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# Uber

## - a Case Study of the Effects of Legalizing Ridesharing Platforms

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## Abstract

This thesis investigates the ridesharing platform Uber, and the consequences following potential legalization of Uber in the Norwegian market. Through existing research and a quantitative survey on consumer preferences, I seek to find whether adjustments of existing laws and regulations in the transport sector can contribute to desired innovative introductions in the taxi market and increase societal welfare in Norway.

Generally, sharing economy firms are described as platforms facilitating and coordinating transactions between individuals. These developments have become possible through technological change and innovation, in particular on the way information is spread and processed. In turn, this has opened and will continue to expand the scope for supplying new services. However, many of these services, including Uber, face challenges when encountering national legislation. The expansion of ridesharing services has caused debates on the appropriateness of the current structure of the Norwegian taxi industry, and whether legislative changes are in order.

The framework of this study consists of an in-depth study of Uber, a quantitative survey and a theoretical evaluation of the existing market and relevant regulations.

This study concludes that Uber's entry brings welfare benefits to consumers, through lower prices and increased consumer surplus. In addition to generating incentives for the regular taxi industry to improve, the characteristics of Uber's business model have shown increased efficiency, quality and safety in the taxi industry. Moreover, benefits are expected to reach beyond the taxi market. Based on the conclusion, the thesis suggests a modification of existing regulations, abolishing the current means tested supply and regulations on price.

## Sammendrag

Denne oppgaven omhandler bildelingstjenesten Uber, og undersøker hvilke konsekvenser lovliggjøring av Uber i det norske markedet vil ha. Gjennom eksisterende forskning, i tillegg til en kvantitativ spørreundersøkelse om forbrukerpreferanser, prøver jeg å gi svar på hvorvidt forandring av eksisterende regler i transportsektoren kan føre til ønskede og innovative tilskudd i taximarkedet, og øke velferd i Norge.

Generelt blir delingsøkonomiselskaper beskrevet som plattformer som forenkler og koordinerer transaksjoner mellom aktører. Slike utviklinger er gjort mulig av teknologiske forbedringer og innovasjon, særlig i forhold til informasjonsdeling og -behandling. Videre har utviklingen åpnet for nye muligheter for hvordan tjenester tilbys. Til tross for dette møter mange delingstjenester, inkludert Uber, utfordringer i møte med nasjonale lover og regler. Økningen av antall bildelingstjenester har medført store debatter om egnetheten til nåværende strukturen av norsk taxiindustri, og hvorvidt tiden er inne for et nytt sett med lover og regler.

Oppgaven består av en detaljert og grundig studie av Uber, en kvantitativ spørreundersøkelse og en teoretisk vurdering av det eksisterende markedet med tilhørende reguleringer.

Det konkluderes med at Ubers inntreden gir en velferdsøkning for konsumenter gjennom lavere priser og økt konsumentoverskudd. I tillegg til å generere forbedringsinsentiver for den tradisjonelle taxiindustrien, har Ubers forretningsmodell medført økt effektivitet, kvalitet og sikkerhet i taxiindustrien. Videre forventes det at Uber vil påvirke samfunnet utover taximarkedet. Basert på konklusjonen presenteres lovforslagsendringer som inkluderer en avvikling av behovsprøvingen og prisreguleringer.

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Live Hagtvedt

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## 1. Introduction

The sharing economy is expanding. This new market structure has been described as a socio-economic system in which individuals utilize the Internet as a platform to get in contact with other firms and individuals in order to share services and consumption. In this rapidly spreading market, people can share, swap, borrow and co-consume basically all kinds of goods and services. Platforms enabling this kind of business exist in various sectors, though most known may be two of the firms operating in the hotel and the transportation industries, namely Airbnb and Uber. These firms use technology to connect potential customers to suppliers, increasing efficiency by eradicating the need for intermediaries. The networking among participants is mainly enabled by social media and community platforms (Puschmann 2016). Sharing economy firms generally make use of a rating system, where both sides of the transaction get a rating based on their performance, to increase credibility. However, the characteristics and effects of platforms such as Airbnb and Uber have been widely debated.

### 1.1 The sharing economy

Sharing economy firms use technological advances and innovations to change the nature of commercial interactions, giving consumers access to, rather than ownership of, assets (The Economist 2013a). Varying definitions of this change from ownership to usage exist, but the following captures the gist of them: “The sharing economy is an economic model in which individuals are able to borrow or rent assets owned by someone else” (Investopedia 2016). Transactions facilitated by sharing economy firms have been termed “peer-to-peer”, as technological solutions are replacing traditional firms in the transaction, allowing customers to be in direct contact with the suppliers of the service (Federal Trade Commission 2015). However, these platforms have various names - some claim that they have nothing to do with sharing, and that more appropriate terms would be the *shadow economy* or *platform capitalism*. According to PWC (2015), the word sharing is seen as a misnomer by many, as the industry is more about monetary opportunism than altruism. Others see these developments as long-desired and innovative contributions to the economy. However, despite the ongoing discussions, the consequences of their entry remain unchanged.



Collaborative consumption changes the structural composition of the markets. Transaction costs are reduced, due to a simplified process of coordinating the transaction (Hollensen 2007). By decreasing the “friction” between the involved parties, efficiency increases. Using the traditional hotel industry as an example, high entry costs are observed: starting a hotel requires space, rooms and available beds, bathrooms, staff, etc. However, through Airbnb, a major and successful actor in the sharing economy, individuals get the opportunity to become both “consumers and producers”: It allows individuals to open their homes to travelers with no prerequisites other than a place to sleep. Entry costs and transaction costs decrease, and due to the increased supply, competition increases and the market power of the traditional industry declines significantly.

According to the Economist, the rise of the sharing economy is partly caused by the financial crisis, due to increased needs for earning (and saving) money (The Economist 2013b). Between 2007 and 2010, the Internet expansion and the rise of social media platforms instigated the founding of many sharing economy firms. The establishment of firms like Airbnb and Uber have caused a spiraling growth for the sharing economy, driven mainly by advances in technology, increased focus on cost savings and social change. According to PWC, the five main sharing economy sectors generated about 15 billion dollars in global revenue in 2015. Moreover, it is estimated that by 2025, these same five sharing economy sectors have the potential to generate revenues of a staggering 335 billion dollars (PWC 2015).

As noted by Cannon and Summers (2014), the interests of sharing economy firms often align with those of the government. However, since the sharing economy structure does not necessarily fit into existing regulatory frames, some have raised questions as to whether these platforms are trying to exploit the industry’s loopholes rather than developing legitimate business models (Cannon & Summers 2014). Thus, potential growth in the sharing economy depends on new actors’ ability to overcome regulatory and fiscal obstacles.

## 1.2 Choosing Uber as the case for this study

Due to the broad scope of the sharing economy, it is essential to narrow down the range of this thesis. Because of the attention Uber has received in the media lately, and the heated debate about their existence in the Norwegian market, Uber was a natural choice.

Simply explained, Uber is a ridesharing service connecting private drivers to potential customers through a smartphone app. This allows car owners to take part in the market by using their own vehicles to supply rides. In contrast, the Norwegian taxi market follows a rigid system, with district-based approval arrangements and maximum pricing, in which the government determines the capacity and price rates of the sector (Juel 2016). With Uber's entry, new methods of business have emerged, and the change in the traditional market structure has allowed Uber to operate in an available and previously unused area of the transport sector.

New competitors tend to ruffle a few feathers, and Uber is no exception. Uber's entry triggers broad juridical, political, economic and ideological debates (European Parliament 2015). In Uber's case, main issues include taxation and existing regulations for the transport sector. For example, according to the Norwegian *Act on Professional Transport by Motor Vehicle and Vessel*<sup>1</sup>, all providers of paid transport are required to possess a license to do so (Norwegian Government 2011). This implies that all unlicensed drivers, receiving payment for services they provide, operate illegally according to Norwegian legislation.

This thesis deals with UberPop, one aspect of Uber's services. UberPop is comparable to a regular taxi service, while UberBlack, on the other hand, is similar to a limousine service supplying luxury vehicles by providers holding commercial licensing and registration (Ridesharing Driver 2015). The two services are subject to different legislation, and have different requirements towards the standard of the vehicle. As UberBlack drivers are eligible to licenses, this service falls under different legislation, and is legal in Norway (Simonsen 2016). Thus, all further references to Uber in this thesis allude to UberPop.

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<sup>1</sup> Yrkestransportloven

Uber operates with lower prices compared to the traditional taxi industry. Due to the easy access to both sides of the transaction, Uber lowers transaction costs and increases efficiency. On the supply side, independent drivers supply rides to preferred hours; while on the demand side, consumers encounter a new and simplified transport service, as the app organizes the ride from beginning to end. The regulated taxi industry, on the other hand, is subject to legislation that aim to ensure certain standards of safety, reliability and quality, at the same time as ensuring a fair competitive market structure (Norwegian Government 2015). According to the *Act on Professional Transport by Motor Vehicle and Vessel*, the required taxi license may be granted to anyone who fulfills the requirements of having a good repute, a satisfactory financial standing and sufficient professional competence (Norwegian Government 2011). The income generated from supplying the service must be the main income of the individual possessing the license - predominantly where Uber fails to comply (Norwegian Competition Authority 2015). In the United States, empirical findings show that a majority of Uber drivers supply taxi services as a second job (Hall & Krueger 2015). Due to the low unemployment rate in Norway, it is reasonable to assume that this also applies to the Norwegian labor market. Hence, for the majority of Uber drivers, obtaining a license is problematic under current Norwegian regulations. Further complicating entry, the supply of taxi services is means tested. That is, each county municipality has the authority to introduce an upper limit on the number of licenses granted in the county, aiming to ensure a healthy level of competition (Norwegian Government 2015). Thus, Uber drivers are prevented from legal participation in the Norwegian market.

### 1.3 Initial hypothesis and research questions

With the rise and expansion of the sharing economy, and its increasingly debated impacts, my curiosity grew. Adam Smith's theory of the invisible hand taught me early on my path to becoming an economist that individuals who pursue self-interest, and thus direct the industry to do so, will frequently promote the interest of the society (Smith 1776). Later I have learned that this not always the case, and that for societies and markets to function in a satisfactory way, rules and regulations are needed. However, it is crucial that regulations develop in accordance with market fluctuations

to remain relevant and appropriate. Retaining current legislation may restrain potential benefits for consumers.

From the start, my hypothesis has been that Uber yields welfare benefits to consumers due to lower prices. However, during the initial phase of this process, various questions concerning the structure of the sharing economy came to mind: Does this “old system” have the ability to evaluate the appropriateness of a “new structure”? Are existing rules and regulations at all applicable to this new way of doing business, or does the development of the sharing economy require a new set of regulations? Does the entry of such firms threaten an established and seemingly well-functioning system? The objective of the thesis is to analyze Uber’s entry in the Norwegian market, and the expected consequences of legal entry on consumer welfare. Thus, I have formulated two overall research questions:

*How can adjustments of existing laws and regulations in the transport sector – legalizing Uber – contribute to desired innovative introductions in the taxi market?*

*What will be the consequences of legalizing Uber’s entry?*

#### 1.4 Limitations of the study

This analysis takes existing legislation into account, and further examines the expected consequences of legalizing Uber. The study will consider the effects, rather than the motives for potential change. As it is an economic evaluation, it will not discuss political or ethical objectives or purposes of the potential modification of legislation.

An obstacle to conducting research on a new area is lack of existing data. This obstacle became apparent throughout the process of this study, and particularly regards data from Norway. To overcome this, I have anchored my study to established theories for consumer demand and producer behavior, and utilized the data I have gotten access to from outside Norway.

## 1.5 The outline of the thesis

Chapter 2 presents existing studies and research on Uber, before explaining the methodology and research methods of this thesis. The analysis starts with a theoretical description of the characteristics of the Norwegian taxi industry in Chapter 3, discussing the structure of the taxi market. Here, the properties of the two sides creating a market are described, and general market failures allowing for Uber's entry are pointed out. Chapter 4 provides a detailed description of Uber and associated characteristics, before the outline of current Norwegian legislation applicable to Uber and some international experiences follow in Chapter 5. Chapter 6 contains a theoretical presentation of the relationship between Uber and traditional taxi services, and how the demand for the two services changes when prices change. The survey I conducted is presented in Chapter 7, in addition to a description of the process of creating the survey and the survey methodology. Chapter 8 discusses Uber's impact on the Norwegian labor market and the general characteristics of Uber drivers. Additional consequences of Uber's entry are discussed in Chapter 9, in which the expected effects are separated into short-term and long-term effects. Ultimately, Chapter 10 consists of concluding remarks, followed by suggestions to how modifications of current legislation can contribute to increase the welfare of consumers.

## 2. Existing literature and preliminary work

Below is a brief presentation of the recent development of guidelines and suggestions to existing Norwegian regulations. This is important preliminary information, as it reveals a taxi industry that may be more suited for change than what is known to the average consumer.

### 2.1 Suggested regulative changes

Already in 2003, the Ministry of Transport and Communications was advised to modify the taxi sector's regulatory framework. The recommendations followed an analysis concluding that the characteristics of the taxi industry did not significantly differ from other sectors, and the means tested entry could no longer be defended (ECON 2002). Similarly, a recent report carried out by the Norwegian Competition Authority (NCA) (2015) points out the need to focus on increasing productivity, and examine existing regulations limiting competition. The NCA report concludes that it is time to abolish the current means tests and price regulations in the taxi industry, and that the aim of new regulations should be to support the development of customer-focused, flexible and modern frameworks that encourage innovation and competition in favor of potential taxi customers. However, a central aspect of the report regards competition, urging similar conditions for both new and established suppliers of taxi services (Norwegian Competition Authority 2015).

Evidently, we are facing a new era pushed forward by the rise of the digital economy. In March 2016, the Norwegian government appointed a board with an objective of analyzing the sharing economy, and how it can contribute to a more efficient exploitation of resources (Finansdepartementet 2016). This illustrates the pertinence of the sharing economy, and that Norwegian regulative forces aim to support a coherent relationship between these new firms and applicable regulations.

## 2.2 A note on existing research

To answer the research questions, a look at existing research and studies on the sharing economy was necessary. It became apparent throughout the process of writing this thesis, that the extensive media coverage does not reflect the amount of scientific papers on the topic. Though some former studies have examined different effects of Uber's entry in the taxi market, a thorough literature search revealed few scholarly studies on these issues. This also pertains to the Norwegian market, where relevant information is particularly limited. Thus, this study may contribute to the existing literature.

Existing studies mainly originate from the fields of economics, business and law, and the majority of these studies derive from the same scarce research pool. Hence, in order to obtain relevant data for the thesis, it was crucial to draw comparisons between Norway and countries with available information: predominantly the United States and France.

## 2.3 Methodology

Despite limitations in terms of scientifically published works and data on this topic, existing studies provide useful information and reflect interesting findings on the subject. As the sharing economy is a relatively "new" phenomenon, available information is likely to be up to date and relevant. The methodology therefore aims to explain how available existing studies influence the decision of why certain methods are used in favor of others. In this case, generalizations across countries are necessary, in addition to deriving information from a variety of sources, such as reports, studies, publications, social media, blogs and newspaper articles. Keeping these restrictions in mind, as well as general source criticism, is crucial for producing a reliable study.

Two publications protrude as the most relevant contributions. The recent report from the NCA, *A Future Oriented Taxi Market*<sup>2</sup> (Norwegian Competition Authority 2015), discusses the foundations of the current Norwegian taxi market and the motives for a potential change in regulative legislation, especially concerning competition. As the

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<sup>2</sup> Freely translated: et drosjemarket for fremtiden

NCA report does not include any evaluation of Uber, Jonathan Hall and Alan Krueger's report, *An analysis of the labor market for Uber's driver-partners in the United States*, became an important contribution to the analysis of Uber's entry. The report is the first comprehensive analysis of Uber, and examines the characteristics of Uber's driver-partners in the U.S., and the labor supply elasticity in the Uber market (Hall & Krueger 2015).

To gain information from countries in which Uber is legal, I contacted actors in the Estonian taxi market. As of April 2016, Estonia is the only European country to embrace Uber, and legalize ridesharing (Munford 2016). Here, Uber and the local Estonian service *Taxify* legally compete with conventional taxi services. Actors in the Norwegian market, such as the Institute of Transport Economics, Norway's Taxi Association and relevant organizations also provided useful information on the subject. Much of which is presented in this analysis, though some was ultimately left out.

## 2.4 Research method

The methodology of a study creates the foundation for the methods. To analyze the effects following Uber's entry in the Norwegian taxi market, a combination of an in-depth study of Uber, primarily built on existing analysis and studies, a conducted quantitative survey and a theoretical evaluation of the existing market and relevant regulations will follow.

Due to the restricted amount of available statistics, a case study of Uber was a natural choice to congregate necessary information. Qualitative methods are useful to study previously unexplored topics, or topics with a limited amount of background information (Fothergill 2004). As pointed out by Gerring, "a case study may be understood as an intensive study of a single case where the purpose of the study is – at least in parts – to shed light on a larger class of cases" (Gerring 2007: p. 20). Case studies may employ a variety of techniques, both qualitative and quantitative, for gathering information and evidence (Gerring 2007). This case study aims to capture characteristics of Uber's structure to further develop a greater and more quantitative picture of how innovative participants affect a currently regulated taxi industry.



