markets Study

As part of this study, 19 markets representing a broad range of conditions, were selected for a detailed review of outlet economics. This provided for market-by-market and regional comparisons of key competitiveness indicators, in order to identify market and/or regional competitive differences as potential issues or opportunities within the industry.

With the participation of several CPPI member companies, proprietary 1995 operating data were collected on a total of 481 retail outlets in the selected market groups. This was integrated with selected NRCan price data, and one by one, several "outside variables" (product taxes, wholesale product cost and freight charges) were isolated from the pump price, to derive 1995 average petroleum gross product margins for each of the 19 markets. A wide range of petroleum gross product margins were evident, from 3 cents per litre in Toronto to 14 cents per litre in Gaspé.

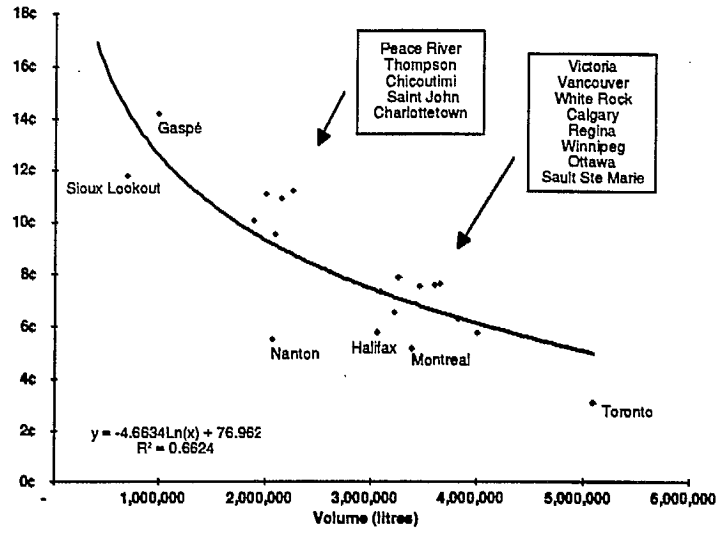
When petroleum gross product margins were compared to their corresponding outlet throughputs, a distinct pattern was demonstrated: an inverse relationship between retail gross product margin and the average outlet throughput associated with that market. That such a relationship should exist was not surprising, although this study provides an independent confirmation of this.

With few exceptions, the 19 study markets exhibited a high degree of correlation in gross product margin as a function of outlet throughput, which led to two key findings:

- Larger population centres and their surrounding communities consistently exhibited lower pump prices and narrower gross product margins than smaller, rural markets, but also had significantly higher throughputs per outlet.

- Smaller markets performed as competitively as larger centres, and the higher prices (and margins) generally seen in these markets were a function of poor volume performance, not poor competition.

Relationship of Gross Product Margin to Outlet Throughput (1995)



source: MJ Ervin & Associates

Although a comparison of petroleum gross product margins to their corresponding throughputs was shown to be an effective competitiveness analysis tool, an additional goal of this study was to undertake a comparison of outlet profitabilities, of which gross product margin and throughput are only two of several factors.

Consequently, revenues from ancillary operations (eg: convenience store, car wash) and outlet costs were factored into the market study analysis to derive a complete measure of average outlet income (in absolute dollars) in each region, and in major vs. smaller markets.

This study showed that an average outlet net revenue in the 19-market study group was about $70,000, which represents the source of cash flow for three distinct purposes:

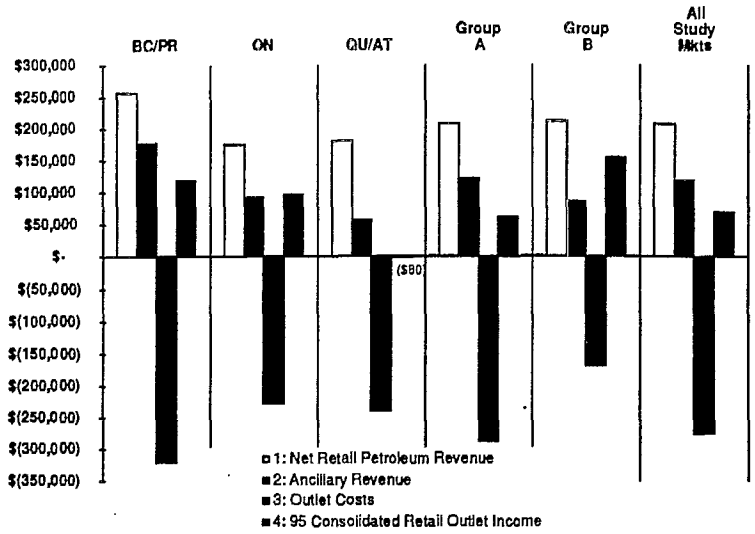
- **dealer income/profit**: the return or salary to the dealer, which reflects his investment in the outlet, and his personal labour investment.
- **supplier overhead**: all operating costs of the supplier that are not directly associated with a single outlet. These costs would include salaries of marketing representatives and management, brand advertising, corporate charity, sales processing, head office and regional office overheads, etc..
- **supplier profit**: after the above costs are allocated, the residual revenue is available as profit to be re-invested into retail operations, and/or distributed to shareholders.

Using market-determined rack prices as the basis for establishing petroleum gross product margin and its related revenue, this study estimated that within the 19-

market study group, after allowing for estimated dealer profit and supplier overhead, suppliers likely incurred a net loss on outlet operations in 1995.

Where the actual corporate results of petroleum marketers showed 1995 profits from their downstream operations, it was likely due to profitability in the refiner side of operations in the case of integrated refiner/marketers, or due to lower non-outlet overhead costs which are likely achievable by regional and independent marketers, for which this study had no specific data.

Average Outlet Income (before marketing overhead costs)



source: MJ Ervin & Associates

The study also showed that very little fundamental difference in outlet profitability existed between regions, but that outlets in smaller (Group B) markets had higher outlet incomes than major (Group A) market outlets - $154,000 vs. $61,000 per year, respectively. Despite this difference, rural market outlets were likely to be no more profitable: supplier overhead costs associated with maintaining rural, distant outlets are clearly higher than those associated with concentrated urban markets.

The study showed that the average urban outlet would experience a net loss without the contribution of ancillary operations, and that petroleum sales revenues alone, at 1995 prices, were insufficient to cover outlet costs.

Conclusions

The study findings lead to a number of conclusions relating to the competitiveness of Canada's petroleum marketing sector.

1. Although an objective measure of competitiveness is elusive, a variety of available data suggests that a state of vigorous competition exists in the Canadian petroleum marketing sector.

The Canadian retail petroleum products industry, by all objective measures available to this study, was shown to be strongly competitive:

- A long-term decline in pump prices, when measured in constant and nominal dollars, was observed (Finding 10). This has not simply been a result of a decline in underlying raw materials costs; the very margins within which this industry operates has, over the long term, exhibited a diminishing trend (Finding 13).
- On a national level, in comparing Canada average (city) pump prices to those of the United States, Canadian prices have been at or below US prices in recent years, when taxes were excluded (Finding 14).
- In comparing several diverse markets, a consistent pattern of competitiveness emerged when comparing product margins to their associated average outlet throughputs (Finding 18).

These findings are likely in sharp contrast to a common public perception of this industry in general and price trends in particular.

Virtually all of the competitiveness indicators examined in this study relate to price. As described in this study however, price is but one of four competitiveness "tools" available to marketers (product, place, and promotions are the other three). Closer examination of these strategic tools might yield additional insights into the nature of competition in this industry sector.

2. The economic relationship of the petroleum marketing sector with its related stakeholders is a complex one.

Critical to the overall success of this study was the development of a model which would create a common frame of reference for the considerable terminology that accompanies an industry as complex as Canada's petroleum sector.

The study presents such a model, which also serves to illustrate the interrelationships between the various stakeholders who ultimately receive the revenue from the sale of a litre of gasoline.

This price/margin model illustrates that the various sector margins are a consequence of the prices at which feedstock or wholesale product is bought and then sold (Finding 1). The contrary notion that a given refiner or marketer is free to establish a price based upon a minimum margin requirement, is mistaken.

Rack and pump prices are determined in competitive marketplaces, each with unique dynamics. The resultant margins, which at times can decline to very low or even negative values, are thus a reflection of the state of product supply, demand and other competitive factors existing at the time.

In applying such a model to the retail petroleum marketing industry, it is important to understand that, while crude oil markets are considered *global* in scope and rack product markets are considered *regional* in scope, retail petroleum markets are considered *local* (municipal) in scope, since this is the effective range of consumer choice. This implies that the competitive dynamics pertaining to these retail markets can, and do, vary considerably from one population centre to another.

Dealers were shown to have a variety of relationships with their supplier; well over half of all outlets in Canada operate as lessees or independents, and accordingly, the responsibility for deciding upon retail pump prices was shown to reside principally at the local dealer level (Finding 9).

While some markets, particularly smaller ones, experienced higher than average pump prices, when the "outside" factors (tax, rack price and freight cost, for example) were rationalized, the resultant margins were found to display a distinct relationship with average outlet throughputs for each market.

A much more accurate barometer of industry competitiveness would therefore be the rack-to-retail or gross product margin, measured against the average outlet throughput for that market. This would entail the tracking of not only pump price, but also rack prices and outlet performance, an exercise that consumers are unlikely to engage in, but not beyond the reach of any organization wishing to truly understand petroleum competitiveness issues.

3. Taxation is a significant factor in the price of retail gasoline, and in some markets, presents a competitive disadvantage to Canadian marketers.

This study's analysis of NRCan urban regular gasoline prices shows that the tax content in a typical consumer's gasoline purchase is about 50 percent (Finding 4). By contrast, crude costs accounted for roughly 34 percent (Finding 2), refiner margins accounted for 5.3 cents or 9 percent (Finding 5), and product margins accounted for 3.5 cents, or 6 percent (Finding 6) of the 1996 average regular pump price.

Petroleum product taxes are levied at the federal, provincial, and in some markets, municipal levels of government. The latter two can vary considerably from one market to another, and are a predominant cause of inter-regional pump price differences (Finding 16).

The measurement and analysis of the effect of petroleum taxation levels in Canada compared to other countries is well beyond the scope of this study, but given its magnitude, taxation as an element of public policy is an area worthy of additional research.

Due to the localized nature of competition in the retail gasoline marketing sector, taxation differences between Canadian and US markets, or even between Canadian markets with differing tax structures, generally do not serve as competitiveness inhibitors. The demonstrated exception to this is in markets directly adjacent to nearby US markets, but even in such cases, these markets have managed to sustain a certain level of viability and competitiveness.

Canadians nevertheless enjoy one of the lowest average gasoline taxes in the industrialized world, second only to the United States.

4. Pump price fluctuations can be an indicator of competition in the marketplace.

Demand for gasoline was shown to vary significantly according to the time of year, in a highly distinct, predictable seasonal pattern. Retail pump prices showed a corresponding seasonal pattern, reflecting consumer demand behavior (Finding 15).

This relationship between price and demand was cited as the essence of competitiveness in the petroleum rack marketplace, which in turn is the principal

driver of ex-tax pump prices. Viewed from this perspective, fluctuating prices are a strong competitiveness indicator (Finding 7).

Retail pump price changes showed a close relationship to underlying rack prices, which in turn, showed a close relationship to underlying crude prices (Finding 11). Rack prices were shown to not significantly differ between major centres, further suggesting that a strongly competitive environment exists in the refiner sector as well (Finding 3).

While price wars are undoubtedly an indicator of competitiveness, the absence of price war activity does not imply a lack of competitiveness. This study's margin-volume model could detect no difference between price-volatile markets such as Toronto, and more price-stable markets such as Sioux Lookout, on the basis of price fluctuation alone. In fact, Sioux Lookout, a price-stable market, exhibited competitive traits typical of any of the study markets, when examined on the margin-volume model.

5. Retail gasoline marketing revenues, on a per litre basis, constitute a small portion of the retail pump price.

The pump price/margin model shows that in 1996, the Canadian retail marketing sector realized an average gross margin of 3.5 cents per litre on the sale of regular gasoline in a typical major urban market (Finding 6). This margin represents gross revenue (after wholesale product and freight cost) which, incorporated with ancillary revenues and outlet costs, is available to provide for all retail marketing operations including outlet costs, dealer income, supplier costs and profitability.

This consolidated outlet revenue, when distributed these three ways (Finding 20), translates into supplier profits of an estimated one cent per litre of petroleum sales in the case of smaller markets, and a loss in the case of urban markets, which represent the majority of Canada's population base.

While these findings are somewhat qualified in terms of this study's use of posted rack prices as the derivation basis, it can still be concluded that the petroleum marketing sector constitutes a small portion of the total retail pump revenue distribution.

6. Declining refiner and marketing margins, have caused, and have resulted from, intense competitive pressures in the downstream industry in general, and the marketing sector in particular.

Changing conditions in Canada's downstream petroleum sector have caused retail pump prices to remain relatively flat since 1992, despite increases in tax content and crude costs (Finding 12), both of which are beyond the direct influence of Canada's oil companies.

A truly objective barometer of downstream industry influence on retail pump price lies in the measurement of *margin*, not price. Since 1991, the combined downstream (refiner and marketing) margin in Canada decreased by about 7 cents per litre (Finding 13).

This trend has both resulted in, and has been a result of, several competitive strategies, including:

- improving production efficiency through refinery plant rationalizations (closures);
- emphasis on ancillary revenue sources as a means to augment petroleum revenue and offset outlet operating costs;
- improving retail outlet performance through outlet rationalizations (closures) resulting in higher unit throughputs (sales volumes).

Both the downward trend in margins, and the associated industry initiatives which are ongoing in nature, serve as perhaps the most significant indicators of competitiveness in the downstream industry.

7. Industry profitability is extremely sensitive to very small changes in pump price.

Annual residual profits available to petroleum marketers is in the order of perhaps one cent per litre, based upon an assumed posted rack price. Also, these findings clearly show that pump price increases are ultimately linked not to increased profits, but to increases in underlying rack prices, and in turn, crude costs. Thus, pump price signs are particularly ineffective as a barometer of petroleum marketer competitiveness and profitability, despite the predisposition of many observers to use them as such.

While these economics might appear to place this industry in a position of poor viability, the rack price basis used in this study may understate actual revenues by about 1 to 2 cents per litre. Also, most outlets used in the 19-market study represent major integrated oil companies. It is likely that regional and non-refiner marketers operate with somewhat smaller overhead costs than those used in this study.

Nevertheless, profit margins in this sector can be stated to be in the order of 1 to 2 cents per litre in a "good" year. Indeed, if Canadian average pump prices were only one cent higher than they were in 1995, this industry sector would have realized profits of unprecedented proportions, assuming all other costs were unchanged. Thus, although pump prices in some markets can fluctuate by several cents per litre in the course of a week, in the long term these fluctuations are likely more reflective of market restorations, not excessive profits.

8. Outlet throughput is a key determinant of inter-market pump price differences.

A wide range of petroleum gross product margins were evident within the 19-market study group, from 3 cents per litre in Toronto to 14 cents per litre in Gaspé.

When these margins were compared to their corresponding outlet throughputs, a distinct pattern emerged: an inverse relationship between retail gross product margin and the average outlet throughput associated with that market (Finding 18). That such a relationship should exist was not surprising, although this study provides comprehensive evidence of this.

Thus, virtually all of the 19 study markets exhibited similar levels of competition. When plotted against the margin-volume model, most markets, regardless of size, had petroleum margins which were commensurate with average outlet throughput for that market. Although some smaller markets appeared to have higher gross

product margins than larger markets, poor outlet throughputs were generally the predominant factor.

9. Smaller, isolated markets face particular challenges: although found to be highly competitive, other factors exist which contribute to relatively high margins and prices.

The costs of most consumer goods in smaller, more isolated markets are generally higher than in larger centres, and this study showed that gasoline prices were no exception. While competitiveness in most smaller markets was shown to be as active as in larger centres, average pump prices were relatively high. This was due to three factors:

- **Low average outlet throughputs** The average group B outlet sold approximately 1.5 million fewer litres of gasoline than a group A (major centre) station. This created some economic pressure to sell product at a higher pump price, in order to generate sufficient revenue to cover the outlet's fixed operating costs.
- **High distribution costs** Smaller markets are generally further removed from their source rack point than larger centres, and therefore suffered an additional distribution cost disadvantage of about 2 cents per litre on average (Finding 17).
- **Low ancillary revenues** Outlets in smaller centres received significantly less ancillary revenue than their group A counterparts, likely due to the different geographic and lifestyle differences that exist in small communities compared to major cities.

At first glance, it would seem that if local government in smaller markets were interested in lowering pump prices, the solution would be to encourage some dealers to exit the market, thereby improving petroleum volumes and ancillary revenues at the remaining sites, which should, according to the margin-volume model, reduce pump prices. In suggesting this approach however, there are three points to consider:

- In very small markets, reducing the number of outlets may also reduce the number of competitors, which could actually inhibit competition.
- A full-serve retail gasoline outlet typically employs 3-5 staff. The loss of employment represented by a station closure may be of some concern to smaller communities.
- Some impediments to market exit may exist in the form of petroleum underground storage tank regulations which may present to the operator the option of pumping gas as the better alternative to decommissioning the site and possibly incurring prohibitive remediation costs.

The particular competitiveness and viability issues facing smaller markets is an issue worthy of further study, in order to build upon the findings in this study towards a full understanding of the dynamics at work.

10. Retail ancillary operations are a critical element of petroleum price competition.

Ancillary or non-petroleum revenue is described as an increasingly important feature of the retail gasoline marketing demography (Finding 19). Convenience store, car wash, and the traditional automotive service bay, were cited as examples of ways in which outlet petroleum sales are augmented by other revenues.

As these findings show, the degree of price competition in the retail petroleum has in effect, depressed petroleum revenues, sometimes below that of outlet operating costs. This competition then, is both the cause and consequence of increased activity in ancillary operations.

Non-petroleum revenues at retail gasoline outlets will continue to gain prominence, as marketers find even more innovative ways to attract market share. This will be driven by the depressed petroleum product margins which currently exist in the petroleum marketing sector, and in turn, will likely preserve a highly competitive petroleum market, characterized by narrow product margins and relatively flat pump prices.

11. Government intervention into petroleum marketing is likely a poor alternative to market-based regulation.

The 19-market study provides some insights into the issue of whether or not regulated retail gasoline markets serve to benefit consumers (Finding 22).

A full analysis of the various features of the Nova Scotia and PEI regulatory structures, and the perceived effect on their markets, is well beyond the scope of this study. The historical record is clear however: since deregulating pump prices, the Halifax market, and likely others in Nova Scotia, has seen a decline in pump prices relative to other Canadian markets. Charlottetown, under the current PEI regulatory structure, does not appear to benefit in consumer terms.

This is not to say that all direct government intervention into marketing practices is certain to produce undesirable results. The federal Competition Bureau for example, is viewed as an agency which exists to the benefit of industry and consumer alike. Also, many national and local environmental regulations exist for good cause, and as such, are an acceptable limitation on pure competition (Finding 8).

This study proposes rather, that where a healthy competitive climate exists, as it does in the Canadian petroleum marketing sector, direct regulatory interventions may have an adverse effect on competitiveness, possibly to the detriment of the consumer.

Recommendations

This study advances two recommendations to enhance the existing competitiveness in Canada's petroleum marketing sector.

1. Improve public understanding and awareness of competition in the petroleum marketing sector.

A recurrent theme arising from this study's conclusions is the likely gap that exists between the demonstrably high level of competition within this industry sector, and

the converse image held in much of the public domain. Ways in which this gap can be closed might include:

- **Ongoing third party evaluation of prices, margins and competitiveness factors.** This should be in the form of a quarterly summary of price trends and related measurements, in a simple format designed for consumers and legislators.
- **A regular comprehensive competitiveness evaluation.** This study might be used as the concept basis for a comprehensive annual update of price/margin trends and selected market competitiveness research.
- **Public perception measurement.** Research into the specific competitiveness issues of concern to consumers would provide valuable direction for groups conducting industry competitiveness research.

Would this enhance the competitiveness of this sector? It is felt that better public understanding of this industry's record of competitiveness, and the nature of competitiveness influences, would ultimately be reflected in carefully-considered public policy which serves to truly enhance, not inhibit, petroleum marketing competitiveness.

Individual companies within the retail petroleum industry have been reluctant to speak directly to the issue of gasoline pricing and competitiveness. Organizations such as the Canadian Petroleum Products Institute and the Petroleum Communication Foundation would therefore have an expanded role to play in commissioning and regularly disseminating the results of these recommended initiatives.

2. Develop cooperative industry research into marketing sector competitiveness issues.

Industry and government have an opportunity to continue to work together in cooperative research similar to that which this study represents. This study alludes to several potential study initiatives which go well beyond the objective of public awareness and may assist both the public and private sector policy and strategic directions:

- **Price/Margin Modelling**: Development and adoption of a standard price model and associated terminology by industry/government, along the lines of the model used in this study.
- **Marketing Strategy Effectiveness**: Research into price and non-price marketing strategies and their relative influence on consumer response, using Canadian and foreign selected markets.
- **Regulatory Intervention**: Historical and theoretical research into government regulation of petroleum markets, using Canadian and foreign selected markets.
- **Small Market Competitiveness**: Detailed research into small market outlet economics and competitiveness, and issues/opportunities facing such markets, and in particular, the possible effect of underground storage tank legislation as a potential impediment to market exit and as a competitiveness inhibitor.

- **Taxation**: An analysis of taxation levels on industry and consumer behavior and as a tool of policy and revenue, using Canadian and foreign selected markets.

* * *

Better understanding of this industry, by industry, consumers, and regulators alike, is vital if Canadians are to put in place the structures that truly meet their social and economic needs.

Lack of understanding of this industry can lead to misguided policies which benefit neither the industry nor the consumer. A better comprehension of the true issues and opportunities facing this industry would be an important step in the right direction towards stable and effective policy.

Introduction

Background

Canada's petroleum refining and marketing sectors, which comprise the "downstream" oil industry, face a number of challenges: a poor public image, competitive pressures from US and offshore refiners, and a challenging array of potential environmental initiatives, to name a few.

In 1995, Industry Canada completed a Sector Competitiveness Framework (SCF) for the Canadian refined petroleum products (downstream) industry. The objective of this project was to improve understanding of the issues affecting the long term competitiveness of this industry, leading to more effective policies and reduced uncertainty for future investment.

The SCF laid the foundation for supplementary studies, including a regional, more detailed economic model of the industry from the rack price point (eg: the refinery plant) to the retail pump. This would have several advantages: it would objectively explain the sometimes significant pump price differences that can exist between regions, or even communities within the same region, and in the process, provide a model for better understanding the nature of competition and pricing economics within the petroleum marketing sector.

A working group represented by Natural Resources Canada (NRCan), the Canadian Petroleum Products Institute (CPPI), and Industry Canada was convened to undertake this project, and MJ Ervin & Associates was selected to undertake the "rack to retail", or petroleum marketing portion of the study.

Project Objectives

The working group established as the primary objective of this study "...to analyze the rack to retail market and the market structure for refined petroleum products, region by region across Canada, and in comparison to the Canadian national average and nearby USA markets". Specific purposes of this study would be:

- "...to provide a sound database upon which more effective policy decisions can be made;
- ...to better understand the competitive opportunities and challenges, and regional differences which face the petroleum products retail industry;
- ...to determine the key factors which drive competitiveness in specific markets; and
- ...to draw comparisons with nearby USA markets."

An additional study objective was that an assessment of the viability and competitiveness of regional markets be made, and that issues and challenges be identified so that conclusions and recommendations can be made "...to help the industry cope and to enhance competitiveness."

The study meets these objectives, through a multi-faceted approach. Ultimately, it provides a comprehensive tool to understand the dynamics of this vital and complex industry, and a foundation for effective policy development.

Specific comparisons of specific Canadian and US consumer markets were not made, due to the considerable data gathering difficulties that such an approach would entail. The study does provide comparisons with US markets on a national level of detail, from which some important findings are made.

Study Overview

This study is in five parts:

Part A: Pump Price/margin Model presents a conceptual model for understanding the interrelationship between various subsectors of the petroleum industry, and the effect of competitiveness on each subsector.

Part B: Retail Structure serves to provide a general overview of the retail gasoline sub-sector in terms of infrastructure.

Part C: Historical Trend Analysis provides an overview of prices, margins and demand patterns over the past several years. It also relates consumer demand patterns to pump price fluctuations.

Part D: Selected Market Study presents the findings of a diverse 19-market study, undertaken as part of this project to:

- make a more detailed examination of price, margins and related implications for market competitiveness than can simply be provided by existing public-domain data;
- an examination of a diverse array of markets in order to determine the degree of dissimilarity or similarity between them, and in order to provide insights into the range of competitive dynamics that can exist.

Part E: Conclusions and Recommendations summarizes the study findings and, presents conclusions and recommendations which arise from the study findings.

Report Format and Conventions

- We have defined terms which may be unfamiliar to the reader, or which have a specific meaning in the context of this report, in Appendix I.
- Findings are stated in **bold** and are summarized in part E of this report.
- Unless otherwise stated, all prices and margins referred to in this document are stated in nominal Canadian dollars or cents (ie: not adjusted for inflation).
- Many of the findings in this report are presented in graphical form. Supporting data to these charts can be found in Appendix II.

Acknowledgments

Three organizations were of considerable assistance in the development of this study:

- Industry Canada, through the involvement of Cindy Christopher and Jack Belletrutti (now with CPPI), chaired the steering committee, and provided critical guidance and feedback at several key stages in the process.
- Natural Resources Canada, through Maureen Monaghan and Huguette Montcalm, facilitated some of the data gathering needs of this study, and also participated in the steering committee.
- The Canadian Petroleum Products Institute, through Bob Clapp, assisted in securing the support and participation of member companies in the selected markets phase of the study.

Several organizations participated in two key review sessions, including Ultramar Canada, Shell Canada, Suncor Inc., Petro-Canada,, Consumers Association of Canada, Ontario Ministry of Environment and Energy, Ministère des ressources naturelles du Québec, Environment Canada, CPPI, NRCan, and Industry Canada.

Finally, several companies made a significant contribution by providing us with retail outlet operating data used in the selected market study. These included: Canadian Tire Petroleum, Suncor Inc., Petro-Canada, Imperial Oil Ltd., and Shell Canada. We gratefully acknowledge these companies, and their 481 retail associates whose outlet data was used in our analysis, for their assistance.

Part A Pump Price/Margin Model

Although Canada's petroleum industry is a vast, multifaceted industry, most Canadians relate to this industry in one specific way: as consumers, principally of motor gasoline. And, unlike many consumer products, the particular quality of gasoline which is of most interest to consumers is not its colour, texture, or taste, but simply, its *price*.

It is this particular feature of petroleum products - price - which is used by many groups and individuals to assess the competitiveness of the petroleum industry. In fact, public attention towards the competitiveness of this industry is most focused during a time of gasoline pump price increases.

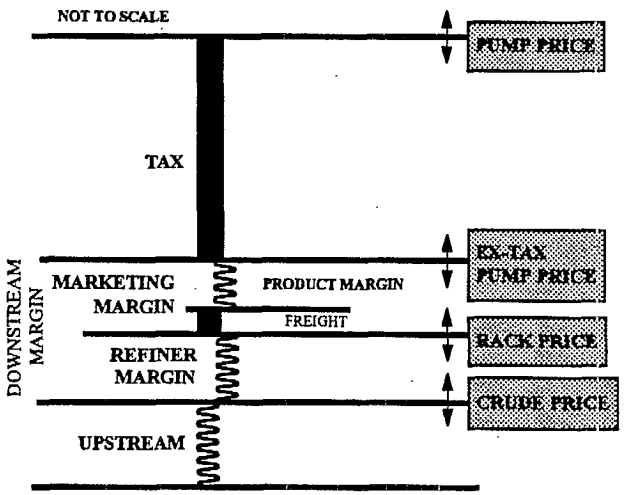
Yet, as this study shows, pump price changes as displayed on the street sign provide no real insights into the factors which drive competitiveness in this industry. To understand competitiveness and pump price economics in the Canadian retail gasoline sector requires a clear understanding of the interrelationships between the principal stakeholders who ultimately share the revenue from the sale of a litre of gasoline.

These relationships can be modeled, as they are in Figure 1. The interface between each of the stakeholders in this model is defined primarily in terms of the price at which product is transferred (sold and then bought) from one sector of the industry to its neighboring sector.

This price/margin model thus creates a common reference for understanding the economics of retail gasoline, and serves to explain several factors that together determine retail gasoline prices at any given time.

An Overview of the Model

Figure 1: Pump Price / Margin Model



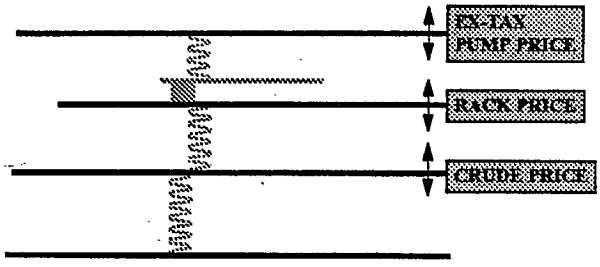
Many of the terms introduced and explained in this section are used extensively throughout this study.

The revenue from the consumer purchase of a petroleum product (such as gasoline) is split among four key sectors, each essentially taking a share[1] - or margin - from the total pump revenue. Each margin is quantified by its defining prices.

Before examining each of the model elements, it is important to define the term "margin". While this term is often associated with the phrase "profit margin", (implying that the stated margin represents net income or "profit"), this study's use of the term relates to gross margin.

Gross margin is simply the difference between two price points, typically the retail price (the price at which the product is sold) less the wholesale price (the price a marketer pays for a product). So defined, gross margin represents revenue only; any operating expenses must *then* be considered before making any determination of profits.

Competitiveness: The Pump Price Model in Motion



One of the key questions this study seeks to answer is "Is the gasoline marketing (ie: rack to retail) sector truly competitive?" As there is no standard, objective measurement for competitiveness, evaluating competitiveness is therefore a partly subjective process.

This section represents the basic model of pump prices and margins shown in Figure 1 not as a fixed view of what pump prices and margins "should be", but as a dynamic model in constant motion: as competitive forces act to move various price points up and down, margins are squeezed or expanded accordingly.

From an industry perspective, "competitive" may be synonymous with "viable". A consumer however, is more likely to equate the term with "value for money". While both perspectives are valid, and in fact inextricably related, this study examines competitiveness from the latter, consumer perspective.

A General Definition of Competitiveness

Since understanding and measuring downstream industry competitiveness is a general goal of this study, an understanding of the term itself is necessary.

[1] The revenue from a petroleum sale filters down to the principal stakeholders in various ways. Ultimately however, these stakeholder revenues are derived from the revenue from the retail sale.

Unlike many business or economic concepts, a universally acceptable definition of competitiveness is elusive. Accordingly, any attempt at arriving at an objective measurement of competitiveness would be subject to considerable debate. This study therefore attempts simply to identify and illustrate competitiveness *indicators* which together, provide some means for comparing the type and to some extent, the degree of competition within a market.

Conditions for a competitive market can be deemed to exist when:

- more than one, and ideally many entities offer the same or similar products (brand variety); and
- at least one of the competitors wishes to improve its revenue by gaining a larger share of the market (profit motive).

Inevitably, the result of price competition is reduced profit, as competitors seek to attract market share through lower prices. Competition can only be sustained therefore, if market conditions allow a sufficient number of players to remain profitably engaged, in order to maintain some level of brand variety. To achieve this, competitors can either restore higher prices or reduce costs. Since a competitive market effectively limits the price option, reducing costs, or in other words, improving efficiencies, is the only real option in the long term.

A useful explanation of competition in the petroleum marketplace was advanced by the Restrictive Trade Practices Commission report "Competition in the Canadian Petroleum Industry" in May, 1986:

> *"Competition may mean very different things to different people, and unless care is taken to use the word precisely, it can frustrate communication and obscure analysis. Price competition, in the sense in which it is something in the public interest, represents a process by which prices are set. The actions by business rivals place an upper limit on the prices a firm can charge for its products. More importantly, such actions by rivals continuously pressure a firm to lower its costs in order that the highest prices the market will permit it to charge enable it to earn a sufficient return of investment to attract investors. This market condition requires that competitors consciously seek to attract business away from each other by price and other means and in turn, this usually requires a reasonable number of competitors. In competitive markets the prices of the various competitors inevitably tend toward the same levels because all available cost-savings techniques will be adopted by all the (surviving) competitors."*
>
> *"...Competition means therefore an effective functioning of markets which promotes and requires rivalry amongst competitors for the business of consumers. An effective functioning of markets also permits smaller competitors to expand if they meet the test, and the entry of new competitors and new ideas. Technological change and innovation are the large levers of competition in industry. They are sources of creative destruction by which monopolies or inefficiencies are destroyed and new entrants and greater efficiency are encouraged."*

Price Competition in the Oil Industry

In order to assess competitiveness, one must ask *how* marketers compete. Simply put, competitive activity can be observed when a competitor alters one or more of

the variables at their disposal, commonly known as the "marketing mix"[1], or four P's: Product, Price, Place, and Promotion. Given the commodity nature of petroleum products, particularly in the crude (upstream) industry and refiner sector, the most effective of these as a competitive tool is price.

