

Assessing and Reforming Vancouver's Taxi Regulations

by

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Abstract

This study assesses provincial taxi regulations on entry, fare, and trade in a Greater Vancouver regional context. Substandard taxi regulations explain why Vancouverites pay more for taxi service and wait longer to be picked up than in most other regions. The regulations impose additional costs on society, while doing little if anything to raise drivers' incomes. The sole beneficiaries are the taxi license owners who earn super-normal profits because competition is tightly restricted. This study examines case studies to identify a regulatory regime that maximizes society's welfare; this is a "pro-consumer" regime with free entry, deregulated fares, and no barriers to taxis picking up riders outside their home municipality. However, policy reforms need to be crafted to overcome acute industry opposition to liberalizing the taxi market with the associated loss of license values. Sequential reforms are proposed to open the market by dividing stakeholders and broadening public, consumer, and environmental support for change.

Keywords: Taxi; Regulation; Economics; Vancouver BC; Passenger; Transportation

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List of Acronyms

CPI	Consumer Price Index
GRVD	Greater Vancouver Regional District
GST	General Sales Tax
OECD	Organization for Economic Cooperation and Development
PTA	Passenger Transportation Act
PTB	Passenger Transportation Board
TCI	Taxi Cost Index
TOP	Temporary Operating Permits
VPD	Vancouver Police Department

Executive Summary

British Columbia's Passenger Transportation Board (PTB) imposes regulations that cause substandard outcomes for the Greater Vancouver taxi market. The PTB restricts new entry, sets standard fare prices too high, and prevents regional trade. These restrictions are virtually unseen in most other types of goods and service markets.

Entry into the Greater Vancouver taxi industry is restricted by an arbitrary application process that requires new entrants to prove that there is a "public need" for the service and that if entry is granted it would continue to promote "sound economic conditions" in the passenger transportation business. These criteria benefit incumbent industry and have supported PTB decisions to reject taxi license applications from new entrants. The process has created an artificial taxi shortage in Greater Vancouver where there are only 0.64 taxis for every 1,000 persons compared to an average of 1.08 taxis per 1,000 persons in other Canadian cities. The shortage of taxis is a public safety concern as the industry lacks sufficient capacity to move people out of downtown after bars and pubs close and public transit has stopped running for the night, raising risks of conflicts outside drinking establishments and of intoxicated persons driving themselves home. Because entry is restricted, the four Vancouver taxi companies behave like oligopolists, raising industry profits at the expense of passengers.

The minimum price that must be charged for taxi service is also set by the PTB, and compared to other Canadian jurisdictions, Vancouverites pay more for taxi service. A 10 km fare in Greater Vancouver is 15 per cent higher than the average of a sample group of Canadian cities. Passenger fares have also risen faster than inflation, and the current process for setting fares ensures that only license holders benefit from industry productivity gains.

Regional trade in the taxi services is also prevented by "originating-area boundaries" that prohibit taxis licensed in neighboring municipalities like Richmond and

Burnaby from picking up in Vancouver and vice versa. The boundaries are imposed despite frequent travel by residents to and from municipalities in the lower mainland. Passengers with suburban destinations are often refused service by the Vancouver taxi companies because it is more profitable for drivers to stay downtown. An April 2011 survey found that on weekend nights 21 per cent of downtown taxi patrons were refused boarding, with most of these passengers having suburban destinations.

The sole beneficiaries of existing regulations are the taxi company shareholders. The entry regulations effectively free license holders from competition and allow them to earn super-normal profits. These profits are capitalized into the value of licenses, which can sell for as much as \$800,000 per vehicle on the secondary market. Taxi drivers themselves do not benefit from entry restrictions because they must pay high lease fees to shareholders for the right to operate. The Vancouver taxi companies estimated that median lease price paid by drivers on Friday or Saturday night is \$180, with drivers also covering fuel costs. As the Vancouver taxi companies' own expert witness put it in the BC Supreme Court: "[Any] lost revenue per taxi will find itself expressed in a lower willingness by taxi drivers to pay a premium for a Friday and Saturday night shift lease. License holders receive the excess value from license rights, and bear 100% of the loss from any decline in the value of that right."

Greater Vancouver taxi regulations on entry, price, and trade are inefficient. The criteria for approving taxi licenses is inefficient in output because it has created an artificial shortage that would not exist absent regulation. The high price and long wait times result in too few taxi trips occurring relative to other goods in the economy. Production is inefficient because taxi services are not offered by providers with the lowest costs. The reason for these inefficient regulations is explained by regulator and legislator "capture." Rather than choosing regulations that bring about superior outcomes for society, decision makers have chosen regulations that benefit incumbent industry at the expense of everyone else.

To remedy these inefficiencies, the study first considers the level of taxi regulation that would serve society's overall interest. Informed by case studies that demonstrate significant passenger benefits from regulatory reform, the analysis suggests more efficient ways to regulate the taxi industry. Efficient reform would open entry, do away with originating-area boundaries that prevent trade, and allow for more flexible fare regulation. This "pro-consumer" option would increase the number of taxis serving the Greater Vancouver area by more than 100 per cent. Trip refusals would decline and the cost of a taxi ride would fall.

However, the efficient option would reduce shareholder values to practically zero. Share owners expected their investment in the taxi industry to be a permanent store of value and they have made economic lifestyle choices based on this expectation. Moreover, existing regulations are a testament to the industry's ability to capture regulations that are in their interest only. As a result, the political acceptability of the pro-consumer option is severely in doubt.

Because of this, the analysis considers policy options that would broaden political support for change. One way to do this would be to divide taxi company shareholders. On the issue of trade for instance, the suburban taxi companies would like to see originating-area boundaries eliminated, but the Vancouver taxi companies oppose this change. Under a scenario where shareholders are divided, the prospects for policy change increase. Moreover, taxi passengers would benefit from the elimination of trade restrictions as taxi availability improves and trip refusals decrease.

Another way to surmount shareholder opposition to policy change would be to freeze taxi fares. Shareholder opposition to this policy would be acute, but lower fares would be popular with taxi passengers. The fares paid by passengers are what supports the \$800,000 valuation of a share in a Vancouver taxi company. If the industry is earning super-normal profits one way to reduce these profits would be to stop granting fare increases until industry profits return to a normal level. A policy that reduces taxi fares

would also have distributional benefits because taxis are more likely to be used low income persons, seniors, and persons with disabilities than other societal groups.

One concern with reduced taxi fares is that it could exacerbate current peak period taxi shortages in downtown Vancouver. To alleviate this, the paper recommends using annual lease fees to allow new entry into the taxi industry. Currently, the cost to renew a license from the PTB is \$100 per vehicle, but on the secondary market the rights to lease one Vancouver taxi is estimated at \$48,000 annually. The PTB should set lease fees for new taxi licenses somewhere near the going market rate for existing taxi licenses. This would protect the value of existing licenses, which would be grandfathered, but crucially it would allow taxi supply to increase when taxi demand grows. Importantly, it would put an end to the regulatory capture because instead of the PTB applying an arbitrary criteria to make decisions on entry, private participants could instead judge whether demand was sufficient to justify paying the lease fee to enter the market. Had a lease fee policy been in place in Vancouver since 2007, I estimate that this policy could have generated more than \$200 million in revenue for the public purse.

These policies are designed to overcome opposition from shareholders by giving them a finite period of time to collect the above-normal profits that accrue to them from restricting supply. The policies are also crafted to marshal new political support for regulatory change. Eventually though, the end result of the initial policy phase should be to reduce license values. Once license values have declined considerably, policy makers should implement the pro-consumer option. This option consists of open entry, relaxed standard fare regulation, and an end to originating-area boundaries. These regulations will deliver superior outcomes for Vancouver's taxi market and are in the public's best interest.

Chapter 1. Introduction

Taxis are a vital cog in any city's transportation network. In Vancouver, British Columbia, taxis are one of the few forms of door-to-door transportation and provide a valuable service to low-mobility groups, including the disabled, elderly, and poor. Taxis facilitate the movement of people during inclement weather and offer safe alternatives for late-night revellers after public transit ceases operations. Taxi usage supports lighter-footprint travel and complements public transit services. Urban families contemplating reduced or eliminated use of private vehicles would consider whether taxicabs offer a reliable alternative. Access to taxis supports local businesses by ensuring that citizens and visitors have a reliable option to move around the metropolitan area.

The Vancouver taxi industry is heavily regulated. The provincial government restricts the number of taxis, the geographic zones where they can operate, and the standard fare they can charge. The Provincial Passenger Transportation Board (PTB) has not approved even one additional full-time taxi license in Vancouver since 2007 despite a steadily growing population.

The purpose of this study is to assess provincial taxi regulations and describe how these rules impact the Vancouver taxi market with respect to taxi availability, wait times, the number of trip refusals, and the overall cost of a taxi trip. I also outline the hidden social and environmental costs of regulations. This study employs economic and data analysis and cites experience with deregulation in other jurisdictions. Based on the analysis and evidence, I formulate alternative proposals for regulatory reform.

Taxi drivers themselves do not benefit from the regulations because they have to lease the "right to operate" a vehicle from the taxi companies. The median cost to lease

a taxi with one of the four Vancouver companies is \$180 for a 12-hour weekend night shift, and drivers are also responsible for covering fuel cost. As the Vancouver taxi companies' own expert witness put it in the BC Supreme Court: "[Any] lost revenue per taxi will find itself expressed in a lower willingness by taxi drivers to pay a premium for a Friday and Saturday night shift lease. License holders receive the excess value from license rights, and bear 100% of the loss from any decline in the value of that right" (Hara Affidavit 2013, page 4).

Once the impacts of regulations are identified and empirical evidence from case studies reviewed, this study finds that Vancouver's taxis regulations are not in the public interest. The regulations pose significant costs for passengers and detract from overall welfare. The taxi companies earn super-normal profits because provincial regulations reflect shareholder interests only. Generally one share in a company equates to one taxi vehicle, and shares in Vancouver taxi companies have been estimated to be between \$500,000 and \$1,000,000 per vehicle (Prentice 2007; Brocki 2012; Lee 2013).

In the light of this finding, the paper asks: what types and level of regulation would maximize the Vancouver public's welfare? Economists are often predisposed to favour market-based policies as opposed to command and control regulation, but recent experiences like the 2008 global economic downturn and California's Energy Crisis in 2000 highlight significant unanticipated consequences that can result from ill-conceived deregulation. Because of this, my study refers to case studies to test whether a superior regulatory environment for taxis exists.

The case studies suggest that comprehensive reforms that benefit the consumer by opening entry to the industry, relaxing standard fare regulation, and abandoning originating-area boundaries is the most efficient regime. Nevertheless, policy change aimed at maximizing welfare would inflict significant financial losses on license owners, an issue that needs to be considered in assessing reforms.

Shareholders have made economic-lifestyle choices based on the expectation that their licenses would be a permanent store of value. The taxi companies have opposed any policy change that would diminish the value of their asset. The Vancouver Taxi Association has devoted considerable energy and expense to maintaining the existing regulatory environment by filing court challenges, commissioning expert reports, and lobbying politicians.

Accordingly, policymakers need to consider whether the most efficient regulatory change is feasible given the certain opposition it will face from existing license holders. As a result, the paper study considers alternative policies that improve taxi industry outcomes but might overcome license-holders' opposition. License-holder resistance could be mitigated by offering concessions that partially protect license values, which would improve the prospects for policy change. Alternatively, policies could appeal to societal objectives like lower taxi fares, improved taxi service, equity, safety, and environmental protection to marshal political resources to surmount license-holder opposition.

Chapter 2. Regulatory Context

2.1. Metro Vancouver Taxi Actors

2.1.1. *City of Vancouver Taxis*

Four taxi companies — MacLure’s Cabs (1984) Ltd., Yellow Cab Company Ltd., Black Top Cabs Ltd., and Vancouver Taxi Ltd.— operate all 588 taxi vehicles in the city.¹ These four companies also hold 99 temporary operating permits. A temporary operating permit (TOP) allows a company to operate an additional vehicle during peak periods. These peak-period licences can be activated only on Fridays and Saturday between 3:00 pm and 6:00 am, or when the regulatory agency believes taxi demand will be high — for example New Year’s Eve, Halloween, and special cruise ship days. Table 2.1 details the number of vehicles each of the four companies operate, as well as any additional vehicles they can operate under temporary operating permits.

Table 2.1. PTB Licenses belonging to Vancouver Taxi Companies

Company	# Licensed Vehicles	# Temporary Operating Permits
Maclure's Cabs	65	16
Yellow Cab	249	36
Black Top Cabs	197	30
Vancouver Taxi	77	17
SUM	588	99

Source: Passenger Transportation Board

¹ One taxi license is not owned by the four companies. It is owned by Gary Tarantino, who operates his taxi with Yellow Cab.

The Vancouver taxi companies are owned by private shareholders. Normally each licensed vehicle equates to one share, and these shares are often split into two half-shares (Evans and Webb 2001). The shares confer a bundle rights to owners which generally include the right to use or lease out a taxi each day. A full-share owner would own the rights to a taxi vehicle for all 24 hours, whereas a half share owner would only have the rights to operate a vehicle for 12 hours. The price of a full share in Yellow Cab has been estimated to be \$800,000 in two recent media reports.²

2.1.2. Suburban Taxi Companies

In addition to the 588 taxis licensed to pick up passengers in Vancouver, 983 taxis are licensed by 23 suburban taxi companies to operate in municipalities throughout the Greater Vancouver Regional District (GRVD). The suburban taxi licenses also have a positive market value but not as high as the Vancouver licenses. In 2007 a Richmond half-share sold for \$197,000 (PTB Garden City Decision 2007). Generally, suburban companies can pick up passengers only in their primary operating municipality, although some are allowed to pick up in nearby municipalities. But the exceptions are rare and vary by license. No suburban companies are allowed to pick up passengers in Vancouver. In 2012, the PTB granted 38 temporary operating permits (TOP) to suburban taxi companies allowing them to pick up in Vancouver's Downtown Entertainment District during peak periods on Friday and Saturday nights. To date, however, the suburban companies have been prevented from using their temporary permits because of a court injunction initiated by the Vancouver taxi companies.

² See Brocki, J (2012) Welcome to Taxiland – the Dependent Magazine and Lee, J, (2013) Taxis Ride A Fare Road to Profit – The Province

Table 2.2 details the number of vehicles each suburban taxi operates, as well as the primary municipality in which they can pick up passengers

Table 2.2. PTB Licenses Belonging to Suburban Taxi Companies

Primary Operating Municipality	Company	Vehicles	TOP*
North Vancouver	North Shore Taxi	125	14
	Sunshine Cabs	65	10
Burnaby	Bonny's Taxi	124	
	Burnaby Select	4	
Coquitlam/Port Moody	Port Coquitlam Taxi	14	
	Coquitlam Taxi	31	
	Bel-Air Taxi	52	
Richmond	Richmond Cabs Ltd	64	
	Coral Cabs	19	
	Garden City	32	
	Kimber Cabs	18	3
Delta/Surrey/White Rock	Guildford Cab	50	2
	Surdell-Kennedy Taxi	69	
	Newton Whalley Taxi	70	2
	Tsawwassen Taxi	28	2
	Delta Sunshine Taxi	40	5
	White Rock/ South Surrey Taxi	63	
Langley	Aldergrove Langley Taxi	21	
Pitt Meadows/Maple Ridge	Allouette Taxi	10	
	Meadows Ridge Taxi	10	
	Syd's Taxi	10	
New Westminster	Queen City Taxi	11	
	Royal City Taxi	53	
Sum (All Suburban Companies)		983	38*

Source: Passenger Transportation Board (2014)

2.1.3. Drivers

Separate from the taxi license shareholders, drivers are those who lease the license from owners on a per-shift or per-month basis. The reported lease price to drive a Vancouver taxi on Friday and Saturday night for 12 hours is \$180, which is paid to the shareholder. During non-peak shifts the cost to lease a cab for a 12-hour shift is \$100.³ Under this lease arrangement, the driver is also responsible for fuel costs, but the shareholder covers all other costs. Drivers can also lease permits on a monthly basis. A 12-hour monthly lease is estimated at \$2,000 and 24-hour lease is \$4,000. Under monthly leases, the driver is responsible for all costs associated with operating a taxi including providing and paying for the vehicle, insurance, fuel costs and dispatch fees. The lease fees paid by drivers support the market value of a Vancouver taxi license.

The Vancouver Police Department has approved 3,077 chauffeur's permits for taxi drivers who drive any of the 588 Vancouver taxis.⁴ In Vancouver, the majority of taxi drivers are persons born outside of Canada. In 2012, Citizen and Immigration Canada estimated that 80.7 per cent of Vancouver taxi drivers were immigrants to Canada (Xu 2012). Estimates suggest that Vancouver taxi drivers earn a low hourly wage, consistent with the going wage rate for unskilled labour in the general economy.⁵

³ See Hara, D (2013, May 31) Estimated Financial Impact on Vancouver Taxi License Holders From Issuing Peak License Rights to 38 Suburban Taxis. BC Supreme Court Affidavit.

⁴ Some of these permits are duplicates because drivers have permits to drive for multiple companies. The VPD estimated that there are perhaps 2,300 individuals who possess a chauffeurs permit to drive (Communication with VPD Taxi Team)

⁵⁵ Skill is a measurement used to differentiate the expertise necessary to work a specific job. All jobs require skill, but some skills are harder to acquire, and because of this economists differentiate between skilled and unskilled labour. Skilled labour may require post-secondary education and significant on-the-job training. In contrast, the requirements to work an unskilled job are possessed by the majority of labour force participants.

2.1.4. Users

Most people are likely to use a taxi at least occasionally. While no data exist for Vancouver, about 50 per cent of Winnipeg residents use a taxi at least once a year (Mundy 2009). Taxi demand is highest in Vancouver when bars and pubs are closing and public transit has stopped running for the night (Chow 2012). Low-mobility groups like seniors as well as persons with disabilities account for a much higher share of taxi trips than their population share (Rosenbloom 1985). Taxis are used more frequently by low-income persons than high-income groups (Competition Submission 2014). Tourists also rely heavily on taxis. Several interest groups including the Council of Senior Citizens Organizations of BC, the BC Coalition of People with disabilities, Tourism Vancouver, and the Port of Vancouver sit on Vancouver's Taxi Industry Roundtable, which is a stakeholder group organized by the city to discuss taxi issues.

2.2. The Passenger Transportation Board

The Passenger Transportation Board (PTB) is the provincial organization responsible for regulating taxis, although it operates independently of the BC Government. The PTB receives its authority from the BC Passenger Transportation Act (the Act). Taxi owners wishing to operate within Vancouver face several types of regulation implemented by the PTB and the city.⁶ The regulations restrict entry, set standard fares, restrict areas of operation, and address quality and safety issues.

The PTB has a tribunal with a minimum of three part-time members appointed by the BC cabinet. The criteria used to appoint PTB board members is unknown but the

⁶ This project assesses only PTB regulations, as they are the senior regulatory authority for the Vancouver market. The City of Vancouver also applies additional regulations that affect city taxis via the *Vehicle for Hire* bylaw #6066. To read more about this by-law see Appendix C, City of Vancouver Regulations.

governing principles of BC's Board Resourcing and Development Process indicates that appointments should be merit based. A review of current member biographies posted online indicate that board members have some prior tribunal experience⁷ although none indicates expertise in passenger transportation markets. The five current board members' biographies list their highest education credential as:

1. William Bell – Master's in Public Administration
2. Brenda Brown – Bachelor of Arts in Sociology
3. Roger Leclerc – Master of Arts in Leadership and Training
4. Spencer Mikituk – Diploma in Aircraft Maintenance
5. Don Zurkowski – no education credential listed (a former municipal city councillor in Prince George)

The board is also supported by four full-time staff members who work from the PTB office in Victoria, BC.

⁷ William Bell sat on Employment and Assistance Appeals Tribunal, and Brenda Brown has been a citizenship judge.

Chapter 3. Methodology

3.1. Description

The research methodology used to evaluate Vancouver’s taxi regulations is comprised of several major components: economic analysis, data analysis, empirical evidence from case studies, and anecdotal evidence. Economic analysis is used to develop a theoretical framework to assess provincial taxi regulations for entry, price, and trade in the taxi industry. Data analysis is used to describe substandard passenger and societal outcomes in Vancouver. Data on the current Vancouver taxi market is limited in scope and quality based on availability; but several indicators, like the value of a license, the number of taxis per capita, and the cost of a ride can be used to compare market outcomes across jurisdictions.

In addition to the cross-jurisdictional comparison, the Vancouver Taxi Association has commissioned expert studies on Vancouver taxi market outcomes. One is a 2012 report by Professor Garland Chow of UBC’s Sauder School of Business on “Peak Demand and Supply of Taxis in Vancouver’s Entertainment District.”⁸ Another report is by Dr. Dan Hara, “Estimated Financial Impact on Vancouver Taxi License Holders from Issuing Peak License Rights to 38 Suburban Taxis.” The industry reports are publicly available through the BC Supreme Court registry due to litigation initiated by the Vancouver companies.

⁸ The report sought to measure changes in customer service and taxi industry productivity following the issuance of 65 temporary operating permits to the four Vancouver taxi companies in 2011.

Case studies will be used to review the performance of jurisdictions that have reformed taxi regulations. Case studies were selected based on their comparability to Vancouver and the richness of current literature.

3.2. Outside Scope of Study

The following sections describe related issues that fall outside of the scope of my study.

3.2.1. *City of Vancouver Regulations*

This project assesses only PTB regulations as they are the senior regulatory authority for the Greater Vancouver market. However, the City of Vancouver applies additional regulations that affect Vancouver taxis via the *Vehicle for Hire* bylaw #6066.⁹ Arguably, the jurisdictional overlap provides taxi companies with two levels of government to lobby and enhances their ability to block reforms contrary to their interest.¹⁰ Legislators considering reform should consider whether clarification of jurisdictional responsibilities would support the development of a superior regulatory environment.

3.2.2. *Safety and Quality Regulation*

Experts agree that minimum quality and safety regulations are necessary in the taxi market. Passengers cannot reasonably know if a taxi's brakes have been serviced or

⁹ See the Vancouver Taxi Regulation to learn more about bylaw #6066.

¹⁰ City of Vancouver Manager Pam Bellamy wrote to the PTB opposing an application for new taxis, "At this time there is insufficient data to justify an increase of taxi licences beyond our recently approved 99 part-time licences for Vancouver companies and the additional 38 part-time licences for the suburban companies." (Pacific Coast Application PTB 2013)

if the driver has a criminal record. Thus, regulations imposing these checks improve the development and functioning of the taxi market (Teal and Berglund 1987).

Both the Passenger Transportation Registrar¹¹ and the Vancouver Police Department traffic team conduct taxi inspections to ensure vehicles are safe. Inspection teams will periodically test safety devices such as seatbelts, signal lights, brakes, and windshield wipers. Vehicles are also required to pass bi-annual safety inspections.