A literature review of existing research was performed to present the current state of knowledge on Uber. The purpose of such a review is to “provide a background to and often a rationale for further research” (Jesson et al. 2011: p. 18). As pointed out by Jesson et al., a traditional literature review may lack transparency, and is thus hard to replicate. The advantage of this type of review lies in its claim to be a more neutral and technical process, and thereby demonstrating objectivity to the reader (Jesson et al. 2011). Jesson et al. also point out that a literature review seeks to add new insight to a topic.

In addition to the literature review, I conducted a quantitative study to outline the structures of consumer preferences in the taxi market. The survey aimed to get primary data from Norway on consumer evaluations of Uber relative to traditional taxi services, and thus contribute to the comprehension of Uber’s development. Rather than providing direct answers, the survey was used to help fill the void of sparse data, and hence assist me in answering the research questions. With the rapid changes going on in the sharing economy in general, and in the Norwegian taxi market in particular, the survey was designed to capture aspects not embedded in the scant existing studies. The survey is further described in Chapter 7.

The thesis’ main theoretical framework builds on microeconomics. General microeconomic theory helped me on where to locate possible market failures, and consumer theory provided for a better comprehension of the forces enabling Uber to enter the market. More specifically, these economic theories created an outline for the understanding of the underlying structures of why consumers behave the way they do. Furthermore, they allowed for a generalization of different factors that generate advantages and disadvantages. On the supply side, theories originating in industrial organization contributed to establish a theoretical framework for how competition is structured in the taxi market, and how the market is organized.

### 3. Characteristics of the taxi industry

Demand and supply of rides for hire create the taxi market. During the last 8-10 years, the Norwegian taxi industry has experienced a decline in number of kilometers spent with customers, in addition to a decline of approximately 30 percent in the exploitation of the existing car pool since 2007. As a result, the costs, and thus also the prices, have increased remarkably (Juel 2016).

Theoretically, the taxi market can be described through game theory: a situation in which players strategically interact, and where the actions of one player affect the other (Belleflamme & Peitz 2010). For an additional profit-maximizing firm to participate, entry must be considered profitable. To get a better comprehension of the market, and understand the factors that enabled Uber's entry, a description of the current situation in the taxi market follows.

#### 3.1 The supply side

The taxi sector in Norway is subject to regulations on price, formation and behavior that limit competition. Due to the presence of high entry costs and general asymmetric price information in the market (i.e. unequal access to information between different parts of the transaction), the taxi sector is characterized by a high concentration of market power (Norwegian Competition Authority 2015). This asymmetry of available price information results in the lack of transparency on the supply side. A quick Google search easily demonstrates this, as information on the number of operating taxi services in the county of Oslo and associated prices are nearly impossible to find. Through communication with Norway's Taxi Association, it was found that by March 2016, there are five centrals operating in Oslo, with 1833 licensed drivers (Hanssen 2016).

The market is divided in two: a spot market and a phone market. In the former, individuals hail taxis on the streets, while in the latter, taxis are requested by phone through a taxi central. In the spot market, both suppliers and consumers are required to visit the actual market for a transaction to take place (Matsushima & Kobayashi

2010). When suppliers and consumers of services are matched, the transaction can be carried out. If not, they will both have to wait for another potential match to enter the market. This involves costs: travel costs to reach the market, in combination with asymmetric price information decide which market each consumer will enter. Often, consumers enter markets even though there could exist other markets nearby with better conditions (Matsushima & Kobayashi 2010).

Besides, costs arise in the form of queues when demand exceeds supply, or vice versa. To decrease these costs, the alternative phone based market can be entered. In this market, the degree of competition may be higher, as search costs and the discomfort of waiting for an available taxi are reduced.

### 3.1.1 Oligopoly

Structurally, the taxi sector may be described as an oligopoly: a market structure in which a small number of firms, offering homogenous products, have the large majority of the market share (The Economist 2016c). Competition in oligopolies may follow one of two different models: the Cournot or the Bertrand model (Belleflamme & Peitz 2010). Simply explained, based on various assumptions, the Cournot model describes a situation in which firms compete on the amount of output produced. The Bertrand model, on the other hand, describes a market structure in which firms compete on prices. As the amount of output is set by the amount of licenses granted to drivers, the Norwegian taxi market is structured in a way similar to the Bertrand model where taxi companies compete on prices. As more firms enter the market, the Bertrand model predicts prices to decline, and eventually end up being equal to the marginal costs of supplying the service. Due to heavy existing regulations in the taxi industry, operators are prevented from entering the market because of entry barriers in form of requirements to the possession of a taxi license. This generates market power and prevents the predicted Bertrand result to arise, as the limited amount of supply allows for a gap between revenues and costs of providing the service.

As pointed out by Varian, “the cost function is our primary means of describing the economic possibilities of a firm” (Varian 1992: p. 64). Thus, the decision for a taxi operator to enter the market and provide services will depend on the relationship

between expected costs and revenues, and entry will happen if expected revenues exceed expected costs. The costs are both variable and fixed. Variable costs are costs associated with the actual ride, such as labor costs, fuel costs and potential cleaning costs. Fixed costs occur regardless of the ride: for example license costs, parts of the insurance costs and vehicle costs.

## 3.2 The demand side

The demand side of the taxi sector consists of two segments: independent consumers and contract based consumers. Independent consumers are travelers that individually contact a taxi service, using either the spot marked or the phone marked. In contrast, contract based consumers have predetermined agreements, which may be arranged due to special needs for reliable transportation.

### 3.2.1 The TT-agreement

The TT-agreement is a service established by law, securing movement of disabled individuals, who cannot make use of other sources of public transport, through access to an alternative transport option (Lovdata 2015b). This service is regulated by each county municipality, and covers a range of different situations where the individual is granted transport assistance. Taxi centrals typically compete to hold these contracts, and the general agreement usually includes a specific number of trips (Norwegian Competition Authority 2015). Operators bid on the contract, and holders will be chosen based on criteria such as price, capacity, expected waiting time and vehicle standard (Hanssen 2016). A potential agreement can be held by various service suppliers, and is not necessarily restricted for a taxi central. However, as taxi centrals typically are the operators with satisfactory capacity and possibility to supply the volume of service that these agreements require, they usually are awarded the TT-contract. The TT-agreement can be held by one sole taxi central, or be divided between two or more firms.

The organization of the TT-agreement can be detached from the remaining taxi market. Empirically, this detached structure is seen in the taxi market in France and in the UK (Baanders & Canoy 2010). Establishing the arrangement as a separate market,

where the highest bidding operator wins the contract, enables any organized taxi central to hold the agreement. However, as the same car fleet serves the two markets, the two segments are connected. In the short term, when total supply can be regarded fixed, channeling more vehicles to one market necessarily results in a reduced amount of vehicles available in the other. An efficient allocation of resources indicates equal marginal revenue of supply in each segment of the market. This implies that the marginal revenue obtained from supplying an additional vehicle in the spot market must equal the revenue generated from providing an additional vehicle in the contract market.

### 3.2.2 Establishing demand

The demand for taxi services is situational and depends on various factors. In addition to prices, expected waiting periods, security and expected journey time, factors like geographic location, weather conditions, economic situation and potential substitution alternatives are expected to affect the demand. Hence, demand may look very different in urban and rural areas. In a competitive market, the supply of any service, including the taxi service can be graphically illustrated as follows.

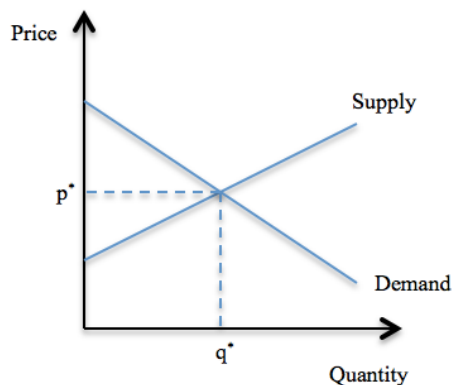


Figure 3.1: a competitive market

Figure 3.1 demonstrates the fundamentals of economics: the upward sloping supply curve and the downward sloping demand curve. The supply curve demonstrates the quantities that will be supplied to different prices: supply increases with price. The demand curve illustrates the opposite effect: demand decreases with price. The

demand curve represents the consumer's set of preferences, and is therefore considered given. The interaction between supply and demand allows for an efficient market equilibrium to be established where supply equals demand, to the price  $p^*$  and quantity  $q^*$ .

The Norwegian taxi market is currently subject to means testing (Norwegian Government 2011). This implies, depending on the level of demand, keeping an upper limit on the amount of taxis in each county. This situation is illustrated by the red line in Figure 3.2. Here, amount  $q^{**}$  will be supplied to price  $p^{**}$ . This is not an efficient solution, as the level of supply is too low for an optimum, and consumers are left without access to the service. Compared to a competitive market, the market is now experiencing a welfare loss, demonstrated by the grey area in the Figure 3.3.

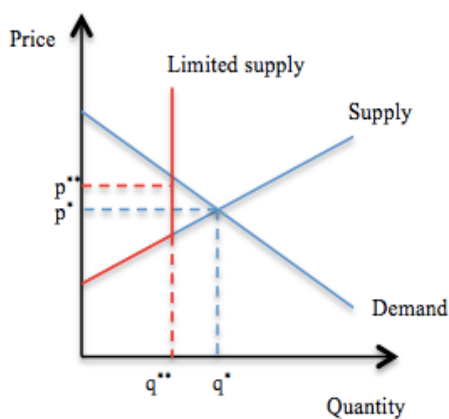


Figure 3.1: limited supply in the market

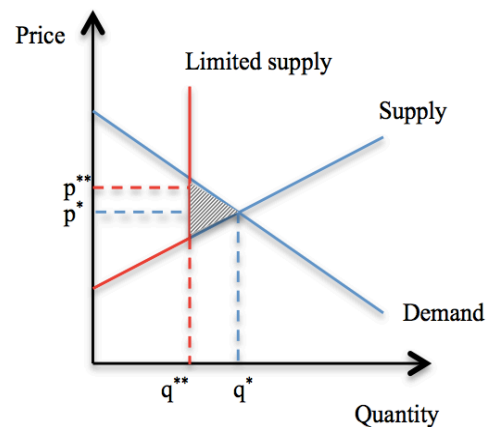


Figure 3.3: welfare loss due to limited supply

### 3.2.3 Elasticity of demand

The price elasticity of demand describes how changes in price will affect the demand. That is, how sensitive demand is to price changes. According to a study on the Sydney taxi market, waiting time, in addition to the actual service price, should be included in the equation for price elasticity of demand (Independent Pricing and Regulatory Tribunal 2014). The more necessary a good or a service is, the less elastic

is the demand. Figure 3.4 illustrates a simplification of a market with two different demand curves: one inelastic (demand<sup>1</sup>) and the other elastic (demand<sup>2</sup>)<sup>3</sup>. An inelastic demand curve illustrates a demand that is insensitive to price changes, while an elastic demand curve represents the opposite.

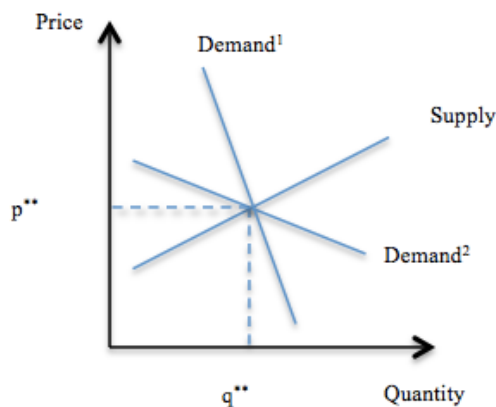


Figure 3.4: elasticity of demand

As for the demand of taxi services, the price elasticity varies with many factors. These include the gender of the consumer, the time of day, expected waiting time, weather conditions, and possible transport substitutes. For example, a lone female trying to hail a taxi on the street in the middle of the night may be willing to accept bigger variations in price than she would when going to a mid-day meeting with friends. This implies that her price elasticity of demand varies with time and situation, in addition to individual differences among consumers.

In a city like Oslo, the majority of inhabitants, with some variation due to geographical positioning within the city, have access to a well-developed public transport network. In such situations, public transport and taxi services may be considered substitutes, though not perfect substitutes, as public transport is of a notably lower quality due to predetermined routes. Despite the lower quality, this

<sup>3</sup> The figure is a simplification, as the elasticity along a linear demand curve is a point estimate, and thus not constant. This is because the ratio between price and quantity differs as we move along the curve. Hence, the elasticity that measures the percentage change in demand per each percentage change in price varies accordingly.

feature implies a possibility for consumers to switch to other methods of transportation in response to increased taxi prices. If the taxi hailed on the street increases its price, an alternative bus ride might appear more attractive. Thus, the demand is elastic. Comparably, variations in the economic situation of the consumer have similar effect on elasticity: students or low-income families may have a more elastic demand for taxi services than individuals enjoying a higher degree of economic security.

To enable an analysis of the market, one often needs to make assumptions and generalizations. A majority of taxi services presumably take place between the hours of 07:00 and 24:00, near other transport alternatives, with customers enjoying a relatively high income. Thus, the general demand for taxi services in Oslo is expected to be quite price elastic, as illustrated by the curve “Demand<sup>2</sup>” in Figure 3.4. Combining this elastic demand curve and the means tested supply, the market may look approximately like Figure 3.5 in situations where the short term supply curve is vertical and  $p^{**}$  is the maximum price that gives equilibrium between demand and supply. For lower prices, there will be excess demand leading other rationing mechanisms than price. Norwegian consumers of taxi services are for example accustomed to queuing in periods of peak demand.

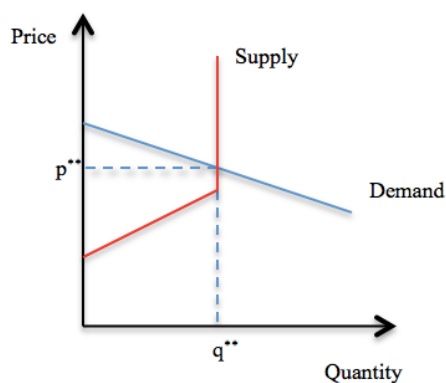


Figure 3.5: presumed current market structure



### 3.3 Service availability

Service availability describes the relationship between the levels of supply and demand. According to a study on the New York taxi market, economic activity, among other factors, has a large impact on service availability. A growing economy reduces the availability, while a shrinking economy increases the level of available taxis (Schaller Consulting 1998). Moreover, the New York study concluded that service availability is a function of taxi fares and level of supply. Figure 3.6 illustrates the development of availability in the Oslo taxi market between 2012 and 2015, by showing the share of supplied hours spent driving with customers. The graph illustrates a weak decline in share of hours spent driving, which implies a weak increase in availability over the recent years. Nine licenses have been granted in Oslo between 2012 and 2015, implying that the volume of supplied taxi services has been stable, with presumably small variations (Transportløyve 2015). Thus, the low variation in availability supports the assumption of a stable demand for the current pricing schedule. A recent study by Statistics Norway (SSB 2016), points in the same direction showing that the average revenue generated per ride in Oslo has remained quite stable in the last few years. As no significant changes have been made to the structure and physical landscape of the city, it is expected that the average distance and duration of rides are practically unchanged. The slight decline may thus not necessarily be caused by changed consumer patterns, but by the general downturn in the Norwegian economy.

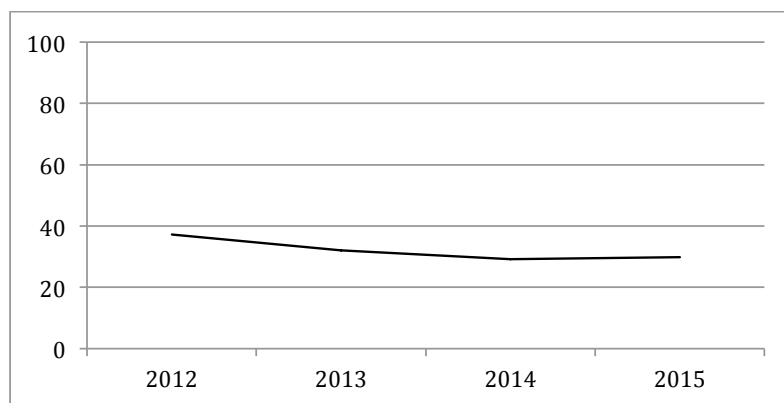


Figure 3.6: percentage of supplied hours spent by Norwegian taxi drivers with customers

A significant finding of the New York study is that desired level of availability can be maintained by adjusting the service supply and taxi fares accordingly (Schaller Consulting 1998). As there is no established targeted level of service availability in Norway, this decision is left to each county municipality. A potential establishment of such a target could improve market analysis, and simplify the estimation of the right level of competition based on the amount of granted licenses.

### 3.4 Introducing Uber

With the introduction of Uber, dispatching the TT-agreement from the remaining taxi sector may be crucial to ensure a reliable market for individuals in need of such services. In a hypothetical situation, in which Uber is the providing operator of this agreement, challenges are expected to occur due to the combination of Uber drivers being independent contractors, and Uber's lack of a superior body to organize supply. As drivers supply rides to irregular times, a reliable and dependable TT-agreement could be hard to guarantee. Thus, a separation of the segments is crucial, with established operators holding the agreement.