Within the broad context of the oil industry, competition acts to self-regulate prices in three distinct marketplaces[2]:

- in **crude oil markets**, where upstream oil producers compete on a global scale to sell crude oil to petroleum refiners;
- in **rack markets**, where petroleum refiners compete on a continental scale to sell refined petroleum products (eg: gasoline) to retail marketing organizations; and
- in **retail markets**, where retail gasoline dealers compete on a local scale to sell gasoline to the motorist.

Thus described, and as will become more evident in this study, the geographic scale of competition is an important consideration. A refiner in Toronto may well compete with a refiner in Buffalo, New York, but a retail dealer in Toronto is more concerned with the competitive threat posed by other dealers within perhaps a 1 to 2 kilometer radius.

It is also important to stress that the market ultimately sets rack and retail pump prices, which in turn defines the margins. The converse notion that the industry establishes a "should be" margin, which in turn defines a proper market price, is false.

Finding 1: Refiner and Marketing Margins are a consequence of their defining prices, in turn determined by competition on a continental (Rack Price) or a local (retail pump price) scale.

The dynamics of upstream and refiner competition are major studies in themselves, and are beyond the scope of this study, which focuses more on the infrastructure and mechanisms which promote or inhibit competitiveness at the retail level. Nevertheless, competition in the crude and rack markets deserves some mention, so a brief description of these, and a comprehensive description of retail price competition follows:

Canada's Petroleum Industry: Upstream and Downstream

The "oil industry" can mean many things to many people. While those who reside in oil producing regions such as Alberta often think of the oil industry in terms of crude oil and natural gas exploration and production, most Canadians relate more in terms of retail gasoline marketing.

In fact, the "oil industry" consists of two distinct industries: the upstream industry, whose main activity is the exploration and development of crude oil, the raw material from which gasoline is made, and the downstream industry, whose main

[1] E. Jerome McCarthy, Basic Marketing: A Managerial Approach, 4th Ed. (Homewood, Ill.: Richard D. Irving, 1971), p.44 (1st Dec., 1960)

[2] Although distinct, some organizations have operations in two or more of these markets, and are generally known as *integrated* oil companies.

activity is the refining of crude oil into petroleum products, and the delivery and sale of these products to the consumer.

While this study focuses on the downstream industry (and in particular, its marketing operations), a brief discussion of its relationship with the upstream industry is useful:

Upstream Industry

The starting point of the pump price model is commonly referred to as the upstream industry, which finds and produces crude oil - the raw material from which gasoline is made. Although this industry is not the focus of this study, it is important to examine its relationship with its neighboring downstream industry.

Infrastructure

The upstream oil industry encompasses a broad range of operations, from the exploration for potential crude or gas reserves, drilling, production, and transportation of crude oil to the refinery plant.

It is difficult to precisely quantify the upstream "content" in the price of a litre of gasoline, due to variables such as crude quality, gasoline grade, and refinery production methods. In providing historical comparisons of crude to rack/pump prices, this study uses a fixed percentage of the Edmonton Par crude price as a standard assumption, which gives an accurate portrayal of month-to-month crude price fluctuations.

Competitiveness in Crude Markets

The nature or extent of price competition in the crude oil marketplace is a subject of considerable debate. Crude oil is a commodity which is traded in a global marketplace; consequently, Canadian producers must compete to sell their production to refiners, alongside major producing countries such as Saudi Arabia.

Within the scope of this study, it is probably sufficient to say that, as a minor contributor to the world crude supply, Canadian producers are known as "price takers" rather than "price setters" of crude prices; that is to say, Canadian producers have virtually no influence over world crude prices, and in the open market structure that exists in Canada, our crude prices rise and fall according to price benchmarks established far beyond our own shores.

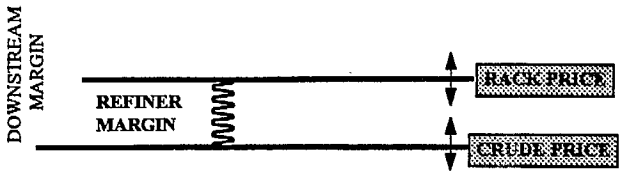
The upstream industry's crude price is represented in Figure 1 as elastic, rather than a fixed value, implying that it fluctuates, which it does on a continuous basis, in several commodities trading centres around the world.

While some suggest that the price of gasoline should rise and fall exactly with the crude price, crude is only one of several factors that influence pump prices. As a general measure:

Finding 2: 1996 average crude price, as a factor of the regular gasoline retail pump price, was 19.1 cents per litre, or roughly 34 percent of the pump price.

From this revenue, oil producers must explore for potential reserves, drill for, and hopefully realize some production, and pay out royalties to the resource owner, which in oil producing provinces such as Alberta, is the provincial government.

Petroleum Refining



Within the downstream oil industry there exists two distinct sectors: refiners, who manufacture petroleum products from crude oil, and marketers who, put simply, buy refined products from the refiner and sell them to the end-use customer.

The focus of this study is on the marketing sector of the downstream petroleum industry. Some discussion of the interface between refiners and marketers is essential to a full understanding of the marketing function however, and some attention to the refiner sector is therefore given here.

Infrastructure

The petroleum refiner sector represents the manufacturing stage of the life cycle of petroleum products. This sector acquires crude oil, and from this feedstock, manufactures a range of refined petroleum products including gasolines, diesel, heating fuels, and lubricants. As is typical of many manufacturing organizations, its predominant feature is the plant facility which, in the petroleum sector, is called the refinery.

A modern refinery is a sophisticated work of engineering. Although a description of the process of turning crude oil into gasoline is outside of the scope of this study, one of the key attributes of this sector is the very high capital cost of a refinery plant facility: roughly one billion dollars in today's dollars. In addition, day-to-day plant operations are cost-intensive, involving energy, personnel, maintenance, and numerous safety and environmental safeguards.

Price/Margin Model Elements

For simplicity, the pump price model uses the term "rack price" to refer to the refiner's sale price of refined petroleum. In fact, refiners sell their product under a variety of arrangements, which can be broadly categorized as follows[1]:

- **rack price** - the price charged for immediate supply on an "as available" basis.
- **contract price** - the price charged to a non-refiner marketer (or other sales channel customers) usually under the terms of a long-term supply agreement.
- **transfer price** - this is the "internal" price charged by a refiner to the marketing arm of the same company.

Of these three refiner prices, only rack price information is readily available in the public domain. Contract and transfer prices are not openly shared, as they relate to negotiated, confidential terms between the seller and specific buyers. Although contract and transfer prices are distinct from rack price, they use rack price as their basis, since the market-driven rack price provides an objective, external measurement of the current market value of a particular petroleum product.

In simple terms, the gross refiner margin is the price at which the refiner sells its refined product, less the price at which it bought its raw material[2] (rack price minus crude price). Since both crude and rack prices fluctuate according to market forces, the gross refiner margin is elastic, being squeezed or expanded between these two price points.

Historical data is readily available for crude and rack prices through publications such as Bloomberg Oil Buyers' Guide™, which provides an independent and objective determination of rack-based gross refiner margin.

This margin provides for plant operating costs as described above, and a return on the considerable capital investment in the plant facility.

While refineries are always rack price points, rack prices also exist at many non-refining centres where there is sufficient wholesale demand for petroleum product. The Bloomberg Oil Buyers' Guide™ currently lists twenty Canadian rack points, representing major Canadian population centres, many of which do not have integral refineries.

The existence of rack price in a given market is not of itself, indicative of a competitive wholesale rack market. For a competitive rack market to exist, a considerable volume of petroleum product must actually *trade* using rack price as the transaction basis. If for example, Canadian refiners produced only sufficient product to supply their own networks of retail facilities, there would be little or no market-driven competitiveness in the refiner sector.

Wholesale volume data is not readily available on a market-specific basis, and accordingly, the relative competitive strength of any given rack market is difficult to assess. On a national basis however, some clear competitiveness indicators exist.

[1] Dealer Price is not included here, as this price point exists within the *marketing* sector, not the refiner sector.

[2] In fact the refiner typically pays a higher price than the benchmark crude price, reflecting the cost of transporting the crude from the producing region to the refinery plant. For simplicity, this model only uses the benchmark crude value, which may cause Gross Refiner Margin to be slightly overstated, but with no material effect upon the Gross Product Margin derivation.

Competitiveness in the Canadian Rack Marketplace

A great deal of Canadian refinery output is sold outside of the refiner's own marketing infrastructure - for example, to major industrial consumers, petrochemical producers, and in the case of gasoline, to so-called "independent" petroleum marketers, who themselves do not refine petroleum products, and which supply petroleum to about one-third of all retail outlets in Canada[1].

These independent marketers naturally seek to purchase their product at the lowest available cost (rack price or a negotiated contract price), from any one of several regional refiners, who compete for a share of this demand.

The range of potential refiner sources from which a marketer can choose is largely dependent on the transportation costs involved in bringing the product from the refiner's rack point (ie: the bulk distribution terminal) to the destination market. In practical terms, this limits a marketer to a relatively short range (perhaps 1,000 km) for overland truck transport, but where pipeline or marine fuel terminal facilities exist, wholesale refined product is bought and sold across very large distances, even overseas, due to the relatively small transportation cost.

With a large proportion of the Canadian population within a few hundred kilometers of the United States and/or able to receive marine supply, many US and European refineries are in practice, potential sources of wholesale product supply for most Canadian non-refiner marketers. Canadian refiners must therefore be price competitive not only with each other, but with their US and European counterparts.

In examining the structure of the Canadian refiner sector, it follows that:

Finding 3: The infrastructure of the Canadian refiner sector provides the necessary conditions required for competitive, market-driven Rack (wholesale) pricing of petroleum products.

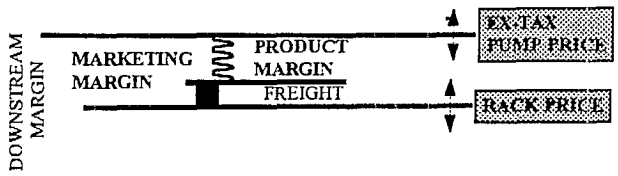
As shown in Figure 15 (page 36), rack prices are also demonstrably competitive in the sense that there is historically a high degree of price uniformity between any two rack points in North America. The mechanisms that drive rack prices are more fully discussed on page 37.

Integrated Refiner-Marketers

In Canada, most refiners also participate in the marketing and retailing of petroleum products. In these cases of so-called "integrated" refiner-marketers, the question of the internal selling price, or transfer price, arises, as there is no obvious market mechanism to regulate its setting.

In practice, integrated refiner-marketers establish transfer prices at, or close to, market-driven rack prices, in order to maintain realistic accountabilities within each of the two sub-sectors. There is no "windfall" profit in setting an unrealistic transfer price: a higher than market transfer price, for example, would produce better than expected refiner income, but at the expense of marketing income.

[1] Based on Octane Magazine Retail Outlet Survey data.



The petroleum marketing sector represents the final stage of the pump price model. It is this sector which has direct contact with the petroleum consumer and it is this sector, in the minds of many consumers, which "sets" the retail price of gasoline.

Within this industry sector, gasoline price and competitiveness issues attract considerable public, media and regulatory attention. For this reason, this study focuses upon price and competitiveness factors that relate to retail gasoline marketing, as a popular and relevant "window" on the petroleum marketing sector.

Infrastructure

Although most consumers associate petroleum marketing with retail gasoline stations, this is only one (albeit an important one) of several sales channels that exist within the petroleum marketing sector. Marketing operations within this sector can be broadly classified into three elements, each with its own distinct infrastructure, as detailed in Table 1:

- **Direct Sales** to major customers who generally purchase several million litres of petroleum product annually, and who essentially deal directly with the refiner. Direct sales consumers do not use the infrastructure associated with the refiners' own brand, and purchase at or near the established rack price.
- **Wholesale Sales** to a wide variety of customers, including mining, farming, trucking, home heating, and aviation. Product is either delivered to the customer by the supplier's (or an associate of the supplier's) tank truck, or in the case of cardlock facilities, product is sold from a central facility, principally into commercial trucking operators' vehicles.
- **Retail Sales** to the domestic motorist, the most recognized element of the downstream oil industry.

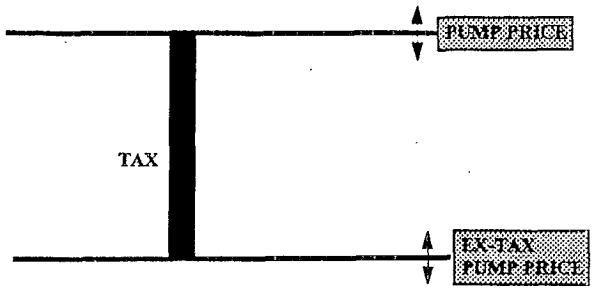
Table 1: Downstream Sales Channels

Sales Channel	Infrastructure Description
DIRECT SALES	**Sales to major accounts, typically at the "rack point". Direct sales generally do not involve any marketing sector infrastructure.**
Major Industrial	Sales to major industrial accounts, often delivered by pipeline or ship/barge.
Spot Rack	Sales to spot buyers at posted rack price.
Contract Supply	Sales to non-refiner petroleum marketers, for example, at a negotiated contract price, which is generally less than the rack price.
WHOLESALE	**Sales to commercial and industrial accounts by the wholesale marketing sector, usually involving some aspect of the marketing sector infrastructure, such as product transport and/or storage.**
Cardlock	Sales of petroleum products through a network of consumer-operated fuel dispensing facilities, which primarily serve long-disttance truckers and commercial delivery and haulage operators. There are over 850 cardlock outlets in Canada. The name "cardlock" refers to the coded access card which the customer uses to activate the fuelling pump at the outlet.
Bulk Sales	Sales of petroleum products through bulk sales outlets. These outlets usually have considerable inventory capacity, and usually supply customers by delivery to the customer's own storage tank, using delivery tank trucks. There are over 1,300 bulk sales outlets in Canada.
Home Heating	Sales of home heating fuels to residential furnace oil customers, by delivery tank truck. In major centres dedicated Home Heat centres provide this service; in smaller centres, heating fuel delivery is an integral part of a bulk sales outlet.
Aviation	Sales of aviation fuels at major and secondary airports across Canada, to the aviation fuel consumer.
RETAIL	**Sales of petroleum products (principally gasoline) through retail gasoline outlets, to the motorist consumer. Retail outlets are operated in a variety of modes, according to the contractual relationship between the supplier and the dealer, as discussed. There are about 16,500 retail gasoline outlets in Canada.**
Primary Brand	Retail gasoline sales through the principal brand name associated with the supplier.
Second Brand	Some larger petroleum marketers also operate a network of retail outlets which are identified with a different brand than the primary.

The remainder of this study provides a detailed examination of the retail petroleum products industry in general, and regular gasoline in particular, as principal elements of petroleum marketing operations.

Before examining this sector in detail, one final element of the pump price model must be reviewed.

Taxation on Petroleum Products



Unlike gross product margin, the tax content of the petroleum price is essentially a pre-determined, stable amount, regardless of market conditions. If the pump price decreases for example, this decrease is reflected in a reduced gross product margin - the tax content stays essentially the same[1].

Table 2 shows the provincial tax content for retail gasoline, typically made up of:

- a ten cent per litre federal excise tax;
- provincial sales tax;
- in a small number of markets, municipal taxes; and
- seven percent GST.

The petroleum industry acts as a collector of these taxes, which amount to 28.6 cents per litre (Canada 1996 10-city average), or roughly 50 per cent of the pump price.

As part C of this study shows, the tax content of retail gasoline in Canada has increased steadily over several years. 1995 product taxes on retail gasoline alone represented approximately 9 billion dollars in federal and provincial government revenues.

[1] Due to the application of GST (and in Quebec, PST), tax content does fluctuate somewhat with pump price changes. A three-cent drop in pump price, for example, would include a roughly 0.2 cent (0.3 in Quebec) drop in the tax content.

Table 2: Taxes on Regular Gasoline on December 31, 1996

(City)Province	Provincial Tax	Federal Excise Tax	GST content (7% of pump)	Total Tax
BC (1)	11.0	10.0	3.6	24.6
Alberta	9.0	10.0	3.0	22.0
Saskatchewan	15.0	10.0	3.6	28.6
Manitoba	11.5	10.0	3.5	25.0
Ontario	14.7	10.0	3.4	28.1
Quebec (2)	18.3	10.0	3.9	32.2
New Brunswick	10.7	10.0	3.6	24.3
Nova Scotia	13.5	10.0	3.6	27.1
PEI	12.0	10.0	3.7	25.7
Newfoundland	16.5	10.0	3.8	30.3
Yukon	6.2	10.0	4.0	20.2
NWT	10.0	10.0	4.0	24.0
Canada Ave.	14.3	10.0	3.5	27.8

note 1 An additional tax of 1.5 cents and 4.0 cents is charged in the greater Victoria and Vancouver areas respectively.

note 2 All Quebec gasoline sales are subject to a 15.2 cent per litre pump tax, plus a 6.5% sales tax applied to the GST-inclusive pump price. Quebec pump taxes are reduced by varying amounts in certain remote areas and in markets within 20 kilometers of provincial or US borders. An additional pump tax of 1.5 cents was introduced in the Montreal and surrounding area in 1996.

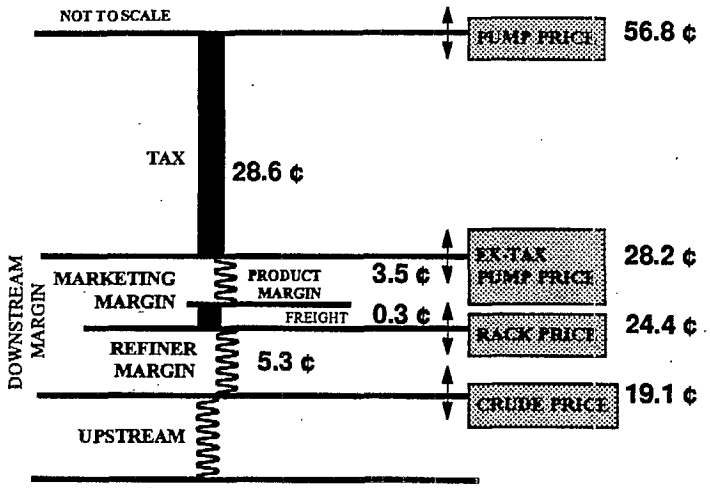
Part B The Structure of the Retail Petroleum Products Sub-Sector

While part A of this report established a conceptual framework of Canada's petroleum industry, this section provides a view of the Canadian petroleum marketing sector, and the retail gasoline sub-sector in particular. It also provides an overview of the industry in terms of several infrastructure parameters, including retail outlet distribution, operating modes, and ancillary operations.

Pump Price/Margin Model: An Integrated View

Having reviewed each of the four key pump price/margin model elements, Figure 2 integrates the pump price model with NRCan 1996 regular gasoline product prices (10-city average), to derive a representative value for regular gasoline gross product margin in Canada.

Figure 2: 1996 Average Prices/Margins - Regular Unleaded[1]



source: Natural Resources Canada

- Tax accounted for 28.6 cents per litre, or 50.3 percent of the average regular gasoline posted pump price.
- Upstream operations realized 19.1 cents per litre, or 34 percent of the pump price.
- Refiner operations realized 5.3 cents per litre, or 9 percent.
- The residual, 3.5 cents per litre (after freight cost), was available for product marketing operations, namely the dealer's costs and income, the brand supplier's costs, and potentially, some profit return for the shareholder. This

[1] Prices and margins reflect a Canadian 10 city average, based on regular unleaded gasoline.

gross product margin represented 6 percent of the Canadian average regular gasoline pump price.

In referring to marketing margins and product margins, Bloomberg rack price values were used as the *assumed* wholesale price. See page 10 for further explanation.

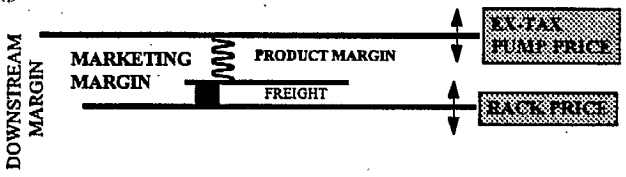
Both refiner and marketing margins have been in decline over the past several years, as part C will describe. Based on the 1996 data, three key findings can be stated:

Finding 4: **In 1996, petroleum taxes accounted for 50.3 percent of the average urban price of regular gasoline in Canada.**

Finding 5: **In 1996, the average Gross Refiner Margin available to Canadian petroleum refiners to provide for all operating costs and profits on the manufacture of regular gasoline, was 5.3 cents per litre.**

Finding 6: **In 1996, the average Gross Product Margin available to Canadian petroleum marketers to provide for all operating costs and profits on the sale of regular gasoline in a typical urban market, was 3.5 cents per litre.**

Marketing Sector Overview



Once the refiner has completed its work, the finished product (gasoline, for example) is sold/transferred at the current rack or transfer price, and is then transported to the retail outlet. As the product leaves the refinery plant, it falls into the domain of the marketing sector.

The marketing sector then, is the second of two elements of the downstream oil industry. It is this sector which provides the entire infrastructure for bringing refined petroleum products from the refinery plant facility to the ultimate end-use consumer.

The gross marketing margin, or "rack to retail" margin, is defined by the market-driven price points of ex-tax pump price, and rack price. This margin represents the revenue which provides for two key operations:

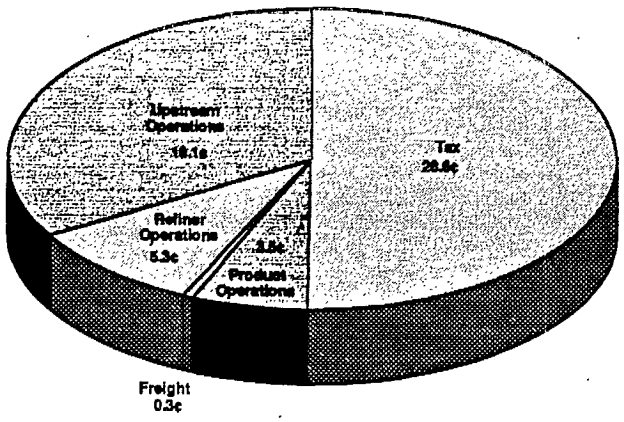
- **Freight**: Freight (or distribution) is the transportation of petroleum products from the rack or refinery point to the final point of sale, which in the case of retail gasoline, is usually the gas station. Although many petroleum marketers conduct their own freight operations, this is seen as a "non-core" business, and is often out-sourced to third-party common carriers. Freight cost does not

typically fluctuate, and it is depicted in Figure 1 as a fixed cost element. Freight costs are generally less than one-half cent per litre in most major Canadian cities, but can be as high as 3 to 4 cents in markets more distant from the refinery point: this partially explains why some small, rural markets experience higher pump prices than do larger centres, which are typically close to a wholesale rack point.

- **Product sales**: Within this domain, petroleum marketers, together with gas station dealers, incur a variety of costs, typical of any retail business. Unlike most other retail enterprises however, storing and dispensing a product such as gasoline adds considerably to the operating cost. Modern pump and underground tank installations have greatly reduced the environmental and safety concerns associated with petroleum products, but at an average cost of over $200,000 per outlet.

Gross product margin is therefore defined as gross marketing margin less freight cost. This is a particularly useful measurement in comparing retail gasoline markets, as it excludes the "outside variables" of tax, freight, and upstream/refiner margins. Posted pump price includes all of these variables, and is therefore a poor comparative tool. As represented in Figure 3, an average gross product margin for regular gasoline in a major Canadian city was 3.5 cents per litre in 1996.

Figure 3: 1996 Average Regular Gasoline Margins (56.8¢ Pump Price)



source: Natural Resources Canada

The determination and comparison of gross product margins in selected markets is a key objective of part D of this study.

Grade Differentials

Most of the Canada average product prices cited in this study refer to regular unleaded gasoline (RUL), as it represents 80% of all retail gasoline sales. Midgrade and premium grades (which have a higher octane content) represent 5% and 15% of

retail gasoline sales respectively[1]. RUL prices are therefore most often cited when relating historical price trends, or when comparing price levels between markets.

Higher octane grades are more expensive than RUL, and the price difference between these grades and the RUL price is referred to as the grade differential. The grade differential varies somewhat from city to city, but in 1995 was typically 5 cents per litre for midgrade, and 9 cents per litre for premium gasoline. Prices for midgrade and premium grades are established in the same way as RUL prices: through competitive activity.

Competitiveness in the Retail Gasoline Sub-Sector

Retail Competitive Practices and Indicators

A retail gasoline marketer competes at many levels: At a general level, marketers compete for the consumer's choice of transportation energy (for example, propane vs. gasoline). This study does not examine such a broad issue however, and confines itself to the more specific (and popular) issue of *brand* competition for retail gasoline.

In order to measure competitiveness, one must ask *how* marketers compete. Simply put, competitive activity can be observed when a marketer alters one or more of the variables at their disposal, commonly known as the "marketing mix[2]," or four P's: Product, Price, Place, and Promotion.

- **Product** In the past decade, marketers have attempted with some success to differentiate their product offerings from other brands. A portion of the market certainly responds to this type of competitive strategy, but most consumers view gasoline as a commodity, and accordingly, will ultimately purchase based on price. Specific competitiveness indicators relating to product would be:
    - introduction and promotion of gasoline grade features such as octane content, additives, seasonal blends, etc.);
    - expanded product/services offerings such as convenience items.
- **Place** Typically, marketers compete to be represented in as many and/or the best locations as possible. In the 1960's and 1970's this type of competitive activity was evident in the retail gasoline sector, as gas stations proliferated. Today, a number of factors preclude this type of strategy. Price competition has forced marketers to optimize outlet revenue. Environmental concerns and associated costs have dictated greater selectivity in developing new sites. This has resulted in a decline in the number of retail outlets in the past two decades (Figure 5, page 24). Today, competitive strategy of this type focuses heavily on selecting the *best* place, rather than the most places. Examples of competitiveness relating to place include:
    - opening new or upgrading existing facilities;

[1] Diesel is another petroleum product sold at many retail outlets. Although revenue from this product is factored into the study market economics in Part D, it represents a very small percentage of total retail petroleum sales.

[2] E. Jerome McCarthy, Basic Marketing: A Managerial Approach, 4th Ed. (Homewood, Ill.: Richard D. Irving, 1971), p.44 (1st Dec., 1960)

- closure of non-viable outlets.

- **Promotion** In the gasoline retailing sub-sector, promotion strategies generally attempt to provide the consumer with added value without resorting to pump price reductions. Promotional activity seems to have decreased in the past few years, probably due to its relatively high cost, and due to the already slim margins available to marketers, caused by price competition. Examples of promotional competition are:
    - brand identity
    - gasoline discount coupon;
    - free item with purchase or special price item with purchase.
- **Price** In most markets, gasoline is viewed by consumers as a commodity - uniform in quality and widely available. As such, price has proven to be the most widely used competitive tool by gasoline marketers. Consequently, this study examines the dynamics of price competition in considerable detail. Examples are:
    - prominently displayed prices - that pump prices are almost universally displayed on highly visible outlet billboards is indicative of the importance of price as a key selling feature;
    - volatile prices - contrary to some public perception, fluctuating pump prices are a significant indicator of robust competition among marketers. At its extreme, volatile pricing manifests itself in the form of a price war (see below);
    - uniform prices - while uniform pump prices are sometimes cited as evidence of industry collusion, in fact it is indicative of some consumer perception that one brand of gasoline is essentially the same as the next. In this context, gasoline is a commodity, and therefore "trades" within a relatively narrow price range;
    - low prices and/or margins.

While examples of all of these indicators are abundantly in evidence, price clearly remains the predominant competitive tool used by Canadian gasoline marketers, due to the largely commodity nature of petroleum product. Establishing an objective measurement of price as a competitiveness indicator however, is less clear.

This study therefore focuses on the nature of product price as a measure of competitiveness in the Canadian "rack to retail" sector. This study presents an extensive historical and comparative analysis of pump prices, and more importantly, their subsector margins.

Price Uniformity and Volatility

As the degree of price uniformity and volatility in the retail gasoline sub-sector is often perceived as synonymous with its competitiveness, it is useful to address some of the general competitive mechanisms behind these particular competitiveness indicators.

When pump prices are uniform, or when prices rise or fall apparently in unison, it is often cited as evidence that marketers engage in direct communication to "fix" prices at an agreed-to level. This is a misconception.

To understand the phenomenon of uniform pump prices, one must adopt the perspectives of both consumers and competing, adjacent dealers. If one dealer decides to reduce pump prices (by two cents, for example), the effect on many consumers is immediate: they will drive into *that* station, bypassing the higher-priced outlet. The other dealer has little choice but to quickly match, or even undercut the competitor's lower price, in order to maintain a reasonable market share.

Pump prices therefore tend to move uniformly within a very short time. This price lowering mechanism may sometimes result in a "price war" if each competitor continues to undercut the other. The effect of this upon the gross marketing margin is obvious: it is squeezed, assuming that the rack price is unchanged. There have been examples of this margin being squeezed to a point that is insufficient to cover operating costs, or even being squeezed to zero - where the ex-tax pump price is equal to, or even less than, the wholesale rack price.

Whether through falling pump prices or rising rack prices, gross product margin will eventually diminish to a point that is not viable for a majority of competitors. One of these competitors will be forced to make a difficult decision: to be the first to raise pump prices in order to restore gross product margins to a viable level.

If the posted price increase is too high, competitors may not follow, in an attempt to gain market share. But if the pump price increase is a reasonable reflection of the underlying change in gross product margin, competitors will likely match this price, since they too must restore their gross product margins to sustainable levels.

A common factor in both falling and rising prices is the posted price sign: it is this device that instantaneously communicates pump prices not only to consumers, but to competitors, who then react quickly to the change. Pump price signs are an ubiquitous feature of the retail gasoline industry, and gasoline is perhaps the only consumer product in Canada that is so consistently advertised in this way.

Finding 7: Price uniformity and price volatility, facilitated through street price signs, are indicators of a competitive market.

Price Support

In times of "normal" pump prices, the relationship between the supplier and dealer is generally as described on page 25. In the case of lessee or independent dealers however, there are times (during a price war in particular) when the retail pump price may fall to a level that provides the dealer with an insufficient margin[1] to meet operating costs.

When this occurs, the supplier may temporarily intervene, and provide to the dealer what is commonly referred to as price support. While this support may take one of several forms, its effect is to restore some measure of the dealer margin, obviously at the expense of the supplier margin.

[1] This does not occur at company operated or commission outlets, since there is no "dealer margin".

Under the provisions of some price support mechanisms, control over retail pump price effectively reverts to the supplier, but reverts back to the dealer when the support arrangement is ceased.

Price Competition and the Regulatory Process

All retail competitiveness in Canada comes under the purview of the Competition Act, which is administered by the federal Competition Bureau (Industry Canada). The Bureau enforces provisions of the Act which prohibit:

- Abuse of dominant position: where a firm (or several firms in collaboration) uses its market power to lessen competition.
- Price discrimination: where a supplier charges different prices to competitors in the same market who purchase similar volumes of products.
- Conspiracy: where several competitors act to fix prices for the purpose of reducing competition;
- Price maintenance: where a supplier exerts upward influence on prices upon a dealer.

While this study does not intend to undertake a detailed review of the effect of the Act, in the past twenty-five years the Bureau has prosecuted a total of 11 violations within the Canadian retail gasoline sector, resulting in 9 convictions. These cases have largely involved local dealers and/or isolated incidents. More recently, the Bureau investigated four well-publicised allegations of anti-competitive behavior on the part of major oil companies in the spring and summer of 1996. Following a year-long investigation, the Bureau found that there was no evidence to support these allegations[1].

In addition, the petroleum marketing sector has been the subject of several inquiries at federal, provincial and even municipal levels, most with the general mandate of examining the "fairness" of competition and pump pricing among petroleum marketers. Perhaps the most notable of these was the 1986 Restrictive Trade Practices Commission (RPTC) study "Competition in the Canadian Petroleum Industry". The outcome of the RPTC study can generally be characterized as acknowledging that a healthy state of competition exists in this industry.

There are few current examples of direct government intervention in the pricing of petroleum products. Prince Edward Island is the only province which directly regulates gasoline and fuel oil prices. In addition, Quebec has recently passed legislation which prohibits the selling of (retail) gasoline or diesel at a price which is lower than the (wholesale) cost to a retailer in any trading "zone".

