



Access
Partnership

Rethinking taxi pricing and reforms: Spurring innovation and choice in the taxi industry

July 2023




accesspartnership.com

Contents

Glossary and key terms	1
Executive Summary	2
1. Introduction	6
1.1 Background and current state of taxi industry	
1.2 The advent of ride-share and impacts on taxi pricing	
1.3 Objectives and approach of this study	
2. Deep dives into key geographies	10
2.1 Key geography 1: Japan	
2.2 Key geography 2: South Korea	
2.3 Key geography 3: Taiwan	
2.4 Challenges faced by the three key geographies	
3. Deep dives into the case study cities	18
3.1 An evidence base to understand the impacts on societies	
3.2 Case study city 1: San Francisco	
3.3 Case study city 2: Singapore	
3.4 Case study city 3: Sydney	
3.5 Case study city 4: Vienna	
3.6 Seven key insights observed across the four case study cities	
3.7 Summary	
4. Seizing the opportunities	33
4.1 How differentiated pricing could meet challenges faced by the three key geographies	
4.2 Six policy levers to guide future taxi pricing reforms	
4.3 Conclusion	
5. Appendix	38
5.1 Approach used for rider and driver surveys	
5.2 Demographics of survey respondents	
5.3 City-specific survey insights	
5.4 Organizations engaged	
6. Endnotes	49

Glossary and key terms

Term	Definition
E-hail	The method of hailing a taxi or ride-share vehicle electronically. Through this hailing method, booking is done in-app or via a website, in contrast to rank (i.e., taxi stand) and street-hail, where the hailing is done physically. The booking of rides through ride-sharing platforms and applications constitutes a type of e-hailing.
Estimated fare	The fare provided to a passenger in an app is determined by the taximeter's time and distance model, and a range is given as the exact price is not final (i.e., between USD 15-18). Estimated fares may also take into account other factors.
Differentiated pricing	Refers to a concept in taxi pricing where a regulatory environment encompasses different fare types, such as metered, upfront, dynamic, etc. (i.e., "this city's legislation allows for differentiated pricing, including both upfront dynamic pricing and upfront (estimated) pricing for taxis.")
Dynamic pricing	This method of calculating taxi fares determines pricing in real time. Prices are flexible and dependent on factors such as the time and distance of a trip and rider-to-driver demand.
Metered fare	The fare paid by the passenger is determined by an in-vehicle taximeter and computed throughout the trip, measured by time and distance variables set by local, state, or national governments.
Ride-share	A type of e-hail where a rider engages a private driver through a ride-share company. Booking is typically done through the application, website, or a phone call to the company. This is referred to as ride-hail in certain cities. In the context of this report, both terms are synonymous.
Surge pricing	A form of dynamic pricing where prices are raised in response to factors such as high rider demand and limited driver supply.
Upfront fare	The fare paid by a passenger is determined by the app before the trip is booked and the price shown is final. There are various ways in which upfront fares can be estimated, which could include dynamic or a metered estimate. Certain apps also provide fallback conditions; for example, if a trip takes 10 times longer than expected, the price will change.

Icons featured in the report	 Driver	 Rider	 Societal
------------------------------	--	---	--

Important notice on contents

This report has been prepared by Access Partnership for Uber. All information in this report is derived or estimated by Access Partnership analysis using both non-Uber proprietary and publicly available information. The views presented in this report are of Access Partnership and not necessarily of Uber. Uber has not supplied any additional data, nor does it endorse any estimates made in the report. Where information has been obtained from third-party sources and proprietary research, this is clearly referenced in the footnotes.

