



A Review Of Greater Vancouver Region - Taxi Fares: 1981-1998

**For the Motor Carrier Commission
Government of British Columbia
Victoria, BC, Canada**

*Prepared by:
Transformation Solutions Ltd.
222-645 Fort Street Victoria, BC
Canada V8W 1G2 (250) 382-2124*

March, 1998

Review of Taxi Fares in the Greater Vancouver Region: 1981-1998

Purpose

This report examines the cost and revenue structure of the taxi industry in the Greater Vancouver Regional District. It also explores development of a "taxi cost index" which could be used by the Motor Carrier Commission to review current and future taxi fare increases.

Executive Summary

The taxi industry received nine tariff increases during the period 1981-91, averaging an annual rate of increase of 9.7 %.

Overall costs for the taxi industry have remained stable since the last tariff increase in October 1991. Since 1991, demand at YVR and in the region generally, has increased. A supply and demand analysis leads to the conclusion that industry profits have increased during the period. Since 1992, the market value of shares in Vancouver taxi companies have increased. A share represents beneficial ownership of a Motor Carrier Commission license. This change in share value is indicative of stable, industry wide profits.

The industry did not respond fully to the Commission's request for financial reporting. The information provided in support of the current rate increase application is flawed and could not be used as the sole basis for evaluation of a rate increase application. The conclusion presented in the statements provided is that the industry is suffering from very low profitability. This representation is contrary to the inferences drawn from the supply and demand analysis.

There has been no increase in the number of licenses issued since the last tariff increase in 1991. In the period, population in Greater Vancouver has increased from 1.59 to 1.86 million, but the number of taxis remained fixed at 1117. Vancouver is serviced at an average of approximately 1,665 persons/taxi. For comparison, the Calgary Taxi Commission reported issuing 1,307 licenses for a population of 800,000, or approximately 612 persons/taxi.

The Commission needs a transparent and effective tool to deal with requests for tariff increase in the future. At least two options are available to the Commission:

1. *Taxi Price Index:*

A Taxi Price Index would work in a manner similar to a Consumer Price Index. Trends in both revenue and expense categories for this industry would be tracked, with the fare tariff adjusted to generate a stable profit for the operator.

The Taxi Price Index attempts to model the financial situation of a generic taxi operation and then adjusts the fares to generate a reasonable profit level for that average operation.

2. *Manage the Share Trading Price:*

The trading price of the share/licenses represents the share of the additional revenue that has resulted from the control of fares and entry in the taxi sector. The number of licenses and the tariff are managed to maintain a stable price and hence stable profitability in the industry.

The Share Price model attempts to manage the industry using an economic model. The income of the average operator is depicted as that operator's share of the additional revenue in the industry.

Both options attempt to predict the profit available to an individual, average operator.

The Commission could consider introducing "purpose focused" tariff increases, designed to encourage movement towards the goals of rider safety and quality of service or the goal of improved reporting.

Purpose Focused Tariff Increase #1

A two stage increase to provide for the cost of Level 1 & Level 2 TaxiHost Program training for all drivers in the GVRD.

Purpose Focused Tariff Increase #2

An increase to provide for the cost of newer vehicles, combined with a continuation of the existing inspection program.

Purpose Focused Tariff Increase #3

An increase to provide for the cost of new automated meters. The automated meters would increase the level of confidence which riders have in the taxi billing process and would enhance the integrity of the tariff system.

Background

Currently, there are approximately 1117 MCC licensed taxis in the Greater Vancouver region. These taxis are owned by shareholders in 26 taxi companies across the region. The number of taxis has remained unchanged since the last major fare increase in October 1991.

9 out of 26 companies hold licenses issued by the Vancouver International Airport Authority. These licenses give 386 taxis an exclusive right to pick up passengers at the airport. The Airport has announced a change in licensing procedures, which could see the Airport move to a "fee per fare" basis in the near future. The "fee per fare" model is used in many other locations, including, Toronto, Calgary and Los Angeles.

The Vancouver airport authority, under YVR Taxi Programs, requires that all taxis servicing the Airport charge a uniform fare. This policy has highlighted the differences in existing local fares in the region.

A number of Vancouver taxi companies have applied for increase in their taxi tariff rates. The current and proposed rates are as follows:

| | Fare Class | Current | Proposed | Increase |
|----|------------|-----------------|-----------------|----------|
| 1) | Flag | \$ 2.10 | \$ 2.50 | 19% |
| 2) | Distance | \$ 1.21 per km | \$ 1.35 per km | 11% |
| 3) | Time | \$ 20.10 per hr | \$ 25.00 per hr | 24% |

Only 4 out of 9 taxi companies holding Airport license are among the group of companies seeking fare increases.

A number of factors need to be examined to assess the current application for taxi tariff rate increases. These factors include:

1. the history of past fares and its relation to inflation during the period,
2. the state of the taxi industry in relation to the undertakings given by the service providers when past fare increases were granted,
3. the economic model governing the financial operation of the industry, being the relationship between demand and supply of taxi services and the impact of regulating entry and revenue, and
4. the current financial viability of the industry, as indicated by reported costs and profits and reported share values.

History: Past Fare Increases

GVRD taxi fares have a long history of increases. There were 18 rate increases during the 1980's. Taxi fares rose almost every second year during this period. The cost of 5.6 km ride rose from \$4.44 in 1981 to \$9.20 in 1991. The following table outlines tariff changes (increases) for 1981 - 1991 period.

| Year Month | Flag Rate (\$) | Increase % | Distance Rate (\$/km) | Increase % | Waiting Time (\$/Hr) | Increase % | Cost \$/5.6 km | Increase % |
|---------------|----------------------|---------------|-----------------------------|---------------|----------------------------|---------------|-------------------|---------------|
| 1981 Jan | 1.00 | ... | 0.625 | ... | 14.00 | ... | 4.44 | ... |
| 1981 Dec | 1.20 | 20.0 % | 0.750 | 20.0 | 14.00 | ... | 5.33 | 20.0 |
| 1983 Mar | 1.40 | 16.7 % | 0.750 | ... | 14.00 | ... | 5.53 | 3.8 |
| 1985 Jan | 1.40 | ... | 0.900 | 20.0 | 14.00 | ... | 6.35 | 14.8 |
| 1987 Sep | 1.40 | ... | 1.000 | 11.1 | 15.00 | 7.1 | 6.90 | 8.7 |
| 1989 Jan | 1.50 | 7.1 % | 1.050 | 5.0 | 17.00 | 13.3 | 7.28 | 5.5 |
| 1990 Oct | 1.80 | 20.0 % | 1.099 | 4.7 | 18.00 | 5.9 | 7.84 | 7.7 |
| 1991 Jan* | 1.90 | 5.6 % | 1.176 | 7.0 | 19.20 | 6.7 | 8.93 | 13.9 |
| 1991 Oct | 2.10 | 10.5 % | 1.212 | 3.1 | 20.10 | 4.7 | 9.20 | 3.0 % |
| Average | | 10.0 % | | 8.9 | | 4.7 | | 9.7 % |

* Fares were increased to include GST.

