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July 11, 2019

Sent via eFile

BCUC INQUIRY INTO GASOLINE AND DIESEL PRICES IN BC EXHIBIT A2-18

**Re: British Columbia Utilities Commission – An Inquiry into Gasoline and Diesel Prices in British Columbia
– Project No. 1599007 – Dr. Mark K. Jaccard Final Report dated September 30, 1996**

British Columbia Utilities Commission staff submit the following report for the record in this proceeding:

Dr. Mark K. Jaccard
British Columbia Inquiry into Gasoline Pricing
Final Report
September 30, 1996

Sincerely,

Original signed by:

Patrick Wruck
Commission Secretary

/dc
Enclosure

*British Columbia
Inquiry into Gasoline Pricing*

FINAL REPORT

Dr. Mark K. Jaccard
Inquiry Commissioner

September 30, 1996

BRITISH COLUMBIA INQUIRY INTO GASOLINE PRICING

Mark K. Jaccard
Inquiry Commissioner



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September 30, 1996

To the Lieutenant Governor in Council

MAY IT PLEASE YOUR HONOUR:

By Order in Council dated May 16, 1996, this Commission of Inquiry was appointed to inquire into and report on matters concerning gasoline pricing in British Columbia by September 30, 1996.

The Commission of Inquiry was directed to consider the issues set out in specific Terms of Reference.

I, the sole commissioner with responsibility for the Commission of Inquiry, have the honour of submitting my Final Report.

Respectfully,

A handwritten signature in black ink, appearing to read 'Mark K. Jaccard', written over a horizontal line.

MARK K. JACCARD

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

Retail gasoline prices in British Columbia rose by about 10¢ per litre during the spring of 1996. In response to public concern, on May 16, 1996 the provincial government appointed Mark Jaccard (currently Chair and CEO of the British Columbia Utilities Commission), under the Inquiry Act, to conduct the British Columbia Inquiry into Gasoline Pricing, and submit this Final Report by September 30, 1996.

The Terms of Reference call for the Inquiry to examine:

- factors that contribute to changes in the retail price of gasoline in B.C.;
- factors underlying the different retail prices charged for gasoline in different areas of B.C.;
- the fairness of, and economic rationale for, the price structure of gasoline at the refining, wholesale and retail levels in B.C.;
- the extent to which retail prices of gasoline reflect the cost of crude oil in domestic and international markets;
- the effectiveness of market competition in regulating gasoline prices to ensure fair prices for consumers; and
- the government's regulatory authority with respect to petroleum product prices.

Over its four month duration, the Inquiry included: (1) registration of interested parties and initial written submissions by June 24; (2) circulation of submissions; (3) release of the Interim Report on July 5, laying out the Inquiry process and key research questions; (4) data collection and analysis by Inquiry research staff; (5) review of all submissions, data and analysis by the Inquiry Commissioner; (6) production and release of the Preliminary Findings on August 28; (7) feedback from interested parties on the Preliminary Findings by September 20; and (8) production and release of this Final Report on September 30. The estimated total cost of the Inquiry is \$130,000.

To explain the factors that contribute to changes in the price of retail gasoline, the Inquiry focused on the 10¢ increase in the Vancouver retail gasoline price in the spring of 1996, summarized in the following table. Data from representative dates indicate that the 10¢ increase in price was primarily due to a 4¢ increase in the cost of crude oil and a 4.1¢ increase in the returns to refiners / distributors. The increase in the cost of crude oil tracks closely developments in international crude oil markets, markets in which B.C. industry participants are price takers. However, the increase in the refining

margin is due to the linkage between U.S. northwest and Vancouver wholesale prices. When U.S. northwest wholesale prices rose in the spring of 1996, the B.C. and Alberta refiners raised their Vancouver wholesale supply prices as well, increasing their refining margin. The retail margin also increased by 1.3¢ and federal taxes increased by 0.6¢, the latter because the GST is calculated as a percentage of the higher retail price.

**Factors Contributing to the Spring 1996
Increase in Vancouver Retail Gasoline Prices
January - June 1996
(cents/litre)**

	Crude Cost	Retail Margin	Refining and Distribution Margin	Provincial Tax	Federal Tax	Retail Price
January 30, 1996	15.4	2.3	9.5	15	13.7	55.9
May 28, 1996	19.4	3.6	13.6	15	14.3	65.9
Difference	4	1.3	4.1	0	.6	10
% of Total Difference	40%	13%	41%	0	6%	100%

The significant increase in refining margins in the spring of 1996 does not by itself demonstrate that there are problems with the gasoline market. Fluctuations in returns are common even in markets with vigorous price competition. Therefore, the Inquiry applied other evidence and argument in assessing the effectiveness of market competition in ensuring fair gasoline prices in B.C.

In general, the Inquiry finds that the market sectors (crude oil supply, refining and distribution, retailing) which determine gasoline prices in B.C. are subject to competitive pressures. Crude oil prices are determined in the international oil market, a market in which competition has had a downward pressure on real prices over the last 15 years. The refining and distribution sector of the market is more concentrated, but its prices are generally linked to the broader North American market. The retail

sector of the market also appears to be relatively competitive. These latter two downstream segments of the industry have not earned high returns in recent years.

Nevertheless, on the balance of the evidence before it, the Inquiry finds that some degree of price discrimination (as defined by economists and not by legal code) has occurred in the B.C. wholesale gasoline market, both in terms of long run price differences and in terms of the speed of adjustment to market disequilibrium:

- the long run average price differential between Vancouver and Edmonton wholesale gasoline prices does not appear to be fully justified by cost differences;
- the length of time during which the wholesale price differential deviates from its average appears to be longer than can be explained from normal market constraints; and
- differences in retail gasoline prices between regions in B.C. appear to depend in part on the extent of vigorous price competition in each particular location.

The major oil companies were earlier requested to provide, in confidence, detailed cost data that might have enabled the Inquiry to refute or verify the evidence that has emerged. However, they generally refused to provide such information.

The apparent price discrimination detected in this Inquiry does not appear to result, on average, in abnormally high profits for the major oil companies. Nor does it appear to lead to inefficient production; there is some degree of external competitive pressure on each sector of the gasoline market. Nonetheless, price discrimination may be seen as unfair in that some customers will pay higher prices than others because the gasoline market is simply not as vigorously price competitive as it might be.

If government seeks to reduce the likelihood of price discrimination in the B.C. gasoline market, it is the recommendation of the Inquiry that it look to policies that use market forces instead of government's direct regulatory or ownership powers. In particular, effective mechanisms are likely to be those that result in:

- greater awareness of relevant costs and prices by retailers, marketers and customers; and
- better access for independent marketers and retailers to all potential wholesale gasoline suppliers.

The main objective of government's policies, therefore, should be to improve throughout B.C. the potential for vigorous wholesale price competition both when markets are relatively stable and when markets are in short run disequilibrium. This would involve:

- mechanisms to help independent retailers access alternative wholesale gasoline suppliers by having owners of various terminal (rail, water, pipeline) and storage facilities post prices for the use of such facilities by independents;
- provide information and access to all retailers (whether independent or linked to a major oil company) on wholesale gasoline prices in different locations;
- intervene, when necessary, to prevent predatory pricing intended to reduce the market share or inhibit vigorous price competition from independent gasoline marketers and retailers;
- collect regular data on retail prices charged in several centres throughout the province, with an estimated disaggregation of cost components, in order to ensure public confidence in the legitimacy of regional differences in gasoline prices.

1.0 INTRODUCTION

1.1 Background and Inquiry Process

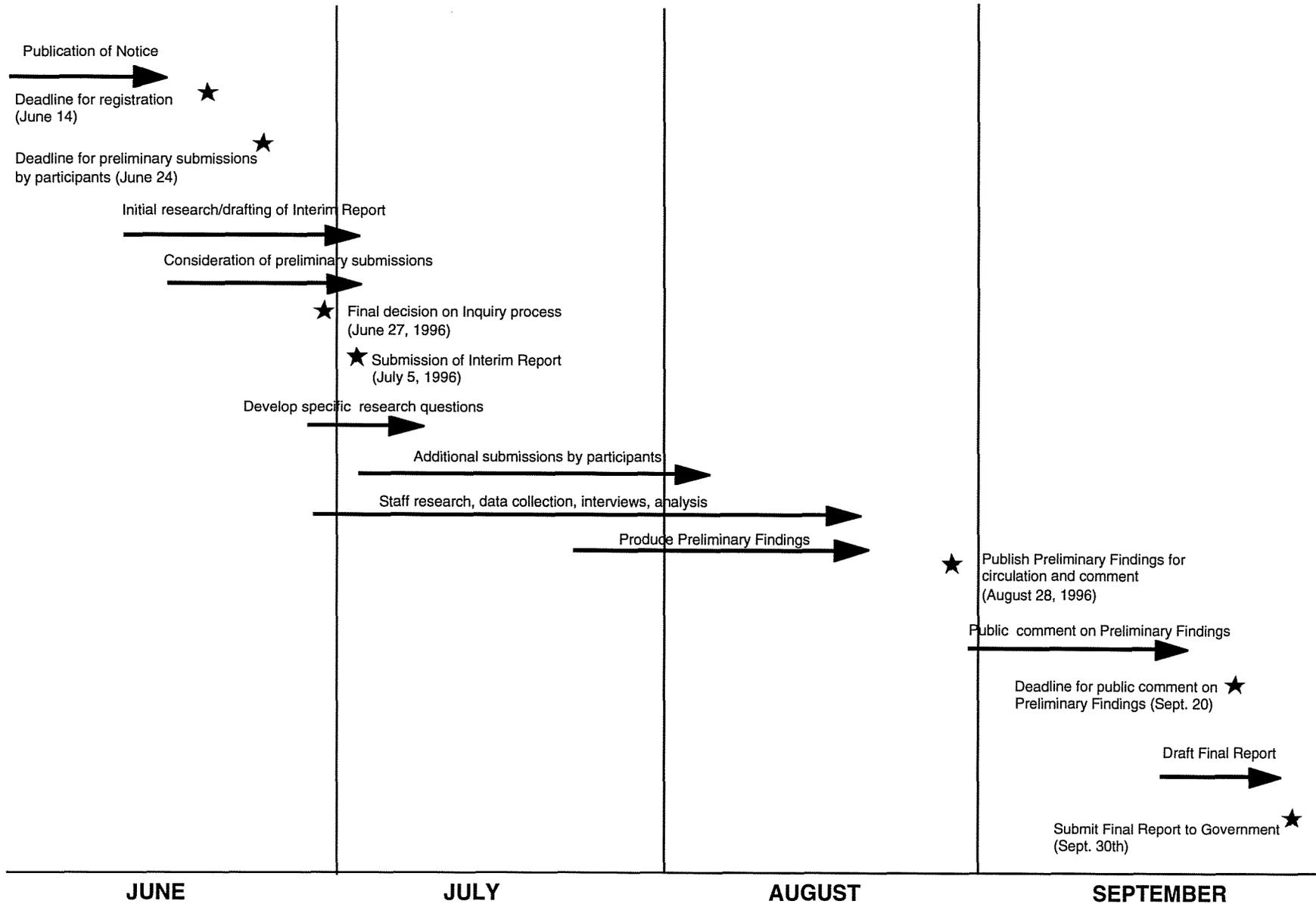
Retail gasoline prices in B.C. rose sharply over the first half of 1996. In Vancouver the price of regular, self-serve gasoline increased by about 10¢ to over 65¢ per litre. Not since the beginning of the Gulf War have prices risen so dramatically.

On May 16, 1996, the provincial government appointed Mark Jaccard (Chair and CEO of the B.C. Utilities Commission) to conduct the British Columbia Inquiry into Gasoline Pricing under the authority of the *Inquiry Act*. The Inquiry was directed to produce an Interim Report by June 30, 1996 and a Final Report by September 30, 1996.

The B.C. government is not alone in its concerns about gasoline prices. Several jurisdictions have launched inquiries to investigate the cause and fairness of recent price changes. In mid-May, the Canadian Competition Bureau began a formal investigation into the practice of retail gasoline pricing. President Clinton announced a similar investigation in the U.S. Inquiries into gasoline pricing, albeit for diverse reasons, have also been initiated in New Brunswick and Quebec.

By the beginning of June, 1996, the process for the Inquiry had been determined. This is shown in Figure 1. The Inquiry process included: (1) written submissions by interested parties; (2) some circulation of these submissions to allow commentary by other parties; (3) release of an Interim Report laying out the Inquiry process, and the critical research questions; (4) data collection and analysis by Inquiry staff; (5) review of all submissions, data and analysis by the Inquiry Commissioner; (6) production and release of the Inquiry's Preliminary Findings; (7) feedback from interested parties on the Preliminary Findings; (8) production and release of this Final Report.

Figure 1
Inquiry Process



Notice of the Inquiry was published in major print media at the beginning of June, with a deadline for participant registration and preliminary submissions by June 24, 1996. The Inquiry issued its Interim Report on July 5, 1996. Detailed research by Inquiry staff continued through the summer based in part on the submissions of industry and interested parties. Specifically, Inquiry staff reviewed data collected and published by the governments of Canada and B.C., by private market information service companies, and by previous inquiries and studies on gasoline prices. Information was also received from gasoline refiners, marketers and retailers. All of the major refiners and marketing companies which supply gasoline to the B.C. market and 20 retail outlet owners or managers were contacted by Inquiry staff during their research. The Inquiry released its Preliminary Findings on August 28, 1996, setting a deadline for feedback of September 20, 1996.

1.2 Terms of Reference

The Terms of Reference call for the Inquiry to examine:

- (a) factors that contribute to changes in the retail price of gasoline in B.C.;
- (b) factors underlying the different retail prices charged for gasoline in different areas of B.C.;
- (c) the fairness of, and economic rationale for, the price structure of gasoline at the refining, wholesale and retail levels in B.C.;
- (d) the extent to which retail prices of gasoline reflect the cost of crude oil in domestic and international markets;
- (e) the effectiveness of market competition in regulating gasoline prices to ensure fair prices for consumers; and
- (f) the government's regulatory authority with respect to petroleum product prices.

The Terms of Reference clearly limit the scope of the Inquiry to gasoline. Gasoline is a fuel used in spark-ignition internal combustion engines, largely although not exclusively for vehicular transportation. It is formulated from the "light" end of refinery runs. Gasoline does not include diesel fuel or propane. While interest has been expressed to the Inquiry that the price of related fuels, such as diesel or propane and even natural gas and electricity, should be considered, factors determining the price of those fuels are beyond the Terms of Reference.

1.3 Current Regulation of Petroleum Product Prices

In B.C. today the government has no express power to set the level or structure of gasoline prices. However, prior to 1987 the former Part 4 of the *Utilities Commission Act* gave the British Columbia Utilities Commission general regulatory authority over the petroleum industry in the province and gave the provincial government the authority by Order in Council to set maximum prices for petroleum products including gasoline.

Responsibility for regulation of the petroleum industry is shared between the federal and provincial governments. Matters such as security of supply, imports, exports, and inter-provincial energy trade are the responsibility of Natural Resources Canada and the National Energy Board. Other federal departments such as Environment Canada, Fisheries Canada, and Transport Canada enforce legislation associated with the refining, distribution, and marketing of petroleum products. Finally, Industry Canada deals with consumer and retailer concerns such as fair pricing. More specifically, the Competition Bureau investigates breaches of the *Competition Act*. The Bureau's director must initiate a formal inquiry whenever he or she has reason to believe that a criminal offence has been, or is about to be, committed or when directed by a federal Minister to inquire into a matter. Under the *Competition Act*, conspiracy to fix prices and price maintenance are criminal offences.

In terms of provincial price regulation, Prince Edward Island is now the only province whose gasoline market is regulated directly. The 1990 *Petroleum Products Act* vests the Island Regulatory and Appeals Commission with the authority to hold public hearings, approve the wholesale and retail prices of refined fuels, and licence all retail outlets. The objective of this form of regulation, as set out in the legislation, is to ensure just and reasonable prices for fuel to consumers and licensees within the province.

Nova Scotia had licenced service stations and set gasoline prices since 1936 but deregulated the industry in July 1991. Under the Nova Scotia *Gasoline and Fuel Oil Licensing Act*, the Board of Commissioners of Public Utilities had the power to hold hearings, to determine the price or changes in the price of gasoline, and generally to protect consumers from unjust or unreasonable changes in the price of gasoline. In 1991, the provisions dealing with regulation of the wholesale and retail components of the gasoline industry were repealed largely because of an increased perception by government that market forces would be sufficient to set fair prices.

Several other provinces have passed legislation permitting regulation of the gasoline market, but the laws have not been implemented. For example, in New Brunswick, the *Gasoline, Diesel Oil and Home Heating Oil Pricing Act* contains provisions which, if proclaimed, would prohibit retailers from offering gasoline for a higher price than that set by the provincial government.

1.4 Submissions of Individuals, Interest Groups and Industry

Preliminary Submissions (June 1996)

Over 120 individuals, corporations, and organizations have participated in the Inquiry in some way. A broad range of points were made and issues raised in the various submissions.

In terms of the scope of the Inquiry, interest was expressed in examining related and alternative fuels. For example, the British Columbia Trucking Association requested that the Inquiry investigate changes in the price of diesel fuel. As noted, these forms of energy are outside of the Inquiry's Terms of Reference.

A number of individuals and interest groups indicated that the most pressing issue for the Inquiry should be that gasoline prices are too low. These groups argued that the Inquiry should investigate the full environmental costs of consuming gasoline and consider higher prices as a means of decreasing reliance on fossil fuels. The Peace River Regional District's submission proposed that the Inquiry examine policies to encourage more environmentally benign forms of vehicle fuel. While the importance of these environmental issues is not questioned, they do not fall within the Inquiry's Terms of Reference.

Several submissions advocated that the Inquiry examine the structure of wholesale and retail prices: the difference, for example, between self- and full-serve prices and between tendered bulk and retail prices. The B.C. Paraplegic Society expressed concern for the cost and availability of self-serve. Issues of this nature are expressly identified in the Terms of Reference.

With respect to the issue of competitiveness, industry submissions argued that extreme price sensitivity of consumers and unimpeded import of gasoline are key factors ensuring a competitive industry. Recent restructuring and rationalization of the refining and retail sectors were cited as evidence of such competitive pressure, resulting in significant cost decreases.

In contrast, several submissions argued that the major oil companies have too much influence over wholesale and retail gasoline prices. Others pointed to apparently unjustified differences in price by region as evidence that price competition is inadequate in all or parts of the province. In general, many individuals expressed a distrust of the gasoline and oil industry.

With reference to regulation of gasoline prices, some, particularly industry, stated that price regulation is neither necessary nor beneficial. They asserted that market forces alone are sufficient to ensure fair prices for consumers. Others suggested the need for a consistent approach to all fuels, particularly as electricity and natural gas become more significant alternatives to gasoline. They proposed that since retail distribution of both electricity and natural gas are subject to regulation, so too should gasoline.

Very few parties expressed interest in conducting research and preparing detailed submissions on the specific items in the Terms of Reference. Instead, there was considerable interest in having the opportunity later in the process to comment on the findings of the Inquiry. This is why the Inquiry did not include public hearings, but instead relied on initial submissions and then the production of preliminary findings, which in turn allowed for feedback by all interested parties prior to the production of this Final Report.

Finally, some submissions questioned the public value of the Inquiry, noting that it had been called during an election campaign. However, others argued that such an Inquiry is justified and even long overdue.

Submissions in Response to the Preliminary Findings (September 1996)

In the Preliminary Findings, issued on August 28, 1996, the Inquiry reached the following tentative findings, as stated in its Executive Summary.

“... the market sectors (crude oil supply, refining and distribution, retailing) which determine gasoline prices in B.C. are, in general, subject to considerable competitive pressures.

... However, some evidence appears to support the argument that the market fails in certain respects to satisfy the conditions of a completely competitive industry.

... First, evidence from the spring of 1996 suggests that the price of wholesale gasoline sold to retailers in the Vancouver market, and possibly other areas of the province, was higher than would have occurred under more competitive conditions, given that this same product was sold at lower prices in the Alberta market.

... Second, there is also some evidence to suggest that prices at other times and locations in the province may have diverged from what would occur under competitive markets.

... Third, differences in price between different grades of gasoline and between self- and full-serve gasoline appear to not accurately reflect differences in the costs of providing these alternatives.

... The preliminary recommendation is that market reform, if necessary, is preferable.

... These findings do not fetter the Inquiry Commissioner's discretion to arrive at different interpretations and conclusions in the final report as a result of new information and arguments that may be presented in response to this preliminary report." (Gasoline Inquiry Preliminary Findings, Executive Summary).