The PTB also assesses whether license applicants are “fit and proper” based on their conduct and character. The City of Vancouver regulations require drivers to possess a Vancouver Police Department “chauffeur’s permit,” which assesses whether a driver is a risk to passengers. To obtain a chauffeur’s permit the applicant must pass a police background check and submit a letter signed by a taxi company indicating the owner intends to hire the individual. The bylaw also requires drivers to demonstrate their ability behind the wheel including collision avoidance, city knowledge, and their English-language proficiency.¹²

This project assumes that existing quality and safety regulations are adequate. Hence, if new taxi supply were added to the Vancouver market, existing regulations would ensure these vehicles meet desired quality and safety standards.

3.2.3. Compliance Benefits from Entry Restriction

Also outside of the scope of the analysis is the issue that greater industry profitability has benefits for compliance.¹³ For instance, accessible taxis that serve people with wheelchairs are less profitable than standard taxis because the vehicle is

¹¹ This is the enforcement arm of the Passenger Transportation Board.

¹² See Taxi Host Pro Certificate, Justice Institute of BC.

¹³ Some regulations carry enforcement costs. For instance, the originating-area boundaries require monitoring to ensure that suburban cabs do not pick up in Vancouver.

more expensive and the passenger boarding process is longer. If entry is fixed and profitability high, politicians may find it easier to encourage taxi providers to offer wheelchair-accessible service without a premium charge. Similarly politicians could use the “threat” of regulatory change to induce compliance on a number of issues, such as offering eco-friendly vehicles or cooperating with police investigations.

The issue of profitability supporting compliance deserves the attention of policy makers considering taxi reform. However, there exist many superior policies that could encourage compliance with government objectives.¹⁴ Compliance is a small part of a much larger regulatory failure occurring in the taxi market. While not investigated in this study, this issue should not be ignored when making policy change.

¹⁴ For instance accessible taxis could be subsidized, or a policy could mandate that for every 10 taxis a company puts on the road one must be accessible.

Chapter 4. Entry Regulation

Passenger transportation regulation dates to restrictions on England's horse and carriage market in the 1600s (Toner 2010). In North America, taxi regulation came of age during the Great Depression. With many men out of work, anyone with a vehicle could become a taxi driver. Fierce competition for fares led to public disturbances. Responding to pleas to regulate entry and concerns over public safety, municipalities began regulating taxi market entry (Hara North American Regulation 2012).

In Vancouver, the first calls to limit the number of taxis came from the Taxi Control Board in 1936. This was a voluntary board consisting of the Vancouver Police Department and two local taxi associations, the Vancouver Taxi Owners Association and the United Taxicabs Owners Association (Sinnott and Tennant 1981).

4.1. How is Entry into the Vancouver Market Regulated Now?

Passenger Transportation Board decisions to approve new taxi licenses are application-driven. If a company wishes to establish a new taxi business, or add vehicles to its existing fleet, it must first seek licensing approval from the PTB. Applications require the payment of a \$200 non-refundable filing fee; if the application is successful, there is a \$100 renewal fee for each licensed taxi.

To determine whether the applicant is eligible for a license, the PTB applies the following three criteria:¹⁵

1. Is there a public need for the service the applicant proposes to provide?
2. Is the applicant a fit and proper person to provide that service?
3. If the application is granted, would it promote sound economic conditions in the passenger transportation business in British Columbia?

To demonstrate an unmet public need, applicants must supply evidence that the current need exceeds existing taxi fleet capacity. To prove public need, applicants often submit letters and emails from potential passengers and business owners detailing why new service is required. Applications from companies with an existing license have an advantage because they can cite actual ridership data to demonstrate a public need. When determining whether an unmet public need exists, the PTB reviews and considers changes in ridership, passenger waiting times, fleet operating capacity, and financial statements (PTB Public Handbook 2010, page 11-12).

The PTB also assesses whether an applicant is “fit and proper” based on the conduct and character of the applicant. The PTB further assesses whether the applicant can deliver the service. To determine this, the PTB evaluates whether an applicant’s proposed operations are structured such that they will be able to meet the obligations set out in the Act and Regulations (PTB Public Handbook 2010, page 13-14).

Finally, the PTB states that applications will be granted only if the new license promotes “sound economic conditions” in the BC transportation business. The PTB acknowledges that this is a broad requirement, but asserts that applicants are expected

¹⁵ See Section 28 of the BC Passenger Transportation Act, “Determination of Board” retrieved from: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_04039_01

to show that any approval of new licenses will maintain healthy competition in passenger transportation markets and not lead to destructive forms of competition that could unduly harm existing service providers (PTB Public Handbook 2010, page14-15).

While the PTB has no specific measure of sound economic conditions, that it considers harm to existing license holders works to their benefit. In previous cases before the PTB, existing firms have argued against new applicants on the grounds that it would create destructive competition (PTB Ripe Holdings Application 2013; PTB Pacific Coast Drivers Association Application 2013). It is rare, in almost any industry, that a tribunal would first consult existing providers before deciding whether a new entrant is a destructive influence on competition. Furthermore, it is natural to assume that incumbent operators will oppose applications from potential competitors. This process has supported PTB decisions to reject applications from new entrants.

Jan Broocke, Secretary of the PTB, stated that the secondary market value of licenses is not a factor in the Board's mandate or approval process (Broocke Interview February 12, 2014). However, increases in the number of taxis would decrease the secondary market value of licenses, estimated at \$800,000 per vehicle.¹⁶ As a result, applications for new taxi licenses will face severe opposition from existing license holders.

4.2. Economic Analysis of Entry Restrictions

Support for Vancouver's level of entry restriction is either non-existent or not credible based on a literature review of the published work of economists and transit experts. Rather, it is argued that entry restrictions harm passengers and reduce the total

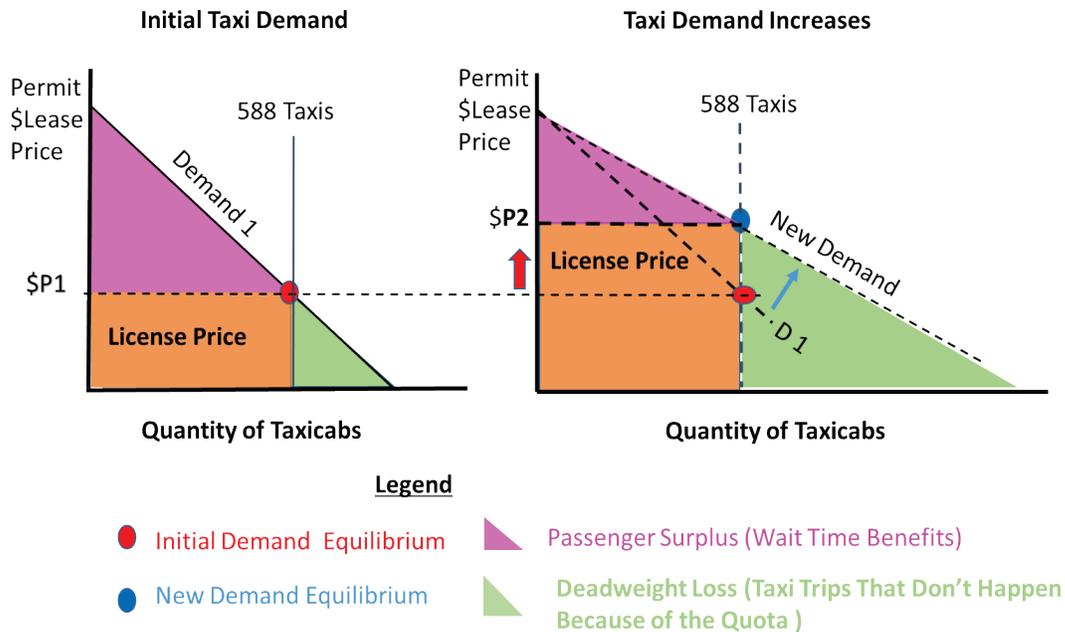
¹⁶ See Brocki, L (2012) Welcome to Taxiland – the Dependent Magazine and Lee, J, (2013) Taxis Ride A Fare Road to Profit – The Province

number of taxi trips that occur. Because new taxis are prevented from entering the market, passengers will need to wait longer for a taxi if demand increases (Kirby 1974). The Organization for Economic Cooperation and Development (OECD) considers entry restrictions to be an unjustified restriction on competition (OECD 2007).

In areas where entry into the taxi market is restricted, licenses develop a market value over and above the fees charged by government to obtain them. A positive value for a license is evidence that entry restrictions have raised the industry return above the competitive rate of return in the rest of the economy (Frankena and Pautler 1984). The value of the license represents the present value of expected future above-normal profits to taxi license holders.

To explain the social welfare loss of a fixed taxi supply, consider the challenge facing a regulator when taxi demand increases. The regulator uses a supply quota, adjusted periodically, to deter “excessive entry” into the market. Currently the PTB has approved only 588 taxis to pick up in Vancouver. As illustrated in the left-hand panel of figure 4.1, at initial demand the taxi supply is fixed slightly below what would occur if entry were open. Because of the quota, customers wait longer than they would if there weren’t a quota. But owners of taxi licenses are able to lease their right to drivers, thereby deriving a small “economic rent” because the limited number of taxi licenses reduces the time spent searching for fares and allows each taxi to be more fully used. There is also loss to society (green triangle) representing trips that do not occur because of the quota.

Figure 4.1. What Happens to License Prices When Taxi Demand Increases Under a Quota



Consider what would happen if demand for taxi rides increased but the number of licenses remained fixed at 588. Taxi demand could increase because of a variety of factors including growing population, greater urban density, more stringent drinking-and-driving laws, and reduced private vehicle ownership. If regulators fail to respond to new demand and keep the quota fixed, a taxi shortage will emerge. Passenger wait time will rise and thus the associated benefits to passengers will decline (area of pink triangle). Owners of taxi licenses will see their “license lease price” (orange box) rise because drivers are willing to pay a higher premium for a license because of increased taxi demand. Society’s loss (the green triangle) becomes larger, as the quota prevents mutually beneficial taxi trips from taking place.

4.3. Impact of Entry Restrictions on License Values and Taxi Shortages

4.3.1. Evidence of High License Prices

There is significant evidence that Vancouver taxi licenses have a high secondary market value despite the PTB only charging \$100 per vehicle to renew a license. In 1981, it was reported that Vancouver taxi licenses were selling for \$70,000, and at one point the City of Vancouver auctioned off 25 new licenses for \$30,000 each (Sinnott and Tennant 1981).¹⁷ A 2001 report by the BC Ministry of Transportation on taxi supply in the lower mainland estimated that the cost of a half share for a Vancouver ranged between \$140,000-\$210,000. Normally one taxi license is split into two 12-hour shares. Using the median of the range provided for a half share (\$175,000) the actual value of a single license was \$350,000 for a full share (Evans and Webb 2001).

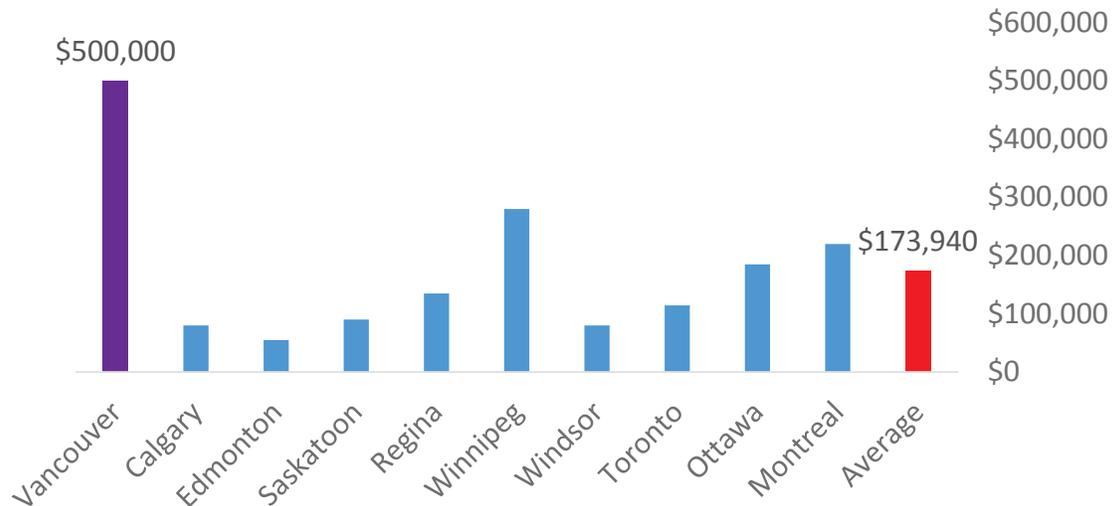
A 2008 article quoted Paul Teichroeb, then Vancouver's chief taxi licence inspector, that licenses "trade around \$450,000 up to as high as \$600,000."¹⁸ A 2009 study estimated secondary market value of licenses across Major Canadian Cities with \$500,000 for Vancouver (Seymour 2009).

¹⁷ According to an interview with City of Vancouver Councillor Geoff Meggs, the city can no longer auction off licenses because it violates the city charter. Also taxis cannot operate without a license issued by the provincial authority.

¹⁸ See Cabbie Costs Climb Across Canadian Cities – The Canadian Press (2008)

Chart 4.1 shows that the value of a Vancouver taxi license outpaces other major Canadian municipalities, indicating that license issuance has not kept pace with demand.

Chart 4.1. Reported Taxi License Values Across Canadian Cities



Source: (Seymour 2009)

It appears that the value of a Vancouver license has appreciated since 2009. An affidavit filed with the BC Supreme Court in 2010, on behalf of Black Top Cabs, indicated that the price of a 12-hour day shift share was \$260,000 to \$280,000 and a 12-hour night shift share was \$245,000 to \$260,000 (Supreme Court 2010). My communication with Black Top Cabs general manager Saif Ullah indicates that the value of a share has gone up significantly since then (Phone conversation Feb. 26, 2014), although he was unwilling to provide an estimate. Kulwant Sahota, president of Yellow Cabs, estimated that a 12-hour share cab sells for approximately \$375,000, meaning a full license would be valued at \$750,000.¹⁹ Recent media reports have placed the value of a license at

¹⁹ February 17, 2014 Interview with Yellow Cab’s management (Kulwant Sahota and Carolyn Bauer).

\$800,000.²⁰ Informal conversations with cab drivers indicate that these estimates are accurate, with some drivers believing that a full Yellow Cab share is worth approximately \$1 million.

Appendix B tests whether reported license values are accurate based on data from a number of industry reports and media reports (Evans and Webb 2001; Hara Affidavit 2013; Brocki 2012; Lee 2013) and concludes that \$800,000 is a reasonable estimate of price for a Vancouver taxi license in 2014.

Substantial license values are not unique to the Vancouver area. An application for a new license in Richmond, BC, included evidence that a half-share for the Richmond cab company was bought for \$84,000 in 2000. That same half share was later sold in 2007 for \$197,500 (PTB Garden City Decision 2007).

Table 4.1 shows Ministry of Transportation estimates for half-share prices in a few GVRD municipalities based on the BC Ministry Report 2001. The values are updated by applying the estimated 129 per cent increase of Vancouver licenses to the suburban figures.²¹

²⁰ See Brocki, L (2012) Welcome to Taxiland – the Dependent Magazine and Lee, J, (2013) Taxis Ride A Fare Road to Profit – The Province.

²¹ Suburban license values may have grown faster or slower than 129 per cent depending on changes in local taxi demand and per-capita taxi fleet supply.

Table 4.1. Estimated Price for Taxi Half-Shares in Greater Vancouver

City	Median Report Range 2001	Author Estimate 2013
Burnaby	\$87,500	\$200,000
New West	\$70,000	\$160,000
Surrey	\$87,500	\$200,000
Coquitlam	\$80,000	\$182,857
Vancouver	\$175,000	\$400,000
Average	\$81,250	\$185,714

Source: Evans and Webb - BC Ministry of Transportation (2001) and author's calculation

4.4. Is There a Taxi Shortage in Vancouver?

The economic analysis predicted that passengers would suffer because entry restrictions prevent new operators from joining the market, thus creating an artificial shortage of taxicabs when demand increases. Is there evidence that Vancouver exhibits an undersupply of taxis relative to other jurisdictions?

4.4.1. Per-Capita Taxi Ratio

The number of taxis per-capita is one measure that can be used to compare taxi availability across jurisdictions. Population is but one determinant of the number of taxis a city requires. Other demand factors include urban density, transit ridership, number of airport taxi trips, and number of households with no vehicles (Schaller, 2005). In fact Vancouver possesses many characteristics—such as high density, many transit riders, and low number of vehicles per capita—that would indicate greater demand for taxis over and above population figures.

Prentice, Mossman, and van Schindel (2010) calculated per capita taxi ratios across a number of Canadian cities (see Table 4.2). A reality with measuring the number

of taxi licenses on a per-capita basis is that the data will constantly be changing. Currently, Vancouver has 588 full-time taxis. A second concern lies in choosing the population measure. Does one choose the smaller census area or the larger metropolitan area? Using regional area population, it would then be necessary to include the 983 suburban cabs licensed by the PTB. Controlling for these factors, there are currently 1,571 taxis serving the GVRD, which today has an estimated population of 2.4 million people.²² That is a ratio of 0.64 taxis per 1,000 persons, well below the 1.08 average for the other Canadian cities. Alternatively, using Vancouver census area population (640,941) and only counting the 588 Vancouver licensed taxis results in 0.92 taxis per 1,000 population.²³ Although using only resident population would understate demand for taxis since the City of Vancouver is the primary destination for tourists visiting Greater Vancouver.

Table 4.2. Number of Taxis per 1,000 Persons in Canadian Cities

City	2006 population	Taxis	Taxi per 1,000 pop
Calgary	988,079	1,411	1.42
Edmonton	862,544	1,185	1.37
Saskatoon	202,425	160	0.79
Regina	179,246	120	0.67
Winnipeg	641,483	410	0.63
Windsor	278,765	211	0.75
Toronto	4,753,120	4,073	1.17
Ottawa	860,928	1,066	1.24
Montreal	3,316,615	4,445	1.34
Average	1,342,578	1,453	1.08

Source: Prentice, Mossman, van Schindel 2010

²² Stats Can Table 051-0062: Estimates of population by census metropolitan area, for July 1, 2013 based on the Standard Geographical Classification

²³ Population figures for Vancouver were updated using BC Stats Regional District and Municipal Population Estimate (2013).

City	2006 population	Taxis	Taxi per 1,000 pop
Region	Population	Taxi Licenses	Taxi per 1,000 pop
GRVD*	2,451,783	1571	0.64
Vancouver*	640,915	588	0.92

*** Updated by Author (BC Population Estimates 2013 and PTB 2014 Licenses Info)**

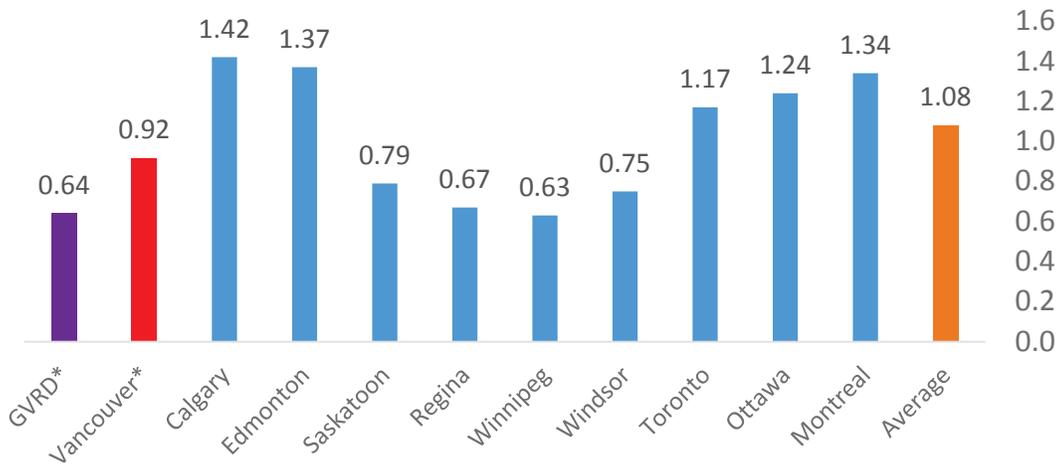
A further difficulty in comparing Vancouver with other jurisdictions is the existence of trade barriers due to originating-area boundaries. While there are 1,571 taxis licensed in GRVD, only 588 can pick up in Vancouver. Since Vancouver is the predominant destination for people commuting to work, seeking food and entertainment, and attending sporting events, the census area population underestimates taxi demand. Data from the Chow report showed that during peak demand 44 per cent of passengers picked up in downtown Vancouver had suburban destinations. Another factor is the treatment of temporary operating permits (TOP). In 2012 the PTB approved 99 TOPs for the Vancouver taxi companies.²⁴ This means that on a Friday or Saturday night, there are 687 taxis able to pick up in Vancouver, which results in a ratio of 1.07 per 1,000 persons. If we use census area population there are only 0.28 taxis per 1,000 people in downtown.²⁵

Chart 4.2 reproduces the findings of Prentice et al. but updates the number of taxis per 1,000 people in Vancouver and for the GVRD to include the latest license and population figures.

²⁴ The PTB also approved 38 licenses for the Suburban cab companies, although a court injunction initiated by the Vancouver taxi companies has prevented the suburban companies from using them.

²⁵ Using city population: $688 / (640,915 / 1000) = 1.07$ taxis per taxi per 1000 pop, or using GRVD: $687 / (2,451,783 / 1000) = 0.28$ per 1000 pop. (BC Stats 2013 Estimates)

Chart 4.2. Number of Taxis per 1,000 Persons in Major Canadian Cities



* Updated by the author using latest population and license data

Source: Prentice, Mossman, van Schindel 2010

Data on the number of taxis per 1,000 people indicates that there is a taxi undersupply in both the GRVD and the City of Vancouver relative to other Canadian cities. Vancouver has many factors favourable to taxi demand, including high public transit ridership which is a complement to taxis because it facilitates reduced private vehicle ownership, but the City does not match the greater supply of taxis observed in large Canadian metropolises including Toronto, Montreal, and Calgary.

4.4.2. Reported Wait Times

Less taxis per-capita implies greater passenger wait time. Data on wait times in Vancouver is limited, but the Chow Report conducted a survey that asked passengers to report their satisfaction with taxi service in Vancouver. This was not a random survey, as respondents were found by asking people congregated in and around the downtown entertainment district to participate. The survey data was used, in part, to evaluate a customer's perception of the total time taken before the cab arrives. How long to speak to an agent? How long to dispatch a taxi? And, how long did it take the taxi to pick up

the passenger? By summing the components of each dispatch experience, it is possible to produce a total customer service cycle (Chow Report 2012).

For dispatched trips, the total customer cycle measured in April, 2011, was 30.6 minutes. When the survey was repeated with the addition of 65 temporary cabs in October, 2011 total customer cycle times declined to 24.1 minutes, or by 21 per cent. Flagged trips also saw a wait time decline, from an average of 16 to 13.5 minutes. This decline in wait times was likely due to the 65 additional vehicles operating in Vancouver during the October period. Table 4.3 shows the changes in wait times for dispatch trips.