During the early 1990's, there were a number of significant increases in GVRD taxi fares. In October of 1990 the flag rate rose by 20%, distance rate by 4.7% and time rate by 5.9%. In January 1991, three months after this major increase, GVRD taxi fares were adjusted to incorporate GST. As a result of these changes, the most substantial increase in Vancouver taxi fares was recorded during the 1989 - 1991 period. Vancouver taxi fares for this period are provided in the following table.

| | Fare Class | 1989 Fares | 1991 Rates | Increase |
|----|-------------|------------|------------|----------|
| 1) | Flag/km | \$ 1.50 | \$ 2.10 | 40 % |
| 2) | Distance/km | \$ 1.05 | \$ 1.21 | 15 % |
| 3) | Time/hr | \$ 17.00 | \$ 20.10 | 18 % |
| 4) | Cost/5.6 km | \$ 7.28 | \$ 9.20 | 26 % |

In 1991, the industry argued that tariff increases were warranted due to increases in insurance, fuel, repair and driver benefit costs. The tariff increases awarded were far in excess of the increases in cost of living or changes in the transport price index.

The 1991 taxi fare increases were granted to ensure the profitability of the industry as a whole, the safety of public and fairness of compensation for drivers. Let us briefly look at each of these factors:

Profits: Later sections of this report confirm that profits in the industry are strong and the industry as a whole is financially viable. This goal of the 1991 the fare increase has been achieved.

Public Safety: The 1997 inspection survey of taxis operating in the region provided an indication of poor quality cabs on roads at that time. ICBC reports an increase in the number of accident claims by cab drivers since 1991. These two factors suggest that the taxi industry has not met the commitment it gave to the Commission at the time of the last fare increase, to improve taxi safety.

Drivers: Financial information provided by the industry as "representative" of the operation of taxis in the region, indicates that driver compensation remains poor. The statements indicate that many are compensated at a level well below the minimum wage. This suggests that the beneficial owners of the Motor Carrier Commission licenses have not allowed the benefits of the last fare increase to reach drivers. The financial statements provided indicate that taxi companies have raised dispatch fees and other charges, capturing a major portion of the benefits available from the last increase.

The industry's failure to increase the compensation available to the drivers would logically lead to a reduction in the overall skill level of the drivers attracted to the industry. This could contribute to the high accident rate reported by ICBC.

State of the Taxi Industry

GVRD has an oligopolistic taxi industry. It consists of a large number of shareholders organized into various taxi companies (fleets). These companies own most of the current taxi licenses issued by the Motor Carrier Commission (MCC).

MCC issues fleet licenses for the operation of taxi services. A given number of taxi certificates are attached to each fleet license. The number of certificates determines the size of the fleet. Guildford Cab (1993) Ltd., for example, has one fleet license with 25 certificates. The company has the right to operate 25 taxis under this license. Vehicles are registered in the name of Guildford Cab (1993) Ltd. for fleet license purpose, but are beneficially owned by the individual owners. The individual taxi vehicle owners are shareholders in a taxi company.

Taxi company shares are not traded on the VSE or in any other open market. Our investigation revealed that sales are advertised by shareholders in a company's office, typically on a notice board. Parties interested in selling shares post their ads and sales are subject to the company's approval.

The beneficial owners of the Motor Carrier Commission licenses are shareholders in the taxi corporations. A given company may operate 100 or more taxis. Every taxi vehicle is registered as belonging to an individual. The number of shares issued by the corporation may not be the same as the number of taxis. Most companies issue shares which represent the right to operate a taxi for one, 12 hour shift, hence the license is actually represented by two shares.

Since 1992, 26 cab companies have supplied 1117 taxis for the 2 million population of the Greater Vancouver region. The following table provides the industry concentration ratio.

| | Class | # of Companies | # of Taxis | Market Share |
|----|--------------|-----------------------|-------------------|---------------------|
| 1) | Top | 5 | 595 | 53.27% |
| 2) | Middle | 11 | 396 | 35.45% |
| 3) | Bottom | 10 | 126 | 11.28% |
| | Total | 26 | 1117 | 100.00% |

Of note, 5 major companies with 595 taxis control more than half, 53.27%, of the total supply. The 10 smallest companies collectively provide 126 taxis or only 11% of supply.

Vancouver based taxi companies have the largest share of the entire GVRD taxi industry. They control 40% of MCC license plates and 33% of Vancouver airport licenses. The regional distribution of MCC and Vancouver airport (YVR) licenses is provided in the following Table. Number of companies is given in parenthesis.

| City | MCC | | YVR | | Market Shares (%) | | Ratio of |
|--------------|-------------|-------------|------------|------------|-------------------|------------|------------|
| | Plates | | Licenses | | MCC | YVR | MCC to YVR |
| Vancouver | (6) | 449 | (3) | 128 | 40.20 | 33.16 | 4 |
| Surrey | (6) | 212 | (3) | 83 | 18.98 | 21.50 | 3 |
| Richmond | (3) | 93 | (1) | 73 | 8.33 | 18.91 | 1 |
| North Van | (2) | 120 | | 0 | 10.74 | 0.00 | 0 |
| Burnaby | (3) | 113 | (1) | 83 | 10.12 | 21.50 | 1 |
| Coquitlam | (3) | 66 | (1) | 19 | 5.91 | 4.92 | 3 |
| New West | (1) | 42 | | 0 | 3.76 | 0.00 | 0 |
| Maple Ridge* | (2) | 22 | | 0 | 1.97 | 0.00 | 0 |
| Total | (26) | 1117 | (9) | 386 | 100 | 100 | 3 |

* Includes Port Coquitlam Co.