Consumers' willingness to embrace technological developments is an important factor allowing for Uber's entry in the Norwegian market. According to the NCA, 80 percent of the Norwegian Internet population (the Internet population consists of 95 percent of the actual population of Norway), was in possession of a smartphone in 2015 (Norwegian Competition Authority 2015). This reveals a steep increase in four years, when only 50 percent of the Internet population owned a smartphone.

Moreover, the general market structure in Norway, with the combination of a means tested supply and an elastic demand allows for Uber's entry. As Uber operates with lower prices, this new price level would theoretically cause demand to increase to meet the new level of supply. According to the CEO of Oslo Taxi, Oslo's biggest taxi central with 923 out of 1833 granted taxi licenses, the central has not experienced a decline in the amount of requests after Uber's entry in the market (Rebne 2016). This finding supports the theory of demand growing approximately at the same rate as supply, or that excess demand absorbs the additional supply. During February and March of 2016, Oslo Taxi experienced an increased amount of requests compared to

the same weeks of last year. However, according to the Oslo Taxi CEO, it is likely that the company would experience a further increase in demand in a situation where Uber did not exist (Rebne 2016). An alternative situation may be that Uber widens the market, in terms of making the rides-for-pay service available to consumers who would normally abstain due to high costs.

However, these characteristics may change with Uber's expansion. In the current situation, based on visual availability in the Uber app, there is only a modest number of Uber drivers operating in the Norwegian market. Thus, in case of legalization, Uber's role as either a substitute for, or a complement to, regular taxi services would become more apparent

### 3.5 Summary of the chapter

Market failures in form of market power, asymmetric information and high transaction costs and search costs have allowed Uber to successfully enter the Norwegian taxi market, despite current regulations making Uber unlawful. Existing regulations prevent the Bertrand result to arise, creating a gap between associated costs and revenues. On the demand side, the segmented market allows for a distinction between contracted and independent consumers, where the independent consumers remain the target group of Uber's activity. The demand in the spot market is considered given, and mostly price elastic.

The contract market is characterized by required delivery of contracted services. Despite this segment being outside Uber's activity area, the two markets are connected through utilizing the same stock of suppliers. Hence, an increase in supply in one segment results in a decreased number of available vehicles in the other.

The effects of Uber's entry are clear: supply increases, competition rises and prices decline. Eventually, this would cause the structure of competition to approximate Bertrand competition. This implies lower revenues for taxi owners, due to prices converging towards the marginal cost of supplying the service. Thus, profits would eventually equal zero.

## 4. Uber

Various factors enable Uber to grow, and their popularity to increase. A look into their business model and its characteristics can provide useful understanding that help to evaluate the effects of their entry.

Uber was founded by Travis Kalanick and Garret Camp after the two had trouble finding a taxi in 2008 (*Uber* 2016c). Seven years later, Uber operates in 401 cities in 68 countries worldwide (*Uber* 2016b). As of December 2015 the company was valued to 62.5 billion US dollars (USD) (Newcomer 2015).

### 4.1 The business model

Uber's business model is simple. According to Uber itself,

*The Services constitute a technology platform that enables users of Uber's mobile applications or websites provided as part of the Services (each, an "Application") to arrange and schedule transportation and/or logistics services with third party providers of such services, including independent third party transportation providers and third party logistics providers under agreement with Uber or certain Uber's affiliates [...]. Unless otherwise agreed by Uber in a separate written agreement with you, the Services are made available solely for your personal, non-commercial use. [...] Uber does not provide transportation or logistics services or function as a transportation carrier (Uber 2016d: section 2).*

As stated above, Uber classifies itself as a technology platform: an intermediary between potential users, rather than a provider of a service.

Uber's smartphone based app can be considered a marketplace, where drivers are connected with passengers. Drivers are independent contractors, either working independently or for someone owning multiple vehicles. Uber charges customers per

kilometer through credit card details kept on file (Rogers 2015). As of February 2016, Oslo is the only Norwegian city in which Uber operates (Uber Oslo 2016).

#### 4.1.1 Prices

Uber is committed to being a low-price leader, and operates with lower prices than the regular taxi industry (Uber 2016f). According to Uber itself, the cost of an Uber ride is reduced with 50 percent compared to a regular taxi ride (Carlson 2015). However, a price test conducted in Oslo revealed a smaller difference, though Uber still turns out significantly cheaper. Uber showed to be 35 percent cheaper on middle-length rides, and up to 70 percent cheaper on short rides (Rammen 2016). This is due to the use of a lower minimum fare than in regular taxis.

Uber Oslo calculates the total price of a ride based on of three criteria: a base fare set to 30 Norwegian kroner (NOK), a set price per minute (3 NOK) and a set price per kilometer (10 NOK). In addition, the minimum fare is set to 40 NOK and the cancellation fee to 40 NOK (Uber Oslo 2016). Uber charges its drivers a commission of 20 percent of each fare, and drivers keep the remaining 80 percent (Rogers 2015). The equation for calculating fares is the following (Uber 2016a):

$$\begin{aligned} &\text{Base fare} + (\text{cost per minute} \times \text{duration of ride}) \\ &\quad + (\text{cost per km} \times \text{distance of ride}) = \text{total price} \end{aligned}$$

In about 10 percent of rides in periods of high demand, Uber makes use of dynamic pricing, also called surge pricing. This implies rising prices when demand peaks, to assure conformity between supply and demand, aiming to encourage drivers to increase their supply (Uber 2016f). Potential customers are required to approve the increased rates, before being connected to a driver.

#### 4.1.2 Transaction costs

Transaction costs are all costs associated with buying and selling a good or a service: the time, money and effort needed to facilitate a transaction (Given 2015). Upon entering the market, the structure of Uber's business model immediately reduced these costs, by connecting the buyer directly to the seller. Instead of working for a taxi

central, drivers can now, through the smartphone app, provide taxi services as independent contractors (Given 2015). On the demand side, technological developments allow for individuals to assess information on price and waiting time, to efficiently obtain a ride. Thus, search costs are reduced. Transactions previously often facilitated by firms are now simplified and enabled by technology platforms like Uber.

#### 4.1.3 Reputation system

Uber's success depends on mutual trust in an anonymous market: customers trust that drivers will take them home safely, and drivers trust that customers will behave respectfully and not cancel a requested ride shortly before arrival. To help solve these challenges, Uber makes use of a reputation system. After a trip, drivers and riders are given the opportunity to rate one another, and bad rating and low acceptance rates may result in losing access to the Uber platform (Uber Oslo 2016). This system reveals valuable information about quality, and can solve problems connected to asymmetric information between suppliers and consumers. Hence, the use of a reputation system is welfare-increasing (Belleflamme & Peitz 2010).

#### 4.1.4 Customers

Uber's smartphone requirement presumably makes younger people more likely to use its services. Through the Uber app, individuals over the age of 18, owning a valid credit card, can request rides in cities in which Uber operates. When requesting the ride, a photo of the driver, in addition to information on the vehicle is provided to increase security, and the app then uses GPS coordinates to estimate waiting time and price (Uber Oslo 2016). When the ride is completed, the payment goes through. The payment can either be shared, or paid entirely by one individual. To further increase security, Uber allows customers to visibly share the route with others, by providing them with the details of the ride (Uber Oslo 2016).

#### 4.1.5 Partner drivers

The so-called Uber partners are drivers supplying rides through the Uber platform. Uber Oslo requires drivers to be above 21 years of age, and to possess a driver's license valid at least one year prior to becoming an Uber driver. According to an

article in the Norwegian newspaper, *Dagens Næringsliv*, the contract between Uber and its drivers requires drivers to hold a passenger traffic permit issued by local authorities (Eidem 2014). The vehicle is required to have four doors, and be an insured 2006 model or newer (Finn.no 2016). Uber does not require documentation on the passenger service permit nor the car insurance (Eidem 2014). However, a certificate of good conduct from local police is required documented (Uber 2016e).

#### 4.2 Labor supply elasticity

Standard theories of inter-temporal substitution of labor show evidence of positive labor supply elasticity. That is, when the wage rate is relatively low, workers respond to an increased wage rate by supplying an increased number of working hours<sup>4</sup>. This implies that the substitution effect outweighs the income effect (Rahman 2013). In contrast, surprising findings from an older study on daily price fluctuations in the regular taxi market show a tendency towards income targeting, based on the findings of a negative labor supply elasticity (Camerer et al. 1997)<sup>5</sup>. This implies that fewer hours of work will be supplied when the wage rate increases, a situation which is inconsistent with standard models on labor supply. The finding of negative labor supply elasticity has been confirmed by a study on the Singaporean taxi market (Chou 2000). Besides, evidence was found of modified income targeting in New York in a study from 2011 (Crawford & Meng 2011).

A study on Uber shows the opposite effect: a positive labor supply elasticity (Hall & Krueger 2015). This was also found in the regular taxi industry in 2014 (Farber 2014). The positive labor supply elasticity implies little support for income targeting among Uber drivers. This is supported by empirical findings of a decreased instant stopping rate among Uber drivers, in situations of surge pricing. That is, drivers seem to adjust their schedules to provide more trips when prices are high (Chen & Sheldon 2015). Furthermore, the Hall and Krueger (2015) study provides interesting information on earnings: Uber drivers usually receive higher earnings per hour than drivers of regular

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<sup>4</sup> Standard models on labor supply show a positive relationship between the wage rate and hours of supplied labor when the wage rate is relatively low, then a negative relationship when the wage rate increase, i.e. a backwards-bending supply curve.

<sup>5</sup> According to Hall & Krueger (2015), this study has later shown to be biased, due to the observation of white noise in the regression.

taxies.

#### 4.2.1 The efficiency of surge pricing

The combination of Uber's use of surge pricing and the drivers' flexible working schedule raises an interesting question: to which extent can Uber successfully influence the service supply, particularly in the short term? The answer is provided by the crucial findings of a positive labor supply elasticity. If the labor supply elasticity is negative, and drivers respond to a wage increase by supplying fewer hours, surge pricing will have the opposite of desired effect. This would imply that in times of high demand, surge pricing would decrease supply additionally, and an even bigger gap between supply and demand would occur.

Chen & Sheldon (2015) conclude that Uber's surge pricing significantly increases the efficiency in the market, because supply is stimulated to meet the demand. For taxi drivers, both Uber drivers and regular tax drivers, the level of income is relatively low. Thus, the income effect is expected dominated by the substitution effect for all likely levels of income. This supports the presumption of positive labor supply elasticity among drivers, and that surge pricing will have the desired effects of increasing supply.

#### 4.3 Summary of the chapter

The characteristics of Uber's business model, such as lower prices and reduced transaction costs immediately bring welfare benefits to consumers. Besides, the reputation system reveals valuable information that reduces the asymmetric information between actors in the market. At times of high demand, the use of surge pricing in a labor market with positive labor supply elasticity efficiently increases supply and ensures that demand does not exceed supply.



## 5. Norwegian legislation and international experiences

As briefly mentioned, Adam Smith's theory of the invisible hand is not necessarily the root to an optimally functioning market. Different forms of price regulation have been central instruments to overcoming various economic obstacles for centuries. From an active use of stabilization policy after World War 2, aiming to maintain production and employment, and avoid high levels of inflation, instruments were gradually changed for what we today see as modern competition policy (Norwegian Competition Authority 2015). Economic theory mainly distinguishes between two reasons for regulative interventions: to ensure efficiency, and to increase equity (Bekken 2003). The extent of regulation in different industries varies, and the passenger transport sector remains heavily regulated.

### 5.1 The Act on Professional Transport by Motor Vehicle and Vessel

The *Act on Professional Transport by Motor Vehicle and Vessel* is the main legislation applying to passenger transport by motor vehicles in Norway, and enforcement of the act is under the responsibility of the Ministry of Transport and Communications. The act contains the following description of the scope of the legislation: "Regular services are services which provide for the transport of passengers along a specific route, provided such transport is available to all and passengers can join or leave at predetermined stopping points." (Norwegian Government 2011: section 2). The act determines that the supply of passenger traffic services in exchange for reward requires a taxi license. "Any party intending to operate passenger transport services by motor vehicle for reward must have a license to do so. The same applies to any party who operates passenger transport services for reward on a basis similar to taxi services where such services are offered to the general public at a public location" (Norwegian Government 2011: section 4). Hence, the possession of a taxi license authorizes legal access to the market. Requirements for being granted this license are economic assurance, a certificate of good conduct and sufficient proficiency (Norwegian Government 2015).

Licensed drivers are typically connected to a taxi central. These centrals can be organized as associations between drivers holding licenses, or as companies or firms that drivers connect to (Norwegian Competition Authority 2015). The county municipalities have the authority to determine the number of taxi centrals in a district. In this regard, the act presents directions concerning approval and operation of these taxi centrals, with a purpose to achieve a suitable organization of the taxi industry, with the best possible access to transport alternatives for consumers (Stammen 2016). The directions aim to protect the vision of an economically structured taxi industry with a beneficial amount of competition, quality and security.

## 5.2 The Norwegian Competition Authority and the Competition Act

The Norwegian Competition Authority (NCA) is the second institution responsible for regulating the taxi industry. In addition to considering the levels of price rates and tariffs, their assignment is to evaluate the level of competition in various industries, by enforcing the Competition Act<sup>6</sup> (Norwegian Competition Authority 2015). The aim of this legislation is to secure an efficient use of resources by achieving an effective level of competition (Norwegian Competition Authority 2004). An effective level of competition generally implies that the price generated by the market is a result of the interaction between supply and demand for a specific service (Norwegian Competition Authority 2015). In the transport sector, taxi centrals are exempt from the regulations of this act, but the NCA is entitled to enforce or avoid price ceilings on parts of the market where this is appropriate (Lovdata 2015a). “The purpose of the act is to further competition, and thereby contribute to the efficient utilization of society’s resources. When applying this Act, special consideration shall be given to the interests of consumers” (Norwegian Competition Authority 2004: section 1).

## 5.3 Norwegian Tax Legislation

The Norwegian tax legislation applicable to Uber regards corporate taxation and income taxation. This is part of the discussion pertaining to the desirability of new business models like that of Uber.

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<sup>6</sup> Konkurranseloven

### 5.3.1 Corporate taxation

Norway holds tax legislation contracts with various states, primarily to avoid double taxation and prevent tax evasion (Norwegian Tax Administration 2015). Most Norwegian tax legislation is developed on the basis of the *OECD Model Convention* from 2003. The Model Convention applies to residents of either one, or both of the contracting states, and covers tax on income and capital (OECD 2013). Norway might, partly or wholly, lose the right to levy own taxes in situations where firms originate in countries where bilateral tax legislation contracts exist with Norway (Norwegian Tax Administration 2015). From OECD's Model Convention, Article 7 regarding business profits, it follows that "the profits of an enterprise of a Contracting State shall be taxable only in that State unless the enterprise carries on business in the other Contracting State through a permanent establishment situated therein" (OECD 2013: Article 7, section 1). Permanent establishment is defined in Article 5, as "a fixed place of business through which the business of an enterprise is wholly or partly carried on" (OECD 2013: Article 5, section 1). Moreover, the definition includes requirements to presence, such as place of management or offices.

Norwegian tax legislation provides fairly extensive corporate tax levy. However, the levy is limited by the OECD Model Convention regarding permanent establishment, as international legislation prevail over national law (Deloitte 2015). In Uber's case, this implies that Norwegian tax authorities are restricted to levy only the driver's income, and not the remaining 20 percent commission that Uber charges its drivers.

### 5.3.2 Income taxation

As pointed out in a master thesis written by two students at the Norwegian School of Economics (NHH) in 2015, the suitability of Norwegian tax legislation regarding Uber's activity is unclear (Thornes & Thuve 2015). The Norwegian Tax Authority states that if passenger transport is provided with a purpose to only receive compensation to cover self-expenses<sup>7</sup>, this will generally not be considered business activity (Norwegian Tax Administration 2016). According to Uber Stockholm's General Manager, UberPop is considered a car sharing service, where drivers are connected to individuals in need of a ride. Thus, the price model of UberPop is not

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<sup>7</sup> Freely translated: selvkost.

suitable for generating profits, but is rather developed to share expenses. With the aim of generating profits, he points out, UberBlack is a better alternative (Eggesvik 2015). Hence, Uber drivers are required to pay taxes only if their income exceeds the threshold for so-called self-expenses.

Norwegian legislation exempt hobbies from taxation (Norwegian Tax Administration 2016)<sup>8</sup>. Besides, individuals are allowed to perform services in exchange for a reward of maximum 1000 NOK per client, without being required to pay taxes (Thornes & Thuve 2015). Thus, the law may be considered ambiguous regarding taxation of Uber drivers. However, it appears that if the income generated from supplying rides through the Uber app is a driver's main source of income, drivers are applicable to the same rules as other independent workers. This includes the responsibility to report on income, if total yearly income exceeds 50,000 NOK (Norwegian Tax Administration 2016).

#### 5.4 International experiences

The volume of demand is the main target of a deregulative policy (Baanders & Canoy 2010). However, other effects follow suit, and before further analysis, a look at the empirical experiences of deregulation in countries with similar structure to the Norwegian market is beneficial.