With the exception of a few submissions by individuals, most responses to the Preliminary Findings were submitted by industry participants: Chevron, Imperial, Petro-Canada, Shell, Mohawk and Acton Super-Save Gas Stations (Super Save). These submissions are summarized here, before the presentation of the Inquiry findings. To understand all of the terms and issues, some readers may wish to reread this section after having read through the following sections in which the analysis, final findings and final recommendations of the Inquiry are presented.

Chevron, Imperial, Petro-Canada, Shell and Mohawk were all in general agreement in arguing that it is erroneous to interpret short-term evidence of price divergence from cost as proof of problems with a competitive market. They pointed out that all competitive markets exhibit cost / price divergences from time to time and that, indeed, such divergences are essential dynamic forces in the marketplace.

"Price discrimination, as defined in economic terms, is constantly present in almost every industry as suppliers respond to actual and anticipated market conditions in their pricing behaviours and in their attempts to establish a balance between market share and per transaction profit in establishing their business strategy. If a lack of complete consistency on a day-to-day basis in the pricing decisions which result from these tradeoffs is evidence of price discrimination requiring government intervention, every industry in British Columbia is a candidate for such intervention." (Chevron Submission, p. 3).

"To compare markets at a point in time and find that prices do not correlate directly with costs fails to recognize that markets set prices based on competitive factors and not on costs alone. ... Based on our assessment that the Preliminary Report is flawed and that its conclusions are incorrect, Petro-Canada opposes the reforms which are suggested for consideration. While the B.C. gasoline market is not perfect, it does work effectively and competitively, and contains far fewer imperfections than would be introduced by any of the proposed reforms." (Petro-Canada Submission, p. 2).

Imperial provided data that contradicted, or clarified the context for, some of the data relied upon by the Inquiry for the Preliminary Findings. This has led to some important changes that have been incorporated into this Final Report.

Mohawk argued that it was incorrectly categorized as a major oil company.

“Mohawk does not own a crude oil refinery, has no upstream assets, is publicly owned, yet has been classified as a major oil company. ... The percentages in Table 1 will be significantly different if Mohawk is appropriately classified as an industry independent.” (Mohawk Submission, p. 1).

Petro-Canada objected to the conclusions drawn in the Preliminary Findings that the concentration of refining among a few firms was a market problem, pointing out that the concentration is not as great as suggested given the opportunities available to several U.S. refiners to access the B.C. market. Petro-Canada also pointed to research suggesting that three or four major firms are sufficient to ensure effective competition in a given market.

Shell objected to the use of the term price discrimination in the Preliminary Findings, pointing out that while price discrimination as referred to by economists does not have a negative connotation, it is a term with a criminal connotation in Canadian law.

“It is irresponsible for the B.C. government (sic) to make defamatory statements declaring publicly that gasoline marketers are engaged in price discrimination when there has been no consideration whatsoever of the facts that would have to be found by a Canadian court in any determination of price discrimination having occurred.” (Shell Submission, p. 2).

In contrast, Super Save, an independent retailer, suggested that there are problems with the B.C. wholesale gasoline market that are greater than those tentatively identified in the Inquiry’s Preliminary Findings.

“... there is no real ability on the part of independents to access a competitively priced wholesale supply of gasoline for re-sale to consumers in the B.C. retail marketplace.” (Super Save Submission, p. 2).

In support of its claim, Super Save provided copies of its recently expired gasoline supply contracts with major oil companies. One contract, covering the period 1990 to 1996, is referred to as a crude related contract, meaning that:

“... the wholesale price chargeable to Super Save Gas was determined by adding to the cost of crude oil a fee for the processing, pipelining and terminalling of that crude oil which was refined on behalf of Super Save Gas by the major oil company.” (Super Save Submission, p. 5).

In this formula-driven contract, the price to Super Save would fluctuate to reflect crude oil price changes, and would correct each year for inflation. According to Super Save, no major oil company was willing to negotiate a similar contract when the crude related contracts expired at the end of 1994 and in May 1996. According to Super Save, the only choice for an independent today is to purchase wholesale gasoline at what is called the rack price¹, a price which on average appears to be much higher than the major oil companies had been willing to accept in the crude related contracts. According to Super Save, the higher rack price must mean higher profits for these companies. Super Save therefore suggested that the Inquiry consider recommending to government that it regulate wholesale gasoline prices and explore the potential for development of an ocean-side terminal facility that could receive refined gasoline from distant suppliers.

The various issues and arguments raised in these submissions are explored and assessed in this Final Report. The report includes examination of: the gasoline market structure in B.C. (Chapter 2), the factors determining gasoline prices in B.C. (Chapter 3), the variation in prices between regions (Chapter 4) and between gasoline grades and services (Chapter 5), an overall assessment of the gasoline market in B.C. (Chapter 6), a description of government's options (Chapter 7), and recommendations (Chapter 8).

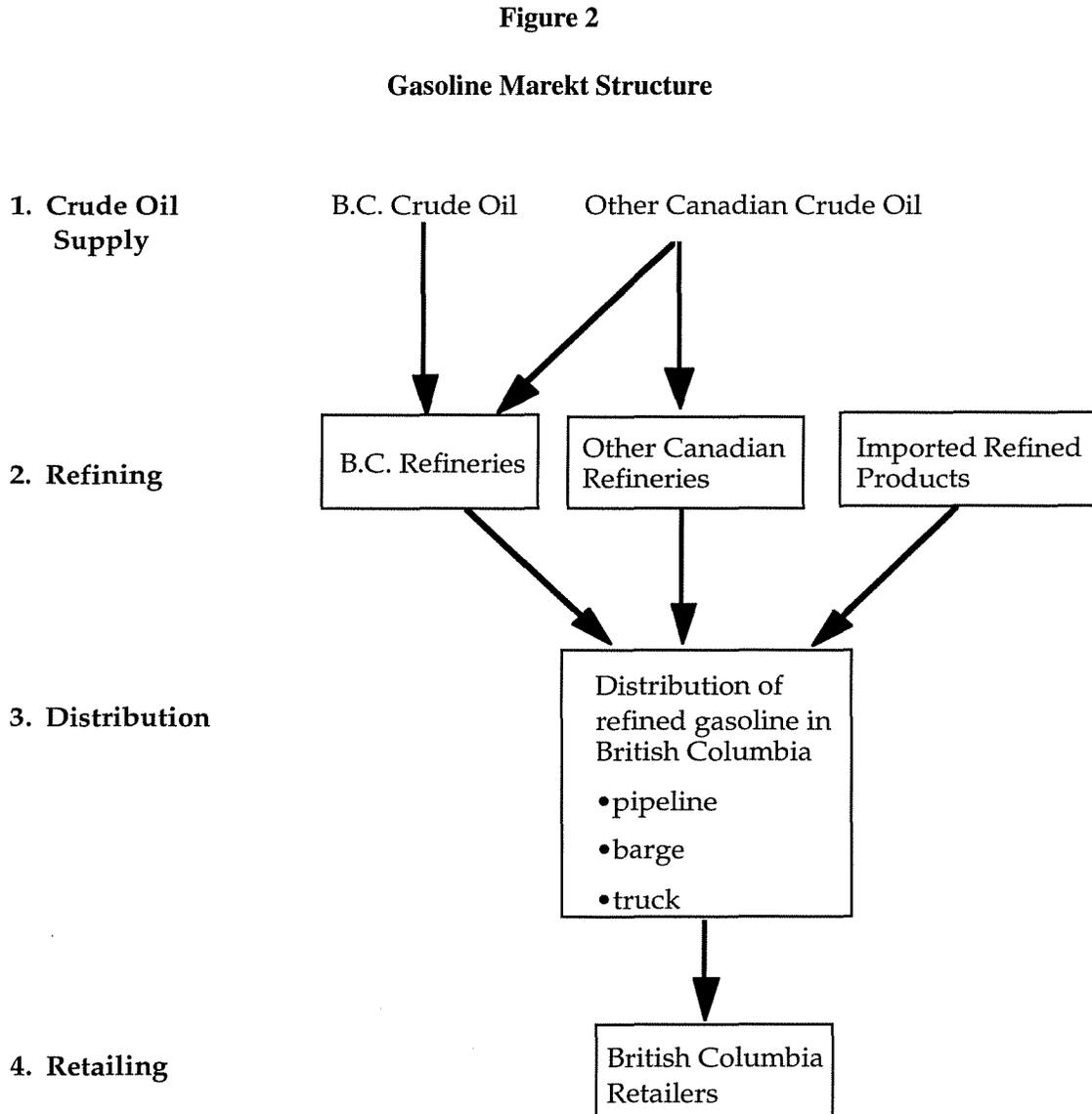
¹ The price posted by gasoline refiners for wholesale gasoline sales to independents at the refinery or terminal loading area. This is further explained in section 2.3.

2.0 GASOLINE MARKET STRUCTURE IN BRITISH COLUMBIA

2.1 Overview

The petroleum industry consists of two distinct types of business. The “upstream” part of the industry refers to the exploration and production of crude oil, while the “downstream” part refers to the businesses of refining, marketing, distributing, and retailing petroleum products. Gasoline is a downstream product.

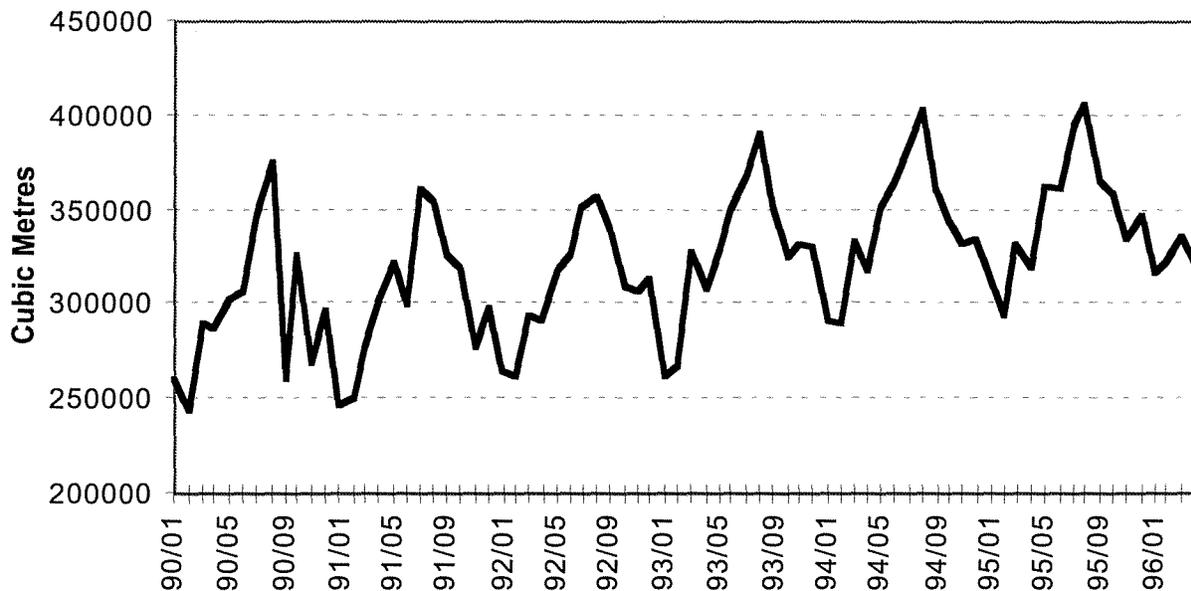
Figure 2 shows the general structure of the gasoline market in B.C. There are four principal segments or phases of the market: crude oil supply, refining, distribution, and retailing.



Retail gasoline sales in B.C. totalled almost 4.2 million cubic metres (billion litres) in 1995. As shown in Figure 3, gasoline sales are highly seasonal, peaking in the summer months. Total annual sales of gasoline have been increasing at a rate of 3.3% per year since 1990, slightly faster than B.C.'s population growth. Thus, per capita consumption has grown from 1,080 litres to 1,110 litres over this period.

Figure 3

**Monthly Gasoline Sales in British Columbia
1990-1996**



Source: Statistics Canada

2.2 Sources of British Columbia Gasoline Supply

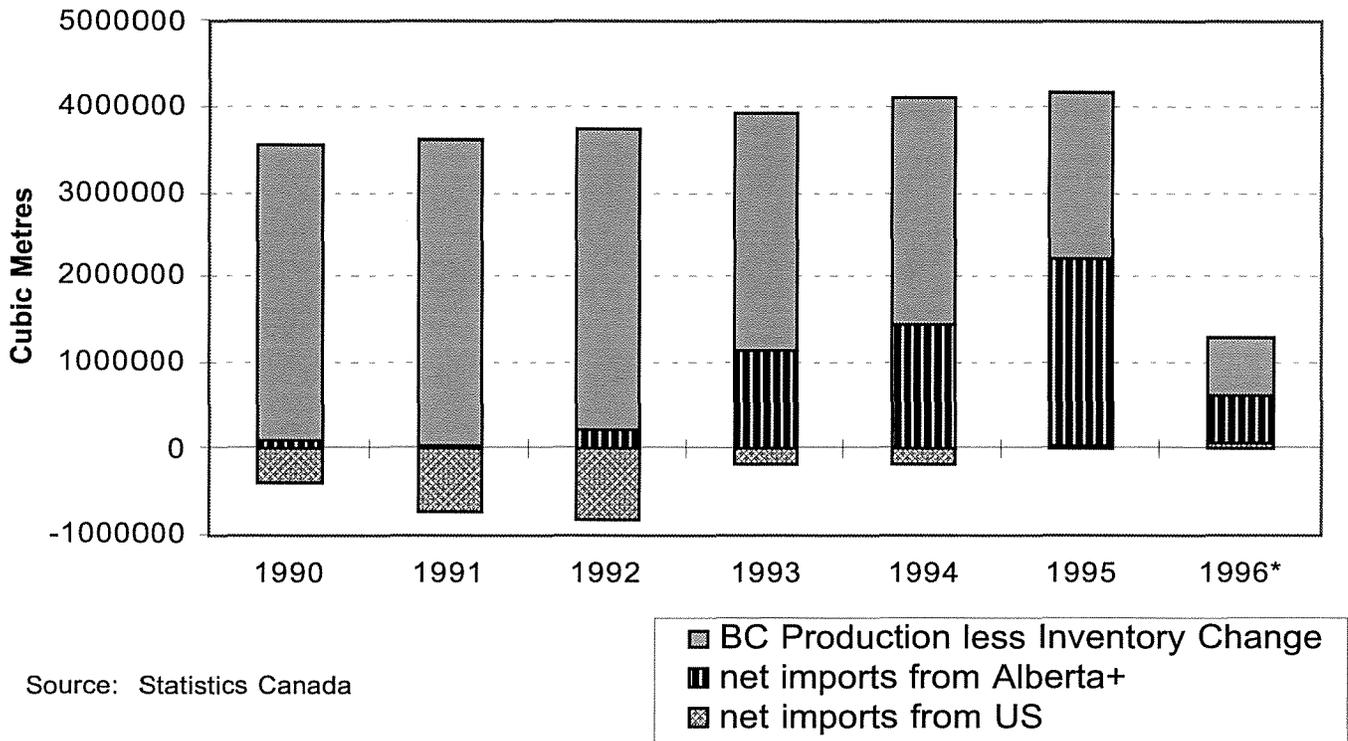
Refined Gasoline

Refining is a process whereby crude oil is broken down into its various components, which are then selectively processed into new products. There are three main stages of refining. First, the crude oil is piped through hot furnaces so as to separate the crude oil components according to their respective boiling points. The products from this first stage are called "fractions". In the second stage, the fractions undergo conversion (usually through a process known as "cracking") to become "streams". Finally, the streams are purified and blended to form the refined petroleum products.

The gasoline that is sold in B.C. is refined in B.C., Alberta and, to a lesser extent, the U.S. northwest. As shown in Figure 4, the amount of gasoline supplied from B.C. refiners has declined dramatically in recent years, from almost 100% of the market in 1990 to less than 50% by 1996.

Figure 4

Sources of British Columbia Gasoline Supply



* For January through April, 1996 only.

+ In the years when net imports from the U.S. are negative (1990-1994), net imports from Alberta equal the sum of the patterned amounts.

This decline is due to the closure of refineries in B.C., from six refineries in 1990, with a total input capacity of 161,000 barrels of crude oil per day, to two refineries in 1996. The two remaining refineries are Chevron in the Lower Mainland, with a capacity of 60,000 barrels per day, and Husky in Prince George, with a capacity of 11,500 barrels per day. The Petro-Canada refinery in Taylor closed in 1990, and the Imperial, Shell and Petro-Canada refineries in the Lower Mainland closed between 1993 and 1995.

The companies which closed their refineries have replaced their gasoline supply through purchase or exchange agreements with the remaining refiners, deliveries from Alberta, and imports from the U.S. The purchase and exchange agreements include provisions, if required, for additional treatment of the gasoline so that it meets the unique specifications of each company's product.

Deliveries from Alberta are the predominant source, especially from the Imperial and Petro-Canada refineries near Edmonton. Much of this gasoline is transported by pipeline to Kamloops and the Lower Mainland. It is also delivered by truck or rail to eastern and northern regions of B.C.

There are no tariffs on gasoline trade between Canada and the U.S., and throughout the 1990-96 period there have been modest amounts of gasoline exports and imports between B.C. and the U.S. northwest. In 1995 and 1996, imports have generally exceeded exports, most notably during the spring. Net imports totalled 55,000 cubic metres, 5.5% of total B.C. sales, in the first quarter of 1996. Most of the imports are trucked into B.C. from Arco and other refiners in the Ferndale/Anacortes area in northwest Washington State.

In terms of industry concentration ratios (the share of total production accounted for by the largest firms), the gasoline refining sector of the B.C. gasoline market is highly concentrated. Four firms (Chevron, Imperial, Petro-Canada and Husky) produce over 90% of the gasoline sold in B.C.

Crude Oil Sources

Most of the crude oil that is refined into gasoline for the B.C. market comes from Alberta oil fields and is predominantly of light grade. Prior to 1990, much of this was imported as crude oil for refining in the province. With the closure of the B.C. refineries, most of it is now imported as refined product.

B.C. crude oil accounts for about 10% of the gasoline sold in B.C. The Husky refinery in Prince George relies exclusively on B.C. crude oil. The Chevron refinery in the Lower Mainland and the Alberta refineries (Imperial and Petro-Canada) also use some B.C. crude oil.

Refiners in the U.S. northwest rely primarily on Alaska crude oil, although they also use some western Canadian crude.

2.3 Gasoline Distribution

Wholesale product prices are generally set at the refinery gate or loading rack and are commonly referred to as rack prices. These prices are the foundation for most other transactions through the distribution system. Wholesale gasoline can be purchased under a variety of conditions. For example, purchasers can negotiate volume discounts. Delivery or transportation costs are added if the product is delivered to the consumer. A branded dealer, who sells the gasoline under a specific brand name, may pay an additional cost for the national advertising, credit card systems, and name recognition or goodwill which are associated with the brand. The variety of services associated with the wholesale product is ultimately reflected in the product price. Gasoline is distributed to most retailers in B.C. by truck, although railway, barge, and pipeline are also used in some locations.

Of the 4.2 million cubic metres of gasoline sales in B.C. in 1995, approximately 73% was sold in the Lower Mainland, Vancouver Island and coastal areas of B.C.; 18% in south central B.C.; 5% in north central B.C.; and 4% in eastern and far northern B.C.

Roughly 45% of the gasoline sold in B.C. is transported as refined gasoline through the Trans Mountain pipeline. This pipeline runs from Edmonton to Vancouver via Kamloops. Along the route, gasoline is taken from the pipeline for treatment and storage in terminals in preparation for distribution. Gasoline reaching the terminals in Vancouver serves the local market and other coastal regions. The Trans Mountain pipeline also carries almost all of the crude oil supplying the Vancouver refinery owned by Chevron. Much of this crude oil originates in Alberta, but some also comes from a crude oil pipeline running from the Peace River region and linking up with the Trans Mountain pipeline at Kamloops. Trans Mountain is regulated by the National Energy Board, which prescribes rates and approves contracts between the pipeline operator and the major oil companies which use the line.

Gasoline sold in the Lower Mainland area is trucked to retail outlets from the local refinery, pipeline terminals and from Washington State refineries. The gasoline sold on Vancouver Island and coastal areas of B.C. is also supplied primarily from the Lower Mainland. Gasoline is barged to terminals in the coastal areas and then trucked to the local outlets. Some gasoline in the northern coastal area (e.g., Prince Rupert and Terrace) is supplied by rail from Alberta refiners.

Gasoline sold in south central B.C. is supplied primarily from terminals in the Kamloops area. The terminals receive the gasoline from the Trans Mountain pipeline, and then the product is trucked to outlets in the surrounding areas.

Gasoline sold in north central B.C. is supplied primarily from the Husky refinery in Prince George, delivered by truck to outlets in the surrounding areas. Some gasoline is supplied from storage terminals which receive gasoline by rail from Edmonton.