Table 4.3. Total Customer Service Time for Vancouver Dispatched Taxis

Component	Average time (minutes)	
	April	October
Call response time	9	7.3
Dispatch service time	3.6	4.7
Pickup Service time	18	12.1
Total Time Cycle	30.6	24.1

Source: Chow Report 2012

Respondents to a survey conducted by Taxi Research Partners asking 1,200 Toronto taxi users to report their desired wait time said seven minutes. Applying this research the wait times experienced by Vancouver passengers, even at peak demand, can be considered “too long” (Toronto Taxi Review 2014).

4.4.3. Taxi Shortages during Peak Periods

Taxi productivity data from the Chow Report confirms that there was a taxi shortage in Vancouver on Friday and Saturday nights. The report found that taxi fleet utilization during peak periods was not impacted by the additional 65 taxis operating during the pilot project (Chow 2012). The PTB Peak Period Decision noted that: “Monthly average fleet usage with the 65 Temporary Operating Permits was between

97 and 100 per cent, meaning virtually all taxis were on the road. The high utilization data indicates the TOPs were not substitutes for existing taxis (Chow 2012).

Yellow Cab was granted 24 additional TOP licenses, which increased its maximum Friday/Saturday night fleet by 9.6 per cent. Yellow Cab trip volume increased by 9.8 per cent with the additional permits, indicating that the new TOPs had not taken business away from existing cabs (Chow 2012). This indicates that there was a shortage of taxis at peak periods and any additional taxis were simply reducing passenger wait times.

4.4.4. Taxi Shortages and Public Safety

The inability to access a taxi also creates safety concerns for taxi users and the general public. Taxi demand is highest in Vancouver when bars and pubs are closing and public transit has stopped running for the night (Chow 2012).²⁶ The PTB asked the Vancouver Police Department (VPD) to comment on peak times for taxi demand in the entertainment district. The VPD's January 27, 2009 written reply stated: "On Friday and Saturday nights the lack of Cabs on the Mall starts around 0030 hrs, By 0200 hrs very few cabs on the mall until shift change at 0400 hrs." ... "During certain times or events there are simply too many customers for too few taxis ... Drivers are refusing to take the out of town trips wanting only to service the local destinations." The VPD noted "There is still room to increase the size of the Vancouver taxi fleets to meet peak demand" (PTB Peak Period Decision 2012).

Kevin Barker, the VPD's Chief License Inspector, stated in an interview that new licenses granted since 2005 have improved safety conditions resulting from a lack of

²⁶ Greater Vancouver transportation services generally do not run 24 hours. The light rail-services stop operating at 1:15 am, in the midst of peak demand for Vancouver's entertainment district (1-3am). Buses stop running around midnight with some select night bus services.

taxis in Vancouver's entertainment district. Still, Barker stated that in certain periods, generally Friday and Saturday nights, the taxi industry lacks sufficient capacity to transport people from downtown. This results in more physical disputes as bar patrons mill outside unable to find a ride home, and it raises the risk of people opting to drive home drunk and increases the risk of sexual assaults occurring. Constable Barker noted that there have been occurrences of private vehicles searching for intoxicated women that are looking for a ride home (interview with K. Barker, Jan. 28, 2014).

Anecdotal evidence from police reports seem to confirm that taxi shortages contribute to violent crime. On October 12, 2013, at 2:00 am, a 25 year old woman flagged down what she believed was a taxi in Vancouver's Gastown district. The driver of the vehicle drove the woman to an area in east Vancouver and sexually assaulted her (VPD Media Release October, 2013). On February 9, 2014 at 1:30 am two men were taken to hospital after being stabbed in a fight in Vancouver's Yaletown district. The fight began as a dispute over who had hailed a taxi first.²⁷

4.5. Entry Restrictions and Oligopolistic Outcomes

The literature notes that fixing or limiting entry is conducive to the development of oligopolies where the taxi market only has a few sellers (Cooper, Mundy, and Nelson 2010). Oligopolists know that their production decisions affect total industry profitability, so they often coordinate with each other to increase profits by restricting output. In contrast, producers in competitive markets make decisions to offer a new service or product independently and ignore how their decisions will affect a competitor's response.

²⁷ See CBC News – Vancouver Taxi Dispute Ends in Stabbing (2014, February 9)

Economists use concentration ratios that measure the total output produced by a given number of firms to indicate whether an industry is an oligopoly. In Vancouver, four taxi companies produce 100 per cent of the output. Economists consider a four firm concentration ratio of 100% to be a concentrated oligopoly (Krugman and Wells 2007). Carolyn Bauer, the head of the Vancouver Taxi Association, indicated to the Vancouver Province that the four taxi companies meet twice a month to work collectively on industry issues.²⁸

Oligopolists expecting to be in business over the medium-to-long term are aware that profitability is interdependent on the production decisions of each firm. As a result, they behave strategically to raise industry profitability. These strategic behaviours can include collusion, either by formal agreement or tacitly by anticipating a competitor's response. The end result is each seller restricting output in order to raise the profits of all firms in the industry at the expense of consumers. Are there examples of collusion in the Vancouver taxi industry?

As an explicit example of collusion, let's consider how the Vancouver companies apply for licenses. Given the high returns generated from the licenses, each license is reported to be worth around \$800,000, so that each company presumably wants additional licenses. If, however, all four applied for significant increases in the number of vehicles, lease rates could plunge due to new supply. The last two major approvals of additional Vancouver licenses occurred in 2007 when 111 new vehicles were approved, and 2011, when 99 temporary operating permits were approved. In both instances, the four companies applied for additional licenses at the same time and in rough proportion to their fleet size. (Table 4.4 shows the license approvals.) The actions of Vancouver

²⁸ See C. Olivier (2013, November 15). Vancouver cabs hailed as Canada's best. The Province.

firms in the application process indicate strategic behaviour consistent with collusion that occurs in oligopolistic industries.²⁹

Table 4.4. Vancouver Taxi License Owners by Company and New License Approvals

Vancouver Taxi Licenses		New Licenses Approved	
Company	Current Market Share	2007	2011
Yellow Cabs	42%	41	36
Black Top Cabs Ltd.	34%	30	30
Vancouver Taxi Ltd.	13%	20	17
MacLure's. Cabs (1984)	11%	20	16

Source: Passenger Transportation Board

As a second example of strategic behaviour, consider that the four Vancouver license holders are authorized by the PTB to use vehicles that can accommodate up to seven passengers. City by-laws also authorize vehicles to carry between four and seven passengers.³⁰ None of the four cab companies, however, offers a taxi able to accommodate more than four passengers. Accordingly groups of five or more require at least two cabs. In theory, it would be profitable for a firm to offer vehicles able to accommodate more passengers since the added cost of carrying an extra passenger is small.³¹ A firm that has capacity for seven passengers would reasonably expect to receive almost all dispatch requests from larger groups. If, however, each firm offered vehicles capable of carrying seven passengers, overall profitability would decline because greater passenger capacity of vehicles would result in less trips overall. Since there are only four Vancouver taxi companies, each company can anticipate how the others will respond to a change in production. Because of this, the companies

²⁹ Note that the Vancouver companies may also exercise oligopsony power in the market for drivers. Meaning they could behave strategically to reduce returns to drivers.

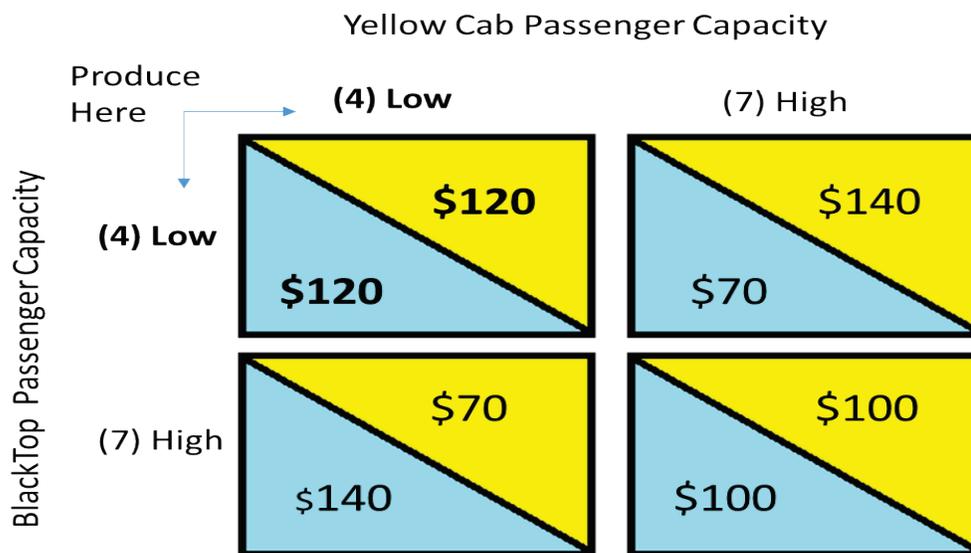
³⁰ See City of Vancouver by-law#6066

³¹ The additional marginal costs would be the larger vehicle (van) and longer boarding time.

strategically limit the passenger capacity of their vehicles to four persons despite being authorized to carry up to seven passengers.

Figure 4.2 formalizes the example using a payoff matrix. The key is that over time both firms will understand that it is in their best interest to produce in the top left hand corner of the payoff matrix, the low/low quadrant. This is the quadrant where total industry profitability is highest.

Figure 4.2. Payout Matrix Based on Vehicle Passenger Capacity Output



4.6. Service Variation

Entry restrictions also prevent innovation by not allowing new competitors into the market (Frankena and Pautler 1984). Recently, the integration of internet, mobile phones, GPS, and social network services has facilitated the development of new private transportation options that connect passengers and drivers through GPS-enabled smartphones. Passengers “request a ride,” and the app communicates their location to drivers. Payment is generally received through credit card connected to a smartphone

and fares are set in a variety of ways. Some apps operate a fare system similar to taxis, with an initial pick-up fee and a per-km distance charge, although the rate could vary depending upon time of day and customer demand. In other instances, the app communicates a suggested fare based on similar rides. The three largest companies are UBER, Sidecar, and LYFT.³²

These applications have often conflicted with BC's Transportation Act.³³ In May, 2012, UBER began operations in Vancouver connecting passengers to private drivers.³⁴ The PTB responded to UBER and other companies advertising applications that link passengers and transportation operators, by issuing a notice on November 28, 2012, entitled: "Passenger Transportation Rates and Smartphone Applications". The notice reminded transportation operators that they must have a PTB license and that they must charge approved rates. The notice specifically stated that this behaviour is "contrary to the Passenger Transportation Act, undermines rate structures in place and could result in destructive competition." The PTB Registrar further warned that operators not in compliance with regulations could face sanctions and penalties.³⁵

4.6.1. Do consumers prefer these new services?

Consumer reviews posted on Yelp, the largest online business review website, shows low ratings for the Vancouver taxi companies. Yelp Business Reviews are scored on a 1 to 5 star basis with 5 being the highest. Yellow Cab received a rating of 2 stars

³² The California Utilities Commission recently created a new class of regulations for companies that offer prearranged transportation services online-enabled applications. For a description of this policy see Appendix E.

³³ It's not the technology used to arrange a ride that conflicts; in fact Yellow Cab offers an app that allows you order a taxi via your smartphone. Rather, it's the variable fares and the fact that some operators did not have licenses.

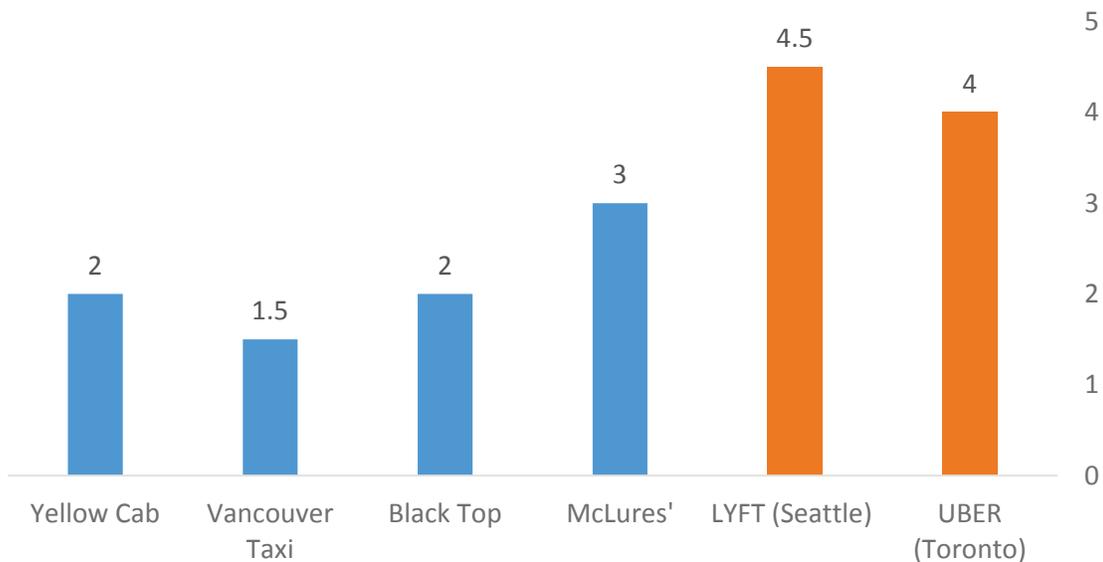
³⁴ See: UBER Blog Post - Secret Testing Begins in Vancouver (2012, May 11).

³⁵ Specifically, the Registrar indicated that it could suspend, cancel, or amend terms and conditions of licenses, as well as impose administrative fines.

(based on 54 reviews), as did Black Top Taxi (17 reviews). Vancouver Taxi received 1.5 stars (5 reviews), while Maclure’s Taxi was the highest rated at 3 stars (27 reviews).

A problem with using online reviews to measure customer satisfaction is that they are prone to adverse selection, since users are more likely to report negative than positive experiences.³⁶ Still, compared with the generally positive reviews for transportation companies like Uber (Toronto) and Lyft (Seattle),³⁷ Vancouver taxicab service leaves significant room for improvement (see Chart 4.3 for a comparison).

Chart 4.3. Average Yelp Rating for the Vancouver Taxi Companies and new service competitors



³⁶ Online reviews may also contain fraudulent reviews as proprietors try to boost business by leaving positive reviews or harm competitors by leaving negative reviews. Yelp uses a review filter that claims to detect fraudulent reviews based on an algorithm, but its effectiveness is unknown.

³⁷ Since PTB regulations prevent Lyft and Sidecar from being licensed in Vancouver, ratings for UBER and Lyft were taken from Toronto and Seattle—Toronto because it is Canadian city where UBER operates, and Seattle because of its proximity to Vancouver.

4.7. Why Do Entry Restrictions Exist Then?

The analysis appears to support the OECD's findings that entry restrictions are an unjustified restriction on competition. Vancouver has fewer taxis per-capita than other major Canadian cities. The taxi companies' strategic behaviour is harmful to consumers, and taxi shortages on weekends create a dangerous environment in Vancouver's downtown entertainment district. Based on consumer reviews, Vancouver taxi users are also unhappy with service levels, and most economists and transit experts view entry restrictions as harmful.³⁸ The sole beneficiary of current regulations appear to be existing license holders whose licenses are estimated to be worth \$800,000 on the secondary market, far more than the \$100 fee charged by the government to renew these licenses.

Economists attribute the continued existence of entry restrictions in many jurisdictions to rent-seeking behaviour by existing license holders. Once entry restrictions are in place, existing license owners understand that it is in their interest to prevent new entry. Rent-seeking occurs when license owners devote considerable political, legal, and financial resources toward maintaining or enhancing a favourable regulatory environment (Seymour 2011).

Regulatory or legislative capture occurs when the regulations primarily reflect the interests of incumbent industry to the detriment of customers, the general public, and potential entrants (Hara 2011). Taxi regulation is prone to capture because the large benefits of entry restriction are concentrated among the few license holders and the costs arising from regulation are dispersed among a wide group of losers (Stigler 1971).

³⁸ Moore and Balaker's (2006) survey of 28 articles related to taxi deregulation found 19 articles concluding that deregulation is beneficial, two finding the results were mixed, and seven finding deregulation harmful overall. The authors note that the literature supporting net benefits from taxi deregulation was richer than the literature finding deregulation harmful.

Losers from entry regulation may not understand the extent to which they are hurt, or if the losses to any individual are small they may have little incentive to push for regulatory changes. Conversely, license owners are acutely aware that industry profitability can be enhanced by favourable regulations.

4.8. Are There Societal Benefits from Entry Restriction?

Because of the financial gains realized by owners due to entry restrictions, license holders often argue that society also benefits from maintaining the restrictions. Some common arguments are that entry restrictions increase driver income and enhance vehicle safety. A critical review of these arguments finds them suspect.

4.8.1. *Do Entry Restrictions Support Driver Income*

An oft-recited argument is that entry restrictions support driver income (Scheiber 1975). Economic analysis, however, does not support this argument (Biggar 2011). First, the restriction on entry limits the opportunity to find employment as a driver. Second, as long as there is a sufficient supply of drivers willing to enter the market, any changes in taxi supply and demand will affect only the value of the license, not driver income. If taxi demand increases owners can charge higher lease rents to drivers. The long-run income of drivers is determined by driver market supply, which includes actual and potential drivers. Since the skills necessary to become a taxi driver are relatively easy to acquire, supply is highly elastic. Accordingly, if drivers' wages increased above the market price for unskilled labour in the general economy, many would offer to lease permits at a higher price. The new market lease price limits driver wage increases to the going wage rate for unskilled labour in the general economy (Biggar 2011).

The Vancouver taxi companies appear to agree with this line of thinking. An affidavit filed by expert witness Dr. Dan Hara estimated the financial impact to the Vancouver taxi license holders from the PTB's decision to grant 38 temporary operating permits to suburban companies. He noted: "The lost revenue per taxi will ultimately find itself expressed in a lower willingness by taxi drivers to pay a premium for a Friday and Saturday night shift lease. License holders receive the excess value from license rights, and bear 100% of the loss from any decline in the value of that right."(Hara Affidavit 2013, page 4).

Despite the findings of their own expert witness in court, the Vancouver Taxi Association argued that drivers are well compensated. Carolyn Bauer, General Manager of Yellow Cab, is quoted in response to a question about how drivers afford the lease rates, "It just shows you what their income is, right? ... Their income is big. Their income is big big big. Some of the guys are making \$700 on a Friday night."³⁹

Using data from Dr. Hara's affidavit and the taxi cost index, it is possible to estimate a taxi driver's wage. Based on figures provided by the Vancouver taxi companies and the PTB taxi cost index Hara estimated that average gross revenue for a Friday or Saturday night is \$360. Hara further reported that drivers pay a median lease of \$180 for a Friday or Saturday night shift and are also responsible for fuel costs. The taxi cost index components, fuel costs (19%) and a driver's wage (31%) represent 50 per cent of taxi operation costs or roughly \$68 for fuel and \$112 to cover a drivers wage for a 12 hour shift.⁴⁰ Based on a 12-hour shift a drivers wage would be \$9.30 per hour. This estimated hourly wage is 9 per cent below BC's minimum wage. Since drivers are assumed to be indifferent between a Friday night shift or a Monday shift, their take-home pay across shifts will be similar.

³⁹See Brocki (2012) Welcome to Taxiland, the Dependent Magazine.

⁴⁰ Lease \$180 + Fuel \$68.4 + Drivers Wage \$111.6 = Total Revenue \$360

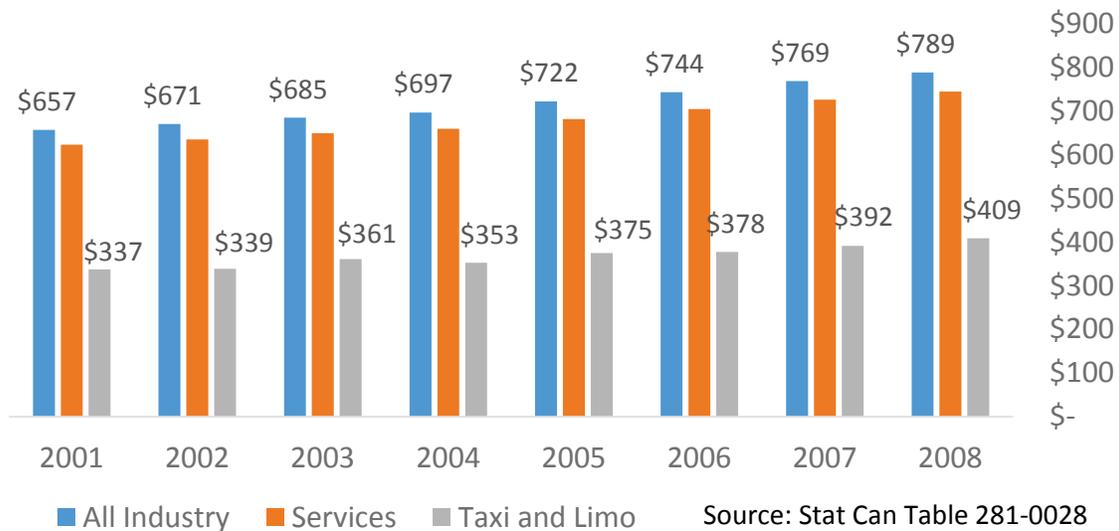
An estimated wage below the provincial minimum wage is hard to fathom.⁴¹ As a result it may be that the taxi cost index has underestimated drivers wages at 31 per cent of total costs, although annual surveys used the PTB to verify the taxi cost index components indicate the weightings are reasonably accurate (TCI Index Review 2012). The PTB's TCI reviewed looked at the New South Wales, Australia, cost index, which had a similar 50 per cent weighting for drivers wage and fuel costs. But the split here was 41% and 9% respectively, whereas BC's is 31% and 19%. Applying, the New South Wales costing to Hara's \$360 estimate for total revenue, than a driver's take would be \$148 per shift, or \$12 per hour.

The low estimated wage is confirmed by observing driver behaviour. In 2012, a group of lower mainland taxi drivers rallied to protest working conditions as well as the current licensing system.⁴² The association complained that drivers work 12-hour shifts without guaranteed minimum pay. Finally, Statistics Canada's survey of employment, payroll, and hours contains estimates of weekly earnings by industry classification, including a classification for limousine and taxi service. The sample size is at the provincial level, but since taxi and limo regulations are similar at the provincial level, the information can inform the debate surrounding driver income. The data shows that in 2008 average weekly earnings for taxi and limousine services was \$409, almost 50 per cent lower than the average weekly earnings for all industries. Chart 4.4 provides a breakdown of average weekly earnings for select industries in BC. Taxi driving in BC is a low wage job, and the restrictive licensing regime for taxis does little if anything to raise drivers' incomes.

⁴¹ Although 80 per cent of Vancouver drivers were not born in Canada, for many English is not their first language. As a result alternative opportunities for employment may be limited. (Xu 2012)

⁴² See Pacific Coast Drivers Association media advisory: "Taxi Drivers to host down rally demanding fair treatment and reform."