The Motor Carrier Act requires that the Commission approve all assignments and transfer of licenses. The industry has evolved into a structure where the Motor Carrier Commission licenses are held in a corporate entity and are seldom transferred. The beneficial ownership of the licenses is, however, represented by the share in that private corporation. While each taxi is registered in the name of an individual, the beneficial owner of the license (the shareholder in the corporation) is not necessarily the person in whose name the taxi vehicle is registered. The shares in a taxi company trade actively, and with it, the beneficial ownership of a portion of the license transfers. The Commission's approval of the sales is not sought. Arguably, the approval is not required, as the license itself has not been transferred.

This structure fetters the Commission in its regulatory role. It limits the flow of meaningful information to the MCC and clouds the personal accountability for the operation of the taxi and may limit enforcement options available to the Commission.

The following table provides a summary of license trades for two of the five largest and one medium size company during the last seven years.

| Year | # of Trades (Plates) | Average Price (\$) |
|-----------------------|----------------------|--------------------|
| 1992 | 43 | 152,000 |
| 1993 | 79 | 148,000 |
| 1994 | 48 | 150,000 |
| 1995 | 64 | 150,000 |
| 1996 | 68 | 188,000 |
| 1997 | 49 | 214,000 |
| 1998 | 12 | 242,000 |
| Annual Average | 52 | |

The above table is based on information provided by Vancouver City. A share in a Vancouver taxi company includes both the City of Vancouver and MCC licenses.

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|-------------------------|-------|-------|---------|---------|---------|---------|---------|
| Pop. (Million) | 1.588 | 1.638 | 1.681 | 1.726 | 1.776 | 1.827 | 1.861 |
| Growth Rate | 2.3 | 3.2 | 2.6 | 2.7 | 2.9 | 2.9 | 1.9 |
| Ridership (# of Fares)* | ... | ... | 324,754 | 390,091 | 421,467 | 563,748 | 604,217 |
| Growth Rate | ... | ... | ... | 20.1 | 8.0 | 33.8 | 7.2 |

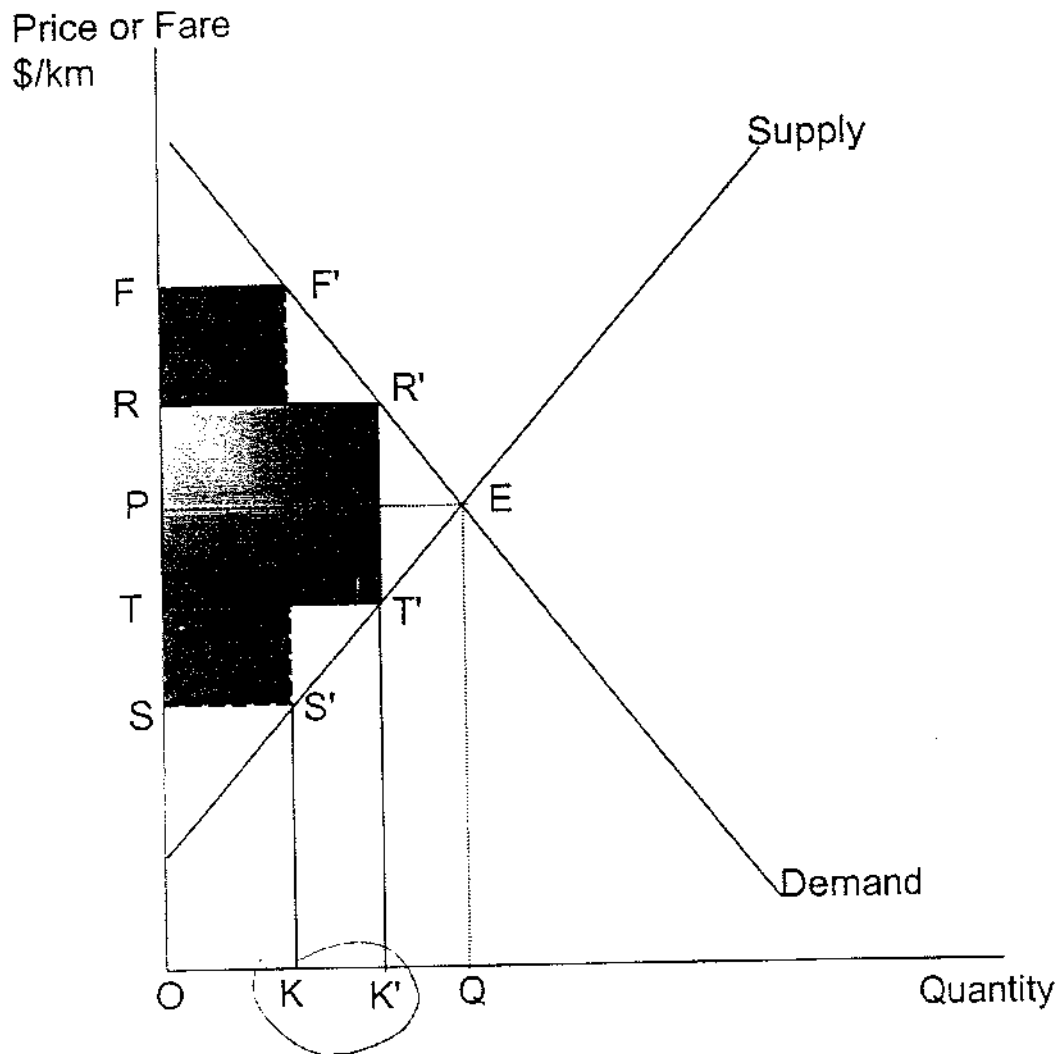
* Only outbound fares from the Vancouver International Airport.

The Economic Model

In terms of simple economics, a supply and demand model for taxi industry reveals:

- The supply side of the taxi industry is highly oligopolistic and the demand side is very competitive. *people have power*
- The supply curve is upward sloping, reflecting the positive relationship between the fare and the quantity supplied
- The demand curve for taxi services is downward sloping. It simply indicates that the higher the fare, the lower will be the quantity demanded. These are standard textbook supply and demand curves, see Figure 1.

Figure 1



The intersection of the supply and demand curves at the point E yields the free market equilibrium price, P, and the quantity of taxis, Q. The price is the fare S/Ride. The quantity is the number of taxis per 10,000 rides.