An examination of the effect of the Competition Act, or of direct government intervention in marketing, is beyond this study's scope. A review of historical retail pump prices in the Halifax, Nova Scotia market may provide an example of the potential negative consequences of direct intervention, however, and a brief discussion of this case appears in part D.

[1] Competition Bureau press release "Gasoline enquiries find no evidence of anti-competitive behavior" dated March 18, 1997

Competitiveness Factors (Drivers and Inhibitors)

Competitiveness factors can be defined as those forces which act upon the industry to increase (drive) or decrease (inhibit) competitive practices, as outlined above. So defined, it is clear that government policy plays an important role in facilitating, or inhibiting, a competitive climate. A practice, policy or regulation can be deemed to be a competitive factor if it:

- creates an obstacle to, or incentive for, entry into an attractive market;
- creates an obstacle to, or incentive for, exit from an non-viable market;
- promotes or limits market-driven pump prices;
- improves or reduces a "level playing field" in terms of the ability of one market to compete with another on the basis of price or operating costs.

It is important to acknowledge that many regulations affecting the retail gasoline industry, to some degree, inhibit competition. The high cost of building a modern retail gasoline outlet for example, is in part, a consequence of regulations which stipulate minimum standards for the design and construction of petroleum storage tanks, for safety and environmental protection.

These regulations clearly exist to the benefit of all, but the considerable investment represented by a modern retail outlet has the effect of limiting market entry to those with sufficient capital to put at risk, and at least some of this capital cost is regulatory compliance-driven.

Conversely, one can cite examples of regulatory obstacles to exit from the retail gasoline market, in the form of standards for the decommissioning of retail petroleum sites. Many smaller retail owner-operators, particularly in smaller population centres, may find it more attractive to continue operating a marginally viable gasoline outlet than facing the cost associated with the removal of inactive tanks and/or potentially contaminated soil. This may have the effect of reducing volume and revenue potential at other retail sites in the vicinity, creating a need for higher margins, and consequently, higher pump prices. This issue is discussed more fully in part D.

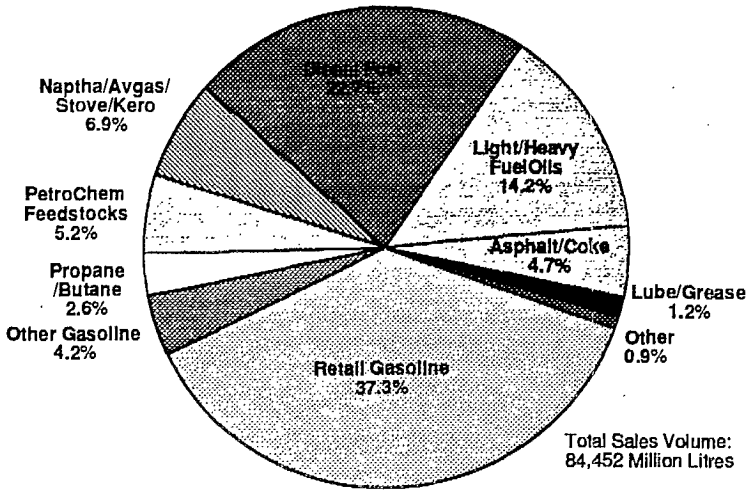
Finding 8: Some competitiveness inhibitors may exist in the retail gasoline market which are regulatory in nature, but exist to meet other important societal needs.

Retail Gasoline Demand

Gasoline is but one of many products produced by the Canadian downstream industry (Figure 4). As a product group however, it is the single largest one, accounting for 41% of all petroleum demand.

Retail gasoline sales, that is, sales of gasoline through the roughly 16,500 retail gasoline outlets across Canada, accounts for about 37% of all refined petroleum demand in Canada, and is the single largest market for gasoline products, accounting for roughly 88% of all gasoline demand.

Figure 4: 1995 Refined Petroleum Products Demand by Product Category

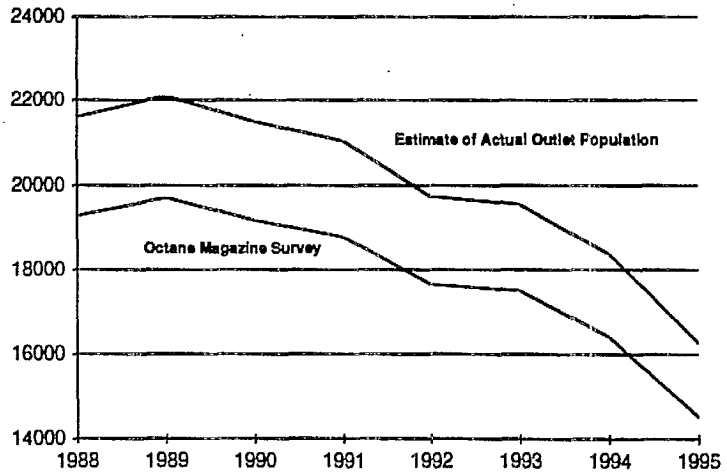


source: Statistics Canada (Cat# 45-004)

National Retail Petroleum Outlet Representation

The most frequent source of information on the population of retail gasoline outlets in Canada is the Octane Magazine Annual Retail Survey. This survey accounts only for major established retail networks - it has no practical means to enumerate each and every outlet, nor is there any federal or uniform provincial enumeration of retail gasoline outlets. This study provides an estimate of the actual retail outlet population, as shown in Figure 5.

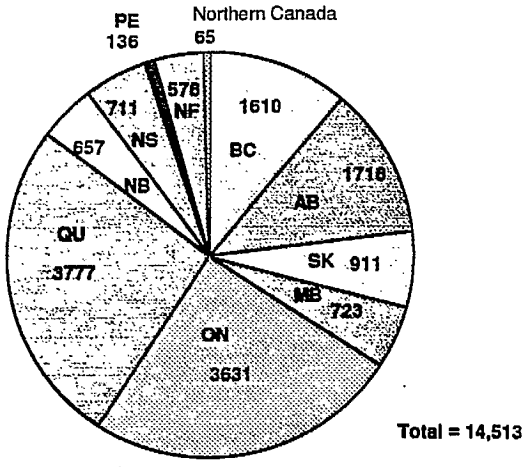
Figure 5: Canadian Retail Outlet Population - 1988-1995



source: Octane Magazine (estimate by MJ Ervin & Associates)

The estimated number of retail outlets in Canada has declined from 22,000 outlets in 1989, to about 16,500 in 1995. Distribution of these outlets by province (Figure 6, using Octane counts only) is roughly equivalent to population densities, as one might expect.

Figure 6: 1995 Retail Outlets by Province



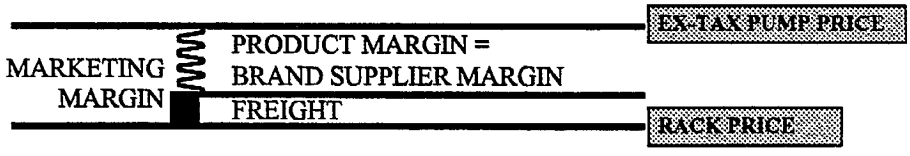
source: Octane Magazine

Retail Petroleum Outlet Modes

The retail gasoline marketing infrastructure is much more complex than represented in Figure 1. There are two main stakeholders involved in the marketing of retail gasoline: the supplier, who holds initial title to the refined petroleum as it leaves the rack point, and usually owns the brand name seen at the retail outlet; and the dealer, who manages the day-to-day operations at the retail outlet.

Several possible relationships, or modes, exist between retail dealers and their suppliers, and this is of some importance with respect to the matter of prices and competition in this sector.

Company Operated

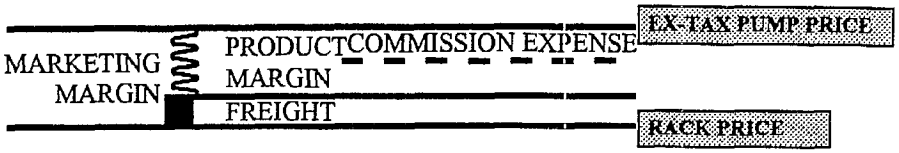


In this mode, the retail outlet is owned and operated entirely by the product supplier. The principal dealer and attendants are salaried employees of the supplier, and all inventory and revenues belong to the supplier. The supplier, as owner of the product, controls the setting of the pump price. Company Operated outlets have no

sub-component margins - the entire gross product margin accrues to the brand supplier, who pays all outlet operating costs.

Control of Pump Price	supplier
Dealer Compensation	salary from supplier; the "dealer" is actually an employee of the supplier
Ownership/control of outlet site	supplier
Ownership of petroleum inventory	supplier
Operation of Ancillary Services	typically the supplier
Percentage of all outlet modes	15%

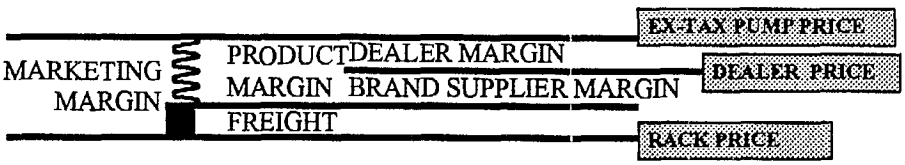
Commission Operator



In this mode, the outlet facilities and petroleum inventory is owned by the supplier, but the outlet operator ("dealer") is compensated by a commission payment, usually based on cents per litre of petroleum sales. The dealer in turn hires attendants, and pays them from his commission revenue. Since the supplier owns the petroleum product at this type of outlet, the supplier retains control of the retail pump price.

Control of Pump Price	supplier
Dealer Compensation	a commission from the supplier; based on pump sales volume. The "dealer" is in essence, an employee of the supplier
Ownership/control of outlet site	supplier
Ownership of petroleum inventory	supplier
Operation of Ancillary Services	typically the dealer, who may pay the supplier a lease fee for the use of merchandising space
Percentage of all outlet modes	26%

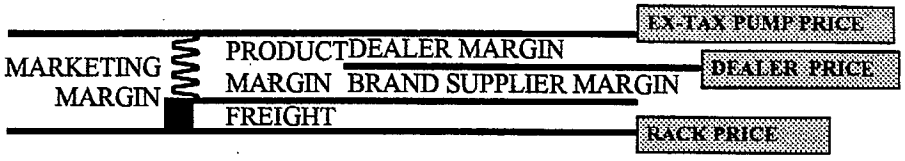
Lessee



In the lessee mode, the supplier typically owns/controls the principal outlet facility which in turn is leased out to the dealer or lessee. The lessee purchases petroleum product from the supplier at a "Dealer Wholesale" price, and in turn resells to the motorist consumer at a higher pump price established by the lessee.

Control of Pump Price	lessee
Dealer Compensation	lessee buys product from the supplier, and sells at the posted pump price. The margin between these two prices is the dealer's gross revenue, and means of compensation
Ownership/control of outlet site	supplier, who would typically charge a lease fee to the dealer for the use of the facility
Ownership of petroleum inventory	lessee
Operation of Ancillary Services	typically the lessee, who may pay the supplier a lease fee for the use of merchandising space
Percentage of all outlet modes	14%

Independent Dealer



In this mode, the retail facilities are owned by the dealer, not the supplier. The dealer buys the petroleum product at a Dealer Wholesale price and in turn resells to the motorist consumer at a higher, dealer-established retail price. The dealer pays most or all of the expenses associated with operating the outlet, and has control over the retail pump price.

Control of Pump Price	dealer
Dealer Compensation	dealer buys product from the supplier, and sells at the posted pump price. The margin between these two prices is the dealer's gross revenue, and means of compensation
Ownership/control of outlet site	dealer
Ownership of petroleum inventory	dealer
Operation of Ancillary Services	dealer
Percentage of all outlet modes	45%

Lessee or Independent outlets are the only modes in which a true dealer margin exists. This dealer margin is defined as the pump price (ex-tax), less the Dealer (wholesale) Price charged by the brand supplier. This Dealer Price, unlike rack or pump prices, can vary considerably from one supplier to another, since it is predicated on contractual arrangements between the dealer and the supplier.

The distribution of retail outlets by mode has some important implications concerning the nature of gasoline pricing and competition.

Figure 7 shows that of all retail outlets in Canada less than half operate as company or commission dealers. This is significant: dealers who operate as lessees or independents are directly responsible for deciding upon the retail pump price. Therefore:

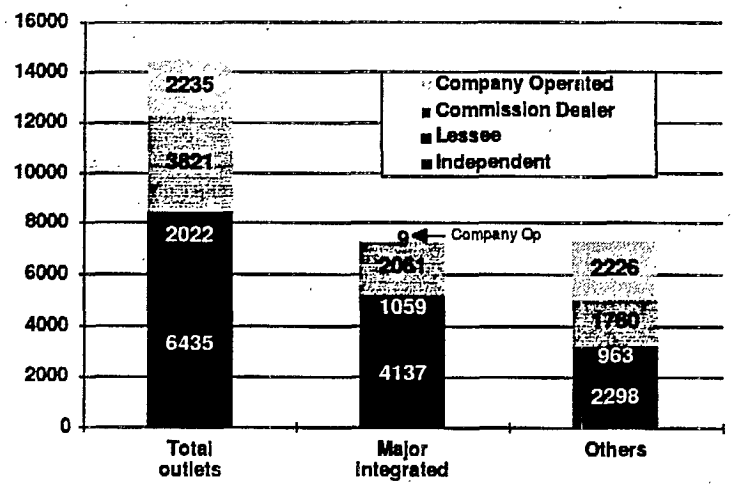
Finding 9: Pump prices are established by the local dealer at over half of all retail outlets in Canada[1].

Roughly half of all retail outlets in Canada represent a major integrated oil company (Shell, Petro-Canada, or Imperial Oil). The remainder represent one of over 50 different marketer organizations. It therefore follows that no single oil company has a position of absolute dominance over the Canadian retail gasoline sector.

In addition, virtually none of the major integrated outlets are company operated, and fully two-thirds operate as lessees or independents, who themselves establish pump prices. This further limits the direct influence that a major oil company might have upon the Canadian retail marketplace.

There is some evidence that there is a higher percentage of lessee and independent outlets in smaller markets than in large population centres. It follows that pump prices tend to be somewhat more directly controlled (ie: at the local community level) in smaller markets than in larger markets.

Figure 7: Outlet Representation by Mode



source: Octane Magazine

Outlet Throughput

A key measure of outlet performance and viability in the downstream industry is the monthly or annual outlet throughput of petroleum products. While a complete

[1] Unless the dealer is under a price support arrangement (for instance, during a price war) as previously described.

discussion of average throughputs in typical Canadian markets will take place in part D of this study, some general figures are mentioned here.

While an average outlet throughput may be in the order of 2.5 million litres, these study findings show that this can vary widely from market to market. Based on a sampling of outlets surveyed in this study, average annual throughputs ranged from under 1 million litres in smaller population centres, to over five million litres in major markets such as Toronto.

Canadian throughputs have dramatically improved in the past several years - a result of significant retail outlet rationalizations (see Figure 5) which the petroleum products industry has undertaken. These improved outlet throughputs have provided for improved petroleum revenue potential, which in part has led to a reduction in retail product margins, more fully described in part C.

Ancillary Services

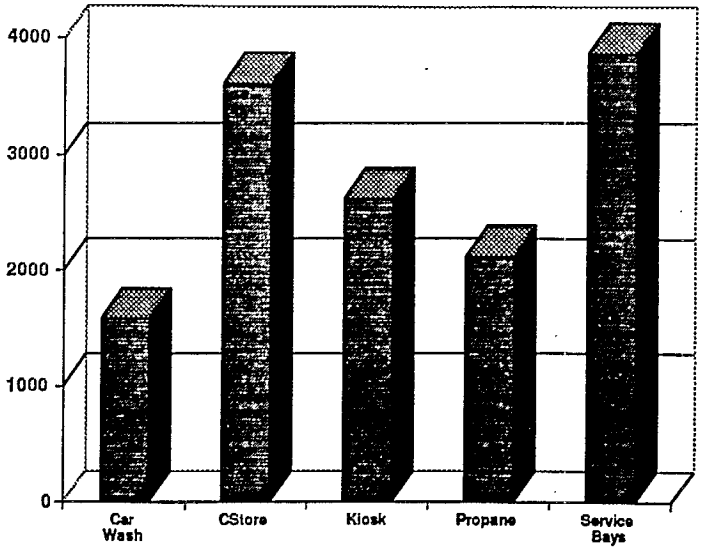
Very few if any retail gasoline outlets limit their product offerings simply to gasoline. In fact, the revenue from so-called ancillary services is an increasingly essential element of retail gasoline marketing.

Figure 8 depicts the Canadian representation of several key ancillary services. Many outlets have more than one ancillary offering: many "flagship" outlets for example, feature both a large-area convenience food store and a modern car wash facility.

The proliferation over the past two decades of ancillary services such as convenience stores and car washes, has had a profound effect on the retail gasoline marketing sector. Improved outlet revenue from ancillary operations has caused, and is a result of, reduced petroleum margins. In effect, ancillary service has had the consequence of subsidizing the pump price of gasoline.

Most ancillary services are operated by the dealer/lessee, who may pay the supplier (who is typically the owner of the facility) a lease or franchise fee for the use of the retail space.

Figure 8: Outlet Representation by Service



source: Octane Magazine

Part C Historical Trend Analysis

This part of the study examines several historical price and margin trends in the Canadian retail gasoline sector. While some of the presented findings are self-explanatory, many utilize terms which are explained in part A, and with which the reader should be familiar.

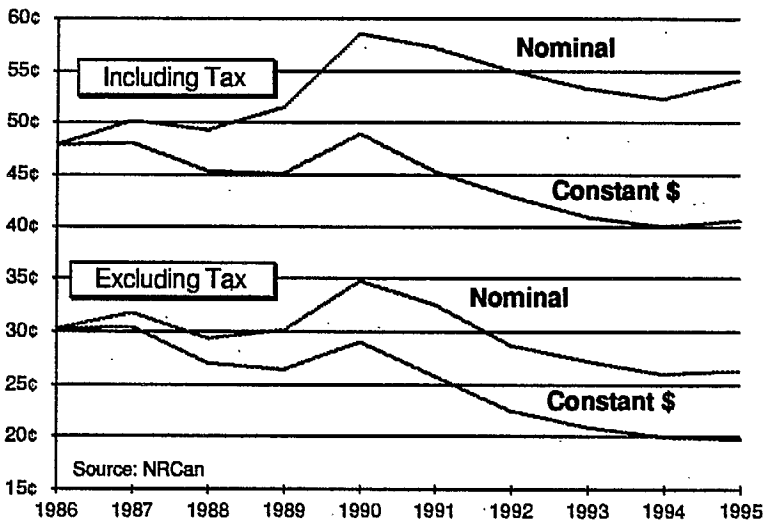
This part examines broad trends in several areas, mainly using Canada average values. Regional and market-to-market comparisons are presented in greater detail in part D.

Unless noted, prices are for regular unleaded (RUL) gasoline, using a Canada 10-city weighted (by provincial demand) average. As such, the "Canada average" price reflects an average of urban markets only[1]. An "all markets" average, including smaller markets, would be somewhat higher, as can be seen in part D of this study.

Gasoline and the Consumer Price Index

A common perception among consumers is that gasoline prices are steadily rising. Since rising prices are common to most consumer goods and services, an examination of the specific historical record of gasoline prices is useful.

Figure 9: Annual Gasoline Price (Cents per Litre)



source: Natural Resources Canada / Statistics Canada

Figure 9 shows the Canadian 10-city average regular gasoline pump price, in nominal (actual) and constant (inflation adjusted) dollars from 1986 to 1995. This shows that pump prices have increased in nominal terms, particularly around 1990, when the Persian Gulf War caused crude prices to increase significantly. Since

[1] Data is not regularly collected on smaller markets.

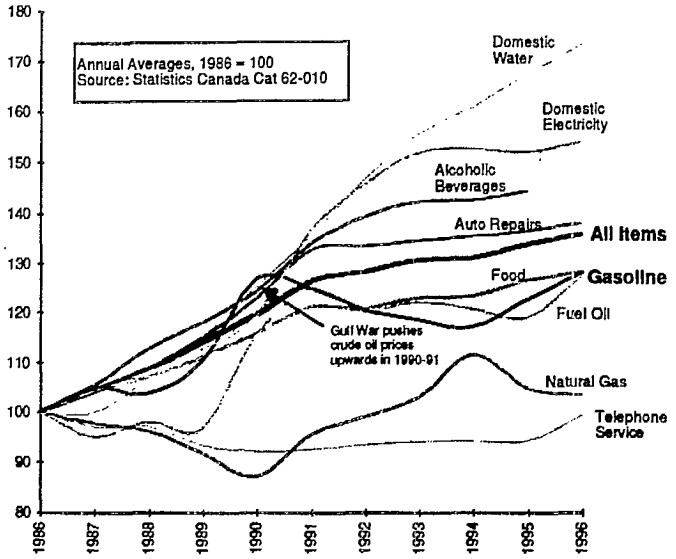
1990, nominal pump prices decreased. In constant dollars, retail pump prices were about 7 cents less in 1995 than they were in 1986.

When pump prices are reduced by the amount of tax content, both nominal and constant dollar prices are less in 1995 than in 1986: the constant dollar price of gasoline declined by 10 cents per litre from 1986 to 1995.

When compared to other consumer goods, as in Figure 10, gasoline prices have had a mitigating effect on the Consumer Price Index (commonly referred to as the CPI or inflation rate).

Finding 10: Gasoline has remained at or below the "all items" Consumer Price Index nine out of the past ten years.

Figure 10: CPI Index Comparison - Selected Goods & Services



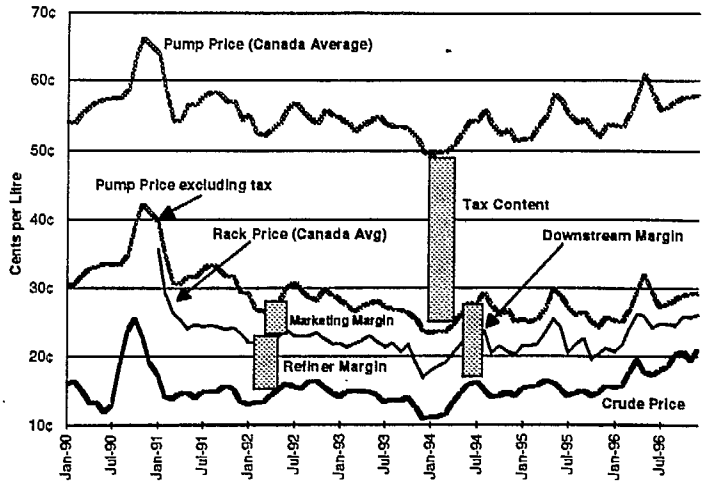
source: Statistics Canada

Key Price History

Figure 11 depicts the history of Canada (10-city) monthly average regular gasoline pump prices, ex-tax equivalent prices, rack price, and relative crude cost. It also depicts the associated margins, as defined in part A of this study. Several observations can be made from this:

- fluctuations in average rack prices have closely followed changes in underlying crude costs;
- there appears to be little or no lead or lag in the timing of rack price fluctuations relative to crude price changes;
- fluctuations in average pump prices (ex-tax) have closely followed changes in underlying rack prices; and
- there appears to be no lead or lag in the timing of pump price fluctuations relative to rack price changes.

Figure 11: Monthly Prices 1990-1996 (Nominal $)



source: Natural Resources Canada

From these observations, the following is evident that:

Finding 11: Retail pump price trends are principally a reflection of changes in the underlying rack (wholesale) price of petroleum products, which in turn, are principally a reflection of changes in the underlying price of crude oil.

It is important to state that pump price changes do not occur in exact lock-step with rack prices, nor do rack prices exactly follow crude costs, due to additional market factors which affect pump and rack prices at any given point in time. In fact, as the next section shows, the presence of these additional market factors have operated to the benefit of consumers.

Margin History

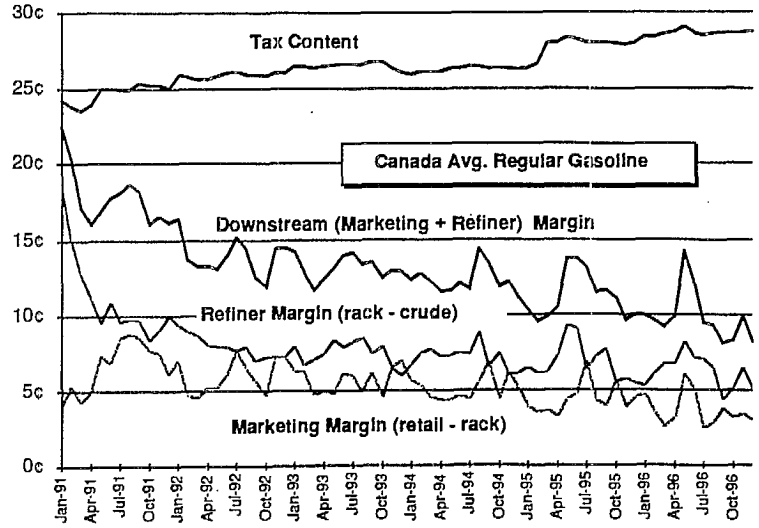
While Figure 11 provides an indication of key price trends, it is also useful to examine the behavior of margins, which are defined by the price points. If, as might be suggested, the downstream industry operates on a "cost-plus" basis, that is, it simply passes on a fixed cost margin to determine the "correct" pump price, then one might expect margins to be quite constant over time.

Figure 12 shows that industry margins have not been constant over time, and in fact have displayed a declining trend over the past six years.

From Figure 11 it can be seen that urban retail pump prices declined somewhat from 1991 to 1994, and have risen slightly since 1994. This recent rise in pump prices is attributable to two factors:

- the rise in crude costs in this period, as Figure 11 shows; and
- the rise in the tax content, as shown in Figure 12.

Figure 12: Monthly Margins 1991-1996 (Nominal $)



source: Natural Resources Canada

Finding 12: Retail pump price increases from 1994 to 1996 are wholly attributable to increases in petroleum product taxation and crude costs.

In particular, this upward trend is not attributable to "downstream" refiner or marketing sector margins, which have both shown a consistent decline throughout the period 1991 to 1996.

Finding 13: From 1991 to 1996, the average tax content of regular gasoline pump prices in major Canadian cities increased by about 5 cents per litre, while average combined Gross Refiner and Gross Marketing Margins decreased by about 7 cents per litre.

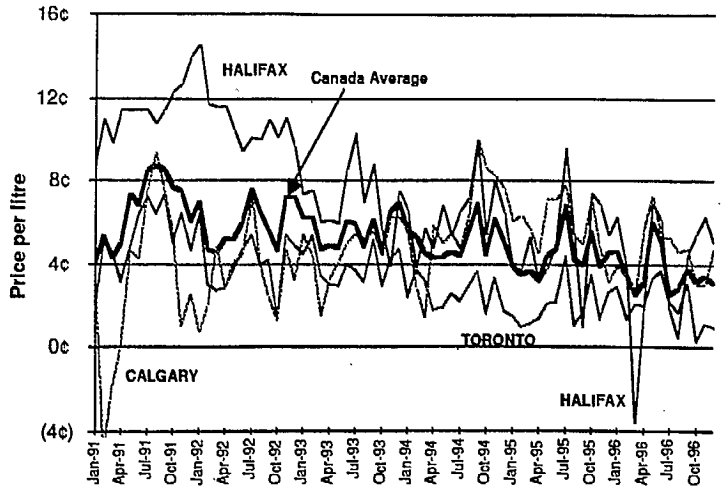
The decline in refiner and marketing margins has both resulted in, and has been a result of, several factors, including:

- improved refinery efficiency as a consequence of plant rationalization and a modest demand increase;
- emphasis on ancillary revenue sources as a means to augment petroleum revenue and offset outlet operating costs;
- improved retail outlet performance as a consequence of higher throughputs due to outlet rationalizations (closures) and demand increases.

Figure 13 is a comparison of regular gasoline gross marketing margins from 1991 to 1996 for selected centres, compared to the Canadian average. This shows that on a monthly basis, the gross marketing margin can fluctuate quite significantly[1], as local competitive factors act to self-regulate pump prices. A more thorough discussion of specific market factors for these and other centres appears in part D.

[1] In fact, the actual fluctuation is much more pronounced than shown, since the chart is based on monthly averages, not weekly or daily data.

Figure 13: Monthly Gross Marketing Margins- Selected Centres



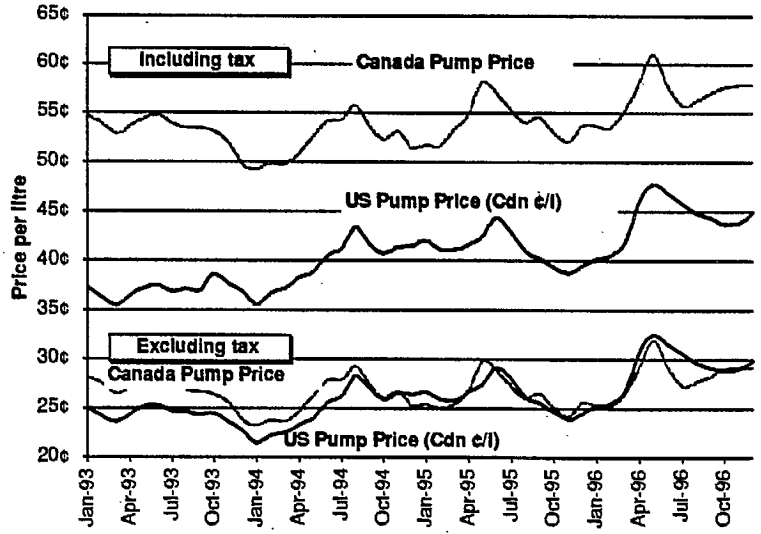
source: Natural Resources Canada (pump price inputs) & Bloomberg OBG (rack price inputs)

Canada vs. US Price History

The retail gasoline tax structure in Canada is vastly different than the US, resulting in significantly higher Canadian gasoline prices. This difference accounts for most, if not all of the difference in pump prices between Canada and the US.

A comparison of Canadian and US regular gasoline pump prices, with and without tax, is presented in Figure 14. This shows that, although Canadian pump prices in urban markets are clearly higher than in the US, this is wholly attributable to the difference in taxation. On an ex-tax basis, Canadian pump prices have been roughly equal to, or even less than, US pump prices, for several years.

Figure 14: Canada / US Monthly Pump Price (Nominal $)



source: Natural Resources Canada

Finding 14: Canadian retail gasoline pump prices are the competitive equal to those of the US, when compared on an ex-tax basis.

Prior to 1994, Canadian ex-tax pump prices were historically somewhat higher than in the US. This is no longer the case however, largely as a result of two factors:

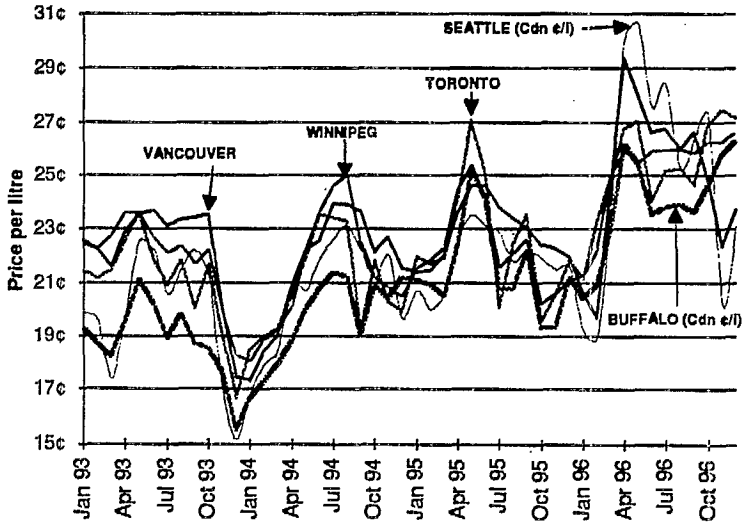
- Canadian marketing margins have decreased in this period, both a cause and an effect of improved throughputs and ancillary revenues as previously described. While these trends have also occurred in the US, Canadian outlet throughputs (although likely still less than those of the US), have improved considerably, as a result of outlet closures (see Figure 5, page 24) and somewhat increased demand.
- The introduction of Reformulated Gasolines (RFG) into some US markets has caused prices to rise, which is reflected in US average pump prices. RFG has not been introduced to Canadian markets.

Although this study shows that on an ex-tax basis, Canadian consumers do not experience any retail gasoline pump price disadvantage to their US counterparts, there are likely some differences in the competitive dynamics in US markets compared to Canadian markets. This would be a useful area for further research.