Gasoline sold in eastern and far northern B.C. is supplied from Alberta refineries, delivered by truck or rail to storage terminals (e.g., in Fort St. John and Fort Nelson) and then trucked to retail outlets. Some is also trucked directly from Alberta refineries or terminals in Edmonton and Calgary to the retail outlets.

2.4 Gasoline Retailing

Approximately 90% of gasoline sales in B.C. are made through retail outlets. The balance are bulk sales to large commercial or government users, and cardlock or keylock sales to small commercial users and fleets.¹

Gas stations fall into five distinct categories: company owned and operated, commission retailer, lessee operated, independent branded retailer, and independent non-branded retailer. Figure 5 shows how these various categories are operated in terms of ownership of facilities, accountability, hiring, product lines, profit, and the setting of prices.

Figure 5

Ownership and Operation of Retail Gasoline Outlets

	<i>company owned and operated</i>	<i>commission retailer</i>	<i>lessee operation</i>	<i>independent branded retailer</i>	<i>independent non-branded retailer</i>
<i>Who owns the station?</i>	oil company	oil company	oil company leases to retailer	third party or retailer	third party or retailer
<i>Whom does the retailer work for?</i>	oil company	self	self	self	self
<i>Who hires staff?</i>	oil company	retailer	retailer	retailer	retailer
<i>Whose products are sold?</i>	oil company's	oil company's	oil company's	oil company's	anyone's
<i>How is the retailer paid?</i>	salary	commission per litre	station margin	station margin	station margin
<i>Who sets prices?</i>	oil company	oil company	retailer	retailer	retailer

¹ Cardlocks and keylocks are fuel pump islands where a key or card allows the customer to activate the pump and indicates who is extracting the fuel.

There are currently some 1,577 retail outlets in B.C., a decrease of almost 20% since 1990 (Table 1). The Inquiry's data from several sources suggest that about 76% of these outlets sell exclusively the gasoline products of one of the six major companies operating in B.C.: Chevron, Husky, Imperial, Petro-Canada, Shell and Mohawk¹ (columns one to four in Figure 5). Of the 24% that are non-branded, some are in turn owned by the major oil companies, such that about 19% of retail outlets are independent, non-branded retailers (column five). Independent branded retailers (column four) account for 29% of outlets. Company-owned retail outlets account for 47% of the total (columns one to three). About two thirds of these company-owned stations are run by commission agents, who are compensated on the basis of the volume of their sales (column two). Most of the other company-owned outlets are lessee operators, who pay a rental fee for the use of the company station and brand and whose compensation is determined by their total revenues and costs (column three).²

Table 1

**Number of Retail Outlets in British Columbia
by Brand Affiliation and Ownership**

	Number of Outlets	%
Major Oil Company Brands		
- Oil Company Owned	746	47
- Independently Owned	451	29
Other Brands/Stations		
- Oil Company Owned	83	5
- Independently Owned	297	19
TOTAL:	1,577	100

Source: Industry Survey

¹ As noted in section 1.3, Mohawk objected to being included as one of the major companies, pointing out that it does not have a refinery or other upstream assets. However, Shell also does not have a refinery directly serving the B.C. market. The judgement was made to include Mohawk as a major because its gasoline is made to a formula; retailers who generally purchase undifferentiated wholesale gasoline were classified as independents. Admittedly, the distinction between major companies and independents is a judgement call.

² The Inquiry was unable to obtain a market share breakdown of sales volumes by retail outlet category.

The average volume of sales of gasoline per outlet has steadily increased over the past five years as a result of an overall increase in sales of gasoline and the reduction in the number of retail stations. Sales of gasoline at retail outlets in B.C. currently average around 2.7 million litres per year. However, this varies by region. Vancouver has the highest average sales, up to 3.5 million litres per year, while the average in rural areas is around 2 million litres per year.

The nature of the retail outlets has also changed over the past five years, with the shift toward more sales of non-petroleum products. Today, most retail outlets have a convenience store and other services such as bank machines.

The self-serve share of the market has increased over the past five years. Retail stations are increasingly offering self-serve only or a split island with the choice of self-serve. This trend is driven by customers' preference not to pay the incremental costs associated with full-serve, resulting in increased investment in newly renovated stations with automated payment options at the pump. Also, many of the stations that have closed have been the full-serve stations.

The use of customer loyalty programs and schemes, such as Shell's Air Miles, Imperial's Club Z and Petro-Canada's Petro Points, has increased in recent years. These programs allow the consumer to collect points that can be redeemed for non-gasoline products. Another trend is a greater emphasis on product quality offerings. By introducing new and modified gasoline product formulations, such as detergent additives, octane enhancements and ethanol blends, the major refiners and their stations seek to differentiate their gasoline products from those of the other suppliers.

3.0 FACTORS DETERMINING THE PRICE OF GASOLINE IN BRITISH COLUMBIA

The Inquiry Terms of Reference refer to gasoline prices throughout B.C. Detailed data on the factors underlying gasoline prices are not available for each area of the province. However, detailed data are available for Vancouver from Natural Resources Canada and other sources. This chapter focuses on Vancouver to explore the factors generally underlying the price of gasoline. Chapter 4 considers factors underlying the differences in price between Vancouver and other parts of the province.

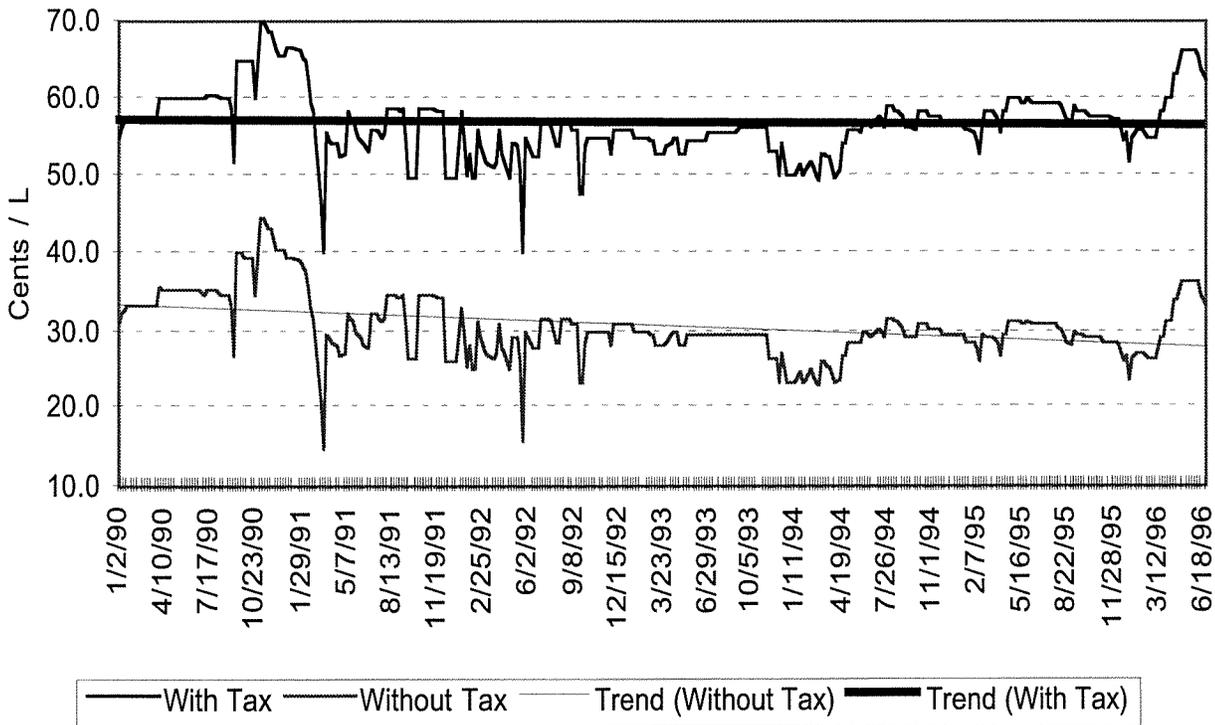
3.1 Retail Gasoline Prices and Their Cost Components

Natural Resources Canada compiles weekly data on retail gasoline prices in Vancouver and other major centres across the country. Figure 6 shows the pattern and trend of prices for regular grade self-serve gasoline in Vancouver, with and without taxes, over the 1990-96 period. Figure 7 presents the same data adjusted for inflation (i.e., in terms of dollars with the same purchasing power as in 1990).

For much of the 1990-96 period, the nominal price of gasoline fluctuated between 50¢ and 60¢ per litre. In two instances prices were much higher. During the fall of 1990 (the time of the Gulf War), prices rose to as high as 70¢. More recently, prices in Vancouver rose to over 65¢. It was this recent rise in price that precipitated this Inquiry. At other times, though for much shorter duration, prices fell significantly below the 50¢-60¢ range. Twice they fell to approximately 40¢ per litre.

Figure 6

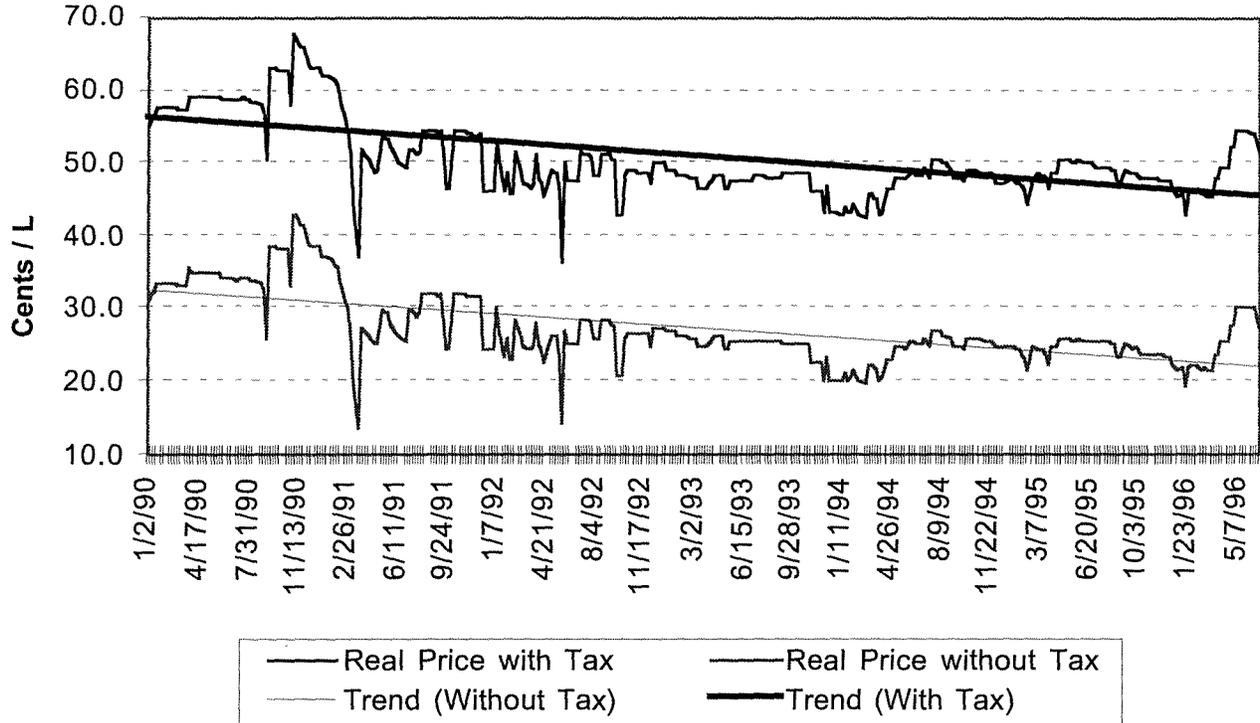
**Weekly Prices for Regular Grade Gasoline in Vancouver
With and Without Taxes — 1990-1996
Nominal Prices
(in each year's dollars)**



Source: Natural Resources Canada

Figure 7

**Weekly Prices for Regular Grade Gasoline in Vancouver
With and Without Taxes
1990-1996
Prices Adjusted for Inflation
(in 1990 dollars)**



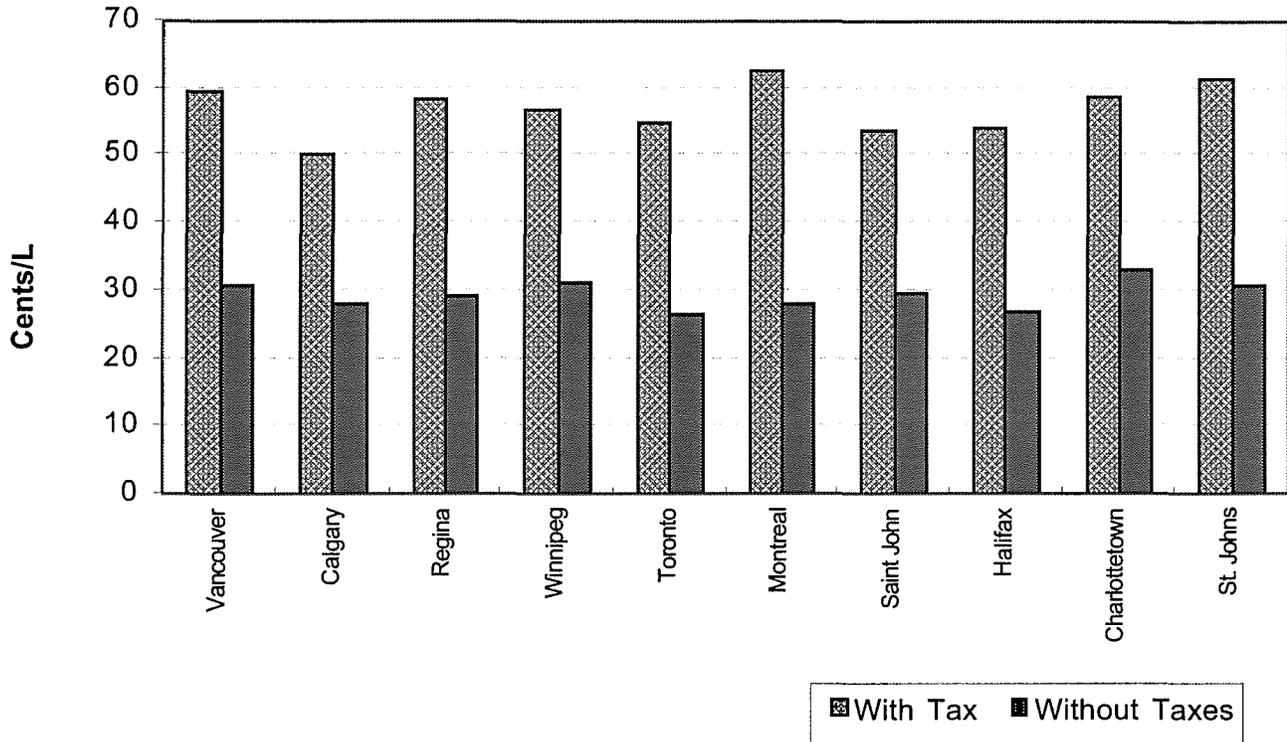
Source: Natural Resources Canada

The figures illustrate the volatility of Vancouver gasoline prices. They also show that the general trend over this period has been for the price of gasoline to decline, particularly when adjusted for the rate of inflation. However, much of this declining trend is due to the very high prices at the beginning of the 1990-1996 period. The trend over the 1991-1996 period has been more stable. Prices in the spring of 1996 were well above the trend line and were as high as or higher than any other time since the high prices in 1990 during the Gulf War.

The average price of gasoline in Vancouver in January through June 1996 was higher than in most other centres across the country. As shown in Figure 8, this was the case for the prices without as well as with taxes.

Figure 8

**Average Price of Regular Grade Gasoline
Vancouver versus other Centres
January - June 1996
With and Without Taxes**



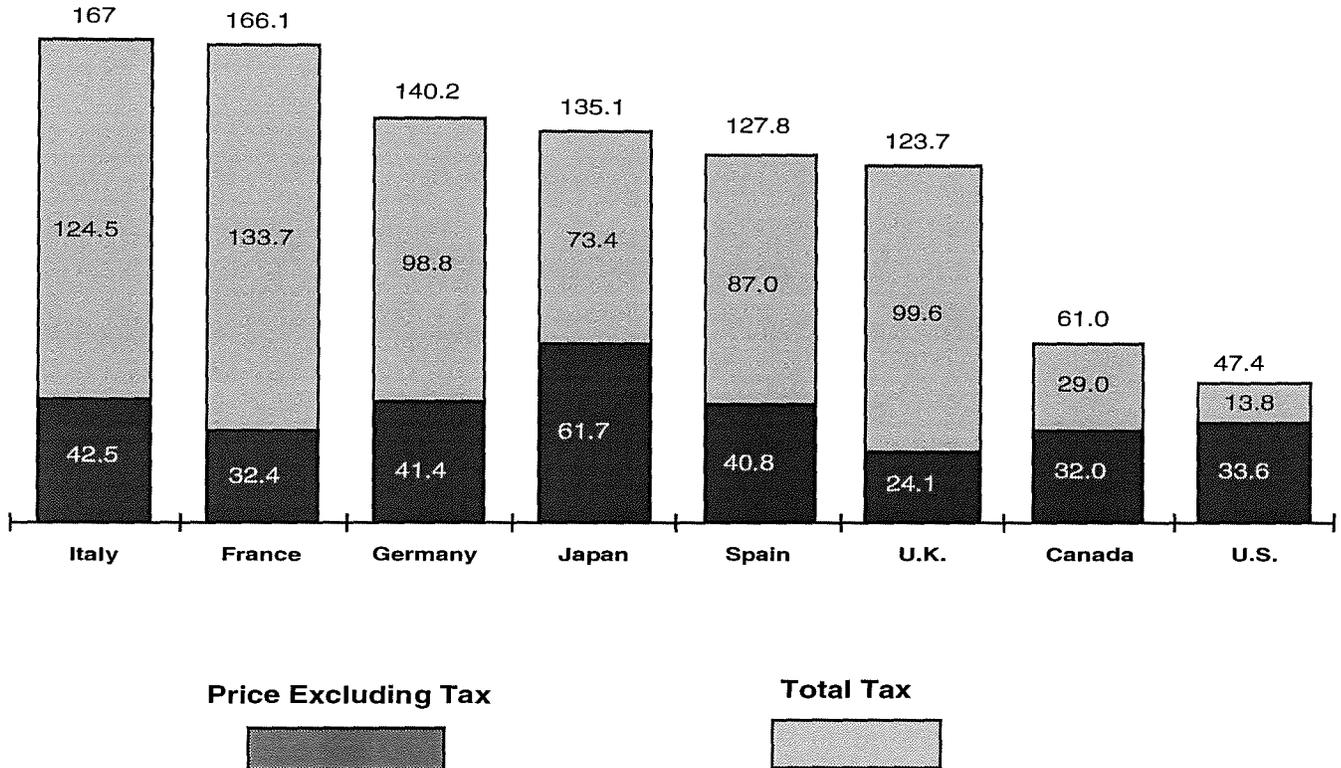
Source: Natural Resources Canada

While there are current concerns about the gasoline prices in B.C. and elsewhere in North America, it is interesting to note how these prices compare to other industrialized countries. As shown in Figure 9, gasoline prices are significantly higher in other industrialized countries, apart from the U.S.

Taxes are the primary reason for the price variation among countries. In most cases, high taxes are the result of petroleum-specific taxation policies, although the underlying objectives may differ. In France, for example, the government levies high taxes on petroleum products as part of a strategy to discourage petroleum imports and thereby reduce France's dependence on oil-exporting countries. This is a legacy of the oil price shocks, and associated geopolitical tensions, of the 1970s. More recently, the gasoline taxation policies of some industrialized countries have been driven by a concern for the environmental impacts of consuming petroleum products. Several countries are examining different taxation proposals as a means of better reflecting the environmental costs of gasoline consumption, and this is already a consideration in their policies of maintaining relatively high tax levels.

Figure 9

International Retail Gasoline Prices
(cents Cdn/litre)
May, 1996



Source: Government of Canada

The retail price of gasoline is the sum of:

- the cost of crude oil acquired by the refinery to produce gasoline and other petroleum products;
- the refining margin (i.e., per unit revenues available to cover the costs of refining, marketing and distribution);
- the retailing margin (i.e., per unit revenues available to cover retailing costs); and
- all provincial and federal taxes.

In January through June 1996, each of these cost components contributed, on average, the following amounts to the price of regular gasoline in Vancouver (Table 2).