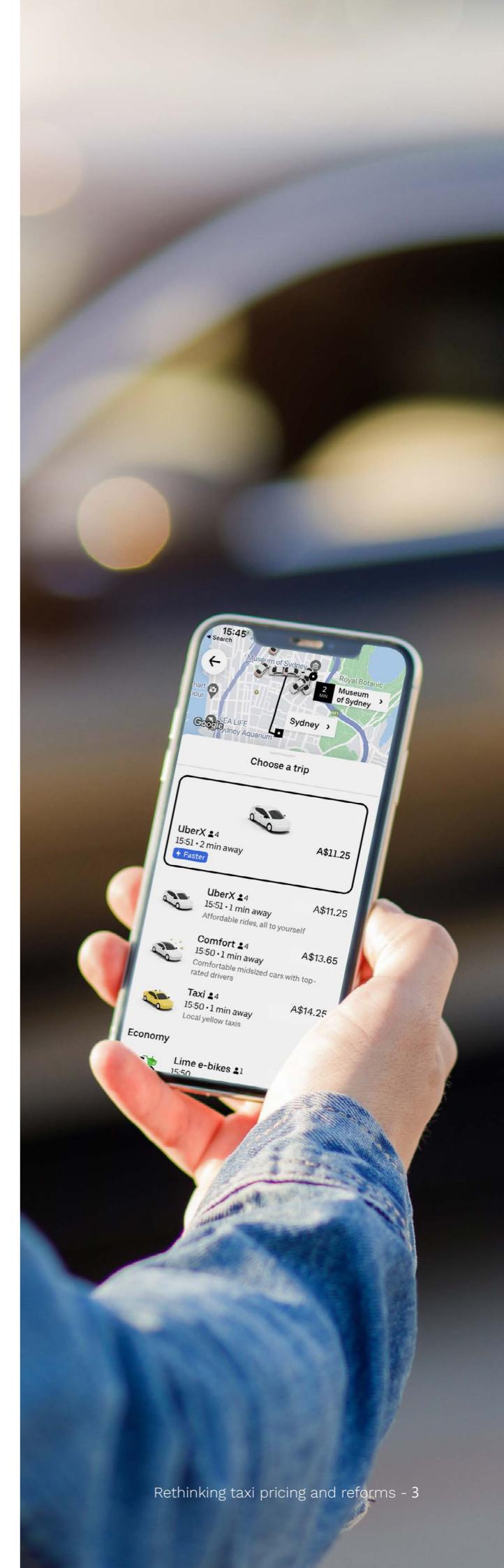
Executive Summary



The taxi industry has served as a cornerstone of transportation models in many cities. However, shifts in the needs and expectations of both drivers and riders have necessitated change. Riders have grown to expect different standards of service, such as the ability to pre-book taxi rides, while drivers are seeking to diversify sources of income by offering their services across different platforms and multiple booking options. As a result, the taxi industry is ripe for change, signaling a need for current (and often legacy) models to evolve.

Ride-sharing apps offer advantages such as flexibility for drivers, ease of access for users, the convenience of finding a ride, and price transparency, among others. The advent of ride-sharing has compelled key players in the market, like regulators and taxi associations, to rethink their pricing models and adapt to customer expectations. Policymakers in some areas of the world have changed regulations to accommodate ride-sharing, while taxi regulations in other places have remained static. However, despite rapid change, the absence of a fact base to guide decisions by regulators and inform the general population has resulted in resistance among certain regulatory bodies.

This report seeks to analyze the impact of differentiated taxi pricing models on taxi drivers and riders, highlighting the limitations and opportunities that regulators can consider. The report unpacks the impacts of taxi pricing reforms in three key markets of interest (Japan, South Korea, and Taiwan). It combines policy analysis with rider and driver survey data in four case study cities (San Francisco, Singapore, Vienna, and Sydney) that have reformed taxi pricing policies in recent years and adopted differentiated taxi pricing, providing unique insights and takeaways for regulators seeking to implement taxi pricing changes.



Key findings of our report include:

- **Existing challenges faced by the traditional taxi industry have been exacerbated by restrictive pricing models.** A study of three economies (Japan, South Korea, and Taiwan) with limited availability of differentiated taxi pricing revealed several commonalities. Despite these geographies having a strong base of taxi services, as well as active government efforts to improve the transport industry, a number of challenges remain. For instance, regulators have long struggled to address issues such as low driver pay and long working hours, while difficulty in finding taxis remains a concern among riders. While many of these issues are inherent to the traditional taxi industry, they appear to have been made worse by limited flexibility and resistance to fully adopt differentiated pricing models. An encouraging finding is that authorities in these geographies seem increasingly open to taxi pricing reforms.
- **An analysis of cities that are further along in their reform journey demonstrates possible benefits that could be unlocked through differentiated taxi pricing options.** Four policy case studies from San Francisco, Singapore, Sydney, and Vienna (henceforth referred to as “case study cities”) revealed that incremental changes to taxi pricing regulations have yielded positive outcomes, such as increasing flexibility for both riders and drivers, growing driver earnings over the longer term, and providing sufficient driver supply to meet rider demand, among others. This outlines that cities and countries could reap benefits through their openness to explore differentiated pricing options, which has the potential to address several challenges faced by the traditional taxi industry. Furthermore, the bulk of taxi riders value being able to choose their preferred fare option when taking taxi rides and appear to be generally supportive of upfront fares. 52% of respondents surveyed in the four case study cities selected upfront fares as their preferred fare type, compared to 21% for metered fares.