Chart 4.4. Average Weekly Earnings in BC Using North American Industry Classification System



4.8.2. Do Entry Restrictions Improve Safety?

Another argument used to support entry restrictions is that above-normal profits from limited entry allow taxi owners to invest in safety and/or deliver better quality service. However, much like the driver’s income argument, if license holders receive the excess value from a fixed supply, it is unclear that they would be predisposed to direct those rents into improving vehicle safety or service quality. In fact a counter-argument is that competition from open entry incentivizes companies to improve their safety, quality, and the overall passenger experience (Frankena and Pautler 1984). Regardless, if the policy goal is to improve safety and/or quality then regulations should target those objectives directly (OECD 2007).

Data on safety outcomes for taxis in Vancouver is extremely limited. The Passenger Transportation Registrar does require taxis to pass bi-annual safety inspections. However, no known data exist that would allow for a comparison of

Vancouver taxi safety over time, or against other jurisdictions. Despite this, some information on vehicle safety is available from a 2011 media report.

In April 2011, CBC news reported that 24 of 55 vehicles inspected by the Vancouver Police failed certification tests and were permanently taken off the road. Eight others were initially removed but reinstated following repairs. A further 15 vehicles were issued inspection notices requiring repairs within 30 days of a second inspection. The media report represents only a snapshot of safety issues, but when only eight taxis of 55 taxis tested passed the safety test, the report refutes the argument that higher profits ensure better vehicle safety. The Vancouver taxi companies behaved like any other industry, keeping maintenance costs low even if they risked not meeting standard safety requirements.⁴³

24 Hour News quoted a Vancouver police officer involved in the inspection saying that Vancouver taxi companies were buying U.S. vehicles at a discount. The officer added: "Taxi companies are buying these vehicles and they've been told that these vehicles had been inspected when they bought them ... We're finding that these vehicles would never pass inspection."⁴⁴

⁴³ See "24 Deficient Cabs ordered off the Street" (April 11, 2011 - CBC News)

⁴⁴ See "Bad Cabs a Structural Concern" (April 11, 2011 - 24 hours Vancouver)

Chapter 5. Taxi Fare Regulation in Vancouver

The PTB’s standard fare regulation also warrants an evaluation.

5.1. PTB Standard Fare Regulation

The standard fare charged by taxis is set by the PTB. All taxi companies located in the Greater Vancouver Regional District (GVRD) operate under a common rate agreement. Table 7 shows the various rates that make up GVRD taxi fares, including the initial “flag-drop” rate, the distance per kilometer, and waiting-time rate. Passengers must pay the final fare posted on the meter.

Table 5.1. Regulated Fares in the Greater Vancouver Regional District

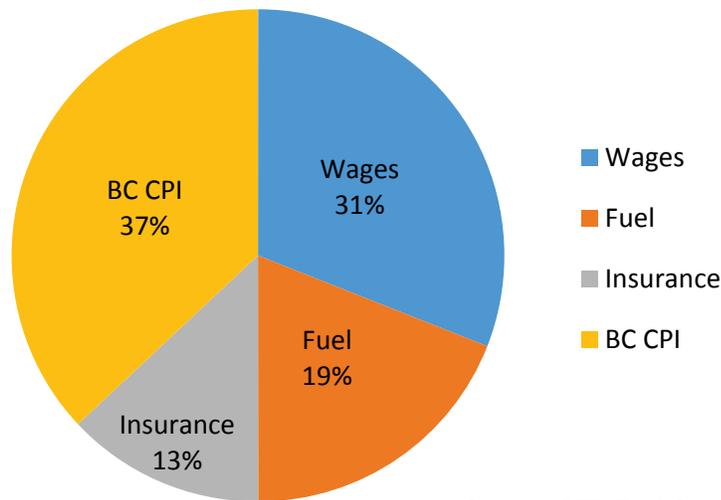
Type of Rate	Fare with 5% GST	Formula
Flag Drop	\$3.20	\$ 3.20 for the first 54 meters
Distance Per KM	\$1.84	\$0.10 for each additional 54 meters
Wait Time per Hour	\$32.86	\$0.10 for each consecutive 10.95 seconds that the vehicle is stopped

Source: PTB TCI 2013

The PTB sets fare rates through two mechanisms, the Taxi Cost Index and rate change applications. Taxi Cost Index (TCI) requests to the PTB have been the most common method for rate changes. The TCI was developed by the PTB as an objective indicator of four cost components: a driver’s wage, changes in the BC Consumer Price Index, fuel, and insurance costs (PTB TCI Methodology 2011). These components are

weighted to reflect the average cost of operating a taxi in the province (see Chart 5.1).⁴⁵ Taxi companies can request TCI increases from the PTB without charge, if the TCI increase exceeds 2 per cent⁴⁶ since the last review. The PTB requires that 51 per cent of licensed vehicles in the Greater Vancouver Regional District submit a TCI request form before it commences a rate review. A TCI fare increase is approved by the PTB once these conditions are met and the cost components validated (PTB TCI 2013).

Chart 5.1. Taxi Cost Index Components



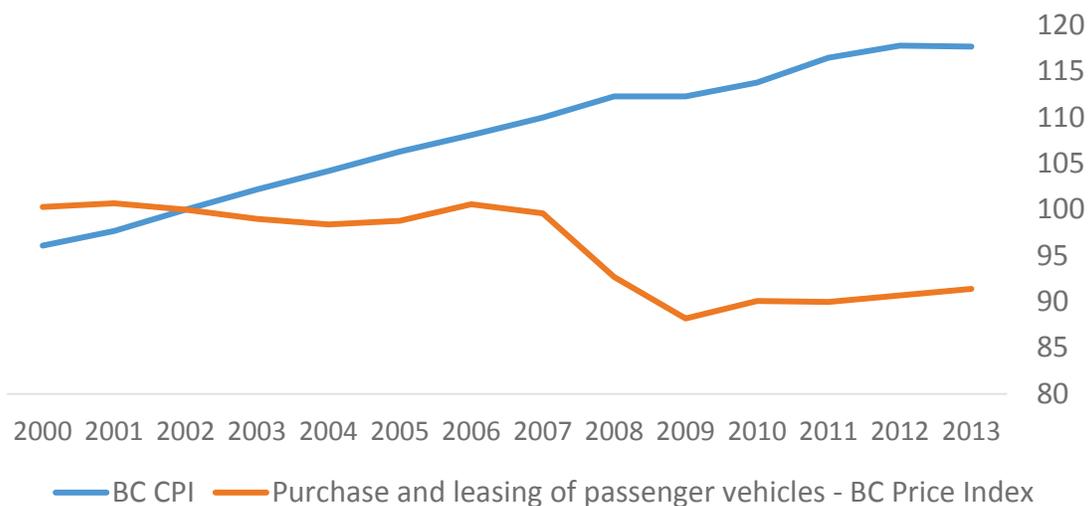
Source: PTB Taxi Cost Index 2013

⁴⁵ The weighting of the taxi cost index components are derived from annual surveys asking taxi companies to report their cost structure. The PTB reports that the survey responses tend to reflect the cost weightings within 2 per cent.

⁴⁶ The two per cent threshold is used because it is costly to re-calibrate meters for small changes

A criticism of the taxi cost index is that it cannot measure changes in productivity from declining input prices. For instance, the cost of passenger vehicles has fallen in BC and vehicle fuel efficiency has improved. Chart 5.2 demonstrates that cost of new vehicles in BC has decreased significantly in real terms over the past decade. Technology improvements have also driven down the cost of computerized dispatch. But the index used to calculate taxi rate increases considers only the total CPI, which has increased steadily in BC. Normally, when indexes are used to automate rate changes, like in the utilities industry, they generally consist of a positive cost component like CPI offset by a negative component that measures productivity savings. This process does not happen with the TCI.

Chart 5.2. BC Consumer Price Index, Purchase and leasing of passenger vehicles (2011 Basket) vs. BC Total CPI



The other mechanism to change the regulated fare is a “Change of Rates Application,” which allows taxi companies to apply for an increase that exceeds the TCI increase. Unlike the TCI request, a Rate Change Application includes a fee of \$200, requires more documentation and generally has a longer review period (PTB TCI 2011).

Table 5.2 provides a list of changes in the regulated taxi fare for the Greater Vancouver Regional District since 2001 and the reasons for them. It appears that no Change of Rates Applications have been approved since the introduction of the TCI in 2002. Still, rates have risen substantially. In April, 2008, the flag drop rate for GVRD was \$2.75 (includes 5% GST) In April, 2013, the rate was \$3.20 (includes 5% GST) or a 16 per cent increase over five years.

Table 5.2. Changes in Greater Vancouver Regional District Fares

Meter Change Event	Date	Rate Increase	Tax Regime
Order allowing increase of up to 11%	15-Mar-01	9.30%	7% GST
Introduction of Taxi Cost Index (TCI) 2002	3-May-03	3.34%	7% GST
TCI 2004	27-Mar-05	8.77%	7% GST
Temp Fuel Surcharge (TFS) 2005	12-Nov-05	4.50%	7% GST
TCI 2006 End 4.5% TFS. Add 5.77% TCI	1-Jul-06	1.27%	6% GST
TCI 2008	5-Jan-08	2.27%	5% GST
TFS 2008	12-Jul-08	3.50%	5% GST
TCI 2009 End 3.5% TFS, Add 3.16% TCI (0.34% decrease pending)	1-Jan-09	0%	5% GST
TCI 2009B 5.00% less 0.34% carry over	20-Jun-09	4.66%	5% GST
Implement 12% HST (taxi camera surcharge ended)	1-Jul-10	0%	12% HST
TCI 2011	18-Jun-11	2.38%	12% HST
TCI 2012	7-Jul-12	1.60%	12% HST
TCI 2013	27-Feb-13	1.90%	12% HST
Return to PST and GST	1-Apr-13	0%	5% GST

Source: PTB TCI Review

5.2. Economic Analysis of Standard Fare Regulation

Support in the economic literature for standard fare regulation is mixed. However, all studies conclude that maximum fare regulation is necessary when entry is closed. Under closed entry but with unregulated fares, producers could charge monopoly prices. Regulated ceilings on prices are needed to prevent this outcome. But there is little justification for minimum fare regulation, which sets a price floor for the cost of service.

Under open entry, the economic literature identifies segments of the taxi market more prone to market failure, such as cabs that accept street hails, where maximum or light-handed fare regulation would still be appropriate. Examples of light-handed fare regulation include requirements to advertise or structure fares in a fashion that enables consumer comparison, but does not limit the price charged (OECD 2007).

The disagreement over the benefits and costs of fare regulation stems from the multiple market segments where taxis operate. Taxis generally search for fares in three semi-distinct markets: cruising cabs that accept street hails; cabs that wait for fares at taxi stands; and dispatched or prearranged cabs. Each segment has different properties, which may justify differential regulation by segment.

Cruising cabs are defined as taxis that prowl the streets searching for hailed trips. Cruising vehicles are viable in densely populated areas where there are many potential passengers. For customers, the search costs associated with cruising cabs are higher than for dispatched cabs. That is to say, customers may face long wait times before a taxi becomes. Since search costs make it difficult for customers of cruising cabs to know whether another cab is likely to come along or offer a lower fare, these cabs use uncertainty to extract higher fares (Teal and Berglund 1987). Drivers of cruising cabs are aware of this and have little incentive to lower fares. Tourists, unfamiliar with taxi market conditions are easily exploited, and infrequent taxi users have little incentive to

inform themselves about market prices just to save a dollar or two. Search costs in the cruising market may justify maximum fare regulations.

Taxi stands also create market failures warranting maximum fare regulation. Taxi stands are located at popular points of origin for taxi travelers such as hotels, airports, and train stations. The vehicles line up at the taxi stand and passengers generally follow the convention of boarding taxis based on the vehicle's position in the lineup. This first-in first-out method does not give passengers an opportunity to compare prices. At busy taxi stands, the need to maximize throughput limits the scope for buyer-seller negotiation (Biggar 2011).

Dispatched cabs represent a third segment of the taxi market. In dispatch, the positive forces of competition have a greater opportunity to exert themselves because customers can choose their preferred company. In the dispatch market, customer loyalty rewards companies that provide good quality and reliable service. Taxi companies can advertise their fares to customers and are rewarded with more business by reducing prices. The dispatch market is not subject to the same transaction costs⁴⁷ that exist in the cruising cab and taxi stand market. Research findings suggest that allowing companies to set fares, as opposed to mandating standard fares, may be welfare-enhancing (Frankena and Pautler 1984). A customer will request a taxi from the company that best meets their quality and price expectations — similar to consumer choices for other goods and services. Alternatively, regulators could use lighter-handed fare regulation such as requiring companies to post their price using a universal zone system that facilitates customer comparison.

⁴⁷ Some argue that regulators may wish to keep maximum fares for dispatch markets because of network effects in dispatch that give rise to market. These arguments are considered in Appendix A.

The fact that many people now carry powerful computers in their pocket suggests that the distinction between pre-booked taxis and cruising cabs may be obsolete. Anyone with a smartphone can quickly compare prices and customer reviews prior to flagging a taxi.⁴⁸

5.2.1. Combining Entry and Fare Regulation

The analysis to date has considered standard fare regulation and entry regulation separately. However, entry regulation has implications for price regulation, and some argue that the combination of closed entry and standard fare regulation is a desirable regulatory regime because it increases taxi productivity. With more taxis on the road, the time each taxi spends looking for a passenger rises.⁴⁹ If open entry is allowed, wasteful duplication occurs. Instead, if regulators limited entry to fewer taxis, each taxi could offer lower fares and still meet operating costs. Is this view correct?

Under open entry, economists generally view the market for taxis as monopolistic competition. Under this market structure, each taxi company has many competitors but differentiates itself from competitors by a number of factors, primarily location. A common example of monopolistic competition is coffee shops that are sited in different locations. By differentiating themselves spatially from other producers, coffee shops have some power to set price.⁵⁰ Consumers are willing to pay more than

⁴⁸ In 2013, The California Public Utilities became the first regulator to create a new class of regulations for companies that offer prearranged transportation services for compensation using an online-enabled smartphone applications. To read more about this see Appendix E “California Smartphone Applications.”

⁴⁹ The PTB has indicated in decisions that it looks at taxi vehicle productivity when considering a new license application. In its “Peak Period Decision” the board the number of taxis on shift as well as the number of trips made per hour to gauge productivity.

⁵⁰ Producers in monopolistic competition have some control over the price they charge. In perfect competition producers are price takers.

the cost of producing a cup of coffee because the closer coffee shop offers savings in travel time.

Consider a passenger searching for a taxi. In this example, an empty taxi sits outside the passenger's front door, but the passenger also knows that by walking two blocks to Main Street there will be many empty taxis. Still, the taxi outside the front door is more convenient than the taxi two blocks away and as a result the taxis are not perfect substitutes. The taxi that is closer in location can charge a slightly higher price.

When firms are able to charge price above the average cost to produce that unit of service, it means that they are not operating at their minimum cost output. In theory, monopolistically competitive taxis could produce more trips while lowering the average cost of a trip. As a result they exhibit "excess capacity."

Returning to taxis, assume that taxi operating costs are primarily fixed; an empty taxi costs as much to run as one with a passenger.⁵¹ If hourly operating costs (wage, insurance, fuel, vehicle) for the driver is \$20, and under open entry he could expect to serve two passengers per hour. To cover his costs the driver would need to charge each passenger \$10. If regulators fixed the number of taxis and now the driver could expect to receive four fares per hour in theory average fare price could be lowered to \$5.

Monopolistic competition in the taxi industry does not, however, justify entry regulation. First, if supply restrictions mean taxis do not spend long looking for a rider, that implies many passengers are waiting longer to be picked-up. Excess capacity is a benefit to consumers because it lowers wait time experienced by passengers. Moreover, if entry regulation in the taxi industry exists to make firms more productive, where are the calls to limit entry and regulate price for other service industries like grocery stores, barbershops, and fast food restaurants exhibiting excess capacity?

⁵¹ This is largely true as empty taxis will be using fuel when searching for passengers.

5.3. The Cost of a Taxi Trip in Vancouver

Even if lower fares and higher taxi productivity could be achieved by managing supply and setting fares, there is no evidence of a feasible policy able to determine the appropriate level of taxi supply. Not only would it be difficult for regulators to determine whether supply is too high or too low, but past experience with restricted entry suggests that supply increases are rare and the regulatory process generally benefits existing license holders at the expense of society (OECD 2007).

Still, it is worth reviewing fare outcomes in Vancouver to assess any evidence that Vancouver taxi fares are lower than in other jurisdictions. The Greater Vancouver Regional District common rate agreement allows taxis to charge an initial flag-drop rate, rate per km travelled, and waiting-time.

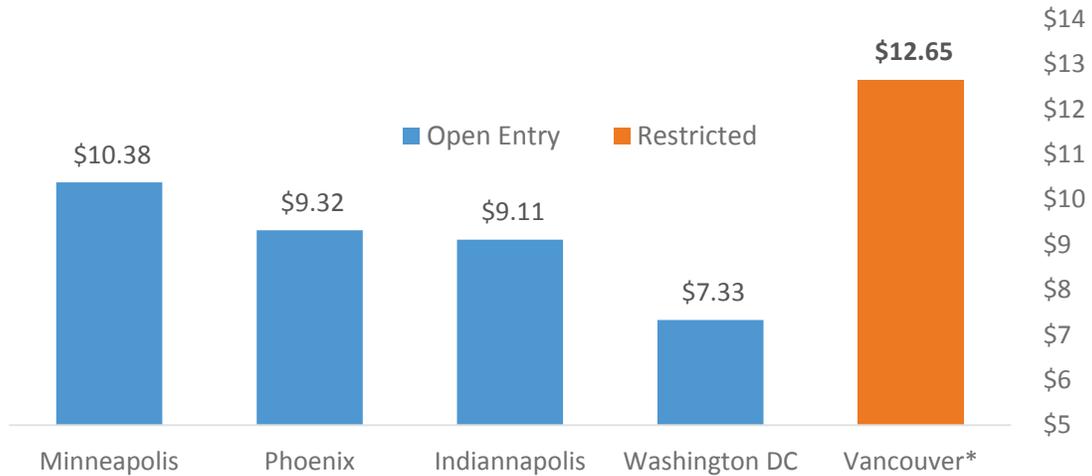
The International Association of Transportation Regulators benchmarks fares across Canadian municipalities. Chart 5.3 shows the average fare rates for five and 10 km journeys using flag-drop and distance charges for 2011. Compared to this group, the average five km fare in Vancouver is \$12.65 or 12.1% higher than the sample average. A 10-km and 35-km trip in Vancouver will cost \$22.10 and \$69.35 respectively or 15.1% and 18% above the average sample. The data show that Vancouver fares are higher than in most major Canadian municipalities. Victoria, BC, where fares are also regulated by the PTB, is the only city with a fare cost equal to Vancouver.

Chart 5.3. Average Fare 5 and 10 KM Fare Rates Across Canadian Cities



Making fare comparisons across municipalities is inherently difficult due to differences in regulation and regional taxes. For instance, Vancouver has a high gasoline tax and a carbon tax. Still, Vancouver has some of the highest taxi fares in Canada. Moreover, in cities that allow open entry like Washington DC, Minneapolis, Phoenix, and Indianapolis taxi fares are substantially lower than in Vancouver. For instance a 5 km taxi ride in Vancouver is 73 per cent more costly than a 5 km fare in Washington, DC. Chart 5.4 compares Vancouver taxi fares against U.S. cities with open entry regulation.

Chart 5.4. Cost of a 5 km Fare in Cities with Open Entry (\$CAD) 2011



Source: Hara and Mallory 2011 * Author's Calculation using 2011 exchange rate

Taxi fares have also increased at a faster rate than the general price level in the BC Economy. The pre-tax⁵² cost of a five km taxi fare in March 2005 was \$9.49 and in March 2013 the pre-tax fare rose to \$11.81, an increase of 24 per cent. Over that period BC's CPI increased by 12.5 per cent. If taxi fares had increased by the rate of inflation, a five km fare would cost \$10.67 instead of \$11.81.

5.3.1. What per cent of fare box revenue goes toward above-normal economic profit?

The argument that closed entry would allow super productive taxis to charge a low fare requires that taxis to collect just enough revenue to cover their costs. In July 2013, Yellow Cab provided the Vancouver Sun with an estimate of a taxi's average daily revenue. The amount provided was \$575, comparing this amount with the reported

⁵² I calculate fares abstracting from sales tax because of the frequent changes sales tax applied to taxi trips due to GST reductions and the BC government's adoption of the HST followed by a subsequent return to the PST.

license values of \$800,000 it is possible to estimate what per cent fare revenue represents above normal profit.

Financial analysis implies that for an asset to be valued at \$800,000 the annual lease fee would need to be \$48,000. The analysis uses a 6 per cent discount rate because it represents median between the 3 per cent discount rate for used for safe assets and a 9 per cent discount used for risky assets. Choosing the median rate is appropriate because markets that guarantee the right to a job observe lower discount rates (conversation with SFU Adjunct Professor Marvin Shaffer, 2014 February). At the same time, the risk of deregulation prevents a taxi license from being viewed as a completely safe asset like a government bond. The \$48,000 valuation seems accurate based on media reports and personal interviews that indicate the cost to lease a 24-hour taxi in Vancouver is \$4,000 a month ($12 * 4,000 = \$48,000$). Under this arrangement, the lessee is responsible for all operating costs including vehicle costs (depreciation and opportunity cost of capital), dispatch fees, fuel, and insurance. For an asset to return \$48,000-a-year the average daily take would be \$131 ($131.5 * 365 = \$47,997$). Thus Yellow Cabs' daily revenue could be reduced from \$575⁵³ to \$444 while still leaving operators enough revenue to cover all costs. A reduction of this magnitude would represent a 23 per cent decrease in fares. This would reduce the cost a 10 km fare from \$11.81 to \$9.10.

⁵³ Yellow Cab provided an estimate of daily revenue in Lee, J, (2013) Taxis Ride a Fare Road to Profit – The Province

Chapter 6. Originating-Area Regulation

6.1. PTB Originating-Area Boundaries

The PTB also implements originating-area boundaries contained within the terms of the license. These boundary restrictions dictate in which geographic area passengers can be picked up and act as a barrier to regional trade. As a result, only taxicabs licensed in the City of Vancouver are allowed to pick up passengers within city limits. Hence, taxis licensed in neighbouring municipalities are prohibited from picking up passengers in the City of Vancouver, while taxis restricted to picking up passengers in Vancouver cannot pick up fares in suburban GRVD communities.

To define where the 27 Greater Vancouver taxi companies may pick up, the PTB grouped them into nine primary operating municipalities: (1) Vancouver; (2) North Vancouver; (3) Burnaby; (4) Coquitlam/Port Moody; (5) Richmond; (6) Delta/Surrey/White Rock; (7) Langley; (8) Pitt Meadows/Maple Ridge; and (9) New Westminster. The true number of unique originating areas is likely larger as each taxi license sets out a specific area where the company can pick up (PTB Omnibus Decision 2012).⁵⁴

Jan Broocke, informed me that many of the originating-area boundaries have been in place for a long time and are a contentious issue among license holders (February 12, 2014 Interview, Jan Broocke). In a recent decision allowing suburban cab

⁵⁴ Consider the Delta/Surrey/White Rock group, while six taxi companies are licensed in the region (Guildford Cab, Surdell-Kennedy Taxi, Newton Whalley Taxi, Tsawwassen Taxi, Delta Sunshine Taxi, White Rock/South Surrey Taxi) some companies are prevented from picking up in Delta region and only two are allowed to pick up in White Rock.

companies to operate 38 vehicles in Vancouver on Friday and Saturday nights, the PTB first considered whether the companies were providing a satisfactory level of service in their home base before allowing the vehicles to pick up in Vancouver’s entertainment district (PTB Peak Period Decision 2012).