In BC, like many other jurisdictions in North America price (taxi fares) and entry into the taxi industry (number of taxis) are regulated.

Control of Number of Taxis

Licensing procedures are used to restrict entry into the taxi industry and thereby the number of cabs to K. K is chosen by the regulators to be less than the free market equilibrium quantity of taxis, Q.

The immediate effect of reducing the number of taxis to K is an increase in the price to F. The demand price, F, is higher than the free market equilibrium price, P. The supply price declines to S, which is less than the free market equilibrium price, P.

In Figure 1, area FF'SS' represents additional revenue from the control of fares and entry in the taxi sector.

The fundamental issue for the regulators is to decide on the appropriate value of K. The only thing the regulator knows for sure is that Q is too high, and that to be effective, K has to be less than Q. **For GVRD, K = 1117 since 1992.**

Control of Price (Fare)

The price F corresponding to the regulated quantity of K would be too high for some potential users of the taxi services. It could prove to be a major accessibility challenge. Therefore regulators are required to set the price (fare).

For any quantity less than Q, the price will be higher than the equilibrium price P. Often, regulators set the price between points P and F.

The following tables provide current and pre 1992 regulated taxi fares (prices) inclusive of GST, and a comparison to fares in other Canadian and American centres.

| | Fare Class | Pre 1992 Fares | Current Rates |
|----|------------|-----------------|-----------------|
| 1) | Flag | \$ 1.50 | \$ 2.10 |
| 2) | Distance | \$ 1.05 per km | \$ 1.21 per km |
| 3) | Time | \$ 17.00 per hr | \$ 20.10 per hr |

| City | Flag \$/km | Distance \$/km | Time \$/Hr. | Ave. Trip 15 km |
|-----------------------------|---------------------------------|-------------------|----------------|--------------------|
| Vancouver | 2.10 | 1.21 | 20.10 | 20.25 |
| Prince George | 1.96 | 1.05 | 24.00 | 17.71 |
| Kelowna | 2.40 | 1.30 | 28.00 | 21.90 |
| Nanaimo | 2.00 | 1.30 | 28.00 | 21.50 |
| Victoria | 2.01 | 1.20 | 22.43 | 20.01 |
| Kamloops | 1.91 | 1.31 | 25.00 | 21.56 |
| Calgary | 2.20 | 1.05 | 24.00 | 17.95 |
| Winnipeg | 2.55 | 1.10 | 24.00 | 19.05 |
| Toronto | 2.50 | 1.10 | 24.00 | 19.00 |
| Montreal | 2.25 | 1.00 | 22.20 | 17.25 |
| U.S. Comparables | Converted at \$1.45 Cdn. | | | |
| Portland | 3.63 | 1.36 | 29.00 | 24.03 |
| Seattle | 2.61 | 1.63 | 43.50 | 27.06 |

The regulated price (R) has following effects. In Figure 1:

- Despite the control of entry, demand and supply will increase to K'.
- The area FF'S'S has changed to RR'T'T, that is, there is a change in the additional revenue of licensees. Whether this change represents a loss for the licensees or not is an empirical question.

Revenue

The total revenue of the taxi industry in the absence of any regulation is area OPEQ in Figure 1.

The regulated price and quantity leads to very different picture of revenue since regulation creates additional revenue for the license holders. For example, if only quantity is fixed at K or with K, price is set at F, then there are two components of total revenue; e.g. areas OSS'K and FF'S'S.

Notice that at the given labour, maintenance and other costs, the industry is willing to supply K quantity at the price S. The demand side, however, offers price F, or any price greater than P. Thus, quantity control gives rise to the additional revenue area FF'S'S. This can be viewed as the pure return on the license plate asset. As long as this area is positive, there will be a market for license plates.

The total revenue area of the taxi industry, OFF'K, divided by the number of licenses K, gives the price at which each license plate will trade.

Furthermore, the additional revenue component FF'S'S, divided by the number of licenses K, determine the rental price (lease rate) of the license plate which an operator should be willing to pay.

The taxi industry operates on cash basis. As a result, it is difficult to calculate actual revenue per taxi or total industry revenue. The amount of unreported revenue/leakage appears to be significant. However, it can be shown that total, average and marginal revenue has increased significantly since last fare increase.

According to informed sources and our estimate annual revenue ranges from \$110K to \$130K per taxi. Given 1117 taxis in the greater Vancouver region, the total taxi industry revenue lies in the range of \$116M to \$145M per annum.

Costs

For the purpose of this illustration, it is assumed that taxi service is subject to the usual cost structure, in which average cost initially declines, reaches a minimum and rises thereafter, see Figure 2. As long as the price is above the minimum point of the average cost curve, the service is viable business. As a result it pays to stay in business even if the profit margins are small or non-existent.

