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Impact of Taxi Market Regulation

An International Comparison

Jon Terje Bekken and Frode Longva

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Summary:

As part of a wider survey into the UK taxi market, TØI has made an international comparison of the impacts of regulations on taxis markets. The report clearly shows a great variety in regulations, regulatory changes and outcomes of such. The major experiences from deregulation, both of entry and fares, are increased availability, increased fares and an increased focus on qualitative requirements. Different market characteristics and different external effects can explain some of the differences. The impacts of regulatory changes are most pronounced at cabstands and in the hailing segments. Furthermore, there are geographical differences. In rural areas the availability do not increase as much as in urban areas, whereas fares increase more. The major lesson to learn from different experiences is that regulatory changes should be made with a stepwise approach. Combined with monitoring, this allows a better tailoring of the regulatory changes

Tittel: Effekter av drosjeregulering - internasjonale erfaringer

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Sammendrag:

Som en del av en større studie av det britiske drosjemarkedet har TØI gjennomført en internasjonal sammenligning av erfaringer med drosjeregulering. Rapporten viser tydelig store variasjoner både i reguleringsregime, endringer i reguleringsregime og effektene av slike endringer. Hovederfaringene med deregulering er at tilgjengeligheten øker. Det samme skjer med prisene. Et annet resultat er at fokus i større grad blir rettet mot kvaliteten. Ulike markedsforhold og eksterne forskjeller kan forklare noe av forskjellen mellom erfaringene ulike steder. Effektene av endringer er minst for markedssegmentet knyttet til telefonbestilling. Videre er de geografiske virkningene viktige. I spredtbygde strøk øker ikke tilgjengeligheten like mye som i større byer. I tillegg øker takstene mer i disse områdene. Den viktigste lærdommen fra de ulike erfaringene er at endringer bør skje stegvis. Ved å kombinere en stegvis endring med en overvåking av markedet, kan endringene bedre tilpasses ulike forhold.

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Foreword

The Office of Fair Trading launched a study into the UK licensed taxi services market in summer 2002. The investigation will examine whether consumers are best served by the regulations that restrict the number of taxi licences and will aim to identify any other competition or consumer welfare issues. As part of this wider research, the Office of Fair Trading wishes to compare and analyse the regulatory regimes governing the taxis markets in several countries to ascertain if these can inform on and/or improve competition and consumer welfare within the UK market.

This report is a part of the wider research into the UK licensed taxi market. The overall goal of this report is to use the experience of regulatory reform in taxi markets around the world to inform the thinking on the UK market.

The Office of Fair Trading, UK has financed the project. Researcher Jon-Terje Bekken has been Project Manager and has been responsible for Sections 1, 2, 3.1, 3.2, 3.4-3.6 and 4. Researcher Frode Longva has been responsible for Section 3.3. Section 3.7 has been written in cooperation between the authors. Odd I Larsen has been the Quality Assurance Manager. Department Secretary Kari Tangen has been responsible for the word processing and the layout.

Oslo, May 2003

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Summary:

Impact of taxi market regulation

An international comparison

Background and problem

This report is a part of a wider research into the UK licensed taxi market. As part of this wider research, the Office of Fair Trading wants to compare and analyse the regulatory regimes governing the taxis markets in a number of countries to ascertain if these can provide information about and/or improve competition and consumer welfare within the UK market. The overall goal of this report is to use the experience of regulatory reform in taxi markets around the world to inform the thinking on the UK market.

The underlying foundation for selecting the case cities and countries has been to cover a number of countries or cities that have either undergone regulatory reform or which have very diverse regulatory systems. Based on this, we have selected Ireland, Sweden, the Netherlands, Norway and New Zealand as our primary case countries. Major changes have also occurred in Canada and the US. We have thus included a survey of the experiences of deregulation in these countries as well.

Major findings

The impacts of regulatory changes vary between different cities. Different market characteristics (internal factors) and different external factors are important when assessing the impacts. Our major findings in this report are as follows:

- Quality requirements appear to become increasingly important as entry and or fares are deregulated . In some of the cities and countries investigated in this study, deregulation of entry has occurred without quality enhancements, however, in most of these cases, re-regulation or quality enhancements have later been introduced. The most recent regulatory changes focus more on the quality of service rather than the number of vehicles. It is important to note that even modest quality requirements reduce the effects of deregulating entry by creating barriers to entry.
- Fares do not necessarily decrease due to fare liberalisation. Rather, they seem to increase and become more differentiated. This may be partly due to fares being previously over suppressed under a regulated regime. Fares seem to increase most where there is less competition, such as at taxi ranks and in rural areas¹. The major benefit from fare deregulation is related to

¹ Fares may be higher in rural areas due to increased costs caused by lower taxi utilisation rates.

greater fare differentiation between times of excess demand and excess supply, and some new fixed-fare services. Fares are higher at times when demand exceeds supply and so consumers benefit through the increased supply that is generated. Experiences from New Zealand and to some extent Norway and Sweden, also show that measures to improve the bargaining position of consumers can improve fare competition. In New Zealand and Norway, DC affiliation is required. This has reduced the number of different fare schedules to choose between. In Sweden, strict requirements on fare information have been introduced.

- Supply increases when entry restrictions are removed. Thus, the waiting time for consumers is reduced and availability increases. New entrants into the industry primarily focus on the hailing and the taxi rank segments. In areas where the telephone booking market dominates, the increased supply occurs through the expansion of existing operators. In rural areas, the overall increase in availability is less than in urban areas.
- If fares continue to be regulated, the Private Hire Vehicle (PHV) sector will continue to function as a complement to the taxis in the telephone-booking segment. However, PHV operators tend to become taxi operators and benefit from the synergy between the different market segments. This transition, however, depends on the differences in quality standards between taxi and PHV operators.
- A stepwise approach to deregulation seems to be more appropriate due to the unexpected effects caused by regulatory changes in the taxi industry. Such an approach allows monitoring and tailoring of the effects as changes occur and should improve the overall outcome. This is in particular evident from the Dutch experiences.
- The falling service quality and vehicle standards reported in several studies do not seem to be ultimately linked to free entry. Neither the free market nor heavy entry regulation in itself seems to avoid deteriorating service quality over time, both with regards to driver competence and vehicle safety standards. Problems related to falling service and vehicle standards must indeed be addressed no matter regulatory framework at hand, and several studies indicates that it can be overcome by tougher enforcement policies and procedures, increasing driver requirements and programs for further competence building. This may, on the other hand, lead to higher costs related to quality controls, leaving the net costs results of quantitative deregulation uncertain.

Different regulatory regimes and the changes in them

Great differences in the regulatory regimes

The countries and cities we have chosen have very different regulatory regimes. Table S.1, shows the major regulations which are effective at a national level in the different countries.

Table S.1: Major regulations, currently effective on national level

Country	Regulatory level	Direct barriers to entry		Indirect barriers to entry		Fare regulations
		Market access	Quality standards on operators	Quality requirements on taxi drivers	Other requirements	
Ireland	Local authority great discretion	Entry deregulated Substantial licence fee Licences valid in one area only	Must have a valid taxi driver licence. No further restrictions	Written exam. Criminal record check. Taxi drivers licence renewed annually	Vehicle requirements with an annual test	Maximum or fixed fares apply. Local authority decide the fare level
New Zealand	National legislation, regional enforcement	Entry deregulated DC (association) affiliation required ²	Written exam Demerit point system applies also for the associations Criminal record and transport offences checked	Written exam Demerit point system for drivers	Annual test of vehicle, taximeter must be checked every 6 months	Fares not regulated, however the associations decide the fare for affiliated taxis
Sweden	National	Entry deregulated, all operators must pass the quality standards	The EU directive on road transport operators applies	Written exam. Criminal record check. Medical certificate. Working time requirements	Annual test of vehicle. Strict rules on roadworthiness and safety apply	Fares deregulated. Independent operators free to decide structure. Otherwise DC decides. Strict requirements on fare information
Norway	National legislation, regional enforcement	Entry regulated. Local authorities decide the market size. DC affiliation required	Must have a valid taxi driver's licence and be a taxi driver as main occupation. The EU directive on road transport operators applies	No exam Criminal record check Medical certificate Local area knowledge test in urban areas	No particular taxi vehicle test except the ordinary biannual vehicle test. Taximeter with printer required	Fares deregulated in some urban areas. The DCs decide the fares for all affiliated taxis.
The Netherlands	National	Entry deregulated No licence areas apply	Written exam Criminal record check Complaint handling service	No exam Criminal record check Medical certificate Working time requirements	Annual test of vehicles (roadworthiness and taximeter)	Maximum fares apply
USA	Local	Very different approaches locally. A nationwide survey showed 64% having entry control, while 76% had fare regulations				
Canada	Local	Very different approaches locally				

² The DC or association must provide a service 24 hours a day and also provide a telephone booking service and maintain a register of complaints.

It is striking how different regulatory regimes are between the countries. This underlines the fact that regulatory regimes must be tailored to fit different market characteristics and that there is no such thing as a perfect organisation of the taxi industry and/or a regulatory regime that would fit every locality.]

Different regulatory changes have been implemented in different countries

Just as striking as the difference in the current regulation are the different regulatory changes implemented in the different countries. Table S.2 summarizes the major regulatory changes in the different countries.

Table S.2: Summary of regulatory changes

Country	Direct barriers to entry		Indirect barriers to entry		Fare regulation	Major goal of the changes
	Market access	Quality standards on operators	Quality requirements on taxi drivers	Other requirements		
Ireland	Quantity restrictions removed Second hand value of licences wiped out	Enhancement foreseen	Enhancement foreseen	No change	Unchanged (Fixed by local authority)	Reduce the mismatch between supply and demand (Increase availability)
New Zealand	Quantity restrictions removed	Enhanced DC affiliation introduced. PHVs and taxis equally treated	Mainly unchanged	Enhanced	Removed	Part of the general deregulation of the economy. Reduce the difference between taxis and other passenger service vehicles (PHVs and others)
Sweden	Quantity restrictions removed. Licensing areas merged	Enhanced some years after deregulation	Enhanced some years after deregulation	Enhanced some years after deregulation	Enhanced some years after deregulation	Create a more efficient industry. Reduce the mismatch between supply and demand Increase price competition
Norway	Unchanged Some licence areas merged	Enhanced	Unchanged	Unchanged	Removed in some urban areas	Increase competition and supply
The Netherlands (Stepwise deregulation)	Quantity restrictions removed. Licensing areas merged	National standard requirements introduced	National standard requirements introduced	Enhanced	National maximum fares introduced instead of local fixed fares	Strengthen the role of taxi as a complement to other modes of public transport. Increase the use of taxis
USA (Reregulation on several aspects later)	Quantity restrictions removed in most of the deregulated cities	Usually enhanced after some years. In particular fleet sizes and other operating requirements are introduced	Usually unchanged	Usually unchanged	Mainly removed	Primarily based on the advantages of free competition. Also to increase supply, level of service and reduce fares. In some cases to reduce the bureaucracy
Canada	Different approaches	Enhancements	Enhancements		Unchanged	To increase safety and the quality

Regulatory changes and the effect on consumers welfare

Substantial variations in the regulation of the taxi industry have been identified. The major question, however, is what can be learnt about the impact of different regulations on consumer welfare. The report clearly shows that the outcome depends on both external and internal forces.

A summary of the effects is presented in Table S.3. The table clearly shows that the effects on consumer welfare of different regulations differ between different locations, and that they depend on alleviating policies as well as different market characteristics. Nevertheless, the availability of taxis and the waiting time of consumers in general improves following the removal of entry controls. In particular this is the case in urban areas and at taxi ranks. The cost of this increase, however, must also be considered. Increased fares may follow increased availability if fares are also deregulated.

To a great extent, the effects depends on different market characteristics. The effect of deregulated entry on availability is greatest in urban areas and at the cabstand segment. The effect of fare liberalisation is also different depending on market characteristics. In rural areas and in the street segments (cabstands and curb hailing), the overall fare increase is greater compared to urban areas and the telephone-booking segment.

Differences in taxi supply are also influenced by several factors besides the question of regulatory regime. These effects, we have labelled external effects.

Table S.3: The outcome of deregulation

	Market characteristics	Numbers of vehicles	Fares	Level of service	Organisation
Ireland (Entry deregulated)	The taxi rank- and hailing segments dominate (Dublin).	Massive increase. (+200% in Dublin, + 100% on average).	Still regulated.	Reduced waiting time for customers nationwide. Primarily at taxi ranks. Small improvements in telephone booking segment.	More independent operators, the PHV sector has decreased in importance.
New Zealand (Fares and entry deregulated)	The telephone booking segment important in particular outside urban areas.	Massive increase (+160% 1989-2001 on average). Marginal decrease in taxis numbers as well as availability in rural areas.	Decline in real terms increase in nominal terms. Fares increased in real terms in rural areas.	Reduced waiting time. Far greater range of services.	More large operators as well as more small operators.
Sweden (Fares and entry deregulated)	The telephone booking segment dominates. Large share (56%) of trips subsidized (primarily in rural areas).	Increase immediately after deregulation, stable thereafter. No long term increase in rural areas. The efficiency has decreased.	Immediate increase (real terms), stable thereafter. The major increase occurred in medium cities and rural areas. The cost of subsidized trips increased in rural areas and decreased in cities.	Reduced waiting time, no change in consumer satisfaction.	Most newcomers are small, thus there is a decrease in the average company size. The major DCs have increased their market share. In rural areas few competing DCs.
Norway (Fares deregulated in some areas)	The telephone booking segment dominates nationwide. Large share (20%) of trips subsidized (primarily in rural areas).	No change due to deregulation.	Immediate increase (real terms), stable thereafter. Greater fare differentiations (most prominent in large cities).	The supply at night and in weekends has increased due to the increased revenue potential caused by fare differentiation.	No change in the organisation.
The Netherlands (Entry deregulated, maximum fares)	The taxi rank segment dominates in the largest cities, telephone segment elsewhere. Large share of public subsidized trips, primarily in rural areas.	Significant increase in the number of taxis, primarily at taxi ranks.	Increased the first year and fell the second year (real terms).	Increased availability most pronounced at taxi ranks in the weekends. Taxi usage has only increased marginally in urban areas and decreased in rural areas.	The average size of operators has declined in cities due to increased number of independent owner- drivers. The opposite occurred in rural areas as incumbents expanded their business.
USA	Very different, however street work dominates in urban areas.	Massive increase (+18 to +127%)	Increasing	Unchanged	Less concentration
Canada	Very different, however street work dominates in urban areas.	Increase	N/A	Increased availability, reduced quality.	No change

1 Introduction

As part of a wider research into the UK licensed taxi market, the Office of Fair Trading, wants to compare and analyse the regulatory regimes governing this market in a number of countries to ascertain if these can provide information about and/or improve competition and consumer welfare within the UK market. The Institute of Transport Economics (TØI) was awarded the contract to carry out this study.

The overall goal of the study is to use the experience of regulatory reform in taxi markets around the world to inform the thinking on the UK market. To help the reading of the report, a Glossary of key terms are included in Appendix 2.

1.1.1 Selection of the case cities and countries

The underlying foundation for selecting the case cities and countries has been to cover a number of countries or cities that have either undergone regulatory reform or which have very diverse regulatory systems. Based on this, the following criteria for the selection of the case cities and countries have been used:

- First and most important, we have focused on countries that have undergone some form of regulatory change
- Second, we have chosen countries with different regulatory regimes.

These criteria reflect the purpose of the study and have resulted in the selection of the following case countries and cities:

- **Sweden**, which deregulated market access, fares and several other forms of legislation in 1990. Later, some new regulations were put in place to alleviate the negative effects of full deregulation. As a result, the Swedish quality requirements for operators are among the tightest in Europe. The Swedish experiences have been explored in several research papers and reports.

The Swedish experiences may be transferred to most countries. In particular, the differences between urban and rural areas are important. To some extent, the experiences were different. In Sweden, there is a one-tier system, in contrast to the UK.

- **The Netherlands**, which have deregulated both market access and fares. The Dutch approach has been a cautious step-wise one, where the experiences from the different changes were evaluated to some extent before they proceeded with further changes. The experiences are investigated in several reports.

The Dutch deregulation is important in assessing the effect of a more cautious approach. Furthermore, the Dutch regulation is a one-tier system. The country is also very densely populated.

- **Ireland** is the country where recent changes have had the greatest impact on the industry. After a long debate on the problems of the taxi industry, the changes were implemented immediately, following a High Court decision in October 2000 that all quantitative restrictions on the number of taxis were to be removed. In Ireland, fares are still regulated by a maximum fare schedule.

In the Irish system, a two-tier system still exists. The PHV industry has traditionally been very important; however, it has decreased in size after entry to the taxi industry was liberalised. The short-term effects of the Irish deregulation are evaluated in a couple of reports. However, these primarily focus on the city of Dublin.

- In **Norway** a one-tier system exists. Here, a quite different approach has been applied to the taxi industry. In some urban areas, the fares have been deregulated, whereas quantity still is regulated to different degrees.

It is important to assess the Norwegian experiences, as the country has adopted the opposite approach to many other countries by deregulating fares while maintaining a regulation on market entry. The experiences are explored in some reports.

- **New Zealand** experienced deregulation of the taxi industry in 1989. One important result was that the two-tier system was abandoned. The experiences from this may prove useful when compared to the UK situation. Furthermore, a number of new requirements were introduced, such as requirements to be a member of an association and qualification requirements for both drivers and operators. After deregulation, taxis are also allowed to offer shared rides.

The experiences from the regulatory changes in New Zealand are explored in several papers and reports. A summary of the experiences will prove useful in particular with regard to the effects of abandoning a two-tier system and imposing requirements for affiliation to an association.

- In **Canada**, several cities have also made changes in their regulation of the taxi industry. We will take a closer look at some experiences. The Canadian experiences are primarily related to quality enhancements.
- In the **USA**, several cities have changed their regulation of the taxi industry. These experiences are interesting as they go in different directions. Furthermore, the experiences are widely reported. Given the lack of information available about the Canadian experiences, we have decided to pursue the US experiences to a greater extent.

These countries provide experiences of different regulatory reforms in taxi markets. As illustrated in Table 1.1, different types of deregulation experiences are covered.

Table 1.1: Type of deregulation experience

		Fares	
		Deregulated	Regulated
Quantity	Deregulated	Sweden New Zealand Some US cities	Ireland The Netherlands Some US cities
	Regulated	Norway	Canada Some US cities

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Both countries and cities with a two-tier system (Ireland, most US cities and some Canadian cities) and a one-tier system (Norway, Sweden, The Netherlands) as well as one with a change from the former to the latter (New Zealand) are covered.

1.1.2 Method and data sources

The focus of this report is on the effects of taxi regulation on the consumer. Most of the analysis is drawn from secondary sources. To some extent, these sources are research conducted for, or by, agencies with a strong vested interest in the outcomes of the research and thus may be subject to bias. We have attempted to correct for this where possible through the use of data from independent sources.

Focus is kept on customer satisfaction from deregulated experiences.

Unfortunately, the different reports consulted have used different approaches to assess customer satisfaction. In some instances, we have tried to derive the effects on consumer satisfaction from other figures. An example is the supply of taxi services, which clearly is an indicator of taxi availability.

2 Conceptual framework

The basic elements of taxi regulation are the taxi industry and the regulatory authorities. The taxi industry provides taxi services in a market. The regulatory authority sets rules for this market. The consumers demand the services.

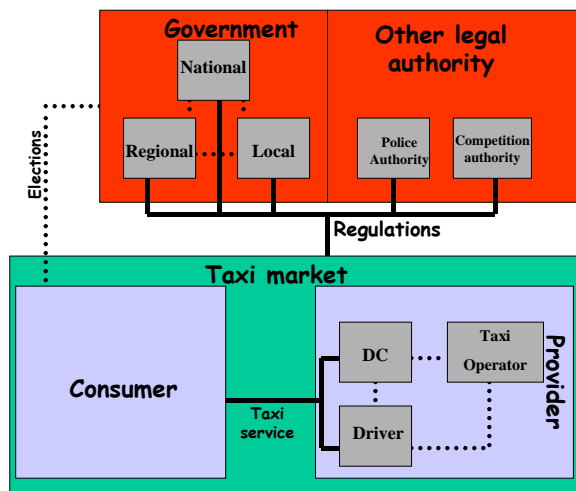
The taxi industry is highly complex. Unfortunately, much of the literature related to the taxi industry considers the taxi industry as one homogenous industry and does not address the complexity of its sub-markets and the different organisational structures or regional differences. As a result, only a small proportion of the literature makes any attempt to clarify and define the services, players and markets discussed and the relevant markets. In this chapter, we will present a conceptual framework for the taxi industry.

Following the outline of the conceptual framework, the country and city descriptions and the description of regulatory reforms will focus on the regulatory framework, differences between market segments and the actual organisation of the taxi industry, including the differences in legislation between taxis and PHVs (where such differences exist). Private Hire Vehicles (PHVs) are door-to-door passenger services as taxis, however they are not allowed to pick up passengers in the street or from cabstands.¹

2.1 Different forms of regulation

The actors involved in the taxi regulation are the taxi industry and the regulatory authorities. The taxi industry provides taxi services to the public (consumers) in what we can term the market for taxi services. The regulatory authority sets rules for this market. This relation is illustrated below. The consumers may be individuals, authorities or businesses.

¹ The term is further explained in the glossary (Appendix 2)



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Illustration 2.1: Major relations in the taxi market

Within this framework, we can define three major groups of regulation. They concern a) direct barriers to entry, b) indirect barriers to entry and c) fare regulations. The direct barriers to entry relates primarily to the quantitative and qualitative regulations on the operators. The indirect regulation covers all other aspects creating barriers to entry. Taxi driver requirements and vehicle requirements are important in that respect.

a.) Direct barriers to entry

The supply of a taxi service is dependent upon taxi operators putting taxi vehicles in service.² The direct barriers to entry are related to quantitative restrictions on the market size (number of operators and/or taxis per operator), or qualitative standards on the operators allowed to enter the market. Both of these create direct barriers to entry into the taxi industry. New operators must pass the quality requirements before they can face the quantity restrictions.

Quantitative regulations

This kind of regulation involve some degree of control of the **quantity of taxis** on the street and thus the **supply in the taxi market**. The degree of regulation ranges from totally closed markets into which no new entrants are allowed, to markets without any restrictions on the number of operators. This range necessarily constitutes a continuum.