6.2. Analysis of Originating-Area Boundaries

The United Kingdom’s Department of Transportation recommends abolishing originating-area boundaries, arguing that they reduce taxi supply, vehicle productivity, and customer choice (UK Best Practices 2010). These restrictions are wasteful as drivers make the return trip to their home area empty, wasting both time and fuel. This “deadheading” also increases vehicle greenhouse gas emissions. Drivers often refuse rides where the destination takes them to an area that disallows them from picking up passengers. It also creates confusion for customers who can’t understand why the vehicle that dropped them off at their destination is unable to make the return trip (Evans and Webb 2001). Enforcement of area restrictions also pose administrative costs to governments as time and money are spent ensuring that taxis don’t pick up riders outside their boundary.⁵⁵

The primary barrier to removing area restrictions is the impact on license values. Despite the improved taxi productivity and shorter wait times that would occur if trade was allowed, if licenses in one jurisdiction have a higher market value, then combining the jurisdictions will transfer wealth from high-value license owners to license-holders in

⁵⁵ Consider “Project Gypsy,” an operation conducted by the Vancouver Police Department targeting out-of-town taxi companies from picking up in Vancouver. The project ran for three nights on December 8, 14, and 15, 2012, and issued 77 tickets to suburban cab companies for making illegal pick-ups while in Vancouver. To enforce the originating-area restrictions the VPD used nine officers for three eight-hour shifts or 216 person hours (email from Wally Argent with the VPD).

the lower-value jurisdiction. Furthermore, if entry into the market remains restricted, there is a risk that removing the restrictions would exacerbate taxi shortages in locations where overall taxi demand is low.

For example, if there is a severe undersupply of taxis in Vancouver due to entry restriction, then removing geographic barriers will cause an influx of taxis from suburban areas. The taxis will now be serving Vancouver customers, and that may reduce service to a suburban municipality. From an equity standpoint, society may view it desirable to keep originating-area restrictions to ensure that it remains possible to get a taxi in Tsawwassen, BC. Note that this assumption holds true only if entry is restricted. If entry were open, entrepreneurs or existing taxi companies would respond to demand for taxis by offering new services anywhere there is demand.

6.2.1. Evidence of Trip Refusals in Vancouver

Trip refusals occur when the driver does not want to pick up a passenger. Trip refusals are prohibited in Vancouver unless the passenger is exhibiting disorderly behaviour or if the driver is nearing a shift change.⁵⁶ The literature indicated that originating-area boundaries contribute to trip refusals because drivers are reluctant to leave their operating area.

The Chow report found that about 21 per cent of survey respondents were refused boarding in April, 2011. After the introduction of the TOPs in October, the number of passengers who were refused boarding fell to 18 per cent. Given that drivers

⁵⁶ If drivers cite shift change as the reason for refusing a trip, the driver must dispatch another vehicle to make the pick-up.

were told by their companies that the number of trip refusals was a concern,⁵⁷ even 18 per cent is a high number.

The Chow report cited many occurrences of drivers refusing to pick up downtown passengers with suburban destinations. Trips were refused because the driver believes it is more profitable to stay in the downtown area, rather than making the return trip from a suburb empty. When the survey enquired about final destinations, 44 per cent of respondents stated that their final destination was a suburban municipality (Chow 2012).

Kevin Falcon, a former Minister of Transportation in BC recalled in a media report that he was once refused service by a cab waiting at a downtown hotel at 5 o'clock in the afternoon. "He says: 'Where are you going?' I say: 'to Surrey' because that's where my riding is. I was just trying to get home. And, he said, 'No, I don't want to drive to Surrey,' and just drove off."⁵⁸

6.2.2. Airport Service

Mohan Kang of the BC Taxi Association estimated that 50 per cent of taxi trips originating from the airport have downtown Vancouver as their final destination (Interview January 14, 2014). The YVR airport has contracts with 12 suburban cab companies and the four Vancouver cab company. In total 525 cabs serve the airport, with 80 per cent suburban cabs (426) and the remaining 99 cabs Vancouver companies. Airport taxi trips frequently end in an area where the taxi is disallowed from picking up because of originating-area boundaries. This is frustrating for passengers who are

⁵⁷ After receiving an interim report regarding the high number of trip refusals, the Chow report states that: "The Vancouver Taxi Association acted immediately to remind their drivers of their public service obligation." (Chow 2012)

⁵⁸ (Vancouver Sun - Taxi passenger bill of rights sought 2007)

waiting for a taxi at a downtown hotel and witness the suburban taxi drop of an airport passenger, but are left waiting at the curb. Taxi productivity is also reduced by requiring taxis to return to their “home area” first.

Chapter 7. Policy Problem

Economists generally believe that free markets, unencumbered by government restrictions on entry or price, will maximize society's total welfare. In free markets, the forces of supply and demand interact to allocate scarce resources efficiently. In certain markets, however, government intervention—through regulation, taxation, or other means—can produce outcomes superior to that which would emerge in a free market. These superior outcomes can be gauged in terms of distribution or efficiency, but the focus for the present purposes will be on efficient outcomes. Specifically, government regulation can be used to prevent market failure. For instance, in the taxi industry, requirements to meet safety standards can bring about a more efficient market.

In many cases, however, regulation prevents the economy from achieving efficient outcomes. Provincial taxi regulations on entry, originating area, and fares are examples of inefficient regulations. The criteria approving licenses is inefficient because it has created a taxi shortage that would not exist absent regulation. The artificial scarcity means license owners earn super-normal profits. If entry were open, new taxi drivers would enter the market and push down wait times for a taxi. Fare regulation is inefficient because firms are able to charge more than it costs them to provide the service. Originating-area boundaries prevent regional trade and stop mutually beneficial trips from occurring. The high prices and long wait times result in inefficient output levels because too few taxi trips occur relative to other goods in the economy. Regulations also contribute to inefficient production because taxi services are not offered by providers with the lowest costs. If entry were open, production would be re-allocated to businesses with lower costs.

Taxi industry outcomes in Vancouver confirm the negative consequences from entry regulation outlined in the economic analysis. Customer satisfaction is low. Vancouver passengers pay high fares and face long waits. Trip refusals are common. The Vancouver industry earns above-normal profits due to the scarcity of licenses. The evidence suggests that Vancouver should reform current regulations significantly. The major barrier to reform is opposition from taxi company shareholders. These license-holders have convinced politicians and regulators to maintain a regulatory environment that is primarily in their interest.

Chapter 8. Case Study Evidence

The policy problem indicates that Vancouver's taxi shortage can be explained by a restrictive regulatory environment. Economists are pre-disposed to favour market-based policies as the solution to policy problems created by regulation. However, economists are rightly criticized for blindly favouring market policies, without first considering any unintended consequences from deregulation. Because of this, the analysis needs to review the experiences of other jurisdictions that have reduced taxi regulations, before assessing reforms Vancouver's regulations.

Two distinct waves of deregulation have arisen in the taxi industry. The first occurred in the 1970s and 1980s and was partly inspired by airline deregulation in the United States during that period (Leisy 2001). This wave of deregulation was more pronounced as regulators removed restrictions on entry, price, and quality. When the anticipated gains in terms of lower fares and better services did not emerge, many questioned whether the outcomes were superior. After observing the results, Seattle, which had deregulated taxis in 1979, decided to re-regulate in 1984 (Hara 2012 North American Taxi Regulations).

The second wave of deregulation ran from the 1990s until the present day. Regulators were more judicious during this wave. Learning from past experience, regulators focused on partial measures that relaxed entry or allowed fares to vary in certain segments of the market. Regulators retained useful safety and fare regulations.

8.1. First Wave - Deregulation

Teal and Berglund (1987) assessed the impacts of fare and entry deregulation in six American cities (San Diego, Seattle, Fresno, Phoenix, Tucson, and Oakland). Prior to deregulation taxi licenses in those six cities traded for several thousand dollars indicating above-normal profits. The authors concluded that the predicted benefits of deregulation were only partially fulfilled.

Open entry did improve taxi availability. In total taxi licenses across the sample group increased by 18 per cent, but open entry had unintended consequences. There was no evidence that deregulation lowered fares, and some evidence to suggest fares rose faster in cities that deregulated. Observers expected fares to decline, but when companies in San Diego and Seattle lowered fares, they were not rewarded with increased market share because consumers did not have adequate information to compare price. New entrants chose to wait for passengers at hotel or airport taxi stands to guarantee themselves passengers. Since the opportunity to negotiate fares at cabstands is constrained by the convention of first-in-first-out, rate increases were more pronounced at cabstands than in the phone-dispatch market (Teal and Berglund 1987).

There was no indication that service levels improved in the cities, with some reports of improved response times but more frequent complaints of trip refusals. More taxis on the road resulted in fewer trips per vehicle and less revenue, forcing operators to lower their costs by reducing quality and safety levels (Teal and Berglund 1987).

Cities like Phoenix, which transitioned from restricted entry and regulated fares, saw entry into the taxi market increase by 80 per cent, but predicted fare decreases did not occur. In Phoenix, the cabstand and flagged markets saw fares rise between 17-33

per cent over dispatch fares.⁵⁹ Seattle, which removed the cap on permits in 1979, decided to re-cap permits in 1984. This re-regulation was a response to service level declines. The return to a cap on licenses in Seattle re-inflated the value of a license, indicating a return to above-normal profits (Hara North America 2012).⁶⁰

Teal and Berglund argue that market structure can explain when deregulation failed to produce the expected benefits. Transaction costs at cabstands prevented the positive forces of competition from working. The high cost of computerized dispatch at that time prevented new entrants from joining that market, resulting in oligopolistic dispatch firms that raised prices.⁶¹ The lack of clear benefits to consumers cast a pall over future calls for deregulation.

8.2. Second Wave - Open Entry

Having learned from the failed experience of full deregulation, several cities participated in a second wave of limited deregulation. This wave emphasized opening entry and relaxing fare regulation, but kept safety and quality regulation in place. By exercising caution in opening the market, regulators were able to increase taxi availability, while simultaneously allowing fare competition in segments of the market. Regulators were successful in maintaining service quality and safety in the industry. The one group hurt by the second wave was existing license holders, who saw the value of their licenses decline significantly. Hardly any license holders were compensated for their losses and even when they were compensated they were not made whole.

⁵⁹ The authors note that regulated fare may have been set “too low” prior to deregulation. As a result the jump in prices may be related in part to catch up.

⁶⁰ In 1991, the value of a license was only \$2,500 but it has since increased to \$146,000 in 2011.

⁶¹ To read more about network economies in taxi dispatch markets please see Appendix A

8.2.1. Indianapolis, Indiana

In the 1990s, Indianapolis, Indiana, began a review of municipal regulations, which then used a public convenience and necessity test⁶² to limit the number of taxicabs to 392 (Moore 1998). At the time, five companies controlled 83 per cent of the industry fleet and they often coordinated so that only 250 vehicles were on the road.

The regulatory review resulted in Indianapolis moving to an open-entry system for the taxi industry with maximum fares as opposed to standard fares. Wary of the failed experiences with deregulation that allowed fares to be set freely, Indianapolis set the maximum rate and encouraged competition by requiring cabs to display their fare schedule. The city also granted the airport authority the permission to make rules affecting taxi stands presumably to avoid the long line-ups of drivers at airport stands in previous open-entry experiments (Moore 1998). Indianapolis enhanced safety and quality compliance by requiring driver background checks and implementing random vehicle inspections.

Under open entry, Indianapolis saw the number of taxi licenses grow to 800 with 31 active companies (Hara and Mallory 2012). Complaints regarding fare increases and poor service that plagued earlier attempts at deregulation did not emerge in Indianapolis. In fact the number of complaints declined. Data collected by city officials showed that four years after deregulation fares were seven per cent lower than before. Average wait time for prearranged services declined from 45 minutes to 20 minutes (Moore 1998).

⁶² Public convenience and necessity tests generally require applicants to prove that their actions are in the “public interest.”

8.2.2. Minneapolis, Minnesota

In 2006 Minneapolis, Minnesota removed its fixed cap on entry into the taxi industry. At that time, there were 348 taxis in Minneapolis. New entry was phased in over a five-year period with 45 new licenses being granted each year and in 2011 the city completely eliminated the cap. Similar, to the BC PTB's "public need" test, Minnesota regulators had previously used a "public convenience and necessity test" to issue licenses. However, the new reforms required only that applicants be "fit, willing and able." This insured quality regulation continued to take place (Institute for Justice 2007). Minneapolis also kept standard fare regulation in place.

Since deregulation, the Minneapolis taxi fleet has grown by almost 130 per cent to approximately 800 vehicles.⁶³ While the reforms in Minneapolis were successful from a customer service standpoint, the Minneapolis taxi association, which represented the industry of existing license owners, launched a legal challenge against the city. Before open entry, taxi medallions sold for \$25,000 but the reforms meant licenses could be acquired for \$475. The legal challenge by the taxi association was dismissed by a federal court judge.

8.2.3. Ireland

Entry into the Irish taxi market was deregulated in 2000 after the High Court ruled that limitations on the number of license holders were illegal and only benefitted existing license holders (Weir 2010). At that time, existing licenses were valued anywhere between £IR70,000 to £IR110,000. After the court ruling, a license could be acquired by paying the local authority a one-off fee of £IR 5,000. Irish authorities maintained regulated fares as well as safety and quality standards (Goodbody 2009).

⁶³ See City of Minneapolis Taxi Licensing Website.

The relaxation of entry into the market benefitted Irish consumers. Prior to open entry only 58 per cent of consumers in Dublin had waiting times of less than 10 minutes; by 2008 that figure had risen to 86 per cent. Total taxi trips nearly doubled from 22 to 40 million trips between 1997 and 2008. For Dublin “the value of the post-liberalisation reduction in waiting times to Dublin cab users is €300 million at a minimum.” (Goodbody 2009).

While consumers benefitted from deregulation, existing Irish owners saw license values collapse. To reduce the economic harm to existing licenses holders the Irish government created a committee to administer compassion payments to those that had incurred large losses. Payments ranged from €3,000 to €15,000. The government also refunded a portion of fees collected by local authorities and changed the capital cost tax treatment of licenses acquired before deregulation. Still, license owners were not made whole for their losses and lawsuits continue 14 years later.⁶⁴

8.2.4. New Zealand

In October, 1989, the New Zealand government removed the quantity restrictions on the number of taxicab licenses. The reforms were part of broader package of structural reforms taking place in New Zealand due to a fiscal crisis (Morrison 1997). Prior to removing entry restrictions on taxis, licenses could be sold for NZ\$25,000. Open entry effectively reduced the value of a license to zero. To apply for a license one only had to demonstrate they were of “good character” (Morrison 1997). Between October 1989 and November 1994, the number of taxis in Wellington, NZ increased by 105 per cent. A number of new services were also added to the market including taxi vans, executive cabs, and elite taxi services (LTSA 1994).

⁶⁴ See Independent.ie (2013) Taxi Drivers Demand Compensation Over Disastrous Licence Liberalization

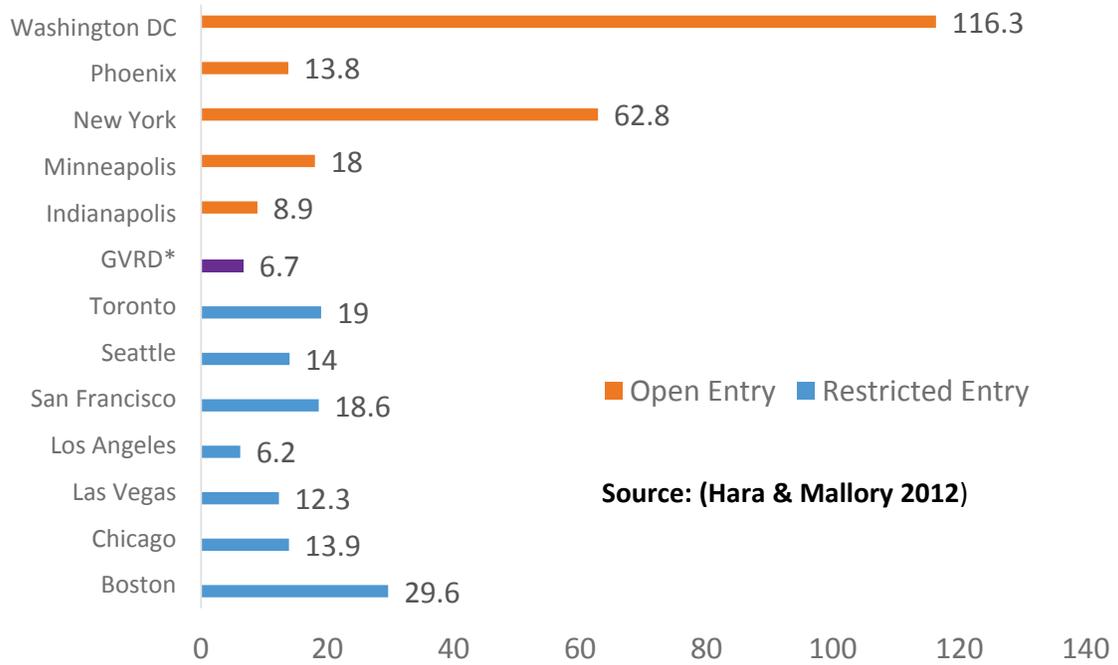
In addition to removing entry barriers the New Zealand government allowed taxi companies to set their own fares provided they registered the fare schedule with the regional authority. Many studies concluded that fares fell in real terms and potentially nominal terms (Dunlop 1992; LTSA 1994). The industry also saw the emergence of differential pricing among firms suggesting that services were being customized to meet the needs of customers with varying tastes for price and quality (Morrison 1997).

8.3. Open Entry Increases Long Run Taxi Demand

Dan Hara has compared the number of taxis per-capita in systems with open and closed entry. While the type of entry regulation is but one indicator of taxi overall demand, Hara notes that cities like Washington and New York⁶⁵ with long-standing open entry policies have achieved a considerably higher ratio of taxis per 10,000 people. This suggests that open entry facilitates greater taxi use over the long term. Chart 8.1 reproduces the findings of Hara and Mallory (2012) and includes the updated numbers for the Greater Vancouver Regional District.

⁶⁵ New York has open entry in the market for pre-booked service but closed entry for cruising cabs. To pick up street hails a taxi must have a NYC Taxi Medallion which trades for around \$1 million (Hara 2012).

Chart 8.1. Number of Taxis per 10,000 Persons in Open Entry and Restricted Entry Cities



Chapter 9. Description of Analysis

The city of Vancouver has a taxi shortage. Taxi availability is poor and passenger fares are high. Case studies demonstrate that significant benefits could be achieved from regulatory reform. My analysis is conducted in two stages, both of which support regulatory reform. The first stage of the analysis examines the level of taxi regulation that maximizes social efficiency while ignoring any opposition from existing license holders. The second stage of analysis considers shareholder opposition to policy change and responds by recommending policies that might reduce or overcome license holder resistance, but that are still more efficient than the status quo.

9.1. First Stage of the Analysis: The Pro-Consumer Option

The goal of the first stage is to assess the most efficient taxi regulations available for the GVRD. This stage ignores the political dimension of policy reforms impacting the value of current licenses. A single criterion will be used to evaluate the policy change: effectiveness at increasing taxi availability and reducing deadweight loss associated with existing regulations. The first stage of the analysis leads to a comprehensive “efficient” policy recommendation.

By focusing solely on efficiency, the pro-consumer option will ignore acceptability concerns from existing license owners that open entry is “unfair” because it devalues their asset. All investments have risk and investing in a taxi license is no different. The government has no obligation to protect private investment by reducing society’s welfare. Moreover, some observers might view the existing regulations as unfair because they impose higher prices and longer wait times on passengers — many

of whom are seniors, persons with disabilities, and low-income groups — to transfer economic rents to license owners. The government has no obligation to protect the value of licenses, which it supplies for an annual renewal fee of \$100. Existing license holders have earned high profits from maintaining an uncompetitive regulatory environment.

9.2. Second Stage of the Analysis: Options to Overcome Stakeholder Opposition

The second stage of the analysis considers the political element of the policy problem ignored in the first stage. Given evidence that current regulations are inefficient, there must be a reason, beyond policymaker myopia, for these inefficiencies. Rational analysis concludes that industry has successfully “captured” the regulator and the legislation.

The province has shown no indication that it is considering changing the regulatory structure, and City of Vancouver politicians continue to support the position of the local taxi companies.⁶⁶ Current regulations exist because of political and regulatory influence exercised by existing license owners to protect themselves from competition. If the political influence of a small group of license holders is large enough

⁶⁶ Vancouver Mayor Gregor Robertson wrote a letter to the Passenger Transportation that stated: “any move to allow the lower mainland firms to operate within Vancouver boundaries would be very destructive to customer service quality and the stability of [Vancouver’s] established firms.” The Mayor urged the Board “to reject the application of the lower mainland firms and to work with Vancouver to improve service by building on the results of the current temporary licensing scheme.” (Letter to PTB November 8, 2011)

to cause legislators to adopt policies not in the best interest of a majority of British Columbians, the political dimension of the issue must be brought to the forefront.

As a result, the second stage considers policy options to overcome opposition from taxi company shareholders to policy change. Stakeholder resistance may be overcome in a variety of ways. Policies could make concessions to existing license owners to reduce the financial loss associated with regulatory change. Alternatively, policies could appeal to societal objectives for equity, protecting the environment, or generating revenues for the public purse. The broader appeal of these policies could be used to marshal enough political resources to offset resistance from existing taxi companies. Another option would be to pit stakeholders against one another. If stakeholder acceptance is divided, regulators would have a better chance of achieving policy change. As result the second stage of the analysis will consider both efficiency and the ability to overcome stakeholder opposition.

As in the first stage of analysis, policies will still be evaluated for their contribution to economic efficiency. But in this stage the analysis will describe why variations make them more politically acceptable. The analysis considers many of the same measures from the “pro-consumer option” to describe efficiency gains.

Chapter 10. Policy Options

10.1. The Pro-Consumer Policy Option

The pro-consumer policy option has three primary regulatory features: open entry, the elimination of originating-area boundaries, and relaxed standard fare regulation. Each regulatory feature is discussed in detail in next section but the pro-consumer option would provide many benefits including: more taxis per-capita and shorter wait times, lower fares, less trip refusals, and new services that cater to customers with different preferences for quality and price. The analysis identifies some downsides to the efficient reform including acute license owner resistance as well as the risk that abrupt policy could create a temporary disequilibrium giving existing license holders an opportunity to mobilize to secure re-regulation.