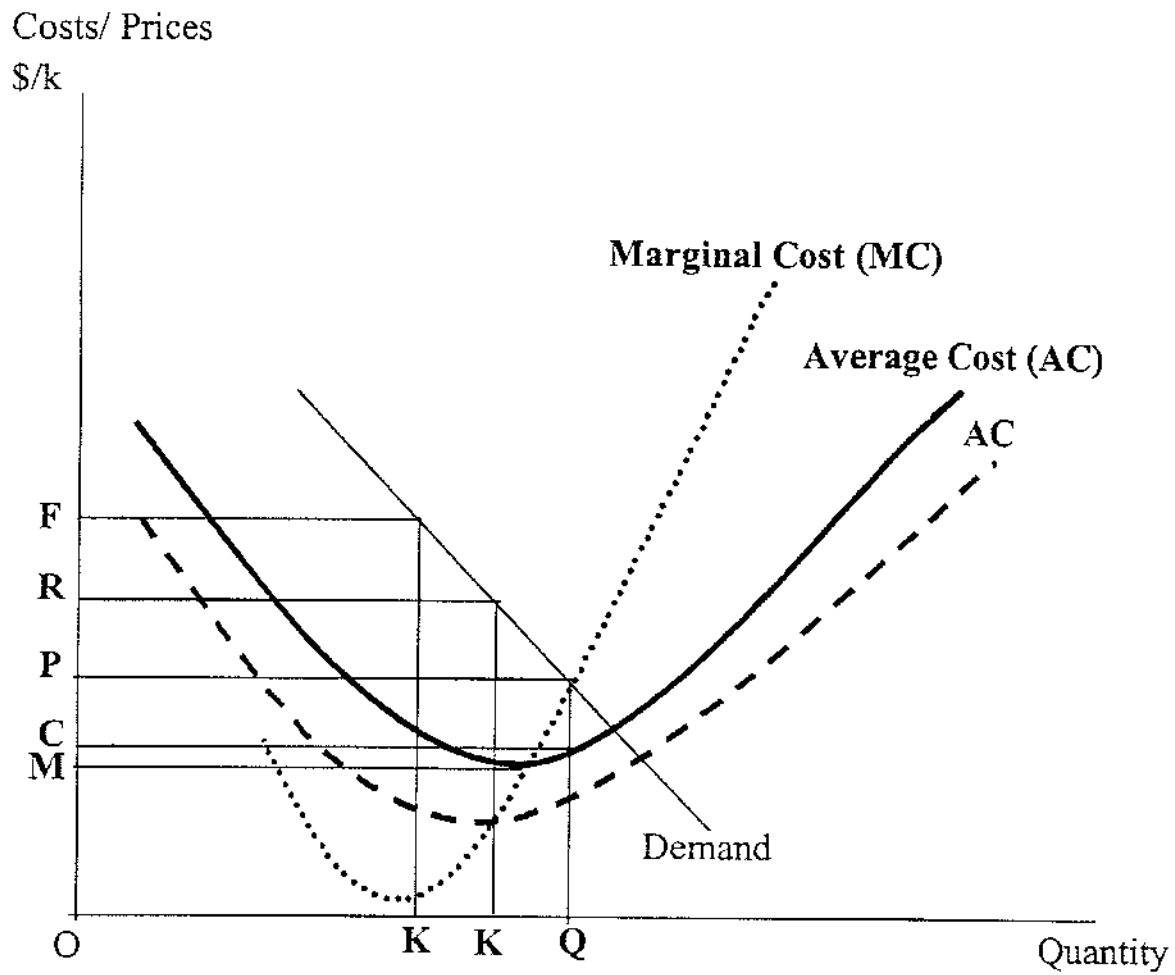
Given the regulated price F, there is a built in incentive for the licensee to reduce costs by minimizing repairs and maintenance expenses, and by minimizing labour costs. This shifts the average cost curve down as indicated by the dotted curve in Figure 2. These cost saving devices ensure higher rates of return on the investment in license plates.

For a typical GVRD taxi, the shares of major cost components in total cost of taxi operation costs are provided in the following table.

| Cost Component | % Share |
|--------------------------|------------|
| Company & Dispatch. Fees | 10 |
| Insurance & License Fees | 15 |
| Vehicle Repairs | 10 |
| Car Replacement | 5 |
| Fuel | 11 |
| Wages & Others | 49 |
| Total Cost | 100 |

While the industry has not provided any time series data to assess changes in the various cost component since the last fare increase in October 1991, it is generally believed the shares of various cost components are stable and have remained unchanged since 1991.

Figure 2



According to our investigation:

- 1) Company fees: dispatch costs have marginally increased, e.g. according to information provided by a consultant in support of an application for a fare increase, dispatch fees have increased at less than 1% per year since 1991.
- 2) Insurance costs: ICBC base rates have not increased for a number of years. Actually, ICBC base rates have been frozen since 1994. In addition, insurance rates vary considerably across the municipalities that constitute the GVRD. Overall insurance cost have remained stable with the exception for fleets that may have lost discounts due to poor driver performance and higher accident claims. The issues of taxi insurance costs are further discussed in the later sections of this report.
- 3) Other costs: a decline in the CPI and TPI, discussed below, suggest that the repair, maintenance and fuel cost have either declined or remained unchanged.

Total costs

The data provided by the industry indicate that typical Vancouver taxi costs range from approximately \$58K to \$104K per year. Total industry costs implied by the cost figures are provided in the following Table.

| # Taxis | Cost Per Taxi (\$) | Total Cost \$ Million |
|---------|-----------------------|--------------------------|
| 1117 | 58,714 | 66 |
| 1117 | 62,000 | 69 |
| 1117 | 103,928 | 116 |

Time series data of costs are not available. Therefore, changes in cost over time cannot be computed. However, economic indicators of taxi costs have increased very little since the last fare increase in October 1991. These include inflation, the transport price index and fuel prices.

Inflation (% change in CPI) and Transport Price Index (TPI)

While taxi fares have remained unchanged during the last seven years, the overall inflation and TPI have been declining since 1993. The following Table provides rate of changes in the CPI and TPI for the last seven years.

| Year | Van CPI % Change | BCTPI % Change |
|--------------------|---------------------|-------------------|
| 1993 | 3.6 | 5.3 |
| 1994 | 2.0 | 5.3 |
| 1995 | 2.6 | 4.7 |
| 1996 | 0.7 | 3.2 |
| 1997 | 0.5 | 0.9 |
| 1998 | 0.1 | -0.8 |
| Average | 1.6 | 3.1 |
| Average 1992-97 | 1.9 | 3.9 |

The economic model and CPI and TPI information indicate that total revenues of the taxi industry have increased and that costs have remained either stable or declined. This implies that the profits have gone up. The observed increases in the market value of shares or taxi licenses also support the conclusion that there are stable or increasing industry wide profits.

Information Provided by Applicants

The Commission has an historical problem with respect to the supply of information from industry operators. Information available is incomplete and unreliable.

This problem is rooted in the structure of the industry and in the revenue source the industry manages.

The structure of the industry appears to have evolved in the following manner:

- Motor Carrier Commission originally issued licenses to individual operators.
- The beneficial owners of the licenses formed associations to reduce costs such as marketing and dispatch.
- The associations were formalized as corporate entities ("Taxi Co."), with Taxi Co. holding all licenses, including the Motor Carrier Commission license. Taxi Co. gave the right to operate a taxi, utilizing one of Taxi Co.'s Motor Carrier Commission licenses to each of the shareholders in Taxi Co. The Taxi Co. shareholders each created a proprietorship/partnership/company to operate the actual taxi.
- Taxi Co. then reorganized by function, with Taxi Co. limiting its operation to providing dispatch services

While these acts were all reasonable when taken, in the aggregate they have an affect on the Commission's ability to regulate.