Regulation of market access is usually accomplished by some kind of licensing regime. How these licences are issued is fundamental in understanding how market access is regulated. At one extreme, new licences are never issued. The

² In the UK, operators are also called proprietors. Quality requirements to access the profession are related to qualitative standards to become a proprietor. Furthermore, the number of taxis may be regulated. These are the direct barriers to entry for proprietors.

other extreme is when there is no limit on the number of licences issued. In between, there are many different solutions.

This study will focus on describing the actual approaches taken to regulate the number of taxis. To assess the different approaches and regulatory changes it is important to consider:

- The criteria for deciding the number of licences (predetermined ceiling, objective criteria or subjective criteria)
- The criteria for issuing licences (seniority, lottery etc.)
- Particular features of the licences. This may include restrictions on pick-up area, licences per operator, required affiliation to a Dispatching Centre etc.

Quantity regulation has been widely used in the taxi industry. It effectively reduces the threat of competition to the incumbents. As the degree of regulation differs, it is important not only to focus on the actual regulation, but also on the degree of regulation. A very flexible regulation of market access may be very close to open entry.

Qualitative standards on access to the profession for taxi operators

Quality standards on access to the profession are related to the taxi **operator** profession. The standards involve certain **qualitative requirements** which all **operators** must fulfil before they are allowed to exercise the profession of taxi operator. Thus, these requirements apply directly to new entrants (operators) into the industry. Such requirements may exist in addition to the regulation on market access.

Quality standards on access to the profession must be seen in connection with quantity regulation. The combination of quantity regulation and quality standards on access to the profession form the overall direct barriers to entry for operators. The combination, however, is a continuum of regulatory regimes, ranging from closed entry with strict quality standards, to free access without any requirements.

The relationship between quality standards and quantity control determines the composition of operators in the industry. Strict quantity control will make new entry rare. This may assure experienced operators, while hampering the positive effects which competition may yield. Quality standards on operators will also inflict on the organisation of the drivers. With lean quality standards drivers are more likely to become owner-drivers rather than employees.

Following political decisions in the EU to liberalise the economy, the EU Council Directive 96/26 on admission to the occupation of road haulage and passenger transport was adopted. The aim was to replace quantitative control with qualitative control. This was further developed in the Council Directive 98/76/EC, which amended Directive 96/26/EC. The directive does not concern taxis.³ However, some European countries (e.g. Sweden, Norway and Austria) have used the

³ The Directive is related to transport operators using vehicles suitable to carry more than nine passengers including the driver.

directive as framework for the legislation of taxi operators. A summary of this directive is included in Appendix 1.

With regard to access to the profession, it is important to make a clear distinction between the two groups of operators: **owner-drivers** and **companies**.⁴ In particular, there may be different legislation for the self-employed and for companies. Furthermore, in some countries all operators are required to be drivers.⁵ This therefore makes the taxi driver requirements valid for operators as well.

The major quality requirements for access to the profession as a taxi operator, which need to be addressed are:

- Professional competence
- Financial requirements
- Repute (e.g. criminal record)

When quantity restrictions on market access are revoked, quality standards on access to the profession for operators are often imposed. It is important to assess the tightness of this kind of regulation, as they may constitute significant barriers to entry. In that respect, they may explain different outcomes among cities, which have removed the direct regulations on market access.

b.) Indirect barriers to entry

The indirect barriers to entry are related to aspects other than the operators in the market. Taxi driver requirements are important indirect barriers to entry. Vehicle requirements and service requirements are other important indirect barriers to entry.

Taxi driver requirements

This form of regulation concerns the **persons** wanting to drive a taxi. Usually, some qualifications for driving a taxi are required. When qualified to access the taxi driving profession, the person is granted a **taxi driver's licence** or equivalent.

Most countries have some requirements for taxi drivers. As a minimum, they must possess a valid driver's licence. In many cases professional and medical requirements are imposed and suitability considered. Strict requirements may prevent operators from expanding their business. This will also indirectly regulate the size of the market. The "Knowledge" in London is an example of this.⁶

⁴ Owner-drivers are persons who own the vehicle they operate. They may be independent with their own licence to operate, or they may be contractors, working for an operator. (see Glossary)

⁵ This is the case in Norway and Ireland.

⁶ The Knowledge applies to all taxi drivers in London. Both employed drivers and owner-drivers have to pass this test before they can drive a taxi. Operators, however are not required to take this test. Nevertheless, most operators are holders of the Green badge (showing proof of the Knowledge) as they are also owner-drivers.

The purpose of such regulations, however, is usually to assure the quality of service and the safety of passengers and drivers. The indirect effect of entry barriers may be unintended but very important.

Taxi driver requirements are a form of regulation that borders onto access to profession as well as other quality and service requirements. This is important in relation to countries where most operators are owner-drivers. In such cases, the taxi driver requirements also function as quality requirements for operators. In some countries, operators are even required by law to be taxi drivers.

Other quality and service regulation

Quality and service requirements concern the quality of the services offered and the service itself. Most of these requirements are related to the vehicles, the drivers and the operators. These types of requirements are very common in most industries providing personal services, including the taxi industry.

Taxi drivers' requirements and operators' requirements will be considered separately from other quality and service regulations. Thus, within our framework, the quality and service regulations will primarily be related to the vehicles and the service actually offered.

The main purpose of quality and service requirements is to assure a minimum level of **quality of service**. Regulations may also assure different groups of customers a predetermined level of service. Quality and service regulations have often been used to alleviate the negative effects of cutthroat competition.

c.) Fare regulation

Fare regulation is often a controversial topic. Different countries have chosen different approaches to this issue. The differences between fixed and free fare setting policies are important, and other intermediate practices, such as maximum and minimum fares, must also be considered.

Information is a key aspect. Ideally, price competition has no purpose unless consumers can assess the fare in advance and use it for purposes of comparison.

It is also important to gain a deeper understanding of the different market segments in order to assess the effects of fare regulation. In some segments, effective competition based on fares is hard to accomplish. In other segments, fares will be the main source of competition.

Important aspects of **fare regulations** are the differences between fixed and maximum requirements. Further requirements on fare structure and information are also important. It is important to describe the differences between countries with a two-tier system and countries with a one-tier system.

2.2 Different market segments and their characteristics

There are three major market segments in the taxi industry. These are the taxi rank segment, the hailing segment and the telephone-booking segment. The two first

can be designated as the street work segment. These segments may call for different regulatory approaches.

The taxi rank segment and the hailing segment are unique to the taxi industry, as there are several problems, in particular related to information, affecting decisions therein. This is further discussed in Chapter 2.5. In general, these segments are recognized by a great number of suppliers as well as a great number of consumers. All of them being small, this would be the ideal situation for an efficient market solution. However, there are great problems related to imperfect and asymmetric information herein. The spatial nature of these segments also creates problems. Furthermore, unofficial “first-in first-out” rules can make competition impossible. Thus, we expect that there are problems related to the pure market solution of these segments.

In the telephone-booking segment, customers are in a better position to shop around for the desired service at an acceptable fare. Here the problem may be to avoid monopolistic behaviour as there clearly are economies of scale herein. However, an efficient market solution must also capture some of the benefits from economies of scale. Consumers will benefit from some degree of market concentration..

Differences in the relative size of these segments may explain different outcomes of regulatory changes.

2.3 Differences in the market organisation

In some countries such as the UK, regulation of the taxi industry is based on a two-tier system. This allows for different regulation for the PHV sector and the taxi sector. The main difference between the two is primarily that PHVs are not allowed to ply for hire. PHVs can only accept pre-arranged services.

In this study, an important focus will be on the differences between a one-tier system, treating all market segments equally, and a two-tier system, where basically the telephone-booking segment is less regulated, often allowing a separate PHV sector to compete. As a result, we will also make a brief investigation of the PHV sector in countries with such a sector.

In some countries, there are large operators with many employed drivers, whereas in most European countries there are primarily owner-drivers. It is important to also focus on how the taxi and PHV industries have been organized in relation to concentration or fragmentation, both on the operator level and on the dispatching level.

2.4 Regulation, deregulation and liberalisation

The above terms are often used interchangeably. Here, a **regulation** is a rule designed to control the conduct of those to whom it applies. Regulations are official rules, and have to be adhered to by the regulated industry.

When it comes to the process of revoking or reducing regulations, the terms deregulation and liberalisation have both been used. The report will refer to the

term **deregulation** when describing the process of reducing or eliminating certain regulations. The term **liberalisation** will only be used when the deregulation is a de facto removal of all the regulations in an area. This is a process seldom experienced.

Often regulations are not revoked or removed, but changed. The changes implicate the institution of new regulations or changes of the old ones. The process of such regulatory changes will be referred to as **reregulation**.

2.5 Literature review - theoretical approaches to taxi regulation

The taxi industry has been cited as a textbook in the field of Industrial Organisation. In this part, we will give a brief summary of the major theoretical discussions of the field.

The literature review will largely follow a chronological pattern. This will show the historical evolution in the literature.

2.5.1 Background

Efficiency in a market requires that all costs and benefits to society are accounted for and that there is no way of re-allocating the resources to increase the social surplus. Hence, efficiency in the taxi market requires that the cost of production, the benefits and costs of the consumers and possible externalities should all be considered.

There is no point in discussing regulation or deregulation in the taxi market without making reference to what an efficient taxi market would look like in terms of supply, quality, fares and organisation.

When consumers consider their costs and benefits, they take several aspects into consideration:

- The expected waiting time and effort to get a taxi
- The uncertainty of the waiting time and effort to get a taxi
- The choice of route by the taxi
- Professional and reliable driver behaviour
- The quality of the vehicle
- The fares

These factors all have implications for the efficiency of the taxi market. The cost of production is very much related to several of the above-mentioned factors. Thus, there will be trade-offs between the cost of production and the costs and benefits to consumers.

Basic economic textbooks, such as Samuelson & Nordhaus (1992), often start by examining a theoretical situation known as the competitive general equilibrium. In this idealized world, the invisible hand of the market makes sure that scarce resources are allocated efficiently for the ultimate enjoyment of consumers. In this regard, competition has its virtues. Competition, in theory, ensures that the most

efficient producers produce the goods and that the price reflects the scarcity, the demand and the cost of production. For the taxi industry, a good illustration of this theory is provided in Hooper (2000).

However, this requires that no player - whether buyer or seller - can influence the prices by himself. Furthermore the consumer must have several suppliers, between which he can freely choose and they must sell identical products. Finally, all the market actors must have easy, free access to all relevant information. These conditions will never be completely fulfilled in a real world market.

When an unregulated market fails to comply with the conditions of an efficient market, we have what is usually termed a situation of market failure. Market failure might justify regulations when the existence of such regulations makes the market yield a more efficient outcome than without regulations. However, the net costs of the regulations must not outweigh the social cost of the market failure. In such cases, deregulation should be considered.

Reasons for and against regulation are often coloured by general political views on the role of Government. This has also influenced much of the literature on taxi regulation. In this part we will focus on theoretical approaches to taxi regulation. These approaches are generally based on general economic theories, which are applied to the taxi industry to explain some of the features and make predictions for possible outcomes.

Theories are abstractions from the real world. They usually simplify the world to explain some of the relations therein. When different economic theories are applied to the taxi industry some of the effects are therefore isolated. This requires that other effects are not considered. Thus, theories may explain some of the effects of the industry. Other effects, which may work in an opposite direction, may not be explained. Arguments about how to organise the real world may neglect important effects and mechanisms if they rely on theories alone. This can result in erroneous predictions.

To make theories more powerful, they should be based on empirical findings. Unfortunately, in the taxi industry such empirical studies are less common. One reason for this may be that it is difficult to obtain the necessary information to assess regulation of the taxi industry. Beesley & Glaister (1983) states this as a reason for not regulating.

2.5.2 The early discussions – arguments for and against regulation

According to Dempsey (2001), free market economic theory has driven much of the deregulation in transportation since the late 1970s. The theory has insisted that government interventions create distortions that thwart market incentives for productivity, efficiency and lower consumer prices. The early theoretical discussion considered both arguments for and against regulation of the taxi industry.

Orr (1969) started the theoretical discussion on regulation in the taxi industry by discussing why New York taxi drivers were opposed to increases in the number of licences (medallions).

Douglas (1972) analysed price and service levels of the taxi hailing market. He argues that a main problem in the industry was that customers were unable to effectively show their willingness to pay for reduced waiting time and level of service. The reason for this can be found in the urban setting of cruising taxis and the uncertain waiting time for, and level of service of the next taxi. As a result, Douglas argues, prices generated by a competitive equilibrium would be clearly inefficient. An upward pressure on prices would be expected until a certain level.⁷ The problem was the lack of downward pressure on prices. A single driver cannot effectively increase his business by charging a lower fare, as he is unable to reach customers with this message. However, the paper recognizes that taxi associations and fleets may be capable of communicating prices and thus induce a downward price competition.

Shreiber (1975:270) makes a similar argument stating “An individual cab operator, acting independently, cannot gain more passengers if he alone reduces his price below the going rate.” As a result he argues that the lack of downwards price pressure on prices will not be efficient as the customers cannot express their relative willingness to pay for a ride compared to the willingness to wait for a taxi. Thus, availability may be too high. He argues that regulation of fares is necessary to establish an efficient level of taxi occupancy and availability. In the absence of price regulation, fares are likely to be too high, inducing a low level of taxi occupancy.

Further, Shreiber (1975) argues for regulations on entry. The argument is based on the externalities taxis impose, such as congestion and pollution. Thus the fares in a system of free entry will not consider the “social” costs. He argues that the fares of taxis may be too low compared to substitute products such as mass transit. This will encourage more people than is socially efficient to take a taxi rather than public transport. He further argues that the absence of barriers to entry makes it easy to start a taxi operation. In times of high unemployment this will make the taxi industry more attractive to newcomers. As a result, the supply of taxi services will increase during depressions and decrease during upturns. Such cyclical fluctuations, he argues, will hurt those who are taxi drivers on a permanent basis. Thus restrictions are needed to provide some income stability.

In later articles (Shreiber 1977 and Shreiber 1981) the argument is clarified by noting the limited application to the hailing segment. However, Shreiber argues that the fundamental difference between the telephone booking- and the hailing segments make it possible for actors to differentiate the fare policies.

Several other contributions later questioned the view of Schreiber. The first of these was Coffman (1977), who questions all the reasons for regulation proposed by Shreiber. His main points of criticism are related to the lack of empirical evidence. According to Coffman, the model is unrealistic since taxi fleets, taxi ranks and telephone bookings will undermine his arguments. Furthermore, he

⁷ The argument is basically as follows: At the prevailing fares, a single taxi driver can increase his fare and make more money given that the extra fare does not exceed the cost of the expected additional waiting time of the customer. All drivers will perceive this. As a result, the industry income rises and attracts more taxis reducing the expected waiting time of customers. Finally, the individual incentive to increase fares will disappear.

argues that the problem of regulatory capture might create a regulated monopoly. When it comes to externalities such as congestion and air pollution, he expects other means to reduce the problems to be more appropriate.

Coffman also rejects Shreiber's view that stabilising the income of taxi drivers is a reason for regulation by referring to previous, poor experiences of regulations related to rent control, agricultural price supports, minimum wage laws, fair trade laws, and so forth.

The above discussions clearly show the two fundamentally different views on the functioning of a market. One argues that the market will solve most problems, while the other argues that imperfections in the market call for interventions. This early discussion on taxi regulation shows that the differences in views are primarily related to the hailing segments.

2.5.3 The US deregulation movement of the 1980's

The deregulation movement in the USA in the 1980's also affected the taxi industry. Supported by the counter-arguments of regulation above and new arguments, entry and fares in several cities were deregulated.

The highlight of the discussion was the report by Frankena & Pautler (1984), which provided an economic analysis of taxi regulations and experiences with regulatory reform. They discussed several rationales for regulation and related them to the taxi industry. They concluded that; "no persuasive economic rationale is available for the most important regulations." Nevertheless, they found some rationale for regulation in relation to fare ceilings and safety and liability issues.

The hailing segment was analysed by Beesley & Glaister (1983). They found arguments for regulation, but the regulators would suffer from the lack of relevant information. Based on the problem of effective regulation, they considered that the other arguments for free entry should be prominent in the discussion of regulation.

2.5.4 Change in the tide – experiences from the deregulation movement

After the papers by Frankena & Pautler, the discussion on taxi regulation seems to have been lain dormant for some time. A few years later, Teal & Berglund (1987) picked up the discussion. They considered some of the impacts of deregulation in the USA and found that the expected positive effects had largely not been achieved. The advocates for deregulation had expected an increase in the size of the industry, fare reductions, improved response times, and innovation in new services. Teal & Berglund found that, in many cases, the opposite had occurred.

They argued that the theoretical generalisations of the de-regulation advocates provided no useful explanation of the taxi industry. Such simple models fail to capture the existence of important market imperfections, economies of scope and experience present in the market. Instead they argued for either retaining price control or entry standards.

2.5.5 Recent discussions – focus on the quality of service

As noted above, the experiences from deregulation were not all anticipated. The reason for this has been the focus for recent literature on the taxi industry. In this discussion, search theories and quality of service have been important issues.

Toner & Mackie (1992) make a welfare assessment of the taxi industry. They find several reasons for regulation. Their conclusion is that regulators in urban areas should focus on the balance between price and service. If prices are set at an optimum level, the number of taxis will adjust optimally through market forces, given the service requirements. Furthermore, they argue that quantity controls only should be used for reasons of equity and stability.

Cairns & Liston-Heyes (1996) suggest a search model for the hailing segment, where drivers and customers search for each other. The model indicates that equilibrium of a deregulated market does not exist. Especially in low-demand periods, the cost of searching implies that it might be useful to institute some form of regulation. Nor will there be equilibrium during high-demand periods. Put simply, they argue that deregulation will drive profits to zero. Furthermore, drivers quote the fare. If any search cost exists, the driver will charge a slightly higher price. Because of the search cost, the customer will accept this and the equilibrium is broken.

2.5.6 Other discussion themes

Taxis as an integral part of urban transportation

Manski & Wright (1976) proposed a model for the taxi rank market segment, which recognized that demand is a result of expected waiting time. The expected waiting time is a result of the number of taxis and the utilisation of them. In the model, an increase in the number of taxis or in utilisation would increase the demand. The increased demand would then make the taxi industry more profitable and increase the number of taxis. Over time, this effect would wear off. Based on this model, they argued for the recognition of taxis as an integral part of the urban transportation system. Some infrastructure must be in place for the benefit of the taxi industry.

The value of tradable taxi licences

In several cities, taxi licences are tradable. This is the current situation in several US and Canadian cities. In Ireland, taxi licences were tradable until the recent liberalisation.

The first major paper addressing the question of tradable licences was Orr (1969). He discussed the effect on the individual operator's profit of an increase in the number of licences. The conclusion was that an increase in the number of licences would depress the operator's profits. This paper started a theoretical discussion.

As noted by Gaunt (1996) the behaviour of taxi licence values is not expected to present any great mystery. The licence value will represent the present value of all future expected profits that will accrue from the operation of a taxi licence. When

fares decrease or the number of licences is increased, a profit reduction is expected, also implicating a reduction in the value of the licences.

Nevertheless, some authors have investigated the expected effects on changes in fares and the number of licences. In Beesley & Glaister (1983), a model taking both price and service elasticity into account is proposed. Their model does not necessarily imply that lower fares or an increase in the number of licences will decrease profits. Based on this, the authors do not recommend the use of licence values as a policy tool. As a policy tool, licence values are too ambiguous. In addition, they question the availability and authenticity of such licence value figures.

In Fischer, Burns, et al. (1992) an experiment was conducted, investigating the market for taxi licences. The experiment was conducted within a laboratory framework, with different groups of people being issued tradable assets replicating the taxi licences. The reason for the experiment was the government's concern for the effect of even a small increase in the number of licences in Adelaide, Australia. The effects of the experiment indicated no effects of a small (5%) increase in assets, though some elements of speculation on future resale prices occurred.

Gaunt (1996a) discussed whether the licence prices might be a useful tool for regulators in deciding the policy. The discussion was related to the Australian experiences. The important factor was what effects changes in fares or numbers will have on the price of the licences. He suggested that: "The most direct and objective proxy of consumers' and producers' welfare is provided by the magnitude of taxicab licence prices" (Gaunt 1996a:344) He also rejected the idea argued by Beesley & Glaister (1983) that in a heavily regulated trade, additional licences are likely to increase licence values.

Cairns & Liston-Heyes (1996) explained by use of a model why prices and entry are regulated as means of promoting the existence and efficiency of a market. Furthermore, they explained why medallions have a positive market value. In opposition to Frankena & Pautler (1984), they argue that a positive licence (medallion) value is not necessarily evidence of inefficient regulation. The efficiency of a regulation should be based on empirical evidence. Positive licence values could, combined with suspensions and threats of revocation, effectively control shirking and assure a high level of service.

The effects of dispatching centres

Even though dispatching centres (DCs) play an important role in most taxi markets in Western cities, their effect have not been coherently studied to any great extent.

One of the few studies conducted was by Månsson (1996). His study concerns the Swedish taxi market. Before deregulation in Sweden in 1990, the law required affiliation to a DC. Also, only one DC was allowed in each licence area. After deregulation, these requirements were abolished. Now, both privately and publicly owned DCs exist.

The study focused on differences between privately owned and publicly owned DCs. No significant differences were found. However, on average, publicly

owned DCs produced more co-ordinated mediations (related to public contracts), whereas private DCs were more efficient in direct mediations (telephone bookings).

Innovation in the taxi industry

Hooper (2000) discuss several questions related to innovation. He first questions whether innovation is more likely to occur in competition or whether it requires some degree of market concentration. He finds no precise answer to the question, but stresses two facts. First, monopolisation will to some extent produce less pressure to introduce changes and will not guarantee that the best technology will be chosen. Second, a major problem with innovation is imitation. Some kind of monopolisation may thus be necessary to induce innovation. This is the reason for patent laws.

2.5.7 The conclusions for optimal taxi regulation found in the literature

Teal & Berglund (1987) dismiss full deregulation. They suggest two policies. First, absolute entry restrictions should be replaced by entry standards and fares should be liberalised. The entry standards should primarily be linked to a minimum size of companies in order to avoid small independent operators. In their view, this would give a good result and assure that the economies of scope be realised. Second, regulation of fares combined with quality standards could make it possible to open entry to all.