Rack Price History

The behavior of rack or wholesale prices provides an indication of the degree of competition among refiners. Figure 15 compares these values for selected Canadian and US centres over a period of several years. From this it can be seen that Canadian and US rack prices, behave in a very similar fashion, trading at any given time within a relatively narrow (about 2 cents per litre) range, and moving up or down more or less in unison.

Figure 15: Monthly Rack Prices: Selected Markets



source: Bloomberg Oil Buyers' Guide / Natural Resources Canada

That Canadian rack prices are so closely tied to those of the US is strong evidence of the interdependence of these two macro-markets. Simply put, any given Canadian or US rack point cannot successfully price its wholesale product substantially higher than that of any other rack market in continental North America, or indeed anywhere. To do so would invite the inevitable consequence of rack customers themselves sourcing their product needs from the rack point that offers the lowest price (plus freight expense).

Demand vs. Price History

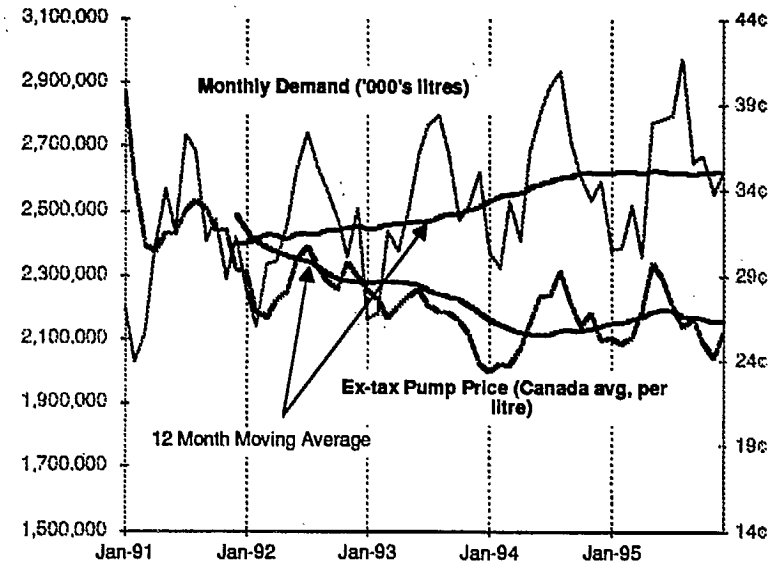
Figure 16 shows the history of Canadian gasoline demand, or sales, of motor gasolines from 1991 to 1996, compared to average ex-tax regular gasoline pump price for the same period. Gasoline demand exhibits a very regular seasonal pattern, increasing significantly every spring, and falling in the latter half of each year. Gasoline price exhibits a similar, albeit less distinct pattern, rising and falling closely in step with demand.

This phenomenon actually illustrates the essence of how competition in the petroleum industry operates to self-regulate the price of gasoline:

The rising demand for gasoline which occurs every spring has a diminishing effect on product inventories, not only in a given market, but in fact across the North American continent (US demand follows a similar pattern). As non-refiner marketers attempt to secure a supply of this diminishing inventory, conditions begin to favour a "seller's market", and as would be expected in any commodities market under these conditions, the price tends to be bid upwards.

Such a pattern is sometimes perceived as evidence of refiner or supplier "price gouging". Yet in the latter half of each year, as demand ebbs and inventory improves, a "buyers market" develops, and prices tend to fall.

Figure 16: Monthly Demand vs. Pump Price (nominal ¢/litre)



source: Statistics Canada (demand) / Natural Resources Canada (price)

Whether in the spring or the fall, price fluctuations at the rack (and consequently at the pump) are a simple reflection of buyers and sellers alike, competing to meet their own needs. This is of course, the essence of a free market economy, and it can be seen to operate as effectively in the Canadian petroleum products industry as it does in any open market.

Finding 15: Seasonal fluctuations in retail pump prices are ultimately linked to wholesale product inventory levels, a feature of most market-regulated commerce, which ensures a competitive product price for buyer and seller alike.

The traditional supply-demand model predicts that when demand rises, so do prices, and this is clearly demonstrated in the case of gasoline prices on a seasonal basis.

On a long-term basis however, gasoline prices have not followed the traditional model, in that prices have fallen, despite a rise in demand. Figure 16 shows that from 1991 to 1995, demand rose approximately 8.3%, while average ex-tax pump price declined by 14% (since 1994, pump prices have increased due to a significant rise in crude costs in this period).

This part of the study presented a number of historical views of retail gasoline prices, their related product costs and margins, and product taxes which add to the consumer price of gasoline. All of the findings suggest that, while world crude prices and Canadian taxes have generally increased over the past several years, the downstream petroleum industry, which consists of the refiners and marketers of gasoline and other petroleum products, has operated in a highly competitive environment, as evidenced by declining industry margins.

The next part of this study will undertake a comparative perspective: examining pump price and margin differences that exist between individual markets within Canada.

Part D Selected Markets Study

Introduction

A review of public domain data on current and historical prices as presented in part C, is useful in providing broad overviews of industry price and margin trends, but contains two inherent limitations:

- data is drawn exclusively from major Canadian centres; there is no regular monitoring of pump prices in smaller centres; and
- pump prices alone provide very little opportunity for "comparability". A number of factors such as taxes, freight, outlet volumes, ancillary revenues, outlet costs, etc., play a role in a market's pump price. These "outside factors" tend to obscure the more relevant aspect of pump price, namely product margin, which relates solely to that sector of the petroleum industry directly involved in using pump price as a competitive tool.

Part D of the study therefore has two main objectives:

- an examination of a diverse array of markets in order to determine the degree of similarity or dissimilarity between them, and in order to provide insights into the range of competitive dynamics that may exist; and
- a more detailed examination of price, margins and related implications for market competitiveness than can simply be provided by existing public-domain data.

Methodology

Selection of Markets

A number of markets were selected for the study, so that a broad range of the following criteria was represented:

- population
- proximity to refinery
- proximity to primary supply point
- proximity to US border
- proximity to other retail markets

Twenty markets were initially selected by the committee, although one was subsequently dropped due to insufficient submitted data. Nineteen markets were therefore adopted for the study (Table 3).

Each market was classified according to regional affiliation (BC/Prairie, Ontario, and Quebec/Atlantic) and market size: Group A markets included population centres in excess of 500,000, and Group B markets less than 500,000[1].

Table 3: Selected Study Markets

Total (19)	BC/PR (9)	ON(4)	QU/AT (6)
Group A (8)	Vancouver*	Toronto	Montreal*
	Victoria	Ottawa*	
	White Rock		
	Calgary*		
	Winnipeg		
Group B (11)	Nanton AB	Sault Ste Marie*	Chicoutimi*
	Peace River AB	Sioux Lookout	Gaspé
	Regina*		Saint John NB*
	Thompson MB		Charlottetown
			Halifax

* forms part of ancillary revenue and cost analysis

Sources of Data

In order to conduct a detailed study market analysis of retail marketing operations, it was essential to obtain data not normally available through existing public sources. To this end, member companies of the Canadian Petroleum Products Institute (CPPI) were approached to provide detailed outlet operating petroleum and ancillary revenue and cost data[2] for a random sampling of outlets in each of the selected study markets.

Five companies responded to this request: Imperial Oil, Petro-Canada, Shell Canada, Suncor Inc., and Canadian Tire Petroleum. In all, confidential data were collected and independently evaluated on 481 retail gasoline outlets in 19 Canadian markets. In addition, these organizations provided market-level data on freight costs, retail outlet and brand representation, and for smaller markets, price history data not available through public sources.

Process Overview

As illustrated in part A, retail pump prices - and consequently competitiveness - are influenced not by one, but a number of variables. To examine the competitiveness of the marketing, or "rack to retail" sector, the gross marketing margin must be

[1] Although White Rock is clearly not a major centre by itself, its situation in the Greater Vancouver Regional District placed it in the category of a Group A market.

[2] Depending upon the outlet mode, both the dealer and the product/brand supplier realize revenue and incur costs associated with an outlet. This study compiled both sets of financial data in order to produce a net revenue/cost per outlet picture which eliminated the effect of mode differences.

examined in isolation from those other variables. Furthermore, the gross marketing margin is stripped of its freight component, to derive the 1995 average *gross product margin* for each of the study markets. The gross product margin thus serves as an interim basis for comparing study markets.

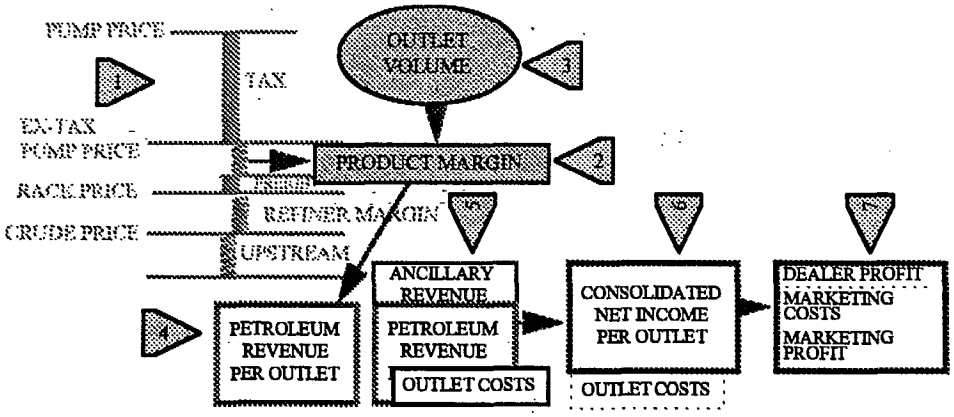
Where differences in gross product margin might still exist, this study postulates that average outlet throughput in each market may be a significant factor affecting margins and prices. Gross product margins are therefore compared to corresponding volumes to determine if a cause-and-effect relationship exists.

Finally, the study postulates that outlet operating costs and revenues from ancillary sources (such as convenience store sales) might affect how the dealer establishes competitive pump prices. Using the derived gross product margins and volumes for each market, in addition to operating cost and ancillary revenue data gathered in the study[1], a market-by-market profile of outlet income is presented.

Process Description

Figure 17 shows an overview of the process used to reduce the study market 1995 pump prices into its sub-elements:

Figure 17: Study Market Methodology



1. For each market, 1995 average values were determined for pump price, tax content, rack price, and freight, by product grade. Where applicable, these were weighted by volume, to arrive at "blended" values[2].
2. The variables of tax content, rack price, and freight were successively removed from the pump price, and the final "rationalized" gross product margin was determined for each market. Values were weighted by market population using 1991 Statistics Canada census data in order to determine Group A (major urban), Group B (smaller market) and 19-market study averages.
3. From participant company supplied data, average outlet annual throughput was determined for each market.

[1] Although outlet cost and ancillary revenue data was not available for all markets, a broad representation of markets was possible, including some smaller centres.

[2] Accordingly, average pump prices are higher than actual average regular gasoline prices, as the "blended" price includes other product grades, weighted by sales demand. This allows for an accurate determination of net outlet revenue.

4. This value was then applied to the gross product margin to determine average outlet petroleum revenue.
5. From participant company data, average revenues from ancillary services were added, and outlet operating costs were deducted from total revenue...
6. ...to determine average consolidated net revenue per outlet.
7. The resultant consolidated net revenue per outlet was examined in terms of its component elements of Dealer Income, Supplier Overhead costs, and supplier profit. A dollar-per-outlet estimate of these elements was made.

Interpretation of Data

In some smaller centres, grade differentials were based on known differentials of nearby markets. These differentials do vary from one market to another, and from one brand to another, but they are relatively minor, and therefore where assumptions were made, the effect on the "blended price" is small, also considering that RUL constitutes the majority of product.

The derived weighted average values of pump price, freight, marketing margin, etc., represent a broad range of markets, including relatively smaller ones such as Sioux Lookout or Gaspé, and accordingly represent a broad spectrum of consumers and marketers. Also, these 19 markets represent a combined population base of 8.7 million, encompassing a significant portion of the entire Canadian market.

Use of Rack Price

The derived value of retail gross product margin is essentially based upon two price points: pump price and rack price. While clear, objective data exist for both of these values, it is important to understand that the use of rack price in this analysis has certain implications.

Rack prices used in this study are taken from Bloomberg Oil Buyers' Guide™, a recognized source of data on world crude oil and petroleum markets and prices. Unlike retail pump prices however, many wholesale petroleum purchases are made at less than the "posted" rack price, as described on page 10.

In referring to marketing margins, product margins, petroleum revenues, or consolidated net incomes, Bloomberg rack price values were used as the *assumed* wholesale price.

Since *actual* wholesale prices (using transfer or contract prices) are not available in the public domain, the Bloomberg rack price is used as the defining wholesale price point which differentiates between the refiner and marketing sectors.

Wholesale refined product prices used in this study are therefore likely to be overstated, and gross product margins are therefore likely to be understated, perhaps by 1 to 2 cents per litre. This variation is constant across all nineteen markets however, so that on a cents-per-litre basis, accurate comparisons are possible.

When these margins are applied to outlet throughputs as in step 4 above, the rack price basis results in petroleum revenues which are understated to a somewhat greater degree in high throughput markets than they are in low throughput markets.

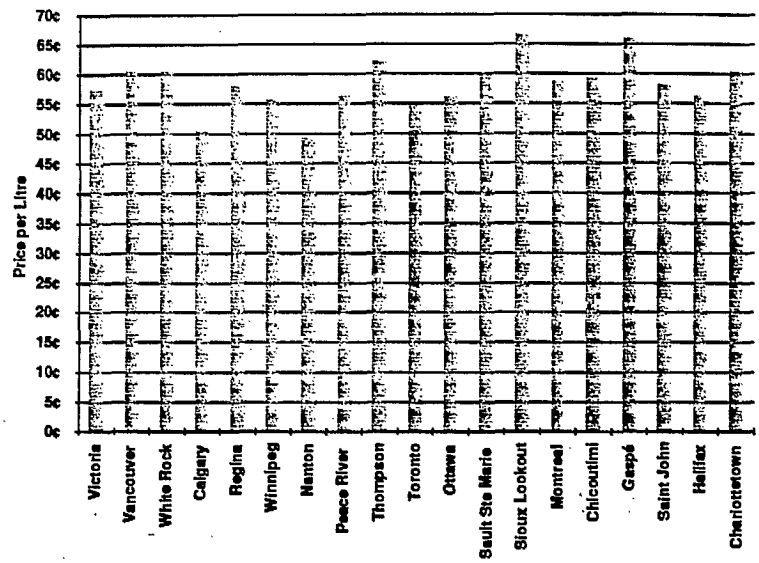
Rack prices used in this study are nevertheless market-driven, accurate, and based on objective, independently gathered data.

Study Market Findings

Posted Pump Price

Figure 18 shows 1995 average retail pump price (using a "blend" of gasoline and diesel grades) for each of the 19 study markets. The data shows a statistical pump price variance of over 17 cents per litre within this study group. The data also shows that typically, higher priced markets are associated with smaller population centres, while lower prices tended to prevail in major centres.

Figure 18: 1995 Average "Blended" Pump Price



On the basis of posted pump prices, there is little to suggest why such a high variance exists. Several variables beyond the control of the retail gasoline sector are incorporated into the pump price however, and these tend to interfere with an objective comparison of fundamental competitive differences which may exist. The first of these variables to be examined is tax.

Tax

Figure 19 shows posted pump prices for the study markets, broken into tax and ex-tax components. The study data suggests that variations in tax rates account for a significant part of pump price differences. The 19-market study group exhibited a statistical variance[1] of 17.64 cents per litre in pump price, but a variance of only 12.38 cents per litre in ex-tax pump price. A 6.8 cent difference in pump price

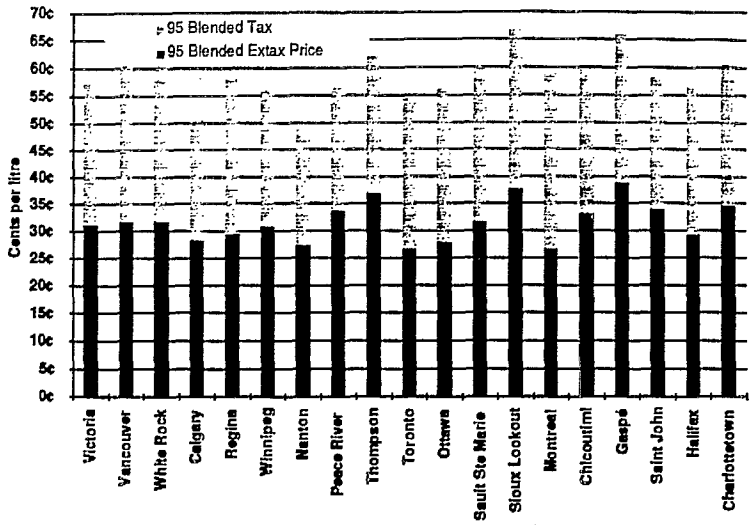
[1] See footnote at Appendix II, table J for an explanation of how variance is derived.

between Calgary and Vancouver for example, when examined on an ex-tax basis, was less than three cents.

In all study markets, taxes were a significant element of pump price, accounting for roughly half of the average retail price. Average 1995 taxation within the study group ranged from 22 cents per litre (Nanton) to 28.75 cents per litre (Vancouver, Montreal).

The data shows that taxation between markets within the same province varies little, while taxation between provinces is more pronounced - while all markets are subject to the same rate of federal excise tax and GST[1], provincial tax rates can vary greatly, as described in part A.

Figure 19: Pump Price - tax, ex-tax elements



Finding 16: Provincial differences in product taxation are a predominant cause of inter-regional pump price differences.

Since the level of taxation is clearly a factor which is beyond the control of the petroleum industry, it is therefore more useful to use ex-tax pump prices when comparing any two markets, or when examining historical price trends. This eliminates any effect that tax variability may have, thus providing a better basis for comparison.

Upstream and Gross Refiner Margins

Although the deduction of tax content is useful, the resultant ex-tax pump price nevertheless represents a gross margin for the entire oil industry. As this study seeks to isolate the marketing or "rack to retail" sector as a competitive entity, additional elements of the revenue stream must be further isolated; namely the upstream industry and refiner sector.

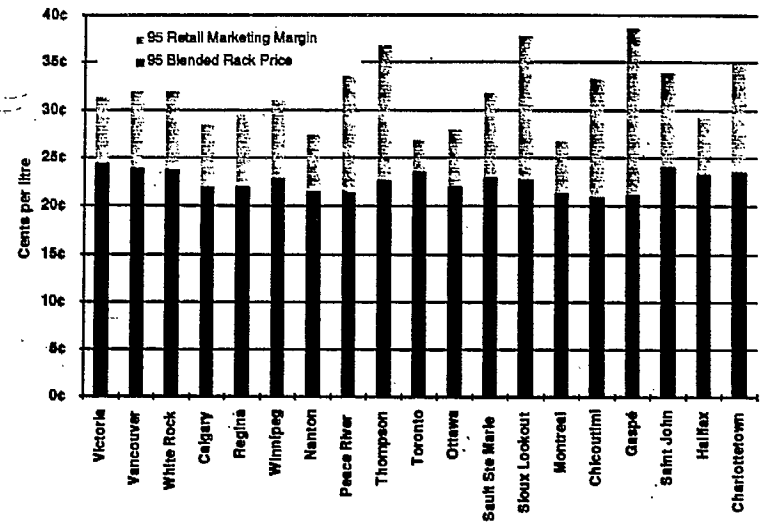
[1] Due to pump price differences, GST content can vary by market, but the variance is minimal - less than one-half cent per litre.

Since the refiner's rack price incorporates the raw material cost (crude price) plus the "value-added" element of refining, the rack price is equivalent to the upstream margin plus the refiner's margin. When rack price is deducted from the ex-tax pump price, the resultant gross marketing margin represents that portion of the pump price model which relates solely to the retail marketing sector.

Figure 20 shows ex-tax pump price isolated into its upstream/refiner (ie; rack price) and gross marketing margin elements. The figure shows that combined gross Refiner/upstream margins are relatively uniform among the study group, reflecting some differences in refinery crude acquisition costs, but ultimately, reflecting the reality that at the rack level of competition, one region cannot maintain rack prices at a higher level than another, as this would cause rack buyers to bring product in from the lower-priced region - assuming transport costs did not outweigh the price difference.

It can also be seen that upstream/refiner margins for remotely located markets such as Thompson MB, differ little from those of major centres. This is due to the fact that for any market, the rack price is set at the rack point (Winnipeg, in the case of Thompson). Freight costs are additional, as is examined below.

Figure 20: Ex-Tax Pump Price Elements



As many petroleum marketers are also involved in crude oil production and product refining, the validity of analyzing gross marketing margins in isolation might be raised. To address this, it should be restated that each of these sectors, and their respective margins, are clearly delineated by market-driven crude, rack and pump prices. Furthermore, the dynamics of (marketing) retail pump prices are quite distinct from those of (refiner) rack prices, and therefore are best analyzed separately, if a clear understanding is to be achieved.

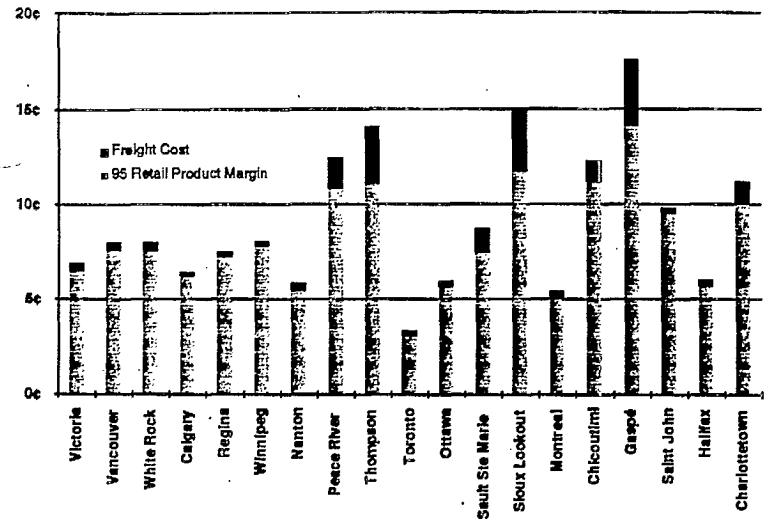
Gross Marketing Margin and Freight Cost

The gross marketing margin provides for a useful comparison of revenue streams available to the retail gasoline marketing sector. Before using this as an analytical tool however, one final outside variable must be isolated: that of product freight.

It is axiomatic that remote markets incur higher freight costs than those located close to the source of supply. To provide a comparative view of the *marketing* dynamics within the study group, it is therefore important to eliminate the freight variable from the gross marketing margin, resulting in comparative gross product margins.

Figure 21 shows a study market comparison of gross marketing margins, with their component freight costs. For markets which are also established as rack points, this freight cost is almost negligible, as low as 0.3 cents per litre. For other, generally smaller markets, the data shows that freight is often a significant part of the gross marketing margin, and therefore a significant pump price factor. Two of the study markets had freight costs in excess of 3.0 cents per litre.

Figure 21: Gross Marketing Margin Elements



Elimination of the freight variable reduced the study group's statistical variance from 13.16 cents per litre (gross marketing margin) to 7.49 cents per litre (gross product margin).

Finding 17: Market-specific differences in product freight are a key factor in inter-market ex-tax pump price differences, particularly in comparisons of major urban markets to small, remote population centres.

Although freight operations are often an integral part of many petroleum marketing operations, it is essentially a "non-core" business; in fact, most Canadian marketers contract out at least some of its product distribution needs to third party cartage companies.

Retail Gross Product Margin

Figure 22 provides a comparison of the original pump price for each study market, to the resultant retail gross product margin - the gross revenue available to the petroleum marketing sector for its operations.

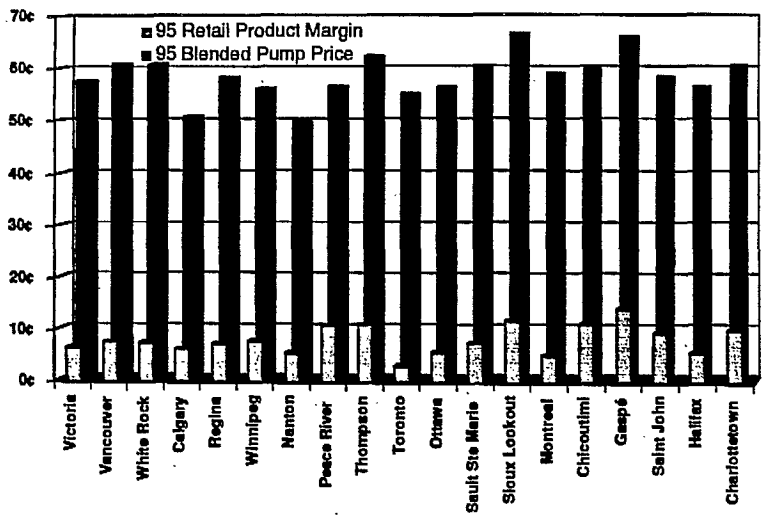
In referring to marketing margins, product margins, petroleum revenues, or consolidated net incomes, Bloomberg rack price values were used as the *assumed* wholesale price.

For all study markets, 1995 gross product margin averaged 5.68 cents per litre[1]. Group A (larger population) markets averaged 5.42 cents per litre, while Group B markets averaged 7.95 cents per litre. Gaspé, at 14.17 cents per litre, was the highest of the study group, while Toronto, at 3.06 cents per litre, was the lowest.

The study revealed that:

- Retail gross product margins differ very little between major urban markets - a variance of only 2.22 cents per litre
- Smaller markets showed a wider variance in gross product margin - 6.68 cents per litre.

Figure 22: Petroleum Gross Product Margins



When comparing the variance in pump prices within the 19-market study group (17.6 cents) to the variance in their component gross product margins (7.5 cents), it is evident that the non-industry factors of taxation and freight cost are partly responsible for pump price differences between any two markets, or between any two regions.

[1] This is considerably more than the 3.5 cents per litre average Gross Product Margin cited in Part B; as the 3.5 cent per litre average relates to regular gasoline in major markets, whereas the study market result cited here incorporates all gasoline grades and a broad variety of population centres.

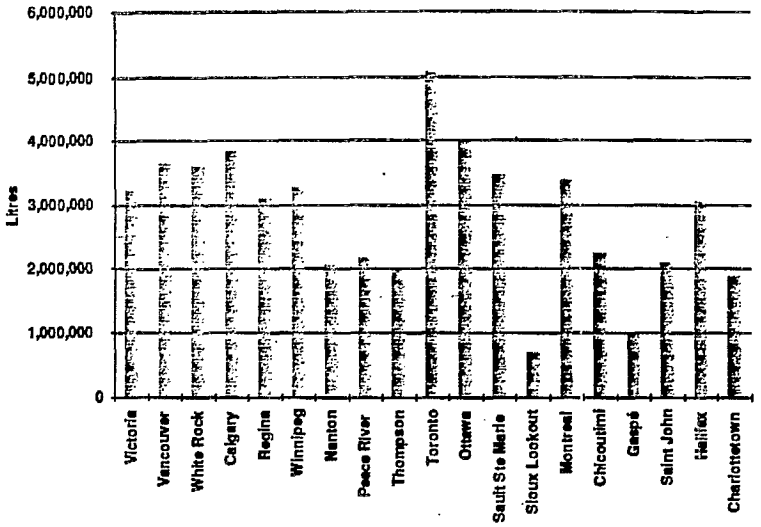
A 7.5 cent variance in gross product margin is still significant however, which suggests that there may be an additional factor which is responsible for pump price differences between markets. To understand why such a wide range of margins can exist after eliminating all tax and freight variables, an examination of related outlet throughput volumes is necessary.

Outlet Throughput

Figure 23 shows average annual outlet throughput (sales volume) for the study group. A wide range of volume performance is evident, ranging from under 700,000 litres per year (Sioux Lookout) to over 5,000,000 litres per year (Toronto).

This study's data shows that the range of volume performance among outlets within a given market is relatively narrow. Indeed, if any retail gasoline outlet located in the Toronto area for example, sold significantly less than 5 million litres of petroleum per year, it would likely be so unprofitable as to be un-viable.

Figure 23: Average Annual Throughput per Outlet

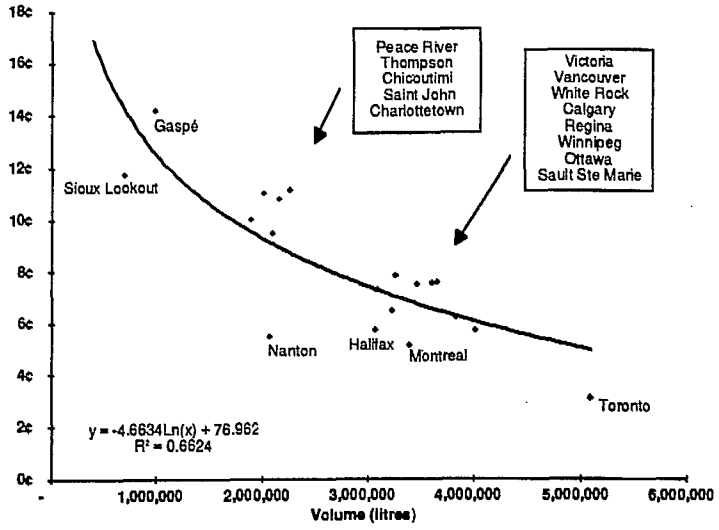


Relationship of Gross Product Margin to Outlet Throughput

Figure 22 shows that, once isolating retail gross product margin from all of the "outside" pump price factors, a wide range of variability still exists between markets in the study group - 14.2 cents per litre in Gaspé, vs. 3.1 cents per litre in Toronto, for example.

Figure 23 shows a similarly wide range of variability in average throughput per retail outlet within these same markets. If these two factors are related to each other as they are in Figure 24, a distinct relationship between product margin and outlet throughput emerges:

Figure 24: Outlet Volume vs. Gross Product Margin



That such a relationship would exist is understandable: with the *same* margin, an outlet with low throughput would derive less petroleum revenue than a high-volume outlet. As most outlet operating cost are fixed in nature - that is, they remain essentially the same regardless of volume changes - a low volume outlet would be much less profitable than one in the same market with significantly higher volumes. If *all* outlets in a given market experience generally low throughputs, it follows that higher gross product margins will be the consequence.

It can be seen from Figure 25 that major centres (Group A) generally experience smaller retail gross product margins (5.42 cents) than smaller (Group B) population centres (7.95 cents). On average however, the Group A market outlets had roughly 50% more throughput than Group B outlets - 4 million litres annually, compared to 2.7 million respectively.

This analysis of outlet throughput and gross product margin by market leads to one of the more significant findings of the study:

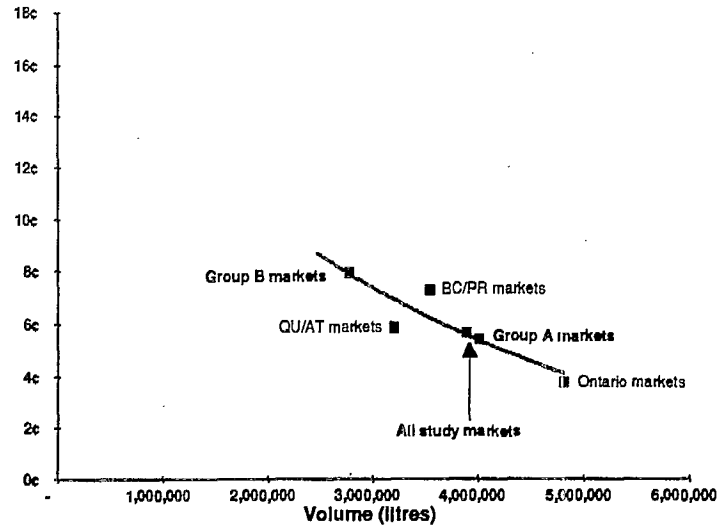
Finding 18: After accounting for differences in taxation and freight the remaining difference in retail pump prices between markets is very closely linked to market differences in average sales volumes such that markets with low Gross Product Margins are associated with high outlet throughput volumes, while those with high Gross Product Margins tend to have low outlet throughputs.

With few exceptions, the 19 study markets exhibit a high degree of uniformity of gross product margin as a function of outlet throughput. Smaller markets perform as competitively as larger centres, and the higher prices (and margins) generally seen in these markets were a function of poor volume performance, not of poor competition.

Regionally, all market groups (BC/Prairie, Ontario, and Quebec/Atlantic) exhibit a close adherence to expected margins based on throughput. Although

Quebec/Atlantic markets appear to experience higher margins (and smaller throughputs) than other regions, this is likely due to the higher incidence of Group B study markets within this region.