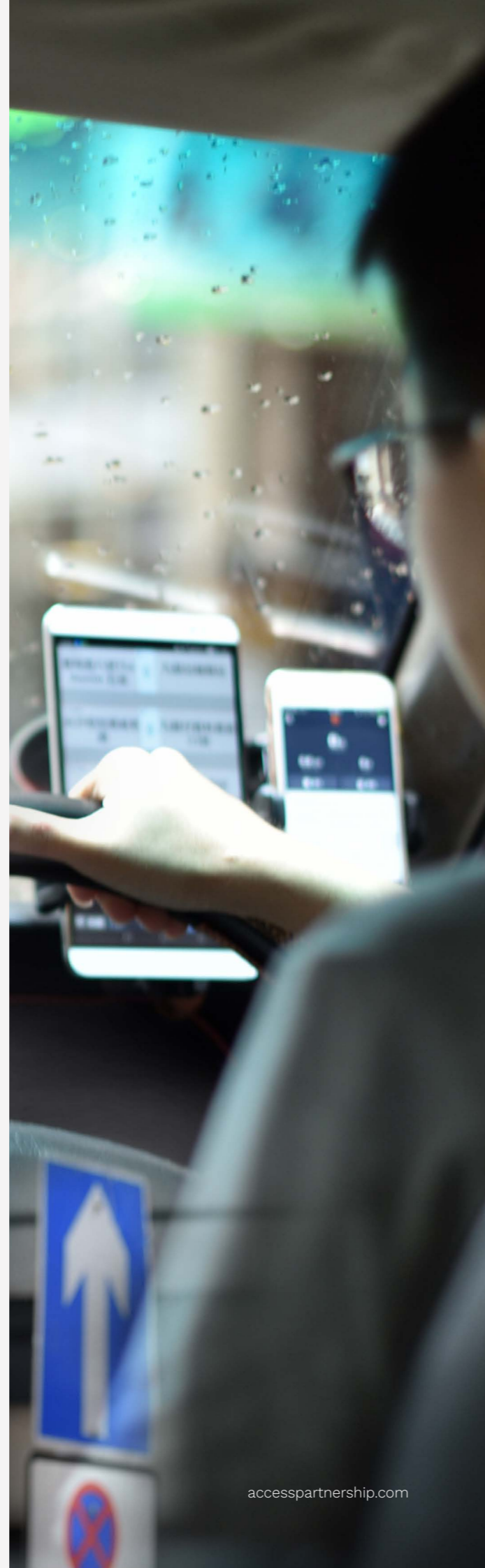
- Six policy levers can help policymakers looking to implement differentiated taxi pricing policies. These are:

- 1 Enable flexibility and choice in regulations.** Key stakeholders should discuss options for driver flexibility before implementing a dynamic pricing framework. For example, drivers may want the option to opt out of certain types of trips, like ride-share-originated trips.
- 2 Develop pilot program(s) and incentivize participation.** Ahead of considering and evaluating upfront pricing implementation, authorities can utilize pilot programs to test partnerships with taxi companies and collect data. In addition, policymakers and e-hail platforms could consider incentives for taxi companies and their drivers to participate in pilot programs, coming together to discuss how such incentives could be implemented.
- 3 Establish a framework to educate drivers.** To ensure a smooth transition to a dynamic pricing policy framework, policymakers could support drivers and develop a framework to educate drivers about app-based features, such as payments, navigation, and dispatch.
- 4 Diversify the employment environment of taxi drivers.** Regulators can ease licensing requirements for app-only drivers to lower the barrier to entry. Governments can support drivers working part-time to allow more drivers during peak hours when supply is needed to meet demand.
- 5 Prioritize multi-stakeholder collaboration.** There is a need to facilitate coordination among internal and external stakeholders (local government, national government [if applicable], taxi associations, regulators, ride-share companies, workers' unions) throughout the policy process. This can help with knowledge-sharing across the different sectors, as well as understanding what is happening out in the field.
- 6 Ensure transparency.** Regulators should be open with the public on partnerships, taxi data (non-personal), costs, and other variables when seeking to implement taxi pricing on e-hail or ride-share apps.

As there is no universal solution to tackling every problem in a particular city, the above can be explored to fit a city's needs and objectives for different stakeholders. Consequently, this report seeks to provide readers with a more in-depth understanding of taxi policy landscapes in cities around the world, serving as a base to shape future regulatory conversations and guide industry stakeholders.

1. Introduction

This section provides background on the current state of the taxi industry, details how the advent of ride-share brought taxi pricing options to the forefront, and outlines the objectives and approach of this report with an analysis of the impacts of differentiated taxi pricing.