Toner (1997) discusses the optimal regulation of the taxi industry. The study focuses on the policy of the UK. He starts by discussing different tools in regulating the taxi industry. Through the use of these tools, the regulatory agency may determine the industry structure, the technology, the products, the prices and the providers.

According to Toner, the purposes of taxi regulation should be public safety, consumer protection, congestion management, accessibility, economic performance and public order. Toner also states that there should only be regulations in the case of market failure.

He suggests three criteria for assessing the suitability of the regulations used: acceptability, proportionality and targeting. An appropriate regulation should be flexible to adapt to changes. Evidence to determine the appropriate regulatory policy should be used. Also, the regulation should be transparent.

Toner's analysis concludes that the objectives of regulation are best met with a regime that bring as many vehicles as possible into a licensing system, and where maximum fares for the taxi rank and hailing segments are controlled, whereas other fares may be liberalised.

Based on the literature survey and the above suggestions for future policies on taxi regulation, the major conclusion is that future taxi regulations should try to avoid mimicking one of the extremes of the ideological debate between regulation and deregulation. A more sophisticated approach is needed.

3 Country and city descriptions

3.1 Ireland

Until 2000, the Irish taxi industry had been very tightly regulated for years, with regard to both fares and entry. New licences were rarely issued. According to several reports, there was a great mismatch between supply and demand, as will be discussed later.

In January 2000, the Ministry of the Environment and Local Government decided to increase the number of taxi licences by 3,200. These were to be issued to current licensees. In addition, 500 wheelchair accessible licences would be issued. This decision was taken to court, based on preferential treatment of current licensees over and above newcomers. The High Court decided against the Ministry stating that the restriction of access to licences to current licensees exceeded the powers of the Minister. This decision effectively cleared the way for deregulation of entry restrictions to the Irish taxi industry. A summary of the subsequent Road Traffic Amendments can be found in Punch (2001).

Compared to most European countries, Ireland has a very high number of taxis per capita.⁸ Furthermore, the PHV industry also provides a substantial number of trips, which come in addition to the services provided by taxis. The PHV industry is not allowed to pick up passengers on the street (plying for hire). However, this has been reported as a major problem. The PHV industry is quite large compared to the taxi industry. In December 2001, 6,891 taxis and 3,000 hackneys were reported in Dublin (Goodbody 2001a).

Most taxis are affiliated to a DC. According to the National Taxi Drivers Union (NTDU), on average, 70 per cent of taxis are affiliated, both in Dublin and in Ireland. DCs are usually organised as specific companies. The technological level of the DCs, however, is lower compared to other European countries. Only 10 per cent of the DCs offer computerized contact between DC and driver. Mobile phones are used extensively. The booking systems are generally manual (90%).⁹

The majority of the taxi operators in Ireland are independent owner-drivers. There are very few salaried drivers. On average, there are almost as many taxis as there are operators. The Dublin taxi market is very much based on the street segments. The table below illustrate this. PHVs are excluded as they are only allowed to make prearranged trips.

⁸ See Illustration 4-3 in section 4.2.

⁹ These figures are estimates provided by the National Taxi Drivers Union.

Table 3.1: Proportion of Taxi Trips by type of segment, PHVs excluded. (Source: Goodbody 2001b)

	Dublin	Average Ireland
Telephone bookings	37.7%	Approx 30%
Taxi rank	29.1%	Approx 20%
Hailed on street	32.6%	Approx 50%

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The Dublin taxi market is particularly concentrated on Fridays and Saturdays. During these two days, 55 per cent of all taxi trips and 64 per cent of all hackney trips are performed. This reflects the proportion of taxi trips taken for social and recreational purposes (66 per cent of all trips). Only 9 per cent of the trips are business and work purposes (Goodbody 2001a).

3.1.1 Current regulation of the taxi industry (both national and local)

The overall responsibility for the regulation of the taxi industry lies at the national level.¹⁰ Detailed responsibilities are given to local authorities. New legislation is under way, and in February 2003, the Minister of Transport established the Office of National Taxis Regulator.

Quality requirements to access the profession

An operator's licence, also called a plate licence, is required to operate a taxi service. Local authorities issue such licences, which is valid in the licence area only. The licence areas coincide with the boundaries of the regions.

Each licence must be allocated to a specific vehicle. Furthermore, a certificate of roadworthiness for the vehicle from the national Car Test Centre is required for an operators licence to be issued. The assigned vehicle must pass an annual vehicle test for the licence to be valid.

Except for the approval of vehicle, no specific requirements apply for operators. However, taxi operators must be taxi drivers in that they hold a Public Service Vehicle driver's licence (PSV driver's licence). In theory, anyone with a PSV driver's licence may start an operation and hire additional drivers, or drive himself.

Market access

As noted, until 21 November 2000, the number of operators' licences was regulated. The licences were transferable and few new licences issued.

Access to the market is no longer regulated, as market access is free. Under the new regime, the issuance of new licences is now an administrative process only. Nevertheless, certain requirements apply to the licences. Most important is the

¹⁰ The Ministry of the Environment and Local government have been the relevant authorities. However much of the responsibility has recently been transferred to the Department of Environment.

fact that licences are issued locally and only apply to the licence area where they are issued. Furthermore, there are no restrictions on the number of licences an operator can hold, except that each licence is assigned to an approved vehicle.

A substantial licence fee of €6,350 is required before a licence is issued (Competition Authority 2002). For wheelchair accessible taxis, the fee is only €127.

Taxi driver's requirements

A Public Service Vehicle (PSV) driver's licence is required. With such a licence a person may drive a taxi and/or get a taxi plate to operate a taxi vehicle (see above). The test is a 3-hour written test. No local area knowledge tests are required. A background check by police is also required. Appeals can be lodged against the police decision.

Fare regulations

Fares are regulated by maximum or fixed fares decided by the local authorities. Local authorities also decide the actual fare level. The fare structure, however, is fixed for the whole of Ireland. Local authorities must vote upon changes in the fares and also decide on the taximeter areas. The carriage office enforces the fares.

Fares are not regulated for PHVs/hackneys.¹¹ However, these are only allowed to make pre-arranged trips. Furthermore, they are not allowed to have any sign advertising their services, or to use a taximeter.

Quality and service regulations

National authority regulates the quality of taxi vehicles through a set of minimum requirements. The National Car Testing Centre carries out the annual vehicle tests related to roadworthiness and emissions. The local Garda (police) also enforce the requirements related to safety and appearance.

A taximeter is required. From 1 September 2002, an automatic printed receipt is also required.

3.1.2 The situation before deregulation

Before deregulation in November 2000, a fixed number of taxi licences existed. In Dublin, the number had not increased very much during the two decades with regulation. Actually, the number of licences had only increased by 900 between 1978 and 2000.¹² At the time of deregulation, 2,720 taxis were registered.

¹¹ In Ireland, a hackney is considered a PHV as opposed to in the UK, where a hackney is basically the same as a taxi. (See the glossary)

¹² The major increase occurred after 1997. The number of registered taxis in 1998 was 1,974 (Competition Authority 2002).

The Irish taxi industry was also characterised by a second-hand market for licences. According to the Competition Authority (2002), licences were traded for amounts in excess of €100,000 each. The deregulation effectively removed the second hand value of the licences.

The demand for taxi and hackney carriage (T&H) services in the wider Dublin area before deregulation has been evaluated in several reports. Some of these are summarised below. All of these recognised a great mismatch between supply and demand.

In 1998, Oscar Faber (1998) provided a thorough investigation of the local taxi industry. The major recommendation was to phase in deregulation of entry over 10 years, while keeping the regulated maximum fares.

The same year, Fingleton, Evans, et al. (1998) made almost the same recommendations. Kenny & McNutt (1998) focused on the second hand market for taxi plates and suggested a “swift move to complete entry liberalisation, but in the absence of such a move, the revocation of the right to transfer the taxi plate is a necessary and inevitable step for any sustainable long- term market configuration with entry liberalisation” (Kenny & McNutt 1998:19).

In a report prepared for the National Taxi Driver’s Union and the Irish Taxi Driver Federation, Brendan Lynch (1998) rejected the recommendations above. They concluded: “A sensible regulated taxi service is in the best interest of the future prosperity of the city” (Brendan Lynch 1998:15). Their rejection relied on the assumption that deregulation would make it impossible to make a decent living as a taxi driver and, as a result, very few would be willing to work as taxi drivers. This they argued would lower the quality of drivers and inflict on the quality of service.

Based on the evaluations of the excess demand of taxi services particularly in Dublin, the Ministry of Transport proposed an increase in the number of taxi licences. However, the new licences were to be issued to existing licensees. The total deregulation of market entry followed from a High Court decision against the legality of this change.

3.1.3 Major regulatory changes

Following a High Court decision in October 2000, all quantitative restrictions on the number of taxis were removed. Due to this, the regulatory changes in Ireland are among the most abrupt changes taking place in any country. Almost overnight, the industry went from a state of closed entry to open entry. Without any policy to alleviate the negative effects, it should come as no surprise that the effects were important and came about instantly.

The only regulation, which actually was altered in 2000, was access to the market. The other regulations of the taxi industry were more or less as before. Fares were tightly regulated whereas the requirements of drivers and operators were lightly regulated. No other changes were introduced as to alleviate the possible negative effects of deregulation. The effects of the deregulation are described in the next section. To alleviate some of the effects of the deregulation, some new legislation has been introduced and more is foreseen.

To alleviate the effects of the eroded value of the plates, a hardship panel was appointed by the Minister for the Environment and Local Government. The report of the panel was published in December 2002 (Hardship Panel 2002). The Panel reported that as a direct result of the liberalisation of access to taxi licences, certain licence holders suffered extreme personal financial hardship. One of the duties of the newly-established Office of Taxi Regulator will be to assess the applications for financial compensation.

Also following the deregulation, several proposals for improving the regulation of the taxi industry have been put forward. Most important are the proposals to tighten the quality standards and make the enforcement more credible. The proposed changes in the regulation have not yet been put into force. However, changes are expected. One important step on the way has been the establishment of the Office of the Taxi Regulator.

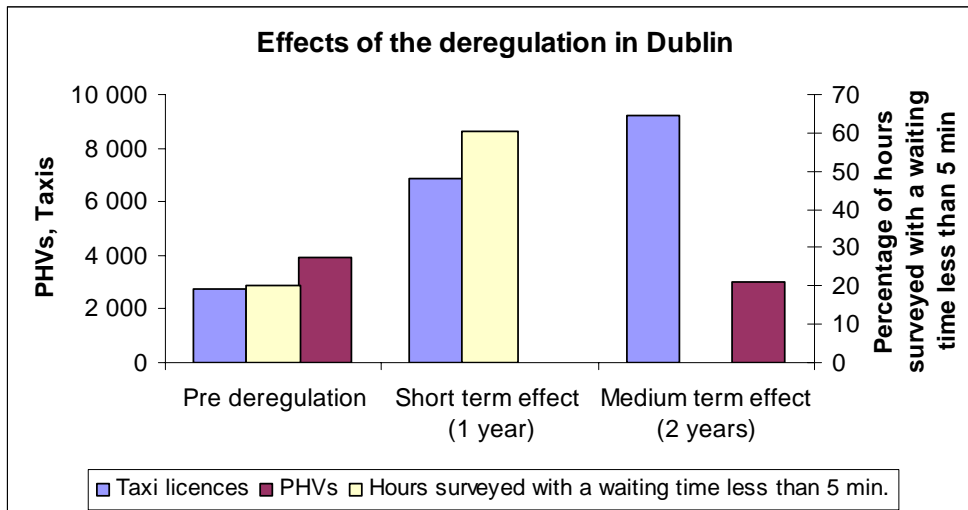
3.1.4 Experiences with regulatory changes

The Irish experiences from deregulation are primarily related to Dublin. However, according to the NTDU, the experiences from Dublin are fairly representative for the rest of the country. The early result of the deregulation is summarized in Goodbody (2001a) and Goodbody (2001b). The main conclusions in relation to the effect of deregulation are:

Taxi availability and waiting time

Illustration 3.1 indicates the increase in the number of taxis and the decrease in waiting time in Dublin. The waiting time of customers has improved significantly. From 1997 to 2001, the percentage of hours where the average waiting time at taxi ranks was less than 5 minutes increased from 20 per cent in 1997 to 60 per cent in 2001.¹³ This is a result of increased availability. A survey by Goodbody (2001b) show that on average, a passenger in Dublin will have to wait for 2.8 minutes for a taxi to come by. However, 86 per cent will have to wait less than 5 minutes and 34.4 per cent will get a taxi instantly. The major problems occur in the post midnight period. At that time, the average waiting time is 7.5 minutes with 63 per cent getting a taxi within 5 minutes.

¹³ This is from a survey presented in Goodbody (2001b).



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Illustration 3.1: The effect on taxi availability and waiting time from the deregulation. (Source: Goodbody 2001b)

The waiting time for pre-booked taxis has also improved, improving the reliability of the taxis. In 2001, 48 per cent of the pre booked taxis arrived less than 5 minutes after scheduled, whereas in 1997 only 23 per cent did the same. However there are still major problems on the telephone-booking segment. A mystery fares survey (Goodbody 2001a) indicated that 30 per cent of the attempted telephone bookings were unsuccessful.¹⁴ The major reason was that the company had no service available at that time. According to Goodbody (2001a) the relatively small size of the taxi companies is a major reason for these problems of availability in the telephone-booking segment. Because of their small size, the taxi companies may not have taxis available in the vicinity.

The increased number of taxis after deregulation is striking. In 2000, prior to regulation, there were 2,720 taxis and 3,920 hackneys operating. (Goodbody 2001a). After the deregulation, licences were issued at a rate of 340 per month. In December 2001, 6,861 taxis were registered and by July 2002, the numbers were up to 8,503. The most recent figure is 9,230 taxis in November 2002.

Information from the effects of deregulation in other parts of Ireland is scarce. However, from November 2000 to November 2002, the following increases in the number of licensed taxis were reported from different licensing authorities in Ireland:

Dublin	-	increase from 2,722 to 8,609 (+216%)
Cork	-	increase from 216 to 590 (+173%)
Galway	-	increase from 148 to 410 (+179%)
Limerick	-	increase from 207 to 434 (+110%)
Waterford	-	increase from 41 to 147 (+258%)

¹⁴ The mystery fares survey involved surveyors undertaking actual cab journeys and recording details of factors such as waiting times and the quality of service offered by the cabs. Both the street work and the telephone booking segment was surveyed.

The quality of service

In the survey by Goodbody (2001a), consumers were asked about their attitudes to value for money offered by taxis in Dublin. The table below summarizes the findings.

Table 3.2: Attitudes of Consumers to Value Offered by Taxis (Source: Goodbody 2001a)

Taxis Offer Good Value for Money	All taxis 2001 %	All taxis 1997 %
Agree strongly	14.4	8
Agree	38.7	44
Neither agree nor disagree	17.9	27
Disagree	20.2	15
Disagree strongly	8.8	4
Total	100.0	100

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The table illustrates that more consumers now perceive taxis as offering poor value for money compared to 1997. There has been only a marginal change among those perceiving the value to have increased. The major change, however, was among those who were indifferent to the changes in value for money. Nevertheless, more than 50 per cent consider taxis to offer good value for money.

There may be different reasons for this result. As shown in Illustration 3.1, and as discussed above, the waiting time of consumers has decreased. Considering the reduced waiting time and the regulated (unchanged) fares, we would expect the value for money to have increased unless a decrease in quality of services was experienced. This may explain the lack of satisfaction with the reduced waiting time.

In general, the public supports the deregulation of the taxi industry. 49 per cent of the customers perceived the impact of deregulation on the level of service to be positive, while 67 per cent agreed that the deregulation had been a good idea. Business users were more negative about the effects; only 16 per cent perceived the impact on the level of service to be positive.

Frequency of taxi usage

The frequency of use of taxis has increased. This is supported by the fact that the proportion of taxi users using taxis at least weekly increased from 43 per cent in 1997 to 51 per cent in 2001 (Goodbody 2001a). However, the penetration of taxi usage among the population as a whole has remained constant.

The concluding remark is that those using taxis seem to have increased their frequency of usage, while the infrequent users still seem to prefer other modes of transport.

Effect on the PHVs

The number of PHVs (hackneys) has decreased in Dublin following deregulation. The obvious reason is the reduced cost of entering the taxi market and the low barriers to entry. Previously a taxi licence had to be bought to enter the industry.

Combined with few indirect barriers to entry, several PHV operators have turned to the taxi profession. Nevertheless, PHVs still have a strong market share of the telephone-booking segment. Most of the new entrants to the taxi industry have entered the street work segments.

Consumers, however, view taxis and PHVs as complementary services in the telephone-booking segment. This is underlined by the similarities between the taxi journey purposes of the two different supply modes.

Driver working hours

The earnings of drivers have dropped, forcing them to work longer hours to provide the same income. An analysis provided in Goodbody (2001b) shows that if a driver were to work a normal 40-hour week, his earnings would fall significantly compared to the situation prior to deregulation. This analysis however is primarily related to the cost increases rather than the reduced number of trips per taxi. According to Goodbody, a 16 per cent increase in fares would be necessary to bring the earnings up to a level where they could earn a sufficient living from a 40-hour week as opposed to the 60 hour average for a driver. Such long working hours clearly have safety implications.

Possible re-regulation

Based on the effects of deregulation, the Competition Authority (2002) suggested some improvements to the legislation. First, fares should be rebalanced to reduce excess supply and assure adequate service at all times. The maximum fare policy should be retained. Second, quality standards should be tightened.

3.1.5 Summary

Several reports showed a great mismatch between supply and demand of taxi services prior to the changes in 2000. As a result, a proposal to increase the number of licences was put forward. New licences were to be issued to existing licensees only. This targeted increase in taxi licences was proposed as to assure that the licences were rapidly mobilised and with regard to existing taxi licence holders. When the High Court decided against this proposal, the only objective left was to increase supply.

The regulatory changes in Ireland are summarized in Table 3.3. We have also included some of the later adjustments foreseen in the regulation.

Table 3.3: Summary of the Irish regulatory changes

	Before deregulation	After deregulation	Later adjustments
Fares	Regulated	No changes	
Entry	Tightly regulated with transferable licences	Quantity restrictions removed	
Operators	Must have a PSV licence and an approved vehicle	No changes	Stricter requirements foreseen
Drivers	Must have a PSV licence	No change	Stricter requirements foreseen
Other quality and service	Vehicle approval, taximeter	No changes	Stricter requirements foreseen
PHVs	Not regulated. Only allowed to make prearranged trips		

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The effects of the regulatory changes are summarized in Table 3.4. Unfortunately, little evidence exists about the effects outside Dublin.

Based on the Irish experiences from regulatory changes, we can formulate the following lessons to learn from regulatory changes.

- If entry is liberalised without other direct barriers to entry being introduced, the number of taxi operators will increase significantly. These operators are previous salaried drivers, previous PHV operators or newcomers in the industry. The utilisation of the taxis, however will decrease. As a result supply does not increase as much as the increased number of operators would indicate.
- The demand for taxi services do not increase as much as the supply. This will reduce the profitability in the industry and put a pressure on quality and fares. While maintaining fixed fares, there are indications that the quality of service in Dublin has declined.
- Consumers will benefit from the increased availability through reduced waiting time. Some of this may be offset by reduced quality of service. Both of these factors will be most important for the street work segments.
- If fares continue to be regulated, the PHV/Hackney sector can function as a complement and an important market corrective to the taxis in the telephone-booking segment. However, several PHV operators will become taxi operators reducing the size of the PHV industry.
- The new entrants primarily focus on the taxi rank segment. Thus, the service offered by telephone booking services does not necessarily improve much.

Table 3.4: Summary of the effects of the Irish regulatory changes

	Large municipalities (Cities)	Medium sized municipalities	Rural areas
Market characteristics	The taxi rank and hailing segments dominate	N/A	N/A
Supply	Significant increase. In Dublin, the number of taxis has more than tripled. For Ireland as a whole, the number of taxis has doubled.		
Fares	Fares are still regulated. Thus no changes have occurred due to the deregulation of market access.		
Level of services	<p>Significant reduction in passenger waiting time between 1997 and 2001.</p> <p>The percentage of telephone booked taxis arriving less than 5 minutes after schedule increased from 23% in 2001 to 47.5% in 2001.</p> <p>For passengers in city centres after midnight, the percentage with waiting time at ranks in excess of 30 min decreased from 43% to 6.2%.</p> <p>The level of service has increased most at taxi ranks.</p>	N/A	N/A
Organisation	Most newcomers are small independent operators.	N/A	N/A
Innovation	No significant innovations reported.	N/A	N/A
PHVs	The number of PHVs has decreased. However, this is primarily related to the opening of the taxi market rather than a change in customers' preferences		

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3.1.6 Sources

EIM (2002)
 Goodbody (2001a)
 Goodbody (2001b)
 Competition Authority (2002)
 Hardship Panel (2002)
 Fingleton., Evans., et al. (1998)
 Kenny & McNutt (1998)
 Brendan Lynch (1998)
 Bekken (2003)
 Oscar Faber (1998)

3.2 The Netherlands

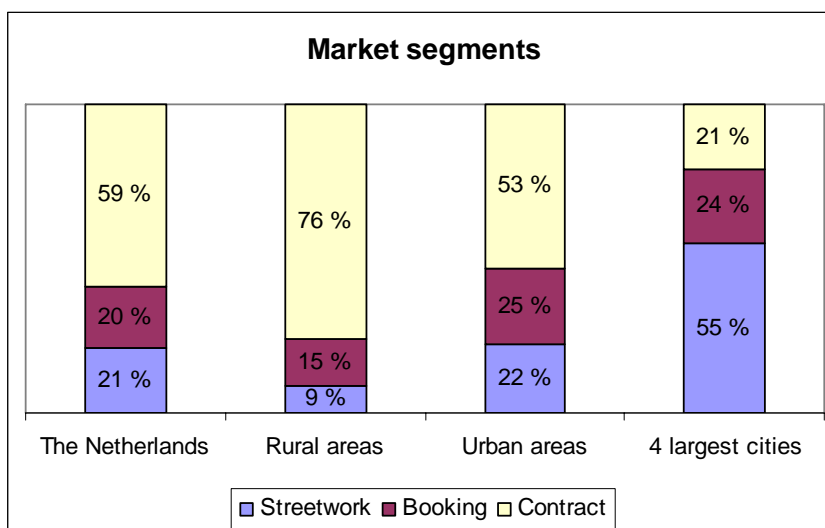
The Netherlands is one of the world's most densely populated areas. More than 90 per cent of the population live in cities (Johansson et al). However, the population is more concentrated in the southern part of the country, rather than the north.