Figure 25: Outlet / Volume Relationship - Regional & Urban Groupings



The examination of gross product margin as a function of outlet throughput provides a comprehensive and objective rationalization of inter-market pump price differences, and ultimately shows that very little difference in competitiveness exists between any two markets.

Gross product margin, however, is only a measure of *petroleum revenue per litre*. In reality, competitiveness occurs between retail outlets, which, in addition to petroleum sales, supplement their incomes with other revenues, and incur many expenses in the course of their commerce. These additional factors clearly have an effect on the relative competitiveness of retail markets, and must be examined.

Consolidated Net Revenue per Outlet

To create a complete, outlet-based view of retail markets, two additional factors are introduced: ancillary revenue and outlet operating costs. Ancillary revenues are those derived from non-petroleum sales sources, such as convenience stores, car wash, and auto service, while operating costs are those costs which are directly incurred in the operation of the retail facility.

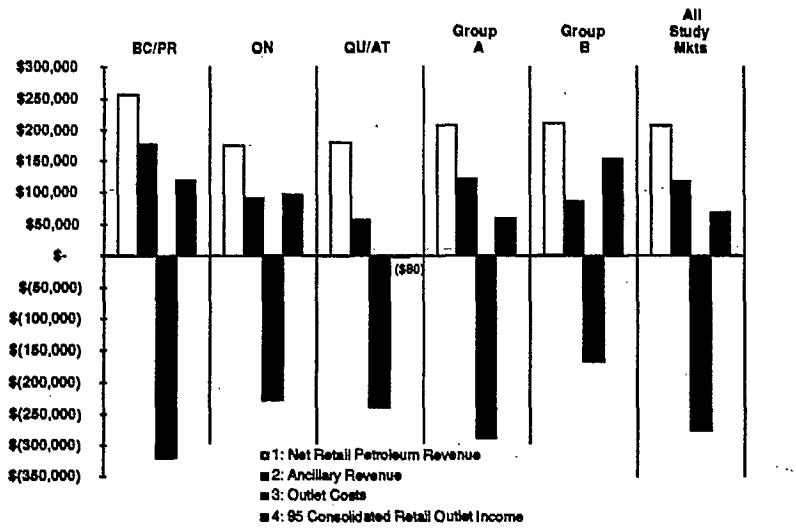
Consolidated net revenue is the result of combining gross petroleum revenue (gross product margin times throughput) plus ancillary revenue (excluding cost of merchandise), less outlet costs. It represents the residual revenue which is available to the dealer and to the supplier, as described below.

Figure 26 summarizes total outlet petroleum sales, ancillary sales, product cost, and the resultant consolidated net revenue, which for the study group, averaged $69,716 - the revenue available for dealer income, supplier overhead costs, and supplier profits. Although outlets in smaller (Group B) markets had higher outlet consolidated net revenues than major market outlets - $154,000 vs. $60,000 per year respectively - Group B outlets were not as *profitable* as these revenue values might suggest, as explained below.

An examination of these component elements reveals a significant finding: that for most markets, petroleum revenues alone are insufficient to offset the operating expenses associated with retail petroleum outlets.

Finding 19: Based on published rack prices, petroleum sales revenues alone were insufficient to cover operating costs for the 481 individual outlets studied. The study average retail gasoline outlet would have experienced a net loss without the contribution of ancillary operations. In effect, these ancillary operations contributed to a lower product margin and consequently, reduced pump prices.

Figure 26: Outlet Revenues, Costs, Income



The findings depict that some inter-regional differences in outlet net revenue exist, although these differences are somewhat overstated (market data for Montreal showed particularly low net revenue, causing the weighted average for Quebec / Atlantic to be depressed). Most markets showed relatively similar net revenues (see Appendix II, Table K).

As described above, consolidated net revenue is the residual revenue which is available to the dealer and to the supplier. A discussion of the ultimate distribution of this revenue is useful.

Dealer and Supplier Profitability

Consolidated net revenue represents the source of cash flow for three distinct purposes:

- **dealer income/profit**: the return or salary to the dealer, which reflects his investment in the outlet, and his personal labour investment.
- **supplier overhead**: all operating costs of the supplier that are not directly associated with a single outlet. These costs would include salaries of marketing representatives and management, brand advertising, corporate charity, sales processing, head office and regional office overheads, etc..
- **supplier profit**: after the above costs are allocated, the residual revenue is available as profit to be re-invested into retail operations, and/or distributed to shareholders.

Although ideally, this study would quantify each of these values, there are no clear, objective means to do so. In particular, the measurement and subsequent allocation of supplier overhead costs on an outlet-by-outlet basis is an inexact science, at best. This study therefore provides an *estimate* of these values, as shown in Table 4.

Table 4: Estimated Cash Flow from Consolidated Net Revenue

	All Study Market Avg.	Estimated Range
Consolidated Revenue (data supported)	**$70,000**	**($15,000) to $220,000**
comprised of (estimated):		
Dealer Income	$32,000	0 to $60,000
Supplier non-outlet Overhead	$52,000	$30,000 to $70,000
Supplier Residual Profit	$(14,000)	$(30,000) to $150,000

note Supplier overhead estimates are based on MJ Ervin & Associates research data not directly related to this study.

Despite the fact that these table values are estimates, the values, and the supplier residual profits in particular, are believed to be a reasonable assessment of the state of retail profitability in Canadian retail petroleum markets. Accordingly, in 1995, a typical retail outlet is estimated to have returned a net loss to the supplier in the order of $14,000, *using Bloomberg rack prices as the cost basis*.

Finding 20: For the 481 individual outlets studied, after the average 1995 outlet revenues were distributed to meet dealer income and the supplier's marketing overhead requirements, the residual represented a net loss to the supplier. Taking into account the possible discounts from posted rack prices and independent brands' lower marketing overheads, residuals for outlets not studied may be better.

This may contradict other indications that 1995 in fact may have represented a profitable year for Canada's major oil companies. This was unlikely to be as a result

of retail marketing operations, however, and was more likely a result of other operations including upstream, refining, or petrochemicals.

Also, non-refiner marketers, who did not contribute to the study database, may have realized somewhat better profitabilities than indicated here: it is likely that their dealer costs and supplier overheads are less than those of major oil companies. Nevertheless, this data illustrates an important finding:

Finding 21: Based on published rack prices and the individual outlet data, the profitability of the 481 outlets studied appears only marginal. The viability of the Canadian retail gasoline sector as a whole may be somewhat better, given the possibility of discounts from posted rack prices and potentially lower overhead costs.

Unlike the major market outlets, rural market outlets used in this study appeared to be somewhat more profitable. This may not be representative of rural outlets in general, however, since the 11 Group B markets were chosen for this study for some particular criteria, not necessarily to be "typical" small-population markets.

Market by Market Competitive Analysis

This section of the study provides a detailed market-by-market analysis of the 19 study markets for the purpose of illustrating some competitive dynamics that may exist in retail gasoline markets.

Explanation of Format

Each market commentary begins with a demographic overview as shown below, providing values and rankings for a number of parameters:

- **population** - taken from 1991 census data, this is the population of the greater metropolitan area (census district) of each municipality.
- **# of brands** - number of brands, as reported by study participants.
- **# of outlets** - estimated number of outlets, as reported by study participants.
- **outlets per 10,000** - number of retail outlets per 10,000 population.
- **avg outlet volume/yr** - average outlet annual throughput, based on participant-provided outlet data. Total market volume and total outlets were not used to derive this measure, as they are estimates only.
- **95 mktg mrgn** - gross marketing margin, as defined in part A of this study.
- **freight** - freight cost per litre associated with transporting petroleum from the rack point to a typical outlet in the market.
- **95 prod mrgn** - gross product margin, as defined in part A of this study.
- **rank or rank*** - ranking of the value within the range of study group values. Where an asterisk appears (*), rankings are lowest value = 1, otherwise highest value = 1.

- **sample size** - the number of retail outlets for which data was collected in this market.

Where sufficient data exists, a historical record of relevant prices is shown in graphical form.

Victoria

population	# of brands	# of outlets	outlets per 10,000	
299,550	**12**	**106**	**3.54**	
rank 8	rank 9	rank 8	rank* 6	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
3,223,068 litres	**6.89 ¢**	**0.41 ¢**	**6.48 ¢**	**26**
rank 9	rank* 7	rank* 10	rank* 7	

General: Victoria is a relatively major market, and its location on Vancouver Island presents some uniqueness with respect to supply.

Geographic / Supply / Freight cost considerations: As Vancouver Island has no refinery, Victoria depends upon marine supply from the Vancouver mainland, or potentially from any marine source of supply in the Pacific Rim. This broad access to supply has occasionally allowed some marketers to purchase "spot" gasoline at relatively low rack prices, creating a short-term drop in pump prices. In the past several years, the rack market across Canada has grown more robust, such that all Canadian rack prices now follow those in the US very closely, and most Canadian markets now benefit from the same type of cross-border rack competition that Victoria had experienced.

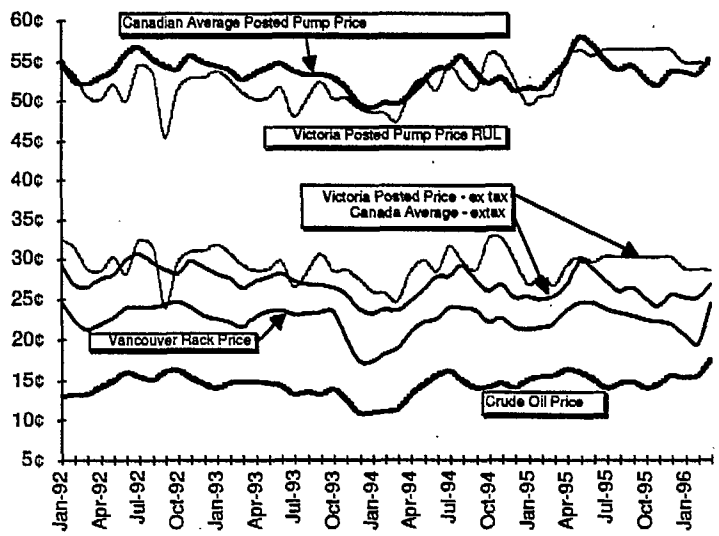
Influence of other markets: Due to its geography, consumers in this market are somewhat "captive" to the local retail gasoline marketers: no opportunity exists to drive to other markets to purchase retail gasoline on a casual basis. This had no apparent effect on the level of competition or price levels however, as described below.

Price history / Taxation: Pump prices have historically been quite volatile, often at times when other markets have been quite stable, as described above. Victoria collects a 1.5 cents per litre municipal tax. Ex-tax pump prices are on average, very close to the Canadian 10-city average.

Margin/Throughput relationship (Figure 24): Victoria fell within a cluster of markets with similar margin/throughput relationships. Product margin was marginally less than expected for a market with these throughput characteristics.

Consolidated net revenue: No ancillary or outlet cost data was available.

Figure 27: Victoria - Price History



Vancouver

population	# of brands	# of outlets	outlets per 10,000	
1,542,745	**18**	**446**	**2.89**	
rank 3	rank 5	rank 3	rank* 2	
avg outlet volume/yr	**95 mktg mrgn**	**freight**	**95 prod mrgn**	**sample size**
3,658,968 litres	**7.98 ¢**	**0.38 ¢**	**7.60 ¢**	**37**
rank 4	rank* 9	rank* 9	rank* 11	

General: As one of Canada's major retail markets, and with access to wholesale product by several means, Vancouver provides several perspectives into retail marketing.

Geographic / Supply / Freight cost considerations: As a port city, this market has access to numerous refiners along the Pacific coast through marine supply, and also has local refining capacity, a 60,000 barrel per day plant located in the greater Vancouver area. Vancouver is also a terminal for a refined products pipeline from Edmonton.

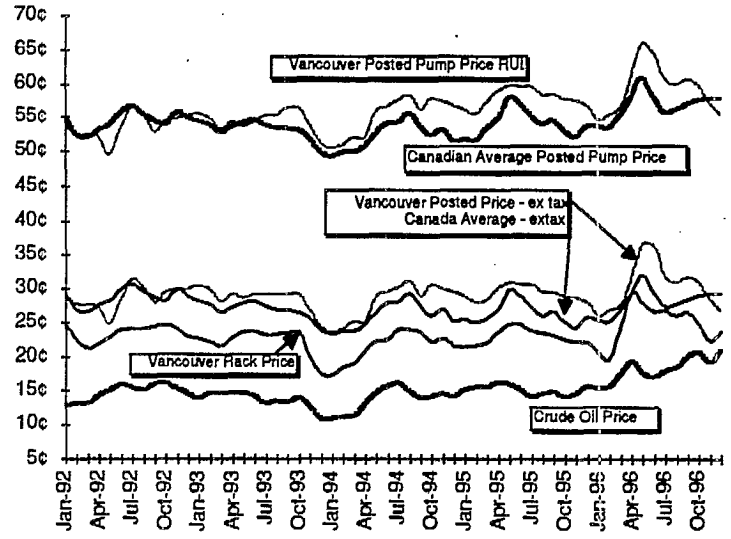
Influence of other markets: Although relatively close to the US border, driving distances preclude most Vancouver consumers from routinely accessing this neighboring market.

Price history / Taxation: Pump and ex-tax prices have historically been somewhat higher than the Canadian 10-city average. Vancouver collects a 4 cent per litre municipal tax, contributing to a higher than average pump price.

Margin/Throughput relationship (Figure 24): Gross product margin was slightly high, ranking 11th, while average throughput ranked 4th. Low consolidated net revenues may have contributed to the higher margin, as described below. The somewhat high margin placed this market slightly above, but well within a cluster of markets with similar throughputs.

Consolidated net revenue: Vancouver outlets averaged the highest in both ancillary revenue and outlet operating costs. Overall, net outlet revenues were less than those of other major centres. This may explain the somewhat elevated gross product margin in this market.

Figure 28: Vancouver - Price History



White Rock

population	# of brands	# of outlets	outlets per 10,000	
16,315	**4**	**8**	**4.90**	
rank 14	rank 17	rank 14	rank* 13	
avg outlet volume/yr	**95 mktg mrgn**	**freight**	**95 prod mrgn**	**sample size**
3,604,630 litres	**7.98 ¢**	**0.45 ¢**	**7.53 ¢**	**5**
rank 5	rank* 9	rank* 12	rank* 10	

General: White Rock is situated on the lower mainland of BC, adjacent to the United States border, thus providing some unique characteristics for the market study.

Geographic / Supply / Freight cost considerations:. This market is close to its usual rack point, Vancouver. Freight costs were accordingly low compared to other small markets in this study.

Influence of other markets: Although this market is a border-crossing community, the study data found little to suggest a material effect upon representation, prices, or competitive dynamics. In all respects, price/competitive dynamics appeared to relate more to the influence of Vancouver than to any cross-border factors. This suggests that, at least in this market, gasoline "cross-border shopping" is less pronounced than might be expected. The reality may be that the immediate necessity of filling one's gas tank may often preclude a cross-border trip.

Price history / Taxation: Although no specific data is available, prices in this market have historically mirrored those of Vancouver. Like Vancouver, this market is subject to a 4 cent per litre municipal tax.

Margin/Throughput relationship (Figure 24)**:** gross product margin was virtually identical to that of Vancouver. White Rock's margin was typical of markets with similar outlet throughputs, but less than most markets with a small population base. This is likely due to the fact that unlike many smaller markets, White Rock is essentially part of a major market due to its proximity to Vancouver.

Consolidated net revenue: No Ancillary or outlet cost data was available for this market.

Despite its relatively small size, the White Rock retail gasoline market displayed the same attributes as a major urban market, due to its proximity to one. Average outlet throughputs were relatively high, and retail gross product margin was less than that of markets with a similar population base.

Calgary

population	# of brands	# of outlets	outlets per 10,000	
710,675	**27**	**313**	**4.4**	
rank 4	rank 3	rank 4	rank* 9	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
3,827,719 litres	**6.47 ¢**	**0.24 ¢**	**6.23 ¢**	**69**
rank 3	rank* 6	rank* 3	rank* 6	

General: Alberta enjoys the lowest provincial product tax rates in Canada, which was one reason for selecting Calgary as a study market.

Geographic / Supply / Freight cost considerations: Although there is no refining capability within this market, Calgary is of sufficient size to support a viable rack market. Product is usually sourced from Edmonton refineries via pipeline. Rack-to-outlet freight costs are among the lowest in the study group.

Influence of other markets: Calgary is fairly remote from US and other major markets. Some smaller markets in the vicinity have occasionally priced below Calgary, creating some competitive pressures (see Nanton).

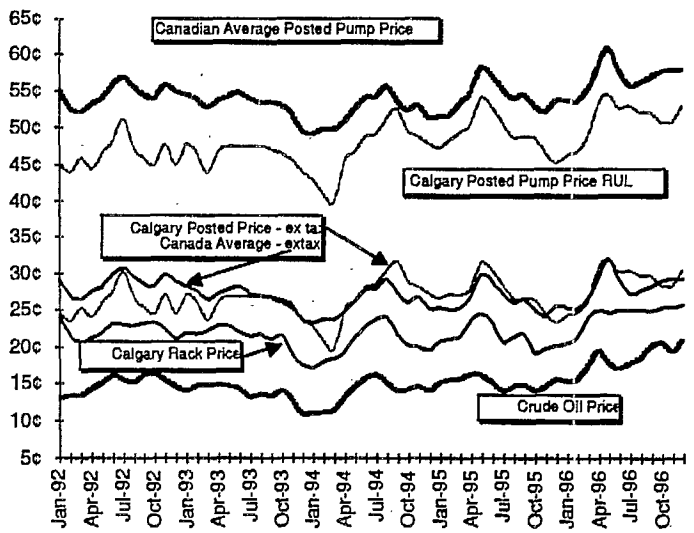
Price history / Taxation: As the figure below shows, pump prices in this market have historically been well below the Canadian 10-city average. This trend is largely due to a low provincial tax rate: when compared on an ex-tax basis, Calgary pump prices are very close to the Canadian average.

Margin/Throughput relationship (Figure 24)**:** Gross product margin was very typical of other study markets with similar throughput characteristics.

Consolidated net revenue: was typical of other major markets in the study group.

Other considerations: Of the markets studied, Calgary had the third highest number of retail brands, indicative of a strong competitive climate. Indeed, on some occasions the Calgary ex-tax RUL pump price has dropped to within one cent per litre of rack price.

Figure 29: Calgary - Price History



Regina

population	# of brands	# of outlets	outlets per 10,000	
179,180	**15**	**86**	**4.80**	
rank 9	rank 7	rank 10	rank* 10	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
3,089,794 litres	**7.50 ¢**	**0.21 ¢**	**7.29 ¢**	**30**
rank 10	rank* 8	rank* 1	rank* 8	

General: With local refining capacity, and a history of volatile pump prices, Regina was of some interest as a study market.

Geographic / Supply / Freight cost considerations: Regina possesses its own refining capacity, and is therefore a recognized rack pricing point. Freight costs were therefore low: Regina ranked first (least) in freight costs among the entire study group.

Influence of other markets: Like Calgary, this market is removed from other significant markets, and therefore experiences no particular influences from any other major market.

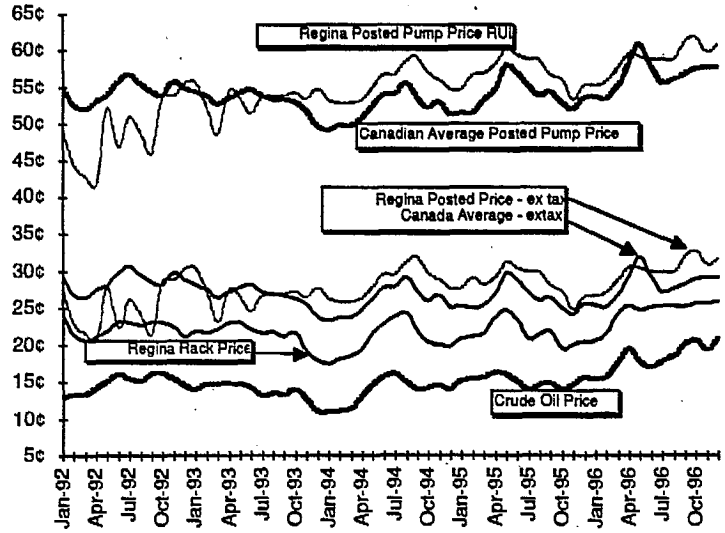
Price history / Taxation: In the early 1990's this market experienced frequent and pronounced price war activity. Although no supporting data is available, it is likely that this reflected a surplus of wholesale inventory within the local market or region. Since then, supply/demand is likely more balanced, price volatility has eased, and this market is now more typical of other large population centres.

Since 1993, this market has generally exhibited pump prices which are somewhat higher than the Canada 10-city average. This is partly due to provincial taxation levels, which are among the highest in Canada. Ex-tax prices are also above average, reflecting a somewhat higher than average gross product margin relative to the 10-city weighted average.

Margin/Throughput relationship (Figure 24): Although gross product margin was high relative to major markets, margins and throughputs were typical of other markets with a similar population base.

Consolidated net revenue: was typical of other similar markets.

Figure 30: Regina - Price History



Winnipeg

population	# of brands	# of outlets	outlets per 10,000	
616,790	**17**	**261**	**4.23**	
rank 6	rank 6	rank 5	rank* 8	
avg outlet volume/yr	**95 mktg mrgn**	**freight**	**95 prod mrgn**	**sample size**
3,265,217 litres	**8.06 ¢**	**0.22 ¢**	**7.84 ¢**	**61**
rank 8	rank* 11	rank* 2	rank* 12	

General: The Winnipeg market is characterized by stable, though somewhat higher than average ex-tax pump prices.

Geographic / Supply / Freight cost considerations: No refining capacity exists within the Winnipeg market, although, like most markets of this population density, it is an established rack price point.

Influence of other markets: Like Calgary, this market is removed from other significant markets, and therefore experiences no particular influences from any other major market.

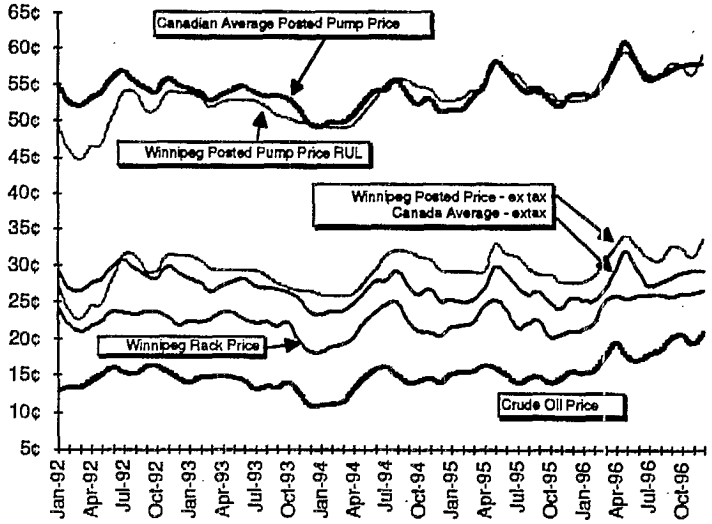
Price history / Taxation: In the early 1990's this market experienced some price war activity, probably related to a regional surplus of wholesale inventory (see Regina). Since then, this market has exhibited relatively stable pricing, and has remained very close to the Canadian 10-city average.

On an ex-tax basis, prices have tended to stay somewhat above the Canadian average. This may reflect a lower than average Consolidated Net Income, possibly due to modest ancillary revenue, although there is no study data to support this.

Margin/Throughput relationship (Figure 24)**:** Winnipeg fell within a cluster of markets exhibiting similar margins relative to their throughputs.

Consolidated net revenue: No ancillary or outlet cost data was available for this market.

Figure 31: Winnipeg - Price History



Nanton, Alberta

population	# of brands	# of outlets	outlets per 10,000	
1,585	**4**	**5**	**31.55**	
rank 19	rank 17	rank 18	rank* 19	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
2,071,000 litres	**5.91 ¢**	**0.41 ¢**	**5.51 ¢**	**2**
rank 15	rank* 3	rank* 10	rank* 3	

General: Nanton is a farming community approximately 70 km south of Calgary, situated on a major North-South highway to the United States Among the study group, Nanton was the smallest market in terms of population.

Some unique characteristics of this market serve to illustrate why some smaller markets experience relatively low pump prices, while others experience consistently high prices.

Geographic / Supply / Freight cost considerations: Located within an hour's drive of the Calgary rack, this market has a relatively low freight overhead. Its setting on a major highway provides a significant opportunity for attracting highway motorist volume, a feature not available to other, more isolated small-town markets.

Influence of other markets:. Unlike many of the smaller markets in this study group, the retail gasoline market in Nanton was not restricted to the local population. Due to its highway location and its proximity to Calgary, Nanton appeared to benchmark its pump prices to those of Calgary, in order to maintain a share of the considerable potential sales revenue that passes through this market.

Price history / Taxation: In order to attract market share beyond simply the local population, Nanton has traditionally priced either at or below Calgary. This strategy has had the effect of sustaining a roughly 10 million litre per year retail gasoline market - far in excess of what would be expected of a community with a population of 1,600.

Margin/Throughput relationship (Figure 24)**:** Like some other small markets in the study group, Nanton had a high number of per capita outlets - the highest of the entire group - and a low average outlet throughput, although not as low as expected. While these conditions would normally result in a high gross product margin, Nanton had the second lowest gross product margin of the study group.

Despite its small size, the Nanton retail gasoline market displayed the same price attributes as a major urban market, due to its proximity to one. Average outlet throughputs were relatively low, placing Nanton well below the expected margin, as Figure 24 shows. In this respect, Nanton was perhaps the least viable market in the study group, in terms of expected petroleum revenues.

Consolidated net revenue: No Ancillary or cost data was available. While the margin data might suggest that retail gasoline operations in Nanton would not be profitable, it is likely that low operating costs, and perhaps healthy ancillary sales associated with highway traffic, would have an offsetting effect.

Peace River, Alberta

population	# of brands	# of outlets	outlets per 10,000	
6,715	**6**	**8**	**11.91**	
rank 17	rank 13	rank 14	rank* 17	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
2,157,623 litres	**12.45 ¢**	**1.6 ¢**	**10.85 ¢**	**4**
rank 13	rank* 16	rank* 16	rank* 15	

General: Peace River is located at a considerable distance from the nearest source of primary supply, and was accordingly chosen as a study market. In contrast to Nanton, the community of Peace River is subjected to a number of factors which give rise to higher than average prices, though fairly typical of many smaller, isolated markets.

Geographic / Supply / Freight cost considerations: At 1.6 cents per litre, Peace River has among the highest freight cost in the study group. Supply is via tanker truck from Edmonton, its normal rack point.

Influence of other markets: Since it is not located on a major inter-urban thoroughfare, and due to its isolated locale in northern Alberta, this market has little or no influence upon, nor is it influenced by, other markets.

Price history / Taxation: Peace River is typical of small, isolated markets, experiencing relatively high gross product margin and consequently, high pump prices. Peace River also experiences high freight costs, further adding to overall high pump prices.

Margin/Throughput relationship (Figure 24)**:** Although gross product margins in this market were relatively high, they were comparable to other markets with similar average throughputs, and in fact fell into a tight cluster of four other study markets.

Consolidated net revenue: No Ancillary or outlet cost data was available for this market.

Thompson, Manitoba

population	# of brands	# of outlets	outlets per 10,000	
14,975	**5**	**6**	**4.01**	
rank 16	rank 15	rank 17	rank* 7	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
2,014,520 litres	**14.1 ¢**	**3.02 ¢**	**11.08 ¢**	**4**
rank 16	rank* 17	rank* 17	rank* 16	

General: Like Peace River, the community of Thompson clearly falls into the category of a small, remote market. Although outlets in Thompson appear to be as competitive as those of any other study market, the Thompson market experiences some competitive disadvantage due to its small population base and limited market potential.

Geographic / Supply / Freight cost considerations: At 3.02 cents per litre, Thompson is among the highest freight costs in the study group. Supply is via tanker truck from Winnipeg, its usual rack point.

Influence of other markets: Since is not located on a major inter-uban thoroughfare, and due to its isolated locale in northern Manitoba, this market has little or no influence upon, nor is it influenced by, other markets.

Price history / Taxation: Thompson was typical of small, isolated markets, experiencing relatively high gross product margin and consequently, high pump prices. It also experienced high freight costs, further adding to overall high pump prices.

Margin/Throughput relationship (Figure 24)**:** Although gross product margins in this market were relatively high, they were comparable to other markets with similar average throughputs, and in fact fell into a tight cluster of four other study markets.

Consolidated net revenue: Low outlet throughputs were offset by higher margins, resulting in per-outlet petroleum revenues which were quite typical of many markets. Although ancillary revenues were the smallest of the study group, outlet costs were also modest - typical of most smaller markets. These factors resulted in relatively strong per-outlet net revenues, a significant portion of which would likely be distributed towards supplier overhead costs.

Other considerations:

Like other small markets, Thompson is faced with the dilemma. A reduction in the number of outlets might seem to be the best way to improve outlet throughput performance, thereby creating the potential for narrower margins, and reduced pump prices. This however, would have the conflicting effect of reducing the consumer's choice in a market with a limited choice to begin with.

Toronto

population	# of brands	# of outlets	outlets per 10,000	
2,275,775	**30**	**546**	**2.4**	
rank 1	rank 2	rank 2	rank* 1	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
5,098,478 litres	**3.36 ¢**	**0.3 ¢**	**3.06 ¢**	**59**
rank 1	rank* 1	rank* 7	rank* 1	

General: Within the study group, this market ranked first in a number of measures: lowest gross product margin, least number of outlets per capita, and first in average throughput per outlet. In addition, it had the second highest brand variety of the study group.

Geographic / Supply / Freight cost considerations: Toronto has nearby refining capacity, and is also relatively close to wholesale supply sources in the US. It consequently has a low freight component.

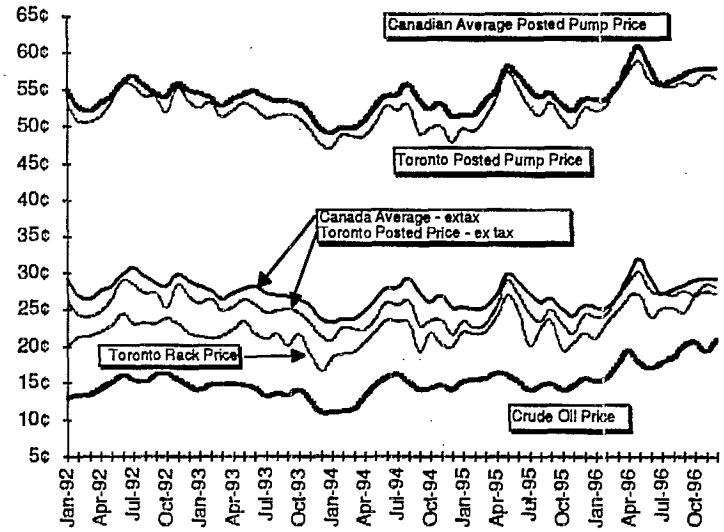
Influence of other markets: This market is continuously linked with several other major retail markets, stretching from Pickering to Buffalo, New York. Within this region are thousands of retail outlets, thus there exists a climate of robust competition, as evidenced by an exceptionally low gross product margin.

Price history / Taxation: 1995 posted pump prices in Toronto did not differ markedly from those of other major Canadian centres. On an ex-tax basis however, this market was consistently less than the 10-city average.

Margin/Throughput relationship (Figure 24): This market stood apart from the study group, exhibiting a lower margin than even expected of an extraordinarily high average outlet throughput. With an average "blended" gross product margin of only 3.06 cents per litre, an outlet pumping significantly less than the average 5 million litres annually would not be likely to generate sufficient revenue to remain viable.

Consolidated net revenue: Although no study data was available for this market, it is likely that outlet ancillary revenues are among the highest in the country. This is likely offset by high operating costs, and a resultant low consolidated net revenue, similar to that of Montreal.

Figure 32: Toronto - Price History



Ottawa

population	# of brands	# of outlets	outlets per 10,000	
678,145	**19**	**209**	**3.08**	
rank 5	rank 4	rank 6	rank* 4	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
4,004,948 litres	**5.97 ¢**	**0.29 ¢**	**5.68 ¢**	**39**
rank 2	rank* 4	rank* 6	rank* 4	

General: Ottawa was very typical of major markets, exhibiting all of the characteristics of robust competition.

Geographic / Supply / Freight cost considerations: As Ottawa is an established rack point, freight costs within this market were quite low.

Influence of other markets: Although Ottawa is the only major market in the immediate area, several smaller, rural markets co-exist in this area, some of which have on occasion priced below Ottawa (see Nanton and Calgary).