Table 2

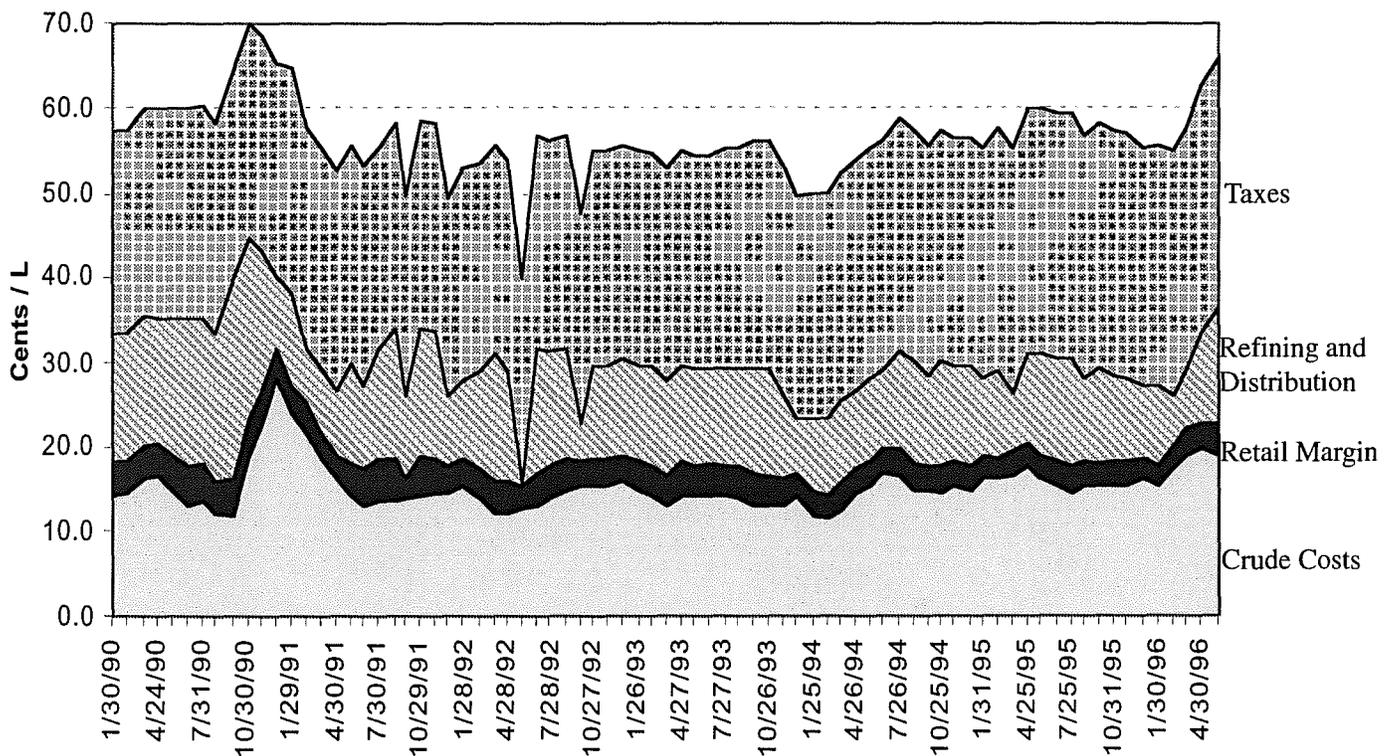
**Cost Components Underlying Vancouver Average Price
of Regular Grade Gasoline
January - June 1996**

	<u>¢/litre</u>	<u>%</u>
Crude Acquisition Cost	18.4	31
Refining Margin	9.4	16
Retailing Margin	2.9	5
Taxes - Provincial	15.0	25
Taxes - Federal	<u>13.9</u>	<u>23</u>
TOTAL:	59.6	100

Similar breakdowns have prevailed over the past five years, though the size of each component, particularly the cost of crude oil and the refining margin, varies over time, as shown in Figure 10 and further discussed below.

Figure 10

**Breakdown of Vancouver Price of Regular Grade Gasoline
by Major Cost Component**



Source: Natural Resources Canada

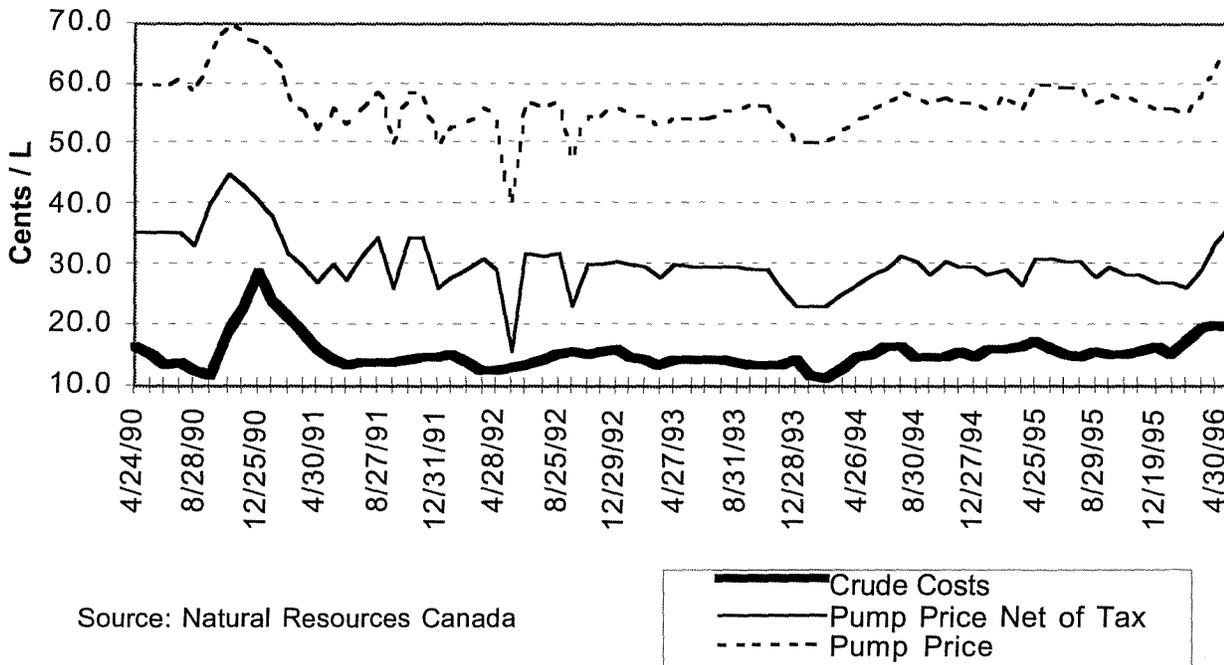
3.2 The Link Between Crude Oil Costs and Gasoline Prices

Crude Oil Costs

In 1996, as shown in Table 2, the cost of crude oil accounted for about 30% of the total retail price of gasoline in Vancouver, 60% if taxes are excluded from that price. As illustrated in Figure 11, over the 1990-96 period, crude oil acquisition costs for gasoline sold in Vancouver have generally been in the range of 12¢ to 18¢ per litre. In the fall of 1990, they were much higher, at almost 30¢ per litre. In the spring of 1996, they rose again, though not as markedly, to 20¢ per litre.

Figure 11

Comparison of Pump Price With and Without Tax and
Crude Acquisition Costs for Vancouver
1990 - 1996



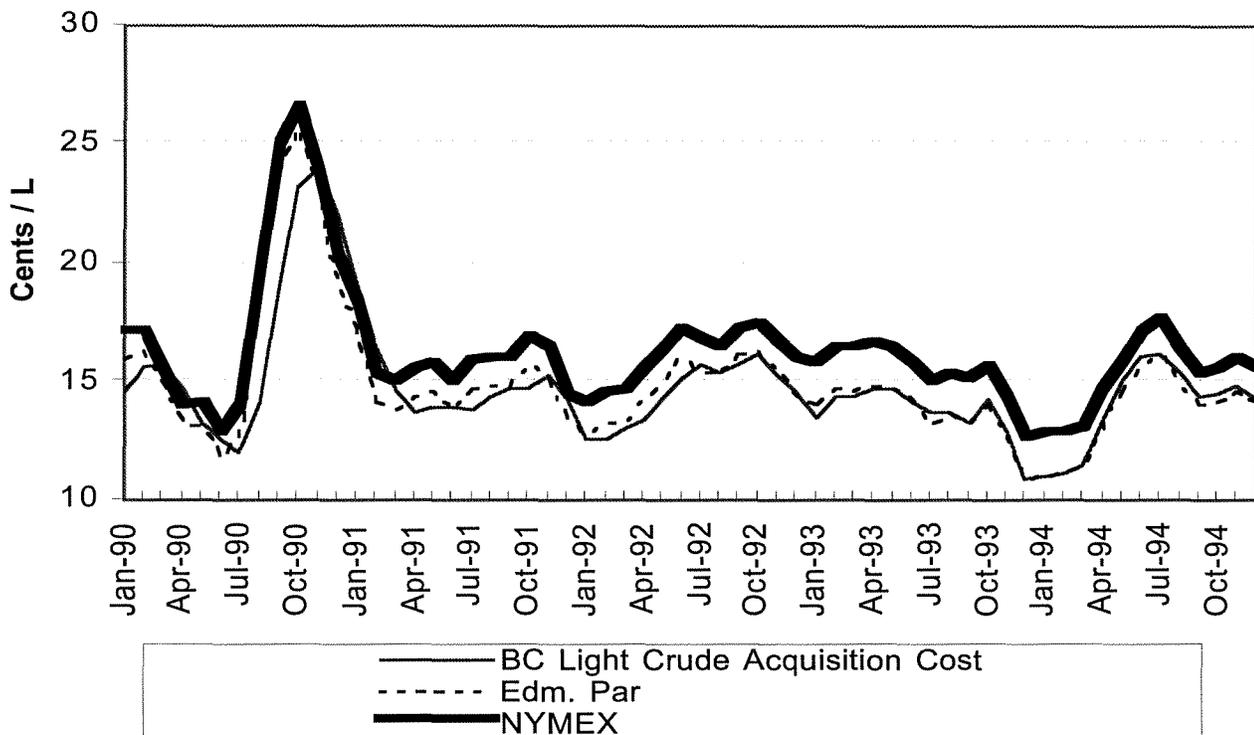
Since 1985, the price of crude oil in Canada has been set in international markets instead of domestically. Figure 12 shows estimated crude oil acquisition costs for gasoline sold in the Vancouver market from 1990 through October 1994 along with the price of crude at Edmonton (Edmonton Par)

and on the New York commodity exchange (NYMEX).¹ The crude oil acquisition cost for gasoline sold in the Vancouver market closely tracks the Edmonton and NYMEX prices.² Thus, the cost of crude oil for gasoline sold in Vancouver appears to closely reflect the competitive price of crude oil in North America, and all of the supply and demand factors in North America and the world that determine that price.

The same is true for the cost of crude oil for gasoline sold in other Canadian centres. As shown in Figure 13, crude oil acquisition costs are very similar across the country (particularly in western and central Canada which have common sources of supply), differing by less than 1¢ per litre.

Figure 12

Vancouver Crude Oil Acquisition Cost,
Edmonton Par, and NYMEX Crude Oil Prices
1990-1994



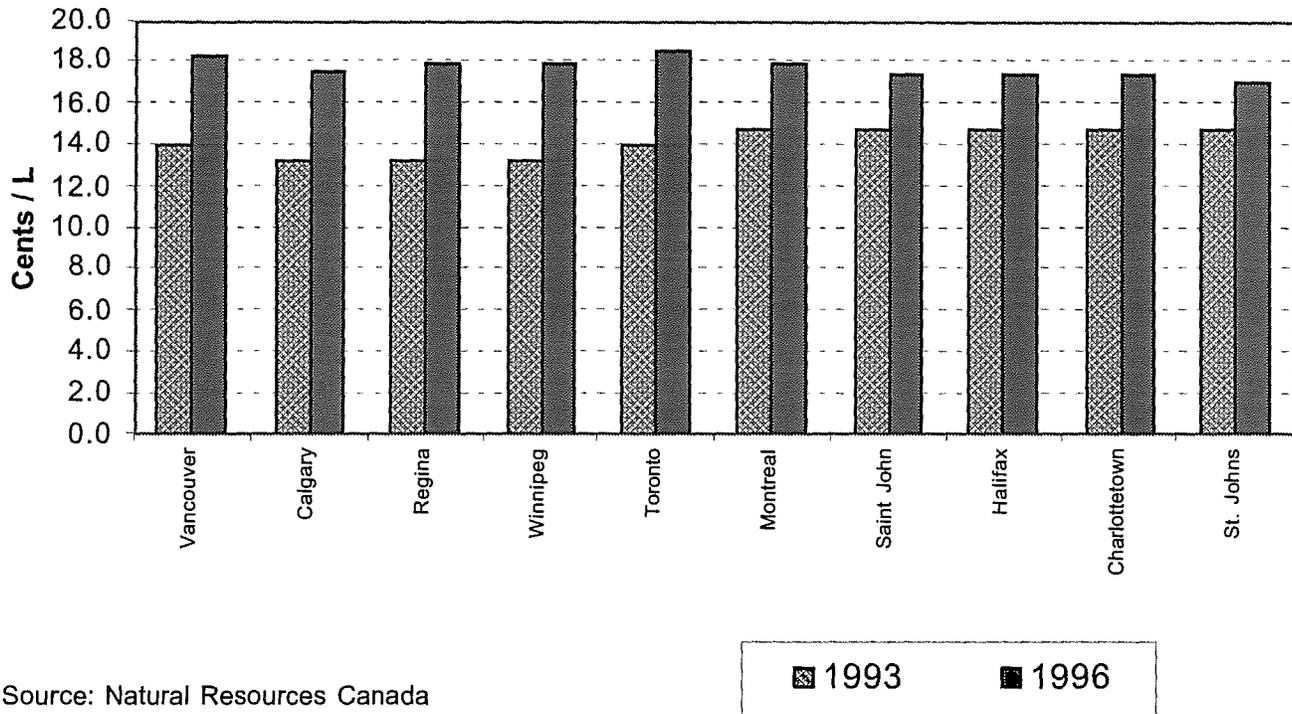
Source: Natural Resources Canada

¹ The Edmonton price is represented by an average of different types of Alberta crude oil, termed the Edmonton par price. The NYMEX price is for sweet (low sulphur) West Texas Intermediate crude oil, for delivery in the following month.

² Natural Resources Canada's reporting of crude acquisition costs has changed over time. Prior to 1994, their cost estimates were based on a survey of B.C. refiners' crude costs, and assumed an inventory lag of two months. Since 1994, their estimates reflect the cost of crude oil in Edmonton plus a pipeline transmission charge to Vancouver, resulting in the perfect tracking during this period and rendering redundant separate data sets for Edmonton and Vancouver.

Figure 13

**Crude Oil Acquisition Costs in Vancouver
and Other Canadian Centres
1993 and 1996**



Source: Natural Resources Canada

The international price of crude oil rose in the spring of 1996 for a number of reasons. Global crude oil inventories were abnormally low in late 1995, as refiners deferred purchases in anticipation of the easing of sanctions on Iraqi oil exports. When the sanctions were not lifted, crude oil prices rose as refiners sought oil to replenish their stocks and meet their requirements. Compounding this was the abnormally cold and long winter in many parts of North America, increasing demand for heating oil, with upward pressure on crude oil prices.

Crude oil prices on the west coast of North America were uniquely affected by an additional factor. Until this last year, the U.S. government has not allowed exports of Alaskan crude oil. Before this policy change, most of this oil was sold on the U.S. west coast, but surpluses had to be shipped through the Panama Canal to the U.S. east coast. This created a market distortion in that Alaska crude marketers tended to be willing to accept low prices in order to avoid the extra transportation costs of shipping surplus oil to the U.S. east coast. When this policy was changed, it led to additional upward pressure on crude oil prices in the U.S. northwest.

Divergences of Gasoline and Crude Oil Price Changes

The price of crude oil and the prices of various petroleum products are subject to different supply and demand conditions, and therefore sometimes move independently of each other, especially in the short-term.

Gasoline prices, to a much greater extent than crude oil prices, are highly seasonal. They tend to rise in the early spring when gasoline stocks are low and demand begins to grow. The higher prices encourage more production, which by mid-summer tends to stabilize stocks and prices. When demand begins to decline in the autumn, gasoline stocks rise and prices tend to fall.

This seasonal variation in gasoline prices occurs independently of changes in the cost of crude oil. According to some analysts, it explains part of the rise in price that occurred in the spring of this year.¹ In particular, the long winter of 1995/96 in North America caused refiners to produce more heating oil and less gasoline in the spring of 1996 than they would normally. As gasoline demand began its seasonal upward swing in the spring, this appears to have created an upward pressure on wholesale gasoline prices. Also, there were some interruptions of gasoline production from major U.S. west coast refiners, again with the effect of tightening the market and putting upward pressure on the wholesale price of gasoline.

The consequence of diverse factors such as these is that while changes in the price of crude oil are generally reflected in the price of gasoline, the correlation is not perfect. This is illustrated by comparing the crude costs with the pump price in Figure 11 and confirmed by simple statistical tests which indicate that the correlation between the retail price of gasoline (net of tax) and the cost of crude oil in Vancouver over the past six years was 74%. In other words, 74% of the variance in the retail price of gasoline is explained by the variance in the cost of crude oil.

A second issue concerning the link between crude oil costs and gasoline prices is whether or not the gasoline price changes are symmetrical in time for upward and downward movements in the cost of crude oil.

¹ See e.g., United States Department of Energy, An Analysis of Gasoline Markets, Spring 1996, June 1996.

Depending on refiner inventory valuation practices, a change in the cost of crude oil may not have an immediate effect on the cost and price of gasoline and other refined petroleum products. Specifically, if refiners use a “first in - first out” (FIFO) valuation system, then a change in the cost of crude won’t affect refining costs until inventories at the time of the cost increase are used up, a period of up to two months.

One would expect that such a lagged response would be the same for both increases and decreases in the cost of crude oil. However, some studies have shown that gasoline price responses are not fully symmetrical. While it generally takes the same amount of time for gasoline prices to fully adjust, the pattern of adjustment can be different. Some studies have shown that there is more likely to be a sharp, early increase in the price of gasoline in response to an increase in the cost of crude oil than a sharp, early decrease in response to a reduction in the cost of crude oil. More of the adjustment takes place sooner for crude cost increases than decreases.¹

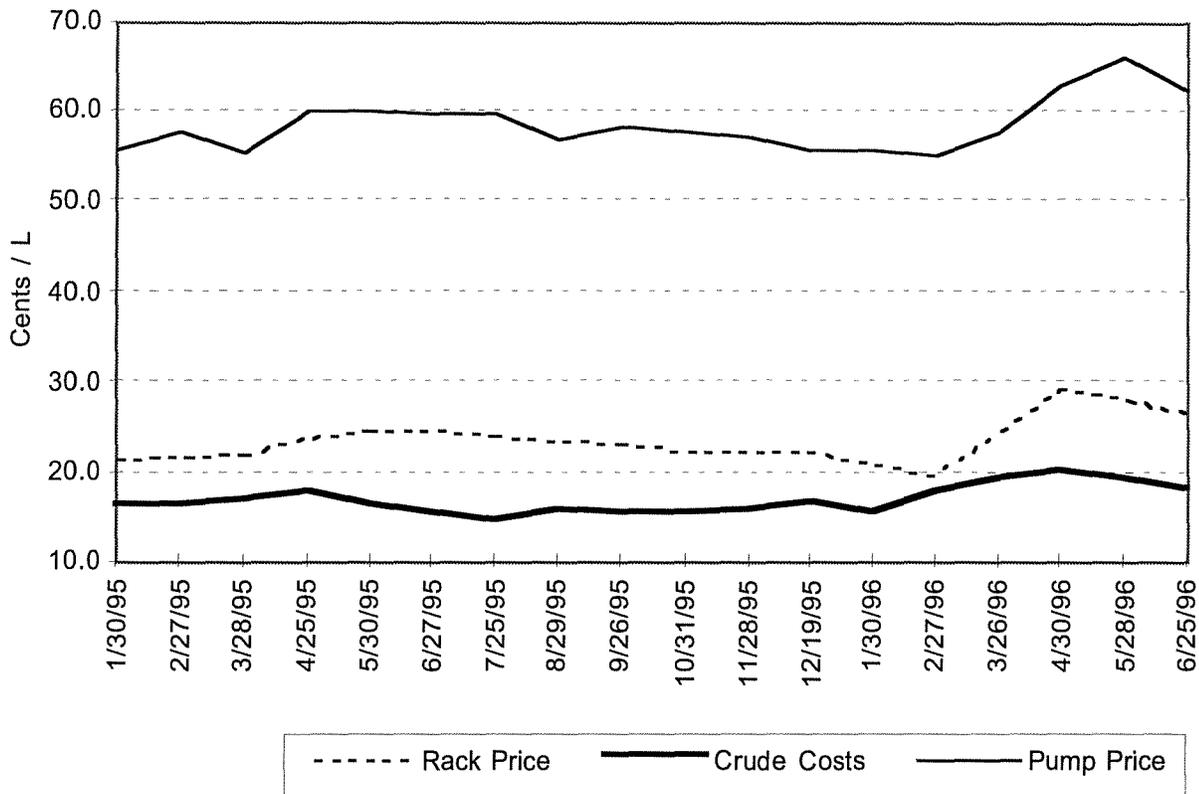
Most of the refiners which supply the B.C. market do not use FIFO inventory valuation. They use the “last in - first out” (LIFO) valuation system. With this system, one might expect no lag between changes in the cost of crude oil inputs and changes in the price of wholesale gasoline. Of course, other factors may cause lags, either in the wholesale price response or in the retail price response, to a change in the cost of crude oil. Refiners and distributors may have wholesale sales contracts with retailers which do not allow for instantaneous changes in wholesale prices. Retailers may use a FIFO valuation system for their inventory, leading to a lag between changes in the wholesale price and changes in the retail price.