10.1.1. Open Entry

Description of the Policy: To facilitate open entry the Passenger Transportation Act (The Act) will be amended to eliminate its arbitrary test for approving taxi licenses in the GVRD. To achieve this, the “public need” and the “must maintain sound economic conditions test” criteria used to make decisions on license applications is removed from the Act. The only criteria the Act will keep is the “fit and proper person” test to verify that the applicant is of good character and can deliver the services. The cost to apply and renew licenses will reflect only the administration costs of processing the license as well any other costs incurred by government to enforce safety and quality regulations.

Analysis: Case study analysis suggests that eliminating entry restrictions would be a boon to consumers and that open entry is the most efficient policy option available to regulators.⁶⁷ Evidence suggests that the number of taxis would increase by more than 100 per cent and passenger wait times will fall. There is also evidence that overall taxi demand will increase with an open-entry policy (Hara and Mallory 2012). Ridership will increase on account of both decreased fares and the shortened wait times.

Measure - the Number of Taxis: Evidence from cities with open entry suggests that removal of entry restriction causes taxi supply to more than double. Indianapolis, Minneapolis, and New Zealand are three jurisdictions that moved from a closed to open system. In each case the taxi licenses achieved a secondary market value, although nowhere near as high as Vancouver. When entry restrictions were removed supply doubled in a very short period (Moore 1998; Institute for Justice 2008, Morrison 1997).

Measure - Wait times: Open entry has consistently resulted in reduction of passenger waiting times. Prior to open entry only 58 per cent of consumers in Dublin had waiting times of less than 10 minutes, but by 2008 that figure had risen to 86 per cent (Goodbody 2009). Indianapolis saw the average wait time for prearranged services decline from 45 minutes to 20 minutes (Moore 1998).

It would be reasonable to expect that wait times in Vancouver would decrease significantly if open entry were allowed, especially when one recalls that the addition of 65 operating temporary permits (11 per cent increase in fleet size) caused wait times to fall by 21 per cent during peak periods (Chow 2012).

⁶⁷ Open entry is not fully efficient in an economic sense, since taxis are still monopolistic competitors, but since open entry is the most efficient of alternative methods to regulate entry, it is the most efficient option.

10.1.2. Eliminating Originating-Area Boundaries

Description of the Policy: The PTB would eliminate originating-area boundaries for GVRD licenses. Taxis could now pick up in any GVRD municipality as long as they met municipal safety and quality standards.

Analysis: Originating-area restrictions pose several efficiency problems. Taxis located in Vancouver often refuse passengers seeking a cab to a suburban municipality. Trips are refused because drivers naturally want a return fare and believe it to be more profitable to stay in the city (Chow 2012). When trips with destinations outside of originating-areas occur, these trips are unnecessarily wasteful as drivers must exhaust time and fuel returning to their home area.

Measure-Trip Refusals: Trip refusal would decline since drivers are no longer reluctant to make a trip outside of their originating-areas. Taxi vehicle productivity would also increase. This would likely result in some industry consolidation of the regional taxi industry as companies merge to take advantage of economies of scale in dispatch and to provide the best service in the GRVD.

10.1.3. Relaxing Standard Fare Regulation

Description of the Policy: Standard fare policy would vary by segment of the market. For flagged trips and taxi stand trips (with market failures) the meter would work in the much the same way charging a per-km, flag drop, and waiting time fare. However the fare on the meter would represent the maximum fare the passenger has to pay, not the minimum. Taxis would be encouraged to advertise discounts. As an example, the cab's top light could be used to advertise any discounts from the standard

fare.⁶⁸ For instance, if \$10 was the cost shown on the meter at the end trip, but a 20 per cent discount was in effect, then the passenger would only pay \$8.

For dispatched or pre-arranged trips no standard fare regulations would apply. Instead light-handed fare regulation would be used to ensure taxi fares are easily comparable across companies. Companies would be required to quote the fare to the customer in advance of the trip. Fares would be required to be posted with the PTB online. The PTB would need to develop a standard system such as “zone pricing” to allow customers to compare fare quotes. Under a zone system, a pre-booked trip from Vancouver’s Gastown neighborhood to Kitsilano might be four zones. Passengers could then compare how much each company charges per zone. Flat fares could be negotiated for shorter or long trips where zone pricing is inconvenient.

Analysis: Relaxing fare regulation in the context of an open-entry system should improve the affordability of taxis. For instance, if the PTB kept the current pricing system structure for street hailed taxis and stated that the fare shown on the meter at the end of the trip was the maximum price the passenger had to pay, new entrants could enter the market and offer lower fares.

Much of a taxi driver’s operating cost is tied up in the lease fees paid to license owners. Consider that the four Vancouver taxi companies estimate that the median lease fee to drive a taxi on a Friday and Saturday night is \$180 (Hara Affidavit 2013). Drivers indicate that the cost of a monthly lease for a 12 hour shift is around \$2,000; under the monthly arrangement drivers also cover all vehicle costs including repairs,

⁶⁸ I am not aware of any jurisdictions that use this method to advertise fares. However, many cities require taxis to post their fare schedule inside the vehicle (Indianapolis) or with the regulator (New York City). A type of electronic kiosk is already used by the Arrow Private Hire Company at Manchester and Leeds-Bradford Airports to arrange and pay for service. Biggar (2012) advocates developing kiosks that allow consumers to compare fares and order their preferred option.

maintenance and depreciation as well as insurance and dispatch fees. If entry were open and drivers no longer had to pay thousands of dollars for the “right to operate,” their operating costs would be lower and they could offer lower fares to customers.

Measure - By how much would fares fall: Revenue estimates from technical appendix B suggests that 23 per cent of fares represent the above-normal profits to the industry. Under the pro-consumer option above-normal profits would be reduced and Vancouver taxi fares would decline. At the same time, open entry reduces vehicle productivity, suggesting that taxis will have more idle capacity, which could be reflected in fare prices. This still would provide shorter wait times, but it might limit fare decreases.

Whether fares will fall by 23 per cent is unknown, but evidence from case studies suggests that the cost of hiring a taxi will decline. Indianapolis, saw that four years after deregulation average fares were seven per cent lower. Many studies have concluded that prices of New Zealand taxi fares fell in real terms and potentially nominal terms as a result of open entry and variable fares (Morrison 1997).

Measure – Variation in Service levels: Jurisdictions allowing open entry into dispatch have seen the introduction of new transportation services that connect drivers and passengers via a GPS-enabled smartphone.⁶⁹ UBER which was prevented from operating in Vancouver by PTB regulations would return. UBER’s competitors like Lyft and Sidecar would likely enter the Vancouver market as well. Earlier analysis noted that no companies currently offer to carry more than four passengers. If companies can enter the market freely and vary their fares, this will no doubt give rise to a range of

⁶⁹ See California Case Study, Appendix E

services from vehicles that carry many passengers, to low-price/low-quality combinations to luxury service.

10.1.4. *The Pro-Consumer Option Summary*

The pro-consumer policy option would double the number of taxis in Greater Vancouver and shorten wait times for passengers. Drivers freed from paying significant fees to license owners for permission to drive a taxi would see their operating costs decline and would pass savings on to passengers. The industry would become more innovative as new entrants like UBER and Lyft competed in the marketplace. Allowing fares to vary in the pre-booked or dispatched market would facilitate varied price and quality combinations enabling customer choice. Relaxing standard fare restrictions for street-hailed taxis by moving from minimum fares toward maximum fare regulation could evoke price competition. Overall the cost of taxi travel in Vancouver will decline. Trip refusals will also decline as drivers are no longer reluctant to offer service to an outer municipality because they are allowed to pick up anywhere.

Experience from New Zealand, Ireland, Minneapolis, and Indianapolis confirms the benefits predicted to flow from an open-entry system with relaxed fare requirements. Passengers witnessed greater taxi availability and lower fares. Regulators successfully maintained service quality and safety in the industry. From a consumer standpoint the reforms were a real success.

From the perspective of license holders, however, open entry resulted in significant financial losses for owners as license values declined to zero.⁷⁰ Few owners were compensated for their losses, and when they were compensated they were not

⁷⁰ License holders may retain some value under open entry because of the value associated with their taxi company—such as familiar brand, established vehicle network able to deliver faster service, and memorable phone number—but the losses will be substantial.

made whole. Because of this, the pro-consumer option will face formidable resistance from existing license holders. Since the efficiency gains are dispersed among a broad number of groups including taxi passengers, potential new service providers, and society at large, each actor may have little incentive to push for policy change. Conversely, the taxi license holders represent a narrow group of stakeholders. These companies already work together to advance common interests, and they will coordinate effectively to resist any regulatory change.

Finally, the pro-consumer option estimated that the number of Vancouver taxis will more than double. As suppliers rush to fill the shortage, inexperienced providers may be temporarily unable to deliver a reasonable standard of service. This transitory effect could create a temporary disequilibrium where passengers are unsure if the new supply is beneficial overall. In the past, existing license holders have taken advantage of this situation to secure restoration of regulation (OECD 2007).

10.2. Policies to Overcome Stakeholder Opposition

Current taxi regulations heavily favour existing taxi companies. Existing owners are able to prevent new entrants from gaining access to the market by arguing that entry will result in “destructive competition.” License holders can also expect annual fare increases to outpace inflation. From a public interest standpoint there does not appear to be any justification for the current regulatory structure. Significant regulatory change that opens entry such that permits lose all value would cause \$470 million of financial losses to existing Vancouver license holders ($588 * \$800,000 = \$470,000,000$). A policy change that fully devalued licenses would cause acute opposition from license

holders.⁷¹ Moreover, passengers interact primarily with the taxi industry through conversations with drivers. Vancouver taxi drivers come from varying backgrounds, but many are relative newcomers to Canada, and for many, English is a second language (Xu 2012). It is difficult for society to distinguish who is a taxi license owner⁷² and who is the driver. Regardless, the public at large could sympathize with the taxi industry. Moreover, some members of society would believe it patently unfair to cause severe financial losses to anyone through regulatory change.

Therefore, policymakers must consider how the taxi industry and society at large will respond to regulatory changes. Policymakers must devise strategies to counter stakeholder opposition. Consider the issue of originating-area boundaries, policy reform could be formulated to leverage the differential interest of existing license owners. The efficient policy choice made the case to eliminate originating-area boundaries based on efficiency gains from a more productive taxi fleet able to pick up anywhere. However, the argument to eliminate boundaries could be approached in a different manner.

10.2.1. Reforming Originating Boundaries

Policy Feature: Eliminate originating-area boundaries

Efficiency Benefits: Taxi availability, wait times, improved industry productivity, reduced trip refusals.

Other Societal Benefits (Protection): Less greenhouse gas emissions per vehicle, contributes to greater public safety in the downtown entertainment district.

⁷¹ Taxi owners responded to regulatory reform instituted in Greece in 2011 by using their vehicles to block access to the international airport, cruise ship ports, and key archeological sites. See Greek taxi drivers disrupt tourists in protest at deregulation – The Guardian

⁷² No known demographic data exists for license owners, but the Vancouver Taxi Association often says in public that many shareholders are drivers.

Stakeholder Acceptance: Suburban companies would support this. The variation is less harmful to Vancouver license values than the efficient policy option, and it offers a possibility that values would be restored in time.

Analysis The suburban taxis have shown great interest in accessing the lucrative Vancouver market. A BC Ministry of Transportation report indicated that suburban companies would like to see the area restrictions removed, or at least eased, during peak times (Evans and Webb 2011). In 2012 they applied for temporary operating permits to pick up in downtown Vancouver. Currently the suburban companies operate 63 per cent of GRVD taxis. Eliminating boundary restrictions as a standalone reform might be supported by suburban companies.

Mohan Kang, President of the BC Taxi Association, which represents the suburban cab companies, stated in an interview (Kang, January 14, 2014) that originating-area regulations must be updated to respond to the changing times. “Twenty years ago boundary restrictions may have been necessary, but now that downtown Vancouver has become the hub for where people go, regulations must change with times.” Mr. Kang emphasized that safety is paramount and allowing suburban taxis to pick up riders in Vancouver would address the needs of suburban customers who are often refused service by the downtown companies.

After the key stakeholders are divided, policymakers could appeal to societal objectives for protection of people and the environment. Consumers and society would still realize efficiency gains as wait times decline and drivers refuse fewer trips, but regulators could emphasize the contribution of boundary restrictions to wasted fuel and increased greenhouse gas emissions. Environmental concerns are a powerful force in BC

politics and, even though the associated greenhouse gas reductions would be small, appealing to environmental interests could buoy support for change.⁷³

A further push for political support would appeal to the common societal beliefs that regulations should protect public safety.⁷⁴ Taxi shortages render Vancouver's entertainment district less safe after public transit has stopped running. Removing originating-area boundaries will benefit public safety because it will expand the taxi industry's capability to respond to localized shortages during peak periods.

The Vancouver taxi companies, which operate in the more lucrative geographic area, will oppose this policy because it transfers wealth to suburban companies and because the policy represents a departure from the regulatory environment. However, the intensity of the resistance will be less than the "pro-consumer option" which would reduce license values completely. Since suburban licenses have a robust secondary market value,⁷⁵ the regionalization of the market would continue to support license values. Moreover the elimination of these boundary regulations would increase taxi productivity and further support passenger demand as taxi service improves.

Measure – License Values: As long as entry into the market remains restricted, the benefits of regionalization might over time restore or even exceed existing Vancouver

⁷³ BC is the only Canadian jurisdiction with a carbon tax, and environmental opposition to Enbridge's proposed Northern Gateway Pipeline has been significant.

⁷⁴ Consider a February 3, 2014, editorial by the Vancouver Province which supported City Councilor Geoff Meggs' call for more stringent safety regulations for party busses (Party busses move large groups of people to a pre-arranged destination. Alcohol consumption is disallowed but difficult to enforce): "Here's one issue where politicians of all stripes should be setting aside ideology and not fearing acknowledging a good idea from the opposition to do what is right for the citizens of B.C., in this case our children."

⁷⁵ In 2001 suburban licenses in Burnaby, Coquitlam, Surrey, and New West were valued at approximately 47% the price of a Vancouver license. In 2007, a Richmond taxi half-share sold for \$200,000 not far off for the reported price \$260,000 Vancouver Black Top Cab half-share in 2010.

license values after a few years of the policy. Boston, a city with closed entry previously capped at 1,525 vehicles, increased the city's fleet size by 20 per cent between 1999 and 2003. The introduction of new licenses did not harm the transfer value of licenses. Prices continued to increase in every year that new licenses were introduced, selling for a median price of \$173,000 between 1999 and 2003. By 2011 the average price of a Boston medallion was \$421,000 (Hara and Mallory 2012).

Summary - Reforming Originating-area Boundaries

The combination of support from suburban companies, as well as societal support for the protection of people and environment, and reduced intensity of Vancouver taxi license holders' opposition may be enough to overcome the Vancouver taxi companies' resistance to removing originating-area restrictions. Still, the policy will be vigorously opposed by the Vancouver companies. The PTB's decision to allow 38 suburban cab companies to pick up in Downtown Vancouver on weekends has resulted in a series of court challenges. If the Vancouver license holders are willing to expend this much effort to prevent a 2.5 per cent revenue loss on Friday and Saturday nights,⁷⁶ even the combination of suburban taxi companies and general public support might not be large enough to surmount Vancouver companies' opposition.

Other Policies to Overcome Shareholder Opposition

The removal of originating-area boundaries provided an example of a policy that might have enough political momentum to overcome Vancouver license holder resistance. The blueprint is to divide existing stakeholders, appeal to new interest groups such as environmentalists and those concerned about public safety, and finally dampen stakeholder objection by choosing a policy that causes less harm than the

⁷⁶ Revenue loss was estimated by Dan Hara in an expert witness affidavit filed on behalf of the Vancouver taxi companies (Hara 2013 Affidavit).

alternative. However, the policy recommendation dealt with only a limited part of the policy problem in boundary restrictions. This study has found fault with many of the Act's regulations, including entry and standard fare regulation. What policies might address these regulations in a manner that is more efficient than the status quo but still be able to overcome Vancouver license holder objection?

10.2.2. Decrease Taxi Meter Fares

Policy Feature: Reduce or Freeze Meter Rates

Stakeholder Acceptance: License holders will object to any policy that decreases industry revenue. However, under frozen fares, profits would still be above normal so there is an incentive to continue to operate. Moreover, this policy will appeal directly to consumers' pocketbooks to broaden political support for change.

Trade-offs

Benefits

Efficiency: Increased taxi productivity during non-peak hours as lower fares induce greater demand, and taxi fares will now be closer to their average production cost.

Other Societal: (Distributional) Reducing fares enhances equity because taxis are more commonly used by persons with low income, disabilities, and seniors.

Negatives

Lower real fare costs exacerbate current taxi shortages at peak demand.

Analysis: One of the key problems identified in this study is that the Vancouver taxis earn above-normal profits. These profits give rise to a strong incentive for existing license holders to oppose new entry such that the benefits from increased taxi demand

flows directly to them. If profits are above normal, regulators could lower them by reducing the standard fare price.

Given Yellow Cab estimates that average daily revenue is \$575, this study projects that fares could be reduced by 23 per cent while still leaving operators enough revenue to cover all costs.⁷⁷ Policymakers can explain that taxi fares are higher than they should be because a limited supply of licenses has created above-normal profits. The debate over regulation can be re-framed by emphasizing that current taxi fares can be reduced by 23 per cent without affecting a driver's wage or service levels in Vancouver. Since taxis are disproportionately used by the elderly, the disabled, and low income persons (Canadian Competition Bureau 2014), fare reductions will have particular appeal to persons concerned about vertical equity in society.

Moreover, appealing to consumers' pocketbooks is an especially effective way to build political support. The Federal Conservative government's decision to reduce the General Sales Tax (GST) from seven to six per cent in 2006 and further to 5 per cent in 2008 remains politically popular. This has occurred despite a string of budget deficits since the reduction and the fact that economists prefer to rely more on sales taxes to generate government revenue. Similarly, the federal government's decision to reserve wireless spectrum space for new entrants and the Conservative Party's "Standing Up for Wireless Consumers" advertising campaign are other examples of generating political support by targeting consumers' pocketbooks.

Jane Dyson of the BC Coalition with Disabilities stated that "the people we serve are really poor and we would support a fare freeze" (Interview Dyson, January 30, 2014). Tom Hammel, who retired as a City taxi license inspector in January 2014, believed that the value of the license is driven by the profitability of the industry and

⁷⁷ See Appendix B: Average Revenue and Lease Prices

considered as evidence “that the public is paying more than they need to pay ... if you had a fare that approximated the cost of a taxi, replacement, the driver’s wage, and small profit than you would probably be at much lower fare, and less expensive fares would be a good thing for the public” (Interview Hammel, Jan. 31, 2014).

The Passenger Transportation Act gives the PTB some flexibility to make rules respecting rates that may be charged by a licensee. The PTB could perform a dramatic one-time reduction in fares. The outcomes section noted that the cost of five and 10km in Vancouver fare is 12 and 15 per cent higher than a sample group of Canadian cities.⁷⁸ A reduction in range of 10 to 15 per cent would bring Vancouver fares more in line with the average cost of a taxi in other Canadian cities. This “take your medicine” approach might be feasible since it would only need to be done once.

Even with broad political support, it might be unrealistic to expect the PTB to reduce Vancouver fare rates dramatically because they are exceedingly uncommon and license holder opposition would be fierce.⁷⁹ However, another option would be to simply stop granting annual fare increases.⁸⁰ The current mechanism to increase fares, the Taxi Cost Index, was created by the PTB under its own volition to streamline change of rates applications. Taxi license holders would continue to lobby for rate increases but the PTB as an independent tribunal could stop granting them until the real cost of fares declined to a desired level. If Vancouver taxi companies’ shares trade for \$800,000, it should be abundantly clear to the PTB that industry economic conditions are sound and there is no justification for a fare increase.

⁷⁸ Sample Group: Halifax, All of Quebec, Ottawa, Toronto, Winnipeg, Saskatoon, Calgary, and Edmonton.

⁷⁹ Meter rate reductions have occurred only once in the recent history of the GVRD common rate agreement and that was when BC eliminated the HST.

⁸⁰ Fare increases occur almost automatically now due to the reliance on the Taxi Cost Index

Since the Bank of Canada targets a two per cent growth rate in the general price level, the real cost of a taxi ride would fall each year that taxi fare rates are frozen. Vancouver companies would fiercely oppose frozen fares because their license values would decrease, but it would continue to be in their best interest to operate, because profits would remain above normal, albeit declining over time. If regulators and politicians worry that prolonged frozen fares would lead to insurmountable license holder opposition, the policy could be varied to shorten the duration of the freeze.

Either a one-time reduction of fares or simply freezing fares will bring down the value of a taxi license. As result shareholder opposition will be intense. However, an upside to a gradual decline in the value of a license is that it allows policy makers to transition to a system of open entry when the values of licenses won't cause an overnight rush of inexperienced entrants.

Freezing fares does present another challenge to regulators. If taxis become more affordable relative to other goods, their demand will increase. Given that there already is a taxi shortage in Vancouver, lower cost taxis will exacerbate the problem. Some customers with a high willingness to pay for a taxi won't be able to get one at certain times. Policymakers may wish to complement a fare freeze policy with allowing some new entry into the market.

10.2.3. Use Entry Fees to Regulate Entry

Policy Feature: Charge an annual entry fee to new operators wishing to enter the market but grandfather-in existing license-holders. The initial entry fee should match current lease prices for permit for in the secondary market.

Stakeholder Acceptance: Fees on new entry can be used to protect license values provided the rate is set at the going lease price. Politicians may also be attracted to entry fees' capacity to raise revenue.

Trade-offs

Benefits

Efficiency: Reduces regulatory capture and ensures that the number of taxis will increase with demand.

Other Societal (Public Purse): Part of the economic rents generated by restricting entry are now captured by the public

Negatives

Efficiency: Entry is still restricted via lease fees. This causes a deadweight loss to society.

Analysis: This paper stressed the need for new entry in Vancouver's taxi market. However, the open entry system proposed in the efficient policy option will be intensely opposed by license holders. Regulators will need to consider policies that could increase entry in a fashion that overcomes stakeholder resistance.⁸¹ One way to do this would be to eliminate the Act's arbitrary license approval process and, instead, allow new licenses to be issued on the basis of market prices. Under this policy, existing license holders would be grandfathered but any additional new licenses would need to be leased from the regulator at market rates. I earlier calculated that an annual lease fee of \$48,000 is needed to justify a license value of \$800,000. However, this amount would have to be verified by reviewing actual lease agreements between drivers and permit owners prior to setting a lease price. Moreover, if regulators want to induce greater entry into the taxi market, they would need to set the lease price lower than the going rate.

Assuming the annual lease price of \$48,000 is correct, consider that in 2007 the PTB released 111 licenses to the four Vancouver companies, and in 2011 issued an

⁸¹ Other options to increase entry (discussed in Appendix E) include granting existing drivers new licenses (Toronto) or opening entry in one segment like pre-booked trips (New York and California).

additional 137 temporary operating permits for Friday and Saturday nights. Had a system of lease fees been used in 2007, the net present value of permit leases would have represented \$220 million to the public purse.⁸² The City of Vancouver has many goals that will require increased revenues, including an ambitious transit plan as well as 30-year local area plan for the city's Downtown East Side.⁸³ Pledging to use revenues generated from taxi licenses to fund city goals could broaden support for policy change.