##### 5.4.1 Empirical comparisons

Upon examining various national taxi markets, Sweden and the Netherlands protrude as most relevant for comparison to Norway. Both countries experienced a deregulation of the taxi market in 1990 and 2000 (Cooper et al. 2010). Before the deregulation, the Dutch taxi market was organized similarly to the Norwegian market. Rules and regulations were aimed at avoiding "wasteful competition" in addition to securing "reasonable earnings" for operators. In both Sweden and the Netherlands, regulative changes included lower barriers to entry through the abolishment of licenses, to decrease the mismatch between supply and demand (Baanders & Canoy 2010). This would in theory increase competition and demand. Taxi operators could

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<sup>8</sup> Note that the article points out difficulties with distinguishing between hobbies and business.

now pick up customers anywhere in the country. In the Netherlands, a compulsory price tariff was continued, including rules on starting price, and the combination of pricing per minute and per kilometer to increase transparency (Baanders & Canoy 2010). In Sweden, all forms of price regulation were abolished in 1990 (OECD 2007). However, challenges arose as lack of transparency on price and quality created problems regarding asymmetric information, and customers were left with little or no information to compare differences between operators. Thus, prices increased and quality declined (Baanders & Canoy 2010).

These experienced effects of deregulation must be kept in mind when evaluating regulative changes. However, the experienced obstacles regarding quality and price are partly expected solved by Uber's business model. The already set price rates will prevent providers from overcharging, in combination with increased transparency through the offered fare estimate provided prior to pickup. The reputation system ensures quality, and makes drivers more dependent on the valuation given by customers.

In addition to the Swedish and Dutch analysis, communication with Markus Villig, founder and CEO of the before-mentioned Estonian ridesharing platform *Taxify*, provided useful empirical information. In Estonia, the volume of the supply side has increased significantly since legalization of sharing platforms (Villig 2016). This is due to the lower entry barriers and the less time consuming process of becoming taxi drivers for private drivers. Moreover, Estonia is currently experiencing increased competition and thus lower prices, and increased quality. Increasing demand combined with a declining average cost of supplying rides increases efficiency (Villig 2016).

## 5.5 Summary of the chapter

Through their report, the NCA indicates that the current regulative framework of the taxi industry is insufficient in embracing the new technological era. Their findings of expected benefits resulting from allowing new actors to participate in the market, at the same time as securing a fair competition for all actors may call for an adjustment of the legislation.

Regarding taxation, the Norwegian government has limited abilities to directly claim corporate taxation from Uber, as it originates in another country. However, no other than organizational challenges are expected regarding income taxation of Uber drivers.

Experiences from Sweden and the Netherlands serve to point out potential obstacles of deregulation. However, the structure of Uber's business model expectedly alleviates some of the challenges, as has been experienced in Estonia.

## 6. Consumer preferences

Consumer choices depend on preferences and the underlying characteristics of products or services. Within product differentiation, one usually distinguishes between two types of product differentiation: vertical and horizontal. In a duopoly, it is said that “if prices are set to marginal costs, we are in a situation of horizontal product differentiation if each product would be preferred by some consumers, [...] and in a situation of vertical product differentiation if all consumers prefer one product over the other” (Belleflamme & Peitz 2010: p. 112). In a competitive environment, where the structure of competition approximates Bertrand competition, this definition would be applicable. However, the distinction between vertically and horizontally differentiated products is not easily drawn in practice because products tend to be defined by more than one characteristic (Belleflamme & Peitz 2010).

Uber and regular taxis are seemingly two horizontally differentiated services. Theoretically, “If duopolists choose product locations (but not set prices), they offer the same products, i.e., they choose not to differentiate their products” (Belleflamme & Peitz 2010: p. 114). The linear Hotelling Model illustrated this, by showing that each firm would choose to locate half way on the linear line, to serve a proportionate part of the customer pool. Empirically, however, one may not consider Uber and regular taxis perfect substitutes, and the two services are thus not situated in the middle of the Hotelling line. Consumers value products and services differently, and a consumer’s relative valuation of one product to another can be graphed out by an indifference curve. The below graphs illustrate the indifference curves of two extreme versions of horizontal differentiation.

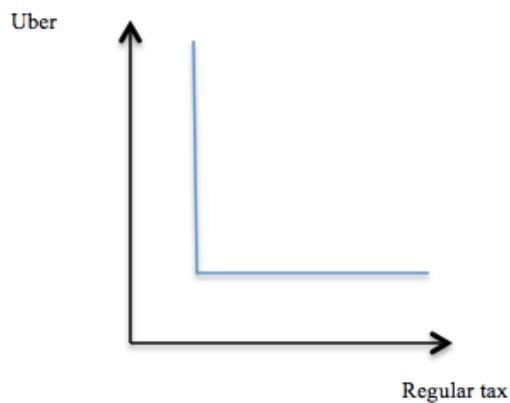


Figure 6.1: perfect complements

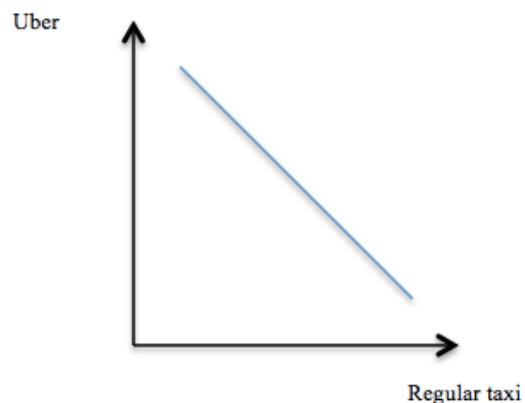


Figure 6.2: perfect substitutes

The less angled the indifference curve is, the more substitutive are the goods or services. Figure 6.1 illustrates a situation where the services are considered perfectly complimentary, while Figure 6.2 illustrates perfectly substitutive services.

### 6.1 Transfer costs

When evaluating a representative consumer's evaluation of Uber, transfer costs should be taken into account. These costs are all the barriers keeping consumers from switching away from one service and making use of the other. These barriers are individual, and are reflected in the preferences of the respective consumer. In some cases, a service that often valued inferior or equal to another service, is picked in favor of the latter due to costs associated with changing. The size of these costs varies, and is usually biggest for the most loyal customers. An example of such differences may be an old woman in need of a taxi service, to enable her to go grocery shopping, versus a young adult going to a party. The costs of switching from the use of regular taxi services to Uber are expectedly greater for the older lady, due to habits, willingness to try new services and lower familiarity with smartphone technology.

Due to such varying costs, a distinction between Uber's short-term and long-term customer pool may be beneficial. In the short-term, the customer pool is more likely to be set. The most curious customers, the ones with the biggest desire to try the



service are expected to make the switch and take part of Uber’s customer group at quite an early stage. The remaining group, consisting of the regular taxi service’s most loyal customers, is likely to remain in this group in the short-term. The decision of remaining a customer of regular taxi services may be based on various reasons, such as little knowledge of Uber, not possessing a smartphone, old habits or more calculated reasons like political motivation or legality. In the long run, however, the possibility of more people switching from the customer pool of regular taxi services to Uber’s customer pool is higher, due to further developments in technology and an increased share of the population using smartphones. This implies that in the current situation and expectedly in the short run, the group of transferable customers is relatively small, and customers who already tried Uber are the ones that are likely to repeat the usage. This customer group’s approach can be defined as the discrete choice approach: they decide which brand or product to buy and do not mix between different products (Belleflamme & Peitz 2010).

## 6.2 Consumer preferences

A possible approach to generally describe consumer preferences is modeling each consumer with a variable demand for all products, but assume that all consumers are identical. This is called the representative consumer approach, and is illustrated in Figure 6.3 (Belleflamme & Peitz 2010). Here, both services are considered normal goods. That is, demand is expected to increase as income increases. The ordinal utility function is illustrated by the indifference curve,  $U^0$ , which shows all different bundles of goods considered equally good by the consumer<sup>9</sup>. The indifference curve fulfills the general properties of an indifference curve. That is, it is strictly convex to the origin; it is sloped downwards and to the right; it can never intersect another indifference curve; and a higher indifference curve represents a higher utility level. The slope of the indifference curve at a particular point is defined as the marginal rate of substitution<sup>10</sup> (*MRS*): the relative valuation of the two goods (Rickertsen 2015).

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<sup>9</sup> The properties of the preferences are the following:

- Consumers rank the goods according to preferences.  $X_1$  is either better ( $>$ ), worse ( $<$ ) or equal ( $=$ ) to  $X_2$
- Consumers are consistent in their ranking
- More of a commodity is always better than less of a commodity. I.e. the goods are "good"

<sup>10</sup>  $MRS = - \frac{\frac{\partial U}{\partial X_1}}{\frac{\partial U}{\partial X_2}}$

The possible obtained utility is limited by the budget line, which shows the relative price of the two goods. Consumers are considered rational and welfare maximizing, subject to the budget constraint. The slope of the budget line is defined as the marginal rate of transformation<sup>11</sup> (*MRT*), and measures the price of good 1 measured in units of good 2. In this case, the slope of the budget line can be described as the decline of regular taxi rides due to a marginal increase in Uber rides. The optimal solution, or the optimal bundle, is an interior solution, and is situated at the point of tangency between the indifference curve and the budget line. That is, where the *MRS* equals the *MRT*. In Figure 6.3, this point is illustrated as the frequency of use of Taxi\* or Uber\*.

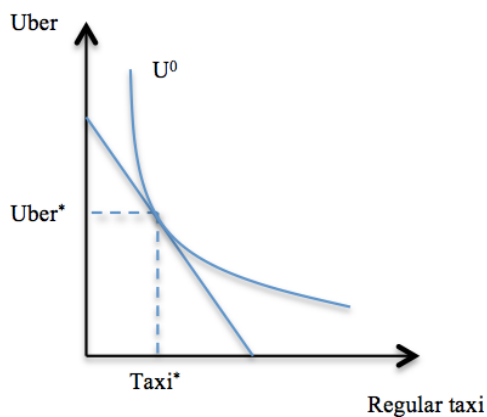


Figure 6.3: consumer preferences

The graph illustrates a situation in which Uber has entered the market, and provides a cheaper transport alternative.

In 1966, Kelvin Lancaster introduced a theory on consumer preferences called *A New Approach to Consumer Theory*. This theory would provide a much more complex picture of how consumers make their choices, than had been the situation with conventional maximization theory. The essence of the theory is that “goods, per se, do not give utility to consumers, but it is the possessed characteristics of the good that give rise to utility” (Lancaster 1966: p. 134). Here, the importance lies in the goods

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<sup>11</sup> $MRT = - \frac{P_1}{P_2}$

consisting of multiple characteristics. Where conventional consumer theory would consider the services of Uber and regular taxi services to be either the same service (ignoring relevant aspects of what creates preference) or different services (no a priori assumption that they are close substitutes), Lancaster's theory considers the services to be associated with satisfactory vectors, differing only in one component (Lancaster 1966). This allows for a better understanding of consumer preferences.

### 6.3 Price change

In addition to the initial welfare increase caused by Uber's low price level, a legalization of Uber will increase competition. As explained in Chapter 3, over time, the structure of competition is expected to approximate the Bertrand result. As Uber already operates with a low price level, the expected price change is presumed to happen in the regular taxi industry. Fewer legislative regulations will cause entry costs to decline, and the price level of regular taxis will decrease to match Uber's price level. The comparative statics of consumer demand behavior is illustrated in Figure 6.4.

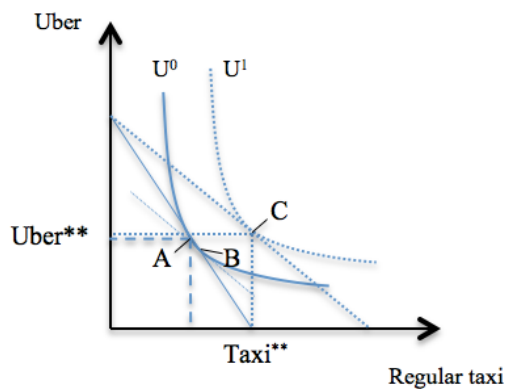


Figure 6.4: reduced prices in the regular taxi industry

The budget line is now shifted outwards, from the straight drawn line to the straight stippled line. The new budget line is less steep, making the relative price of an Uber ride more expensive. The new optimal solution is illustrated in the point  $Taxi^{**}$ ,  $Uber^{**}$ , where the new budget line tangents the indifference curve,  $U^1$ .

The impacts of a price change can be separated in two: the substitution effect and the income effect. The substitution effect represents the change in consumption caused by the change in relative prices: in Figure 6.4, the substitution effect is illustrated by the change from the initial point A, to point B. The income effect represents the change in consumption due to a change in purchasing power, and is illustrated in Figure 6.4 as the change from point B, to point C. The total effect is the change from A to C: the consumer chooses to increase the consumption of both goods, due to a strong income effect. However, the increase in consumption of regular taxi services is relatively greater, as the price change caused Uber rides to become relatively more expensive compared to the initial situation.

Figure 6.5 illustrates how the new Marshallian demand curve for regular taxi rides is obtained<sup>12</sup>.

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<sup>12</sup> Note that a change in the Marshallian demand curve should not be used to measure changes in welfare. The consumer surplus represents the difference between actual payment and the consumer's willingness to pay. However, the willingness to pay is defined as the amount that leaves the consumer on the same indifference level. When the utility level is set, this provides us with the Hicksian demand curve, not the Marshallian demand curve. When income effects caused by price changes are small, the Marshallian demand curve is a good measure of welfare.

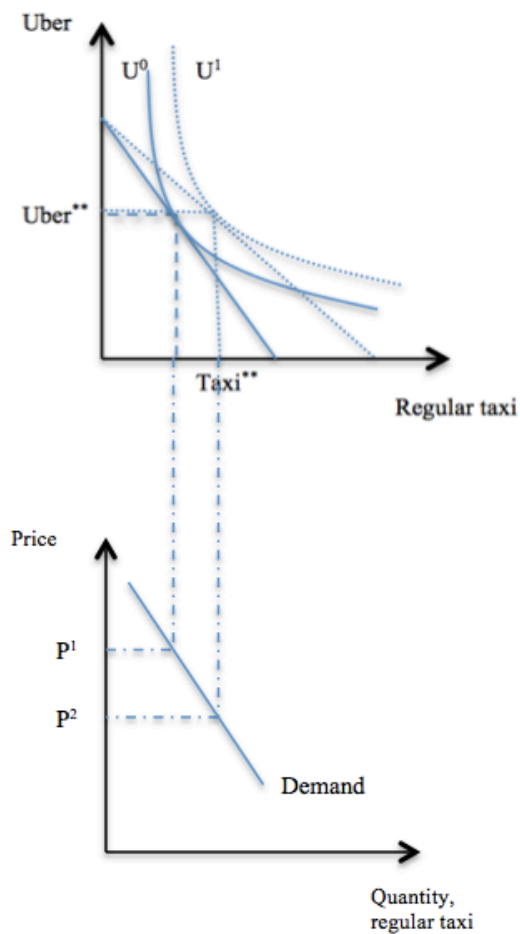


Figure 6.5: obtaining the Marshallian demand curve for regular taxi services.

The Marshallian demand curve for any good or service can be obtained, from the consumer preferences. From this, useful information for further understanding on comparative statics can be acquired, such as the Slutsky equation, showing the decomposition of the change in demand caused by a price change. The Slutsky equation is obtained by inserting the expenditure function in the Marshallian demand function, before taking the derivative of the Marshallian demand function with respect to price and income (Varian 1992).

It is reasonable to expect that a modification of the legislation would cause the two services to become more similar in the eyes of the consumers, and thus increase substitution between the services. This implies a “longer term” change towards indifference curves that are less curved.

#### 6.4 Summary of the chapter

In addition to Uber's low prices, increased competition will force the prices of regular taxi services to match Uber's price level. Over time, the price difference between the two services is expected to decrease, as illustrated in Figure 6.4. This implies that consumers will end up on a higher utility level. The price decline will cause individuals to increase consumption of both services, though a relatively bigger increase of regular taxi rides. Thus, as total demand increases, both services will benefit. Consumers will end up on a higher utility level, and the two services are expected to become more substitutive over time.

## 7. Survey: Uber vs. regular taxi services

While ownership has been the predominant way of consuming goods in the past, temporary usage and co-consumption is becoming increasingly attractive for consumers (Puschmann 2016). As an attempt to describe the characteristics of the demand side in the Norwegian taxi market, and understand how consumers value the different services and make their choices, a survey was conducted.

### 7.1 Survey methodology

The purpose of the survey was twofold: First, I wanted to chart consumer preferences in the taxi sector and reveal potential attitudes towards the two services. Second, I wanted to gain increased understanding of the motives behind consumer choices in the markets for taxi rides.

The survey<sup>13</sup> was created with the survey-making tool, *SurveyMonkey*, and published and shared on the social media platform, *Facebook*. As the majority of the respondents are my acquaintances, a big proportion of them are of the same age group. Thus, the sample may not be considered representative to the population. However, a big part of the respondents have similar characteristics to individuals who may be considered most likely to be using Uber. Despite the lack of representativeness, I expected the survey to capture relevant information on prospective Uber customer views on using taxis or Uber.

To increase the response rate, the survey was rather short, with different follow-up questions depending on the answers given to previous questions (forking). Forking is expected to decrease the probability of respondents dropping out of the survey, and help respondents maintain the focus on questions relevant for them. The expected benefits of forking are higher response rates, and more reliable answers.