The Commission no longer knows who "holds" its licenses or holds beneficial ownership of each of the license plates issued. Ownership moved from the individual licensee to Taxi Co., with the

permission of the Commission. Once this occurred, the beneficial interest in the license could be transferred without notice to or approval of the Commission, as that interest was represented as the share in a private company. The Commission now has experienced difficulty in obtaining records to confirm the identity of the shareholders and has difficulty holding individuals accountable for the operation of the taxicab.

The relationship between Taxi Co. and the individual businesses that actually operate the taxicab allows for non-arm's length or non-market based transactions that can shift income between the entities.

The Commission now has difficulty in asserting its right to receive complete financial reporting. The relationship between the Commission and the firm that actually operates the taxi cab is not as clear as it was when the taxi was operated by the holder of the Motor Carrier Commission license.

Beyond the structure of the industry, the reliability of the information submitted to the Commission is also reduced because cash is used as the settlement medium for many of the transactions. Cash custody techniques typically employed will not allow an auditor to certify the reasonableness of the financial statements of the taxi cab operation, even if one wished to spend the money to have such an audit performed. It should be noted that this issue is not peculiar to British Columbia. Reliable financial reporting is an issue in the industry, in all jurisdictions.

The Commission must accept that the financial reporting from its industry will not reflect all revenues available. It is a practical reality that a certain portion of the cash received, covering both tips and fares, will not be reported in the financial statements that are available from the operators. The second reality is that the extent of the cash "leakage" will be difficult to estimate.

When the Commission was asked to adjudicate on the current rate increase application, it requested detailed financial information in an October 1997 letter to the applicants. The firms seeking the rate increase responded in an incomplete manner to request. Typically, the Commission received submissions that did not respond directly or completely to the requests the Commission made in October.

The Commission could press for a more complete submission from the applicants. This approach is not recommended, because even if totally successful, the information received would not be conclusive. At best, the Commission could hold a complete set of financial reports which are unaudited and would be unreliable because of the likelihood that they contain non-arm's length or non-market based transactions and the likelihood that they fail to reflect all cash revenues generated.

For example, the companies that responded to the Commission's request submitted operating results for 15 taxis. These statements were claimed to be a representative sample of financial statements from selected taxi operations. The Commission was not provided with either the basis of the selection or evidence as to the independence or randomness of the selection. Accordingly, the Commission has no basis upon which it can extrapolate the information received, to draw conclusions about the industry as a whole.

The statements provided were, on their face, suspect. The category "Other" is defined as containing fuel, car payments, dues and miscellaneous. Logically, this category would be dominated by the fuel costs. We observe however, that one car drove 109,100 Km at a cost of \$12,545, while a second drove 108,420 Km at a cost of \$37,219. This indicates that either costs have been misallocated or there are significant, unreported cost categories included in "Other".

| # of Shifts | Hours in Use | Kilometers | Revenue | Company Fees | Licence & Insurance | Repairs | Replacement Allowance | Other, incl. Fuel | Net income, before wages |
|-------------|--------------|------------|---------|--------------|---------------------|---------|-----------------------|-------------------|--------------------------|
| 609 | 6,786 | 103,080 | 57,468 | 8,222 | 12,673 | 5,746 | 3,200 | 28,873 | (1,246) |
| 612 | 6,525 | 102,900 | 67,320 | 8,222 | 12,323 | 4,140 | 3,200 | 29,467 | 9,968 |
| 558 | 6,538 | 98,221 | 49,409 | 8,222 | 11,527 | 3,244 | 3,200 | 19,679 | 3,537 |
| 648 | 6,804 | 123,217 | 58,467 | 8,222 | 9,921 | 3,864 | 2,600 | 26,468 | 7,392 |
| 634 | 7,044 | 108,244 | 67,489 | 8,222 | 11,426 | 9,451 | 4,200 | 28,782 | 5,408 |
| 615 | 6,708 | 109,100 | 46,790 | 8,543 | 10,825 | 2,030 | 1,148 | 12,585 | 11,859 |
| 632 | 6,688 | 108,420 | 67,845 | 8,543 | 11,352 | 3,879 | 3,200 | 37,219 | 3,652 |
| 582 | 6,238 | 95,951 | 57,679 | 8,543 | 11,804 | 6,706 | 3,200 | 31,679 | (4,253) |
| 616 | 6,928 | 110,840 | 62,497 | 8,543 | 12,596 | 3,624 | 3,200 | 28,023 | 6,511 |
| 331 | 3,700 | 64,750 | 38,338 | 8,543 | 10,841 | 2,300 | - | 5,594 | 11,060 |
| 672 | 7,480 | 115,584 | 73,920 | 8,543 | 12,871 | 2,400 | - | 39,351 | 10,755 |
| 681 | 7,558 | 117,275 | 69,470 | 8,543 | 11,833 | 4,500 | 3,200 | 37,497 | 3,897 |
| 684 | 7,256 | 115,076 | 69,347 | 8,543 | 12,571 | 4,179 | 3,200 | 33,358 | 7,496 |
| 632 | 7,076 | 110,608 | 61,378 | 8,543 | 9,638 | 3,874 | 2,600 | 31,563 | 5,160 |
| 643 | 7,287 | 114,233 | 67,238 | 8,543 | 9,639 | 3,892 | 2,600 | 34,679 | 7,885 |
| Average | | | | | | | | | |
| 610 | 6,708 | 106,500 | 60,977 | 8,436 | 11,456 | 4,255 | 2,583 | 28,321 | 5,925 |

The apparent treatment of capital assets (the car) indicates the statements were not prepared according to generally accepted accounting principles.

The statements purport to be the return to the owner, before accounting for the wages of the operator. The average car operated 18.38 hours/day. If the driver was paid minimum wage, without overtime or shift differentials, wages would have been in the range of \$47,960, and the average taxicab would have lost more than \$40,000. In the alternative, this information could be viewed as an indication that the operators earned \$0.88 per hour. If, as asserted by those submitting the information, these financial statements fairly represent the operation of the average taxicab, most operators would be leaving the industry. Continued operation would not be economically viable.

The fact that the trading value of a share/license is increasing, indicates there is a steady and increasing demand to enter the industry. This confirms that new investors in this industry are making their investment decisions based on an expectation that returns will be materially greater than those reflected in the financial statements presented to the Commission.

The conclusion to be drawn is that these 15 financial statements are seriously flawed and should not be used as the basis for any evaluation of a rate increase application.