Figure 14 presents the retail prices, wholesale rack prices and crude oil acquisition costs for the gasoline sold in the Vancouver market over the period January 1995 to June 1996. This shows that crude oil prices started their recent rise after January 30, 1996. After February 27, a one month lag, wholesale rack prices and retail prices started to rise. The slope and magnitude of the rise for wholesale and retail prices was greater than for crude oil prices. After April 30, 1996, crude oil prices started to fall. Wholesale rack prices started to fall at about the same time, while retail prices were again lagged by one month, starting to fall after May 28, 1996. Figure 14 suggests that the lag in retail price response was roughly symmetrical for the rise and fall of crude oil prices in the spring of 1996. However, it also indicates that the magnitude of the retail price increase exceeded that of the crude oil price.

¹ See e.g., J. Karrenbrock, “The Behaviour of Retail Gasoline Prices: Symmetric or Not?”, Federal Reserve Bank of St. Louis, July/August 1991; R. Bacon, “Rockets and Feathers: the asymmetric speed of adjustment of UK retail gasoline prices to cost changes”, Energy Economics, July, 1991

Figure 14

**Pump Price, Rack Price and Crude Acquisition Costs
of Regular Grade Gasoline in Vancouver**



Source: Natural Resources Canada

3.3 Refining Margin

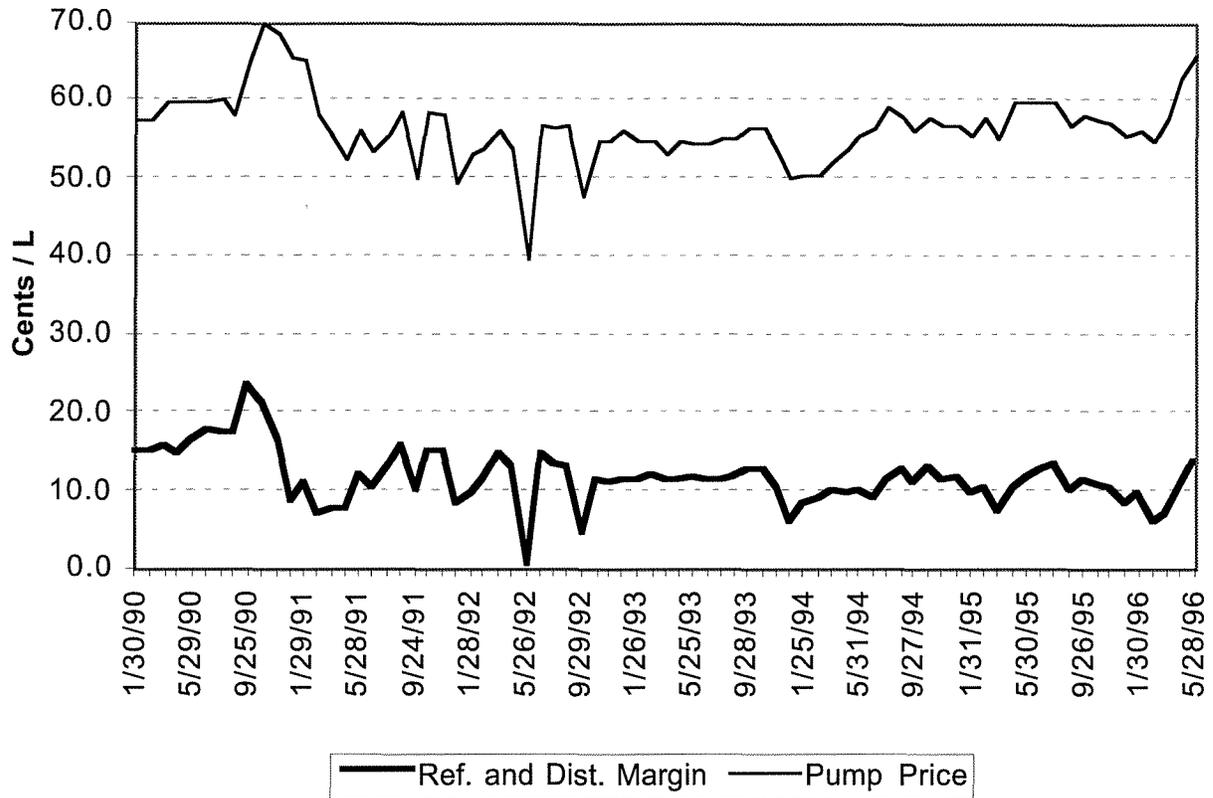
Average Value of the Refining Margin

The refining margin, as defined and reported by Natural Resources Canada, is the residual net revenues accruing to the refiner after deducting from the pump price all taxes, the retailing margin and crude oil acquisition costs. It reflects the difference between wholesale prices for gasoline delivered to Vancouver, net of taxes, and crude oil acquisition costs. The difference between the refining margin and refining, marketing and distribution costs is the net return from refining and related operations.

The refining margin data from Natural Resources Canada are presented in Figure 15. They show that the refining margin for gasoline sold in Vancouver has fluctuated significantly over the 1990-96 period, from over 20¢ per litre to zero. Generally, it has been in the range of 8¢ to 14¢ per litre. It rose to the high end of that range when gasoline prices rose in the spring of this year (13.6¢ per litre on May 28, 1996).

Figure 15

**Refining Margin and Price of
Regular Grade Gasoline in Vancouver
1990-1996**



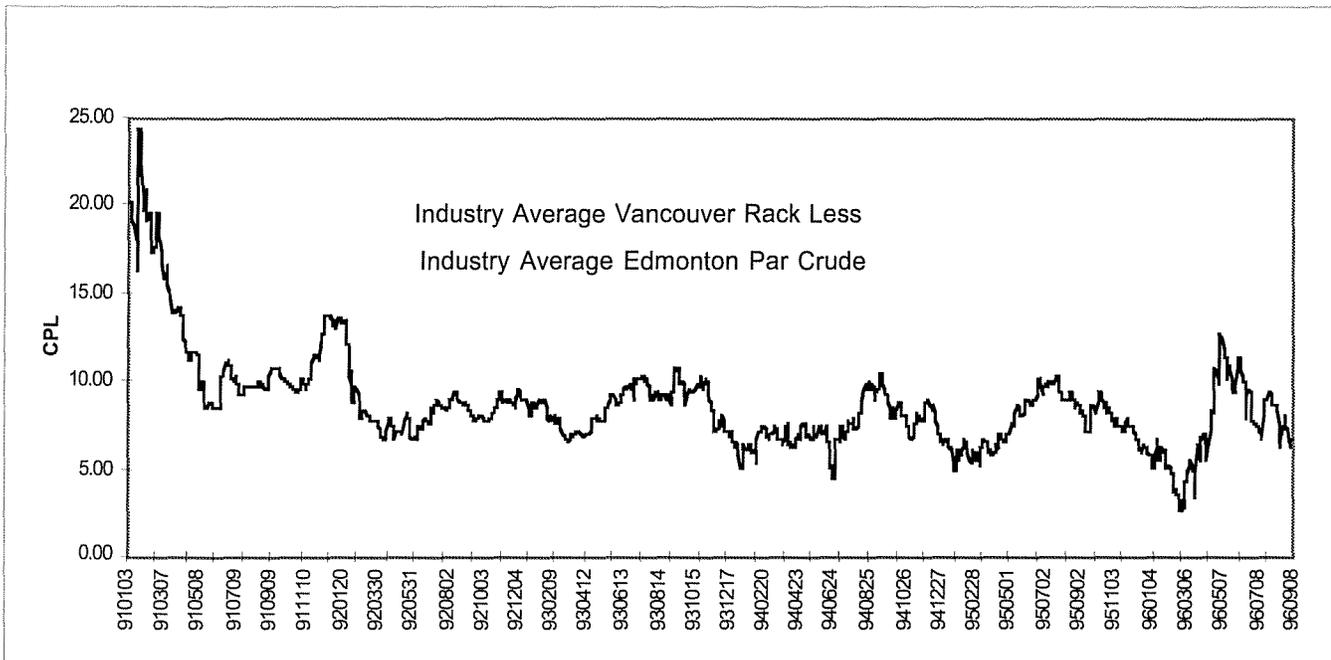
Source: Natural Resources Canada

The actual value of the refining margin, and what that value means in terms of a fair return to refiners and fair gasoline prices, was the most contentious issue facing the Inquiry. The select data sample from Natural Resources Canada calculates a refining margin for gasoline sales to the Vancouver market of 9.4¢ per litre as the average for the six month period of January to June 1996.

In its response to the Preliminary Findings, Imperial provided an alternative estimate of the refining margin from an average of data from Imperial, Shell and Petro-Canada. The Edmonton Par Crude was subtracted from the average Vancouver rack price for the three companies. The results are shown in Figure 16. Imperial's estimate of the average refining margin for the same first six months of 1996 is 7.3¢ per litre, 2.1¢ lower than the Natural Resources Canada estimate. Moreover, these data suggest that the refining margin has declined from an average of 12.3¢ per litre in 1991 to the 7.3¢ per litre in 1996. Figure 16 also shows that while the refining margin did rise above its average in the spring of 1996, it had fallen well below its average in the preceding months at the beginning of 1996.

Figure 16

**Refining / Marketing Margin
Imperial / Shell / Petro-Canada**



Source: Imperial Oil

The difference between the calculations is explained in that Natural Resources Canada estimates an average retailing margin and subtracts this plus crude oil costs and taxes from the retail price in order to arrive at the refining margin as a residual. Imperial took Vancouver rack prices (net of taxes) and subtracted the Edmonton Par crude price to calculate the refining margin. If the rack price is subtracted from the retail price (net of taxes), the average retailing margin is closer to 6¢ per litre. Thus, the difference between the estimates is caused either by Natural Resources Canada underestimating the retailing margin or by the reported rack prices understating the full average values for delivered wholesale gasoline sales.¹ It also appears that local distribution costs are in the refining margin for Natural Resources Canada but in the retailing margin in Imperial's method of calculation. However, this should only explain 1¢ per litre of the discrepancy.²

¹ Earlier evidence by Dorenfeld suggested that rack prices do track actual contract agreements quite closely. Dorenfeld, David, Affidavit before the Competition Tribunal: In the Matter of the Acquisition by Imperial Oil Limited of the Shares of Texaco Canada Inc., CT89/3.

² The numbers may also differ because Natural Resources Canada uses weekly data for all industry participants while Imperial used daily data for only three firms.

The issue was further complicated by the submission of Super Save, an independent gasoline retailer. Super Save provided copies of its recently expired wholesale gasoline supply contracts with major oil companies. One of the contracts, starting in 1990, set the wholesale price at Swan Hill Crude¹ plus 4.6¢ per litre, plus 0.85¢ per litre for delivery to the Vancouver terminal (pipeline cost), a total refiner margin of 5.45¢ per litre. The contract also included an inflation adjustment clause; if inflation averaged 3% since 1990, the 1996 price would be about 6.5¢ per litre. Super Save claimed that in 1996 no major oil company supplier was prepared to negotiate a crude based contract with it.

Thus, the data before the Inquiry suggest that the average refiner margin for the first six months of 1996 ranged from 7.3¢ to 9.4¢ per litre, and as low as 6.5¢ per litre on specific crude based contracts. Super Save suggested in its submission that the difference between the crude based contract price and the estimated refiner margin represents excess profits. However, the major companies could respond that their unwillingness to renew the contracts in 1996 is evidence that such contracts, at least at historic levels, do not provide refiners with an adequate return. But this Inquiry has no way of determining with confidence, without detailed and tested refining and distribution cost data, what margin represents an adequate return to refining and distribution. It could equally be true that the margins contracted for under the contract described above were adequate, and that the unwillingness to recontract is because of the prospect of higher returns by not having the refining margin fixed in a long-term contract.

Refining Margin Shifts in the Spring of 1996

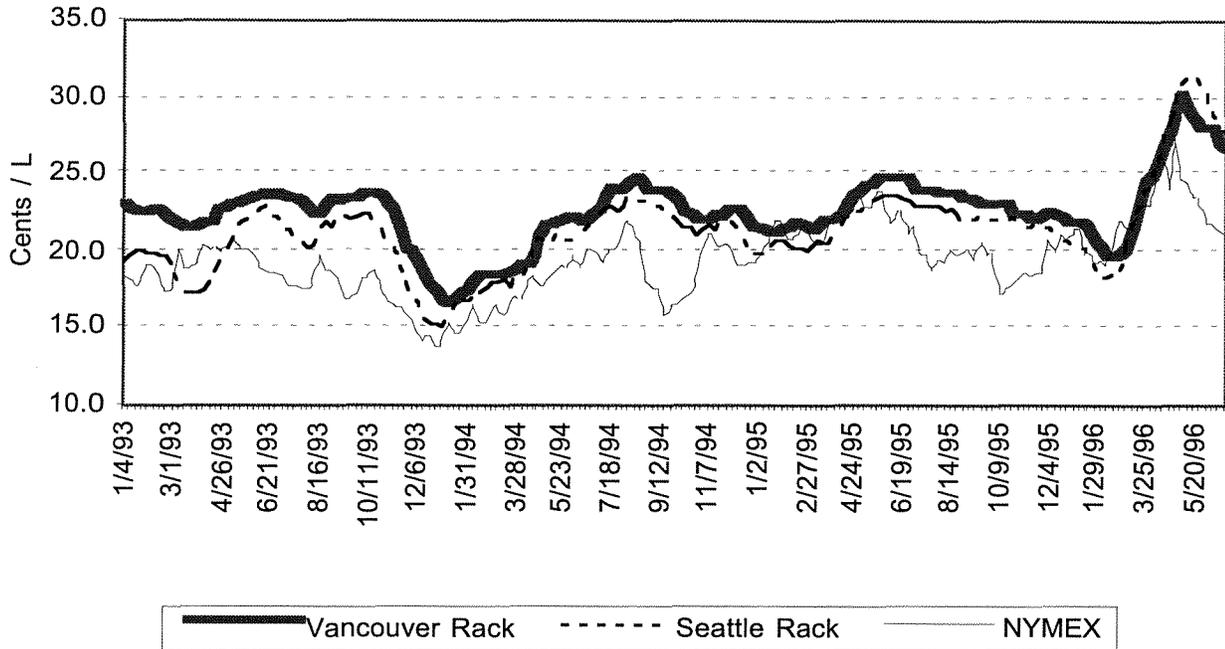
Both the Natural Resources Canada data (Figure 15) and the Imperial data (Figure 16) show a substantial increase in the refining margin associated with Vancouver gasoline sales in the spring of 1996. The Preliminary Findings explored why this occurred by examining data from several sources.

In Figure 17, Vancouver rack prices are shown along with a competitively traded NYMEX price and the Seattle rack price. While all three prices exhibit broadly similar patterns, it is evident that there are significant differences in both the level and pattern of the Vancouver and the NYMEX prices. For example, while the two prices were quite similar in the winter through spring of 1995 and the winter of 1996, they diverged quite significantly in the spring and early summer of 1996. The NYMEX price did not rise as high and fell more sharply than the Vancouver price.

¹ Comparable to Edmonton Par Crude.

Figure 17

**Vancouver Rack, Seattle Rack and
NYMEX Gasoline Prices
1993-1996**



Source: Natural Resources Canada

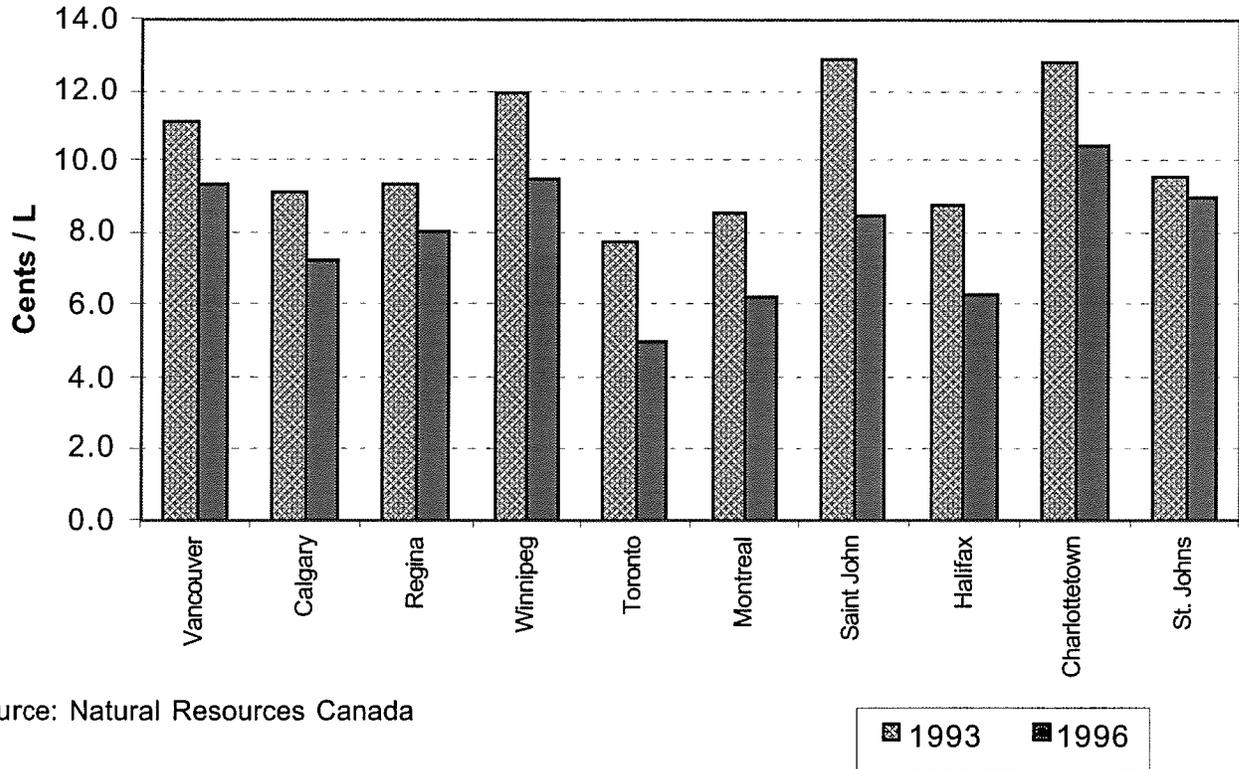
The Vancouver and Seattle prices, however, are very similar. From the summer of 1993 on, they generally remained within 1¢ per litre of one another. The sharp rise in Vancouver prices in the spring and early summer of 1996 followed almost exactly the rise in the Seattle rack price. The data suggest that Vancouver wholesale gasoline prices (and, consequently, the refining margin) are linked to gasoline prices in the U.S. northwest and the supply and demand factors underlying them. Industry submissions have generally supported this conclusion.

U.S. northwest gasoline prices rose sharply in the spring of 1996. In part this was due to the general factors driving up international crude oil prices. However, there were also factors specific to the U.S. west coast which led to especially high prices in that region. As noted above (section 3.2), these included refinery production interruptions in California and the change in U.S. policy on Alaskan crude oil exports.