Before publishing the survey, I conducted a pilot study to increase clarity in questions. The pilot was tried on a small non-random test sample, consisting of five

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<sup>13</sup> See the attached survey

respondents. The aim was to add or remove questions to improve ease of responding, and better elicit the information missing from previous works (see section 2.1). The questions were created with the purpose of capturing the different evaluations of Uber and regular taxi services, and the pilot study provided valuable insight as to how to obtain this information. Retrospectively, and knowing more of the scope of this research, it has become evident that slight alterations might have been beneficial. Examples are clearer statements and less ambiguous questions.

With the limited number of respondents, and lack of proper sampling, my survey should not be considered a scientific survey. However, such “unscientific” surveys may still provide useful information, provided that the survey questions capture respondents’ concerns and views. Key issues in this regard are reliability and validity. Reliability refers to the degree to which the questions provide stable and consistent results (Phelan & Wren 2005). The relatively low variety in answers in my survey, despite the provided answer alternatives, suggests that the questions generate similar results when repeated multiple times. This implies a satisfactory degree of reliability.

Validity on the other hand, refers to how well the questions measure what they were created to measure (Gerring 2007). The questions were designed to measure consumer preferences, and reflect factors such as the respondents’ willingness to pay for the two services, in which situation they would pick one service in favor of the other, and the underlying reasons for their decisions. The findings are considered valid. Generally, reliability can be obtained without validity, but obtaining validity without reliability is not possible. My survey is not intended to provide sound qualitative information, but to map out an outline of the situation and contribute to a better understanding of existing consumer preferences in the market for taxi services.

## 7.2 The survey

148 people responded to the survey: a response rate of 17 percent compared to the total number of people on my Facebook profile. While this response rate may appear low at first, Facebook friends of different nationalities limit the number of possible respondents. Besides, it is rare that all members of a Facebook profile regularly check a Facebook friend’s posting. 81 percent of the respondents are between the age of 18-



30, and 65 percent of them have completed four or more years of higher education (university or university college). Near 34 percent of the respondents are students, while 52 percent are full-time employees. About 66 percent of the respondents have listed Oslo as their city of residence, while 34 percent live elsewhere. Almost 56 percent of respondents are female.

About 61 percent of the respondents have tried Uber. Out of these, 75 percent decided to try it due to lower prices or out of curiosity towards new services. The survey shows an interesting finding regarding the valuation of Uber compared to a regular taxi service: when asked how much more they are willing to pay for a regular taxi ride, 19 percent of respondents replied that they are willing to pay more for an Uber, due to other desired qualities. The majority, however, responded that they will choose Uber as long as prices are lower, but switch over to a regular taxi if Uber prices equal or exceed regular taxi prices. Finally, the majority of the respondents answered that Uber does not affect their use of public transport, nor their need for a car.

Among the 39 percent that never tried Uber, a majority responded that it is due to the lack of Uber supply where they live. Others have technical problems with the app, or no particular need for taxi services as they live central locations. Some listed that they prefer regular taxis, out of habit. Only 10 percent responded that the legality of Uber are holding them back, though 89 percent would consider using Uber had it been legal. Moreover, lower prices and shorter waiting periods are seemingly the main motivation for the respondents to consider a potential switch from regular taxi services to Uber. In valuing Uber, the majority of the respondents answered that the Uber price must be between 20-35 percent cheaper for them to consider an Uber ride, provided the Uber app is already installed on their phones. Besides, the survey revealed that many respondents feel they either know too little about Uber's services or that they forget about it when they are in situations in need of a similar service. Besides, some are critical to the general quality of Uber.

### 7.3 Analysis of the findings

The reduced price level and curiosity are the most evident factors for consumers to try Uber. On the other hand, lack of availability in the respective city or no particular need for Uber's services are the main reasons for non-users not to try Uber.

Interestingly, the survey revealed differences in willingness to pay for the two services. Among non-users of Uber, the majority requires Uber to be between 20-35 percent cheaper than a regular taxi ride to consider usage. On the other hand, the majority of Uber users responded that they would order a regular taxi if Uber prices were between 10-0 percent lower than regular taxi prices. This indicates that non-users require a bigger price difference to consider changing services, compared to the price difference Uber users require to switch back to the use of regular taxis. This reveals a weak skepticism towards becoming a first-time Uber user. However, once a consumer has taken the step to download the Uber app and entered the market by trying Uber for the first time, there are seemingly small differences causing consumers to pick one service in favor of the other. Thus, switching from one service to another for the first time includes transfer costs.

The findings of the conducted survey reveal that consumers consider the two services substitutes, though not perfect substitutes. In accordance to the Lancaster theory, the characteristics of each service lay the foundations for consumer preferences. Firms compete not just on price, but on their ability to supply a good quality service (Bowbrick 1994). Here, quality is expected to include various characteristics such as safety, availability and reliability.

Finally, the findings indicate that despite the initial assumption of the two services being horizontally differentiated, the majority of the respondents seem to value regular taxi rides higher. That is, in the current situation, the two services are seemingly vertically differentiated, if prices are equal. However, legislative modification is expected to affect this feature, and as characteristics develop, possibly contributing to a higher valuation of Uber's services. Besides, the respondents' lack of knowledge about Uber's existence should be taken into account when interpreting the findings of valuation of the services. This finding may confuse the analysis, and cause

an exaggerate weight of individuals' choice of not using Uber on preferences. With legalization, Uber's prevalence is expected to increase, and potential consumers are thus more likely to make informed decisions. This is expected to be an additional factor to the two services becoming more horizontally than vertically differentiated. Hence, I expect a legalization of Uber to reduce the current skepticism towards Uber usage, especially for first-time users.

## 8. Uber's effect on the labor market

The number of active Uber drivers grows exponentially, affecting the labor market. A recent study on the United States' Uber market examined the demography of Uber drivers: their characteristics and their motives for supplying the service. A significant finding concerns the flexible schedules Uber offers, being a motivator for supplying rides through Uber (Hall & Krueger 2015).

### 8.1 The characteristics of Uber drivers

According to the Hall and Krueger (2015) study, approximately 19 percent of Uber drivers are under the age of 30, while roughly 25 percent are 50 years old or above. In contrast, regular taxi drivers are usually substantially older. Women make up 14 percent of Uber drivers, while only 8 percent of regular taxi drivers are female. However, women are still under-represented in the sector, as approximately 48 percent of the total U.S. work force is female (Hall & Krueger 2015).

An interesting finding regards education: Uber drivers are highly educated, with almost 48 percent possessing a college degree or higher education (Hall & Krueger 2015). This exceeds both the corresponding percentage of regular taxi drivers of 18 percent, and the overall work force of 41 percent. Only 12 percent of Uber drivers have a high school degree, or less, while the percentage for traditional taxi drivers approximates 52. A selection of the results can be seen in the below figure.

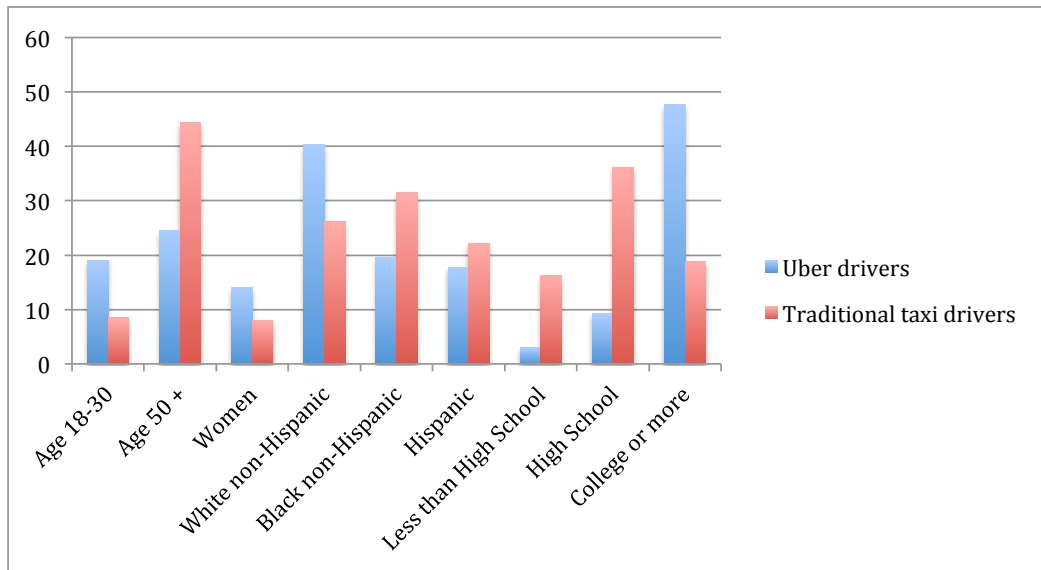


Figure 8.1: the characteristics of taxi service suppliers in the United States

### 8.1.1 Previous employment status

Hall and Krueger’s study provides a picture of the conditions of employment prior to becoming Uber drivers. About 80 percent of the Uber drivers that responded to the survey claimed to be working part-time or full time, of which two thirds still worked full time after becoming Uber drivers (Hall & Krueger 2015). One third of Uber drivers were not actively searching for new jobs when partnering up with Uber. This suggests that Uber provides an alternative for individuals to engage in a work activity that previously did not exist (Hall & Krueger 2015).

Among drivers with Uber as their only source of income, a majority reported that they will continue with Uber until something better comes along. Furthermore, a significant finding concerns the high continuation rate for the U.S. Uber drivers, as 70 percent of drivers continued supplying rides through Uber six months after their first ride<sup>14</sup> (Hall & Krueger 2015). These findings support the suggestion of Uber providing a “bridge” for individuals until they find another job that better matches their skills and interests, or as a long-term alternative for others.

<sup>14</sup> Discontinuation implies not supplying rides for a period of six months.

### 8.1.2 The French experience

A study conducted in France (Chassany 2016), shows approximately the same results. However, a significant difference regards the drivers' unemployment history and structure of employment: in contrast to the U.S. drivers, French drivers had, to a higher degree, experienced unemployment prior to becoming Uber drivers, and 81 percent of French drivers have no additional job (Chassany 2016). Two thirds reported that they considered Uber a long-term job.

### 8.1.3 The U.S. vs. France

The average U.S. Uber driver is a well-educated male under the age of 30. These general characteristics also seem to apply to European drivers, as represented by French. Not surprisingly, all Uber drivers supply fewer hours per week than their taxi-driving colleagues, possibly due to the high proportion of drivers working full- or part-time jobs. French Uber drivers generally tend to work more than their U.S. "colleagues", potentially due to a higher proportion of the French drivers having Uber as their primary job. Contrary to the U.S. drivers, Uber mostly serves as a long-term alternative for the French.

## 8.2 Characteristics of Norwegian Uber drivers

Due to the lack of studies on Norwegian Uber drivers, comparisons on the basis of the findings in France and the U.S are necessary. Looking at recent unemployment rates<sup>15</sup>, France experiences a higher unemployment rate than the U.S. In France, the unemployment of the total labor force was measured to 9.9 percent, while in the U.S. it was measured to 6.2 percent. Besides, the percentage of youth unemployment in France significantly exceeds that of the U.S. In addition to external factors such as the impact of the financial crisis and the scale of social security programs<sup>16</sup>, differences in unemployment rates may contribute to explain the variation in the employment history of the drivers in the respective countries.

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<sup>15</sup> These rates are from 2014: neither the World Bank nor the OECD has yet published the unemployment rates for 2015.

<sup>16</sup> The general European social program (including the French), is more generous and reach a larger share of citizens (Alesina et al. 2001) than in the U.S. Hence, the relative cost of being unemployed is lower in Europe.

Norway has enjoyed a low and stable unemployment rate for many years, measured to 3.4 percent in 2014 (World Bank 2016). Recently, the Norwegian unemployment rate has increased to about 4.9 percent (SSB 2016). Solely based on the observed employment rates, it may be presumed that the characteristics of the Norwegian Uber drivers mostly resemble the situation in the U.S. However, such conclusions require further and more complex evidence.

### 8.3 Uber's effect on the Norwegian labor market

It is assumed that the age characteristics of the drivers also apply to the Norwegian market. These findings may be a result of the structure of the market: it may reflect a tendency towards younger workers being more open to innovations and trying new things, and thus changing jobs more regularly. It may also reflect a situation in which entry barriers make it harder for younger workers to become traditional taxi drivers (Hall & Krueger 2015). Uber's role in the labor market varies with regards to the driver's employment duration and whether or not driving is his or her primary job. In all occasions, the existence of Uber presumably benefits the labor market. However, the effects may be more ambiguous.

On the one hand, becoming an Uber partner driver requires the possession of a vehicle. This capital demanding structure can be described as favoring the most well off individuals in a society. For many years, the traditional taxi industry has created a labor market where drivers can supply a service, without requirements of capital or education. As automation gradually increases, it influences the labor market and society as a whole. Technological development and innovations enable machinery to replace human work in many sectors. These developments reduce the amount of available jobs for unskilled or non-educated individuals (The National Bureau of Economic Research 2016). Jobs with low requirements to entry are valuable to a society, as they function as "entry jobs" and ways for youth and other individuals to start participating in the labor market. The disappearance of such jobs may contribute to create a class distinction in the society.

One might say that Uber potentially contributes to such developments. Parts of the traditional process of supplying taxi services, such as coordinating the matching of

drivers and riders through a taxi central, is now entirely carried out by technology. This reduces the number of jobs available for uneducated individuals. Furthermore, Uber's requirements of capital and characteristics of the vehicle exclude the less wealthy individuals from participating, potentially reinforcing tendencies of class distinction in a society. These consequences can be comprehensive, as the most vulnerable individuals may be kept from employment. Sustained unemployment may cause hysteresis, which is explained as the delayed effects of unemployment, a situation in which long-term unemployment causes difficulties with returning to work (The Economist 2016b). This describes a situation where "the natural rate can be influenced by the path of actual unemployment" (Ball 2009: p. 2). In brief, this is a situation where lasting unemployment makes it harder to reenter the labor market.

On the other hand, there is the alternative hypothesis that Uber's entry brings positive effects to the labor market. This is more realistic and closer linked to the findings of the before mentioned studies. Uber CEO Kalanick, promised to create 50,000 new jobs in Europe in 2015, with Uber serving as a "huge job operator" as number of drivers keep growing exponentially (Waters & Mishkin 2015). As the before-mentioned studies reveal that Uber drivers are significantly younger than regular taxi drivers, Uber seemingly helps young individuals enter the labor market. In France, Uber has been said to represent a foothold in the job market for thousands of undereducated youngsters of immigrant descent, as Uber and other platforms have created about 15,000 jobs in Paris alone. Here, becoming an Uber driver seems to appeal to those without a diploma or job experience. Besides, starting up a company has shown to help immigrants to integrate: Uber has been described as more efficient than any urban policy or state subsidy in France (Chassany 2016).

### 8.3.1 Uber drivers as independent contractors

Uber has been criticized for its conditions of employment. In Norway, parts of the debate concern Uber's responsibilities for its drivers and whether or not self-employment, rather than being employed by a firm or a company, is beneficial. By defining drivers as independent contractors, Uber disclaims any responsibility in case of potential sickness or accidents. Besides, workers must individually plan their own pension, and set aside money. Thus, workers are left without the ordinary safety net



that covers most Norwegian employees.

According to OECD's latest publication on self-employment rates, 7 percent of the work force in Norway is registered as self-employed – one of the lowest rates among OECD countries (OECD 2014). This constituted 191 380 individuals in 2014, and a framework of rules and regulations on self-employment is already in place (SSB 2014). Thus, independent contractors like Uber drivers supplement an already existing system, established to handle unorganized work activity. Hence, potential organizational challenges regarding the reporting on income are considered solvable. Solutions to these challenges are important prerequisites for a well-functioning system, and one must find ways to assure efficient taxation.

#### 8.4. Summary of the chapter

Uber's effect on the labor market may be ambiguous. On the one hand, as technology replaces the need for human assistance, the number of available jobs is reduced. In general, this is expected to predominantly affect the positions of uneducated workers. On the other hand, primarily supported by empirical findings, Uber has contributed to the creation of numerous new jobs. However, these jobs require capital. In spite of this, the overall creation of jobs is presumed to outweigh the affected equity.

## 9. Discussion – additional effects of legalizing Uber

Industrial organizational theory, through the contested market theory, may be used to define the structure of the market after Uber's entry. This refers to a situation in which there is a limited number of actors in the market, but due to the threat of new actors, these few firms act in a competitive manner. In this way, inefficient firms are driven out of the market by more efficient or less profitable firms (The Economist 2016a). As pointed out by Puschmann (2016), sharing economy firms like Uber create benefits for consumers, providers and intermediaries. For consumers, convenience increases as they get access to products for a specific purpose, without investing the amount of capital needed for purchasing a similar product. That is, Uber lowers prices. Moreover, optimality in the taxi market also includes customers' evaluation of factors such as waiting time, quality and safety (Bekken 2003). For providers and intermediaries, the rise of the sharing economy bring along the possibility to benefit from new business models and services, and provide services with additional value such as insurance or payment services (Puschmann 2016).

To analyze the total effects of hypothetical legalization of Uber, a distinction between expected short-term and long-term consequences is helpful.

### 9.1 Short-term effects of legalizing Uber

Short-term effects are effects taking place within short time after legalization.