From 1988 until a new Taxi Act came into effect on 1 January 2000, the Transport Passenger Act of 1988 regulated the taxi industry. One of the objectives of this Act was to liberalise and deregulate collective passenger transport including taxis. An evaluation of the Act in 1992 revealed that the desired effects had not occurred for the taxi industry. This made it necessary to revise the taxi policy (Taxiwet 2003).

The Dutch taxi industry is comprised of a large number of small units, but also a number of larger companies. On average in the Netherlands, each operator has 5 taxi vehicles. In Amsterdam the average number is close to 1, whereas the other large cities have a somewhat larger number of taxis per operator.

There is a high level of DC affiliation in the Netherlands. In the 4 largest cities 89 per cent of the taxis are affiliated to a DC, whereas in the Netherlands as a whole, 67 per cent are affiliated (Nipo 2002c). The competition between the DCs is also good. In Amsterdam there are 5 DCs. The technological level of the taxis is also fairly high and a mandatory on-board computer is foreseen.

The importance of the different market segments differs greatly between urban and rural areas in the Netherlands. In Illustration 3.2, the importance of the segments in monetary terms is illustrated. The importance of the public sector is also evident from this. Taxis are extensively used for public purposes. In the country as a whole, close to 60 per cent of the trips are carried out via public sector contracts. This ranges from a low 21 per cent in the four largest cities to a high 76 per cent in rural areas.



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Illustration 3.2: Proportion of taxi turnover by market segment (Source: Nipo 2002c)

Considering that the conditions of the contract work is much like the telephone booking segment, this also indicate the size of the different market segments. In

EIM (2002b), it is estimated that 30 per cent of the trips in Amsterdam originate from telephone bookings. In the country as a whole, the corresponding figure is 70 per cent. This is much like the figures illustrated above and underlines the difference between urban and rural areas.

3.2.1 Current regulation of the taxi industry (both national and local)

The overall responsibility for taxi regulation and setting quality requirements for operators, drivers and services lies at the national level. Before deregulation, local authorities were responsible for dealing with these issues. As a result, there were different solutions at the local levels. The overall responsibility for legislation on entry and fares is also a national responsibility, following deregulation.

Quality requirements to access the profession

The requirement for taxi operators applies to the person in charge of the operation. Taxi operators are not required to be drivers.

Taxi operators must meet certain requirements to be allowed to start an operation. A written exam on professional skills must be passed and criminal records checked. 6 years of experience as a taxi driver grants exemption from the written exam. Anyone fulfilling these requirements may start an operation. The licence to operate must be renewed every 5 years.

The operator's licence was limited to regions until 2000, when all of the Netherlands became one licence area.

For a transition period from 1999 until 2002, a capacity requirement for new operators applied. The newcomers had to prove a certain level of turnover per taxi per year and a minimum of 390 hours of operation per quarter.

Access to the market

Before deregulation in 2000, the number of licensed operators was regulated based on demand. Local authorities assessed the demand and issued licences. After deregulation, anyone fulfilling the requirements to access the profession may start an operation. An operator must have licences for all the vehicles he operates.

Taxi driver's requirements

All taxi drivers are required to have a valid taxi driver's licence. The licence must be visible for all passengers. There are no prior qualifications for this licence, but medical requirements and an assessment of criminal record apply. The licences are valid for 5 years.

Taxi drivers are required to follow the European and national laws on working time. This applies to all drivers, whether self-employed or employees. All rides are to be written down on a card stating the driver's name, as well as the time and place of departure and arrival of all trips and various other specified information. All drivers are to collect the same data. The operators are required to keep these cards for two years and present them to inspectors on request.

These cards allow the inspectors to check whether the regulations for working conditions are being followed.

Fare regulations

Until 2000, fixed fares applied. After the new Transport Act in 2000, liberalisation of fares was introduced. The first step was to introduce maximum fares. Maximum fares still apply. Some deviations from the maximum have been reported; however, on average the fares have increased. For contracted services the fares can be negotiated required that the fares are below the maximum. All taxis affiliated to the same DC must have the same fare structure. The fare schedule must be visible for customers from outside the vehicle.

Quality and service regulations

The Dutch vehicle requirements are primarily related to the taximeter and the roadworthiness of the vehicles. The legislation is implemented through an annual taxi vehicle test. This test relates to roadworthiness and also checks the taximeter. Taxis are required to have blue licence plates.

In the future, on-board computers are likely to be compulsory. These will automatically register working conditions, trip details, print fare receipts and collect other information. This will reduce the administrative time and cost of control. The date for the implementation of compulsory on-board-computers has not yet been decided.¹⁵

As part of the new Taxi Act, the taxi industry was required to set up a system for handling complaints. Every operator is now required to have a complaint handling service. The operator first handles the complaints. If complaints are not settled here, the customer can forward the complaint to a dispute committee. This committee will try to settle the disputes or come up with advice for solutions. However, the committees are not allowed to revoke licences.

3.2.2 Major regulatory changes

A new taxi bill was formulated in 1996. On 7 December 1999, the Act was finally passed by the Upper House. The objectives of the new Act were to strengthen the role of the taxi with respect to other modes of transport and motivate more people to use taxis more often. Furthermore, taxis are regarded as a complement to other public transport modes. Thus, it is hoped that new services integrating taxis and other public transport modes will create more effective urban transport solutions (Johansson et al. 2000).

The new Act included both reregulation and deregulation of certain aspects and supportive measures as well as intensified supervision and enforcement. The opening of the market was expected to stimulate product innovation to meet consumers demand. This would in turn result in quality-price differentiation, which consequently would make commuting by taxi more attractive (Taxiwet 2003).

¹⁵ The source for this is the Taxiwet homepage; <http://www.taxiwet.nl/home/index.html>.

The new Act will be gradually implemented from 2000 to 2004. The stepwise implementation was made as to allow for monitoring of the effects in order to modify components of the law if necessary. The stepwise implementation also includes yearly reviews of the effects of the changes.

The most important changes in the new Transport Act were:

- Regulation on access to market revoked. This was introduced between January 2000 and January 2002, requiring a certain turnover and a 30 hour working week. Before the new Transport Act, access was regulated, but demand was taken into account and new licences could be issued (no predetermined ceiling)
- Fixed fares were changed to maximum fares. However, for contracted services, fares are free. The change to maximum fares was the first step towards full deregulation of fares
- The entire country became a single working area as opposed to several licence/working areas previously. This change became effective from January 1, 2002
- Centralised enforcement (as opposed to local enforcement previously). The reason for this was to ensure equal requirements for drivers, operators and vehicles throughout the country

3.2.3 Experiences with regulatory changes

The implementation of the new law required yearly monitoring of the effects of the changes. This would allow the authorities to react to undesired effects. The monitoring is reported in a series of publications.¹⁶

The monitoring focuses on 11 indicators. These are illustrated in the table below with their expected outcome and the evaluation on the changes from 1999 to 2001.

¹⁶ These are made available by the Ministry of Transport, Public Works and Water Management on their official internet page for the taxi industry and the consumers:
http://www.taxiwet.nl/taxibranche/t_onderzoekrapportage.html

Table 3.5: The expected and actual development on 11 taxi-indicators. (Source: NIPO 2002a)

	Indicator	Expected development	Experienced development 1999-2001
Output	Cost of market entry	Lower	As expected
	Turnover of operators	More newcomers and increased defection by incumbents	As expected
	Differentiated supply	More choice for consumers	No noticeable effect
	Quality	Improvement	No noticeable effect
	Efficiency	Improvement	As expected
	Load factor	Improvement	No noticeable effect
Outcome	Taxi usage	Increase in passenger and passenger kms	Tends to decline
	Average fare development	Expected to fall	First year a strong increase, second year an increase below inflation
	Modal split	Increased share for taxis	No noticeable effect
Other indicators	Industry turnover	Increase due to increased demand. The increase mitigated by lower fares	Increase due to higher fares not through increased demand
	Employment	Increase due to increased demand. The increase mitigated by increased efficiency	Increase due to increased capacity. The increased capacity, however, is not based on increased demand

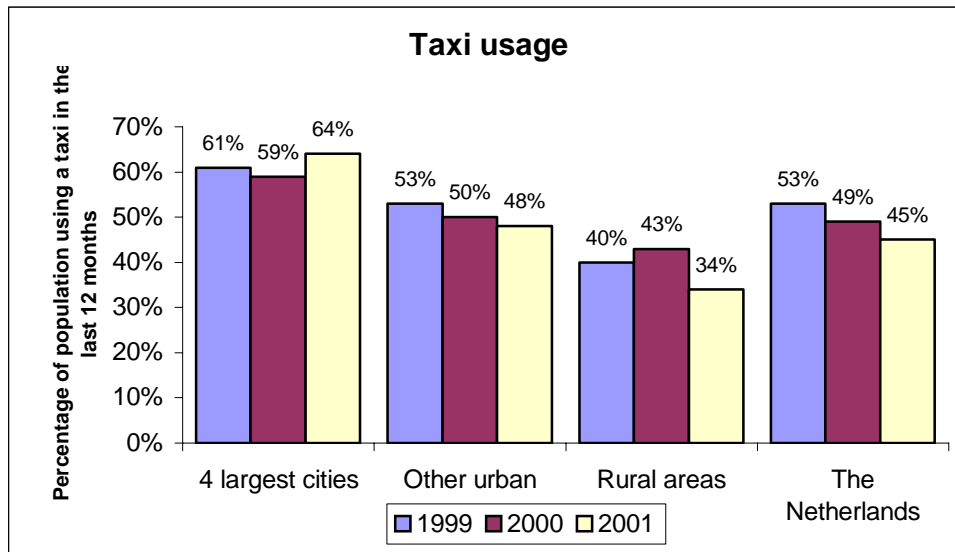
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The indicators above are primarily based on a customer satisfaction survey (Nipo 2002b) and a survey related to the operators (Nipo 2002c). The customer survey provides indicators on the customer satisfaction related to response time, trip time, trip fare, comfort, service and driver friendliness, accessibility, complaint handling and others. Of the indicators referred to in Nipo (2002b), only the taxi fares and the transparency of the fare structure offered any significant changes. Both were considered to have worsened somewhat.

37 per cent of the users indicated that they got a taxi without waiting on their most recent ride. According to Nipo (2002b) this indicates a greater availability than in 1999 and 2000, when this group amounted to approximately 32 per cent. The group of respondents who had to wait longer than 15 minutes was 16 per cent in 2001. Here no change has occurred from the previous two years.

Table 3.5 illustrates the average effect for the entire Netherlands. It is important also to consider the effects in different regional locations. In the following, we will focus on some of the experiences in different locations and on the experiences of consumers.

One of the overall aims of the deregulation was to increase the usage of taxis. The effect however, seems to be somewhat other than expected. This is illustrated below.



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Illustration 3.3: Taxi usage in different regions. (Source: Nipo 2002c)

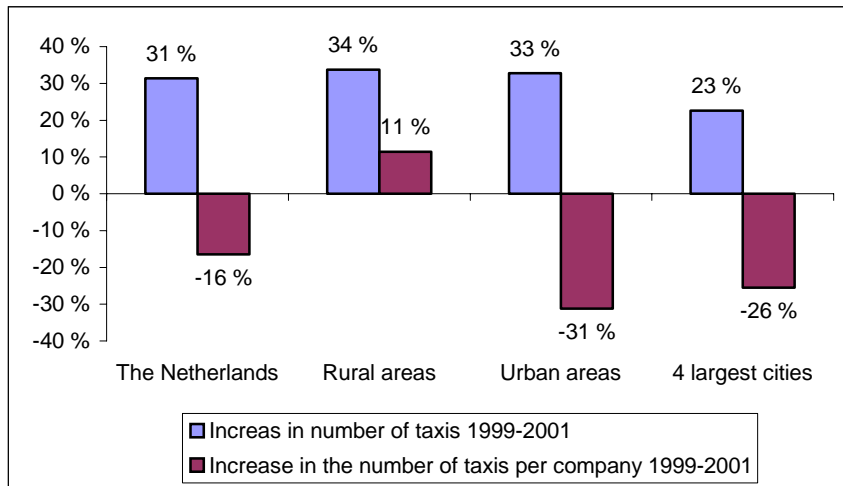
Illustration 3.3 clearly shows that the overall usage of taxis has declined in the Netherlands as a whole. However, in the four major cities there has been an increase. It seems as if the deregulation produced the desired effect in the largest cities, whereas the opposite effect occurred in rural areas.

The number of taxis is an important indicator of taxi supply. An increase in the number of taxis occurred due to a substantial reduction in the economic entry barriers. The usage of taxis seems to decline somewhat. Further, customers do not seem to have reacted to the revocation of the first-in first-out “rule” at taxi ranks. Most still pick the first taxi in the line. These findings are according to NIPO (2002).

Significantly, higher supply in the cities at weekends is also reported. One reason for this is that taxi companies in rural areas work in the cities at weekends. The deregulation also resulted in a large increase in the number of taxis available on the streets in Amsterdam, as more drivers not affiliated to a DC entered the market.

Below, we have illustrated the regional differences in the increase of taxis. It seems as if the number of taxis increased most in rural areas, whereas in the largest cities it was somewhat smaller. Illustration 3.4 also indicates that the increase in rural areas was different compared to the largest cities. A significant decrease in the average number of taxis per company indicates that the new entrants were primarily small, independent owner-drivers. These primarily compete in the taxi rank segment.

In rural areas, the average number of taxis per company actually increased. This may indicate that the incumbents expanded their business, rather than new entrants in the market. This is not surprising considering the minor importance of street work in rural areas.



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Illustration 3.4 Change in the number of taxis and the size of taxi operators for different regions 1999-2001. (Source: Nipo 2002a and Nipo 2002c)

Taxi fares were previously regulated with a fixed fare. This was changed to a maximum fare in 2000. The change to maximum fares was to be the first step towards full deregulation of fares anticipated by the end of 2002. Nevertheless, most companies currently charge a fare below the maximum fare.

The average fare for a “standard” taxi trip in a city increased by 12.5 per cent from 1999 to 2000, and by 1.3 per cent the year after. For urban areas, the changes for a “standard” trip were 14 per cent from 1999 to 2000 and 1.4 per cent the year after (Nipo 2002d). These figures are all in nominal terms. The overall inflation in the Netherlands was 2.6 per cent from 1999 to 2000 and 4.5 per cent from 2000 to 2001 (Statistics Netherlands). Based on the initial high price hikes, it was decided to retain maximum fares for a period of time. The intention, however, is still full fare deregulation.

3.2.4 Summary

Regarding taxis as complement to public transport, the overall object of the Dutch deregulation of the taxi industry was to strengthen the role of the industry. This would benefit both the consumers and the industry. It was also expected that the liberalisation would result in new services and create more effective urban transport solutions. The background for the regulatory changes, however, was a general liberalisation of public transport. Furthermore, a shift in focus from the licensing process to the need of customers was needed.¹⁷ The changes was not tailored towards any specific segments, but to create an opportunity for a more varied product offer. The resulting quality, price and service differentiations would increase consumer’s options it was believed.

¹⁷ See the official taxi webpage for the Dutch Ministry of Transport www.taxiwet.nl/taxibranche/t_englishsummary.html

The regulatory changes in the Netherlands are summarized in Table 3.6. No PHV industry exists. All door-to-door passenger transport comes under the same legislation. The regulatory changes have been stepwise, thus not all the changes have occurred at the same time. For a transition period, some temporary legislation was also introduced.

Table 3.6: Summary of the Dutch regulatory changes

	Before deregulation	After deregulation	Later adjustments
Fares	Regulated	Maximum fares later to be free	Maximum fares continued
Entry	Regulated locally. Increases considered based on necessity	National deregulation	
Operators	Local requirements applied, different between regions	Written exam. Criminal record check. Licensed vehicles must have blue licence plates	For a transition period, new operators had to prove a yearly turnover and at least 390 hours operation per quarter.
Drivers	Local requirements applied, different between regions	Medical certificate. Criminal record check Working-time restrictions for <u>all</u> drivers.	

Above, we have discussed the experiences with the regulatory changes up to now. It is important to bear in mind that the changes are stepwise. This clearly will influence the outcome. The discussion also shows important differences between different regions based on market characteristics such as the urbanisation and the importance of different market segments such as the telephone, street work and contract segments.

In Table 3.7, we have summarized the major experiences from the Dutch deregulation. Based on the Dutch experiences from regulatory changes, we can formulate the following lessons to be learnt from regulatory change:

- A significant increase in the number of taxis and the availability in all areas, regardless of market characteristics, were experienced. However, in cities where the taxi rank segment dominates, the newcomers have been small owner-drivers, whereas in areas where the telephone-booking segment dominates, the incumbents have expanded their business.
- Taxi usage has not increased as was the intention behind the deregulation. Thus, demand seems to be linked to other factors than the mere supply of taxis. The overall economic situation in the country may be important in that respect. Another reason might be that the supply was satisfactory before the deregulation occurred. In that case, supply would only increase if fares declined or quality improved. None of this has occurred.
- The availability has increased most at taxi ranks and at night and in weekends. This has clearly benefited the consumers. Some of this increased supply is related to the removal of designated licence areas for the taxis. This has made

it possible for operators from rural areas to supply services in major cities in the weekends when demand is low in rural areas.

- The stepwise deregulation has made alleviating policies possible. This has allowed the authorities to react to undesired effects.
- Deregulation does not necessarily result in product innovations. One reason for this may be that new entrants are small. There is a risk involved in product innovations. Thus, some financial strength may be required to create new services. Small entrants do not have such strength.

Table 3.7: Summary of the effects of the Dutch regulatory changes. Where nothing is stated, the same applies to medium sized municipalities and rural areas as for large municipalities-

	Large municipalities (Cities)	Medium sized municipalities	Rural areas
Market characteristics	The taxi rank segment dominates. Some contract work	The telephone booking and taxi rank segments are quite similar. More than half of the trips on contracts	The taxi rank and hailing segments are insignificant, most traffic from telephone booking. Most trips on contract
Supply and taxi usage	Significant increase in the number of taxis. Primarily focussed on the taxi rank segment. Taxi usage has increased but not very much	The effect on supply is similar to that of large cities but more pronounced. Taxi usage declined	A significant increase in the number of taxis, however, the average size of operators also increased. Taxi usage has declined after an increase the first year after deregulation
Fares	The fares increased the first year and fell the second year in real terms. Since deregulation fares have increased by close to 5% in real terms. A maximum tariff exists, but most taxis charge below this		The fares increased the first year and fell the second year in real terms. The overall fare increase equal to that of large cities. A maximum tariff exists, but most taxis charge below this
Level of services	Increased availability, primarily at taxi ranks and in weekends. Customers still follow habit and choose the first taxi in line rather than the best deal		
Organisation	The average size of operators has declined, as more independent owner-drivers have entered the market		The average size of operators has increased indicating expanded business of current operators rather than new entrants
Innovation	No significant new services have occurred		

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3.2.5 Sources

NIPO (2001)
NIPO (2002a)
NIPO (2002b)
NIPO (2002c)
NIPO (2002d)
NIPO (2002e)
EIM (2002a)
EIM (2002b)
Johansson et. al. (2000)
Bekken (2003)

3.3 New Zealand

Together with Sweden, New Zealand represents a country where the taxi industry was totally deregulated over the whole country at once. The restructuring of the New Zealand taxi industry in 1989 was intimately related to decisions to deregulate most aspects of what was then a highly controlled economy. Within ten years, New Zealand moved from being one of the most regulated of the OECD-countries to being one of the least regulated ones (Morrison 1997).

Taxi deregulation had its origins in the Land Transport Act of 1983, allowing road operators to compete over distances previously controlled by New Zealand rail. Even though the 1983 legislation did not recommend changes in the taxi industry as such, it propelled deregulation by blurring the distinction between taxi and other passenger services affected by the legislation (Gaunt 1996). Whereas controls over taxi-licences were kept very strict, licences for Passenger Service Vehicles (PSVs) became very easy to obtain, causing a dramatic shift of demand towards PSV-licences.¹⁸ Thereafter, in 1987, the Minister of Transport announced a formal review of the taxi industry, resulting in the Transport Services Licensing Act of 1989 that removed the quantitative controls over entry and fares from the taxi industry.

Today, three types of authority may be granted to a vehicle owner in New Zealand: (1) a licence to drive a taxi, (2) a transport or taxi service licence to own and operate a taxi business, and (3) approval to operate a taxi organisation. Various configurations of a local taxi industry can result from such a structure, creating a very flexible structure that allows the number, size, and capital outlay of various taxi organisations to be modified according to changes in local market demand (Morrison 1997).

¹⁸ A taxi was defined as being used for hire or reward to any member of the public for the carriage of a maximum of seven persons, while a PSV was defined as a vehicle used for carrying passengers and/or goods for hire or reward. Thus PSVs could perform some taxi services. This two-tiered system created a conflict between taxis and PSVs. PSVs are basically the same as the term PHVs used throughout this report.

3.3.1 Current regulation of the taxi industry (both national and local)

Quality requirements to access the profession

To operate any goods, passenger, vehicle recovery, rental or rail service, individuals or companies are required to hold the appropriate Transport Service Licence (under the Transport Services Licensing Act 1989). Under this Act, taxis are defined as Small Passenger Service Vehicles, which carry a maximum of 12 passengers. Owners of such vehicles are required to have a passenger service licence.

People holding taxi licences prior to deregulation were automatically issued with a passenger service licence. New operators are required to publish a notice, in an approved newspaper, stating their intention to apply for an operator's licence before the application can be processed. All applicants are assessed as to whether he or she constitutes a "fit and proper" person. This includes checks of criminal record, transport offences and the general character of the applicant.

A Certificate of Knowledge of Law and Practice (CKLP) is also a requirement for those persons wishing to obtain a Passenger Service Licence. At least one of the persons in charge of a transport service must have this certificate.