These "representative" statements bear marked contrast to the statement provided by an individual owner/operator who provided information in support of the original October 1997 submission.

This respondent reported:

| | |
|-----------------------|-----------|
| Revenue | \$108,000 |
| Dispatch | 9,000 |
| Fuel | 10,535 |
| GST | 7,016 |
| Repairs & Maintenance | 9,973 |
| Insurance | 13,110 |
| CPP, UIC & WCB | 4,275 |
| Wages & Profit | 54,091 |

This respondent did not report the number shifts operate. The prime difference in the statements is the level of revenue reported and the use of that revenue to pay wages in the range of the minimum wage.

In May 1997, an agent representing a number of operators reported that a typical operating position would be:

| | |
|-----------------------|-----------|
| Revenue | \$104,025 |
| Dispatch | 9,600 |
| Fuel | 9,882 |
| GST | 7,282 |
| Repairs & Maintenance | 9,782 |
| Insurance | 9,495 |
| CPP, UIC & WCB | 1,500 |
| Wages & Profit | 56,484 |

The information provided by this agent is consistent with the information provided by the independent operator in October 1997.

The conclusion drawn is that the submissions from the agent and the independent operator are more likely to be representative of the industry. The 15 statements provided by the respondent companies in support of their rate increase application are highly suspect and will not be considered further in this analysis.

The taxi operation is a subsidiary to the dispatch company, which we have been referring to as Taxi Co. Taxi Co. holds the actual Motor Carrier Commission license. It is not uncommon to find in the corporate structure of the group, a series of companies associated with Taxi Co. These could be remnants of earlier amalgamations or could be entities created to perform specific activities of the shareholders. An example of an entity created for a special activity would be a subsidiary that buys fuel in bulk and provides a fuel service to the cabs in the fleet.

Examples are available where these structures have become quite complex. The Motor Carrier Commission often does not have access to financial information for all entities in the group. In the few cases where the information has been provided, the statements were not presented with consistent period dates, and not all statements were audited. Many statements lack the explanatory notes necessary to eliminate related party transactions and to interpret them in a meaningful manner.

No assurance can be provided to the Commission with respect to the completeness or the accuracy of the financial situation depicted in these statements.

Having said this, the statements available typically indicate no build-up in retained earnings and history of small period profits or losses, effectively a break-even situation.

The information presented conveys a picture of an industry where the holding companies effectively break-even and the actual operating companies do not generate revenues sufficient to pay minimum wage to their employees. Trading activity with respect to the shares in the Taxi Co. challenges whether this is an accurate portrayal of the current financial situation in the industry.

The overall conclusion drawn is that the financial information provided to the Commission is incomplete, and likely inaccurate, and should not be used as the basis upon which the pending rate increase application is adjudicated.

Model Structure

The issue facing the Commission is to develop a consistent, understandable and reasonable means to adjudicate rate increase applications, or to predict when rate increases should be awarded. At least two options are available to the Commission.

1. Taxi Price Index:

A Taxi Price Index would work in a manner similar to a Consumer Price Index. Trends in both revenue and expense categories for this industry would be tracked, with the fare tariff adjusted to generate a stable profit for the operator.

2. Manage the Share Trading Price:

As mentioned previously, the trading price of the share in Taxi Co. represents the share of the additional revenue that has resulted from the control of fares and entry in the taxi sector. This was depicted as area FF'SS' in Figure 1.

If the Commission managed the trading price of the share, it would actually be managing the additional revenue in the industry, that is the profit available to the average operator. This would insure reasonable profit levels for all competitive participants in the industry.

This option would require that the process of trading shares in all of the Taxi Co.'s be a more formal matter. The Commission would then adjust the fares to insure stability in the trading price.

Both options attempt to predict the profit available to an individual, average operator.

The Taxi Price Index attempts to model the financial situation of a generic taxi operation and then adjusts the fares to generate a reasonable profit level for that average operation.

The Share Price model attempts to manage the industry using an economic model. The income of the average operator is depicted as that operator's share of the additional revenue in the industry.

The Taxi Price Index:

A price index model references changes against the situation that prevailed in the base year. The first issue faced in the selection of the appropriate base year.

The second issue to be addressed in the Taxi Price Index model is clarity surrounding the phrase, "profit level of the business".

The phrase must apply to the average business in the industry, not to each business on an individual basis. The Commission should concern itself with the viability of the industry, not the viability of each participant. The individual businesses must conduct themselves so as to remain competitive in the market. The Commission should not be applying regulations to protect the weaker participants from market forces.

The Commission must next decide if "profit level" should refer to the income earned by the individual operator or the level of income as a percentage of total revenue that the individual operator earns.

The third step is to select the component elements of the index.

The revenue side has only one element, being the aggregate fare revenue, including tips. Fare revenue is dependent on the level of ridership, the current trip profile and the existing tariff.

The cost elements would include:

- Fuel,
- Dispatch charges,
- Life Cycle cost of the vehicle,
- Wages, and
- Insurance and license fees.

Dispatch and insurance are typically fixed annual expenses. The other expenses are variable, responding to changes in ridership, and hence revenue.

The fourth issue faced in the Taxi Price Index model is the determination of an operating statement that fairly represents the average taxi operation in the industry.

Typically, the industry would provide evidence supporting the profile of each of these elements and the relationships the elements have to each other. This would effectively provide the Commission with the generic operating statement.

In developing the Taxi Price Index, the Commission will need to develop a proxy for each of the elements. Changes in the revenue or expense elements will be based on the changes in the associated proxies. The Index will move based upon changes in the proxy elements over time

and the relationship between the elements as established by the representative or generic financial statement.

To avoid the task of estimating the revenue available to the average operator, the option of basing future changes in the tariff on changes in the cost elements would appear to be an enticing prospect. The action of increasing the tariff in proportion to increases in expenses would however, generate revenue increases far greater than required to maintain the existing net income picture of the operation. Net income would actually increase by a factor greater than the percentage increase observed in the expense elements. Further, this form of the model would not account for growth in demand, which has been material in the past and is expected to remain strong in the mid-term.

The conclusion drawn is Taxi Price Index must reflect the relationship between revenue and expenses and changes occurring in both.

Operation of the Model

The operation of the model depends on whether the Commission wishes a stable net income percentage or a stable net income amount.