Moreover, although B.C.'s gasoline originates almost entirely from Alberta (in the form of gasoline or crude oil), the rise in the price of gasoline in the Vancouver market tracked the wholesale price increase in the U.S. northwest, and diverged from the wholesale price in Alberta. The Preliminary

Figure 18

**Average Refining Margin for Regular Grade Gasoline
in Selected Centres in Canada
1993 and 1996**



Source: Natural Resources Canada

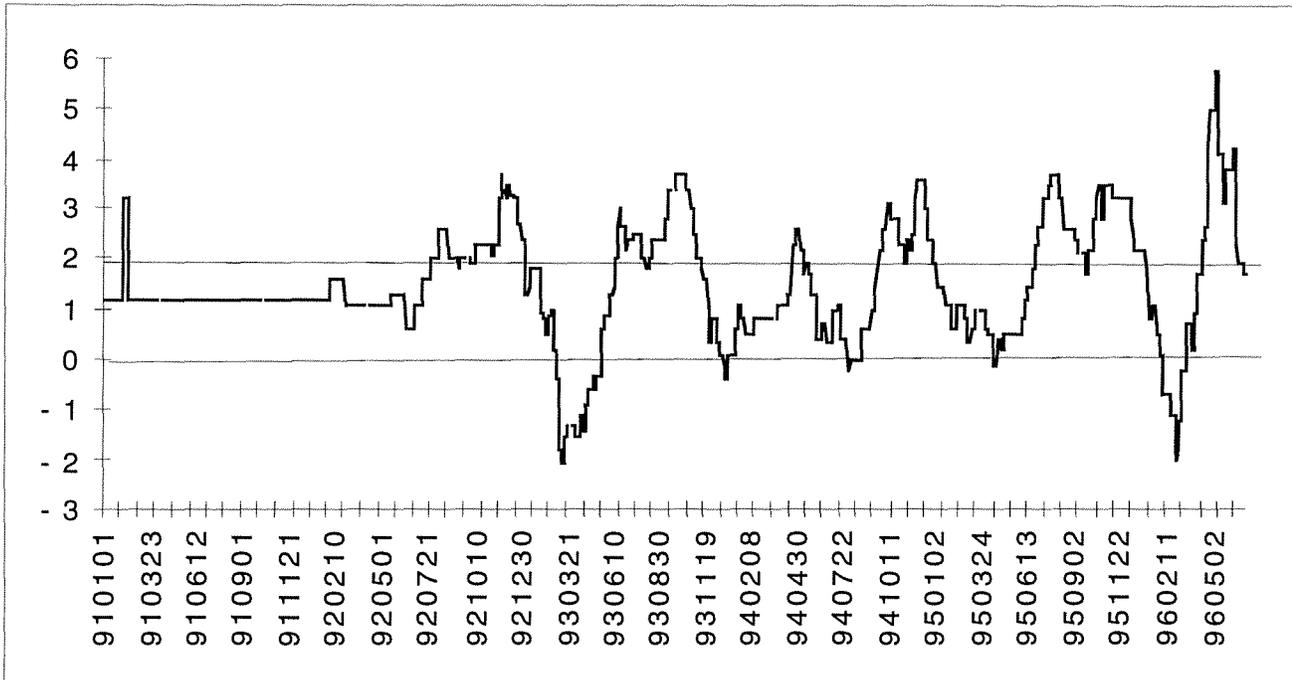
Findings presented data showing that a significant spread emerged between Vancouver and Edmonton wholesale gasoline rack prices in the spring of 1996: over 2¢ per litre in April, almost 4¢ per litre in May and 3¢ per litre in June.

Indeed, the average refining margin for Vancouver for the first half of 1996 was higher than for most other major Canadian centres (Figure 18). For example, it was over 2¢ per litre higher than in Calgary and over 4¢ per litre higher than in Toronto.

The spreads between the Vancouver and Edmonton wholesale prices were well in excess of the pipeline transportation tariff of 0.88¢ per litre. In the Preliminary Findings, it was suggested that such a differential should not be sustained for this length of time in a market which exhibited vigorous price competition and relatively open access for all potential market participants.

Figure 19

Differential between Vancouver Rack and Edmonton Rack



Source: Imperial Oil

In response to these concerns expressed in the Preliminary Findings, Imperial presented data which show the difference between its Vancouver and Edmonton rack prices since 1991 (Figure 19). The data confirm the wholesale price divergence. However, Imperial pointed out that its data also show that the Vancouver rack price has twice fallen below that of Edmonton, and that the long run average differential between Edmonton and Vancouver rack prices is approximately 2¢ per litre. According to Imperial (and other majors in their submissions), this long run average wholesale price differential is justified because the full costs of transporting gasoline to Vancouver from Edmonton include not only the regulated pipeline tariff but also costs for de-sulphurization, product downgrading because of product interfaces in the pipeline, and terminal storage. Imperial and other majors pointed out that when the price does rise above (or below) the 2¢ per litre cost-based difference, instantaneous correction because of trading is impossible because of the lags in contracting for and using the pipeline and associated facilities. For example, it takes more than two weeks for product to travel down the pipeline. Finally, Imperial pointed out that comparison to Edmonton should not overlook the fact that the price in that market may be insufficient to ensure an adequate return on investment.

Three questions arise from the data and argument presented: (1) is the long run average price differential between Vancouver and Edmonton fully justified by transportation and treatment costs? (2) is the length of time during which the spread exceeded 2¢ justified by market lags? and (3) are the prices in Edmonton at an appropriate level?

- (1) Imperial and other majors claim that the full cost of transporting gasoline from Edmonton to Vancouver is 2¢ per litre, but they have not provided testable evidence to support this, even though this type of information was directly requested by the Inquiry. The only relevant evidence the Inquiry has is the contract between Super Save and one of the major refiners. With an approximate inflation adjustment, that contract charged Super Save about 1¢ per litre in 1996 for delivering gasoline from Edmonton to the Vancouver terminal. This suggests that the long run differential between Edmonton and Vancouver wholesale prices may not be fully cost-justified.
- (2) The data in Figure 19 appear to indicate that a spread of greater than 2¢ per litre between Edmonton and Vancouver wholesale prices, and certainly a spread of greater than 1.5¢ per litre, can endure for considerable periods of time. This suggests that it may be worthwhile to explore mechanisms for accelerating the rate at which retailers and marketers can react to such price differences.
- (3) The Inquiry has been provided with no evidence to suggest that an appropriate return is, or is not, being earned at the Edmonton prices. In this circumstance, it is appropriate for the Inquiry to focus on the first two questions: justification of the short and long run differential between Edmonton and Vancouver prices.

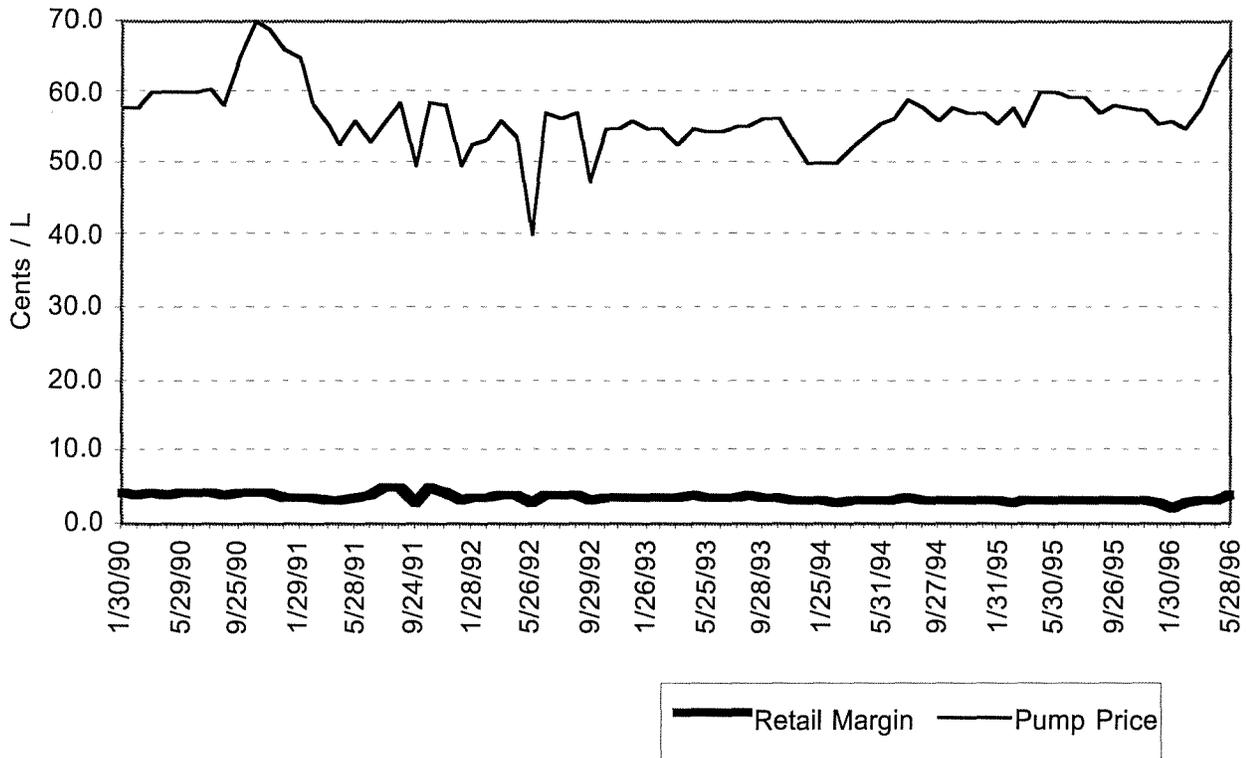
3.4 Retailing Margin

The retailing margin, as defined and reported by Natural Resources Canada, is the per unit net revenue available to cover the cost of retailing and provide a profit to the retailer. It is the difference between the average pump price, net of taxes, and the average delivered wholesale price paid by the retailer.

As shown in Figure 20, the retailing margin in Vancouver has been relatively constant, averaging about 3¢ per litre in recent years. While some changes in retailing margins have occurred, they are not of a magnitude that serves to explain changes in the retail price in the Vancouver area.

Figure 20

**Retail Margin and Price of
Regular Grade Gasoline in Vancouver
1990-1996**



Source: Natural Resources Canada

Within local markets, the degree of retail competition has a critical influence on prices. Price wars, which are an indication of intense competition, are most evident in areas where individual retailers are seeking to increase their market share. Prolonged price war activity often results in the closure of the less efficient service stations. In centres where an equilibrium is reached, in which competitors are satisfied with their market share and return on investment, price wars are infrequent. Generally, the lowest cost retailer with excess capacity tends to set the price of gasoline in a given market.

To a large extent, the size of the retailing margin appears to be strongly influenced by the pricing strategies of the major oil company suppliers. They establish the wholesale prices at which gasoline is supplied. They set the retail price at their own stations and advise on the price at independ-

ently-owned major brand stations. Independents can set their own retail price, but if they charge a higher price than the major brand stations they will lose business, given the price sensitivity of most customers. If they charge a lower price, they risk precipitating a price war in which they would be very vulnerable. This is because the major companies will protect the retailing margins at branded stations (in whole or in part) by lowering their wholesale prices to match decreases in the retail prices during price wars (as long as the retailer did not start the price war). In contrast, the retailing margins at independent stations are not protected. Their wholesale price typically does not change, even if it is above the falling retail price.

However, other factors do affect the magnitude of the retailing margin on a location-specific basis. The retailing margin depends on competitive conditions, sales volumes and cost factors in different locations. It also depends on the extent and profitability of ancillary business. A number of retailers have indicated (and the small margin would suggest) that gasoline sales in themselves are not profitable. Convenience stores or other related activities frequently sustain the overall operations.

Retailing margins in Vancouver appear low relative to other centres across Canada, as shown in Figure 21. However, the differences are not great, generally less than 1¢ per litre. One exception is Charlottetown, where retailing margins are higher than in other Canadian centres, about 2¢ per litre higher than in Vancouver.

3.5 Taxes

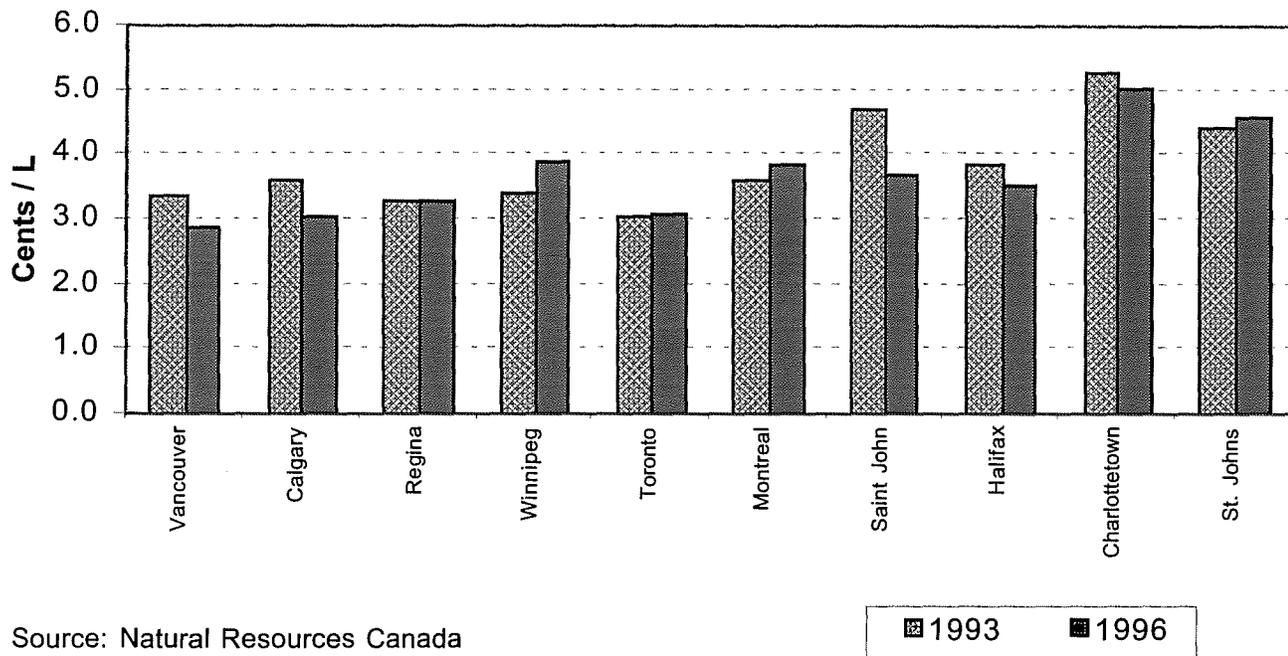
Included in the retail price of gasoline are provincial and federal taxes. In Vancouver, provincially-authorized taxes total 15¢ per litre, an 11¢ provincial road tax¹ and a 4¢ transit levy.² Federal taxes currently total almost 14¢ per litre, a 10¢ per litre federal excise tax and the GST. The GST component varies, depending on the total price of gasoline. At 60¢ per litre, it is just over 3.9¢ per litre.

¹ Of this road tax, 1¢ is dedicated to the BC Transportation Financing Authority to help pay the interest and amortization for new highway projects. The balance of the road tax goes to the province's general revenues for highway operating, maintenance and rehabilitation costs and other government expenditures.

² The 4¢ transit levy only applies to Vancouver. In Victoria there is a 1.5¢ per litre transit levy. Elsewhere in the province there are no transit levies.

Figure 21

**Average Retail Margin for
Regular Grade Gasoline in Selected Canadian Cities
1993 and 1996**

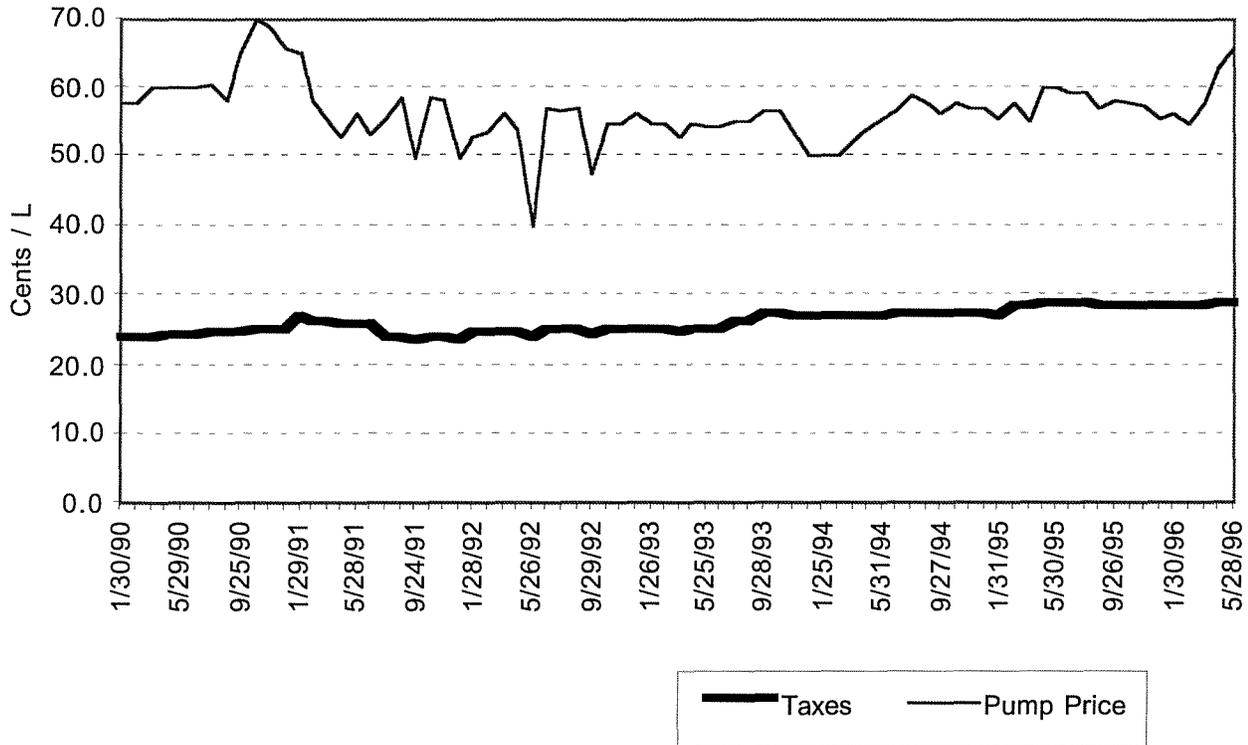


Source: Natural Resources Canada

Taxes have increased in recent years. In 1993, the provincial road tax was increased from 10¢ per litre to the current 11¢ and the Vancouver transit levy from 3¢ to the current 4¢. In 1995, the federal excise tax was increased from 8.5¢ to the current level of 10¢. The GST rate has not changed, but the amount of tax it represents has increased recently because of higher prices. Overall, as shown in Figure 22, taxes have increased from approximately 25¢ per litre in 1990 to 29¢ per litre in the spring of this year.

Figure 22

**Gasoline Taxes and Price of
Regular Grade Gasoline in Vancouver
1990-1996**



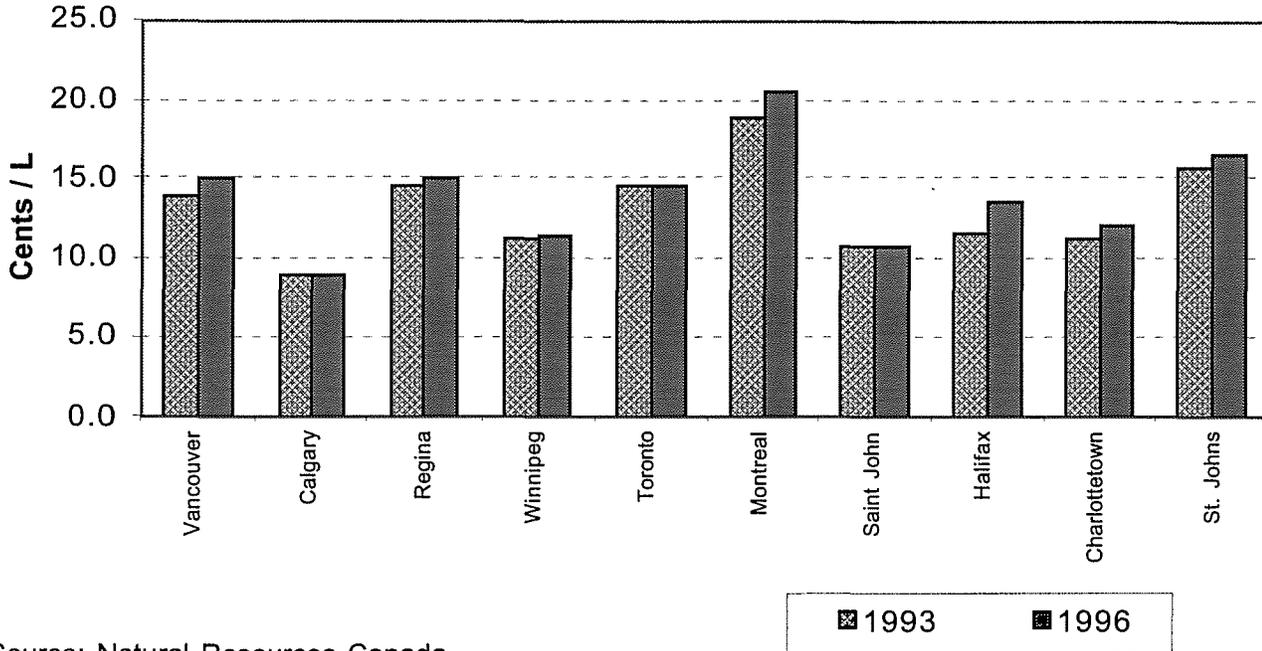
Source: Natural Resources Canada

The level of federal taxes in Vancouver is very similar to other centres across the country, with only small differences due to the GST. However, provincial taxes differ markedly, as shown in Figure 23.