#### 9.1.1 Contagious innovations

In recent time, innovations have changed regular taxi centrals' way of doing business. By creating incentives for the regular taxi industry to become more efficient and competitive, Uber has presumably contributed to the acceleration of the innovation process. For example, the Norwegian taxi app *Taxifix*, allows customers of regular taxi services to order rides through the app, and provides them with information regarding their ride. When ordering, customers get the possibility to decide the type of car in which they wish to be picked up. When the order is completed, the taxi's license number is provided, and the customer can follow the taxi's progress through a

GPS function on the app (*Oslo Taxi* 2016). Furthermore, due to cooperation with the popular payment app, *Vipps*, customers can efficiently complete the payment on a smartphone.

This shows that the regular taxi industry is modernizing – by becoming more efficient and competitive. Moving away from the spot market, and allowing customers to request rides through app, has contributed to increase the average number of rides completed per driver per hour. In Chicago, a study shows that whereas regular taxi drivers complete 1.68 rides per hour, Uber drivers averagely complete 15 percent more (Uber 2015). Such developments in the regular taxi industry increase the similarities between the two services, and thus make them less differentiated. This implies that the regular taxi industry and Uber are getting more substitutive. The two indifference curves of the consumers are illustrated in Figure 9.1, where  $U^0$  represents the indifference curve in the initial situation, and  $U^1$  the indifference curve when the two services are more substitutive.

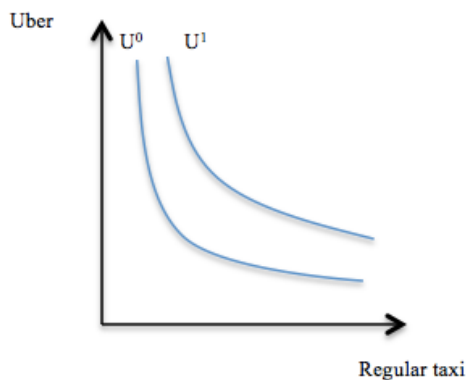


Figure 9.1: consumer preferences in the new situation

### 9.1.2 Quality

Regular taxi drivers respond to increased competition by improving the quality of their own services. Those are the findings of a study conducted on the New York and Chicago taxi markets, due to the observation of fewer registered complaints (Wallsten 2015). However, as competition causes individuals to change company instead of filing a complaint, it may be challenging to establish the reason for the declining

number of complaints. Are customers switching firms to avoid complaining, or has the quality actually improved? The general findings of this study support the concept of regular drivers responding to competition by increasing quality (Beard et al. 2009). This implies that the introduction of Uber will benefit not only those who embrace new innovations. Customers that are loyal to regular providers, may not experience lower prices, but will experience a higher quality of service (Wallsten 2015).

### 9.1.3 Safety

A study conducted on safety in the San Francisco taxi industry, used the technology tool Zendrive. Zendrive uses sensors on a smartphone to measure driving behavior by detecting collisions, aggressive driving, distracted driving and more. In Norway, speeding was a factor in approximately 50 percent of fatal traffic accidents between 2005-2010, and has a major impact on the safety of consumers (Trygg trafikk 2011). After analyzing drivers' behavior during more than 2000 kilometers of rides, Zendrive revealed that regular taxi drivers tend to speed about 50 percent more than ridesharing drivers. In peak periods, the difference increased, as regular taxi drivers showed to speed 2.6 times more than rideshares. Besides, findings revealed that regular taxi drivers were more likely to use cellphones while driving. These differences may be a result of most Uber drivers using private cars to provide rides. However, in the long-rung, legalization of Uber in Norway may cause the rise of so-called Uber barons: individuals or firms possessing numerous vehicles, renting them out to potential drivers. This may cause drivers to act in less considerate ways, as vehicles are no longer private assets.

Customers of ridesharing services also showed to be safer at the point of pick up, due to shorter waiting periods (Zendrive 2014). Figure 9.2 is copied from the study, and illustrates the findings on passenger waiting periods.



Figure 9.2: pick-up waiting period

The figure illustrates that 51 percent of regular taxi customers are picked up within ten minutes during both day and night, whereas 90 percent of rideshare customers enjoy the same benefit. Overall, the concluding remarks of the study evaluate ridesharing as safer than regular taxi rides (Zendrive 2014). This is also supported by a report from the Cato Institute, claiming that Uber’s business model offers safety advantages, as far as the drivers are concerned. Cash-free transactions and self-identified customers mitigate the risk of violent crime, as drivers are generally vulnerable and potential victims of crimes (Feeney 2015). However, as drivers are provided the full name of customers, challenges may occur regarding disturbing behavior. These challenges may be partially lessened by the reputation system.

A safety problem occurs regarding insurance. As pointed out by Feeney (2015: p. 9), “the problem is that peer-to-peer ridesharing occupies a no-man’s-land that falls between the traditionally distinct domains of personal and commercial insurance”. However, for the time being, Uber has purchased comprehensive insurances to cover accidents involving their drivers (Feeney 2015). The insurance is valid from the time of pick-up, until the customer is dropped off at the destination (Uber 2016e).

#### 9.1.4 Fluctuations in supply

Despite the positive labor supply elasticity in the Uber market, and the use of surge pricing to increase supply when necessary, the supply may fluctuate. With no organizational body to ensure availability at all times, customers may experience the lack of available vehicles at abnormal times, such as in the middle of the night.

Scarcity is confirmed by this study's survey conducted on consumer preferences in Norway, where some respondents answered that they sometimes choose regular taxis due to low or no availability of Uber rides. This causes insecurities. In areas in which Uber drivers are absent, other transport alternatives must compensate for the scarce supply. A consumer dependent on a reliable transport alternative must now arrange the trip prior to departure.

In the current situation, Norwegian taxis are required to supply rides at all times. This is a part of the existing contract between the taxi industry and the regulators, and is established in exchange for a regulated industry. Abandoning the current regulative system may imply giving up on this ensured availability.

#### 9.1.5 Bus lane

In the current situation, regular taxis are authorized to ride in bus lane. This advantage is most relevant during hours of dense traffic, as it reduces the duration of the ride by increasing mobility. As Uber's entry will cause the number of taxis on the streets to increase significantly, the scope of this regulation should be considered. By permitting every supplier of taxi services to access the bus lane, queues will reduce efficiency and the advantage is reduced.

#### 9.1.6 Summary: short-term

The listed effects imply that legalizing Uber provides short-term welfare benefits, both for Uber users and for traditional taxi users. By providing the regular industry with incentives to increase innovation, efficiency and quality, a broad range of customers will benefit. Moreover, studies reveal that a general Uber ride is considered safer than a regular taxi ride, partly due to the lower overall number of safety infractions. On the other hand, the lack of an organizational body to ensure supply may cause availability fluctuations, though surge pricing is expected to partly solve

this. In a situation in which the number of taxis authorized to enter the bus lane is increased, the efficiency outcome of entry will decline. To avoid this, evaluation of access permission should be conducted.

## 9.2 Long-term effects of legalizing Uber

The long-term effects are effects taking place after a couple of years, when the market has adapted to the new situation. Whereas short-term effects are easier to predict, long-term effects are expected to be greater, but more ambiguous. The impacts of these effects depend on the chosen time frame of the analysis: the longer the time perspective, the harder it is to predict a reliable outcome. Further developments in technology and unexpected consequences of legalization may arise, again causing structural changes to the market. This implies that predicted long-term changes are greater than predicted short-term changes, though the uncertainty of analysis increases.

Theoretically, as previously mentioned, one usually distinguishes between short-run fixed and variable costs. However, when operating with a longer time perspective, all costs are variable. That is, in the long-run, fixed costs are zero, and all costs vary with the amount of output produced or supplied (Varian 1992). Thus, with a long-time perspective, there will in theory be no “lock-ins” in the market due to high fixed costs associated with entry, and operators are more adaptable and supply can be adjusted accordingly. In practice, the entrance of Uber and similar rideshare services is likely to reduce “lock-ins” and increase flexibility on the supply side. For the consumers, the substitution possibilities increase, as time allows for a better adaption to the situation.

### 9.2.1 Effects on the existing transport sector

In the long run, a deregulated taxi industry is expected to affect the structure of the remaining transport sector. Lower prices and shorter waiting periods may increase the willingness to pick a taxi service in favor of public transport. At the Intelligent Transport Systems Norway’s (ITS Norway) yearly conference in March, public transport was described unequally valuable to door-to-door alternatives, due to public transport not being economically viable for areas with low or dispersed demand. This

is typically the case for areas such as the distance between the bus stop and the final destination. According to CEO in Robosoft Solution, Gilbert Gagnaire, this creates the need for an additional transport service (Gagnaire 2016). Thus, the long-term consequences of Uber are ambiguous. One alternative effect is that Uber may provide this additional transport service, at places where public transport is scarce. Such "collaboration" between a taxi service and public transport would increase efficiency, as it would allow for fewer stops on the bus route, at the same time as individuals have the possibility to be transported directly to their final destination. On the other hand, the increased availability of taxi services may result in a decreased demand for public transport services as a whole, and thereby challenge the existence of public transport firms.

Despite the findings of the survey I conducted, where about 82 percent of respondents answered that Uber does not affect their current use of public transport, this effect may be a more likely long-term consequence, than a short-term consequence.

### 9.2.2 Alternative to car ownership

In the long run, sharing platforms may constitute an alternative to car ownership, as it is likely to affect both the purchase and the use of vehicles. The total costs of ownership relative to the total cost of sharing privately owned vehicles will determine the decision of the consumer. From an ecological perspective, sharing provides potential for reduced production (Puschmann 2016). While it may be expected that such factors influence consumers' choice to participate in sharing systems, a study reveals that it does not (Lamberton & Rose 2012). However, despite the consumer's limited consideration of such effects, they should not be excluded from an economical evaluation of sharing. A study shows that 40 percent of car related emissions originate from production, and that every shared vehicle could reduce the production of cars with between nine and twelve units (University of California Transportation Center 2011). As environmental issues continuously spread and severely affect the world, policies contributing to co-consumption, and thus reduced production and emissions are important parts of a future oriented framework.

The expected influence of Uber on climate is currently unclear. Through communication with Bellona, a Norway based organization aiming to fight climate



change, it was pointed out that by April 2016 there exists no available data on this topic (Viseth 2016). Bellona further mentioned that on the one hand, one may expect environmental benefits as Uber may contribute to a more efficient utilization of the currently existing stock of cars. On the other hand, however, Uber's entry may increase the total distance traveled by car, and thus have a negative effect on climate.

### 9.2.3 Reduced public income

Section 5.3.1 explains how legislation limits the Norwegian Tax Authority to only levy the percentage of the fare kept by the drivers. This implies that 20 percent of the amount paid by the customer is transferred directly to Uber, without being subject to corporate taxes. This results in a reduced public income, compared to the situation where only professional actors, with a taximeter reporting on income, are permitted to be suppliers in the market. However, in the current situation, the *Act on Value Added Tax*<sup>17</sup> (VAT), states that “vehicles used as means of passenger transport in return for consideration as part of a passenger transport enterprise”, in addition to goods and services for maintenance and operation of passenger transport, are exempt from VAT (Lovdata 2009: section 3-25).

In a situation where Uber is legalized and regular taxi services partly or fully lose their competitiveness, the number of vehicles granted VAT exemption is expected to decline<sup>18</sup>. This implies that the overall reduction in governmental income due to corporate taxes now is reduced due to VAT exemptions. Thus, legalization is expected to have two effects on government income: a reduction, as the government has limited rights to levy corporate taxes from firms originating in other countries, and an increase, as fewer vehicles will be exempt from VAT<sup>19</sup>. Which of the two outweighs the other, remains unclear.

### 9.2.4 Comparisons to the hotel industry

A quick look at the development in the before-mentioned hotel industry Uber equivalent, Airbnb, may be interesting. Due to high publicity, Airbnb is the main

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<sup>17</sup> Merverdiavgiftsloven

<sup>18</sup> As Uber drivers generally use private vehicles to supply rides, these cars will not be exempt from VAT.

<sup>19</sup> Additional effects may occur.

image of the sharing economy for many. From 2008, the firm has allowed travelers to access neighborhoods and areas previously mainly reserved for residents. Through low-key private rental, new ways of discovering cities and places are increasing in popularity. However, fast forward to 2016, the fundamental characteristic of deprofessionalization has gradually changed: Airbnb estate agents companies offering property management services are emerging to help hosts get the best deals for their homes (Williams 2016). Thus, the principals of disintermediation that first made Airbnb different are now reversing.

These tendencies will presumably also emerge in the taxi industry. A potential rise of Uber barons may change Uber's current structure, and create unwanted cartels, contributing to forming a situation similar to the situation of the traditional taxi industry.

#### 9.2.4 Summary: long-term

In the long run, Uber is expected to affect the existing transport industry by becoming an alternative method to transportation. However, this may occur as Uber operates as a complement to the public transport industry, by providing the rides between the bus stop and the final destination. This increases efficiency by reducing the amount of necessary bus stops. On the other hand, Uber may outdo public transport. Uber's availability may or may not contribute to environmental benefits, by either reducing the total production of vehicles or increasing total distance traveled by car. Finally, public income will be affected, due to current legislation. The total effect on income is unknown.

## 10. Conclusions and concluding remarks

I initially asked how adjustments of existing laws and regulations in the transport sector can contribute to desired innovative introductions in the taxi market, and what consequences legal entry of Uber will cause. Despite the limited available background information, I consider the findings relevant and adequate for a thorough analysis and to sufficiently answer the research questions. These answers are outlined in the following subsections.

As initially described by Clayton Christensen, disruptive innovation refers to a phenomenon in which innovations transform existing markets by introducing simple, convenient, accessible and affordable methods to a situation of complication and high costs (The Clayton Christensen Institute 2015). Here, competition takes place through innovation. Uber can be classified as such an innovation, as market entry was made possible by increased expected profitability through utilizing the possibilities embedded in technological change. Furthermore, it was rendered possible by market failures, in form of asymmetric information, search costs and entry costs.

The most important consequence of Uber's entry is the lowered price level, causing an increased consumer surplus and thereby generating welfare benefits. Theoretically, the emerging Bertrand competition reduces prices until prices equal marginal costs. Lower prices, in combination with an increased volume of supply, increase the area between the demand curve and the price, and create a welfare effect for consumers. While availability is expected to remain rather unchanged as a result of an increase in both supply and demand, efficiency, quality and safety in the transport sector are presumed improved. Besides, the sector will enjoy increased utilization of capacity, in addition to increased efficiency (Juel 2016). This is partly due to Uber's business model, but also due to increased competition, providing incentives for the regular taxi service to improve.

The findings of my study suggest that Uber's entry causes welfare benefits that reach beyond the taxi market. By creating additional labor alternatives and increasing potential participation in the work force, Uber is presumed a good supplement to the labor markets.

The survey I conducted reveals a curiosity and willingness to embrace new innovations among consumers. However, this curiosity is restricted by transfer costs, and the limited knowledge about Uber and the service they provide. This is expected to change in a situation where Uber is legalized, as Uber becomes a more established and trusted part of the Norwegian transportation landscape. With Uber's expansion, the specific characteristics of all transport services are expected to develop, and the preferences of utility maximizing consumers are expected to vary accordingly. Thus, caution should be taken not to draw hasty long-termed predictions.

A division of the taxi market is probably necessary to ensure availability for individuals with special transportation needs. For example, one must find ways to maintain the services of the TT-agreement, as the structure of the taxi industry changes.

### 10.1 Legislative proposals

For these lower prices and other benefits like increased supply and consumer flexibility to be generated, and to allow for desired innovative introductions in the taxi market, legislative changes are necessary. Welfare enhancing policies should support the entering of new participants like Uber, to obtain the aim of the NCA of a customer-focused, flexible and modern transportation industry, encouraging innovation and competition. In section 1.4, I stated that my study would not “discuss any political or ethical objectives or purposes of potential modification of legislation”. However, throughout this writing process, it has become apparent to me that despite the initial intention of not discussing political objectives, no legislative change, nor a decision of legislative continuance can be considered an apolitical action.

A distinctive feature of the Norwegian taxi industry is the degree of fragmentation (Bekken 2003). Three institutions co-jointly set the regulations: the Ministry of Transport and Communication, the Norwegian Competition Authority and the various county municipalities. The three are in charge of different fields of regulations, and we end up in a situation of “too many cooks spoiling the broth”. This implies that existing regulations may not promote the wellbeing of consumers in a satisfactory

way. However, abandoning the regulative framework as a whole may not generate the desired effects unless care is taken to capture some of the concerns raised, in particular related to the TT-service.

#### 10.1.2 The Act on Professional Transport by Motor Vehicle and Vessel

The *Act on Professional Transport by Motor Vehicle and Vessel* is the main legislation limiting Uber's participation, through a means tested supply and taxi license requirements. It should therefore be modified. A modification should enable the possibility for all passenger transport providers to legally access the market. This implies the removal of means testing and any upper limit on number of entrants. Besides, the regulation limiting taxi licenses to be granted to individuals supplying taxi services as a main source of income should be abandoned. However, due to security aspects, the current practice of taxi licenses being granted to individuals holding licenses of good conduct, issued by local police, should be continued.

A well-functioning deregulated taxi industry may take time to establish. A potential short-term solution, to gradually change from the current situation towards the abolishment of means testing and removal of price regulations, may be the establishment of a targeted level of availability. I see two solutions to learn more about the impacts of changing the transport regulations. First, an increased, but calculated number of drivers could be given the license to provide passenger transport services, while the industry has time to adjust to the new system. Second, on locations where conditions are suitable, local municipalities may offer taxi licenses to anyone, provided that these license holders have no criminal record on violent conduct or misbehavior.