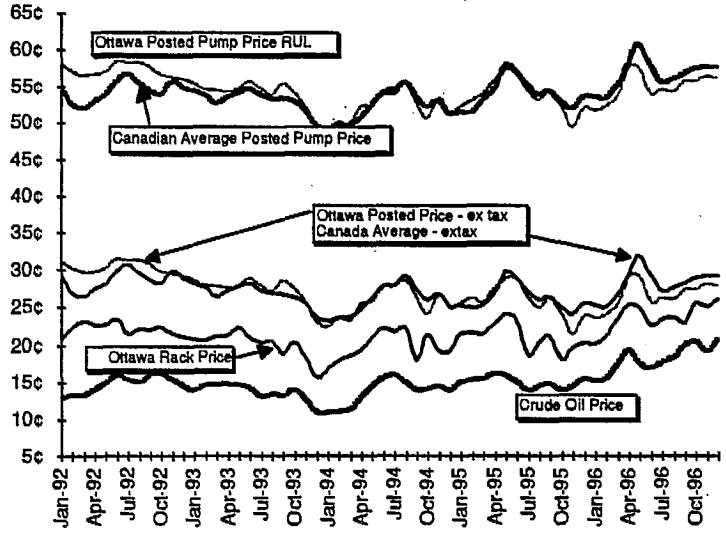
Price history / Taxation: Pump prices in this market were comparable to other major centres when viewed on an ex-tax basis, and close to the Canadian 10-city average. This would suggest that it was as competitive as any other major market of similar size and throughput characteristics.

Margin/Throughput relationship (Figure 24)**:** This market had the second highest average outlet throughput of the study group with a correspondingly low gross product margin, in fact, slightly lower that expected.

Consolidated net revenue: was low. Although petroleum revenues were typical of major markets, ancillary revenue was slightly lower than average, and operating costs were higher than most.

Other considerations: While pump prices in this market were somewhat higher than in Toronto, margins and prices in Ottawa are typical of markets with similar throughput and net revenue characteristics.

Figure 33: Ottawa - Price History



Sault Ste Marie

population	# of brands	# of outlets	outlets per 10,000	
81,475	**10**	**24**	**2.95**	
rank 11	rank 10	rank 12	rank* 3	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
3,465,550 litres	**8.73 ¢**	**1.22 ¢**	**7.51 ¢**	**12**
rank 6	rank* 12	rank* 15	rank* 9	

General: While situated at some distance from its nearest source of rack supply, Sault Ste Marie is a sizable market, somewhat isolated, yet with some potential for cross-border retail competition.

Geographic / Supply / Freight cost considerations: Sault Ste Marie uses Toronto as its usual rack point. Freight costs are therefore high, a consequence of the transport distance from the rack point.

Influence of other markets: This market is close to a US border market.

Price history / Taxation: Ex-tax pump prices were relatively high compared to other Ontario markets, partly due to higher freight costs.

Margin/Throughput relationship (Figure 24)**:** While this market had the third-lowest per capita outlet population of the study group (behind Vancouver and Toronto), average throughputs were modest. This would suggest that a significant market share is being lost across the US border, and accordingly, this Canadian market has some difficulty in remaining both competitive and viable.

Sault Ste Marie fell into a cluster of 10 study markets of between 3 to 4 million litres in average annual throughput, and between 5 to 8 cent per litre in gross product margin. Pump prices in this market were thus typical of any market with similar throughput characteristics.

Consolidated net revenue: This market showed the highest consolidated net revenue of the study group, a product of relatively strong net petroleum revenues combined with lower than average operating costs.

Sioux Lookout

population	# of brands	# of outlets	outlets per 10,000	
3,310	**3**	**3**	**9.06**	
rank 18	rank 19	rank 19	rank* 16	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
694,066 litres	**14.96 ¢**	**3.2 ¢**	**11.76 ¢**	**2**
rank 19	rank* 18	rank* 18	rank* 18	

General: Sioux Lookout was one of the smallest markets within the study group, and had the least number of outlets, brands, and outlet throughputs of any market studied. It therefore presents some unique characteristics for the market study.

Geographic / Supply / Freight cost considerations: Sioux Lookout is normally supplied from the Winnipeg rack via tank truck. Freight costs are therefore high, in fact the second highest in the study group. This is a major factor in the high cost of gasoline in this market.

Influence of other markets: This is clearly an isolated market, with little or no influence from other retail gasoline markets. Sioux Lookout is well-removed from any major highway, so that virtually all sales volume represents local demand only.

Price history / Taxation: Ex-tax pump prices were relatively high compared to other Ontario markets, largely due to higher freight costs.

Margin/Throughput relationship (Figure 24)**:** Sioux Lookout's gross product margin, although high, was much less than expected for a market of this size. An average outlet in Sioux Lookout pumped only 694,006 litres in 1995, one-seventh the average throughput in Toronto. This would suggest that, despite its high prices, this market experiences a high degree of price competition.

Consolidated net revenue: No data was available for this market.

Montreal

population	# of brands	# of outlets	outlets per 10,000	
1,775,870	**32**	**866**	**4.88**	
rank 2	rank 1	rank 1	rank* 11	
avg outlet volume/yr	**95 mktg mrgn**	**freight**	**95 prod mrgn**	**sample size**
3,394,144 litres	**5.43 ¢**	**0.3 ¢**	**5.13 ¢**	**74**
rank 7	rank* 2	rank* 7	rank* 2	

General: As the largest retail gasoline market in the Quebec/Atlantic region, Montreal was included in the selected market study. With 32 competing brands, this market ranks first of the study group in terms of brand variety.

Geographic / Supply / Freight cost considerations: Montreal has local refining capacity, and is also relatively close to wholesale supply sources in the US. It therefore represents a highly competitive rack market.

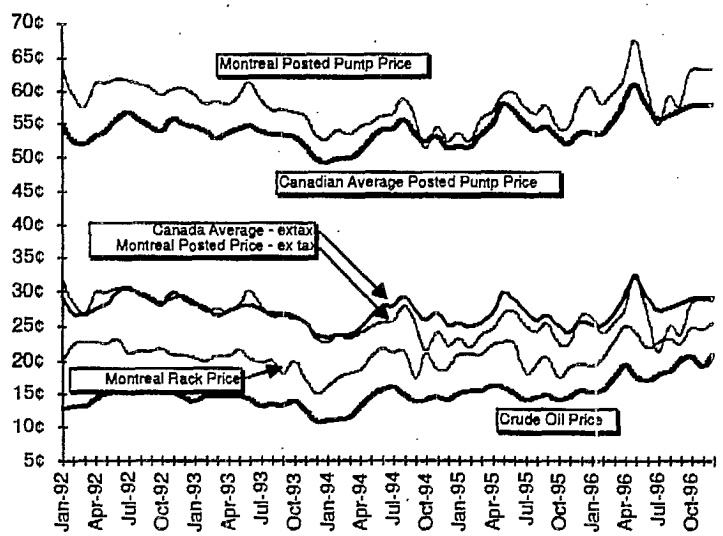
Influence of other markets: Like Toronto, this market interacts with several other markets in the region, thus promoting a competitive climate.

Price history / Taxation: As the figure shows, pump prices in this market have a tendency to be volatile; a function of a competitive rack market and an excess of retail outlets competing for market share. This market had the highest tax content of the study group due to high provincial tax rates (in 1996, an additional tax of 1.5 cents per litre was introduced into the Montreal area). On an ex-tax basis however, pump prices in Montreal have generally been at or below the 10-city average for major markets.

Margin/Throughput relationship (Figure 24)**:** This market would appear to be over-represented in outlets compared to other major markets, with resultant low average outlet throughputs. Montreal nevertheless exhibited a gross product margin which was well below that expected for these throughput attributes.

Consolidated net revenue: Montreal outlets had relatively poor ancillary revenues compared to the major market average. This, combined with low petroleum revenues and high operating costs, placed Montreal lowest of all study markets in terms of consolidated net revenue.

Figure 34: Montreal - Price History



Chicoutimi

population	# of brands	# of outlets	outlets per 10,000	
120,605	**14**	**97**	**8.04**	
rank 10	rank 8	rank 9	rank* 15	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
2,250,289 litres	**12.28 ¢**	**1.08 ¢**	**11.2 ¢**	**16**
rank 12	rank* 15	rank* 13	rank* 17	

General: The Chicoutimi area was somewhat unique among the study markets in that there is a relatively large population base, yet is geographically quite isolated.

Geographic / Supply / Freight cost considerations: Although some markets of this size support a viable rack market (Saint John, for example), this market has little potential as a rack market. Chicoutimi is normally supplied from the Quebec city rack, by tank truck. Freight costs are therefore somewhat high, a partial factor in the high cost of gasoline in this market.

Influence of other markets: The Chicoutimi / Jonquiere market represents a sizeable population base, but is quite isolated from any other markets.

Price history / Taxation: Chicoutimi benefited from a special Quebec tax reduction which applies to certain markets in remote areas and within 20 kilometers of the provincial border. In the case of Chicoutimi, this amounted to a reduction of 5.75 cents per litre. Nevertheless, both pump and ex-tax prices in this market were higher than average.

Margin/Throughput relationship (Figure 24)**:** Outlet throughputs, although low, were quite typical of markets with similar populations. Gross product margin was accordingly high, but as the figure shows, within a cluster of other markets with similar attributes.

Consolidated net revenue: was average among the study group.

Gaspé

population	# of brands	# of outlets	outlets per 10,000	
16,400	**6**	**13**	**4.88**	
rank 13	rank 13	rank 8	rank* 12	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
981,900 litres	**17.50 ¢**	**3.33 ¢**	**14.17 ¢**	**2**
rank 18	rank* 19	rank* 19	rank* 19	

General: Gaspé is a relatively small market, located at a considerable distance from its rack source of supply.

Geographic / Supply / Freight cost considerations: Gaspé is normally supplied from the Montreal rack, by tank truck. Freight costs are therefore high, in fact the highest in the study group. This is a major factor in the high cost of gasoline in this market.

Influence of other markets: This is clearly an isolated market, with little or no influence from other retail gasoline markets. Gaspé is well-removed from any major highway, so that virtually all sales volume represents local demand only.

Price history / Taxation: Gaspé benefited from a special Quebec tax reduction which applies to certain markets in remote areas and within 20 kilometers of the provincial border, in the case, amounting to a reduction of 5.75 cents per litre. Nevertheless, both pump and ex-tax prices in this market were higher than average, a product of high freight costs and gross product margins.

Margin/Throughput relationship (Figure 24)**:** This market had the second-lowest outlet throughput of the study group; a key factor contributing to its 14.17 gross product margin - the highest of the study group. Nevertheless, this margin was only slightly higher than expected for a market with these throughput attributes.

Consolidated net revenue: No data was available for this market. Although operating costs are likely to be low in a small market like Gaspé, ancillary revenues would likely be modest.

Saint John NB

population	# of brands	# of outlets	outlets per 10,000	
74,970	**9**	**56**	**7.47**	
rank 12	rank 11	rank 11	rank* 14	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
2,095,694 litres	**9.79 ¢**	**0.27 ¢**	**9.52 ¢**	**17**
rank 14	rank* 13	rank* 4	rank* 13	

General: As a major refining centre in Atlantic Canada, Saint John presents some unique characteristics for the market study. That a major refinery resides in this market might suggest that these prices should be among the least in the country. In fact, with or without a local refinery, retail pump prices are ultimately a reflection of rack prices, which for Saint John, do not differ markedly from any other rack point in the study group. The only real benefit that a local refinery provides is the modest rack-to-outlet freight cost factor.

Geographic / Supply / Freight cost considerations: Saint John is home to a large regional refiner, and is capable of shipping and receiving wholesale product through marine facilities. Accordingly, it is an established rack point, and therefore, freight costs in this market are low.

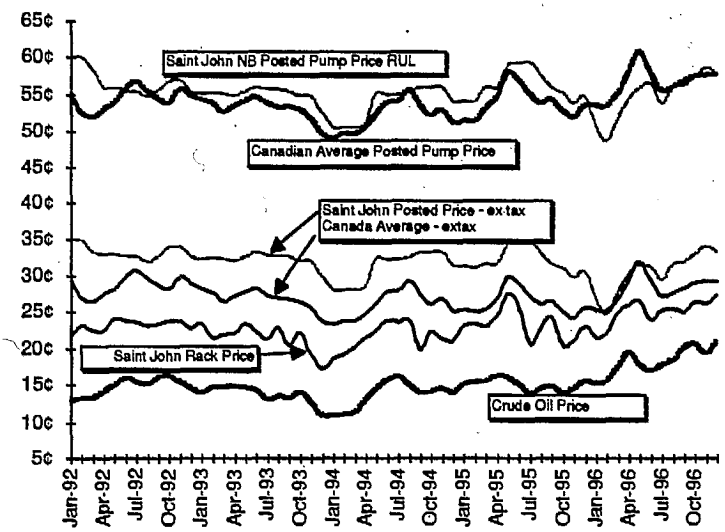
Influence of other markets: Although rack pricing is potentially subject to influence from other Atlantic coast terminals, the Saint John retail market is relatively isolated from other retail markets of any significance.

Price history / Taxation: Historically, posted pump prices in the Saint John market have closely followed the 10-city average. Since provincial taxes are among the lowest in the country, ex-tax prices were relatively high.

Margin/Throughput relationship (Figure 24)**:** Saint John is somewhat over-represented by retail outlets, resulting in lower than expected average outlet throughputs. Average gross product margin was consequently high, reflected in the high ex-tax pump price. Nevertheless, this market fell within the expected range of gross product margins as a function of outlet throughput.

Consolidated net revenue: was average for the study group.

Figure 35: Saint John NB - Price History



Halifax

population	# of brands	# of outlets	outlets per 10,000	
330,845	**9**	**113**	**3.42**	
rank 7	rank 11	rank 7	rank* 5	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
3,058,010 litres	**6.0 ¢**	**0.27 ¢**	**5.73 ¢**	**18**
rank 11	rank* 5	rank* 4	rank* 5	

General: As the largest population centre in Atlantic Canada, Metro Halifax was included in the selected market study.

Geographic / Supply / Freight cost considerations: This market is served by a number of regional refineries, including one situated locally. Its marine port status allows for the potential import of refined product from any one of several refiners on the US east coast or western Europe.

Influence of other markets: The Halifax/Dartmouth market represents a sizable population base, with a commensurate representation of retail outlets. It is relatively isolated from other retail markets of any significance.

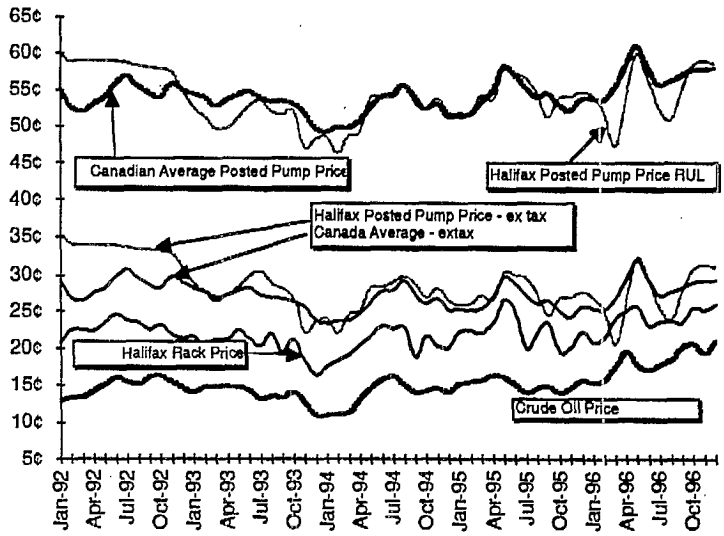
Price history / Taxation: For a number of years until mid-1991, retail pump prices, numbers and types of outlets and pump service (full vs self-serve) were regulated by that province's Public Utilities Board (PUB). This structure was likely responsible for the historically high pump prices that existed in this market until late 1992.

Since then, pump prices have generally fallen to reflect market conditions, and have on occasion, experienced price war activity, most notably in 1996, where at times, prices fell below the posted rack (wholesale) cost.

Margin/Throughput relationship (Figure 24)**:** Halifax exhibited a gross product margin well below that expected for these throughput attributes. While product margin ranked 5th lowest in the study group, outlet throughput was disproportionately low, ranking 11th.

Consolidated net revenue: No data was available for this market.

Figure 36: Halifax - Price History



Charlottetown

population	# of brands	# of outlets	outlets per 10,000	
15,395	**5**	**23**	**14.94**	
rank 15	rank 15	rank 13	rank* 18	
avg outlet volume/yr	95 mktg mrgn	freight	95 prod mrgn	sample size
1,890,648 litres	**11.17 ¢**	**1.14 ¢**	**10.03 ¢**	**4**
rank 17	rank* 14	rank* 14	rank* 14	

General: As PEI is the only province that regulates gasoline prices, Charlottetown was included in the study group to derive some insights into its possible effect on competitiveness.

Geographic / Supply / Freight cost considerations: This market receives marine supply, usually from Halifax, but often from one of several marine terminals in the region, including Saint John, Quebec city or Montreal.

Influence of other markets: Due to its island setting, retail consumers have little opportunity to shop adjacent markets for the lowest-priced gasoline.

Price history / Taxation: Charlottetown has perhaps the consistently highest ex-tax pump price of any urban market in Canada.

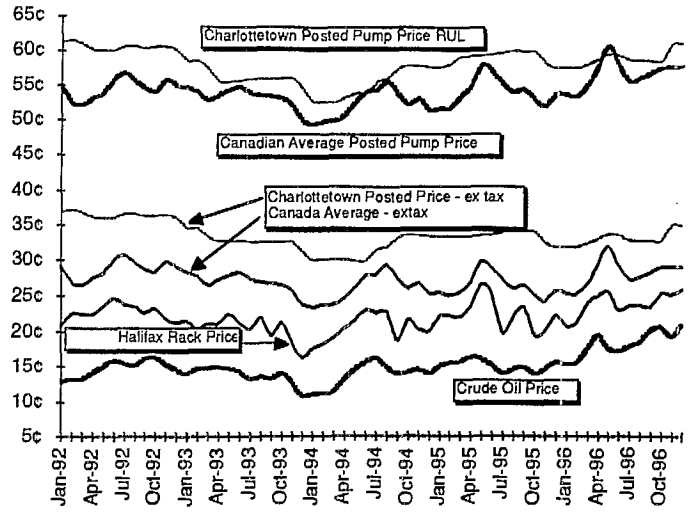
Margin/Throughput relationship (Figure 24)**:** Charlottetown is probably over-represented by retail outlets, resulting in lower than expected average outlet throughputs. Average gross product margin was consequently high, reflected in a high ex-tax pump price, although it was comparable to other markets with similar throughputs.

Consolidated net revenue: No data was available for this market.

It is unlikely that the removal of price regulation would result in pump prices any higher than already exist in this market. Competitive disadvantages which exist in PEI markets are shared with many other non-regulated markets which exhibit a pattern of lower prices. Therefore, there is likely no consumer benefit, and there may be some detriment attached to the PEI regulatory structure, as evidenced by its pricing history and that of Halifax.

Finding 22: Some instances of direct government intervention into petroleum marketing have been shown to have a possible adverse effect on competitiveness, and likely a negative impact on consumers.

Figure 37: Charlottetown - Price History



Part E Findings, Conclusions & Recommendations

This Retail Petroleum Markets study meets the study objectives of:

- providing a sound database for policy direction;
- providing a means to better understand competitive opportunities and challenges;
- assessing the viability and competitiveness of regional markets; and
- determining key competitiveness factors in specific markets.

The study thus provides a tool to understand the dynamics of this vital and complex industry, and a foundation for effective policy development.

Findings

This study presented twenty-two findings which are derived from the pump price model analysis, historical evaluation of pump prices and margins, and specific market analysis:

Conclusions

The study findings lead to a number of conclusions relating to the competitiveness of Canada's petroleum marketing sector.

1. Although an objective measure of competitiveness is elusive, a variety of available data suggests that a state of vigorous competition exists in the Canadian petroleum marketing sector.

The Canadian retail petroleum products industry, by all objective measures available to this study, was shown to be strongly competitive:

- A long-term decline in pump prices, when measured in constant and nominal dollars, was observed (Finding 10). This has not simply been a result of a decline in underlying raw materials costs; the very margins within which this industry operates has, over the long term, exhibited a diminishing trend (Finding 13).
- On a national level, in comparing Canada average (city) pump prices to those of the United States, Canadian prices have been at or below US prices in recent years, when taxes were excluded (Finding 14).
- In comparing several diverse markets, a consistent pattern of competitiveness emerged when comparing product margins to their associated average outlet throughputs (Finding 18).

These findings are likely in sharp contrast to a common public perception of this industry in general and price trends in particular.

Virtually all of the competitiveness indicators examined in this study relate to price. As described in this study however, price is but one of four competitiveness "tools" available to marketers (product, place, and promotions are the other three). Closer examination of these strategic tools might yield additional insights into the nature of competition in this industry sector.

2. The economic relationship of the petroleum marketing sector with its related stakeholders is a complex one.

Critical to the overall success of this study was the development of a model which would create a common frame of reference for the considerable terminology that accompanies an industry as complex as Canada's petroleum sector.

The study presents such a model, which also serves to illustrate the interrelationships between the various stakeholders who ultimately receive the revenue from the sale of a litre of gasoline.

This price/margin model illustrates that the various sector margins are a consequence of the prices at which feedstock or wholesale product is bought and then sold (Finding 1). The contrary notion that a given refiner or marketer is free to establish a price based upon a minimum margin requirement, is mistaken.

Rack and pump prices are determined in competitive marketplaces, each with unique dynamics. The resultant margins, which at times can decline to very low or

even negative values, are thus a reflection of the state of product supply, demand and other competitive factors existing at the time.

In applying such a model to the retail petroleum marketing industry, it is important to understand that, while crude oil markets are considered *global* in scope and rack product markets are considered *regional* in scope, retail petroleum markets are considered *local* (municipal) in scope, since this is the effective range of consumer choice. This implies that the competitive dynamics pertaining to these retail markets can, and do, vary considerably from one population centre to another.

Dealers were shown to have a variety of relationships with their supplier; well over half of all outlets in Canada operate as lessees or independents, and accordingly, the responsibility for deciding upon retail pump prices was shown to reside principally at the local dealer level (Finding 9).

While some markets, particularly smaller ones, experienced higher than average pump prices, when the "outside" factors (tax, rack price and freight cost, for example) were rationalized, the resultant margins were found to display a distinct relationship with average outlet throughputs for each market.

A much more accurate barometer of industry competitiveness would therefore be the rack-to-retail or gross product margin, measured against the average outlet throughput for that market. This would entail the tracking of not only pump price, but also rack prices and outlet performance, an exercise that consumers are unlikely to engage in, but not beyond the reach of any organization wishing to truly understand petroleum competitiveness issues.

3. Taxation is a significant factor in the price of retail gasoline, and in some markets, presents a competitive disadvantage to Canadian marketers.

This study's analysis of NRCan urban regular gasoline prices shows that the tax content in a typical consumer's gasoline purchase is about 50 percent (Finding 4). By contrast, crude costs accounted for roughly 34 percent (Finding 2), refiner margins accounted for 5.3 cents or 9 percent (Finding 5), and product margins accounted for 3.5 cents, or 6 percent (Finding 6) of the 1996 average regular pump price.

Petroleum product taxes are levied at the federal, provincial, and in some markets, municipal levels of government. The latter two can vary considerably from one market to another, and are a predominant cause of inter-regional pump price differences (Finding 16).

The measurement and analysis of the effect of petroleum taxation levels in Canada compared to other countries is well beyond the scope of this study, but given its magnitude, taxation as an element of public policy is an area worthy of additional research.

Due to the localized nature of competition in the retail gasoline marketing sector, taxation differences between Canadian and US markets, or even between Canadian markets with differing tax structures, generally do not serve as competitiveness inhibitors. The demonstrated exception to this is in markets directly adjacent to

nearby US markets, but even in such cases, these markets have managed to sustain a certain level of viability and competitiveness.

Canadians nevertheless enjoy one of the lowest average gasoline taxes in the industrialized world, second only to the United States.

4. Pump price fluctuations can be an indicator of competition in the marketplace.

Demand for gasoline was shown to vary significantly according to the time of year, in a highly distinct, predictable seasonal pattern. Retail pump prices showed a corresponding seasonal pattern, reflecting consumer demand behavior (Finding 15).

This relationship between price and demand was cited as the essence of competitiveness in the petroleum rack marketplace, which in turn is the principal driver of ex-tax pump prices. Viewed from this perspective, fluctuating prices are a strong competitiveness indicator (Finding 7).

Retail pump price changes showed a close relationship to underlying rack prices, which in turn, showed a close relationship to underlying crude prices (Finding 11). Rack prices were shown to not significantly differ between major centres, further suggesting that a strongly competitive environment exists in the refiner sector as well (Finding 3).

While price wars are undoubtedly an indicator of competitiveness, the absence of price war activity does not imply a lack of competitiveness. This study's margin-volume model could detect no difference between price-volatile markets such as Toronto, and more price-stable markets such as Sioux Lookout, on the basis of price fluctuation alone. In fact, Sioux Lookout, a price-stable market, exhibited competitive traits typical of any of the study markets, when examined on the margin-volume model.

5. Retail gasoline marketing revenues, on a per litre basis, constitute a small portion of the retail pump price.

The pump price/margin model shows that in 1996, the Canadian retail marketing sector realized an average gross margin of 3.5 cents per litre on the sale of regular gasoline in a typical major urban market (Finding 6). This margin represents gross revenue (after wholesale product and freight cost) which, incorporated with ancillary revenues and outlet costs, is available to provide for all retail marketing operations including outlet costs, dealer income, supplier costs and profitability.

This consolidated outlet revenue, when distributed these three ways (Finding 20), translates into supplier profits of an estimated one cent per litre of petroleum sales in the case of smaller markets, and a loss in the case of urban markets, which represent the majority of Canada's population base.

While these findings are somewhat qualified in terms of this study's use of posted rack prices as the derivation basis, it can still be concluded that the petroleum marketing sector constitutes a small portion of the total retail pump revenue distribution.

6. Declining refiner and marketing margins, have caused, and have resulted from, intense competitive pressures in the downstream industry in general, and the marketing sector in particular.

Changing conditions in Canada's downstream petroleum sector have caused retail pump prices to remain relatively flat since 1992, despite increases in tax content and crude costs (Finding 12), both of which are beyond the direct influence of Canada's oil companies.

A truly objective barometer of downstream industry influence on retail pump price lies in the measurement of *margin*, not price. Since 1991, the combined downstream (refiner and marketing) margin in Canada decreased by about 7 cents per litre (Finding 13).

This trend has both resulted in, and has been a result of, several competitive strategies, including:

- improving production efficiency through refinery plant rationalizations (closures);
- emphasis on ancillary revenue sources as a means to augment petroleum revenue and offset outlet operating costs;
- improving retail outlet performance through outlet rationalizations (closures) resulting in higher unit throughputs (sales volumes).

Both the downward trend in margins, and the associated industry initiatives which are ongoing in nature, serve as perhaps the most significant indicators of competitiveness in the downstream industry.

7. Industry profitability is extremely sensitive to very small changes in pump price.

Annual residual profits available to petroleum marketers is in the order of perhaps one cent per litre, based upon an assumed posted rack price. Also, these findings clearly show that pump price increases are ultimately linked not to increased profits, but to increases in underlying rack prices, and in turn, crude costs. Thus, pump price signs are particularly ineffective as a barometer of petroleum marketer competitiveness and profitability, despite the predisposition of many observers to use them as such.

While these economics might appear to place this industry in a position of poor viability, the rack price basis used in this study probably understates actual revenues by about 1 to 2 cents per litre. Also, most outlets used in the 19-market study represent major integrated oil companies. It is likely that regional and non-refiner marketers operate with somewhat smaller overhead costs than those used in this study.

Nevertheless, profit margins in this sector can be stated to be in the order of 1 to 2 cents per litre in a "good" year. Indeed, if Canadian average pump prices were only one cent higher than they were in 1995, this industry sector would have realized profits of unprecedented proportions, assuming all other costs were unchanged. Thus, although pump prices in some markets can fluctuate by several cents per litre

in the course of a week, in the long term these fluctuations are likely more reflective of market restorations, not excessive profits.

8. Outlet throughput is a key determinant of inter-market pump price differences.

A wide range of petroleum gross product margins were evident within the 19-market study group, from 3 cents per litre in Toronto to 14 cents per litre in Gaspé.

When these margins were compared to their corresponding outlet throughputs, a distinct pattern emerged: an inverse relationship between retail gross product margin and the average outlet throughput associated with that market (Finding 18). That such a relationship should exist was not surprising, although this study provides comprehensive evidence of this.

Thus, virtually all of the 19 study markets exhibited similar levels of competition. When plotted against the margin-volume model, most markets, regardless of size, had petroleum margins which were commensurate with average outlet throughput for that market. Although some smaller markets appeared to have higher gross product margins than larger markets, poor outlet throughputs were generally the predominant factor.

9. Smaller, isolated markets face particular challenges: although found to be highly competitive, other factors exist which contribute to relatively high margins and prices.

The costs of most consumer goods in smaller, more isolated markets are generally higher than in larger centres, and this study showed that gasoline prices were no exception. While competitiveness in most smaller markets was shown to be as active as in larger centres, average pump prices were relatively high. This was due to three factors:

- **Low average outlet throughputs** The average group B outlet sold approximately 1.5 million fewer litres of gasoline than a group A (major centre) station. This created some economic pressure to sell product at a higher pump price, in order to generate sufficient revenue to cover the outlet's fixed operating costs.
- **High distribution costs** Smaller markets are generally further removed from their source rack point than larger centres, and therefore suffered an additional distribution cost disadvantage of about 2 cents per litre on average (Finding 17).
- **Low ancillary revenues** Outlets in smaller centres received significantly less ancillary revenue than their group A counterparts, likely due to the different geographic and lifestyle differences that exist in small communities compared to major cities.

At first glance, it would seem that if local government in smaller markets were interested in lowering pump prices, the solution would be to encourage some dealers to exit the market, thereby improving petroleum volumes and ancillary revenues at the remaining sites, which should, according to the margin-volume model, reduce pump prices. In suggesting this approach however, there are three points to consider:

- In very small markets, reducing the number of outlets may also reduce the number of competitors, which could actually inhibit competition.
- A full-serve retail gasoline outlet typically employs 3-5 staff. The loss of employment represented by a station closure may be of some concern to smaller communities.
- Some impediments to market exit may exist in the form of petroleum underground storage tank regulations which may present to the operator the option of pumping gas as the better alternative to decommissioning the site and possibly incurring prohibitive remediation costs.

The particular competitiveness and viability issues facing smaller markets is an issue worthy of further study, in order to build upon the findings in this study towards a full understanding of the dynamics at work.

10. Retail ancillary operations are a critical element of petroleum price competition.

Ancillary or non-petroleum revenue is described as an increasingly important feature of the retail gasoline marketing demography (Finding 19). Convenience store, car wash, and the traditional automotive service bay, were cited as examples of ways in which outlet petroleum sales are augmented by other revenues.

As these findings show, the degree of price competition in the retail petroleum has in effect, depressed petroleum revenues below that of outlet operating costs. This competition then, is both the cause and consequence of increased activity in ancillary operations.

Non-petroleum revenues at retail gasoline outlets will continue to gain prominence, as marketers find even more innovative ways to attract market share. This will be driven by the depressed petroleum product margins which currently exist in the petroleum marketing sector, and in turn, will likely preserve a highly competitive petroleum market, characterized by narrow product margins and relatively flat pump prices.

11. Government intervention into petroleum marketing is likely a poor alternative to market-based regulation.

The 19-market study provides some insights into the issue of whether or not regulated retail gasoline markets serve to benefit consumers (Finding 22).

A full analysis of the various features of the Nova Scotia and PEI regulatory structures, and the perceived effect on their markets, is well beyond the scope of this study. The historical record is clear however: since deregulating pump prices, the Halifax market, and likely others in Nova Scotia, has seen a decline in pump prices relative to other Canadian markets. Charlottetown, under the current PEI regulatory structure, does not appear to benefit in consumer terms.

This is not to say that all direct government intervention into marketing practices is certain to produce undesirable results. The federal Competition Bureau for example, is viewed as an agency which exists to the benefit of industry and consumer alike. Also, many national and local environmental regulations exist for good cause, and as such, are an acceptable limitation on pure competition (Finding 8).

This study proposes rather, that where a healthy competitive climate exists, as it does in the Canadian petroleum marketing sector, direct regulatory interventions may have an adverse effect on competitiveness, possibly to the detriment of the consumer.

Recommendations

This study advances two recommendations to enhance the existing competitiveness in Canada's petroleum marketing sector.