While taxes are clearly a large component of the price of gasoline, they were not responsible for causing the change in gasoline prices that occurred in the spring of this year. Rather, the opposite occurred. The rising gasoline price had the effect of slightly increasing taxes because the GST component is calculated as a percentage of the retail price of gasoline.

Figure 23

**Average Level of Provincial Taxes in Selected Canadian Cities
1993 and 1996**



Source: Natural Resources Canada

3.6 Determinants of the Spring 1996 Gasoline Price Increase

Table 3 provides a break-down of the factors contributing to the spring 1996 increase in Vancouver retail prices. In terms of the cost components underlying the price of gasoline, the 10¢ increase in price was primarily due to an increase in the cost of crude oil (4¢) and an increase in the refining and distribution margin (4.1¢). The increase in the cost of crude oil appears to track relatively closely developments in international crude oil markets, markets in which B.C. industry participants are price takers. However, the increase in the refining margin is apparently due to the linkage between U.S. northwest and Vancouver wholesale prices. When U.S. northwest prices rose in the spring of 1996, the B.C. and Alberta refiners raised their Vancouver wholesale supply prices as well, increasing their refining margin. Finally, the retailing margin also increased by 1.3¢ and federal taxes increased by 0.6¢, the latter because the GST is calculated as a percentage of the higher retail price.

Table 3

**Factors Contributing to the Spring 1996
Increase in Vancouver Retail Gasoline Prices
January - June 1996
(cents/litre)**

	Crude Cost	Retail Margin	Refining and Distribution Margin	Provincial Tax	Federal Tax	Retail Price
January 30, 1996	15.4	2.3	9.5	15	13.7	55.9
May 28, 1996	19.4	3.6	13.6	15	14.3	65.9
Difference	4	1.3	4.1	0	.6	10
% of Total Difference	40%	13%	41%	0	6%	100%

Source: Natural Resources Canada

4.0 REGIONAL GASOLINE PRICE VARIATIONS

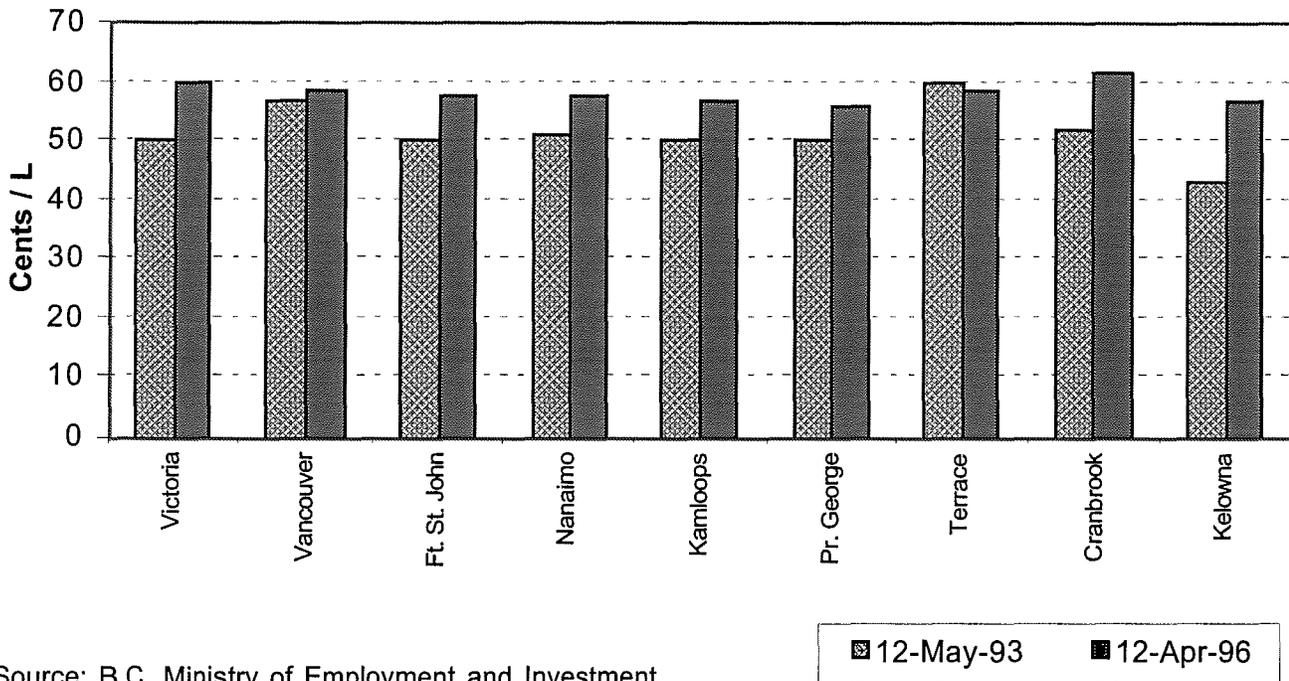
4.1 Gasoline Prices Across British Columbia

Detailed time series data on gasoline prices in different B.C. communities are unavailable. The Inquiry therefore relied on single day samples collected by the B.C. Ministry of Employment and Investment.

Figure 24 shows gasoline prices in nine centres across the province in the spring of 1993 and 1996. In 1996, the prices differed by over 5¢ per litre. Even larger differences were apparent in 1993. While these differences reflect the prices on the specific sampling dates and any unique circumstances at that time (such as the very low price in Kelowna in the May 1993 sampling date), they are indicative of the magnitude of price differences across the province. Industry data confirm sustained differences by centre in B.C., although the specific differences revealed by these two sampling dates are apparently unrepresentative for some communities.

Figure 24

**Prices for Regular Grade Gasoline in
Selected Cities in British Columbia**



Source: B.C. Ministry of Employment and Investment

4.2 Regional Tax Differences

One factor underlying different prices across B.C. is the difference in taxes. Most significantly, only Vancouver and Victoria have transit levies: 4¢ and 1.5¢ per litre, respectively. As well, there are slight differences in the effect of the GST because it is a percentage of the final price. However, as shown in Figure 25, there are still significant differences in gasoline prices net of all taxes.¹

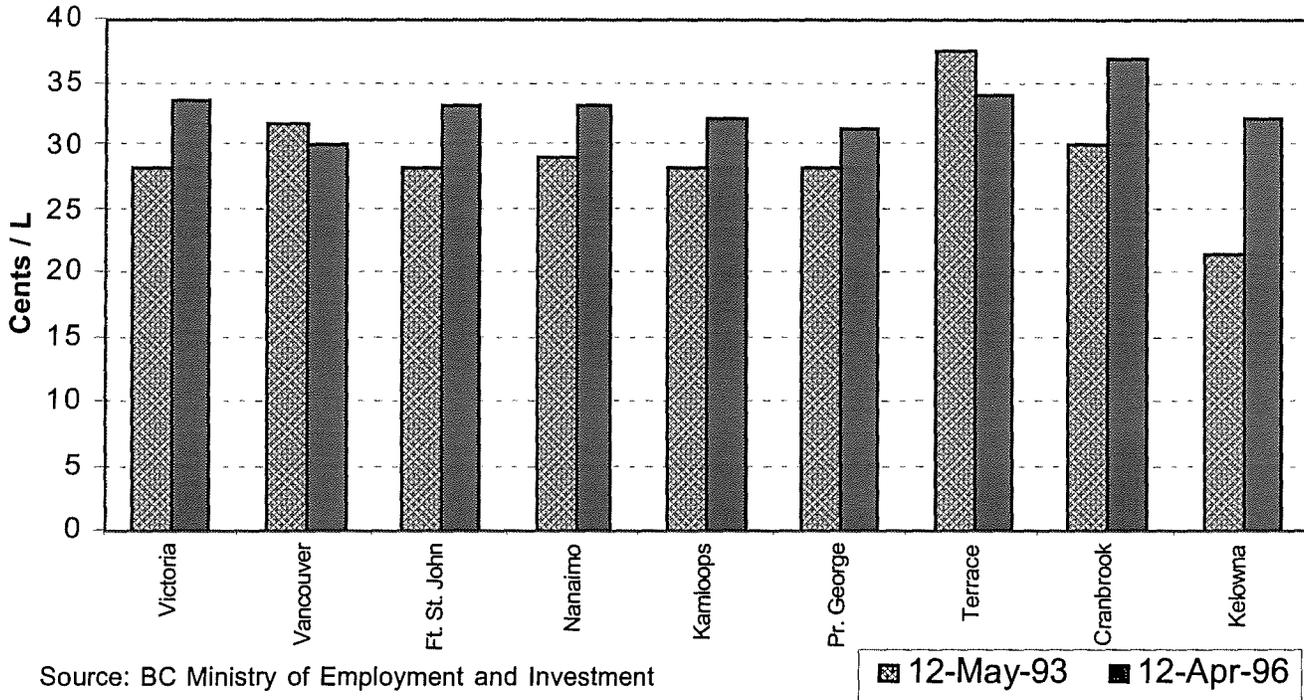
4.3 Cost Differences

The cost of gasoline in different centres depends on the wholesale cost at the refinery or major terminal source, the costs of delivering gasoline from the source of supply to the retail outlet, plus the retailing cost in each centre. Edmonton is a common source of supply for wholesale gasoline sold to all parts of B.C. Thus, differences in transportation costs from Edmonton plus differences in retailing costs should account for the differences in the price of gasoline sold in different parts of B.C. There are

¹ Again it is important to remember that prices on these sampling dates are not necessarily indicative of average differentials between different centres in the province.

Figure 25

**Prices for Regular Grade Gasoline in Selected Cities
Within British Columbia
Net of Taxes**



differences in transportation and retailing costs by centre in B.C. However, as discussed below, these do not appear to fully explain price differences.

Transportation Costs

Gasoline is delivered from Edmonton by pipeline to Kamloops and Vancouver, by truck to eastern B.C., and by rail to northcentral and northeastern B.C. Gasoline is delivered from Vancouver by barge to Vancouver Island and the central and north coastal areas.

While transportation costs can vary significantly, depending on the specific locations and requirements, generally they are in the range of 1¢ to 4¢ per litre. Pipeline costs to Vancouver are currently 0.88¢ per litre while pipeline costs to Kamloops are 0.67¢ per litre. To these must be added additional costs of using the pipeline to ship product, as noted in section 3.3. Trucking costs to eastern B.C. (e.g., the Kootenays) are in the order of 2¢ per litre. Barging costs to Vancouver Island (e.g.,

Nanaimo) are approximately 0.5¢ per litre, to Prince Rupert 1.8¢ per litre. Total transportation costs from Alberta to Vancouver Island and Prince Rupert are therefore about 1.4¢ and 2.7¢ per litre respectively.

The delivered wholesale cost of gasoline will differ by centre because of these differences in transportation costs. However, these differences in cost neither explain, nor in some cases are reflected in, differences in price.

Total transportation costs to Kamloops, for example, are slightly less than to Vancouver. Despite this, the net of tax price of gasoline in Kamloops was 2¢ per litre higher than in Vancouver on April 12, 1996. On other sampling dates in 1996, it was 4¢ to 5¢ per litre higher.

Total transportation costs to Cranbrook are roughly 1¢ per litre higher than to Vancouver (2¢ per litre trucking cost from Calgary). The net of tax price of gasoline in Cranbrook, however, was 7¢ per litre higher than Vancouver on April 12, 1996.¹ Similar price spreads were reported on other 1996 sampling dates.

Total transportation costs to Vancouver Island from Alberta are 0.5¢ per litre greater than to Vancouver. In April 1996, Vancouver Island prices, net of tax, were over 3¢ per litre higher than in Vancouver. On May 12, 1993, Vancouver Island prices, net of tax, were 3¢ per litre lower than in Vancouver, despite the higher transportation cost.

Retailing Costs

Retailing costs per litre of gasoline depend on the total volume of sales. The required retailing margin on gasoline also depends on the extent and profitability of ancillary businesses. Other factors affecting retail costs (and how they differ by centre) are land costs.

Generally, the average volume of sales is higher and the profitability of ancillary business is greater in the larger centres. This contributes to lower retailing costs and thus lower required retailing margins per litre of gasoline sold. On the other hand, land costs are higher in the larger centres, offsetting somewhat the cost reducing effect of higher sales volumes.

¹ In its response to the Preliminary Findings, Imperial suggested that the sampling data for Cranbrook are not indicative of its average price spread with Vancouver.

Detailed data on retailing costs by centre are not available. Industry submissions suggest that retailing margins generally range from just under 3¢ to 5¢ per litre, a potential differential of 2¢ per litre, but in some cases the differential between margins can be as high as 4¢.

4.4 Differing Market Conditions

If differences in taxes and costs (transportation, distribution and retailing) do not fully explain regional gasoline price variation, differences in market competitiveness may be a factor. In particular, there is a relatively large number of independent retail outlets in the Vancouver area. These retailers can and do acquire gasoline supply from refiners in the U.S. northwest. This access to U.S. suppliers may serve to constrain wholesale prices in the area, provided that U.S. wholesale prices are not relatively high. Also, many Lower Mainland customers live near the border or travel frequently to the U.S., and consequently have the option of purchasing their gasoline at U.S. retail outlets. The much lower U.S. retail prices (primarily due to lower taxes) may serve to constrain the retail price that Lower Mainland outlets can charge.

The competitive pressure from U.S. sources of supply is not as great in most other regions of the province because of longer distances and higher transportation costs. Also, in most other markets there are fewer independent retailers who are free to seek out alternatives to the major Canadian sources of supply.

Overall, it is very difficult to determine, in the absence of detailed data, whether price differences between different regions in the province are essentially a result of cost differences or a result of differing market conditions. However, the Inquiry encountered at times strong public concerns that a lack of vigorous price competition is responsible in some locations for part of the price differences that have been observed. Given this concern, there may be a benefit to both the public and industry in the collection and distribution of relevant cost data.

5.0 THE STRUCTURE OF GASOLINE PRICES

The Terms of Reference for this Inquiry call for examination of the fairness of, and the economic rationale for, the structure of gasoline prices in B.C. Previous chapters have probed this issue in terms of the structure of gasoline prices at different stages in the production process (crude oil, wholesale gasoline, retail gasoline) and between different locations in the province. In this chapter, the focus is on the structure of gasoline prices depending on the type of gasoline purchased (regular, medium and premium) and the way in which the gasoline is purchased (self-serve vs full-serve).

5.1 Prices by Grade of Gasoline

In Table 4, the Vancouver price of self-serve gasoline is shown by grade along with the price differentials. In 1996, the price of mid-grade gasoline was 5.1¢ per litre greater than regular; premium was 9.2¢ per litre greater than regular. These differentials are more than double those that existed in 1990.

Table 4

Vancouver Retail Gasoline Prices by Grade
Cents per Litre
(difference from regular in parenthesis)

	<u>Regular</u>	<u>Mid-Grade</u>	<u>Premium</u>
1990	61.1	63.3 (2.2)	65.7 (4.6)
1991	56.4	59.2 (2.8)	61.9 (5.5)
1992	53.6	57.0 (3.4)	60.3 (6.7)
1993	54.6	58.6 (4.0)	62.5 (7.9)
1994	55.2	60.0 (4.8)	64.0 (8.8)
1995	57.9	62.9 (5.0)	67.1 (9.2)
1996*	58.8	63.9 (5.1)	68.0 (9.2)

* January through May

Source: Natural Resources Canada

This Inquiry was unable to discover a cost-based rationale for the change in these differentials over such a relatively short period of time.

A possible non cost-based explanation is that buyers of mid and premium grade gasoline are generally more concerned about quality and less sensitive to price than buyers of regular grade gasoline. Consequently, the demand for higher grades may be, in economic terms, more inelastic with respect to price (a higher price does not reduce the volume of sales as much as it would for regular gasoline). This may allow retailers to charge higher prices for the higher grades without the same concern about loss of sales.¹

5.2 Prices by Type of Service

There has been a marked trend in recent years toward self-serve stations. Some full-serve stations have closed. Many others have switched to self-serve or split-island self- and full-serve stations.

There is a higher cost associated with full-serve because of the additional labour it requires. Industry estimates of the extra cost for full-serve range from 1¢ to 3¢ per litre. One might expect to see this extra cost universally reflected in the relative prices of self- and full-serve gasoline. At stations which offer both self- and full-serve, the price differential is frequently in the range of 3¢ per litre of gasoline. However, at stations which offer only full-serve gasoline, there is often no difference in price relative to nearby self-serve stations. In other words, stations which offer only full-serve do not generally charge the cost premium. This may be explained by the fear of loss of sales. Customers who do not value full-serve will not pay the higher cost and will fill up at other stations.

In contrast, stations which offer both full- and self-serve do not have to worry about loss of customers from a full-serve premium. They can set the full-serve premium to reflect the cost of providing it, or in relation to the value certain customers place on that service, if those customers, like the buyer of higher grades of gasoline, are less sensitive to price because of their desire or need for full service.² This allows retailers to charge higher prices for full-serve without loss of full-serve customers.

¹ For evidence of this in other jurisdictions see S. Borenstein, "Selling costs and switching costs: Explaining retail gasoline margins", *RAND Journal of Economics*, Autumn, 1991.

² Evidence of this (i.e., price differences not reflective of cost differences) is also found in other jurisdictions. See A. Shepard, "Price Discrimination and Retail Configuration", *Journal of Political Economics*, Volume 99, No. 1, 1991.

Organizations representing the disabled pointed out that the reduction in the number of full-serve stations, and the tendency to close these stations in the late evening, is a potential problem for customers who must have this service. The Inquiry was not provided with detailed evidence in order to assess the extent to which this is a problem. The government could work with groups representing the disabled to further examine the issue and to explore solutions.

6.0 ASSESSMENT OF THE EFFECTIVENESS OF THE BRITISH COLUMBIA GASOLINE MARKET IN ENSURING FAIR PRICES

6.1 Overall Assessment

The evidence compiled in this Inquiry suggests that the market sectors (crude oil supply, refining and distribution, retailing) which determine gasoline prices in B.C. are, in general, subject to competitive pressures. Crude oil prices are determined in the international oil market, a market in which competition has had a downward pressure on real prices over the last 15 years. The refining and distribution sector of the market is more concentrated, but its prices are generally linked to the broader North American market. The retail sector of the market also appears to be relatively competitive. These latter two downstream segments of the industry have not earned high returns in recent years.

Nevertheless, some of the evidence before this Inquiry appears to support the argument that the market fails in certain respects to be as vigorously price competitive as it could be. Specifically, there are concerns about the determination of wholesale gasoline prices charged to retailers in the Vancouver market area, and potentially also in other areas of the province. There are also concerns about retail price differences in different locations in the province.

The major oil companies were requested to provide, in confidence, detailed cost data that could have enabled the Inquiry to refute or verify this evidence. However, they generally refused to provide such information.¹

¹ Husky provided some cost data.

6.2 Market Concentration and Fair Prices

The Terms of Reference of this Inquiry ask for an assessment of the fairness of gasoline prices in B.C. The term “fairness” needs to be defined and its significance explored.

Fair prices are here defined as the prices that would emerge in a market with vigorous price competition. It is generally argued that prices in such markets need not be regulated because they will automatically reach levels that are reasonable. By this it is meant that vigorous price competition will ensure that a given good will be priced at a level that covers the costs of producing the good as efficiently as possible (at the lowest possible cost), including a return to invested capital that reflects the risks involved in producing the particular good in question. Thus, competitive markets could result in what seem like very high profits for certain activities in certain circumstances, but these high returns may simply reflect a willingness to accept higher risks.

However, it is important to make a distinction between short and long run price determination. On average, one would expect the prices in a market with vigorous price competition to be close to the full cost of production. But prices can diverge substantially from that long run average depending on short run market conditions. Because markets are never in equilibrium, there will often be relative supply shortages, driving prices above the full cost of production, or relative surpluses, driving prices below the full cost of production. What becomes important is how quickly the market reacts to higher or lower prices. This response time will vary depending on the technical characteristics of each type of market and even each location within a market.

A market will tend to exhibit vigorous price competition if it is characterized by many buyers and sellers, as well as ease of market entry for new sellers. Markets that lack one of these conditions may fail to achieve the prices that would have been obtained under more competitive conditions. However, this may be difficult to demonstrate, even if true, in the absence of a competitive market comparison because no data are available on what the competitive price would be.

In assessing price fairness, therefore, the first step of analysis is to assess whether or not the basic conditions of competitive markets have been met. Are there many buyers and sellers? Is market entry relatively easy for new sellers?

The next step is to assess whether or not absence of one or more of these conditions is associated with evidence of prices that diverge from what would be expected from more competitive markets.