Licence-holders must belong to an approved taxi organisation that offers a 24 hour/7 day telephone booking service, a communication system, and maintains a register of complaints.¹⁹ Both taxi operators and drivers are subject to a demerit point system, disqualifying a licence-holder for five years should 200 or more demerit points be incurred within two years. For example, taximeter tampering would incur the maximum penalty of 100 demerit points.

The requirement to belong to an association was continued after deregulation. The reason for this was threefold (SOU 1999:60). First, it was considered necessary to ensure 24-hour service at all places. Second, it would make control and enforcement easier. Third, some US cities had negative experiences of removing such requirements.

Today the associations are important with regard to self-justice in the industry. Some of the associations require a substantial fee for new entrants. While creating barriers to entry, this fee allows the operators to work under a well known brand. This also makes it easier for consumers to use previous experiences when selecting the next cab.

Access to the market

In 1989 the taxi industry in New Zealand was deregulated. There are currently no quantitative controls on market entry. As mentioned above, each owner of a taxi vehicle is required to have a passenger service licence, but there are no restrictions on the number of passenger service licences issued. Thus a licence-

¹⁹ Exemptions regarding the 24 hour/7 day-requirements may be granted outside the large urban areas where it can be shown that insufficient demand exists for such a service.

holder may operate any number of vehicles under the licence. Multiple hiring is also permitted, and no longer restricted to specific taxi ranks.²⁰

Even though no quantity restrictions currently apply, some quality requirements constitute *de facto* barriers to entry (Gaunt 1996). These are primarily related to quality requirements. Despite no requirement in the Act of 1989 for a minimum number of cars before a taxi organisation can be approved, the Transport Licensing Division of the Land Transport Safety Authority (LTSA) has made it a prerequisite that there be more than five cars before approval can be granted, at least in metropolitan areas.

Taxi drivers' requirements

Drivers of small passenger vehicles must also be licensed. A taxi driver must have held a full driving licence for at least two years prior to making an application. Furthermore, taxi drivers are subject to checks of their criminal record and driving record, and all drivers must pass a map-reading test, hold a first aid certificate, and undergo annual medical examinations. The licence to drive a taxi is valid for five years and must be carried and displayed when driving.

Taxi drivers are also subject to a demerit system. If more than 200 points are incurred within a two-year period, the driver is suspended for the next five years. Demerit points (15, 25 or 100) are incurred when drivers are convicted of criminal offences and illegal operating practices.

All drivers of any vehicle being used for transport services must follow certain rules for resting time. If convicted of a breach of driving hours, a driver can be fined and be disqualified from driving for at least one month. The rules basically limit the working period to maximum 11 hours per 24 hours, and ½ hour rest after 5½ hours driving. All drivers are required to use a logbook to record rest periods.

Fare regulations

No fare regulations currently apply in New Zealand. Individual taxi organisations can set their own fare schedule. The only requirements are that maximum fares are registered with the Secretary of Transport, calibrated on the taximeter and displayed both inside and outside the taxi. Thus, individual operators are not allowed to set their own fare schedule but must follow the schedule of the association.

Other quality and service regulations

All taxi vehicles are required to display a unique vehicle identifier, the name and address of the licence holder, a rooftop sign ("TAXI"), a sign indicating whether the vehicle is available for hire, the procedure for complaints, and the fare schedule both inside and outside the vehicle. A taximeter must be installed and must be tested, sealed and certified every 6 months. Each vehicle must also possess a certificate of roadworthiness, issued by a Testing Station.

²⁰ Multiple hiring allows a taxi to pick up several passengers at different locations on the same trip.

3.3.2 Major regulatory changes

Before deregulation in 1989, four geographically based Transport Licensing Authorities (TLA) controlled the number of taxi operator's licences. Thus, people who applied for an operator licence were required to attend to a public hearing held by the local TLA to assess the need for and public good of the proposed service. In cities with a population exceeding 20,000 the TLA also conducted regular reviews of the need. Additional licences, however, were seldom issued, creating rising prices for the existing tradable licences as demand generally exceeded supply. The removal of the restrictions, however, effectively wiped out the scarcity value of licences (Morrison 1997).

Fares were equally tightly regulated as the Secretary for Transport fixed a fare schedule for the different licence areas. Fares were set on a cost-plus basis, based on cost data provided by the taxi organisations themselves. According to Gaunt (1996) the process was quite subjective, encouraging numerous applications. Thus in 1986, this system was supplemented by a nationally determined system where the costs, the index and the fares were automatically updated every six months.

Quality controls were imposed on the standards for vehicles, driver competence and operator performance. In order to obtain a taxi driver's licence, the drivers were required to be at least 20 years of age, have held a drivers' licence for at least two years and be in good health. Furthermore, prospective drivers had to pass written, oral and practical tests, including a test of local area knowledge. The drivers were also required to keep a minimum period of rest. To prove this, a logbook was required. Besides these, multiple hiring was limited to two people at specific pick-up points, and advertisement on taxis was very restricted.

The lifting of quantitative restrictions allowed a whole variety of new drivers to enter the industry – the unemployed, immigrants, and those between jobs – which led to the imposition of additional qualitative requirements such as the display of identification cards, procedures for passenger safety, and the (re)introduction of area-knowledge requirements. So while New Zealand removed restrictions on the licence numbers and taxi fares charges in 1989, most qualitative controls remained – and in certain respects were strengthened.

According to Morrison (1997), the increase in number of taxis has resulted in drivers working much longer hours to generate the same revenue. A survey conducted in 2002 (Charlton et. al. 2003) showed an average shift length of 10.3 hours, and a total of 42.2 per cent of drivers reported more than eleven working hours in the last 24 hours.

3.3.3 Experiences with regulatory changes

The main results of deregulation have been as follows:

- A tripling of the number of companies in the metropolitan areas and a massive increase in the number of taxis. In 1989 there were 2,762 vehicles nationwide, while by 1994 these had increased to 7,181, a figure far outweighing the growth in population figures.
- The availability of taxi services in smaller areas decreased marginally under regulation (Morrison 1997).

- Post-deregulation has been characterised by a series of mergers between the largest taxi organisations, while at the same time creating leeway for entrants of many smaller operators. Thus the market becomes more segmented.
- Declining fares in real terms in the larger cities (i.e. 15% to 25%), while the changes were more ambiguous in the smaller towns (Morrison 1997). More interesting, however, is the introduction of differential pricing components.
- Service innovations were introduced in the larger cities, including taxi vans and executive taxis. In addition, taxi companies started to tender for public bus routes. Advertisement on taxis was permitted, a new taxi-charge credit system introduced, and the range and flexibility of company accounts increased.
- Many more taxi driver jobs have become available, although this is widely believed to have been accompanied by reduced incomes and longer hours. Furthermore, increasing levels of part-time and temporary workers and use of subcontracting are also reported.

Overall, both Gaunt (1996) and Morrison (1997) note that, especially in the larger cities, the consumer has benefited from deregulation by greater numbers of taxis, shorter waiting times, and a greater range of services. In the smaller towns, however, the results seem more ambiguous. In addition, quantitative deregulation has been accompanied by increased regulatory cost due to significant increases in quality control.

Table 3.8: Changes in the New Zealand taxi industry. (Source: Gaunt 1996b)

Population	Taxis per 1,000 capita		Average Number of Taxi Companies	
			Oct 1989	Dec 1993
100,000+	1.49	2.43 ²¹	4.60	13.00
50,000 - 100,000	N/A	N/A	1.33	2.17
20,000 - 49,999	N/A	N/A	1.00	1.78
10,000 - 19,999	N/A	N/A	0.93	0.93
1 - 9,999	N/A	N/A	0.54	0.48
Nationwide			0.80	1.16

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3.3.4 Summary

The deregulation in New Zealand was particularly tailored as to assure some concentration of the industry. All taxi operators are required to be affiliated to an association providing services 24 hours/ 7 days and providing telephone booking opportunities. Furthermore, new associations must have at least 5 vehicles. This tailoring of the deregulation may be an important reason for the outcome of it. Problems of monitoring the industry has been reduced, economies of scale have

²¹ This figure is from Wellington

been achieved as well as service innovations. Furthermore, the competition has increased as customers are in a better position to compare the fares offered.

The regulatory changes in New Zealand are summarized in Table 3.9. No PHV industry exists, however before deregulation such an industry existed alongside the taxi industry. Some aspects of the regulation have been strengthened after deregulation. Most important for the outcome of the deregulation was perhaps the required affiliation to an association.

Table 3.9: Summary of the regulatory changes in New Zealand

	Before deregulation	After deregulation	Later adjustments
Fares	Regulated. Fixed fares schedules for different licence areas	No regulation, all associations must have the same fare structure. Maximum fares must be registered with the Secretary of Transport	Maximum fares continued
Entry	Number of licences regulated by local TLA. Licences were tradable	No regulation on quantity, minimum standards. Must be affiliated to an association, which provides 24-hour service and booking services	
Operators	No strict requirements	Must have a Transport Service Licence. (Criminal record check and exam)	
Drivers		Taxi drivers' licence required (criminal record, driving record, map-reading test, medical certificate, first-aid certificate)	The driver's requirements were tightened in 1993 imposing a local area knowledge test
PHVs	No strict regulation – it was easy to obtain such a licence, no numeric restrictions apply	No PHV industry exists. All must follow the same requirements.	

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The above table illustrates the previous and current regulation of the taxi industry in New Zealand. It is important to keep this in mind when the outcome of the deregulation is assessed.

Table 3.10 summarises the effects of the deregulation of the taxi industry in New Zealand. Based on the experiences from regulatory changes in New Zealand, we can formulate the following major lessons to be learnt from regulatory changes:

- Significant increase in the number of taxis and the availability for customers in urban areas. In rural areas, where the taxi rank segment is insignificant, there was a small decrease in the supply.
- In urban areas, the increased number of taxis has resulted in shorter waiting times and greater range of services. Some associations have developed shared ride services. All of these changes have benefited the consumers.
- Fares declined in real terms in the largest cities. This is different from several other experiences with deregulation. A major reason for this may be the required affiliation to an association. This has created a better climate for

competition between the associations. In smaller cities and in rural areas, the effect on fares was ambiguous. This may be due to a small potential for new services and new entrants.

- There has been a concentration among the large associations. The biggest have become bigger. At the same time, the number of small associations has increased.

Table 3.10: Summary of the effects of the regulatory changes in New Zealand. Where nothing is stated, the same applies to medium sized municipalities and rural areas as for large municipalities-

	Large municipalities (cities)	Medium sized municipalities	Rural areas
Supply	A significant increase in supply		Marginal decrease in supply in smaller areas
Fares	Declined in real terms, not in nominal terms. More important is the increased fare differentiation	Ambiguous result	Ambiguous result
Level of services	Shorter waiting time and greater range of services.	N/A	N/A
Organisation	Many new small entrants and several mergers of existing operators made the industry more segmented with a few very large operators and many small operators.	N/A	N/A
Innovation	Some service innovations experienced. New taxi vans and executive services	N/A	N/A

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Sources:

Gaunt (1996a, 1996b)

Morrison (1997)

Kang (1998)

SOU 1999:60

Charlton et. al (2003)

Johansson et. al. (2000)

3.4 Norway

In Norway a one-tier system exists. All vehicles performing door-to-door passenger transport must follow the same legislation. As the operator's licence is personal and limits the operator to one vehicle, a large number of small units exist. No large units exist.

Salaried drivers are used extensively. In some places, salaried drivers wanting to become owner-drivers must wait several years to get an operator's licence. The vehicles have a high grade of utilisation, which also require extensive use of hired drivers. The requirement to provide a service at all hours makes salaried drivers necessary.

In some areas several DCs are competing. However, in most licence areas only one DC exists. On average 20 per cent of the taxi services are related to public sector contracts.

Almost all taxi operators are affiliated to a DC (in fact, DC affiliation is required). The high grade of DC affiliation has resulted in a high level of technology and a high degree of vehicle and driver utilisation.

In Norway, the DCs play an important role. This is clearly indicated by the large amount of tips originating from telephone booking compared to the taxi rank segment and the hailing segment. The figures in the table below are from 1997, however, the significance of the telephone-booking segment has not changed considerably.

Table 3.11: Proportion of Taxi Trips by type of market segment in Norway. (Source: Norges Taxiforbund 1997)

	Oslo	Large cities	Medium cities	Small areas	Norway
Telephone booking segment	64%	60%	74%	90%	68%
Taxi rank segment	32%	37%	24%	6%	29%
Hailing segment	4%	3%	2%	4%	3%

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A survey among taxi customers nationwide showed that almost 20 per cent of the taxi trips were paid for by the public sector. This ranged from almost 50 per cent in the most rural areas to 10 per cent in the largest urban areas.

3.4.1 Current regulation of the taxi industry (both national and local)

The current legislation of the taxi industry is very much a result of history rather than any conscious action taken by the authorities. Since 1947 the legislation has remained more or less unchanged. However, the implementation of the legislation has changed somewhat. In particular, larger urban areas have experienced a significant increase in the number of licences. Furthermore, some of these areas have also experienced liberalisation of the fare regulation. Below, we will give a brief introduction into the major regulations currently effective in the taxis markets.

Quality requirements to access the profession

The Ministry of Transport and Communications decides on overall legislation. Operators are required to be taxi drivers and a taxi driver's licence is required. Also, the main occupation must be as a taxi driver. Operators are only allowed to have one ordinary licence.²²

An operator's licence is personal but not transferable. In case of sickness or death, a licence may be leased out for a maximum of 3 years. DC affiliation is generally required. The licence is only valid in its licence area and is affiliated to one vehicle only. Furthermore, the licensee has an obligation to provide a service in periods of low demand. This is only relevant in rural areas.

Operators are required to be affiliated to a specific DC. In some places a small proportion of the operators are allowed to change affiliation. In relation to DCs, the regional authority must approve new players. New operators' licences have to be issued with affiliation to the new DC. The authority cannot change the affiliation of current operators' licences.

New requirements have been prepared. These incorporate the directive EU 98/76 and became effective on 1. April 2003.

Access to the market

The Ministry of Transport and Communications (MTC) decides on overall legislation. Access to the market is regulated through a system of operators' licences for certain licence areas.

The regional authority decides the number of licences for the respective licence areas. The numbers are set after an assessment of demand. The need for competition is also considered. The local authority (county) issues the licences according to seniority.

Taxi driver's requirements

To drive a taxi, a taxi driver's licence is required. This is issued by local police authorities and requires a certificate of good conduct and a medical certificate. The police may also require a local knowledge test to be passed. Such knowledge tests exist in the major urban areas.

Fare regulations

The Competition Authority decides on overall policy on taxi fares. Maximum fares are the rule. Nevertheless, in some major cities the fares have been liberalised since June 2000. In all these areas, there is more than one DC. Thus, competing DCs are considered a prerequisite for the liberalisation of fares. In practice, the maximum fares function as fixed fares. Where fares are liberalised, no strict regulation on the structure or the information applies.

²² A system of reserve licences exists. Such licences are issued to current operators (max 1 per operator). The reserve licences have restrictions on when they can be used. Often the usage is administered by the DCs.

Quality and service regulations

The MTC decides on the overall policy. Maximum seating in a taxi is usually 9 seats including the driver. However, maxitaxis are to some extent allowed.²³ The law stipulates a roof sign and a taximeter, which prints receipts. There are no special vehicle inspections or requirements for taxis. Taxis are treated as ordinary vehicles in this respect.

The law regulates the working hours of hired drivers. For owner-drivers no regulation applies, as they are regarded as self-employed and currently do not come under this legislation. International requirements on working time apply to all, but are not enforced. With regard to DCs, the regional authority may demand a seat on the board.

3.4.2 Major regulatory changes

Another approach to the regulation of the taxi industry has been adopted in Norway compared to most other countries reforming their regulation. The regulation of fares has been revoked in some urban areas, whereas the number of taxis still is regulated.

The experiences from Norway are important as they can give some information about the isolated effect of fare liberalisation. It also provides another approach to the regulation of fares versus quantity, compared to other countries.

In Norway, two major changes have occurred in recent years:

- Taxi fares in some major cities have been deregulated
- Some licence areas have been merged

The fares have only been liberalised in areas where there are competing DCs. The effect of the fare liberalisation has not resulted in any fierce competition. Prices seem to have increased rather than decreased, as one might have expected. Problems with price information have also arisen.

The purpose of merging licence areas was to increase competition and supply. Although some areas have been merged, local authorities still are responsible for issuing licences. This has had some unfortunate consequences. One example is the reported fact that the differences in waiting lists make prospective operators apply for a licence in an area where the waiting list is shorter, even though they do not intend to drive in this area. Thus, the outskirts end up with a reduced supply of taxis, whereas the supply increases in central areas.

3.4.3 Experiences with regulatory changes

The Norwegian Competition Authority has investigated the effect on fares after deregulation (Konkurransetilsynet 2001). They found that fares in general increased. The fare increase on weekdays have been relatively small, whereas the increase has been most notable at weekends and at night.

²³ Maxi taxis are allowed to 17 persons and provide a major part of the services for the disabled.

The increase in fares has been very different between the different deregulated areas. The major increases occurred in the largest city, Oslo. The Norwegian Consumer Council investigated fare levels and fare structures in the deregulated areas two years after deregulation (Forbrukerrådet 2002). This comparison also illustrates that there are great differences within the different deregulated areas. If the customer was fully informed, he could save between 14 and 34 per cent on the same trip in Oslo by choosing the cheaper taxi. The figures were depending on the time of the day.

Table 3.12 illustrates the average fare increases for the major taxi companies operating in deregulated areas. The first four companies are allowed to operate in Oslo. All the increases are in nominal terms. The corresponding overall increase in the CPI, as this table clearly shows, indicates that fares increased substantially in real terms the first year, whereas the real increase on average was much smaller thereafter.

Table 3.12: Average fare increases for major taxi companies after deregulation (Source: Norwegian Taxi Owners Association)

Company	First year (May 2000-2001)	Second year (May 2001-2002)
Increase in CPI	4.3%	0.4 %
Oslo Taxi	19 %	2 %
NorgesTaxi, Oslo	16 %	0 %
Asker/Bærum	21 %	1 %
Nedre Romerike	8 %	8 %
Drammen Taxi	17 %	12 %
Kr.sand Taxi	10 %	4 %
Stavanger Taxi	14 %	4 %
Bergen Taxi	13 %	7 %
TrønderTaxi	14 %	0 %

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3.4.4 Summary

In Norway, the most important regulatory change has been the deregulation of taxi fares in some licence areas. These licence areas have also been merged into larger entities. One prerequisite for the deregulation of fares has been some degree of competition between different DCs. Thus, in all the areas where fares have been deregulated, more than one DC exists. Nevertheless, the size of the DCs is indirectly regulated as new licences are issued depending on affiliation to a certain DC. There are also some restrictions on the opportunity for operators to change the central to which they are affiliated. The major reason for the deregulation of fares has been to increase competition. However, the policy has recognised the fact that competition needs more than one actor, thus it has been limited to areas with more than one DC.

The regulatory changes are summarized in Table 3.13.

Table 3.13: Summary of the Norwegian regulatory changes

	Before deregulation	After deregulation	Later adjustments
Fares	Regulated	Deregulated in some areas	
Entry	Regulated	Regulated, but some areas have been merged	
Operators	Must be drivers	No change	The EU legislation on transport operators has been applied to taxi operators from April 2003
Drivers	Criminal record check. Local area knowledge test in certain areas	No change	

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In Table 3.14, we have summarized the effects of the regulatory changes in Norway. No major changes have occurred in the rural areas. The deregulation of fares has only taken place in large and medium sized urban areas.

Table 3.14: Summary of the effects of the Norwegian regulatory changes. Where nothing is stated, the same applies to medium sized municipalities and rural areas as for large municipalities-

	Large municipalities (cities)	Medium sized municipalities	Rural areas (No changes have occurred in these areas)
Supply	Number of licences increased by the authorities	Number of licences increased by the authorities	
Fares	Significant initial increase. The second year, the increase followed the CPI. Greater fare differentiation, major increase at times when demand exceeds supply	Significant initial increase, however smaller than in the largest cities. Greater fare differentiation, major increase at times when demand exceeds supply	
Level of services	The supply at night and in weekends has increased due to the increased fare and thus increased revenue potential. Taxi usage, however, has dropped ²⁴		
Organisation	No change		
Innovation	New fixed fare services to and from certain locations. This has made fare comparison easier		

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Based on the Norwegian experiences from regulatory changes, we can formulate the following lessons to be learnt from regulatory changes:

- The overall fare level has generally increased in real terms after deregulation. The increase occurred instantly. After the initial increase, fares have

²⁴ The decreased usage of taxis has occurred independently of the fare deregulation. The major reason is the overall decline in the economy. During the two first years with deregulated fares, the usage increased marginally.

stabilised. There might be several reasons for this. Fares might have adjusted as to reflect the costs in the industry. This would have been the case if fares previously had been suppressed. The increased fare level could be a result of drivers reaping the benefits from asymmetric information. Another reason might be that consumers are willing to pay more for increased availability and decreased waiting time.

- New fixed fare services have been introduced. For such fixed fare trips, such as to airports, competition has resulted in significant fare decreases. Generally, these locations have been well served. Sufficient supply is a prerequisite for fare competition. Furthermore, with only 3 DCs the customers should be able to compare the fixed fares at these locations. Thus, the Norwegian experiences indicate that fare competition seems to be achieved if the supply is sufficient, the fare schedules comparable and the number of different schedules limited.
- The fare differentiation increased. This has increased the supply of taxis at unsocial hours as more drivers have found it worthwhile to work at these times. The fare differentiation depends on the size of the taxi rank segment at night and weekends. Where the taxi rank segment is insignificant, the fare differentiation is smaller. Prior to deregulation, the mismatch between supply and demand was greatest at night in weekends. The deregulated fares seem to have reduced this mismatch somewhat. This is obviously the case in Oslo. Thus, fare liberalisation or fare differentiations can benefit consumers by increasing the supply at certain times. However, this must be considered together with the possibility of overcharging consumers due to asymmetric information.

Sources:

Forbrukerrådet (2002)
Konkurransetilsynet (2001)
Norges taxiforbund (1997)
Johansson et. al. (2000)
Econ (2002)
Bekken (2003)
Bekken and Longva (2003)

3.5 Sweden

The Swedish population of 8.8 million occupies a country of 450,000 square kilometres. This suggests a very sparsely populated country. However, most of the population is concentrated in the southern parts of the country.