1. Improve public understanding and awareness of competition in the petroleum marketing sector.

A recurrent theme arising from this study's conclusions is the likely gap that exists between the demonstrably high level of competition within this industry sector, and the converse image held in much of the public domain. Ways in which this gap can be closed might include:

- **Ongoing third party evaluation of prices, margins and competitiveness factors.** This should be in the form of a quarterly summary of price trends and related measurements, in a simple format designed for consumers and legislators.
- **A regular comprehensive competitiveness evaluation**. This study might be used as the concept basis for a comprehensive annual update of price/margin trends and selected market competitiveness research.
- **Public perception measurement.** Research into the specific competitiveness issues of concern to consumers would provide valuable direction for groups conducting industry competitiveness research.

Would this enhance the competitiveness of this sector? It is felt that better public understanding of this industry's record of competitiveness, and the nature of competitiveness influences, would ultimately be reflected in carefully-considered public policy which serves to truly enhance, not inhibit, petroleum marketing competitiveness.

Individual companies within the retail petroleum industry have been reluctant to speak directly to the issue of gasoline pricing and competitiveness. Organizations such as the Canadian Petroleum Products Institute and the Petroleum Communication Foundation would therefore have an expanded role to play in commissioning and regularly disseminating the results of these recommended initiatives.

2. Develop cooperative industry research into marketing sector competitiveness issues.

Industry and government have an opportunity to continue to work together in cooperative research similar to that which this study represents. This study alludes to several potential study initiatives which go well beyond the objective of public awareness and may assist both the public and private sector policy and strategic directions:

- **Price/Margin Modelling**: Development and adoption of a standard price model and associated terminology by industry/government, along the lines of the model used in this study.
- **Marketing Strategy Effectiveness**: Research into price and non-price marketing strategies and their relative influence on consumer response, using Canadian and foreign selected markets.
- **Regulatory Intervention**: Historical and theoretical research into government regulation of petroleum markets, using Canadian and foreign selected markets.
- **Small Market Competitiveness**: Detailed research into small market outlet economics and competitiveness, and issues/opportunities facing such markets, and in particular, the possible effect of underground storage tank legislation as a potential barrier to market exit and competitiveness inhibitor.
- **Taxation**: An analysis of taxation levels on industry and consumer behavior and as a tool of policy and revenue, using Canadian and foreign selected markets.

* * *

Better understanding of this industry, by industry, consumers, and regulators alike, is vital if Canadians are to put in place the structures that truly meet their social and economic needs.

Lack of understanding of this industry can lead to misguided policies which benefit neither the industry nor the consumer. A better comprehension of the true issues and opportunities facing this industry would be an important step in the right direction towards stable and effective policy.

Appendices

Glossary of Terms

Ancillary service - a service provided in addition to the basic retail petroleum sales operation, such as convenience goods, car wash, service bays, etc..

Dealer - a generic term referring to a retail outlet operator. There are several modes (see below) of dealer operation, such as lessees, independent dealers, and commission dealers.

Distribution Costs - (for the purpose of this study) the cost, generally expressed in cents per litre, of transporting petroleum product from the rack point to the final point of sale, such as a retail gasoline outlet.

Downstream - the segment of the oil industry involved in the refining and/or marketing of petroleum products such as gasoline, diesel, lubricants, etc..

CPPI - Canadian Petroleum Products Institute, an association of petroleum refiners and marketers, which serves as the voice of the petroleum products industry in Canada on environment, health, safety and business issues.

Ex-tax Pump Price - the retail price of gasoline that would be displayed if all product taxes were removed. These product taxes include Excise tax, GST, provincial pump tax, and in some regions, municipal tax levees. The ex-tax pump price is *exclusive* of these taxes, but *inclusive* of any corporate taxes on earnings.

Excise Tax - a federal tax on retail gasoline purchased by domestic (ie: motor vehicle) consumers, currently established at 10¢ per litre, and included in the retail pump price.

Grade Differential - the difference in pump price between a premium or mid-grade of gasoline vs. the regular unleaded pump price.

Independent Petroleum Marketer - a petroleum marketer who is not involved in the refining of petroleum products, and therefore purchases its supply of petroleum product from an outside source, such as a major oil company or regional refiner/marketer.

Integrated Oil Company - a petroleum marketer which is involved in both the upstream and downstream aspects of the oil industry.

Lessee - a particular mode of retail petroleum operation where the outlet operator (dealer) leases the retail outlet from the product supplier, and purchases petroleum products from the same supplier for resale at a pump price determined by the lessee.

Major Oil Company - a petroleum organization involved in both the refining and marketing of petroleum products which has marketing operations in most or all of Canada's provinces.

Margin - the difference which exists between net sales and the cost of merchandise sold and from which expenses are usually met or profit derived. Usually expressed on a per-unit basis, for example, in cents per litre.

Marketer - an organization who sells refined petroleum products to end-use consumers.

Mode - the type of contractual relationship between the supplier and the dealer (outlet operator). In the retail gasoline sector, these can be broadly classified as company operated, commission dealer, lessee, and independent dealer.

PCF - Petroleum Communication Foundation, an association of upstream and downstream oil companies and related organizations, with a non-advocacy mandate to improve public awareness of Canada's petroleum sector.

Rack Price - the wholesale price posted at the rack point.

Rack Point - the point at which title to refined product is transferred from the refiner to the supplier. This may be at a refinery loading terminal, or at one on several loading terminals (usually in major population centres) where petroleum is marketed to non-refiner supplier/marketers at posted rack prices.

Refiner - an organization who, manufactures (from crude oil) a range of petroleum products suitable for consumer use.

Regional Refiner/Marketer - a petroleum organization involved in both the refining and marketing of petroleum products which has marketing operations in a limited number of provinces.

Supplier - within the context of retail gasoline marketing, the supplier has initial title to the petroleum product as it leaves the rack point, is typically also the brand name owner of the chain of gasoline stations to which it supplies refined petroleum products.

Throughput - the volume (ie: in litres) of petroleum sold at a retail outlet in a given period, usually per month or per year.

Transfer Price - the internal price paid by an integrated refiner/marketer to its own refinery for refined petroleum products. Although in theory the transfer price could be set at any arbitrary value, it is usually based on the market-driven rack price.

Upstream - the segment of the oil industry involved in the exploration and/or production of crude oil, the raw material from which petroleum products are manufactured.

Table A: CPI Index: Selected Goods and Services

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
**"All Items" (1)	100	104.4	108.6	114.0	119.5	126.2	128.1	130.4	130.7	133.5
Food	100	104.4	107.2	111.1	115.7	121.2	120.8	122.8	123.3	126.3
Shelter	100	104.4	109.3	115.6	122.1	127.7	130.2	132.0	132.5	134.0
Natural Gas	100	97.8	96.1	91.7	87.0	95.4	99.1	102.9	111.5	104.7
Fuel Oil	100	95.0	97.9	96.8	115.2	124.6	120.0	122.0	120.5	118.8
Telephone	100	97.1	97.1	93.4	92.1	92.5	93.4	93.9	94.1	94.3
Gasoline	100	104.8	103.8	110.3	126.6	124.7	120.2	118.4	117.0	122.4
Auto Repair	100	104.1	108.5	115.1	122.7	132.6	133.3	134.3	135.2	136.1
Alcoholic Beverages	100	105.5	112.8	117.9	124.3	133.8	139.1	141.9	142.3	144.1
Domestic Water	100	100.1	106.9	115.2	125.3	135.6	146.5	155.3	160.4	167.1
Domestic Electricity	100	104.2	108.2	112.6	119.3	136.4	145.3	151.4	152.3	151.7
RUL Annual Price, Nominal (¢/litre) (2)	47.8	50.1	49.2	51.4	58.5	57.2	55.0	53.3	52.2	54.1
RUL Annual Price, 1986 Constant (¢/litre) (3)	47.8	48.0	45.3	45.1	49.0	45.3	42.9	40.9	39.9	40.5
RUL Ex-tax Price, Nominal (¢/litre) (2)	30.2	31.7	29.3	30.1	34.7	32.5	28.7	27.2	26.0	26.3
RUL Ex-tax Price, 1986 Constant (¢/litre) (3)	30.2	30.4	27.0	26.4	29.0	25.8	22.4	20.9	19.9	19.7

Note 1 Price Index data is from Statistics Canada Cat. No. 62-010: Consumer Prices and Price Indexes.

Note 2 Nominal RUL (Regular Unleaded) price and ex-tax price is from Natural Resources Canada, using a weighted (by provincial gasoline demand) 10 city average.

Note 3 Constant dollar RUL gasoline values were derived by applying the "All Item" CPI to the nominal price for that year.

Table B: Key Price / Margin History - Regular Gasoline

RUL Canada Avg	Pump	ex-tax Pump	Rack 10 city Avg	Crude Price Edmonton	Tax Content	Down-stream Margin	Gross Marketing Margin	Gross Refiner Margin
Jan-90	53.9	30.4		16.0	23.5	14.4		
Feb-90	53.9	30.4		16.3	23.5	14.1		
Mar-90	55.3	31.7		15.0	23.6	16.7		
Apr-90	56.4	32.7		13.3	23.7	19.5		
May-90	56.8	33.0		13.2	23.8	19.8		
Jun-90	57.3	33.5		11.9	23.8	21.6		
Jul-90	57.4	33.4		12.7	24.0	20.7		
Aug-90	57.4	33.4		18.9	24.0	14.5		
Sep-90	58.7	34.7		23.8	24.0	10.9		
Oct-90	63.3	39.3		25.6	24.0	13.7		
Nov-90	66.2	42.2		23.1	24.0	19.1		
Dec-90	65.2	41.1		19.1	24.1	22.0		
Jan-91	63.9	39.7	35.7	17.3	24.2	22.4	4.0	18.4
Feb-91	58.3	34.5	29.2	14.2	23.8	20.3	5.3	15.0
Mar-91	54.3	30.8	26.5	13.7	23.5	17.1	4.3	12.8
Apr-91	54.3	30.4	25.4	14.4	23.9	16.0	5.0	11.1
May-91	56.5	31.5	24.2	14.6	25.0	16.9	7.3	9.5
Jun-91	56.5	31.5	24.7	13.8	25.0	17.7	6.8	10.9
Jul-91	57.7	32.8	24.3	14.7	24.9	18.1	8.5	9.6
Aug-91	58.3	33.4	24.6	14.8	24.9	18.6	8.8	9.8
Sep-91	58.2	32.9	24.4	14.8	25.3	18.1	8.5	9.6
Oct-91	56.9	31.7	24.0	15.7	25.2	16.0	7.7	8.3
Nov-91	56.9	31.7	24.2	15.2	25.2	16.5	7.5	9.0
Dec-91	54.4	29.4	23.3	13.3	25.0	16.1	6.1	10.0
Jan-92	55.1	29.2	22.2	12.8	25.9	16.4	7.0	9.4
Feb-92	52.6	26.9	22.2	13.2	25.7	13.7	4.7	9.0
Mar-92	52.1	26.5	21.9	13.2	25.6	13.3	4.6	8.7
Apr-92	53.1	27.5	22.3	14.2	25.6	13.3	5.2	8.1
May-92	53.9	28.1	22.9	15.0	25.8	13.1	5.2	7.9
Jun-92	55.9	29.9	23.9	16.0	26.0	13.9	6.0	7.9
Jul-92	56.8	30.7	23.1	15.5	26.1	15.2	7.6	7.6
Aug-92	55.5	29.6	23.1	15.2	25.9	14.4	6.5	7.9
Sep-92	54.6	28.7	23.1	16.2	25.9	12.5	5.6	6.9
Oct-92	54.0	28.2	23.5	16.3	25.8	11.9	4.7	7.2
Nov-92	55.8	29.8	22.6	15.4	26.0	14.4	7.2	7.2
Dec-92	55.0	29.0	21.8	14.5	26.0	14.5	7.2	7.2
Jan-93	54.6	28.2	21.9	14.0	26.4	14.2	6.3	7.9
Feb-93	54.0	27.6	21.4	14.7	26.4	12.9	6.2	6.7
Mar-93	52.8	26.6	21.8	14.8	26.3	11.7	4.7	7.0
Apr-93	53.6	27.2	22.3	14.8	26.4	12.4	4.9	7.4
May-93	54.3	27.8	23.1	14.7	26.5	13.1	4.7	8.4
Jun-93	54.8	28.2	22.1	14.3	26.6	13.9	6.1	7.9
Jul-93	53.9	27.3	21.4	13.2	26.6	14.1	5.9	8.2
Aug-93	53.4	26.9	22.0	13.6	26.5	13.3	4.9	8.5
Sep-93	53.5	26.8	20.7	13.3	26.7	13.5	6.1	7.4

RUL Canada Avg	Pump	ex-tax Pump	Rack 10 city Avg	Crude Price Edmonton	Tax Content	Down-stream Margin	Gross Marketing Margin	Gross Refiner Margin
Oct-93	53.1	26.4	21.9	14.0	26.7	12.4	4.5	7.9
Nov-93	51.9	25.6	19.1	12.6	26.3	13.0	6.5	6.4
Dec-93	49.8	23.8	16.9	10.9	26.0	12.9	6.9	6.0
Jan-94	49.2	23.3	17.7	11.0	25.9	12.3	5.6	6.7
Feb-94	49.9	23.8	18.5	11.1	26.1	12.7	5.3	7.4
Mar-94	49.8	23.7	19.2	11.5	26.1	12.2	4.5	7.7
Apr-94	50.8	24.7	20.4	13.2	26.1	11.5	4.3	7.2
May-94	52.5	26.2	21.9	14.6	26.3	11.6	4.3	7.3
Jun-94	54.1	27.8	23.2	15.7	26.3	12.1	4.6	7.5
Jul-94	54.3	27.9	23.5	16.2	26.4	11.7	4.4	7.3
Aug-94	55.7	29.3	23.8	15.0	26.4	14.3	5.5	8.8
Sep-94	53.7	27.4	20.5	14.0	26.3	13.4	6.9	6.5
Oct-94	52.3	26.0	21.6	14.1	26.3	11.9	4.4	7.4
Nov-94	53.1	26.8	20.6	14.7	26.3	12.1	6.2	6.0
Dec-94	51.4	25.2	20.1	14.1	26.2	11.1	5.1	6.1
Jan-95	51.7	25.4	21.5	15.1	26.3	10.3	3.9	6.4
Feb-95	51.6	25.0	21.5	15.5	26.6	9.5	3.5	6.1
Mar-95	53.3	25.4	21.7	15.6	27.9	9.8	3.7	6.2
Apr-95	54.9	26.9	23.7	16.4	28.0	10.5	3.2	7.3
May-95	58.1	29.8	25.4	16.1	28.3	13.7	4.4	9.3
Jun-95	57.1	28.9	24.2	15.2	28.2	13.7	4.7	9.0
Jul-95	55.2	27.2	20.4	14.1	26.0	13.1	6.8	6.3
Aug-95	54.0	26.0	21.8	14.5	28.0	11.5	4.2	7.2
Sep-95	54.5	26.5	22.5	14.9	26.0	11.6	4.0	7.7
Oct-95	53.0	25.1	19.5	14.1	27.9	11.0	5.6	5.5
Nov-95	52.0	24.2	20.3	14.6	27.8	9.6	3.9	5.7
Dec-95	53.7	25.7	21.1	15.7	28.0	10.0	4.6	5.5
Jan-96	53.7	25.3	20.6	15.4	28.4	9.9	4.7	5.3
Feb-96	53.5	25.2	21.7	15.6	28.3	9.6	3.5	6.1
Mar-96	55.3	26.8	24.3	17.6	28.5	9.2	2.5	6.7
Apr-96	58.1	29.4	26.3	19.5	28.7	9.9	3.1	6.7
May-96	61.0	32.0	26.0	17.8	29.0	14.2	6.0	8.2
Jun-96	57.9	29.3	24.2	17.1	28.6	12.2	5.1	7.1

source: Natural Resources Canada

Table C: Canadian Supply, Inventory, Demand, and Pump/Rack Prices

	Net Canadian Supply: Gasoline Production (M3)	Closing Canada Inventory (M3)	Canadian Domestic Gasoline Sales (M3)	Canadian Retail Gasoline Sales (M3)	Canada Avg ex tax RUL pump price (¢/l)	Canada Avg RUL Rack Price (¢/l)
Jan-91	2,958,429	3,876,979	2,516,322	2,202,299	39.7	35.7
Feb-91	2,636,612	3,976,469	2,316,366	2,030,415	34.5	29.2
Mar-91	3,067,168	4,045,179	2,427,297	2,122,298	30.8	26.5
Apr-91	2,822,313	3,710,133	2,729,287	2,389,633	30.4	25.4
May-91	2,887,322	3,254,677	2,930,802	2,565,269	31.5	24.2
Jun-91	3,120,114	3,369,693	2,781,544	2,437,752	31.5	24.7
Jul-91	3,379,886	3,354,323	3,140,510	2,735,485	32.8	24.3
Aug-91	3,180,968	3,101,270	3,089,180	2,688,026	33.4	24.6
Sep-91	3,218,804	3,321,056	2,773,112	2,409,152	32.9	24.4
Oct-91	3,075,188	3,286,613	2,840,673	2,477,703	31.7	24.0
Nov-91	3,025,255	3,294,765	2,622,254	2,291,733	31.7	24.2
Dec-91	3,141,720	3,287,637	2,767,029	2,422,279	29.4	23.3
Jan-92	3,201,281	3,558,827	2,556,932	2,254,370	29.2	22.2
Feb-92	2,966,589	3,654,311	2,430,499	2,141,884	26.9	22.2
Mar-92	3,345,625	3,894,235	2,647,572	2,333,859	26.5	21.9
Apr-92	2,830,709	3,785,644	2,641,853	2,346,020	27.5	22.3
May-92	2,716,046	3,377,450	2,775,381	2,462,242	28.1	22.9
Jun-92	2,725,782	2,837,627	2,952,461	2,626,592	29.9	23.9
Jul-92	3,283,628	2,995,813	3,083,967	2,739,429	30.7	23.1
Aug-92	3,085,490	2,904,097	2,970,651	2,636,599	29.6	23.1
Sep-92	3,022,182	2,633,095	2,890,331	2,565,325	28.7	23.1
Oct-92	3,070,047	2,609,941	2,808,878	2,480,287	28.2	23.5
Nov-92	3,108,329	2,801,044	2,672,604	2,361,457	29.8	22.6
Dec-92	3,102,580	2,714,232	2,844,101	2,508,246	29.0	21.8
Jan-93	3,301,479	3,220,931	2,441,322	2,164,564	28.2	21.9
Feb-93	2,897,051	3,251,130	2,458,335	2,181,315	27.6	21.4
Mar-93	3,245,416	3,300,771	2,748,027	2,439,502	26.5	21.8
Apr-93	2,853,646	3,209,301	2,671,443	2,378,073	27.2	22.3
May-93	2,938,176	2,883,256	2,810,748	2,496,268	27.8	23.1
Jun-93	3,002,193	2,732,709	2,998,180	2,669,035	28.2	22.1
Jul-93	3,192,933	2,501,864	3,113,160	2,767,285	27.3	21.4
Aug-93	3,301,897	2,630,045	3,151,130	2,798,199	26.9	22.0
Sep-93	3,003,682	2,465,664	3,019,619	2,682,324	26.8	20.7
Oct-93	3,161,874	2,600,191	2,801,037	2,476,176	26.4	21.9
Nov-93	3,132,889	2,799,456	2,843,779	2,518,979	25.6	19.1
Dec-93	3,131,141	2,900,969	2,960,833	2,621,011	23.8	16.9
Jan-94	3,206,000	2,970,509	2,642,521	2,373,897	23.3	17.7
Feb-94	3,081,935	3,039,015	2,587,871	2,326,412	23.8	18.5
Mar-94	3,437,216	3,262,070	2,818,122	2,532,839	23.7	19.2
Apr-94	3,142,369	3,473,338	2,666,475	2,411,743	24.7	20.4
May-94	2,831,047	3,281,804	2,973,930	2,687,841	26.2	21.9
Jun-94	2,823,202	2,865,869	3,095,193	2,796,615	27.8	23.2
Jul-94	3,263,620	2,873,403	3,250,970	2,893,667	27.9	23.5
Aug-94	3,299,853	2,744,661	3,295,880	2,934,661	29.3	23.8

	Net Canadian Supply: Production (M3)	Closing Gasoline Canada Inventory (M3)	Canadian Domestic Gasoline Sales (M3)	Canadian Retail Gasoline Sales (M3)	Canada Avg ex tax RUL pump price (¢/l)	Canada Avg RUL Rack Price (¢/l)
Sep-94	3,182,984	2,679,264	3,048,005	2,717,205	27.4	20.5
Oct-94	3,097,644	2,692,799	2,906,317	2,606,714	26.0	21.6
Nov-94	3,195,112	2,904,386	2,825,346	2,537,222	26.8	20.6
Dec-94	3,469,244	3,165,703	2,889,638	2,593,214	25.2	20.1
Jan-95	3,336,871	3,539,928	2,649,669	2,382,442	25.4	21.7
Feb-95	3,204,994	3,607,791	2,658,338	2,390,141	25.0	21.7
Mar-95	3,376,597	3,863,386	2,797,480	2,519,505	25.4	22.0
Apr-95	2,961,940	3,881,648	2,614,006	2,363,198	26.9	24.0
May-95	2,806,516	3,970,753	3,068,414	2,773,997	29.8	25.8
Jun-95	3,198,566	3,148,656	3,077,294	2,785,675	28.9	24.4
Jul-95	3,483,037	3,250,344	3,123,660	2,796,919	27.2	20.8
Aug-95	3,315,999	3,082,130	3,324,467	2,977,415	26.0	21.9
Sep-95	3,184,601	3,179,320	2,965,055	2,649,324	26.5	22.7
Oct-95	3,149,830	3,198,936	2,986,840	2,671,521	25.1	19.8
Nov-95	3,261,170	3,074,617	2,857,264	2,555,864	24.2	20.5
Dec-95	3,426,155	2,970,667	2,930,170	2,620,219	25.7	21.5

source: Statistics Canada (production, demand, inventory) / Natural Resources Canada (price)

Table D: Pump Price History - Study Markets

RUL Pump	Victoria	Vancouver	White Rock	Calgary	Nanton	Peace River	Regina	Winnipeg	Thompson	Sioux Lookout
Jan-92	54.5	53.8		45.2			49.1	49.4	59.5	62.0
Feb-92	53.5	52.3		43.9			44.3	46.1	57.5	62.2
Mar-92	50.7	52.4		45.9			42.8	44.6	57.5	62.2
Apr-92	50.3	52.1		44.4			41.6	46.5	57.5	62.2
May-92	52.2	49.6		46.6			52.2	46.8	57.5	62.2
Jun-92	50.0	53.8		48.2			46.9	50.7	57.5	62.2
Jul-92	54.5	56.6		51.2			51.0	53.9	58.5	62.2
Aug-92	53.7	55.3		47.2			48.7	53.9	58.5	62.2
Sep-92	45.5	52.8		46.0			45.9	51.5	58.5	62.2
Oct-92	51.5	54.6		44.9			53.7	51.6	58.5	62.2
Nov-92	52.9	54.9		47.9			53.9	53.9	58.5	62.6
Dec-92	53.1	55.3		44.9			55.5	53.9	58.5	62.7
Jan-93	53.9	55.7		47.9			55.8	53.9	58.5	62.7
Feb-93	52.8	54.9		46.6			52.4	53.2	58.5	62.7
Mar-93	51.2	53.3		44.0			48.6	51.9	58.5	63.3
Apr-93	50.3	54.4		46.8			54.7	52.7	59.0	62.2
May-93	50.6	53.7		47.6			53.7	52.9	59.5	61.9
Jun-93	51.7	54.4		47.6			51.5	52.9	59.5	62.0
Jul-93	48.2	55.4		47.5			53.6	52.9	59.5	62.0
Aug-93	50.4	55.4		47.5			53.9	52.1	59.5	61.9
Sep-93	52.6	56.4		47.2			53.9	50.9	59.5	61.9
Oct-93	50.4	56.4		46.5			54.4	50.4	59.5	61.9
Nov-93	50.5	53.9		45.7			53.5	49.9	59.5	61.9
Dec-93	49.2	51.1		44.1			54.9	49.9	59.5	61.9
Jan-94	48.7	50.5	50.3	43.1			53.4	49.3	59.5	61.9
Feb-94	48.5	51.0	51.5	41.0			52.9	49.1	57.5	61.5
Mar-94	47.5	52.0	52.4	39.8			52.9	49.1	57.5	61.4
Apr-94	51.3	52.1	52.3	45.6			53.4	49.5	57.5	61.4
May-94	52.9	55.6	55.9	46.8			55.1	51.1	57.5	61.4
Jun-94	51.3	56.7	56.9	48.9			56.9	52.9	57.5	61.4
Jul-94	54.7	57.5	58.2	49.2			56.9	54.9	58.5	63.2
Aug-94	52.7	58.4	58.9	51.3			58.8	55.8	58.5	63.9
Sep-94	51.6	56.2	56.5	52.6			59.4	55.7	60.5	63.9
Oct-94	55.9	57.9	57.4	49.6			57.2	54.9	60.5	62.9
Nov-94	55.8	57.4	57.8	48.9			56.2	54.4	60.5	64.9
Dec-94	52.8	56.8	56.8	47.8			54.9	52.9	60.5	64.9
Jan-95	49.6	56.1	56.2	47.3	49.8	56.9	54.9	52.8	60.5	64.9
Feb-95	50.7	55.5	55.0	48.3	48.4	56.9	56.8	53.2	60.5	64.9
Mar-95	51.1	57.2	57.4	49.3	47.6	56.9	57.0	54.2	62.0	64.8
Apr-95	55.4	59.0	59.1	50.4	48.4	56.0	58.1	54.4	62.0	64.7
May-95	56.5	59.8	59.9	54.1	54.9	55.4	60.3	58.4	61.6	65.2
Jun-95	55.8	59.6	59.9	52.8	53.0	55.4	59.6	56.9	61.0	65.2
Jul-95	56.6	59.6	59.9	50.8	50.3	55.4	58.9	56.5	61.0	65.4
Aug-95	56.5	58.4	57.9	48.8	48.4	54.9	58.9	54.8	61.0	65.7
Sep-95	56.5	58.5	58.9	48.9	46.6	54.9	56.9	53.8	61.0	65.7
Oct-95	56.5	57.7	58.8	48.7	47.9	54.9	56.1	53.8	61.0	65.7
Nov-95	56.5	57.5	57.9	46.5	47.8	54.9	53.4	52.8	61.3	65.7
Dec-95	56.5	56.7	56.7	45.2	44.3	54.9	55.4	52.8	61.0	65.7

Table D: Pump Price History - Study Markets (cont'd)

RUL Pump	SS Marie	Toronto	Ottawa	Montreal	Chicoutimi	Gaspe	Saint John	Halifax	Charlottetown	Canada Avg
Jan-92	52.3	52.9	58.2	63.2			60.0	60.0	61.2	55.1
Feb-92	56.1	50.8	57.2	59.5			60.1	58.9	61.5	52.6
Mar-92	53.4	50.6	56.6	57.6	56.5		58.3	59.0	61.0	52.1
Apr-92	51.0	51.4	56.8	61.1			56.0	59.0	60.2	53.1
May-92	50.0	53.2	57.2	61.2			56.0	59.0	60.0	53.9
Jun-92	54.2	55.9	58.6	61.8	67.2		55.6	59.0	60.0	55.9
Jul-92	55.4	55.5	58.3	61.6			55.5	58.7	60.6	56.8
Aug-92	54.9	54.1	58.5	61.1			54.9	58.3	60.6	55.5
Sep-92	54.9	54.1	57.8	60.5	57.2		55.7	58.1	60.4	54.6
Oct-92	55.1	51.9	56.7	59.5			56.9	57.9	60.6	54.0
Nov-92	54.3	55.3	56.5	60.2	57.2		57.0	57.4	60.7	55.8
Dec-92	55.6	53.5	56.1	60.6	57.2		55.6	54.8	60.1	55.0
Jan-93	55.6	52.5	55.5	59.4	57.2		55.3	52.6	58.6	54.6
Feb-93	55.6	53.2	54.7	58.1	57.2		55.4	51.4	58.6	54.0
Mar-93	55.3	51.4	54.7	58.5	57.2		55.3	49.7	57.3	52.8
Apr-93	54.9	52.2	54.4	58.0	56.6		55.0	49.8	55.5	53.6
May-93	55.2	53.2	54.8	59.2	54.8		55.5	51.2	55.5	54.3
Jun-93	54.7	52.5	55.8	61.4	54.2		56.2	52.8	55.7	54.8
Jul-93	54.6	51.2	54.8	58.7	55.4		55.8	53.7	56.0	53.9
Aug-93	54.3	51.5	54.0	57.1	55.0		55.8	52.0	56.0	53.4
Sep-93	54.4	51.8	55.5	57.3	57.2		55.6	51.6	56.0	53.5
Oct-93	54.4	51.2	54.2	56.8	57.2		55.0	52.2	56.0	53.1
Nov-93	54.4	49.8	52.4	56.3			55.0	47.2	56.0	51.9
Dec-93	54.1	47.7	49.7	53.8			52.6	48.3	54.5	49.8
Jan-94	52.6	47.1	49.0	52.7	49.4	63.5	50.6	48.6	52.7	49.2
Feb-94	52.6	49.0	50.2	54.1	45.7	63.5	50.6	46.3	52.7	49.9
Mar-94	52.6	48.7	50.0	53.4	44.1	63.5	50.6	48.7	52.6	49.8
Apr-94	53.1	48.7	52.3	54.5	48.4	63.5	51.3	49.2	53.3	50.8
May-94	54.2	50.3	52.6	55.0	50.4	61.8	55.2	53.9	53.9	52.5
Jun-94	56.6	52.8	54.6	56.2	53.8	60.9	55.1	53.9	53.9	54.1
Jul-94	56.7	52.2	54.8	56.4	54.3	60.9	55.1	54.7	55.6	54.3
Aug-94	58.4	52.9	55.6	58.9	55.9	61.5	55.5	55.5	56.1	55.7
Sep-94	58.3	49.2	53.0	56.0	56.1	61.9	56.2	54.4	57.5	53.7
Oct-94	56.9	49.8	50.8	51.5	55.9	61.9	56.2	52.4	57.9	52.3
Nov-94	56.9	50.0	53.5	54.6	55.9	62.3	56.2	53.8	57.9	53.1
Dec-94	57.0	47.9	51.6	52.3	55.9	62.3	54.3	51.9	57.7	51.4
Jan-95	57.1	49.8	52.4	53.6	55.9	61.9	54.2	51.2	57.7	51.7
Feb-95	57.1	49.4	53.3	52.5	55.9	61.9	54.3	51.7	58.1	51.6
Mar-95	58.4	51.0	54.1	55.7	57.5	63.6	56.1	54.3	59.2	53.3
Apr-95	58.7	53.7	56.0	56.8	57.6	63.6	56.1	53.6	59.3	54.9
May-95	59.9	57.5	57.4	59.3	58.1	63.6	59.1	57.7	59.4	58.1
Jun-95	61.5	55.5	57.3	59.7	58.8	63.5	59.3	57.3	59.6	57.1
Jul-95	61.5	52.7	54.6	57.5	61.2	64.9	59.5	56.6	59.9	55.2
Aug-95	60.2	51.5	53.3	56.5	61.1	64.9	57.7	54.6	60.2	54.0
Sep-95	58.8	53.3	54.7	57.7	61.1	64.9	56.1	51.2	60.1	54.5
Oct-95	57.4	51.0	52.3	54.4	61.0	64.7	55.4	53.9	60.0	53.0
Nov-95	57.2	49.9	49.4	54.5	57.1	64.5	54.0	53.9	58.2	52.0
Dec-95	57.1	52.5	52.2	59.2	56.8	64.5	54.8	54.7	57.6	53.7