#### 10.1.3 The Competition Act

The *Competition Act* regulates tariffs and prices in the taxi market. As stated in the recent NCA report, technological innovations have changed the very foundations for regulations in the taxi industry (Norwegian Competition Authority 2015). Asymmetric information has been an important obstacle to making informed decisions, and has accounted for price regulations. With Uber, information is available for consumers to make more informed choices. Thus, regulations on price

should be abandoned. However, as abandoning price regulations without the existence of a satisfactory level of competition in the market could lead to a detrimental level of market power, this abandonment should only be done in combination with abandoning the means tested supply from the *Act on Professional Transport by Motor Vehicle and Vessel*.

In areas with limited supply and therefore limited competition, regulative restrictions on price must be considered. In such areas, a gradual transition towards a deregulated market structure could be beneficial. In this initial phase, regulations on price should be continued to avoid over-pricing.

In accordance with my proposals in this study, the before-mentioned NCA recommending the abandonment of means tested supply and price regulations. The NCA report highlights the importance of ensuring availability of supply in areas where a deregulated sector leads to a non-satisfactory supply, through regulative means (Norwegian Competition Authority 2015).

#### 10.1.4 Taxation issues

Legal conduct of all segments is necessary for a beneficial result. Concerning taxation, Uber drivers are required to report on income, in accordance with existing rules for independent contractors in Norway. As previously mentioned, this is an organizational challenge, and should be excluded from the debate concerning the benefits of Uber's existence. In case of legalization, Uber drivers must be required to follow existing tax legislation.

#### 10.2 Final comments and further research

In the near future, the sharing economy and Uber's activity will undoubtedly be the subject of numerous debates and studies. To embrace innovations and create incentives for research and development, it is crucial that national policies encourage the entry of new firms and ideas. However, a fair competitive environment is vital for an optimal organization of the market. Thus, further research should seek to increase

the understanding of how to optimally organize a market in which newcomers and more established actors compete on equal terms.

We are entering an epoch in which further technological developments will continue to contribute to the evolution of the markets. Here, effects will depend on the authorities' and regulative forces' ability to see potential benefits of technological change, rather than preserve the rents of existing firms. To support the creation of a future-oriented and dynamic market, appropriate and suitable legislation that comprehend the essence of innovation is crucial. This implies that future regulations must be sufficiently flexible to allow for desired developments and progress, at the same time as the initial targets of regulative policies are not neglected. This way, the accuracy of anticipated effects of future innovation is increased, and thus also the predictability in the market.

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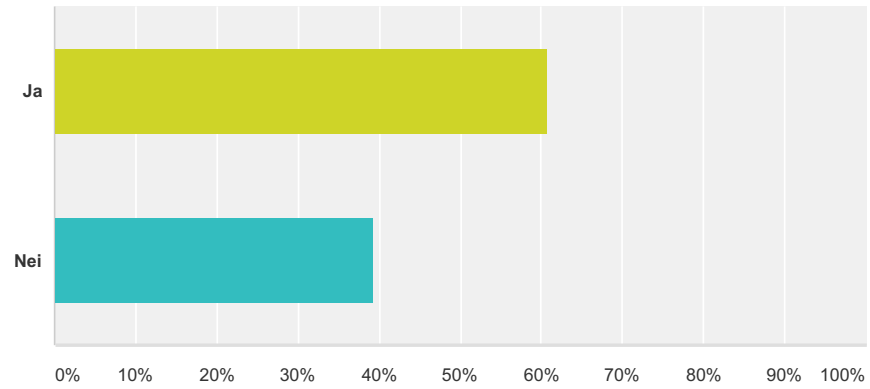
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### Q1 Har du prøvd Uber?

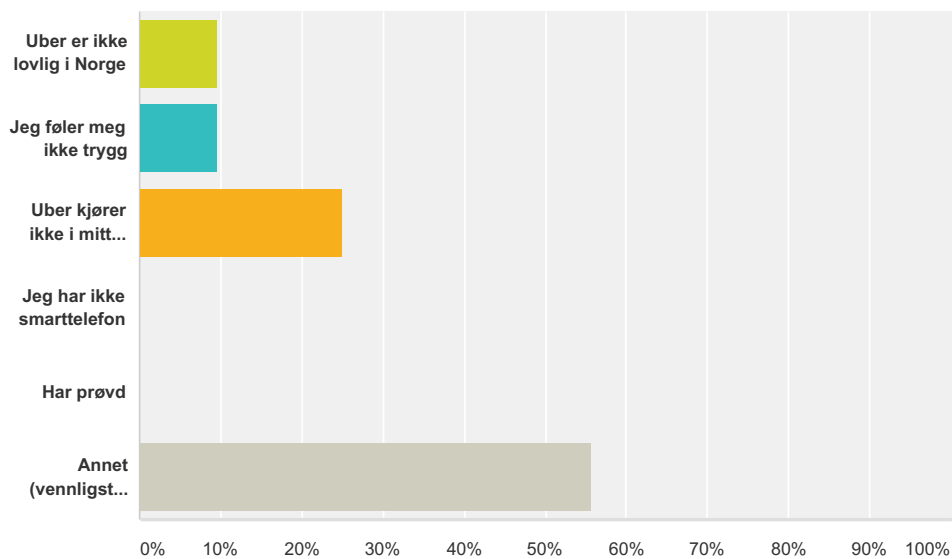
Besvart: 148 Hoppet over: 0



Svarvalg	Svar	Antall
Ja	60,81%	90
Nei	39,19%	58
<b>Totalt</b>		<b>148</b>

## Q2 Hva er grunnen til at du ikke har prøvd Uber?

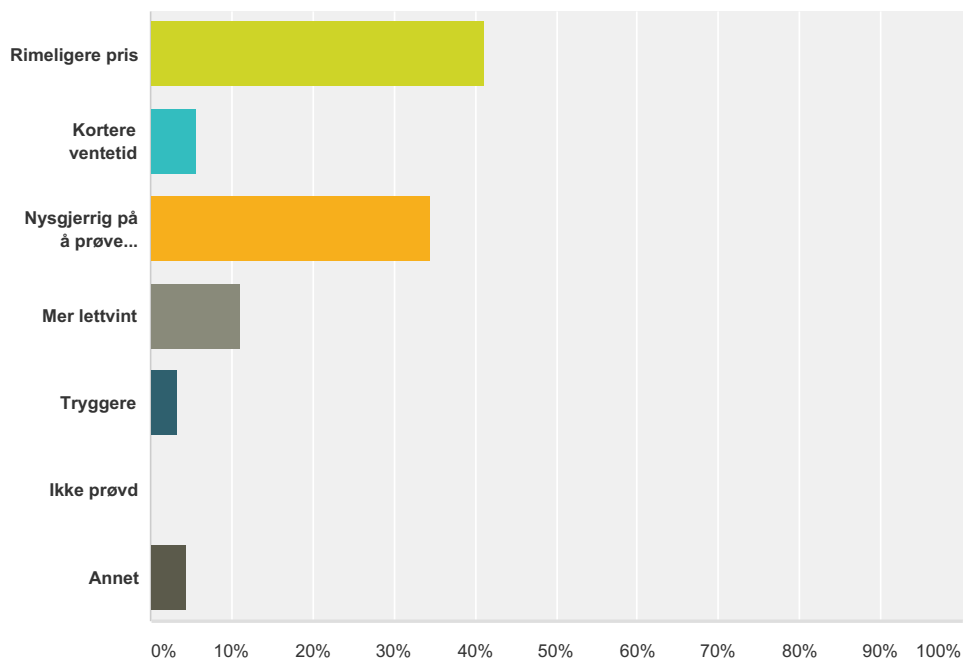
Besvart: 52 Hoppet over: 96



Svarvalg	Svar
Uber er ikke lovlig i Norge	9,62% 5
Jeg føler meg ikke trygg	9,62% 5
Uber kjører ikke i mitt område	25,00% 13
Jeg har ikke smarttelefon	0,00% 0
Har prøvd	0,00% 0
Annet (vennligst spesifiser)	55,77% 29
<b>Totalt</b>	<b>52</b>

## Q3 Hva fikk deg til å prøve det?

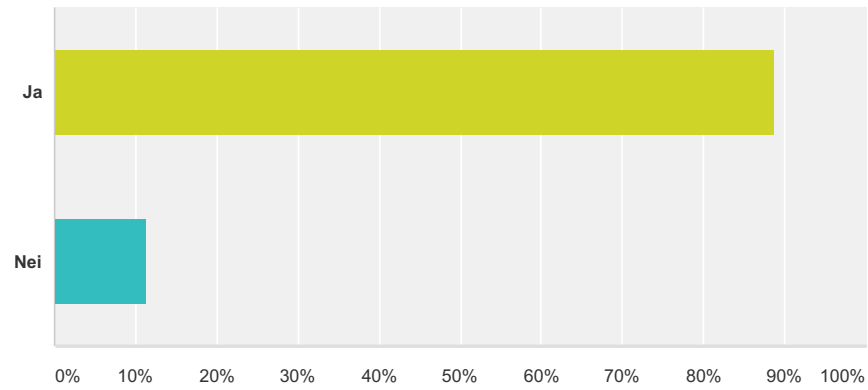
Besvart: 90 Hoppet over: 58



Svarvalg	Svar
Rimeligere pris	41,11% 37
Kortere ventetid	5,56% 5
Nysgjerrig på å prøve tjenesten	34,44% 31
Mer lettvent	11,11% 10
Tryggere	3,33% 3
Ikke prøvd	0,00% 0
Annet	4,44% 4
<b>Totalt</b>	<b>90</b>

### Q4 Forutsett at Uber blir lovlig i Norge. Ville du da vurdert Uber?

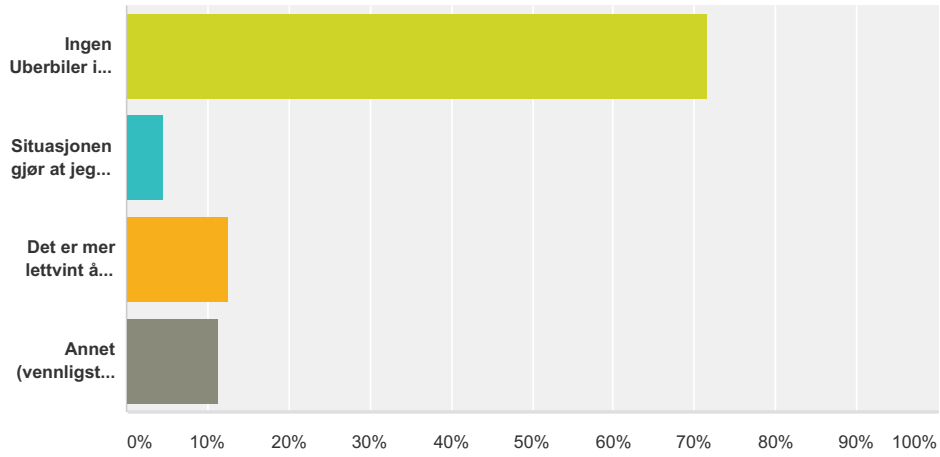
Besvart: 53 Hoppet over: 95



Svarvalg	Svar	
Ja	88,68%	47
Nei	11,32%	6
<b>Totalt</b>		<b>53</b>

### Q5 I hvilken situasjon ville du byttet over til bruk av vanlig taxi?

Besvart: 88 Hoppet over: 60

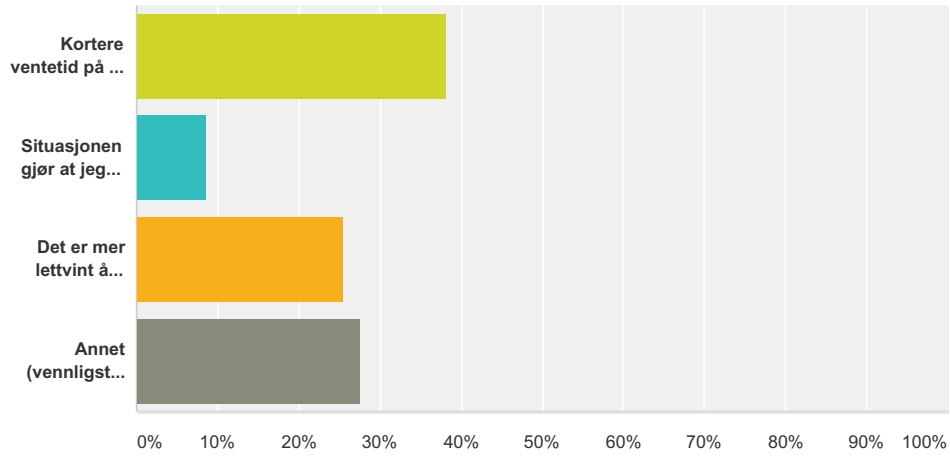


Svarvalg	Svar
Ingen Uberbiler i nærheten - kortere ventetid	71,59% 63
Situasjonen gjør at jeg føler det tryggere i vanlig taxi	4,55% 4
Det er mer lett vint å bestille en vanlig taxi	12,50% 11
Annet (vennligst spesifiser)	11,36% 10
<b>Totalt</b>	<b>88</b>



### Q6 I hvilken situasjon ville du byttet over til bruk av Ubertaxi?

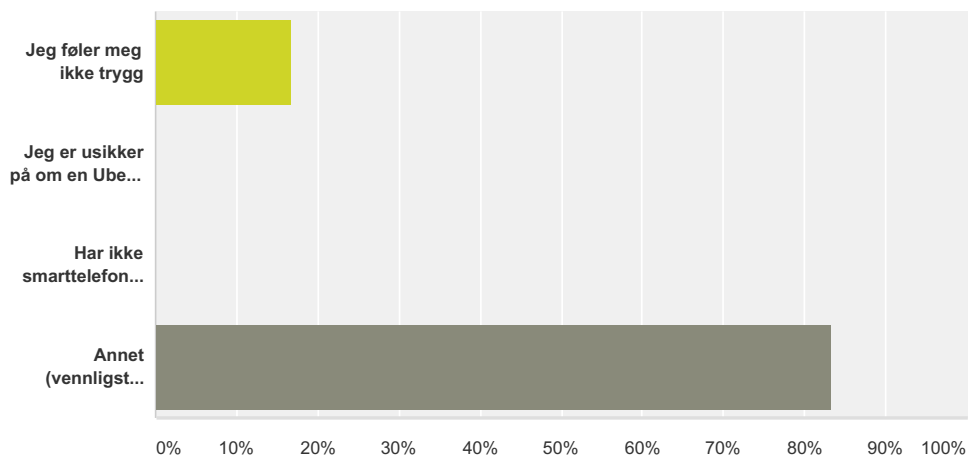
Besvart: 47 Hoppet over: 101



Svarvalg	Svar
Kortere ventetid på en Ubertaxi	38,30% 18
Sitasjonen gjør at jeg føler det tryggere med en Uberbil	8,51% 4
Det er mer lettvtint å bestille en Ubertaxi	25,53% 12
Annet (vennligst spesifiser)	27,66% 13
<b>Totalt</b>	<b>47</b>

### Q7 Hva er den viktigste årsaken til at du fortsatt ikke vil vurdere Uber?

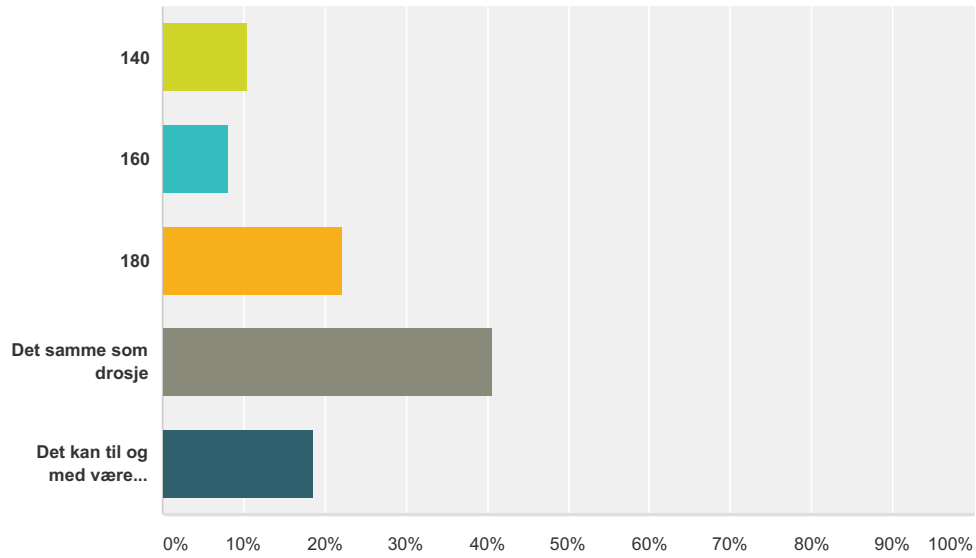
Besvart: 6 Hoppet over: 142



Svarvalg	Svar
Jeg føler meg ikke trygg	16,67% 1
Jeg er usikker på om en Uber bil kommer/bringer meg dit jeg skal til avtalt tid	0,00% 0
Har ikke smarttelefon (og planlegger ikke å anskaffe i overskuelig framtid)	0,00% 0
Annet (vennligst spesifiser)	83,33% 5
<b>Totalt</b>	<b>6</b>