The Swedish taxi industry is organized into a large number of small operators. On average, each operator has 1.7 taxi vehicles across the country as a whole. This is also reflected in the use of salaried drivers. Most taxi drivers in Sweden are owner-drivers (70%). Only 30 per cent are salaried employees. In Stockholm and the other large cities, even fewer drivers are salaried employees.

There is a high level of DC affiliation both in Stockholm (90%) and in Sweden as a whole (95%). There are several competing DCs in the large cities. In Stockholm, 57 per cent of the vehicles are affiliated to the three largest DCs. To avoid DC monopolies, a law limits DCs to a maximum market share of 35 per cent.

As noted, the DCs play an important role in Sweden. This is clearly indicated by the large amount of tips originating from telephone booking compared to street work. Table 3.15 illustrate this for different geographical areas. Most operators are affiliated to a DC, however some operate independently.

Table 3.15: Proportion of taxi trips by type of market segment in Sweden and share of subsidized trips. (Sources: SOU 1999:60 and Laitila et al, 1995)

	Stockholm	Large cities	Medium cities	Rural areas	Sweden
Telephone booking segment	70%	68%	79%	82%	N/A
Other (street work)	30%	32%	21%	18%	N/A
Subsidized taxi transport (estimates)	15-20%			More than 90%	56%

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The Swedish taxi industry is heavily computerised. Most DCs have computerised contact with the affiliated drivers.

Taxis are extensively used for public purposes. In the country as a whole, public sector contracts amount to about 56 per cent of the total taxi trips (SOU 1999:60). The rest of the trips are divided between trips paid by companies (21%) and private persons (23%). In the Stockholm area, the amount of publicly- subsidized taxi trips is estimated at 15-20 per cent. The magnitude of such public sector contracts is illustrated in Table 3.15. The public sector is required by law to use public tendering for all contracts above a certain threshold. DCs or other driver cooperatives may join forces and compete for such contracts. In such cases they can be exempted from the competition law

No Private Hire Vehicle industry (PHV) exists. All passenger transport from door-to door is regarded as a taxi service and must follow the requirements for such transport. Exceptions are made for some public services.

3.5.1 Current regulation of the taxi industry

In general, the Swedish regulations allow the local authorities little discretion. Local authorities issue the operators licences, but cannot refuse to issue them if an operator is qualified.

Quality requirements to access the profession

National legislation sets out certain requirements for a taxi operator's licence. These requirements mostly follow the EU Council Directive 98/76 amending Directive 96/26 on road passenger transport operators. Although this Directive is aimed at vehicles carrying more than 8 passengers, Sweden has found it worthwhile to apply it to the taxi industry as well. A summary of the contents of this Directive is set out in Appendix 1. All operators are required to pass these requirements.

Basically, a test of knowledge of how to manage a company is required. Furthermore, a course is recommended, but not required. Financial requirements apply, as an operator must have a capital reserve of €1,000 for 1 vehicle and 50 per cent of this sum for each additional vehicle he operates. Finally, criminal records will also be checked before the operator's licence is granted.

An operator is not required to be a driver, nor must the operator own the vehicles. However, the vehicles must be registered as taxis in the company.

Access to the market

National authority (The Ministry for Industry, Employment and Communication) decides on the overall legislation. Since the early 1990s, access to the market has been open. All applicants fulfilling the quality requirements to access the profession are allowed to start a taxi operation.

Taxi driver's requirements

National authority decides the framework legislation for taxi drivers. The Swedish National Roads Administration (SNRA) is responsible for carrying out these requirements.

Taxi drivers are required to have a special taxi driver's licence. Local authorities issue the licences following the requirements set out in the national legislation. The licence gives the right to drive a taxi across the whole of Sweden. A test of knowledge is required before a licence is issued. Furthermore, applicants must show a clean criminal record for the last 5 years, be 21 years of age or more and provide a medical certificate.

The main topics in the test of knowledge are; economics of driving (how to drive in an economic manner), safety, commercial traffic law, vehicle knowledge, basic life-saving knowledge and map reading abilities. Local authorities, in consensus with the SNRA, may also require a test of local area knowledge. This is a requirement in Stockholm and most of the large cities.

The operating hours of drivers are limited by a rule requiring at least 11 hours rest for the last 24 hours work. This is divided into 2 periods, of which at least one must be more than 8 hours. This applies to all drivers whether self-employed or

employees. To make enforcement possible, all drivers are required to use a logbook or have the trips recorded by an on-board computer.

Taxi drivers are also required to wear uniform or profile clothing. This puts taxi drivers on equal terms (legally) with other public transport drivers. Violence and threats against taxi drivers are therefore given priority by the police.

Fare regulations

Fares can be freely set and no maximum or minimum fares apply.

There are strict rules governing the information on prices. These were introduced in 2000. A set of comparable prices is required. This relates to a 15-minute trip of 10 km at different hours and on certain fixed price trips. A company must have uniform fares stated for all taxis, however customers may negotiate fares. The same requirements apply to all taxis affiliated to a specific DC.

Quality and service regulations

National authority decides on the legislation. The Swedish Motor Vehicle Inspection Company supervises the vehicle requirements through an annual test.

Taxis are required to have a taximeter and a maximum of 9 seats including the driver. Strict rules on safety and roadworthiness apply. There is no maximum age for vehicles. There is an annual vehicle check.

3.5.2 Major regulatory changes

Internationally, Sweden is one of the most important cases when discussing experiences from deregulation as the experiences is well documented. Below, we will present some of the issues related to the regulatory changes.

Pre 1990, Swedish regulation was tight and covered several aspects

Prior to deregulation, both fares and new entry to the market were regulated. A maximum fare was set by a state agency after considering the changes in the costs of operating a taxi. The taxi trade associations had to apply for such changes. Further, Sweden was divided into several different licence areas. Taxis were only licensed to operate within one area. The areas usually coincided with the counties. The number of taxis in each county was decided by the county boards based on a consideration of the need for additional taxi services.

Another important feature of the Swedish system before deregulation was the required affiliation to a DC. However, only one DC was allowed in a licence area. The DCs were often publicly owned and operated. The taxis were also required to be available for hire according to a schedule set by the local DC.

The main reason for this tight regulation was that the availability of taxis was considered to be an important part of the transportation system all over Sweden and at all times. To make taxis available to everybody at reasonable fares, it was believed that setting maximum fares was required. Further, the required availability at all times made some protection from competition necessary to

allow cross-subsidisation between different times of the day (Johansson et al. 2000).

Deregulation on most aspects

The Swedish taxi market was deregulated on July 1st 1990. The reason for the deregulation was that the taxi industry was believed to be inefficient due to a mismatch of supply and demand and a lack of price competition. It was believed that this resulted in excess waiting time for passengers and too high fares.

After the deregulation in 1990, anyone could register as a taxi operator and charge the fare he wanted. Only a few requirements applied to the operators. The licence areas were all merged and taxis were allowed to operate all over Sweden. The required DC affiliation was also abandoned.

At the same time, VAT was introduced on taxis. The results in the first years were chaotic, due to the authority's lack of control. The introduction of VAT made the situation even more chaotic and complicated.

Several later adjustments to improve the faults of deregulation

Since deregulation, several new regulations have been introduced. In 1995, stricter rules for the taxi driver's licence were introduced. A practical driver's test was introduced. Today, Sweden has some of the strictest rules for acquiring a taxi driver's licence. There are also strict requirements for operators.

To make fare competition function better, strict rules on information have been introduced. The fare competition requires the different companies to have a standard fare for all their vehicles. Thus, competition is mainly between companies, not drivers.

In 2000, a legal exception for co-operation between taxis was introduced in the Competition Act. This exception allows individual operators or DCs to draw up written agreements on joint transport activities with the purpose of achieving efficiency gains or other financial advantages. However, such agreements cannot cover more than 40 vehicles. The same exception also sets a maximum market share for DCs of 35 per cent. One reason for the legal exception was to allow small taxi companies to take part in public tenders for taxi services. Furthermore, the authority believes that it is in the best interest of the public to have DCs and some degree of cooperation between taxis.

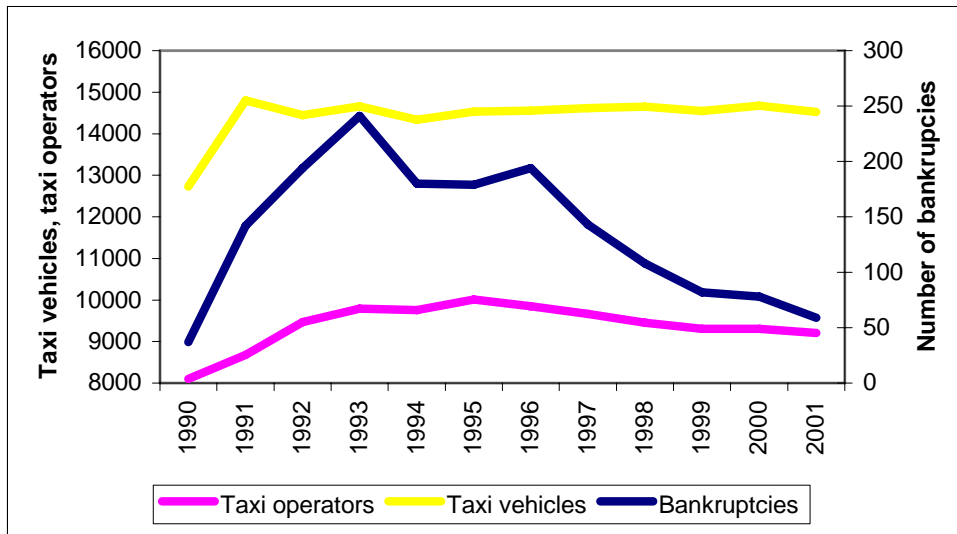
3.5.3 Experiences with regulatory changes

The experiences from the Swedish deregulation are reported in several reports and research papers. In the following sections, we will illustrate some of the major findings.

Supply and demand

The most notable effect of the Swedish deregulation was a sharp increase in the number of licensed taxis. This effect occurred immediately and in all areas (see Illustration 3.5 and Illustration 3.6. However, the increase was primarily a one-

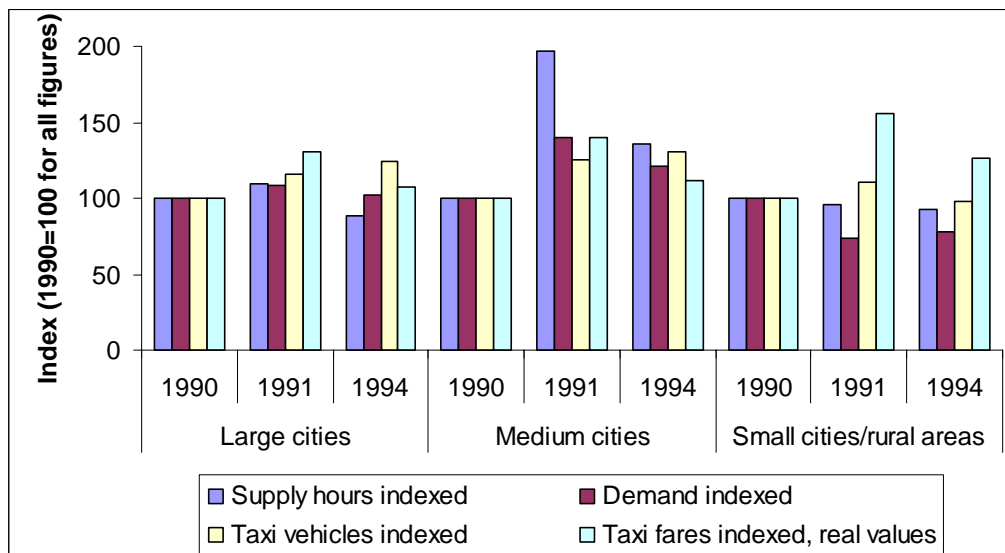
time effect. After 1991, the overall number of taxis in Sweden has been quite stable.



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Illustration 3.5: The development of the Swedish taxi industry after deregulation (Source: Branschläget 2002)

The increased supply of taxis reduced the utilisation. More taxis operated for a shorter period of time. The only exception was in medium-sized cities. Thus, the supply measured in overall hours of operation increased less than the number of taxis in all regions except in the medium sized cities. This clearly illustrates that an increased number of taxis does not necessarily result in an equal increase in supply.



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Illustration 3.6: Major changes in the Swedish taxi industry after deregulation. (Source: Laitila et. al. 1995)

Fares

The fare increase after deregulation is shown in Table 3.16. In Illustration 3.6, the short and long-term fare effects are illustrated for different geographical locations.

Clearly, fares rose in Sweden after the deregulation. However, much of the increase was due to the introduction of 25 per cent VAT almost simultaneously. After deregulation, fare increases have not deviated significantly from the CPI increases. The fare increase has been greatest in the smaller cities and in rural areas. This may be due to the lack of competition in these areas compared to larger cities.

Table 3.16: Yearly changes in the index of taxi fares for Sweden after deregulation (Source Kalderén 1995)

	Increase in taxi index	Increase corrected for VAT	CPI Increase	VAT on taxis
1990 (July-Dec)	19.5 %	19.5 %	3.7 %	0 %
1991	15.1 %	-2.4 %	7.4 %	25 %
1992	-4.5 %	1.5 %	1.5 %	18 %
1993	-0.3 %	7.3 %	1.5 %	21%*
1994	3.0 %	3.0 %	2.5 %	12 %
1995 (1 st quarter)	1.0 %	1.0 %	1.2 %	12 %
Whole period	36.2%	32.2%	22.8%	

* Reduced to 12% 1. July 1993
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Krantz (1991) analysed the very early effects of the deregulation of July 1990 on public subsidized taxi services. His report showed that considerable geographical differences occurred due to deregulation. In rural areas the prices per subsidised trip increased due to monopoly pricing. In urban areas, the opposite effect occurred and prices declined for public subsidised trips. The overall effects from these fare changes on consumers' welfare, however, are not very significant. The effect is primarily related to public budgets.

Availability, waiting time and quality of services

In Laitila et al (1994) and Gärling et al (1995), customer satisfaction with different aspects of a taxi trip was analysed. This survey made a distinction between large, medium and small cities.²⁵ The survey noted only small (and not significant) changes in most of the aspects of the taxi ride.²⁶

The only significant change in all city categories were that fares were perceived to have increased. For small and medium sized cities, the survey reported a decline in the overall waiting time and access time one year after deregulation. No

²⁵ Large cities: Stockholm (pop. 693,000) and Gothenburg (pop. 437,000). Medium cities: Lindköping (pop 128,600) and Sundsvall (pop. 94,500). Small cities: Tanum (pop. 12,400) and Lycksele (pop 14,200). All population figures as of 1993.

²⁶ Significant effects considered at $p < 0.05$.

reliable changes in preferences for and willingness to choose taxi services were reported.²⁷

Månsson (1996) has conducted one of the few studies of Dispatching Centres. His study concerns the Swedish taxi market. Before deregulation in Sweden in 1990, the law required affiliation to a DC. Also, only one DC was allowed in each licence area. After the deregulation, these requirements were abolished. Now, both privately and publicly owned DCs exist. The publicly owned DCs are primarily found in rural areas. The study performed by Månsson focused on differences between privately owned and publicly owned DCs. On average, publicly owned DCs produced more co-ordinated mediations (related to public contracts), whereas private DCs were more efficient in direct mediations (telephone bookings). Otherwise, no significant differences were found.

Recently, Marrel & Westin (2002) have analysed the effects of the Swedish deregulation with the focus on rural areas. The conclusion is that no permanent increase in the number of vehicles occurred. Prices increased, although some variations occurred depending on the type of trip in question. Furthermore, they concluded that efficiency decreased in rural areas from 1991 to 1997.

Marrel & Westin also found that the number of taxi trips declined in rural areas. This, however, might have been due to an increase in car ownership. Customer interviews show an increase in customer satisfaction in rural areas. The increase is small and can be argued to go from very good to even better. In relation to innovation, Marrel & Westin found some developments in new services and businesses after the deregulation, although it is unclear whether competition has been the driving force behind this development. Furthermore, no large-scale companies emerged in either the urban or the rural areas studied. Together with the increase in the number of taxis after deregulation, there was an increase in the number of bankruptcies as illustrated above in Illustration 3.5. This illustrates a very high turnover among the operators. It also underlines the fact that deregulation in the taxi industry usually results in small newcomers.

3.5.4 Summary

The reason for the Swedish deregulation was a believed inefficiency due to mismatch of supply and demand and lack of price competition. The deregulation was not tailored to any specific segment or region. The immediate result of the deregulation was a turmoil. This was also a result of the introduction of VAT for taxi trips. Since the deregulation, several aspects has been reregulated. This is in particular related to quality standards. The current legislation is also tailored as to reap the benefits from economies of scale (by allowing companies as well as DCs to cooperate in public tenders) and to avoid too heavy market concentration (by having a maximum market share of DCs).

The Swedish deregulation affected most of the previous regulatory issues related to the taxi industry. Table 3.17 summarizes the regulatory changes.

²⁷ Access time is considered as the time from which a taxi is ordered by phone till it arrives.

Table 3.17: Summary of the Swedish regulatory changes

	Before deregulation	After deregulation	Later adjustments
Fares	Tightly regulated Adjusted for costs	Free to set. Tight requirements on fare information	Strict requirements on fare information
Entry	Tightly regulated Local authorities decided the number based on necessity Geographical restricted	Free entry No geographical restriction, free to operate all over Sweden	Some cooperation between operators allowed
Operators	No major quality requirements DC affiliation required Schedule for operation to be followed	Some requirements on operators' reputation immediate after deregulation	Further enhancements. EU Directive adopted for taxi operators as well as other transport operators Maximum market share of DCs introduced
Drivers	Few regulations	Some requirements on taxi drivers' knowledge and reputation introduced	Further enhancements

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A summary of the Swedish experiences from regulatory changes can be found in Table 3.18. Based on the Swedish experiences, we can formulate the following lessons to be learnt from regulatory changes:

- The effect in large cities is different from rural areas.
 - Fares increased more in rural areas. The likely explanation for this is lack of alternatives and lack of competition in rural areas compared to urban areas.
 - Supply increased more in cities compared to rural areas, however most in medium sized cities. This follows from the above. It is also important to note that in rural areas, the street segment is insignificant.
 - Increased supply primarily related to the taxi rank and the hailing segments.

From these observations it seems likely that consumers benefit more from deregulation in urban areas compared to the situation in rural areas.

- Fares will not necessarily decrease due to fare liberalisation. Rather, they seem to increase. This is mainly due to previously suppressed fares under a regulated regime. The fares also seem to be more differentiated. Fares seem to increase most where competition is less such as at taxi ranks and in rural areas. The strong position of the consumer at the telephone booking segment creates a downward pressure on the fares.
- Quality requirements should be introduced before deregulation in order to alleviate the negative consequences. Much of the turmoil after deregulation was caused by a lack of qualitative requirements both on operators, but also on drivers and taxi vehicles.

Table 3.18: Summary of the effects of the Swedish regulatory changes. Where nothing is stated, the same applies to medium sized municipalities and rural areas as for large municipalities.

	Large municipalities (cities)	Medium sized municipalities	Rural areas
Supply	<p>Immediate increase in number of taxis after deregulation. No major changes later</p> <p>The number of taxi hours reduced indicating decreased efficiency</p> <p>The revenue per vehicles has decreased</p>		<p>Immediate increase in number of taxis after deregulation. Reduction in the number afterwards.</p> <p>The number of taxi hours reduced indicating decreased efficiency. After 1994, the supply has decreased somewhat</p>
Fares	<p>The fare schedule remains unchanged</p> <p>Prices for public tendered services decreased somewhat due to increased competition</p>	<p>Prices for public tendered services decreased somewhat due to increased competition</p>	<p>Prices for public tendered services increased as the competition did not increase</p>
Level of services	<p>Customers equally satisfied with drivers' services, DCs services and vehicle comfort</p> <p>The preference to choose taxi unchanged</p>		<p>The importance of public subsidized trips have increased</p>
Organisation	<p>Most new operators were small (1-2 taxis).</p> <p>The number of taxi companies with one vehicle only increased from 50% to 75%</p> <p>Large increase in "independent" operators</p>		<p>Less significant change towards one taxi companies</p> <p>No significant amount of "independent" operators observed</p>
Innovation	<p>Few evidences of new services</p>		<p>Some cooperation for the transport of goods between trucks, buses and taxis.</p>

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3.5.5 Sources:

Gärling et al (1995)
 Marrel and Westin (2002)
 Johansson et al (2000)
 Sveriges taxiförbund (2002)
 Branschläget (2001)
 Branschläget (2002)
 Kalderen (1995)
 Krantz (1991)
 Laitila et al (1995)
 SOU 1996:60
 Sundvall (1993)

3.6 Experiences with regulatory changes in the US

In most US cities, the taxi industry was brought under municipal or state regulation during the late 1920s or 1930s (Teal and Berglund 1987). The reason was the extremely competitive conditions following the Great Depression. In New York, for instance, the medallion system was introduced in 1937. Since then, the number of medallions has been increased only once (Schaller and Gilbert 1996). The competitive conditions in the taxi industry after the Great Depression was a result of the low cost of entering the taxi industry at times where other jobs were hard to find.²⁸

During the 1970s and 1980s, several US cities deregulated. The results of the changes in the US taxi regulation have been discussed in several papers. Much of the debate, however, has been very biased. The different effects in different locations and in different market segments of the industry have not been properly addressed in a number of reports.

The most cited literature on the US experiences are the paper by Teal & Berglund (1987) and the report by Price Waterhouse (1993). Teal & Berglund tries to explain why taxi deregulation has been a relatively disappointing policy in the USA. The report by Price Waterhouse was commissioned by the International Taxicab Foundation to analyse and document the experiences with deregulation the previous decade. To some extent, both of these reports use the information provided by several case studies of deregulation commissioned by the USDOT and compiled in Shaw et. al (1983).²⁹

Teal & Berglund evaluate the impacts of deregulation in several cities, which at least have deregulated entry and with reasonably good data on the impacts.³⁰ Price Waterhouse (1993) studied 21 cities, including the ones by Teal & Berglund, trying to analyse the experiences from deregulation in US cities. Detailed case studies were conducted for six cities based on the report by Teal & Berglund. The report describes the short-term effects, the responses of the authorities and the long-term effects. Its primary focus is on the changes in regulatory practices.