In the first case, the changes in each expense element would be calculated and then weighted using the weighting percentages shown in the sample income statement above. The revenue element would then be adjusted first for changes in ridership. The Fare component would be then be adjusted to bring the percentage change in the revenue element into line with the percentage change in the expense elements. The net income percentage earned by the average operator will increase or decrease by the same percentage.

In the second case, the changes in the elements must be converted into a dollar impact amount. The dollar impact of the changes in all expense elements is calculated. The revenue element is adjusted for changes in ridership and the dollar change in revenue due to ridership is calculated. The Fare component is next adjusted to return the net income available to the average operator back to the agreed target income amount.

Illustrative examples of how the model might work are attached.

Management of the Share or License Trading Model

This model accepts the trading price of the share in Taxi Co. as an indicator of industry health and operating profits.

Under this model, the Commission would vary either the number of active licenses and/or the tariff to maintain a stable trading price. The Commission would track the sales and respond to correct variances from the target price that may develop over time.

This model depends on the Commission having reliable information as to the actual trading value for the share in Taxi Co. The Commission would need to manage the forum in which the shares trade. The Commission would also need to obtain proper evidence to support the actual cash

trading value of the shares. In the absence of this rigor, the model could be subject to manipulation.

There is a risk that the trading values reported might be less than the actual cash value of the transaction. This could occur if the buyer and the seller split the transaction and only reported part of the consideration received for the license to the Commission. Under the Share Trading Model, the Commission would perceive a decline in license value and would respond by increasing the tariff, when such an increase would likely not be warranted.

This model is simple, transparent and effective, but is dependent on implementation rigour.

Conclusion

The Commission has the option of considering a tariff increase that is "purpose focused". Such an increase would be designed to either improve rider safety and the quality of service, or the reporting relationship between the industry and the Commission. Three purpose focused increases have been identified.

Purpose Focused Tariff Increase #1

Vancouver City and YVR have recently introduced TaxiHost, Level 1, driver training program. This program is a mandatory condition of the Vancouver and YVR licensing programs and carries a cost to the taxi operator. The charge for the Level 1 course is presently \$175.00 per driver. While this cost is not material it remains as an identifiable cost the industry has been asked to absorb. It is not surprising that this cost has grown into an annoyance to the industry, which the industry has presented as a public issue.

YVR has recently mandated that Level 2 of the TaxiHost program will become mandatory in April 1999. Logically, Vancouver City would be expected to expand their requirements to match YVR. The charge for a Level 2 course is \$275.00.

At this point, TaxiHost is a cost imposed on the industry by regulators, albeit, not the Commission. We understand the Commission supports enhanced driver training as a way to gain improvements in customer service.

The Commission could consider introducing a Purpose Focused Tariff Increase to compensate operators for costs incurred to date and to provide for the cost of future training. Logically, the increase would be staged to provide the current cost of Level 1 training, with a second increase on January 1st, 1999, to provide for the cost of Level 2 training. The increase should be conditional on all new drivers hired after January 1st, 1999, taking both Level 1 & 2 prior to commencement of their employment.

Purpose Focused Tariff Increase #2

The 1992 tariff increase was justified, in part, on an industry commitment to improve the maintenance and safety records of operators. Recent inspections have revealed safety issues and

have resulted in operators incurring costs for deferred repairs and the costs of having equipment temporarily out of service.

One could reasonably argue that repairs and renewal of equipment are an ongoing expense, which has been adequately provided for, in the current tariff. The goal of the Commission is to improve the prospects of rider safety through a reduction in the average age of vehicles in service. This is in fact a change in the expense structure of the industry.

The inspection process now under way will see the age of vehicles reduce when the cost of repairs and "time out of service" make replacement the correct financial decision for the operator to take. The Commission can speed the replacement decision by increasing the cost of violation to the operator. When the risk of detection and the cost of violation become greater than the cost of replacement and repair, the operator will upgrade equipment, delivering as a consequence, improved rider safety.

A tariff increase designed to reflect the shorter expected life-cycle of the vehicle would aid in the process, providing it is accompanied by a stable "risk of detection" and increases in the cost of violation. Expressed another way, the Commission could introduce a tariff increase to allow operators to provide better and safer cars, if the inspection program is maintained to maintain the current "risk of detection", and if the penalty for violation is increased.

For this strategy to be successful, the combined effect of detection/penalty must present a material expense risk to the operator, if the program is to cause the operator to move in the direction of improved equipment.

Purpose Focused Tariff Increase #3

At present, the rider does not receive a written record of the fare charged. A "business card-style" receipt is issued by operators on request, but is seldom completed when provided to the rider. The current receipt is accepted as proof of expenditure on business expense claims. The existing billing/receipt practice reduces the confidence a rider may have in the fare system and detracts from the apparent integrity of the whole tariff system.

An automated meter capable of printing a receipt would eliminate the business card receipts.

Washington D.C. has announced a June 1998 introduction of a new style of meter, designed to print duplicate receipts. One copy of the receipt is provided to the rider. The second copy is retained as a permanent record for the taxi. We understand that similar meters are available which will record taxi activity in electronic form.

An automated meter would address the prime concern identified throughout this report. Presently, there is the lack of reliable information available to the Commission, with respect to the operation of the individual taxi unit. There is presently no reliable information on the number of trips taken, the duration/profile of the trips or the revenue earned. An automated meter with a trip log would correct this issue.

An automated meter would improve, but not eliminate the problems surrounding cash in the taxis. The new meter would not capture a record of tips. The new meter would not eliminate the negotiation of trip rates for a fixed fee (i.e; situations where the meter is not turned on). Even noting the limitations of this solution, there is no denying the improvement in reporting which the new meter could represent.

The record generated by the meter, if provided to the Commission, it would become a record under the Freedom of Information and Protection of Privacy Act. As a record under the Act, it would be protected from distribution to third parties based on either personal privacy or commercial harm. The Act should allow the Commission to receive improved and reliable reporting to taxi activity, without seeing the Commission drawn into the relationship between the operator and Revenue Canada. The Act would not protect the operators from agencies obtaining direct access to the right maintained by the operator, using their existing audit rights.

The proposal with regard to this potential tariff increase would be to introduce an increase sufficient to pay for the acquisition, installation, calibration and ongoing maintenance of the new meter. This tariff increase would be coincident with the Commission announcing the mandatory introduction of the new meter in the industry.