**Q8 For en drosjetur som koster 200 vil en tilsvarende tur med Uber koste 100-140 kr. Hvor mye må en tur med Uber koste før du bytter tilbake og tar vanlig drosje?**

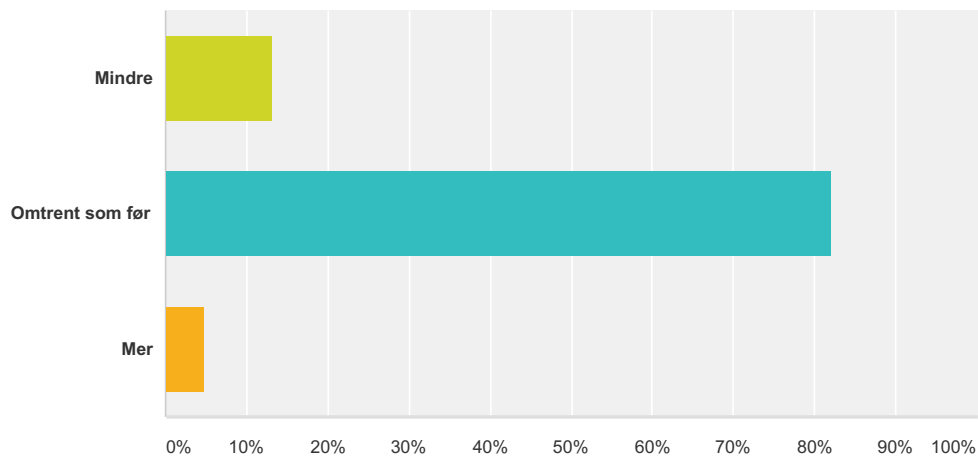
Besvart: 86 Hoppet over: 62



Svarvalg	Svar
140	10,47% 9
160	8,14% 7
180	22,09% 19
Det samme som drosje	40,70% 35
Det kan til og med være dyrere, da Uber har andre kvaliteter	18,60% 16
<b>Totalt</b>	<b>86</b>

### Q9 Fører det at bruker Uber til at du bruker annen offentlig kommunikasjon (buss/trikk/tog)?

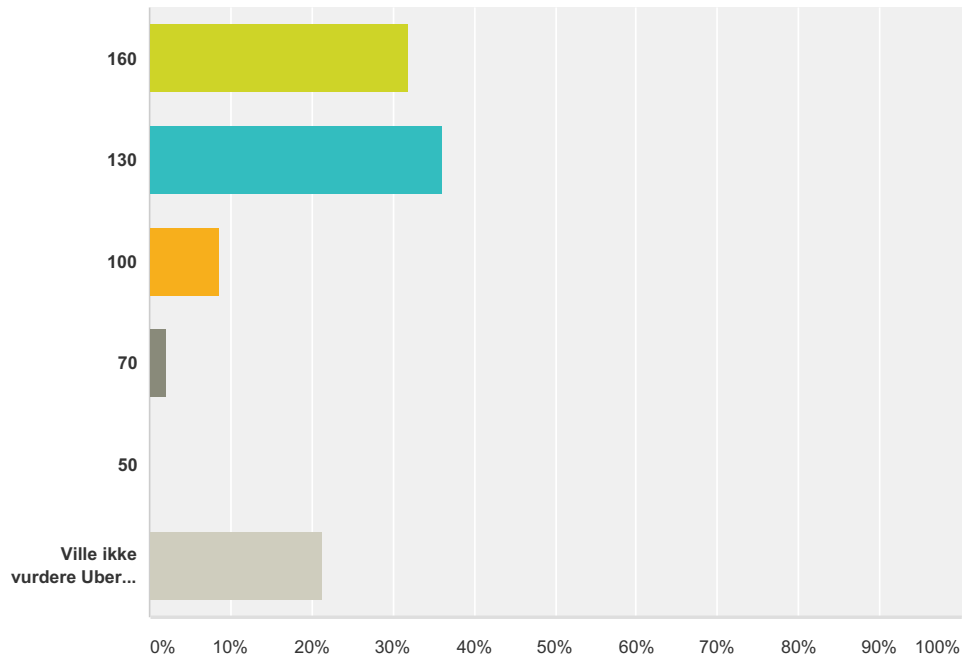
Besvart: 84 Hoppet over: 64



Svarvalg	Svar	
Mindre	13,10%	11
Omtrent som før	82,14%	69
Mer	4,76%	4
<b>Totalt</b>		<b>84</b>

**Q10 En drosjetur koster 200 kr. Tenk deg at du allerede har installert Uber-appen. Hvor mye må den samme Uber-turen koste for at du skal vurdere Uber i stedet for vanlig drosje?**

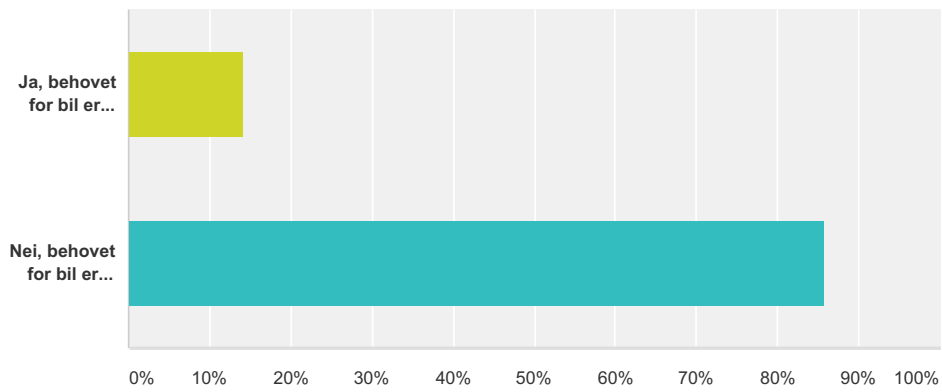
Besvart: 47 Hoppet over: 101



Svarvalg	Svar	Antall
160	31,91%	15
130	36,17%	17
100	8,51%	4
70	2,13%	1
50	0,00%	0
Ville ikke vurdere Uber basert på pris alene	21,28%	10
<b>Totalt</b>		<b>47</b>

### Q11 Endrer det at du bruker Uber behovet ditt for egen bil?

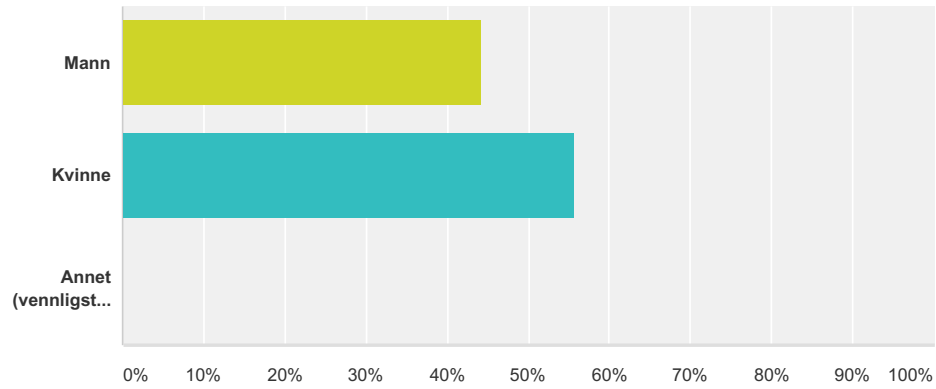
Besvart: 84 Hoppet over: 64



Svarvalg	Svar
Ja, behovet for bil er mindre	14,29% 12
Nei, behovet for bil er uendret	85,71% 72
<b>Totalt</b>	<b>84</b>

## Q12 Kjønn

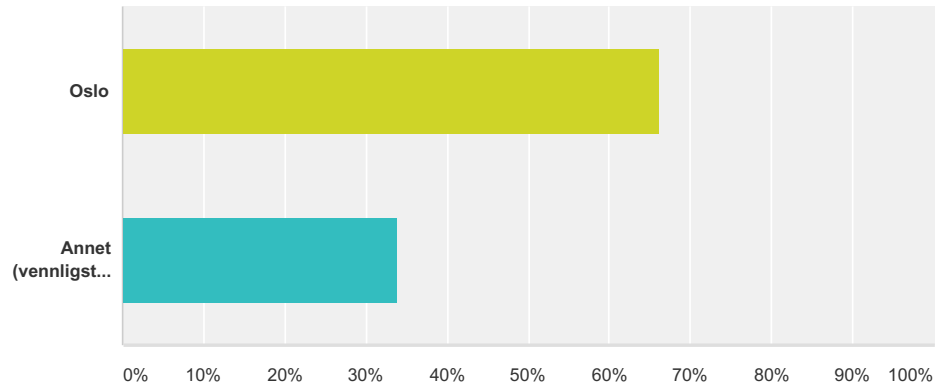
Besvart: 133 Hoppet over: 15



Svarvalg	Svar	
Mann	44,36%	59
Kvinne	55,64%	74
Annet (vennligst spesifiser)	0,00%	0
<b>Totalt</b>		<b>133</b>

### Q13 Bosted

Besvart: 133 Hoppet over: 15

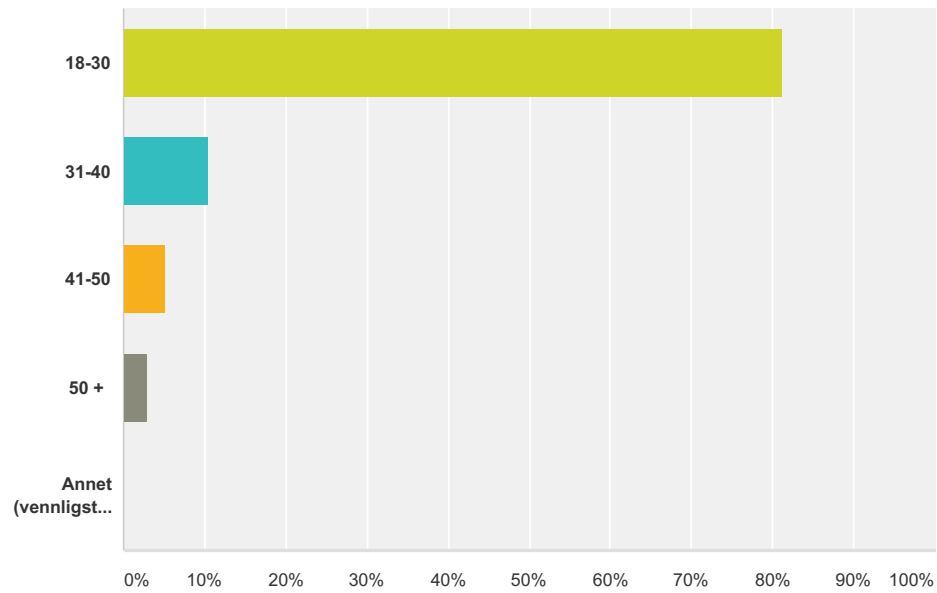


Svarvalg	Svar	
Oslo	66,17%	88
Annet (vennligst spesifiser)	33,83%	45
<b>Totalt</b>		<b>133</b>



### Q14 Alder

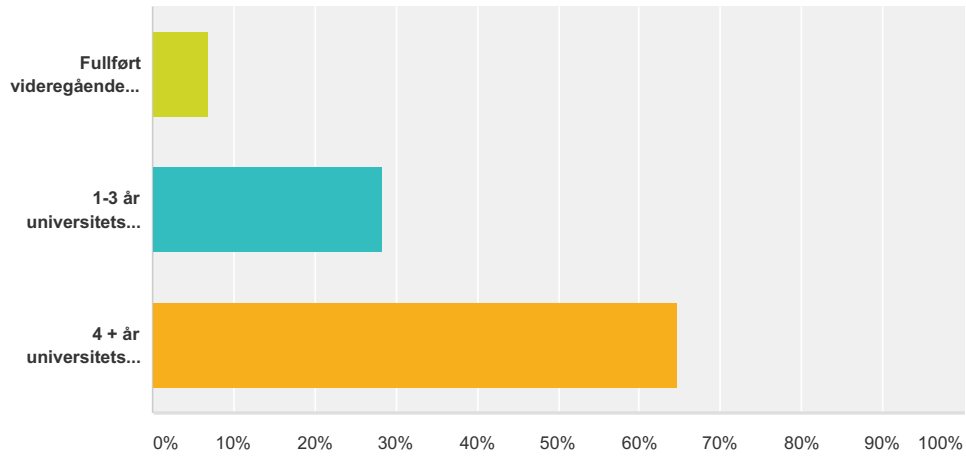
Besvart: 133 Hoppet over: 15



Svarvalg	Svar	
18-30	81,20%	108
31-40	10,53%	14
41-50	5,26%	7
50 +	3,01%	4
Annet (vennligst spesifiser)	0,00%	0
<b>Totalt</b>		<b>133</b>

### Q15 Utdanning

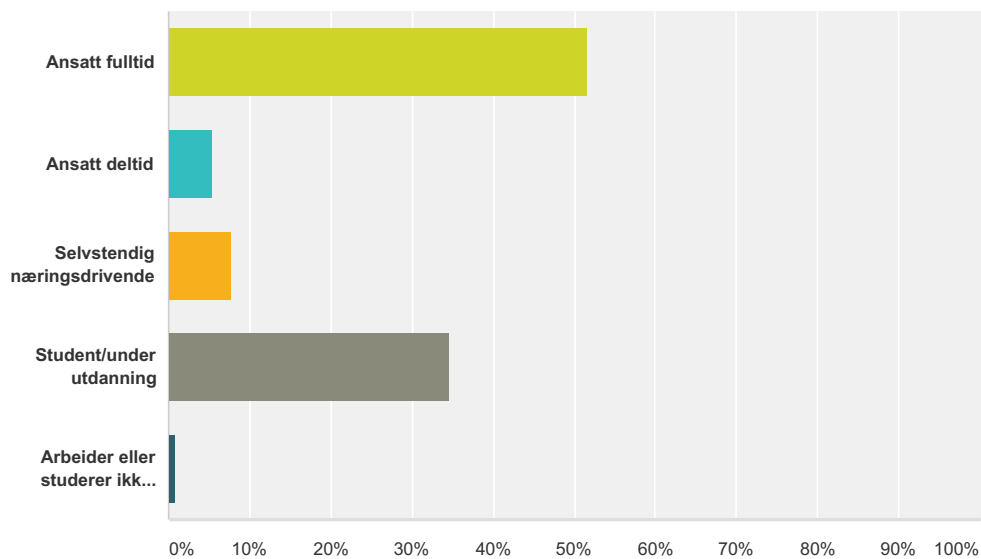
Besvart: 130 Hoppet over: 18



Svarvalg	Svar
Fullført videregående skole	6,92% 9
1-3 år universitets-/høgskoleutdanning	28,46% 37
4 + år universitets-/høgskoleutdanning	64,62% 84
<b>Totalt</b>	<b>130</b>

### Q16 Hvilken yrkesstatus beskriver deg best?

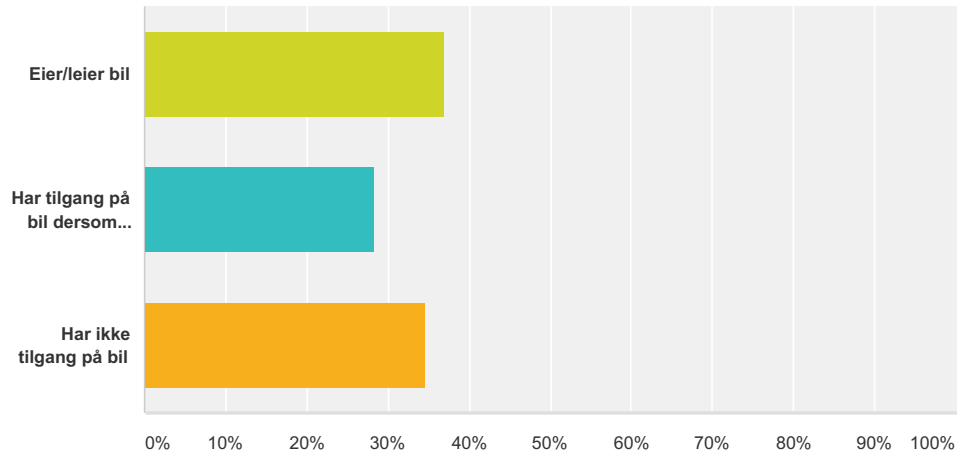
Besvart: 130 Hoppet over: 18



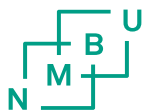
Svarvalg	Svar
Ansatt fulltid	51,54% 67
Ansatt deltid	5,38% 7
Selvstendig næringsdrivende	7,69% 10
Student/under utdanning	34,62% 45
Arbeider eller studerer ikke (f.eks. pensjonist)	0,77% 1
<b>Totalt</b>	<b>130</b>

### Q17 Disponerer du egen bil?

Besvart: 130 Hoppet over: 18



Svarvalg	Svar
Eier/leier bil	36,92% 48
Har tilgang på bil dersom behovet er der	28,46% 37
Har ikke tilgang på bil	34,62% 45
<b>Totalt</b>	<b>130</b>



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