Recently, ITRE (1998) and Dempsey (2001) have summarized and discussed experiences from deregulation in the USA. The ITRE study is related to three US cities that deregulated in the late 1980's and early 1990's, whereas Teal & Berglund and Price Waterhouse focus on cities that deregulated prior to this.³¹ The ITRE study was commissioned by the taxi industry, through the International Taxicab and Livery Foundation.

Johansson, Marrel, et al (2000) provide a summary of the organisation of taxi industries in Finland, Mexico City, Norway, the Netherlands, England and Wales, New Zealand, Sweden and the USA. This study describes the different forms of

²⁸ See Gilbert and Samuels (1982) or Schaller and Gilbert (1996) for more on the New York medallion system

²⁹ USDOT - United States Department of Transport

³⁰ The evaluated cities are San Diego, Seattle, Oakland, Fresno Phoenix and Tucson. In addition quantitative information from Sacramento, Kansas City and Tacoma has been collected.

³¹ The cities are Cincinnati, Indianapolis and Seattle.

regulation and the rationale for the regulations. It also summarizes some of the effects from the regulatory changes. The summary is largely based on the studies previously mentioned in this document.

During the fall of 1998, a national PHV survey was conducted. This survey was sent to taxi operators all over the USA. Out of the 12,062 questionnaires delivered, 677 answered the questionnaire. The findings from the survey are reported in the TCRP report (TCRP 2002) sponsored by the Federal Transit Administration and published in 2002. We will refer to some of the findings later. This report, however, focused on the organisation of the industry rather than the effects of regulation.

A survey of 120 US cities in 1982 revealed that 87.7 per cent exercised some form of entry control (TCRP 2002). The dispersion of the regulations reported in the US taxi industry in 1998 is illustrated in Table 3.19:

Table 3.19: US regulations of taxis. (Source: TCRP 2002)

Type of regulation	Percentage of taxi operators
Market entry	64.2
Fares	76.0
Driver background	78.4
Owner background	66.6
Insurance	89.3

It must be emphasised that this is based on the responses from operators. Thus, the survey does not indicate whether there has been a change towards less regulation of market entry in the different municipalities. From this TCRP study, it is also interesting to note that the majority of operators in the USA are also small. This is similar to both the UK and the other cities and countries in this study.

Table 3.20: Size distribution of taxi operators, US 1981 and 1986. (Source: TCRP 2002)

Taxis	Percentage of operators	
	1981	1986
1-24	76.6	77.4
24-49	9.4	10.6
50-74	5.3	4.3
75-99	2.5	1.6
100+	5.9	6.1

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3.6.1 Supply

The main reported short-term effect of deregulation in the USA was a significant increase in supply. Table 3.21 illustrates the effects from the cities investigated in Teal and Berglund. According to Teal and Berglund, new entrants have primarily been individual owner operators or small companies (less than 25 vehicles). Of the cities in Table 3.21, only Phoenix experienced new large fleet operators. The increased supply mainly occurred at locations which were already well-served, such as airports and major taxi ranks (Teal & Berglund).

Teal and Berglund also suggest that even modest requirements can have a substantial deterrent effect on new entry. Portland, which required a minimum fleet of 10 (later 15) vehicles and service for 24 hours a day and radio dispatch service only experienced one new entry. Furthermore, Kansas City, with the lowest increase in the number of taxis, had other service standards.

Table 3.21: Change in size of the taxi industry since deregulation. (Source: Teal & Berglund 1987)

City (Year of change)	Increase in number of taxis	
Seattle (1979)	33%	Entry changed from population ratio to open entry ³² Fares changed from government-set to industry-set
San Diego (1979)	127%	Entry changed from government set to open entry ³³ Fares changed from government-set to maximum fares
Sacramento (1982)	56%	Entry changed from population ratio to open entry Fares changed from government-set to industry-set
Kansas City (1983/84)	18%	Entry changed from predetermined ceiling to minimum standards for entry. Fares changed from government-set to industry-set
Phoenix	83%	Entry changed from state-regulated to open entry Fares changed from government-set to industry set
Tucson	33%	Entry changed from predetermined ceiling to minimum standards for entry. Fares changed from government-set to industry-set
Oakland	38%	Entry changed from government set to open entry ³⁴ Fares changed from government-set to industry-set

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The consequences of the deregulation in the three US cities studied by the ITRE were similar to those reported by Price Waterhouse and Teal and Berglund. The number of taxis increased, especially at already well-served locations.

When the number of taxis increases without a matching increase in demand, productivity will decrease measured as the number of daily trips per taxi. Table 3.22 illustrates the changes in some of the cities studied by Teal & Berglund. According to Teal & Berglund, this has serious economic consequences for the taxi drivers. Combined with the shift from employees to self-employed (without a minimum wage guarantee), the result is that taxi drivers often earn less for more hours of work.³⁵

³² Entry reregulated in 1984 with a predetermined ceiling.

³³ Entry reregulated in 1982 as the number of permits was frozen.

³⁴ Entry reregulated in 1988 with a predetermined ceiling. Also reregulated fares.

³⁵ According to Teal & Berglund, real earnings in San Diego fell by 30 per cent after deregulation.

Table 3.22: Trends in taxi productivity after deregulation. (Source: Teal & Berglund 1987)

City	Trips per shift	Trips per taxi
Phoenix	-23% ^a	-34% ^a
San Diego	N/A	-37% ^a
Seattle	-35% ^b	-48% ^b
Tucson	-33%	-38%

^a One year after regulatory change

^b Two years after deregulation (based on trip sheets which may be incomplete)

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According to Teal & Berglund, the available evidence indicates a substantial turnover among small companies and independent drivers. For medium and large sized firms little turnover was reported.

3.6.2 Level of service

Little empirical evidence of changes in the level of service is available from the deregulated experiences in the USA. However, some indications can be found.

Response time and reliability are among the most important levels of service indicators for the telephone segment of the industry. The only industry-wide comparisons of waiting time before and after deregulation were in San Diego and Seattle. In San Diego the average response time declined from 10 to 8 minutes after entry was deregulated. On the other hand, the refusal or no show rate increased from 5 to 18 per cent (Teal & Berglund 1987). In Seattle, the “no show” rate also increased after deregulation (Dempsey 2001).

Many of the reported effects from deregulation on level of quality and services do not consider alleviating policies. If something can be learned from these experiences it is that open entry alone will not increase the quality of service. However, free entry is usually accompanied by some minimum requirements for the quality of the services. In that respect, the new regulations in Seattle from 1996 are interesting.

In 1996, Seattle changed its regulation of the taxi industry in order to improve the quality of service. In ITRE (1998), the recent experiences in Seattle are reported. Seattle deregulated entry and fares in 1979 and reregulated both in 1992. In 1996 the regulation was changed again. The new regulation required operators to be members of an association providing 24-hour service and with at least 15 affiliated taxis. Furthermore, the associations face tight requirements, including colour schemes and dispatch service. Furthermore, the associations are held responsible for the services of their affiliated taxis through a points system for rule infractions. The new regulations however do not restrict entry as such. New associations may be established or existing ones may expand through new affiliated operators. The aims of the changes were to reduce governmental control of the taxi industry, and to increase the degree of self-control within the industry.

3.6.3 Fares

In all cities investigated by Teal & Berglund, the taxi rates were higher in real terms after deregulation compared to before. This is illustrated in Table 3.23 and show that the fare increase after deregulation in all cities is greater than the increase in the Consumers Price Index (CPI)

Table 3.23: Fare increases in five US cities after deregulation (Source: Teal & Berglund, 1987)

City	Increase from Oct 1971 to deregulation		Increase from deregulation to Dec 1984	
	Percentage		Percentage	
	Fare increase	CPI increase	Fare increase	CPI increase
Seattle	38.5	78.6	51.9	45.6
San Diego	58.3	78.6	71.8	45.6
Phoenix	66.0	139.6	36.1	9.0
Tucson	122.5 ^a	139.6	28.4	9.0
Sacramento	100.0	39.6	13.7	9.0

^a Rate increase shown occurred 3 months before deregulation in anticipation of its effects; no subsequent rate increase except for waiting time charges
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The table also show that the fare increase before deregulation in several of the cities had been smaller than the increase in the CPI. This suggests that the existing regime did not compensate the taxi drivers for the cost increases, which may have prepared the ground for a price hike at the time of the deregulation.

Further, Teal & Berglund found the upward trends of rates to be even more pronounced in the taxi rank segment than in the telephone-booking segment. The two major explanations they offered were both related to demand. First, demand was characterized by imperfect information and strong name recognition (branding). Second, demand might be inelastic, consequently customers do not pay much attention to the fares.

Price Waterhouse (1993) summarized the short-term experiences on fares in six cities having deregulated both fares and entry. The effects were based on six USDOT documented case studies.³⁶ The comparison showed that in all of the US case cities, prices rose. The report argues that this was a result of lagged cost increases and the fact that the taxi rank and hailing segments are generally price-insensitive and lack competition, primarily due to the first-in first-out nature of taxi queues.

Finally, we would emphasise that an increase in fares is not necessarily negative for customers. It may be that higher fares result in more supply. In particular, more differentiated fares may result in more supply at certain hours and days. Consumers generally consider both fares and availability. Higher availability can offset fare increases.

³⁶ USDOT – United States Department of Transport. The six cities are Seattle, Phoenix, Portland, San Diego, Berkeley and Oakland.

3.6.4 Reregulation

The post-deregulation changes in regulatory practices are interesting. Price Waterhouse summarizes the key experiences. None of the cities that had only partly deregulated reported changes in the regulatory structure after the deregulation. Nine of the 13 cities that granted free access to the market reverted to a regulated system. Of the eight largest cities, six reregulated fully, while two regulated the airport services.

3.6.5 Taxi service innovations

In the report by Price Waterhouse (1993) on the effects of deregulation, only marginal customer-oriented service improvements are reported. According to Teal & Berglund, experience clearly shows that deregulation has not led to the development of innovative taxi services as was expected. None of the deregulated cities in their study was reported to have developed any kind of shared taxis. Exclusive ride taxi services remained the only service offered in deregulated cities.

3.6.6 Summary

The US experiences with deregulation are ambiguous when it comes to the overall welfare of consumers, however some major points can be extracted and prove useful to the UK.

- The number of taxis increases significantly when entry is deregulated. The effect is independent of the fares being deregulated or not. The increase is most pronounced at already well served locations and the taxi rank and the cruising segments. In areas where the telephone segment dominates, the effect is smaller. This is primarily in smaller cities. There are no reports on the effects in rural areas. The increased number of taxis reduces the waiting time for consumers. In that respect consumers clearly benefit from deregulation.
- Fares increase in real terms in most cases when deregulated. Fare deregulation has only occurred in connection with entry deregulation. The fare increase occurs immediate as a one-time effect. In the longer run, fares tend to increase in line with the CPI. The fare increases seems to be more pronounced in the taxi rank segment compared to the telephone-booking segment. The fare increase will not benefit consumers.
- Deregulation will usually be followed by re-regulation or enhanced qualitative requirements. It is reported that even modest service requirements will reduce the effects of deregulation. This suggests that qualitative requirements should be introduced at least at the same time as a removal of quantity restrictions. Customers will benefit from increased quality of service.

3.7 Canadian experiences with regulatory changes

Taxicab regulation in Canada has evolved much as in the United States, and is nowadays left to local or provincial government. Many different jurisdictions have experimented with various degrees of regulation and deregulation. Entry restrictions in particular have been under discussion.

Unfortunately, few comparative studies have been carried out. Furthermore, the studies that have been carried out have not focused much on consumer welfare. Nevertheless, we will summarize the experiences from some of Canadian cities, as they provide useful information about different approaches in particular related to quality enhancements.

3.7.1 Montreal

Between 1985 and 1990, the city of Montreal sought to improve the profitability and effectiveness of its taxi industry through an ambiguous licence-buyback plan. This was brought about by a number of studies on the taxi situation in Montreal that systematically blamed the excessive number of vehicles for all of the industry's economic problems since 1952 (Trudel 1995).

The large number of taxis in Montreal dated back to the removal of the cap on licences immediately after the Second World War. To create jobs for veterans and to cope with public complaints about taxi shortages, the cap on licences was eliminated. This caused a massive increase in the number of taxis. From 1946 to 1952, the number of taxis increased from 765 to 4,978.

The buyback operation led to the elimination of 1287 licences, a 25% decrease in the 5,222 taxi licences formerly in effect, at a cost of some \$21 million, entirely paid for by licence holders. In exchange, the profitability of their licences increased along with their market value, as a result of reduced competition.

In the same period in which the number of licences was reduced to increase profitability, a mandatory driver-training programme was instituted, with the aim of improving service delivery. Since 1994, all drivers in the major urban centres of the entire province of Quebec are required to take a training course lasting approximately sixty hours, including legal elements, professional and ethical relations, health and safety, the disabled, taxis and equipment, transport management concepts and knowledge of the area (Toronto Task Force 1998). Not surprisingly, the programme had the effect of significantly reducing the number of new drivers entering the market, while ensuring a considerably more competent new generation of taxi drivers.

Together with the introduction of a training programme for new drivers, an even more ambitious programme was launched regarding driver retraining and further professional development, called Taxi Ambassador. The training course has two one-day modules: the first deals with client reception and service, and the second deals with regional tourist attractions. Graduation includes the granting of both an official certificate and a "Taxi Ambassador" permit. Apart from making the drivers better qualified to offer sightseeing tours in their region, the programme also introduced a two-tier industry, as the drivers carrying a "Taxi Ambassador"

permit were the only ones allowed to serve Montreal Airport and the Montreal Casino, two high-volume locations.

The regulatory changes in 1994 also affected the fare regulation. Taxis were given the freedom to set fares other than those prescribed by the authority. This freedom was, however, subject to a written contract. The contract must be maintained during the entire journey. This introduced something close to a two-tier system and opened up possibilities for new services (Trudel 1995)

The Quebec experiment thus combines raising entry barriers both by number and professional requirements with a loosening of fare regulations in order to open the way for new market innovations. In all, the initiatives in Quebec are regarded as a resounding success, both with regard to raising service quality and the range of services supplied (Trudel 1995, Toronto Task Force 1998).

3.7.2 Vancouver

Like Montreal, Vancouver is one of the few jurisdictions in Canada that has made the retraining of existing drivers a priority. Here too, the taxi industry functions in an artificial market, capped at 418 licences, and there are no current plans to increase this. Instead, driver training and qualifications were seen as a component of a structure that required improvement, as the city's industry was regarded as having lost its concern for delivering quality service to the customer. Prior to the introduction of a mandatory training regime in 1995/96, the drivers in Vancouver simply had to complete a short English proficiency test, with any additional training provided at the discretion of the individual brokerages.

A collaboration of the taxi industry, the local tourism industry and the Vancouver International Airport Authority launched a voluntary driver-training programme called "Taxi host" in 1995. The success of the programme made it mandatory for all new drivers in 1996/97. The programme comprises four levels, whereof only the first level is mandatory for all new drivers, while levels 2 to 4 are aimed at re-training and further professional development for experienced drivers. The first entry-level includes applicant screening, English language tests and twenty-seven hours of training focusing on local knowledge, language skills and basic tourism training. After completing each level, drivers can market themselves as a "tourism host" for the city.

By all accounts, "Taxi Host", is seen as an unqualified success, boosting the morale and customer-orientation of the drivers. The success of the programme has also led to a recommendation to the City Council that new drivers must complete up to level two of the programme. More importantly perhaps, it has had the effect of inspiring other Canadian jurisdictions to re-evaluate perceptions of the role of the taxi industry in the web of public transportation (Toronto Task Force 1998). For example, the Ontario Tourism Education Council has been adapting the programme to the Toronto market.

3.7.3 Halifax

Halifax, Nova Scotia has been put forward as an innovative example on how the quality of services can be improved. In close cooperation with the tourism

industry, the city has developed what is known as a Hotel Standard licence programme (Toronto Task Force 1998). The number of taxi licences in Halifax is currently limited to 600. It is considered that this number is too high. Thus, no new licences will be issued until the number is down to 550. The licences are not considered an asset, rather a licence granted by the city to operate a business. Hence, the licences are personal and not tradable. Since the licences are not tradable, the reduction in the number of licences will occur naturally through death and retirement. When new licences are issued, they are distributed based on the occupational seniority of the interested persons.

The Hotel Standard applies both to the taxis and the drivers. A Hotel Standard licensed taxi must have more head and leg room, the vehicle's appearance must be first-class and it must be less than eight years old, unless in exceptionally good condition. The operator must present the taxi for inspection once a year. Only Hotel Standard licensed taxis are allowed to operate the lucrative taxi ranks at the hotels. In 1998 250 of the 600 taxis in Halifax were Hotel Standard certified.

More important than the Hotel Standard for the taxi vehicles, is the Hotel Standard certification for taxi drivers. All taxi drivers who wish to service the hotels must complete a specific Hotel Standards driver-training regime. The regime consists of a written test, a performance review and an in-car industry evaluation. The regime is a "light-weight" version of the "Knowledge" in London and it takes up to one year to complete the tests. Since the commencement of the programme in 1995, all new drivers are required to pass the test. However a temporary licence may be issued, providing the test is passed within one year.

The Hotel Standard regime has created a two-tier system with a superior Hotel Standard service offered and an "ordinary" service. In the long run all drivers will be Hotel Standard certified. Thus, the regime is a cautious introduction of a new and higher quality standard.

Unfortunately no reliable experiences from Halifax are reported. Thus, the case primarily function as an example of an innovative way in which to increase the quality of service.

3.7.4 Calgary

As in many municipalities in Canada, Calgary also imposes quantity restrictions and fare restrictions as well as some qualitative requirements. In Calgary, a maximum number of licences was introduced in 1986 after the industry complained that it was unable to make a living. Later, in 1993, it was decided to continue the quantity restrictions but the licences became tradable.

The reason for continuing with a "closed" market in 1993 was the belief that Calgary had too many taxis. Research at that time indicated that Calgary had 2.1 taxi per 1000 capita while the average North American city had 1.1 taxis per 1000 capita (Calgary taxi commission 2003). In 2003 there are approximately 1.4 taxis per 1000 capita in Calgary.

A project team investigated the possibilities of an open entry system in Calgary, but concluded that the dynamics of the industry were sufficiently different from other industries to negate any benefits that might accrue from a free entry and fare

policy (Taxi commission 2003). The new model proposed for the City of Calgary was to continue the licensing regime, but to introduce more flexibility as to increase the number of taxis if consumer demand increased. Furthermore, enhanced driver standards were suggested. As an alternative, the introduction of a “Distinction” class of taxi licences, in line with the experiences from Halifax, Oshawa and Montreal, was suggested.

Unfortunately, the process of rewriting the taxi bylaws has not been completed. Thus, we cannot report on the actual regime adopted in Calgary.

3.7.5 Summary

Previous experiences with various combinations of entry and fare regulation in different jurisdictions in Canada have shown that neither the free market nor heavy entry regulation alone have managed to avoid deteriorating service quality over time, with regard to both driver competence and vehicle safety standards.

While all jurisdictions have experienced an expected, though significant, increase in new entries, they also experienced a rapid decline in operational efficiency and productivity, an increase in fares, a decline in driver income and deterioration in the level of service (Lanyon 1999). For the most part, jurisdictions where deregulation has been tried have concluded that the taxi industry involves “market failures” or “market imperfections” requiring some kind of quantitative or qualitative monitoring.

Based on these ambiguous effects, the focus in Canada has thus shifted from mere questions of licence regulation towards questions of quality re-regulation, whether a free market exists or not. This does not, however, offset the fact that the strengthening of driver and vehicle standards has raised the indirect barriers to entry in several jurisdictions in Canada. In most cases, this has coincided with measures to open up for new markets and service innovations, combined with more differentiated fare setting. Hence, shifting the focus from direct licence barriers to indirect barriers, through quality requirements, has successfully raised the quality of customer service as well as the range of services offered.

The major lesson from Canada is that local experiences with deregulation have led to shifting the focus away from market entry and deregulation *per se*, towards a focus on service delivery and re-regulating measures to enhance quality. Consequently, new and innovative solutions to the service-challenge have evolved in several jurisdictions, which might very well be combined with deregulating measures for taxi entry or fare setting. The introduction of a two-tier system for the quality of services in several cities illustrates this. The “Taxi Host” programme in Vancouver, the “Ambassador” programme in Montreal and the “Hotel Standard” programme in Halifax all create a two-tier system, granting special advantages to certain groups providing services with a higher quality.

In opposite to the UK two-tier system, the Canadian two-tier system focuses on the quality of services rather than the fare setting policy. Nevertheless, in some of the municipalities, the regulation allows limousine services to operate based on telephone bookings similar to the UK two-tier system.

4 Summary and conclusions

The previous chapter showed substantial variation in the regulation of the taxi industry across different countries. The chapter also identified, albeit on an ad hoc basis, corresponding variations in outcome both with regard to performance and to the organisation. In this chapter, we will summarize the different regulatory regimes studied and present the major findings based on them.

4.1 Different regulatory regimes and the changes in them

4.1.1 Great differences in the regulatory regimes

The countries and cities we have chosen have very different regulatory regimes. Table 4.1, shows the major regulations which are effective at a national level in the different countries.

It is striking how different regulatory regimes are between the countries. This underlines the fact that regulatory regimes must be tailored to fit different market characteristics and that there is no such thing as a perfect organisation of the taxi industry and/or a regulatory regime that would fit every locality.