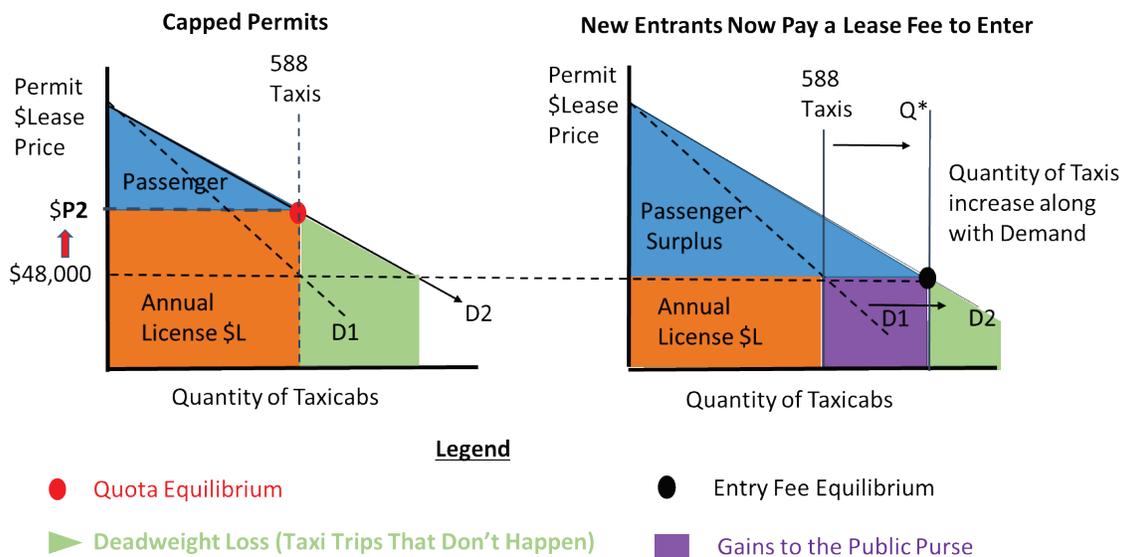
Entry fee regulation has benefits beyond the contribution to the public purse. Issuing new licenses at a fixed price to willing entrants is more responsive to changes in demand than public convenience and necessity tests. If a taxi can deliver profits over and above their lease and operating costs, then new entry will occur. The fixed price also prevents regulatory capture. Instead of placing the onus to estimate demand on regulators, fixed prices allow private actors to judge whether taxi demand is sufficient for new entry or if new services are desired.

⁸² 2007 Full Licenses $(48,000 * 111)/0.03 + 2011 \text{ TOP } (9,353 * 137)/0.03 = 220 \text{ Million}$. I use a 3 per cent discount rate consistent with "safe assets.". Currently individuals considering purchasing a license on the secondary market would use a higher discount rate (maybe 6 per cent) because there exist a risk that deregulation would reduce license values to zero. However, if taxi licenses are leased by the government on an annual basis, the government is able to internalize that risk by promising not to deregulate for the duration of the lease.

⁸³ See Transit 2040 (City of Vancouver 2012) and Downtown East Side Local Area Draft Plan (City of Vancouver 2014).

Figure 10.1 demonstrates the benefits of permit lease fees because they will adjust automatically to changes in demand. Previously taxi supply could not adjust to an increase in taxi demand beyond the 588 PTB approved taxi licenses. Under capped supply, license lease prices increased as drivers are willing to pay more to access a permit, and because there is no new supply many taxi trips go empty which is a deadweight loss to society. However under a system of entry fees, license supply will increase when taxi demand increases. This is because new entrants can access an unlimited amount of permits by offering to lease them from the government at the going rate. Instead of capping entry, it becomes restricted by price. The price restriction means that the public now captures a portion of the rents generated by restricting entry. Society still bears a deadweight loss, albeit smaller, because of the new entry into the market.

Figure 10.1. Using Entry Fees to Regulate Entry



Entry fee regulation is also a concession to existing license owners relative to free entry. If the price of a new license costs just as much as existing lease rates, then existing license holders can anticipate that the value of their asset will never fall below the annual lease fee. If lease fees were set to reflect a net present value of \$800,000, it

is likely the stakeholder objection would be moderated since entry fees at that price would not cause financial loss. Rent-seeking investors may object because the policy would eliminate the speculative value of a license based on owner's ability to restrict future entry. Conversely, consumers would benefit from the elimination of a license's speculative properties because lease fees would reduce opportunities for regulatory capture.

Leasing permits for an annual fee has advantages over a more permanent allocation of licenses like the auction process used in New York⁸⁴, Chicago, and Boston. If licenses are sold or auctioned off with no set time frame for their expiry, it may create a perception that the regulator is obligated to protect the value of licenses throughout the duration of licenses (Hara 2012). An annual fee gives the regulator flexibility to change policy over time since the obligation from leasing a license(s) is limited to one year. The one-year time frame also provides taxi companies an opportunity to adjust short-term changes in passenger demand for taxis.

Another argument for short duration leases over auctions is that the regulator is able to capture higher total rents by internalizing the risk of deregulation for lessors. Individuals considering purchasing a license with a longer duration would recognize the risk of future deregulation and lower their willingness to pay for the permit. As a result, the present value of leasing taxi permits on an annual basis exceeds the present value of one-time sales of permanent taxi permits (Biggar 2011).

Annual fees to restrict the number of licenses is a relatively new development in taxi regulation, but it was recently implemented in parts of Australia. Regulators chose an annual lease price of \$22,000, lower than the previous annual lease value estimated

⁸⁴ A recent 2013 auction of 200 accessible taxi medallions netted New York City \$200 million dollars (New York Times, 2013 "\$1 Million Dollar Medallions Stifling the Dreams of Cabdrivers").

at \$30,000 (Australian Commission 2013). The new price caused a 27 per cent decline in asset value for existing owners.⁸⁵ Vancouver policymakers could emulate this by setting a lower-than-market lease price, which would force existing license holders to take a haircut, or they could refuse to increase the lease fee, causing real values to dwindle with inflation. This would result in greater stakeholder resistance than if lease rates were set at the going price and indexed to inflation, but it would also provide benefits to passengers as more taxis enter the market and reduce passenger wait times.

⁸⁵ See Taxis Block Melbourne Streets in Protest Against Reforms, The Herald Sun (April 11 2014) retrieved from <http://www.heraldsun.com.au/news/victoria/taxis-block-melbourne-cbd-streets-in-protest-against-reforms/story-fni0fit3-1226880339484>

Chapter 11. Policy Recommendation

The pro-consumer option was identified in my first stage of analysis as the most efficient reform available for regulating the taxi industry. Entry into the taxi market would increase by more than 100 per cent. Relaxing standard fare regulations would decrease the cost of a taxi and allow for new types of transportation services to emerge. Removal of the originating-area boundaries would further increase the productivity and efficiency of taxi service in the GVRD.

Despite the innate benefits of pursuing the most efficient policy, existing license holders would fight tooth and nail to prevent its introduction. The current regulatory environment is a testament to the ability of license holders to influence policy in their interest. Moreover, the efficient policy could create temporary disequilibrium in the taxi industry as inexperienced operators rush to fill excess demand. Industry interests have often taken advantage of such disruptions to achieve re-regulation.

A second option available to regulators is to acknowledge stakeholder resistance and to introduce regulations that are more efficient than the status quo but are able to overcome opposition. The recommendation to eliminate originating-area boundaries in the second stage of analysis was no different than the pro-consumer policy recommendation, but the policy as a standalone recommendation could be enough to overcome license-holder opposition since suburban taxis would support this. Removing boundary restrictions would effectively divide license holders because access to the Vancouver market is something the suburban companies greatly desire (Evans and Webb 2001; PTB Omnibus Decision 2012). Furthermore, broader political support for the policy change could be achieved by emphasizing the environmental and public

safety benefits of the policy change. Finally, Vancouver license-holder opposition would be dampened because licenses would continue to have value and may eventually return to or exceed current values as taxi demand increases. That is not to say that Vancouver license-holder resistance will be trivial, rather this is a strategy for policy makers to surmount their opposition by dividing stakeholders, appealing to societal objectives to broaden support for change, and offering some concessions to existing license holders.

This strategy can also be used to reform fare regulations. Freezing taxi fares will lower the value of licenses by reducing above-normal profits, and it will also increase productivity of taxis as lower fares induce greater demand. Lower fares would be a benefit to taxi users many of whom are people with low mobility including the poor, the disabled, and the elderly. In this case, license-holder opposition will be more severe than the boundary removal recommendation, but by offering savings to consumers freezing fares could be an effective way to generate political support.

Using an annual lease price to regulate entry has benefits for society because it reduces the opportunity for regulatory capture by adjusting automatically to changes in demand. The policy has the potential to placate existing license holders by setting the lease price at the current lease rate in the private market, thereby protecting the value of existing licenses. However, if the policy were structured such that existing license holders are clearly worse off,⁸⁶ their hostility could be nearly as acute as with the pro-consumer option.

These alternatives to overcome stakeholder opposition could be introduced piecemeal or comprehensively. The policies could also be varied to allow shareholders to retain a greater portion of their initial license values; for example, by allowing real fares to decline slowly over time as opposed to imposing immediate cuts. The more

⁸⁶ Examples of this include setting the lease price lower than the going rate, refusing to increase the lease price with inflation, or pairing an entry free policy with frozen taxi meter fares.

comprehensive the reform, the greater the license-holder resistance it will provoke. Importantly, these alternatives are also not as efficient. Is there are a way for regulators to implement the most efficient option in a way that defeats stakeholder opposition?

Policymakers could use a more gradual approach to reform. This study's recommendation is for regulators to immediately implement policies identified by the second stage of the analysis. These are policies to overcome stakeholder resistance. However, policy makers would be clear that, eventually, the goal is to achieve the efficient reforms outlined in the pro-consumer option.

As a first step, policymakers should eliminate originating-area boundaries, which is efficient because it will increase the productivity of GVRD taxis by allowing them to pick up anywhere. Importantly, the policy also has a chance to overcome license-holder opposition by dividing suburban and Vancouver taxi license holders. Secondly, the PTB should stop approving fare increases through the Taxi Cost Index process. This methodology has resulted in a rubber stamp approval of fare increases over and above inflation in the BC economy. Whether this means reducing fares, freezing them, or slowing the pace of fare increases, the point should be abundantly clear to all that when licenses trade at \$800,000 on the secondary market, there is no need to increase fares.

Finally, regulators should switch to annual lease fees to regulate entry as opposed to using the current PTB entry criteria. This policy unduly favors existing license holders at the expense of both passengers and potential new entrants. The entry fee for new licenses should initially be set somewhere near the average cost to lease a permit but the goal should be to reduce the real cost of lease fees over time. Regulators should adjust lease fees in a manner that encourages modest new entry each year despite the fact that PTB taxi meter fare increases will be harder to come by.

Policymakers should be explicit that the end goal is to move to a system of open entry and relaxed standard fare regulation identified earlier in the pro-consumer option.

However, this goal will be accomplished gradually and the choice of annual lease fees over open entry is a concession to existing holders. Current license holders would have 10-15 years to capture the remaining value of their licenses before the efficient pro-consumer option is implemented. This approach acknowledges that license holders were expecting their license to be a permanent store of value and based economic lifestyle decisions on that expectation. The phase-in approach will give them an opportunity to continue to earn above-normal profits at the expense of the passenger. However, because fares are frozen and annual lease fees for new permits will continue to decrease, existing license holders will experience financial loss.

Once the annual value of licenses has fallen from \$48,000 to around \$8,000 over a period of 10 to 15 years, regulators should move to an open-entry system as detailed in the pro-consumer option. Because the lease fees have been reduced dramatically, this approach would avoid any disruptive rush of new operators, which could result in a temporary disequilibrium.

The gradual reform approach is subject to two main criticisms. First, it delays the implementation of the most efficient option. Secondly, the transition provides an opportunity for the taxi industry to halt or reverse intended reforms through lobbying by industry incumbents (OECD 2007). The first trade-off cannot be resolved; the fact that the initial reforms are not as efficient is a feature of the policy used to overcome stakeholder opposition. The risk that the taxi industry would use the transition period to overturn the reformed policies should not be minimized. Though license-holder resistance won't be as intense as under the pro-consumer option, it would still be severe. The government will need to provide strong legislative guidance to accomplish this reform. In the PTB, the government already has an independent tribunal designed to make decisions on taxi industry issues. The reality is that the Passenger Transportation Act currently favours the taxi industry at the expense of everyone else. The Act should be amended to support the gradual reforms in this policy

recommendation. With a clear mandate and board members with transportation expertise, the PTB would be insulated from the political dimensions of the situation and effectively able to carry out the policy change.

Chapter 12. Conclusion

The purpose of regulation is to deliver superior outcomes for society. In 2001, BC's provincial government launched a Regulatory Reform Initiative that set out five principles to be considered when developing, drafting or revising regulation:

1. *Regulation will be needed and efficient*
2. *Regulation will be outcome-based and regularly reviewed*
3. *Transparently developed and clearly communicated*
4. *Cost effective and evidence based*
5. *Supportive of B.C.'s economy and small business*

Vancouver's taxi regulations do not even begin to meet the principles laid out by the Reform Initiative. To the contrary, current taxi regulations violate the principles of good regulation. The restrictive entry process and originating-area boundaries are harmful to passengers — making them wait longer for a taxi and increasing the likelihood that they will be refused service. Despite the poor service, Vancouver's taxi fares are the highest of any major metropolis in Canada and standard fares have increased at a faster rate than inflation in the general economy. Beyond being inefficient, the regulations raise distributional concerns because the poor, the elderly, and the disabled rely disproportionately on taxis. The process for making decisions on license applications is nontransparent. The PTB does not provide robust data on taxi market outcomes nor does it provide any information on the secondary market value of taxi licenses. This information is critical to understanding outcomes in the taxi market outcomes.

Vancouver's taxi regulations are at odds with the many provincial and municipal policy goals. For instance, boundary restrictions force taxis to waste fuel by requiring

that they return to their home area before accepting a new fare; this is inconsistent with the province's desire to reduce greenhouse gas emissions. In addition, the regulatory induced taxi shortages decrease public safety in Vancouver's Entertainment District and do not align with the province's intention to reduce drinking and driving.⁸⁷ Moreover, the current Greater Vancouver Regional Transportation Strategy sets forth many objectives including, greater urban density, more transportation options, and reduced private vehicle use.⁸⁸ All of these objectives are consistent with a greater reliance on taxis, but instead regulations limit taxi use by creating an artificial shortage and setting the fare higher than the cost of providing the service.

There is no empirical basis for believing that the regulations produce the benefits that could justify their costs. In fact, jurisdictions that have reformed taxi regulations have witnessed substantial new entry in to the market, greater taxi availability, and a reduction in the cost of taxi service. The sole beneficiary of current regulations are existing taxi companies whose licenses are estimated to be worth around \$800,000 per-vehicle on the secondary market, far more than the \$100 fee charged by the government to renew these licenses. The regulations incentivize owners to prevent new entry into the market because they will be rewarded with higher license values when taxi demand increases. Because of this, existing shareholders represent a formidable opponent to regulatory change, and rational analysis indicates that they have already captured regulators and legislators.

To remedy Vancouver's deficient taxi regulations, this study recommends introducing a combination of policies designed to overcome stakeholder opposition.

⁸⁷ See BC Ministry of Justice, British Columbia Road Safety Strategy 2015 and Beyond. Retrieved from: <http://www.pssg.gov.bc.ca/osmv/shareddocs/RoadSafetyStrategy.pdf>

⁸⁸ See Translink Metro Vancouver Regional Transportation Strategy. Retrieved from: http://www.translink.ca/~media/documents/plans_and_projects/regional_transportation_strategy/rts_strategic_framework_07_31_2013.ashx

Regulating new entry by charging lease fees will generate new revenue for government while allowing existing license holders a period of time to capture a portion of their current license value. In addition the elimination of originating-area boundaries will pit suburban taxi interests against Vancouver taxi interests. Under a scenario of divided stakeholders the prospects for policy change improve. Finally by freezing taxi fares policymakers are appealing to a powerful force for policy change – the consumers’ pocketbooks. These policies also appeal to societal objectives like safety, environmental protection, and equity to broaden political support for policy change.

Note that depending on policymaker preferences, each policy can be structured in a way that allows license holders an opportunity to capture a greater or lesser portion of existing license values. License lease rates and standard fares changes can be structured to decrease in real terms by a little or a lot. Policymakers could also choose to introduce each policy piecemeal rather than pushing for comprehensive change which would face vigorous opposition from existing license shareholders. Recognizing that abrupt regulatory change might be perceived as unfair, governments could use revenues from lease fees to selectively compensate recent purchasers of licenses who have not had an opportunity to realize a return on their investment.

Still, policymakers must recognize that policies that could be used to overcome license-holder opposition are not the most efficient option. Regardless of the portion of remaining license values that shareholders are allowed to collect, the end result of the initial policy phase should be to reduce license values. Once license values have declined considerably, policy makers should implement the pro-consumer option. This option consists of open entry, relaxed standard fare regulation, and an end to originating-area restrictions. These regulations will deliver superior outcomes for Vancouver’s taxi market and are in the public’s best interest.

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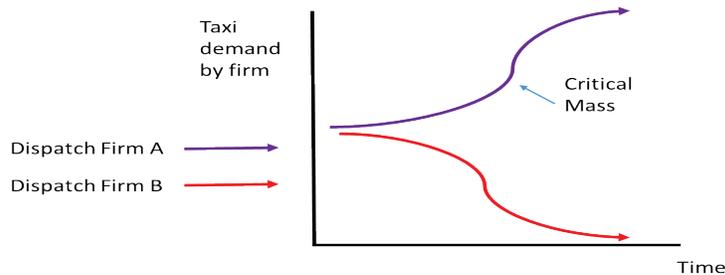
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Appendix A: Network Economies in Dispatch Markets

Some argue that dispatch markets may be a natural oligopoly and that regulators would be wise to keep maximum fare regulation. The issue arises from the economies of scale present in matching networks similar to dispatched cabs. Since customers are more likely to order a taxi from the company that offers the shortest wait time, companies doing so will tend have the most vehicles on the road. This process could be self-reinforcing as companies with the highest customer demand will continue to add vehicles in order to keep wait times low. This, in turn, creates more consumer demand. Eventually this process may lead to one firm gaining market power and extracting monopoly profits (Biggar 2011). The figure below is an example of one firm's demand reaching "critical mass," allowing it to become the dominant dispatch firm in the industry.



Despite the potential for one firm to become the dominant dispatch firm, the literature cautions against anticipating a scenario of one dominant firm. In areas like New York City, New Zealand, and the UK, which allow the open entry into dispatch and variable fares, no examples of monopoly pricing or dominant firms exist. Importantly, the cost of computerized dispatch has fallen dramatically and several companies that coordinate dispatch online via GPS-enabled smartphone applications have emerged. Finally allowing variable fares creates another component of service that taxis can compete on. Under fixed price, the main avenue of competition was wait times, but since customers have different preferences for price and quality of service, a greater number of companies can now serve customers with discrete tastes. Because of this, the literature advocates a wait-and-see approach to deal with the theoretical possibility of dispatch oligopolies as opposed to pre-emptive regulations (Biggar 2011). Still, regulators may wish to keep maximum fare regulation or choose an alternative policy to prevent a dispatch firm from gaining market power⁸⁹.

⁸⁹ Instead of maximum fares, regulators could limit industry concentration to prevent one firm from gaining dominance.

Appendix B: Average Revenue, Lease Fees, and Above- Normal Profits

In 2001 the reported range of Vancouver license values was \$280,000-\$420,000, and the estimated median license value was \$350,000 (Evans and Webb 2001). Evans and Webb also estimated that lease rates for a vehicle was \$1,500 to \$2,000 per month for a median lease of \$1750. That rate does not include fuel, insurance, maintenance or dispatch fees, and the amount represents the value of holding licenses in limited supply. Taking a median lease fee of \$1750 per month, it translates into an annual lease rent of \$21,000. Using a 6 per cent discount rate \$21,000 in annual payments would equal \$350,000 or the reported median value of a vehicle license.

Recently, Vancouver licenses have been valued at \$800,000 by (Brocki 2012; Lee 2013). These values have not been disputed by the Vancouver Taxi Association and represent an increase of 129 per cent over the \$350,000 share value reported in 2001. Applying the reported 129 per cent increase to lease rents would result annual rents of 48,000 or a monthly rent of \$4,000. The \$4,000 monthly lease fee seems reasonable given that one driver reported a monthly fee for a 12 hour shift was \$2,240 (Brocki 2012). My informal conversations with Vancouver taxi drivers indicated \$1,700-2,400 per month for a 12-hour shift as a range.

In 2013, the Vancouver companies engaged economic consultant Dr. Dan Hara to estimate the financial impact on the Vancouver taxi license holders from issuing peak licenses rights to 38 suburban taxis. The report contains information on revenues derived from daily driver lease rates.⁹⁰ The report notes that some drivers lease a Vancouver taxi by the individual shift and the median lease rate for a 12-hour shift on Friday and Saturday night is \$180 per shift. The report notes that “the average shift premium for the preferred Friday and Saturday nights is around \$80 per shift” implying the average lease for non-Friday Saturday nights is \$100 per 12 hours.

Based on this information, Table 1 represents my calculation for the 12-hour lease rate for each available shift in a given week. Table 1 shows the expected lease revenue for a vehicle per week. The calculations use the reported average lease rate of \$100 per 12-hour shift for any non-premium shift e.g., not Friday or Saturday night, but my conversations with taxi drivers indicate the lease rates vary each day depending on demand. For instance a 12-hour Monday shift might be \$85 whereas on a Thursday night it might be around \$160. For simplicity sake I used the reported average of \$100. The daily average lease rate for 24 hours is \$223.

⁹⁰ The reported values are considered reliable because the information was provided by the Vancouver taxi companies themselves and submitted to the Supreme Court.

Appendix B Table 1: Weekly Vehicle Lease Rate

Day	Night Shift	Day Shift	Combined
Monday	\$ 100	\$ 100	\$ 200
Tuesday	\$ 100	\$ 100	\$ 200
Wednesday	\$ 100	\$ 100	\$ 200
Thursday	\$ 100	\$ 100	\$ 200
Friday	\$ 100	\$ 100	\$ 200
Saturday	\$ 180	\$ 100	\$ 280
Sunday	\$ 180	\$ 100	\$ 280
Weekly Sum	\$ 860	\$ 700	\$ 1,560
Daily Average	\$ 122.86	\$ 100	\$ 223

Hara estimated that the average revenue on a Friday and Saturday night was \$360 with 50 per cent going to cover driver wages and fuel, and the remaining \$180 going to a premium lease rate on Friday and Saturday night. I assume that drivers are indifferent to what time or day they work and so \$180 represents their wage and fuel costs for each 12-hour shift whether it's a Monday morning or a Friday night the cost of an average 24 hour shift is then \$360.⁹¹ Adding \$360 to the daily lease rate of \$223 yields an estimate for average daily revenue of \$583.