Table E: Ex-tax Pump Price History - Study Markets

RUL Extax	Victoria extax	Vancouver ex tax	Calgary extax	Edmonton extax	Regina extax	Winnipeg extax	Toronto extax
Jan-92	32.4	29.0	24.7	27.9	27.4	27.1	26.3
Feb-92	31.5	27.6	23.5	20.4	22.9	24.1	24.3
Mar-92	28.9	27.7	25.4	24.5	21.5	22.7	24.1
Apr-92	28.5	27.2	24.0	23.9	20.4	24.4	24.8
May-92	30.3	24.9	26.0	25.9	28.0	24.7	26.5
Jun-92	28.2	28.8	27.6	29.1	22.3	28.4	29.1
Jul-92	32.4	31.4	30.3	30.1	26.2	31.4	28.6
Aug-92	31.7	30.2	26.7	28.0	24.0	31.4	27.3
Sep-92	24.0	27.9	25.5	27.4	21.4	29.2	27.4
Oct-92	29.6	29.5	24.5	26.6	28.7	29.3	25.3
Nov-92	30.9	29.8	27.2	28.7	28.9	31.4	28.5
Dec-92	31.1	30.1	24.4	28.7	30.4	31.4	26.8
Jan-93	31.9	30.5	27.3	27.9	30.6	31.4	25.9
Feb-93	30.8	29.8	26.1	24.1	27.4	30.7	26.5
Mar-93	29.4	28.2	23.6	25.0	23.1	29.5	24.9
Apr-93	28.5	29.3	26.2	25.2	27.6	29.4	25.5
May-93	28.8	28.6	27.0	25.2	26.7	29.4	26.5
Jun-93	29.8	29.3	27.0	27.0	24.6	29.4	25.8
Jul-93	26.5	29.3	26.9	25.6	26.8	29.4	24.6
Aug-93	28.6	29.3	26.9	25.0	26.9	28.7	24.9
Sep-93	30.7	29.2	26.6	24.7	26.9	27.6	25.2
Oct-93	28.6	29.2	26.0	24.5	27.4	27.1	24.6
Nov-93	28.7	26.8	25.2	23.3	26.5	26.6	23.3
Dec-93	27.5	24.3	23.8	21.8	27.8	26.6	21.4
Jan-94	26.0	23.6	22.8	21.6	26.4	26.1	20.8
Feb-94	25.8	24.1	20.8	20.0	25.9	25.9	22.6
Mar-94	24.9	25.1	19.7	21.2	25.9	25.9	22.4
Apr-94	28.4	25.1	25.1	23.8	26.4	26.2	22.3
May-94	29.9	28.7	26.3	24.4	28.0	27.7	23.8
Jun-94	28.4	29.5	28.2	28.3	29.7	29.4	26.1
Jul-94	31.6	30.2	28.5	26.9	29.7	31.3	25.6
Aug-94	29.8	31.1	30.5	28.1	31.5	32.2	26.2
Sep-94	28.7	29.0	31.7	27.0	32.0	32.0	22.8
Oct-94	32.7	30.6	28.9	23.3	29.9	31.3	23.4
Nov-94	32.6	30.1	28.2	21.3	29.0	30.8	23.6
Dec-94	29.8	29.6	27.2	25.4	27.8	29.4	21.6
Jan-95	26.9	29.0	26.7	24.8	27.8	29.3	23.4
Feb-95	27.9	27.9	27.3	24.6	29.2	29.3	22.6
Mar-95	26.8	28.4	27.1	25.3	28.3	29.2	23.0
Apr-95	29.3	30.2	28.1	26.3	29.3	29.3	25.5
May-95	30.3	30.9	31.6	29.4	31.4	33.1	29.1
Jun-95	29.6	30.7	30.4	27.4	30.6	31.7	27.2
Jul-95	30.4	30.7	28.5	26.7	30.0	31.3	24.5
Aug-95	30.3	29.6	26.6	23.9	30.0	29.7	23.4
Sep-95	30.3	29.6	26.7	22.9	28.2	28.6	25.1
Oct-95	30.3	28.9	26.5	24.4	27.4	28.8	23.0
Nov-95	30.3	28.7	24.5	23.9	24.9	27.8	21.9
Dec-95	30.3	28.0	23.3	23.0	26.7	27.8	24.4

Table E: Ex-tax Pump Price History - Study Markets (cont'd)

RUL extax	Ottawa extax	Montreal extax	Quebec extax	Saint John extax	Halifax extax	Charlotte-town extax	Canada Avg extax
Jan-92	31.2	31.7	32.3	34.9	35.3	36.9	29.2
Feb-92	30.3	28.5	30.0	35.0	34.2	37.2	26.9
Mar-92	29.7	26.6	26.3	33.3	34.0	36.8	26.5
Apr-92	29.9	29.9	29.8	33.1	34.0	36.2	27.5
May-92	30.3	29.9	30.3	33.1	34.0	36.0	28.1
Jun-92	31.6	30.5	31.1	32.7	34.1	36.0	29.9
Jul-92	31.3	30.3	31.0	32.7	33.8	36.6	30.7
Aug-92	31.5	29.9	30.8	32.0	33.5	36.6	29.6
Sep-92	30.8	29.3	30.1	32.8	33.5	36.4	28.7
Oct-92	29.8	28.5	28.8	34.0	33.3	36.4	28.2
Nov-92	29.6	29.1	29.0	34.0	32.9	36.5	29.8
Dec-92	29.2	29.5	28.4	32.7	30.9	36.0	29.0
Jan-93	28.7	28.4	28.3	32.5	28.9	34.6	28.2
Feb-93	27.9	27.2	26.8	32.6	27.8	34.6	27.6
Mar-93	27.9	27.6	27.6	32.5	27.1	33.4	26.5
Apr-93	27.6	27.2	27.6	32.2	27.2	32.7	27.2
May-93	28.0	28.2	28.1	32.7	28.4	32.7	27.8
Jun-93	29.0	30.2	30.0	33.3	29.8	32.7	28.2
Jul-93	28.0	27.8	29.5	32.9	30.6	32.6	27.3
Aug-93	27.3	26.4	28.6	32.9	28.9	32.6	26.9
Sep-93	28.7	26.6	28.2	32.7	28.2	32.6	26.8
Oct-93	27.5	26.1	27.7	32.2	26.8	32.6	26.4
Nov-93	25.8	25.7	27.5	32.2	22.1	32.6	25.6
Dec-93	23.2	23.2	25.6	29.9	23.8	31.2	23.8
Jan-94	22.6	22.7	24.4	28.1	24.1	30.1	23.3
Feb-94	23.7	23.8	25.2	28.1	22.0	30.1	23.8
Mar-94	23.5	23.2	25.3	28.1	24.8	30.0	23.7
Apr-94	25.7	24.1	25.8	28.8	25.2	30.0	24.7
May-94	25.9	24.8	26.7	32.4	28.4	29.9	26.2
Jun-94	27.8	25.6	28.2	32.3	28.4	29.9	27.8
Jul-94	28.0	25.8	28.8	32.3	29.1	31.4	27.9
Aug-94	28.7	28.0	30.1	32.6	29.9	31.9	29.3
Sep-94	26.3	25.4	23.7	33.3	28.8	33.2	27.4
Oct-94	24.2	21.5	24.3	33.3	27.0	33.6	26.0
Nov-94	26.8	24.2	26.7	33.3	28.3	33.5	26.8
Dec-94	25.0	22.2	24.4	31.6	26.5	33.4	25.2
Jan-95	25.7	23.3	24.9	31.5	25.9	33.4	25.4
Feb-95	26.3	22.0	24.6	31.2	26.0	33.4	25.0
Mar-95	25.8	23.7	25.7	31.7	27.3	33.3	25.4
Apr-95	27.6	24.6	26.5	31.7	26.6	33.4	26.9
May-95	28.9	26.9	26.8	34.5	30.4	33.5	29.8
Jun-95	28.9	27.2	27.5	34.7	30.1	33.7	28.9
Jul-95	26.3	25.2	25.7	34.9	29.5	34.0	27.2
Aug-95	25.1	24.4	22.8	33.2	27.5	34.3	26.0
Sep-95	26.4	25.4	24.3	31.7	24.4	34.2	26.6
Oct-95	24.2	22.6	25.0	31.1	26.9	34.1	25.1
Nov-95	21.5	22.7	23.8	29.8	26.9	32.4	24.2
Dec-95	24.1	26.7	26.2	30.5	27.6	31.8	25.7

Table F: Rack Prices - Study Markets

RUL Rack	Saint John NB rack	Halifax rack	Quebec city rack	Montreal rack	Toronto rack	Ottawa rack	Thunder Bay rack
Jan-92	21.6	20.7	19.8	19.6	19.9	20.7	
Feb-92	23.1	22.4	22.4	22.2	21.3	22.3	
Mar-92	22.5	22.4	23.0	22.8	21.4	23.1	
Apr-92	22.5	22.3	23.1	22.8	22.0	22.7	
May-92	24.1	23.5	22.7	22.5	22.8	22.8	
Jun-92	23.8	24.6	23.2	23.1	24.4	23.4	
Jul-92	23.6	23.7	21.4	21.2	23.2	21.5	
Aug-92	23.0	23.5	21.7	21.5	23.3	22.1	
Sep-92	23.3	22.5	21.5	21.3	23.2	22.0	
Oct-92	23.8	23.2	22.1	21.9	23.9	22.4	
Nov-92	23.7	21.8	21.1	20.9	23.1	21.6	
Dec-92	22.8	21.2	20.8	20.8	21.9	21.2	
Jan-93	23.5	21.6	20.7	20.5	21.4	20.8	
Feb-93	21.4	20.2	20.1	20.0	21.1	20.7	
Mar-93	21.8	21.1	20.8	20.7	21.5	21.3	
Apr-93	22.2	21.1	20.7	20.7	22.5	21.4	
May-93	23.4	22.4	21.8	21.7	23.6	22.4	
Jun-93	22.3	21.2	20.5	20.5	21.8	21.2	23.8
Jul-93	21.3	20.3	19.7	19.7	20.9	20.4	22.4
Aug-93	22.8	22.0	20.1	20.1	21.8	20.8	23.3
Sep-93	20.4	19.4	18.2	18.3	20.1	18.9	22.1
Oct-93	22.2	21.2	20.0	20.0	21.7	20.4	23.9
Nov-93	19.2	18.2	17.3	17.3	19.1	18.5	20.4
Dec-93	17.2	16.3	15.1	15.1	16.7	15.7	17.2
Jan-94	18.6	17.5	16.2	16.2	18.4	16.9	18.9
Feb-94	19.2	18.2	17.5	17.4	18.9	17.9	19.7
Mar-94	20.1	19.1	18.3	18.3	19.2	18.7	21.4
Apr-94	21.5	20.5	18.8	18.8	20.6	19.4	22.2
May-94	22.5	21.6	20.4	20.4	21.9	21.0	23.4
Jun-94	24.0	23.0	21.9	21.8	23.5	22.3	24.9
Jul-94	23.6	22.6	21.2	21.1	23.4	21.8	25.9
Aug-94	23.8	22.8	21.4	21.4	23.3	22.3	26.5
Sep-94	19.9	18.9	17.5	17.5	19.2	18.1	21.7
Oct-94	22.3	21.6	21.1	21.0	21.8	21.4	22.1
Nov-94	21.3	20.3	18.7	18.6	20.3	19.4	21.3
Dec-94	21.0	20.0	19.0	19.0	19.9	19.2	20.8
Jan-95	23.1	22.1	21.0	20.9	22.0	21.5	22.8
Feb-95	23.3	22.3	21.1	21.0	21.7	21.7	22.5
Mar-95	23.0	22.0	21.0	21.0	21.9	21.6	23.2
Apr-95	24.5	23.5	22.3	22.3	24.2	22.9	25.9
May-95	27.6	26.6	22.8	22.8	27.1	24.2	29.0
Jun-95	25.9	25.1	22.7	22.6	25.1	23.4	24.9
Jul-95	20.8	19.9	18.3	18.2	20.1	18.8	22.3
Aug-95	22.8	22.0	19.8	19.7	22.4	20.4	23.1
Sep-95	24.4	23.5	20.6	20.6	23.5	21.3	23.6
Oct-95	20.4	19.5	17.7	17.6	19.6	18.3	20.6
Nov-95	21.0	20.0	19.2	19.2	20.6	19.7	21.6
Dec-95	23.1	22.2	19.7	19.6	21.8	20.4	22.7

Table F: Rack Prices - Study Markets (cont'd)

RUL Rack	Winnipeg rack	Regina rack	Calgary rack	Edmonton Rack	Vancouver rack	Victoria rack	Canada avg rack
Jan-92	24.3	24.0	24.0	23.6	24.8	25.5	22.2
Feb-92	21.9	21.5	21.5	21.1	22.4	23.1	22.2
Mar-92	21.0	20.5	20.5	20.1	21.3	22.0	21.9
Apr-92	21.7	21.1	21.2	20.7	21.9	22.9	22.3
May-92	22.4	21.9	21.9	21.5	22.7	23.6	22.9
Jun-92	23.7	23.1	23.2	22.7	23.9	24.8	23.9
Jul-92	23.6	23.0	23.0	22.6	24.1	25.3	23.1
Aug-92	23.3	22.8	22.8	22.4	24.1	25.2	23.1
Sep-92	23.7	23.1	23.1	22.7	24.4	25.2	23.1
Oct-92	23.8	23.2	23.3	22.8	24.7	25.5	23.5
Nov-92	23.0	22.4	22.5	22.0	24.1	25.1	22.6
Dec-92	21.9	21.1	21.2	20.7	23.0	24.2	21.8
Jan-93	22.4	21.9	21.9	21.6	22.6	23.8	21.9
Feb-93	22.3	21.7	21.7	21.3	22.2	23.4	21.4
Mar-93	22.7	22.2	22.1	21.7	21.6	22.8	21.6
Apr-93	23.6	23.0	22.9	22.5	22.8	23.6	22.3
May-93	23.6	23.0	22.9	22.5	23.5	24.5	23.1
Jun-93	22.7	22.1	22.0	21.6	23.7	24.7	22.1
Jul-93	22.1	21.5	21.4	21.0	23.1	24.1	21.4
Aug-93	22.4	21.8	21.7	21.2	23.3	24.4	22.0
Sep-93	21.7	21.1	21.0	20.6	23.4	24.4	20.7
Oct-93	22.2	21.7	21.6	21.1	23.5	24.5	21.9
Nov-93	19.9	19.2	19.0	18.6	20.0	20.6	19.1
Dec-93	18.3	17.7	17.5	17.1	17.4	18.0	16.9
Jan-94	18.0	17.3	17.1	16.7	17.3	17.9	17.7
Feb-94	18.8	18.1	17.9	17.5	18.4	19.0	18.5
Mar-94	19.2	18.5	18.3	17.9	18.9	19.6	19.2
Apr-94	20.1	19.4	19.2	18.8	20.9	21.6	20.4
May-94	22.2	21.5	21.3	20.9	22.2	22.8	21.9
Jun-94	23.6	22.9	22.7	22.3	22.5	23.1	23.2
Jul-94	24.6	23.9	23.7	23.3	23.9	24.5	23.5
Aug-94	25.0	24.3	24.1	23.7	23.9	24.5	23.8
Sep-94	22.5	21.9	21.7	21.3	23.6	24.3	20.5
Oct-94	21.2	20.5	20.3	19.9	22.1	22.7	21.6
Nov-94	20.8	20.1	19.9	19.5	22.7	23.4	20.6
Dec-94	20.5	19.8	19.6	19.2	21.5	22.2	20.1
Jan-95	21.5	20.8	20.6	20.2	21.4	22.0	21.7
Feb-95	21.9	21.2	21.0	20.6	21.5	22.1	21.7
Mar-95	22.3	21.6	21.4	21.0	22.0	22.6	22.0
Apr-95	24.5	23.8	23.6	23.2	23.6	24.2	24.0
May-95	25.4	24.7	24.5	24.1	24.6	25.2	25.8
Jun-95	24.2	23.5	23.3	22.9	24.6	25.2	24.4
Jul-95	21.6	20.9	20.7	20.3	23.8	24.3	20.8
Aug-95	22.1	21.4	21.2	20.8	23.4	24.0	21.9
Sep-95	22.6	21.9	21.7	21.3	23.0	23.7	22.7
Oct-95	20.2	19.5	19.3	18.9	22.4	23.0	19.8
Nov-95	20.6	19.9	19.7	19.3	22.3	23.0	20.5
Dec-95	21.1	20.4	20.2	19.8	21.9	22.5	21.5

Table G: Study Market Data - Throughput and Price by Grade

1995	Average Throughput (Litres)				Average Pump Price (¢/litre)			
	Premium	Midgrade	Regular	Diesel	Premium	Midgrade	Regular	Diesel
Victoria	661,268	478,508	2,018,460	64,832	63.98	59.88	54.85	48.78
Vancouver	833,796	529,597	2,204,196	91,377	67.10	63.00	57.97	51.90
White Rock	669,120	570,890	2,334,220	30,400	67.23	63.13	58.10	52.03
Calgary	389,897	350,238	2,945,214	142,370	58.30	54.60	49.26	44.00
Regina	248,296	179,770	2,620,245	41,483	66.00	62.00	57.19	49.90
Winnipeg	351,702	333,018	2,516,811	63,686	63.40	59.40	54.53	48.20
Nanton	120,000	-	1,678,000	273,000	58.26		49.00	48.26
Peace River	217,513	19,000	1,858,101	63,069	63.20	60.94	55.60	50.60
Thompson	256,687	-	1,702,983	54,850	70.07		61.20	54.87
Toronto	1,145,119	632,014	3,194,412	126,933	61.30	57.30	52.32	51.30
Ottawa	722,101	447,554	2,810,241	25,052	63.10	59.10	53.92	51.00
Sault Ste Marie	451,643	184,192	2,745,166	84,549	67.72	63.72	58.74	57.72
Sioux Lookout	102,438	-	591,628	-	74.28		65.30	
Montreal	702,837	329,543	2,249,859	111,905	66.40	61.50	56.45	53.30
Chicoutimi	240,980	120,894	1,704,790	183,625	68.45	63.55	58.50	55.35
Gaspe	185,150	48,250	748,500	-	73.83	68.93	63.88	
Saint John	378,669	203,949	1,448,173	64,903	64.60	60.50	56.38	56.90
Halifax	568,671	399,830	2,056,298	33,211	62.40	58.30	54.23	53.40
Charlottetown	576,529	123,475	1,174,895	15,749	63.20	61.20	59.11	58.80
BC/PR	600,712	429,300	2,420,614	91,621	64.24	60.25	55.19	49.18
ON	1,030,965	576,153	3,093,796	102,922	61.89	57.89	52.86	51.42
QU/AT	636,234	316,971	2,141,113	103,332	65.97	61.22	56.36	53.66
Group A	799,997	473,749	2,636,058	101,834	63.73	59.53	54.48	50.85
Group B	397,935	243,414	2,060,483	71,102	65.34	61.16	56.65	54.02
All Study Mkts	758,972	450,246	2,557,327	98,698	63.89	59.70	54.70	51.17

Note: Regional, Urban, and All Study Markets are weighted (by market population) averages.

Table H: Study Market Data - Rack Price, Tax (by Grade)

	Rack Pt.	1995 Average Rack Price (¢/litre)				Product taxes			
		Premium	Midgrade	Regular	Diesel	Premium	Midgrade	Regular	Diesel
Victoria	Victoria	26.97	25.45	23.47	20.90	26.45	26.18	25.85	36.45
Vancouver	Vancouver	26.38	24.88	22.88	20.36	29.15	28.88	28.55	29.16
White Rock	Vancouver	26.38	24.88	22.88	20.36	29.16	28.89	28.56	29.16
Calgary	Calgary	24.93	23.43	21.43	20.63	22.57	22.33	21.98	21.64
Regina	Regina	25.13	23.63	21.63	20.83	29.08	28.82	28.50	28.02
Winnipeg	Winnipeg	25.83	24.33	22.33	21.23	25.41	25.15	24.83	23.81
Nanton	Calgary	24.93	23.43	21.43	20.63	22.57	22.32	21.97	21.92
Peace River	Edmonton	24.53	23.03	21.03	20.23	22.89	22.75	22.40	22.07
Thompson	Winnipeg	25.83	24.33	22.33	21.23	25.84	25.58	25.26	24.25
Toronto	Toronto	26.07	24.59	22.49	21.42	28.47	28.21	27.88	27.42
Ottawa	Ottawa	24.69	23.33	21.17	20.73	28.59	28.33	27.99	27.40
Sault Ste Marie	Toronto	26.07	24.59	22.49	21.42	28.89	28.63	28.30	27.84
Sioux Lookout	Winnipeg	25.83	24.33	22.33	21.23	29.32	29.06	28.73	28.27
Montreal	Montreal	23.95	22.45	20.45	20.04	33.09	32.49	31.87	29.59
Chicoutimi	Quebec	24.01	22.51	20.50	20.08	27.59	26.99	26.37	24.09
Gaspé	Montreal	23.95	22.45	20.45	20.04	28.25	27.65	27.03	24.75
Saint John	Saint John	26.98	25.28	23.28	22.49	24.69	24.42	24.15	27.18
Halifax	Halifax	25.96	24.39	22.39	21.51	27.34	27.07	26.81	28.65
Charlottetown	Halifax	25.96	24.39	22.39	21.51	25.89	25.76	25.63	26.11
BC/PR		25.95	24.45	22.45	20.65	26.81	26.54	26.21	26.26
ON		25.76	24.31	22.20	21.27	28.51	28.25	27.92	27.43
QU/AT		24.35	22.83	20.82	20.34	31.55	31.01	30.45	28.93
Group A		25.45	23.97	21.92	20.74	28.81	28.47	28.07	27.41
Group B		25.48	23.94	21.91	21.15	27.59	27.25	26.90	27.20
All Study Mkts		25.45	23.96	21.92	20.78	28.68	28.34	27.95	27.39

Note: Regional, Urban, and All Study Markets are weighted (by market population) averages.

Table J: Study Market Data - Blended Prices, Costs, Margin

Cents per Litre	95 Blended Pump Price	95 Blended tax	95 Blended Extax Price	95 Blended Rack Price	95 Retail Gross Marketing Margin	Freight Cost	95 Retail Gross Product Margin
Victoria	57.35	26.03	31.32	24.43	6.89	0.41	6.48
Vancouver	60.63	28.75	31.88	23.90	7.98	0.38	7.60
White Rock	60.54	28.73	31.81	23.83	7.98	0.45	7.53
Calgary	50.47	22.06	28.41	21.94	6.47	0.24	6.23
Regina	58.08	28.56	29.52	22.02	7.50	0.21	7.29
Winnipeg	55.86	24.91	30.96	22.89	8.06	0.22	7.84
Nanton	49.44	22.00	27.44	21.53	5.91	0.41	5.50
Peace River	56.27	22.44	33.83	21.38	12.45	1.60	10.85
Thompson	62.16	25.31	36.85	22.75	14.10	3.02	11.08
Toronto	54.93	28.04	26.89	23.53	3.36	0.30	3.06
Ottawa	56.14	28.13	28.01	22.04	5.97	0.29	5.68
Sault Ste Marie	60.15	28.38	31.77	23.04	8.73	1.22	7.51
Sioux Lookout	66.63	28.82	37.81	22.85	14.96	3.20	11.76
Montreal	58.90	32.11	26.79	21.36	5.43	0.30	5.13
Chicoutimi	59.58	26.35	33.23	20.95	12.28	1.08	11.20
Gaspé	66.00	27.29	38.71	21.21	17.50	3.33	14.17
Saint John	58.28	24.37	33.91	24.12	9.79	0.27	9.52
Halifax	56.27	26.36	29.31	23.31	6.00	0.27	5.73
Charlottetown	60.49	25.72	34.77	23.60	11.17	1.14	10.03
BC/PR	57.18	26.35	30.83	23.24	7.59	0.33	7.26
ON	55.35	28.07	27.28	23.18	4.10	033	3.77
QU/AT	58.62	30.66	27.96	21.70	6.26	0.38	5.88
Group A	56.80	28.24	28.56	22.83	5.73	0.31	5.42
Variance	9.78	7.91	4.25	1.07	2.28	0.01	2.22
Avg Deviation	2.50	2.26	1.98	0.93	1.21	0.07	1.18
Group B	58.16	27.00	31.17	22.58	8.57	0.64	7.95
Variance	20.64	4.98	11.99	1.04	12.82	1.34	6.68
Avg Deviation	3.39	1.86	2.84	0.92	3.05	0.99	2.19
All Study Mkts	56.94	28.12	28.83	22.80	6.02	0.34	5.68
Variance	17.64	6.64	12.38	1.13	13.16	1.08	7.49
Avg Deviation	3.17	2.11	2.85	0.94	3.02	0.82	2.30

Note: Regional, Urban, and All Study Markets are weighted (by market population) averages. Variance uses the formula $[n\Sigma x^2 - (\Sigma x)^2]/n^2$. Average Deviation is the average deviation of the market values from their mean (average) value.

Table K: Study Market Data - Sales, Revenue, Outlet Costs, Income

	Average Outlet Sales (litres)	95 net retail petroleum revenue	Ancillary Revenue	Outlet costs	95 Consolidated Retail Outlet Income
Victoria	3,223,068	$ 208,855			
Vancouver	3,658,966	$ 278,081	$ 222,750	$ (374,143)	$ 126,688
White Rock	3,604,630	$ 271,429			
Calgary	3,827,719	$ 236,467	$ 96,800	$ (249,367)	$ 85,900
Regina	3,089,794	$ 225,246	$ 118,875	$ (164,375)	$ 179,746
Winnipeg	3,265,217	$ 255,993			
Nanton	2,071,000	$ 113,995			
Peace River	2,157,623	$ 234,102			
Thompson	2,014,520	$ 223,209	$ 26,000	$ (49,000)	$ 200,209
Toronto	5,098,478	$ 156,013			
Ottawa	4,004,948	$ 227,481	$ 96,707	$ (241,646)	$ 82,542
Sault Ste Marie	3,465,550	$ 260,263	$ 60,626	$ (98,866)	$ 222,023
Sioux Lookout	694,066	$ 81,622			
Montreal	3,394,144	$ 174,120	$ 54,564	$ (244,241)	$ (15,557)
Chicoutimi	2,250,289	$ 252,032	$ 77,913	$ (227,871)	$ 102,074
Gaspe	981,900	$ 139,135			
Saint John	2,095,694	$ 199,510	$ 60,544	$ (128,956)	$ 131,098
Halifax	3,058,010	$ 175,224			
Charlottetown	1,890,648	$ 189,632			
BC/PR	3,542,247	$ 256,295	$ 177,067	$ (320,208)	$ 119,129
ON	4,605,856	$ 174,677	$ 92,837	$ (226,332)	$ 97,502
QU/AT	3,197,640	$ 180,526	$ 56,779	$ (238,572)	$ (80)
Group A	4,911,638	$ 207,272	$ 121,789	$ (286,911)	$ 60,279
Group B	2,772,934	$ 210,117	$ 85,272	$ (166,766)	$ 154,302
All Study Mkts	3,885,244	$ 207,550	$ 118,116	$ (274,852)	$ 69,716

Note: Regional, Urban, and All Study Markets are weighted (by market population) averages. For 95 net retail petroleum revenue, these averages are based on all applicable study markets, but for ancillary revenue, outlet costs, and consolidated outlet income these averages are based only on those markets with available data.

Table L: Study Market Data - Demographic Profiles

	Population		No. of Outlets		No. of Brands		Est Outlets / 10,000 pop'n	
	pop'n	rank	No.	rank	No.	rank	No.	rank*
Victoria	299,550	8	106	8	12	9	3.54	6
Vancouver	1,542,745	3	446	3	18	5	2.89	2
White Rock	16,315	14	8	14	4	17	4.90	13
Calgary	710,675	4	313	4	27	3	4.40	9
Regina	179,180	9	86	10	15	7	4.80	10
Winnipeg	616,790	6	261	5	17	6	4.23	8
Nanton	1,585	19	5	18	4	17	31.55	19
Peace River	6,715	17	8	14	6	13	11.91	17
Thompson	14,975	16	6	17	5	15	4.01	7
Toronto	2,275,775	1	546	2	30	2	2.40	1
Ottawa	678,145	5	209	6	19	4	3.08	4
Sault Ste Marie	81,475	11	24	12	10	10	2.95	3
Sioux Lookout	3,310	18	3	19	3	19	9.06	16
Montreal	1,775,870	2	866	1	32	1	4.88	11
Chicoutimi	120,605	10	97	9	14	8	8.04	15
Gaspe	16,400	13	8	14	6	13	4.88	12
Saint John	74,970	12	56	11	9	11	7.47	14
Halifax	330,845	7	113	7	9	11	3.42	5
Charlottetown	15,395	15	23	13	5	15	14.94	18

	Avg Volume per Outlet		Marketing Margin		Freight		Gross Product Margin		
	000's litres	rank	¢/l	rank*	¢/l	rank*	¢/l	rank*	N =
Victoria	3,223	9	6.89	7	0.41	10	6.48	7	26
Vancouver	3,658	4	7.98	9	0.38	9	7.60	11	37
White Rock	3,604	5	7.98	9	0.45	12	7.53	10	5
Calgary	3,827	3	6.47	6	0.24	3	6.23	6	69
Regina	3,089	10	7.50	8	0.21	1	7.29	8	30
Winnipeg	3,265	8	8.06	11	0.22	2	7.84	12	61
Nanton	2,071	15	5.91	3	0.41	10	5.50	3	2
Peace River	2,157	13	12.45	16	1.60	16	10.85	15	4
Thompson	2,014	16	14.10	17	3.02	17	11.08	16	4
Toronto	5,098	1	3.36	1	0.30	7	3.06	1	59
Ottawa	4,004	2	5.97	4	0.29	6	5.68	4	39
Sault Ste Marie	3,465	6	8.73	12	1.22	15	7.51	9	12
Sioux Lookout	694	19	14.96	18	3.20	18	11.76	18	2
Montreal	3,394	7	5.43	2	0.30	7	5.13	2	74
Chicoutimi	2,250	12	12.28	15	1.08	13	11.20	17	16
Gaspe	981	18	17.50	19	3.33	19	14.17	19	2
Saint John	2,095	14	9.79	13	0.27	4	9.52	13	17
Halifax	3,058	11	6.00	5	0.27	4	5.73	5	18
Charlottetown	1,890	17	11.17	14	1.14	14	10.03	14	4

Note: Where an * appears after "rank", inverse ranking is used (lowest value = 1). N refers to study sample size (total = 481).

III Sources of Information about the Downstream Petroleum Industry

Canadian Petroleum Products Institute (CPPI)

The CPPI is a national association of petroleum refining and marketing companies which serves as the voice of the petroleum products industry in Canada on environment, health, safety and business issues.

Contact: Brendan Hawley, Vice President Public Affairs

Address: 275 Slater Street, Ottawa ON, K1P 5H9

Phone (613) 232-3709 Fax: (613) 236-4280

Industry Canada

Industry Canada is the primary overseer of the Sector Competitiveness Framework (SCF), a series of studies whose goal is to strengthen Canada's competitiveness, and in doing so, generate jobs and growth. The SCF is the basis for this study.

Contact: Cindy Christopher, Senior Advisor, Petroleum Products

Address: 235 Queen Street, Ottawa ON, K1A 0H5

Phone (613) 941-6219 Fax: (613) 941-2463

MJ Ervin & Associates / Q1 Solutions Inc.

MJ Ervin & Associates is a Calgary-based consulting organization specializing in the downstream petroleum industry. They work with major oil companies in benchmarking performance in the retail, cardlock, bulk, aviation and lubricants marketing channels, and provide background resources to industry public affairs managers and the media.

Contact: Michael J. Ervin, Principal

Address: #400, 119 - 14th Street NW Calgary AB, T2N 1Z6

Phone: (403) 283-8704Fax: (403) 283-9104e-mail: mervin@cadvision.com

Natural Resources Canada

Natural Resources Canada is a key information resource on the matter of petroleum prices. They maintain a large database of historical prices at most major centres, accessible through a public fax-back dial-in system.

Contact: Maureen Monaghan

Address: 580 Booth Street, Ottawa ON, K1A 0E4

Phone: (613) 992-1477 Fax: (613) 992-0614

Octane Magazine

Octane is Canada's refining and marketing trade journal, and is a useful "window" on this industry. It reports industry marketing trends and compiles an annual survey of retail and wholesale outlet representation. Octane is published quarterly.

Contact: Robert Curran, Managing Editor

Address: Suite 2450, 101 - 6th Avenue, Calgary AB,T2P 3P4

Phone: (403) 266-8700 Fax: (403) 266-6634

Petroleum Communication Foundation (PCF)

The PCF is an industry funded, non-advocacy organization whose mandate is to increase public awareness of Canada's oil industry. The PCF is a useful resource for any person or organization wishing to become better informed on general downstream infrastructure and retail gasoline price/competition mechanisms.

Contact: Len Bradley, Executive Director

Address: 214, 311 - 6th Ave. SW Calgary, ABT2P 3H2

Phone: (403) 264-6064Fax: (403) 237-6286e-mail: pcomm@pcf.ab.ca

Statistics Canada

Statistics Canada publishes a variety of petroleum industry performance figures. Its monthly publication "Refined Petroleum Products" (cat. no 45-004) is a useful source of supply and demand volume data.

Contact: Gerard O'Connor, Supervisor, Energy Section

Address: Statistics Canada, Ottawa ON, K1A 0T6

Phone: (613) 951-3562