Table 4.1: Major regulations, currently effective on national level

Country	Regulatory level	Direct barriers to entry		Indirect barriers to entry		Fare regulations
		Market access	Quality standards on operators	Quality requirements on taxi drivers	Other requirements	
Ireland	Local authority great discretion	Entry deregulated Substantial licence fee Licences valid in one area only	Must have a valid taxi driver licence. No further restrictions	Written exam. Criminal record check. Taxi drivers licence renewed annually	Vehicle requirements with an annual test	Maximum or fixed fares apply. Local authority decide the fare level
New Zealand	National legislation, regional enforcement	Entry deregulated DC (association) affiliation required ³⁷	Written exam Demerit point system applies also for the associations Criminal record and transport offences checked	Written exam Demerit point system for drivers	Annual test of vehicle, taximeter must be checked every 6 months	Fares not regulated, however the associations decide the fare for affiliated taxis
Sweden	National	Entry deregulated, all operators must pass the quality standards	The EU directive on road transport operators applies	Written exam. Criminal record check. Medical certificate. Working time requirements	Annual test of vehicle. Strict rules on roadworthiness and safety apply	Fares deregulated. Independent operators free to decide structure. Otherwise DC decides. Strict requirements on fare information
Norway	National legislation, regional enforcement	Entry regulated. Local authorities decide the market size. DC affiliation required	Must have a valid taxi driver's licence and be a taxi driver as main occupation. The EU directive on road transport operators applies	No exam Criminal record check Medical certificate Local area knowledge test in urban areas	No particular taxi vehicle test except the ordinary biannual vehicle test. Taximeter with printer required	Fares deregulated in some urban areas. The DCs decide the fares for all affiliated taxis.
The Netherlands	National	Entry deregulated No licence areas apply	Written exam Criminal record check Complaint handling service	No exam Criminal record check Medical certificate Working time requirements	Annual test of vehicles (roadworthiness and taximeter)	Maximum fares apply
USA	Local	Very different approaches locally. A nationwide survey showed 64% having entry control, while 76% had fare regulations				
Canada	Local	Very different approaches locally				

³⁷ The DC or association must provide a service 24 hours a day and also provide a telephone booking service and maintain a register of complaints.

4.1.2 Different regulatory changes have been implemented in different countries

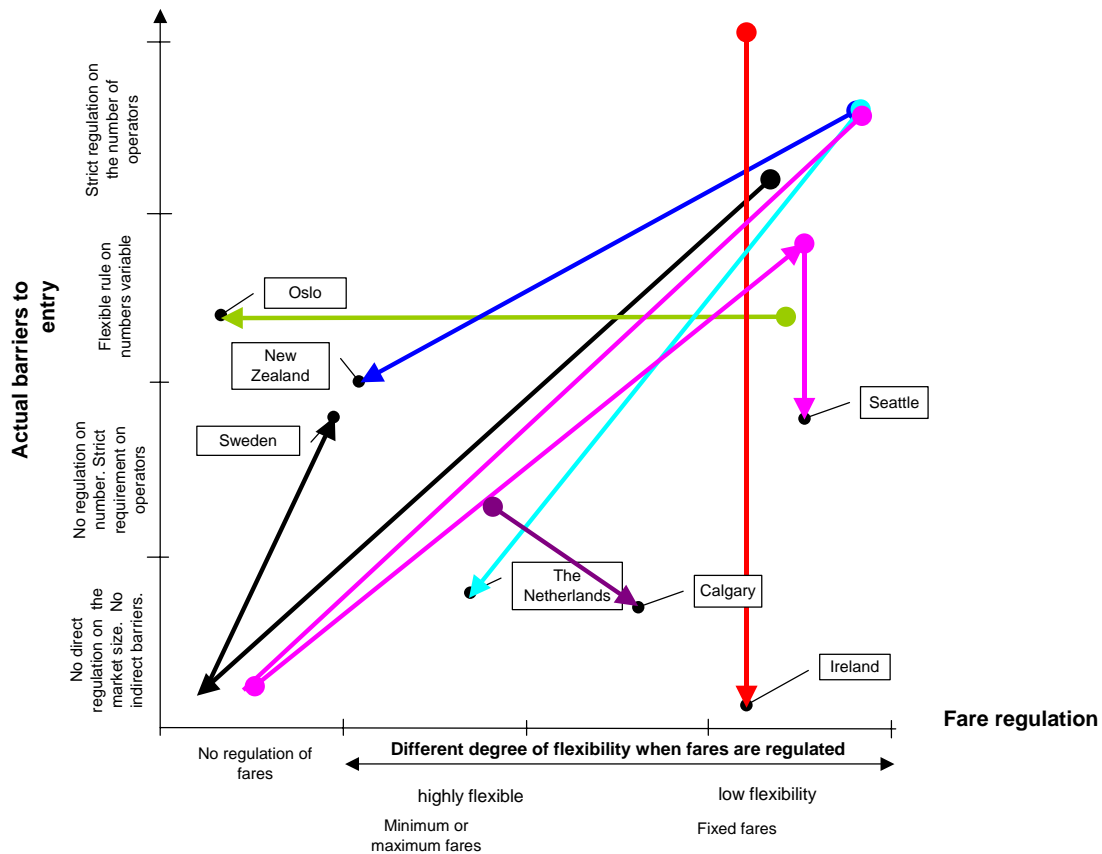
Just as striking as the difference in the current regulation are the different regulatory changes implemented in the different countries. Table 4.2 summarizes the major regulatory changes in the different countries.

Table 4.2 Summary of regulatory changes

Country	Direct barriers to entry		Indirect barriers to entry		Fare regulation	Major goal of the changes
	Market access	Quality standards on operators	Quality requirements on taxi drivers	Other requirements		
Ireland	Quantity restrictions removed Second hand value of licences wiped out	Enhancement foreseen	Enhancement foreseen	No change	Unchanged (Fixed by local authority)	Reduce the mismatch between supply and demand (Increase availability)
New Zealand	Quantity restrictions removed	Enhanced DC affiliation introduced. PHVs and taxis equally treated	Mainly unchanged	Enhanced	Removed	Part of the general deregulation of the economy. Reduce the difference between taxis and other passenger service vehicles (PHVs and others)
Sweden	Quantity restrictions removed. Licensing areas merged	Enhanced some years after deregulation	Enhanced some years after deregulation	Enhanced some years after deregulation	Enhanced some years after deregulation	Create a more efficient industry. Reduce the mismatch between supply and demand Increase price competition
Norway	Unchanged Some licence areas merged	Enhanced	Unchanged	Unchanged	Removed in some urban areas	Increase competition and supply
The Netherlands (Stepwise deregulation)	Quantity restrictions removed. Licensing areas merged	National standard requirements introduced	National standard requirements introduced	Enhanced	National maximum fares introduced instead of local fixed fares	Strengthen the role of taxi as a complement to other modes of public transport. Increase the use of taxis
USA (Reregulation on several aspects later)	Quantity restrictions removed in most of the deregulated cities	Usually enhanced after some years. In particular fleet sizes and other operating requirements are introduced	Usually unchanged	Usually unchanged	Mainly removed	Primarily based on the advantages of free competition. Also to increase supply, level of service and reduce fares. In some cases to reduce the bureaucracy
Canada	Different approaches	Enhancements	Enhancements		Unchanged	To increase safety and the quality

Illustration 4.2 highlights the main regulatory changes each country has undertaken. As illustrated, the paths chosen for regulatory changes vary just as much as the regulations themselves.

Most countries, apart from Norway, have deregulated the actual barriers to entry. Ireland stands out as an extreme with neither significant direct nor indirect regulations regarding market entry and requirements imposed on operators. On the other hand, Ireland has kept relatively strict regulations on fares, which have been extensively deregulated in countries such as Norway (Oslo), New Zealand and Sweden.



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Illustration 4.1: Main regulatory changes

The regulation of the UK taxi industry differ between the local authorities. Thus, we have not included the UK in this figure. However, figures reported by the OFT shows that 95 per cent of the local authorities regulate the fares while 45 per cent regulate the number of vehicles. It does not seem as if quality standards on operators are a big issue. Indirect barriers to entry, such as taxi driver requirements are widely experienced.

In sum, no two deregulating experiences are exactly the same. Various measures have been adopted, and few countries or cities in the study have introduced a free market in the purest sense. Those who have actually have tried something close to total deregulation have later reintroduced some kind of regulation, especially with regard to vehicle and service standards. The question is, consequently, not a simple matter of regulation versus deregulation, but rather what kind of regulation, where and to what extent.

It is also worth mentioning that not all countries have the same regulation for the entire industry. In some countries different approaches have been taken in different market segments. This has been most pronounced when it comes to the regulation of fares. In both Sweden, New Zealand and some Norwegian cities, fares are deregulated. However all cabs affiliated to the same DC are required to have the same fare schedule. This has increased the transparency and competition between the DCs and made it possible for customers to shop around.

The presence of a PHV industry also seems to be a way to tailor the regulation to different market segments. This is particularly related to fares. The customers are most likely to be exploited when catching a cab curbside or from a rank. Thus, some countries maintain strict fare regulation on these segments while allowing the PHV sector to compete in the segments where customers are in a stronger position to shop around.

4.2 Regulatory changes and the effect on consumers welfare

Substantial variations in the regulation of the taxi industry have been identified. The major question, however, is what can be learnt about the impact of different regulations on consumer welfare. The report clearly shows that the outcome depends on both external and internal forces.

A summary of the effects is presented in Table 4.3. The table clearly shows that the effects on consumer welfare of different regulations differ between different locations, and that they depend on alleviating policies as well as different market characteristics. Nevertheless, the availability of taxis and the waiting time of consumers in general improves following the removal of entry controls. In particular this is the case in urban areas and at taxi ranks. The cost of this increase, however, must also be considered. Increased fares may follow increased availability if fares are also deregulated.

To a great extent, the effects depend on different market characteristics. The effect of deregulated entry on availability is greatest in urban areas and at the cabstand segment. The effect of fare liberalisation is also different depending on market characteristics. In rural areas and in the street segments (cabstands and curb hailing), the overall fare increase is greater compared to urban areas and the telephone-booking segment.

Differences in taxi supply are also influenced by several factors besides the question of regulatory regime. These effects, we have labelled external effects.

Table 4.3 The outcome of deregulation

	Market characteristics	Numbers of vehicles	Fares	Level of service	Organisation
Ireland (Entry deregulated)	The taxi rank- and hailing segments dominate (Dublin).	Massive increase. (+200% in Dublin, + 100% on average).	Still regulated.	Reduced waiting time for customers nationwide. Primarily at taxi ranks. Small improvements in telephone booking segment.	More independent operators, the PHV sector has decreased in importance.
New Zealand (Fares and entry deregulated)	The telephone booking segment important in particular outside urban areas.	Massive increase (+160% 1989-2001 on average). Marginal decrease in taxis numbers as well as availability in rural areas.	Decline in real terms increase in nominal terms. Fares increased in real terms in rural areas.	Reduced waiting time. Far greater range of services.	More large operators as well as more small operators.
Sweden (Fares and entry deregulated)	The telephone booking segment dominates. Large share (56%) of trips subsidized (primarily in rural areas).	Increase immediately after deregulation, stable thereafter. No long term increase in rural areas. The efficiency has decreased.	Immediate increase (real terms), stable thereafter. The major increase occurred in medium cities and rural areas. The cost of subsidized trips increased in rural areas and decreased in cities.	Reduced waiting time, no change in consumer satisfaction.	Most newcomers are small, thus there is a decrease in the average company size. The major DCs have increased their market share. In rural areas few competing DCs.
Norway (Fares deregulated in some areas)	The telephone booking segment dominates nationwide. Large share (20%) of trips subsidized (primarily in rural areas).	No change due to deregulation.	Immediate increase (real terms), stable thereafter. Greater fare differentiations (most prominent in large cities).	The supply at night and in weekends has increased due to the increased revenue potential caused by fare differentiation.	No change in the organisation.
The Netherlands (Entry deregulated, maximum fares)	The taxi rank segment dominates in the largest cities, telephone segment elsewhere. Large share of public subsidized trips, primarily in rural areas.	Significant increase in the number of taxis, primarily at taxi ranks.	Increased the first year and fell the second year (real terms).	Increased availability most pronounced at taxi ranks in the weekends. Taxi usage has only increased marginally in urban areas and decreased in rural areas.	The average size of operators has declined in cities due to increased number of independent owner- drivers. The opposite occurred in rural areas as incumbents expanded their business.
USA	Very different, however street work dominates in urban areas.	Massive increase (+18 to +127%)	Increasing	Unchanged	Less concentration
Canada	Very different, however street work dominates in urban areas.	Increase	N/A	Increased availability, reduced quality.	No change

4.3 Major findings

The impacts of regulatory changes vary between different cities. Different market characteristics (internal factors) and different external factors are important when assessing the impacts. Our major findings in this report are as follows:

- Quality requirements appear to become increasingly important as entry and or fares are deregulated . In some of the cities and countries investigated in this study, deregulation of entry has occurred without quality enhancements, however, in most of these cases, re-regulation or quality enhancements have later been introduced. The most recent regulatory changes focus more on the quality of service rather than the number of vehicles. It is important to note that even modest quality requirements reduce the effects of deregulating entry by creating barriers to entry.
- Fares do not necessarily decrease due to fare liberalisation. Rather, they seem to increase and become more differentiated. This may be partly due to fares being previously over suppressed under a regulated regime. Fares seem to increase most where there is less competition, such as at taxi ranks and in rural areas³⁸. The major benefit from fare deregulation is related to greater fare differentiation between times of excess demand and excess supply, and some new fixed-fare services. Fares are higher at times when demand exceeds supply and so consumers benefit through the increased supply that is generated. Experiences from New Zealand and to some extent Norway and Sweden, also show that measures to improve the bargaining position of consumers can improve fare competition. In New Zealand and Norway, DC affiliation is required. This has reduced the number of different fare schedules to choose between. In Sweden, strict requirements on fare information have been introduced.
- Supply increases when entry restrictions are removed. Thus, the waiting time for consumers is reduced and availability increases. New entrants into the industry primarily focus on the hailing and the taxi rank segments. In areas where the telephone booking market dominates, the increased supply occurs through the expansion of existing operators. In rural areas, the overall increase in availability is less than in urban areas.
- If fares continue to be regulated, the Private Hire Vehicle (PHV) sector will continue to function as a complement to the taxis in the telephone-booking segment. However, PHV operators tend to become taxi operators and benefit from the synergy between the different market segments. This transition, however, depends on the differences in quality standards between taxi and PHV operators.
- A stepwise approach to deregulation seems to be more appropriate due to the unexpected effects caused by regulatory changes in the taxi industry. Such an approach allows monitoring and tailoring of the effects as changes

³⁸ Fares may be higher in rural areas due to increased costs caused by lower taxi utilisation rates.

occur and should improve the overall outcome. This is in particular evident from the Dutch experiences.

- The falling service quality and vehicle standards reported in several studies do not seem to be ultimately linked to free entry. Neither the free market nor heavy entry regulation in itself seems to avoid deteriorating service quality over time, both with regards to driver competence and vehicle safety standards. Problems related to falling service and vehicle standards must indeed be addressed no matter regulatory framework at hand, and several studies indicates that it can be overcome by tougher enforcement policies and procedures, increasing driver requirements and programs for further competence building. This may, on the other hand, lead to higher costs related to quality controls, leaving the net costs results of quantitative deregulation uncertain.

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Appendix 1

Summary of the EU Directive on road passenger transport operators

Following political decisions in the EU to liberalise the economy, the EU Council Directive 96/26 on admission to the occupation of road haulage and passenger transport was adopted. The aim was to replace quantitative control with qualitative control. This was further developed in the Council Directive 98/76/EC, which amended Directive 96/26/EC.

Currently, the directive does not cover taxi operators. It is limited to companies using motor vehicles suitable for carrying more than nine persons including the driver. However, the directive is important, as it probably will form the basis for any EU regulation concerning taxis.

The qualitative criteria set forward in the directives are related to:

- **Good repute**
In particular this relates to the absence of serious criminal offences including commercial offences. Furthermore, the operator should not have been declared unfit to pursue the occupation. Finally, the operator should not have been convicted of serious offences with regard to rules governing pay and employment conditions or other road transport rules, such as driving and rest periods or rules concerning professional liability. Member states determine the actual criteria.
- **Appropriate financial standing**
Basically, the requirements in directive 96/26 consist of “having available sufficient resources to ensure proper launching and proper administration of the undertaking.” In directive 98/76/EC the requirements on available capital and reserves were increased to a minimum of EUR 9,000 for the first vehicle and EUR 5,000 each for further vehicles. A bank guarantee or similar means may be accepted or required as evidence. For assessment purposes, the authority may also review annual accounts, available funds, assets, costs, premises, plant, equipment and working capital.
- **Professional competence**
The basic requirement is related to a compulsory written examination, which may be supplemented by an oral examination. The actual requirements for the test are set out in an annex to the directive. Exemption from the test, or part of the test is possible for holders of certain advanced diplomas. Furthermore, five years’ experience in a transport business at management level may result in exemption, providing that a smaller test is passed. If an applicant intends to work solely in one country, the examination may reflect this by only taking subjects of national transportation into consideration.

The directives further require the member states to check that the companies fulfil the above-mentioned requirements at least every five years. Information exchange related to the directive should take place between the member states. Finally, the diplomas and certificates are to be mutually recognised.

Appendix 2

Glossary of key terms

This glossary has been drawn up to make it easier to read and understand the report. The glossary will also help when reading other taxi-related literature.

Term	Explanation
Access to the market	This is related to the entry of taxi operators into the market for taxi services. The access may be regulated by an upper number or by some quality measures, which the operators must fulfil to be allowed to enter the market.
Access to the profession	This is related to the entry of taxi operators into the taxi industry. Often, certain requirements apply for operators wanting to enter the industry. These requirements constitute the regulations on access to the profession. Must be distinguished from taxi driver's requirements. This definition follows the definition from the EU related to transport operators.
Association (taxi)	The term taxi association is primarily used in New Zealand, where affiliation to an association is required. Australian taxi associations corresponds to Dispatching Centrals elsewhere. In other countries, the taxi associations function as a kind of trade union.
Dispatching Central (DC)	An entity providing dispatching services for the affiliated taxis. Usually also includes booking services (telephone and other) and safety services. Thus, also called booking central from the consumer perspective. Can be organised as a co-operative, owned by a single taxi enterprise, operated and owned by a public authority or operated as a specific DC company.
Hackney	The term hackney is used differently in the UK and Ireland. In the UK hackneys are licensed taxis, whereas in Ireland, hackneys are private hire vehicles (PHVs). In the report, the terms taxi and private hire vehicle are used respectively..
Hailing market	Refers to the market segment of the taxi industry where taxis are hailed from the street. The other segments the taxi rank segment and the telephone-booking segment.
Hire out	A taxi operator hiring out some of the operated taxi vehicles rather than having salaried employees.

Term	Explanation
Hirer	Self employed driver, who rents or leases a taxi, and, if required, the attached operator's licence. The driver runs his own business with a rented/leased right to operate.
Medallion	The same as a taxi operator's licence. This term is used when the access to the market is regulated. The term is primarily used in the USA. It is the same as the UK term "taxi plate".
Minicab	Term sometimes used for Private Hire Vehicles in the UK.
Owner-driver	A person who <u>owns and drives his own vehicle</u> . Often registered as a company. Also covers the term independent driver. The person or company only operates one taxi vehicle. An owner-driver may have salaried drivers for part of the day/week. If a person operates several vehicles, he is categorised as a taxi company.
Ply for hire	A driver looking for customers in the hailing market only, plies for hire.
Private Hire services	Door-to-door passenger services on demand <u>offered on a private basis</u> by phone or from an outlet. Not allowed to enter the hailing market or the rank market (unlike taxis.)
Private Hire Vehicle (PHV)	A vehicle used for private hire services. Not allowed to pick up passengers in street or at taxi ranks. In Ireland, the term Hackney is used for private hire vehicles. Note the difference from the UK term hackney, which is the same as a licensed taxi.
Proprietor	Term used in the UK for the actual holder of a taxi operator's licence. The proprietor is the person responsible for a taxi company. In the UK and Ireland, this is equal to the term taxi operator used in other countries as well as in the EU.
Salaried driver	A taxi driver employed by a taxi operator to drive the taxi. The taxi operator is the employee. In Ireland, the term cosy is also used.
Specific DC company	A specific Dispatching Central company is a company offering DC services without operating its own vehicles.
Street work	This term cover both the hailing and the taxi rank segments. Relates to all services rendered from the street.
Taxi	
Taxi company	A taxi company operates several taxi vehicles. Must be distinguished from owner-drivers. The company employ drivers and other personnel. The terms 'taxi enterprise' and 'taxi undertaking' are also used in the literature.
Taxi driver	A person allowed to drive a taxi. Usually taxi drivers must be licensed. A taxi driver's licence will be issued to qualified drivers. To be licensed, certain qualifications may be required. The driver will usually be either an owner-driver, a salaried driver or a hirer.
Taxi driver's licence	A licence authorising a person to drive a taxi. The licence gives the right to access and exercise the profession of driving a taxi.

Term	Explanation
Taxi driver's requirements	This is related to the entry of persons into the taxi-driving profession. Usually some qualifications are needed to enter the profession. When qualified to access the profession, the person is granted a taxi driver's licence.
Taxi operator	A person or company operating taxis. The operator is in charge of the vehicles when used as a taxi. The vehicles may be owned or leased by the operator. A taxi operator may be an owner- driver (owns and drives one taxi vehicle) or a taxi company (operates several taxi vehicles). In the UK, the term proprietor is used for taxi operators. The operators may have to be registered or licensed following certain requirements and may have to obtain a taxi operator's licence.
Taxi operator's licence	A licence giving an operator <u>the right to operate a taxi</u> and thus access to the profession. Usually, taxi operators will have to be registered or licensed. In some places there is an upper limit on the number of operators licences. An operator may have several licences, but this varies between countries. In such instances, a licence is needed for each of the vehicles. The taxi operator's licence is a prerequisite for access to the market.
Taxi plate	The UK term for a taxi operator's licence. Also the similar as the US term medallion. In other countries similar local varieties exist.
Taxi rank	A designated area/facility (often curb side) exclusively for the use by taxis waiting for a trip and customers waiting for a taxi. Sometimes called cabstand.
Taxi rank market	Refers to the market segment of the taxi industry where taxis are hailed at taxi ranks. The other segments are the hailing segment and the telephone-booking segment.
Taxi service	A door-to-door passenger service on demand. The service is offered to the general public's disposal by telephone booking, hailing from the street or from taxi ranks. Must be distinguished from PHVs, which are not allowed to pick up passengers from ranks or in the street.
Taxi vehicle	A vehicle allowed to be used to provide taxi services. Usually, the vehicle must be licensed (taxi vehicle licence) for taxi purposes.
Taxi vehicle's licence	A licence authorising the vehicle to be used as a taxi vehicle.
Telephone booking market	Refers to the market segment of the taxi industry where taxis are booked/ordered by phone. A Dispatching Central usually carries out the telephone booking service. The other segments are the hailing segment and the taxi rank segment.