The refining and distribution sector of the gasoline market in B.C. does not have many sellers. The market is concentrated in the hands of a few major oil companies. Industry submissions have pointed out that there are actually many independents acting in the market, and that there is access to the market for many other U.S. producers. However, from the evidence before this Inquiry, it appears that to have true competitive power in the wholesale gasoline market a firm needs ready access to transportation, terminal and storage facilities. These facilities are generally concentrated in the hands of a few firms in B.C.

Economists refer to a market dominated by a few sellers as an “oligopoly”. Oligopolistic markets are of concern to society for at least four possible reasons.

First, if the few firms in an oligopolistic industry do not aggressively price compete, they can effectively act in some ways like a monopoly. This would allow them to set prices at levels that earn monopoly profits, profits above those which are warranted by the given level of investment risk. With prices higher than they would otherwise be, society underconsumes the good in question. Of course, to sustain these profit levels, the oligopolists need to be able to prevent new firms from entering the market in pursuit of, and eventually eroding, the extra profits.

This Inquiry has not probed in detail the profit levels of firms active in the gasoline market. Industry was asked to provide information that would have helped determine this, but it declined. However, available evidence suggests that these firms were not earning high returns in the downstream part of the industry in the recent past.¹ Further examination of this issue may be warranted, especially with respect to the specific returns being earned in the B.C. market during 1996.

Second, the diminished competitive pressure in an oligopolistic industry reduces the incentive for firms to drive down their costs as low as possible. Economists refer to this as “X-inefficiency”. X-inefficiency is difficult to demonstrate because, if it is endemic to the industry, there is no competitive benchmark for determining the extent of cost inefficiencies.

This Inquiry has asked the major companies to provide detailed data on their costs of production, but they have, for the most part, declined. To pursue this issue further, the Inquiry would need to apply its subpoena powers for acquiring information from the oil companies and would require additional time in order to conduct detailed analyses of industry facilities and to collect and compare international data. However, even with this data, it may be difficult to assess the extent, if any, of X-inefficiency.

¹ Industry Canada, The Canadian Petroleum Refining and Marketing Industry, 1995.

Third, the firms in an oligopolistic industry may be able to charge different prices to different groups of customers, prices that do not accurately correspond to the different costs of serving these different customers. Economists refer to this as “price discrimination”.¹ The returns from price discrimination may show up as higher profits, or as X-inefficiency, or simply as cross-subsidies between products sold by the firm. The issue from a public interest perspective is that prices will diverge from the prices that would exist under more vigorous price competition conditions, thereby providing incorrect signals about costs in that sector of the economy. Also, prices that diverge from costs may be seen by the public as inherently unfair.

Fourth, the firms in an oligopolistic industry may tend to engage in considerable non-price competition. Without the same pressures to compete by reducing costs, they will make efforts to convince customers that their product is somehow different from that of their competitors by using sales promotions, advertising and other means.

6.3 Apparent Price Discrimination in the British Columbia Gasoline Market

On the balance of the evidence before it, it is the finding of this Inquiry that some degree of price discrimination (as defined by economists and not by legal code) has occurred in the B.C. wholesale gasoline market, both in terms of long run price differences and in terms of the speed of adjustment to market disequilibrium.

First, the differential between long run average wholesale prices in Edmonton and Vancouver (and elsewhere in the province) does not appear to be completely justified by differences in the cost of producing and delivering the product.

Second, evidence from the spring of 1996 and other periods suggests that the wholesale gasoline market takes longer than warranted to react to significant wholesale price differences between locations.

Third, differences in retail gasoline prices between different regions in B.C. appear not to be completely explained by cost differences.

¹ It is important to note that the economist’s definition of price discrimination differs from the legal definition. This latter is a criminal offence under the *Competition Act*, requiring strict standards of proof.

6.4 Correcting Market Imperfections

In fully competitive markets, price discrimination cannot be sustained because of what economists call “arbitrage”. Arbitrageurs will buy and sell a good in order to profit from a discrepancy in its price between two locations or between two groups of customers. The effect of arbitrage is to cause loss of market share for those charging the higher price until this pressure causes them to reduce or eliminate the price differential. For example, in the spring of 1996 an arbitrageur could have purchased wholesale gasoline in Edmonton, paid the cost of transportation to Vancouver, and made a profit selling the gasoline to Vancouver retailers at a wholesale price below the price they were paying to their regular suppliers. This activity would have soon eliminated the price differential.

However, as noted earlier, apparent price discrimination may simply be evidence that markets are in short run disequilibrium, a normal occurrence in any market. The issue is whether any or all of the price discrimination is long term, or whether the market is slower to correct the price distortions than it need be. It is the finding of this Inquiry that there may be some long run distortion of prices between Alberta and B.C. and that the market may be able, with some changes, to respond better to price fluctuations.

If government seeks to address these concerns in a given industry, there are three broad alternatives.

One alternative is to reform or restructure the market to ensure that there are no impediments to arbitrage. This may involve any number of actions, such as ensuring that price information is transparent, or ensuring market access to potential arbitrageurs, or increasing the number of sellers by forcing the break-up of large firms.

A second broad alternative is to accept the general market structure, with its impediments to arbitrage, but to impose some form of price monitoring and regulation. Again there are a number of ways of achieving this, such as price regulation by an independent agency, or legislation allowing government to set and perhaps roll back prices, or industry self-monitoring and regulation.

A third broad alternative is for government to intervene directly through participation in the market. Potential mechanisms include outright government ownership of a critical firm or various levels of government assistance to potential arbitrageurs.

7.0 GOVERNMENT OPTIONS

The last Term of Reference for this Inquiry refers to the government's regulatory authority with respect to petroleum product prices. This Term of Reference is interpreted here as seeking a survey and assessment of the government's options should it wish to respond to any concerns of the Inquiry with respect to the effectiveness of market competition in ensuring fair gasoline prices.¹ Given that this Final Report finds that market concentration may be resulting in some cases of long and short run wholesale gasoline price discrimination, the focus in this chapter is on how the government might deal with this.

As noted in the previous chapter, government's broad options include market reform, market regulation and direct market intervention. Another option, which should be considered first, is the status quo. This may be the appropriate response to the detection of a market imperfection.

First, a particular market imperfection may not be of sufficient magnitude to warrant government intervention. For example, the actual amount of price discrimination may be small, or it may be ephemeral. Market power may allow some players to take advantage temporarily of market disequilibrium, but this does not mean that they can sustain this. Indeed, as noted earlier, apparent price discrimination can be observed temporarily even in highly competitive markets simply because of technical conditions that prevent instantaneous arbitrage. Retailers of any product may be locked into certain supply contracts, and their prices, for specific periods of time. Sustained price discrimination is certainly of greater concern than short-term instances of apparent price discrimination.

Second, even if a market imperfection is seen as significant, government intervention is not perfect. Such intervention can be costly and may not achieve intended results. Although imperfect, market forces without government intervention may still be the best means of regulating a particular industry. In this regard, it is noteworthy that in 1991 Nova Scotia abolished its regulatory controls over gasoline prices after a review suggested that the regulation had not led to lower prices relative to comparable jurisdictions.

¹ The government's current regulatory authority over gasoline prices was explained in section 1.3.

7.1 Market Reform

One broad alternative is to reform or restructure the gasoline market to reduce the impediments to quick arbitrage. Essentially, this means making adjustments to how the market functions in order to improve the likelihood of sustained and vigorous price competition.

If it is assumed that the principal cause of the apparent price discrimination detected in the B.C. gasoline industry is the domination of the refining sector by a few firms, the appropriate market reform strategy depends on both: (1) the potential for competition between refiners (existing and potential new market participants); and (2) the linkages between the refining sector and the retail sector.

If refiners will not aggressively compete with each other by price in particular markets at particular times, it does little good to reduce the linkage between the refining sector and the retailing sector. Retailers shopping for the best wholesale price will not be able to drive down wholesale prices. In this case, the required market reform is more substantial. It would involve breaking the market power of the dominant firms by forcing them to break-up in to several smaller entities. This kind of market reform has been pursued before in the oil industry, notably with the break-up of Standard Oil into several different companies near the beginning of the century. This strategy would be difficult for a provincial government to pursue.

If, on the other hand, there is a potential for competition among refiners, the market reform would aim at increasing the vertical separation between refiners and retailers. The goal would be to foster the development of enough independent retailers who, if provided with effective access to competing refiners, would encourage the arbitrage necessary to prevent wholesale price discrimination. This may involve strategies such as:

- requiring refiners to post their wholesale prices, including unbundling the charges for various associated services (credit card schemes, points systems, marketing, etc.);
- improving, by various means, the access of independent retailers to facilities for transporting gasoline from a diversity of suppliers;
- requiring refiners to provide access, at comparable rates, to any retailer wishing to use their terminals and storage facilities;
- preventing predatory pricing and other practices aimed at eliminating independent retailers¹; and

¹ This does not appear to be an issue of concern in B.C. at this time.

- disallowing joint ownership, or at least joint operation, of refining and some or all retailing activities (e.g., some U.S. states have divorce laws that prohibit refining companies from operating retail outlets).

7.2 Market Regulation

A second broad alternative would be for government to monitor and/or regulate gasoline prices. This could be combined with some industry market reform, but it need not be. There are several possible regulatory models. These include:

- rate of return regulation, as is currently practiced with most electric and natural gas utilities, which involves detailed examination and justification of costs and the approval of resulting prices;
- price regulation by complaint, in which detailed examination is only triggered by consumer complaint; and
- price monitoring, which may be linked to various mechanisms for inquiries or even required price adjustments.

These regulatory models could be implemented by an independent agency, such as a utilities commission, or directly by some branch of government, or in some circumstances by an industry association.

7.3 Direct Government Intervention

A third broad alternative would be for government to intervene directly through participation in the market.

At a more ambitious level, government could seek ownership in the refining industry. The goal of achieving a “window on the industry” explains in part the federal government’s creation of Petro-Canada initially as a crown corporation in the 1970s.

However, there are other government intervention alternatives that may improve the function of the market without such a significant commitment as entailed by the creation of a crown corporation. For example, government may be able to act as a wholesale purchasing agent for retail outlets, seeking out the best prices in the wholesale market and making these readily available to B.C. retailers. This may not be sufficient, however, if retailers remain closely linked to refiners. Another strategy then

would be for government to establish its own retailers, or to purchase retail facilities and lease these to independent retailers. Again, this latter strategy can only be effective if the refining market is sufficiently competitive to provide wholesale alternatives for the independent retailers.

8.0 RECOMMENDATIONS

8.1 Foster Vigorous Price Competition in the British Columbia Wholesale and Retail Gasoline Market

This Inquiry finds that although the B.C. gasoline market is characterized by effective price competition in most respects, there is nonetheless evidence that:

- the long run average price differential between Vancouver and Edmonton wholesale gasoline prices does not appear to be fully justified by cost differences;
- the length of time during which the wholesale price differential deviates from its average appears to be longer than can be explained from normal market constraints; and
- differences in retail gasoline prices between regions of B.C. appear to depend in part on the extent of vigorous price competition in each particular location.

While this evidence is characterized in this report as price discrimination, it is important to note that it is the economist's definition of price discrimination that applies here. There is no suggestion of a criminal act. Rather, the conclusion is that the market is simply not as vigorously price competitive as it might be.

If government seeks to enhance wholesale and retail price competition in the B.C. gasoline market, it should attempt to do so in the most cost-effective manner possible. Often, the most cost-effective public policies are those designed to use market forces instead of government's direct regulatory or ownership powers. Direct government intervention in the market is generally the least desirable approach and should only be pursued as a final recourse.

Government should first pursue, therefore, mechanisms that might enhance the opportunities for arbitrage when price discrimination appears to be occurring. Arbitrage is most likely to be initiated by independent gasoline marketers and retailers, although improved price information to non-independent retailers may also have some effect.

According to the evidence before the Inquiry, the opportunities for arbitrage are enhanced: (1) by greater awareness of relevant costs and prices by retailers, marketers and customers; and (2) by full access for independent marketers and retailers to all potential wholesale gasoline suppliers. The objectives and mechanisms listed below have been developed with these two policy directions in mind. It is the recommendation of this Inquiry that government should first pursue measures consistent with these general policies, as outlined below, and only if this proves unsatisfactory should it then turn to considering more substantial market reforms and perhaps other market interventions such as price regulation.

8.2 Initiate Specific Market Reforms

The following specific market reforms are presented as a main objective and a secondary objective. The main objective has three sub-objectives.

Main Objective

Improve throughout B.C. the potential for vigorous wholesale price competition both when markets are relatively stable and when markets are in short run disequilibrium.

There are three sub-objectives related to this main objective.

Sub-Objective 1

Help independent retailers access alternative wholesale gasoline suppliers.

Mechanism

(1) Access to U.S. wholesale gasoline market

- **Access to water terminals**

Require majors to post unit prices for, and guarantee access rights to, their water terminals and associated storage facilities and related services throughout the province.

- **Access for trucking**

Work with U.S. authorities to ensure that there are no impediments (such as regulations) to the importation of wholesale gasoline by truck.

(2) Access to Alberta wholesale gasoline market

- **Access to pipeline**

Require majors to include products purchased by independents in their “product trains” carried on the Trans Mountain pipeline.¹ Because of the economies of scale associated with shipping refined petroleum products on pipelines², independents will need to be charged a fair price for including their product in the majors’ product trains. Alternatively, it may be necessary to allow independents to purchase gasoline product from the majors’ storage facilities in B.C., replacing it later with compensation for all costs incurred by a major as a result (including delay and price movement during the period between purchase and replacement).³

- **Access to pipeline terminals**

Require majors to post unit prices for, and guarantee access to, their pipeline terminals and associated storage facilities and related services throughout the province.

- **Access to rail terminals**

Require majors to post unit prices for, and guarantee access to, their rail terminals and associated storage facilities and related services throughout the province.

(3) Access to other wholesale gasoline suppliers

- **Access to ocean tanker delivery of refined gasoline**

This may be achievable with the same measure recommended in 1 above, that being to require majors to post unit prices for, and guarantee rights access to, their water terminal facilities. If a more substantial facility appears to be desirable, the provincial government could work with other levels of government to explore the technical feasibility, environmental acceptability and economic viability of developing an ocean-side terminal and storage facility for refined gasoline from ocean going tankers.

¹ Apparently Trans Mountain Pipeline is working on developing such a mechanism.

² The smaller the volume, the higher the per unit costs for product cleaning and product downgrading as a result of product interfaces in the pipeline.

³ Also, to correct for the time delay and risk associated with the 10 to 12 days it takes to ship product down the pipeline.

Implementation

The exact way in which these mechanisms would be implemented depends on the approach of the major oil companies. In the first instance, the government should ask the majors to develop a proposal for determining prices and resolving disputes for access to their facilities. If this is not successful, a regulation by complaint mechanism could be developed.

Sub-Objective 2

Provide information and access to all retailers on wholesale gasoline prices in different locations.

Mechanism

Require majors to post their cost-based wholesale gasoline prices at key locations in the province and in adjacent markets, such as Edmonton, Vancouver, Nanaimo, Kamloops, Prince Rupert, etc. A further measure would be to permit any bona fide buyer of wholesale gasoline the opportunity to purchase products at the location of their choice and to make the necessary transportation and storage arrangements (as per Sub-Objective 1).

Implementation

This will be more difficult to implement as it may involve disclosure of the contents of wholesale supply contracts, or significant rewriting of such contracts. Also, it can be extremely difficult to sort out all of the values accounted for in different contracts. Again, the best approach may be to ask the majors to develop a proposal for implementation in the first instance. If this is not successful, some form of cost disclosure may be required. There is also the challenge that posted wholesale gasoline prices can facilitate collusion and deter price discounting.

Sub-Objective 3

Prevent predatory pricing intended to reduce the market share or inhibit vigorous price competition from independent gasoline marketers and retailers.

Mechanism

- (1) Assist the federal government's Competition Bureau in the enforcement of its predatory pricing legislation by requiring oil refiners and marketers / distributors of wholesale gasoline to report various critical costs on a regular basis.
- (2) If the federal legislation proves unsatisfactory, explore the potential for developing provincial legislation governing predatory pricing.

Implementation

Nothing need be done with respect to predatory practices until they become a problem for the province.¹

Secondary Objective

Ensure public confidence in the legitimacy of regional differences in gasoline prices throughout B.C.

Mechanism

Collect regular data on retail prices charged in several centres throughout the province, with an estimated disaggregation of the components of each price (crude oil, refining and distribution margin, retailing margin, taxes).

Implementation

The gasoline industry participants could be asked to present a proposal to achieve this objective.

¹ Predatory pricing is currently a concern in some parts of eastern Canada.

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RESEARCH QUESTIONS LISTED IN THE INTERIM REPORT

- how crude costs and refiner and retailer margins in British Columbia have changed in recent years, particularly in relation to the closure of refining capacity in the province;
- how each component of gasoline prices in British Columbia compares with other jurisdictions;
- how closely gasoline prices follow changes in crude costs, when crude costs rise and fall;
- how closely crude costs for British Columbia track competitive world prices;
- how closely wholesale gasoline prices in British Columbia track gasoline prices traded in competitive commodity markets;
- how closely the differences in gasoline prices by region reflect differences in transportation, distribution, and retail costs;
- the degree to which differences in gasoline prices by type of service or grade reflect identifiable differences in cost;
- how readily independent retailers can switch to lower cost sources of supply and pass those cost savings on to consumers;
- how the contractual arrangements of retailers are likely to encourage or dissuade active competition; and
- what factors can contribute to more competitive pricing in different locations throughout British Columbia.

**THE BC GASOLINE PRICING INQUIRY
QUESTIONNAIRE TO THE INDUSTRY**

July 10, 1996

I Crude Oil Supply

1. What are your sources and mix of crude oil supply?
2. What is the relationship between your crude oil acquisition cost and the Edmonton spot price/ NYMEX spot price? How closely does it track changes in spot prices? What are the reasons for the differences?
3. How do you manage your inventory valuation (LIFO, FIFO, etc.)? How quickly does a change in your crude oil acquisition cost affect the price of refined products? What are the reasons for the time-lag (if there is one)?

II Refining

1. In 1995, what was your average refining cost per litre of gasoline and by grade? How do you allocate fixed costs? What are the key factors affecting the refining cost?
2. How do your refining costs compare to other refiners:
 - elsewhere in Canada?
 - elsewhere in the U.S.?
3. In 1995, what was your average profit per litre of gasoline at the refining level ($\$/l$)? By grade? Is there a difference in profitability between gasoline and other refined products? If so, how big is the difference?
4. In 1995, what was your return on refining related capital?

III Transportation and Distribution

1. Where do you sell gasoline in B.C.? To what regions? (See map.)
2. How is the gasoline transported, stored and delivered to retailers in these regions?
3. Who has access to the bulk storage facilities you use for the delivery of gas to retail stations? Specifically, can independent retailers use these facilities at a comparable cost to your own users?

4. What is the minimum scale for efficient storage facilities in these regions?
5. What is your average transportation, storage and delivery cost per litre of gasoline and by region?

IV Description of the Retail Sector

1. How many retail stations do you have in B.C.? Provide data for the period from 1990 to 1996 broken down by:
 - region (see map)
 - type of station (company owned, commission, lessee, branded independent); and
 - service characteristics of the stations (average sales, auxiliary services and other characteristics)
2. What are the major changes over the last five years in service mix (self/full serve; automated payment); marketing (points program, differentiation of product) and average sales and size at the stations?
3. What are your typical contract terms (length of contract, pricing relationship, exclusivity of supply) with:
 - retailers? (by type of retail station including unbranded independent)
 - bulk contracts?
 - keylock and cardlock contracts? (provide definitions)
 - any other types of sales you may have?

V Wholesale Price Structure

1. What is the relationship between rack price and contract price for:
 - each type of the retail stations you supply?
 - bulk contracts?
 - keylock and cardlock contracts?
 - any other types of sales you may have?
2. What are the charges for marketing, use of brand name and other services? (by type of retail station)
3. What are the key factors governing the level and change in the wholesale price?

VI Retail Prices and Structure

[If you cannot supply exact data, provide a range]

1. What is your average retail cost per litre of gasoline? (by size of station and major centre)
2. What are the key factors affecting the retail cost of gasoline?
3. What is your average retail profit margin by major centre?
4. What is your estimated cost difference between full-serve and self-serve? What does the cost consist of and how is it broken down?
5. What were your average weekly retail gasoline prices for the period from 1990 to 1996 by:
 - major centres in B.C.; and
 - grade; and
 - serve level (full-serve and self-serve).
6. Who has the contractual responsibility for setting the retail prices? (by type of station)

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IMPERIAL OIL

MOHAWK OIL CO. LTD.

PETRO-CANADA

SEVEN-ELEVEN

SHELL CANADA PRODUCTS LIMITED

PAYLESS GAS*

CANADIAN TURBO*

* responses were included in the Shell submission

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