We also know that license holders can either lease their license out monthly for around \$4,000 or at a daily rate of \$223. If they choose the daily lease the owner is responsible for vehicle costs, dispatch, insurance, and maintenance. A daily lease rate of \$223 would represent monthly revenue of \$6,778, with the difference between this number and the \$4000 monthly lease being \$2,778. The number represents the monthly cost of operating a taxi in Vancouver. Thus to recoup their operating costs, license holders would only need to charge a 24-hour lease fee of \$91 instead of \$223.

Using our \$360 estimate for a full-day driver's wage and gas costs plus the \$91 needed to cover operating costs yields an estimated \$451 revenue needed to cover all costs. In contrast, the current estimate of average daily revenue which is \$583. The difference between these numbers is \$131, implying that fares could be reduced by 23 per cent while still leaving operators enough revenue to cover all costs. To verify the data we multiply the normal daily return of \$131 by 365 to get an annual lease fee of \$48,000 which discounted at 6 per cent yields our license value estimate of \$800,000.

⁹¹ There may be differences in fuel costs on slow Monday versus a busy Friday but because taxis generally cruise for fares when they are without passengers the differences is likely small.

Do we have any other ways to verify if the revenue estimate? In July of 2013 Yellow Cab (Lee 2013) provided an estimate of average daily revenue \$350 for night shifts and \$225 for night shifts which gives us an average daily revenue of \$575, which is very close to this study's estimate of \$583.

Appendix C: City of Vancouver Regulations

While the PTB is the senior regulatory authority, Vancouver City Council⁹² applies additional regulations that affect city taxis via the *Vehicle for Hire* bylaw #6066. This by-law sets out a number of rules that affect the quality and safety of taxi services including the age and maintenance record of each vehicle, exhaust emissions and fuel consumption.

The Vehicle for Hire bylaw requires prospective drivers to undergo a police background check. Drivers also need to possess a Vancouver Police Department “chauffeur’s permit,” which assesses whether a driver is a risk to passengers. To obtain a chauffeur’s permit the applicant must meet a number of requirements as well as submit a letter signed by a taxi company indicating the owner intends to hire the individual. Vancouver’s bylaw also requires drivers to demonstrate their ability behind the wheel, including collision avoidance, city knowledge, and their English-language proficiency by earning a “Taxihost” certificate.

The bylaw also stipulates that taxis have a City of Vancouver taxi license. These licenses are separate from those issued by the PTB. City taxi licenses have an annual fee of \$532 dollars and the number of licenses is currently capped at 588, hence if the PTB approves additional licenses the city would need to adjust their bylaw to accommodate them.

Tom Hammel, the former deputy license inspector with the city, said that the license limit is a temporary by-law feature that provides the city time to adjust to any new licenses issued by the PTB. In Mr. Hammel’s opinion, if the PTB issued new licenses that exceeded the current cap, the City would need to increase their limit accordingly, or risk a legal challenge (Interview January 31, 2014). Mohan Kang, president of the BC Taxi Association, indicated that City of Vancouver inaction on PTB approved temporary operating permits has prevented the suburban companies from using them in the past (Interview January 14, 2014).

⁹² Other GVRD municipalities apply bylaws to taxis operating in their region although Vancouver’s regulations are the most comprehensive.

Appendix D: Substitutes and Complements to Taxi Service in Vancouver

A number of services can be considered substitutes to taxis that operate in Vancouver. Substitutes for taxis include traditional ride-sharing, dynamic ride-sharing, smartphone applications, limousines, general authorization vehicles, and rental cars. Some of these substitute faces rules and restrictions on their operations.

Limousines

The PTB regulates entry into the limousines in in much the same way as taxis. The PTB approves limo license applications based on public need, whether the applicant is fit and proper, and the economic impact on industry conditions. However, limousines operate under different terms and conditions than taxis, with the major difference being the rate they charge. Table D provides the fare schedule for limousines, notably limousines must charge a minimum hourly rate. Jan Broocke of the PTB indicated that the minimum rate requirements were a response to concerns from taxi owners that sedan limousines would offer services similar to taxis (February 12, 2014, interview). She states that: “Board policy is to maintain a distinction between taxi and limousine rates.” (Email correspondence, March 30, 2014)

The PTB regulates other forms of private passenger transportation⁹³ which are substitutes to taxis.

Table D: Limousines Fare Schedule

Vehicle Type	\$Minimum Hourly Rate	\$Maximum Hourly Rate
Sedan Limousines (3-5 Passengers)	\$75	\$150
Mid-Size (6-7)	\$90	\$160
Stretch (6-11)	\$110	\$175
Stretch SUV (8-11)	\$150	\$240

Source: Rates and Rules for Limousines PTB 2014

⁹³ The PTB also regulates other Passenger Directed vehicles such as shuttle busses and General Authorization Vehicles. A General authorization vehicles’ route is determined in advance by the company. An example of this would be a sightseeing bus.

Translink and Handy Dart

Translink is responsible for municipal public transportation system in the Greater Vancouver Regional District. It operates rapid light rail transit (sky train), buses, sea buses, and rail transit (West Coast Express). Public transportation is somewhat unique in that it is both a complement and a substitute to taxi usage, although in practice increased transit ridership has been shown to correlate with increased demand for taxis (Schaller 2005).

Translink also operates the HandyDART program which is a prearranged door-to-door shared-ride service for people with a physical or cognitive disability. In the past Handy Dart has used taxis to help service their clientele. Recently, HandyDART began a Taxi Pilot project that transfers 10,000 hours of HandyDART service to the taxi industry. HandyDART users are also eligible for the Taxi Saver program which allows them to purchase up to \$100 worth of monthly taxi-chits at a 50 per cent discount. (Handy Dart Pilot Backgrounder 2013)

Ride-sharing

Ride-sharing is traditionally defined as the grouping of travellers into common trips by car or van (Chan and Shaheen 2011). Technologies are now supporting more dynamic forms of ride-sharing. These technological improvements allow for trips to be organized in real time, sharply reducing the inconvenience of finding someone going to a similar destination or departing from a nearby origin. The possible number of passengers/drivers is expanded from people in one's direct social circle to everyone with a smartphone. The use of GPS technology allows dynamic ridesharing to mimic the role of taxi dispatchers by coordinating time of travel, origins and destinations (Windels Marx).

British Columbia policies currently allow for limited ride-sharing. BC's passenger transportation regulations exempt "carpool vehicles" from certain provisions of the Transportation Act. The result is that, while ridesharing is permitted, the province places many limitations on how ride-shares can operate. The Act explicitly limits any compensation to the driver from exceeding the operating costs of the trip. Carpool vehicles are also limited to making only one return trip per day. Further, the transportation of passengers in a carpool vehicle can be only from the residences of any or all of the driver and the passengers to a place of employment or a common destination (Passenger Transportation Act).

The Passenger Transportation Registrar conducts surveillance on websites, such as *Craigslist*, that are commonly used to coordinate ride-shares. If the Registrar believes that drivers are soliciting compensation for rides, the Registrar will send a cease and desist letter to the advertisers of the ride-share (Interview with Dawn Major, December 18 2013). The Ministry of Transportation also investigates online services such as *Pick-up Pal* that advertise ride-shares to ensure that they are in compliance with the

Transportation Act. In response to a Ministry of Transportation conclusion that Pick-up Pal violated the Act, the company adjusted its business model to ensure that revenue was generated strictly from advertising.

On demand car-sharing

The advances in online GPS enabled technology that have transformed ridesharing have also led to new developments in the car-sharing industry. One such company is Car2Go, which has 300 vehicles available in Vancouver for point-to-point rentals. These companies eschew the traditional model a centralized rental office and allow renters to choose any car parked in the nearby vicinity. Typically rates vary by time with a per-minute rate, as well as a flat hourly and flat day rate.

Certainly the rise of car-sharing services has taken a chunk out of Vancouver taxi demand. However, to access these services one needs to have valid driver's license and a credit card, thus narrowing the pool of potential users. Moreover, a common reason people take taxis is because they do not want to drive themselves (either to avoid trouble finding parking or to be able to consume more than one alcoholic beverage at a social gathering) – Car2Go cannot act as a substitute for people who do not wish to drive.

Appendix E Limited Liberalization Case Studies

One policy option that was not discussed in the analysis is limited liberalization. Under limited liberalization one segment of the taxi market is partially opened. The entrants provide benefits to the consumer without causing major financial harm to existing licenses holders. This is by restricting the operations of new entrants.

New York City

New York has two very distinct regulatory structures, one is a system of open entry for prearranged trips, and the other is fixed cap on the number of medallion taxis able to accept street hails. Open-entry dispatch taxis can vary their fares as long as the fare rate schedule is posted, whereas medallion taxis must charge a standard regulated fare.

Currently there is a cap limiting the number of medallion taxis in New York to 13,237. To change the fixed cap state legislators must pass a bill in the house. As a result of the fixed cap and the fact that “hailing” a taxi is the most common method to get a taxi in New York, medallions have developed a market value reported to be about \$1 million per vehicle. When new taxi medallions are made available they are issued via auction. A recent 2013 auction of 200 accessible taxi medallions netted New York City \$200 million (NYT 2013). Other cities that auction off taxi licenses include Chicago and Boston. The auction has some advantages for regulators. First, it enables the public to capture rents from issuing new licenses, and secondly it partially protects the license value for existing holders by forcing new purchasers to pay the going rate.

The high value of a medallion indicates that there is an under-supply of taxis able to accept street hails. However, New York City is perhaps the only jurisdiction that can credibly argue that the taxi supply is major contributor to congestion on city streets. In Manhattan land is scarce and population density is high; as result it may be appropriate to limit the number of taxis.

Despite the fixed supply of taxis medallions in New York, taxi fares are low and cabs are plentiful compared to most American cities (Hara). A contributing factor to the good consumer outcomes in New York is the open entry for dispatched or prearranged taxis. These vehicles are deemed “for-hire vehicles” by the New York Taxi and Limousine Commission. Initially the city did not have jurisdiction over for-hire vehicles, and the number of for-hire vehicles grew as demand outstripped what could be served by the supply of medallion taxis. Authority over for-hire vehicles belonged to the State and was outside the regulatory reach of the city. For-hire vehicles became a popular alternative for residents who lived outside of Manhattan, black car services grew in popularity, and ‘gypsy cabs’ that picked up passengers illegally began to multiply. In 1987 the New York Taxi and Limousine Commission received jurisdiction over for-hire vehicles. Currently there are approximately 40,000 for hire vehicles licensed by the Commission. Entry remains open and fares can vary but must be quoted in advance of the trip. Currently

the city is exploring allowing a new class of “Boro Taxis” to pick up street hails in the outer boroughs of New York. These vehicles will charge the same regulated fare as medallion taxis, and entry into the market would be based on a permit fee of \$1,500 for three years. The number of permits granted would be capped at 18,000.

Judging by the number of vehicles per-capita and fares, New York’s policy of limited liberalization appears to have improved consumer outcomes. The city managed to capture some of the economic rents from restricting supply, while protecting the value of taxi medallions for existing license holders.

Toronto’s Ambassador Taxis

In Toronto, the City regulates the taxicab industry. In October, 1998, the City instituted a series of reforms in response to a growing consensus among industry participants that customer service levels were inadequate. Citizens and visitors had been complaining about aging, unsafe vehicles, trip refusals, and discourteous, rude treatment from drivers. The Toronto Board of Trade noted that members were concerned with “the increasing frequency and severity of complaints about taxis” (Toronto Task Force 1998). Just prior to the 1998 review, a random inspection of 21 vehicles resulted in two-thirds of them being taken off the streets because they were dangerous and unsafe.

Prior to the 1998 review, Toronto taxis operated under only one regulatory class, the “Standard Plate” license. Owners of Standard Plates were permitted to lease or sell their plates on the open market. Due to limited supply Standard Plates developed a market value significantly above the \$4,500 it cost to purchase them from the City. At the time of the 1998 taxi review, Standard Plates had a market value of \$85,000. Because of the huge financial windfall from receiving a Standard Plate, the waiting list for new plates was 2,500 in 1996 with an average waiting period of nine years. Despite this high waiting list, existing owners of Standard Plates steadfastly opposed any new issuances. In fact, prior to the 1998 review, no Standard Plates had been issued since 1992.

At the time of the 1998 review it had become commonplace for the majority of Standard Plate owners to lease their plate rather than drive the vehicle themselves. In 1998, only about one-quarter of Toronto plate owners actually drove a taxi compared to two-thirds of drivers in 1982. Industry participants remarked that the sharp decline of owner-operator vehicles could have been a factor in the deterioration in customer service (Schimiski 1996).

City of Toronto data seemed to support the contention that owner-operated taxis delivered a higher quality of service. The city found that owner-operated taxis had lower inspection failure rates than leased plates, with officials and industry participants attributing the better vehicle care to pride of ownership.

Introduction of Ambassador Taxi Licenses

In response to the decline in service, Toronto introduced a new regulatory class called an Ambassador Plate in 1998. With the introduction of the Ambassador Plate, Toronto continued its practice of not issuing any new Standard Plates.

Unlike a Standard Plate, the Ambassador Plate could not be sold or leased. In addition, owners of an Ambassador license had to drive the taxi. Ambassador plates were restricted to operating 12 hours per day as opposed to Standard Plates, which can be operated for 24 hours. The Ambassador licenses were distributed according to the waiting lists for Standard plates and phased in to monitor the impacts.

The restrictions placed on the Ambassador Plate were aimed at achieving two goals — protecting the Standard Plate’s value in the market place while improving overall service levels. Since Standard Plates were more desirable than Ambassador Plates, they would retain value. This would minimize objections by Standard Plate holders to the issuance of the new Ambassador licenses. Secondly, based on earlier surveys and findings, expanding the owner-operator model through the introduction of the Ambassador Plate would likely result in higher levels of customer service.

Results: Customer Service

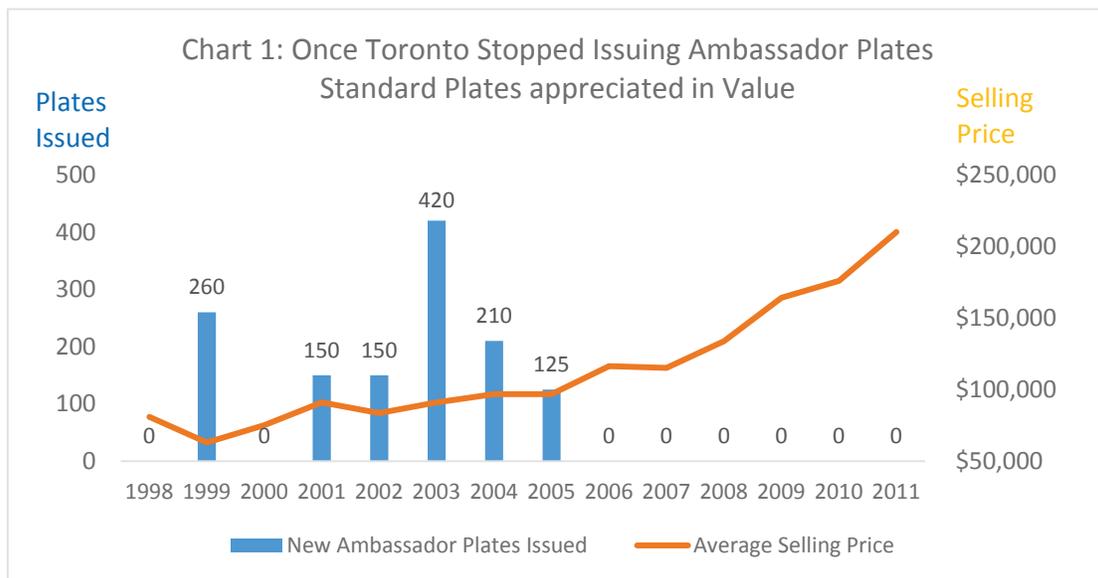
The introduction of the Ambassador Class license succeeded in improving customer service levels. By 2011, there were 1,313 Ambassador taxis in operation together with 3,541 Standard taxis. At the time of the 1998 changes, the average age of a taxi was seven years. Just over a decade later, the average taxi age had fallen to four years (Toronto Review 2013). Since the 1998 reforms, customer complaints, mechanical failures, and plate removals due to safety concerns all declined.

Ambassador Plates outperformed Standard plates against a number of service quality indicators. The Ambassador Plates had fewer mechanical failures than Standard Plates, and fewer customer complaints were made against Ambassador taxis. While Ambassador taxis delivered slightly better customer service than the Standard Plate taxi class, Standard Plate performance improved following the changes.

Impact on Standard Plate Values

With the introduction of the Ambassador Plates, the City stopped issuing Standard Plates and grandfathered the existing 3,541 Standard Plate licences. Restrictions on Ambassador Plates made them less desirable than Standard Plates. Although the Ambassador Plates were not as valuable to own, the increase in the overall number of taxis on the streets of Toronto initially reduced a Standard Plate’s value. Prices then stabilized for a short period as the Ambassador class was phased in and then grew by double-digits when regulators stopped issuing new supply.

In 1998, the average selling price of a Standard Plate was \$80,900. That number is lower than the true market value of a Standard Plate as the average price includes some Plates that were sold to relatives/friends for the token amount of \$1 since existing regulations forbid the transfer of Plates via inheritance. The initial introduction of 260 Ambassador Plates caused a 22 per cent drop in the selling price of Standard Plates. Prices stabilized over the next six years as additional Ambassador Plates were phased in. No new Ambassador Plates have been issued since 2005 and, predictably, the value of Standard Plates has risen substantially. Between 2005 and 2011 Standard Plate values increased by 117%. Appendix Chart 1 shows the change in Standard Plate value.



Source: (City of Toronto 2013)

Toronto New Taxi Industry Review

Creation of the dual license class system appears to have improved customer services levels, while also protecting a Standard Plate’s monetary value. In the latter category, the nominal annual return on a Standard Plate averaged 7.6% since 1998. Several transportation economic models now estimate that there is an undersupply of taxis in Toronto ranging anywhere from 307 to 1,300 taxis (Toronto Review 2013).

The City of Toronto recently completed another taxi review. Ambassador License holders argued that the system was a failure. In particular, they asserted that their inability to transfer a license has made it costly for drivers to take vacation time or sick leave. At the same time, there is a waitlist of 900 people for Ambassador Licenses. One of the enduring truths of taxi regulation is that — once granted access to the market — license holders work hard to prevent others from gaining similar access.

In January 2014, Toronto's Taxicab Industry released its 35 recommendations to reform the taxicab industry (Toronto Final Report 2014). The most significant change is the creation of a single license class called the Toronto Taxi License. If enacted by city council, this single regulatory class would require all Plate Owners to drive their taxicab at least 167 hours a month. The requirement for owner-drivers is consistent with the improved service levels achieved by the Ambassador Plate owner-operated model. Toronto Taxi License owners would be allowed to lease their plate for the remaining shifts.

Decisions to issue new Toronto taxi licenses would be based on careful monitoring of passenger service levels. This would require regulators to monitor consumer outcomes, including the use of computerized dispatch data to report on measurements of passenger service like customer wait time. In practice the regulator would set a standard level of passenger service. If service levels were not being met, the regulator would increase the number of taxis on the road. A passenger service level approach is a more objective measure than simply asking the regulator to determine public need, but in order to measure service levels effectively regulators will require access to reliable data. Regulators will also need a process for determining who is awarded a new license.

California Smartphone Applications

The California State Public Utilities Commission is one of the first regulatory bodies to issue a comprehensive ruling on the new transportation services offered by software companies like Uber, Lyft, and Sidecar. Their decision created a new class of regulations for companies that offered prearranged transportation services for compensation using an online-enabled application. Currently BC PTB regulations prevent these companies from operating in BC as they are not licensed and their fare schedule is not aligned with PTB approved rates.

Generally, the apps accept a fare payment through a credit card connected to the passenger's smartphone. The application stores the passenger's information for future trips. Fares are set in a variety of ways, with some apps operating a fare system similar to taxis, with an initial pick-up fee and a per-km distance charge. In other instances, the app communicates to the passenger a suggested fare based on similar rides; whether the payment is mandatory or voluntary depends on the terms and conditions of the app. Companies that develop ridesharing apps earn revenue in a variety of ways. For instance UBER receives 20 per cent of the fare for coordinating the ride, while some charge membership fees, and others like Pick-up Pal generate revenue by charging users to advertise on their website.

Similar to the BC's PTB, the California Public Utilities Commission is responsible for ensuring regulatory and safety oversight regarding for-hire passenger carriers such as limousines, airport shuttles, and bus operators that are used in the transportation of passenger's for-hire on a prearranged basis. The CPUC also provides an exemption for

ride-sharing when persons have common origins and destinations. In California individual cities are responsible for the regulation of taxicabs.

The rapid rise of smartphone applications that coordinate ride-sharing posed a challenge for the CPUC as the software companies operations were in conflict with existing regulations. Many of these companies were headquartered in California. In 2012, Lyft, UBER, and Sidecar all received citations from the CPUC enforcement division which imposed penalties of \$20,000 after it found these companies to be operating as unlicensed charter-party businesses. In Many other companies offering similar services also received cease and desist letters from the CPUC (November 14, 2012, "California Regulator Issues Citations And Fines Against Transportation Services", Tech Crunch)

On December 20, 2012, the CPUC launched an inquiry into the services offered by these new technologies. The purpose of the inquiry was "to protect public safety and to encourage innovators to use technology to improve the lives of Californians." The inquiry led to the creation of a new regulatory class called a Transportation Network Company (TNC). To be classified as a TNC, the business must provide prearranged transportation services for compensation using an online-enabled application (CPUC Ruling 2013). TNC's are also required to comply with 28 rules and regulations established by the CPUC. The most basic of which is licensing by the CPUC.

Most of the 28 rules and regulations that apply to TNCs deal with safety issues. For instance, CPUC regulations require that each driver undergo a criminal background check. It also requires companies to establish driver-training programs and institute a zero-tolerance policy on the use of drugs and alcohol by drivers. Vehicles must undergo a 19-point inspection to ensure that they are safe to operate. TNC must also hold a commercial liability insurance policy that provides \$1 million per-incident coverage for any incidents involving TNC vehicles and drivers during a TNC trip. The regulations also require that one third of one per cent of TNC's total revenue be paid to the CPUC. This is the same fee structure that limousines pay and is used to finance CPUC operations.

Companies like Sidecar and Lyft were supportive of the new regulations. Sidecar's CEO Sunil Paul wrote in a blog post: "When regulators and innovators work together, people win." Lyft co-founders John Zimmer and Jordan Green also concluded that the regulations "set a new standard for safety in transportation while supporting innovation that makes cities safer, more affordable and better connected" (July 30, 2013, "California Proposal Clears UBER Lyft and Sidecar Wall Street Journal)

Not everybody was pleased with the decision however. California taxi groups such as the Taxi Para-transit Association of California (TPAC) and the San Francisco Association of Taxi Drivers both opposed the CPUC decision to allow the software companies to operate as a TNC. Both groups have called for a new hearing on the CPUC decision.