1.1 Background and current state of taxi industry

Taxi services vary by country and city, serving demand for point-to-point services around the world. Some cities view taxi services as a complement to public transit (providing a publicly available service), while other areas may consider taxi services a part of the public transit ecosystem (i.e., in rural areas with few transit options).¹

While taxis are a vital component of urban mobility and have historically maintained a monopoly on door-to-door services in urban transportation, some challenges have persisted. These include concerns relating to the following:

- Customer service and safety (cleanliness, vehicle quality, driver behavior).
- Competition with public transport (more options for shorter routes).
- Quantity of drivers (mismatch of supply and demand).
- Livelihood (long hours for low driver pay, irregular wages).
- Pricing (riders unaware if routes are accurate, lack of digital payment options).²

In sum, differing local contexts and economic structures generate a range of challenges for authorities seeking to regulate the industry.³

1.2 The advent of ride-share and impacts on taxi pricing

The taxi industry has changed dramatically in the last fifteen years, with ride-sharing companies emerging to both complement and compete with taxis globally. Ride-share disrupted the traditional taxi market, providing flexibility for drivers, ease of hailing through smartphone applications, and price transparency.⁴

Research indicates that once a ride-share service enters a city, many people who formerly used taxis are likely to switch to this service.⁵ Since Uber launched its UberCab



service in the United States (US) in 2010, ride-share platforms (also offering taxi hail services) have spread worldwide through both Uber and other companies with similar business models, like DiDi in China and Grab or Gojek in Southeast Asia.

The rise of the ride-share model has also led to discussions about taxis across governments, industry, taxi drivers, and taxi associations on pricing for point-to-point services, as riders have also grown accustomed to certain pricing arrangements (see Box 1 for a summary of taxi pricing models). With street-hail services, riders do not know the cost until the trip is complete. Traditional taxi pricing can lead to a certain anxiety among passengers, who watch the fare increase on the meter as the trip continues (known as “meter anxiety”).⁶ With the advent of ride-share and upfront pricing, riders and drivers have come to expect transparency.

BOX 1

Main types of taxi pricing models

Demand for point-to-point mobility and the growth of ride-sharing services have motivated the taxi industry to rethink its pricing models. Most cities around the world maintain strict time and distance pricing regulations for taxi trips. Others follow the upfront fare or dynamic pricing model introduced by ride-sharing companies but maintain metered pricing for street-hail. This paper will examine four pricing typologies that apply to taxi pricing on e-hail apps:

**Metered**

This is the traditional pricing model, where taxi meter rates are set by regulation. Taxi rides are priced according to the distance covered and time taken for the trip and calculated by an in-vehicle taximeter (in many jurisdictions, regulations require in-vehicle meters). These measurements are then converted to a fare at the end of the journey. Taxis can also be dispatched by e-hail apps in the metered scenario. Cities with these pricing models include Tokyo, Seoul, and Taipei.⁷

**Upfront with estimated metered fare**

Taxi fares are metered (i.e., regulation requires taximeter pricing). Trips are dispatched through e-hail apps and provide an estimated range (i.e., USD 15-18) because the exact price is unknown at the time of booking.

**Upfront with regulated price range**

Authorities allow taxis to be dispatched through e-hail apps but maintain that the upfront rate provided to the passenger cannot be lower or higher than a certain percentage of the regulated meter rate. Vienna is an example of a city that uses this pricing model. Japan is also exploring this pricing model in its latest pilot.

**Upfront and dynamic**

Rates are set by an e-hailing platform's algorithm, which adjusts fares based on several variables, such as time, distance, traffic conditions, and the current rider demand and driver supply. Regulations in San Francisco, Singapore, and Sydney allow for upfront dynamic pricing when riders request a taxi via an e-hail app.

The metered model is the traditional way for taxi fares to be set by governments. However, as the environment for point-to-point services has changed, some governments have slowly adjusted their fare schemes (such as San Francisco, New York City, Sydney, Melbourne, and Singapore) through regulation.

1.3 Objectives and approach of this study

While many cities are actively reviewing their taxi pricing regulations, regulators will benefit from a fact base to guide decisions. Insights on the reform process, as well as data from riders and drivers in cities that have adopted differentiated taxi pricing, are key components to consider. This report aims to bridge this gap by analyzing the impact of differentiated taxi pricing on taxi drivers and riders, highlighting the limitations and opportunities.

Chapter 2 analyzes the taxi pricing policies, recent developments, and policy impacts in three key geographies, focusing on their largest or capital cities (if applicable) and whether the current state of taxi reform limits opportunities for riders and drivers. Japan, South Korea, and Taiwan were chosen due to their strong street-hail taxi services, coupled with the government's desire to boost utilization, efficiency, and affordability in the transport industry overall. Tokyo, Seoul, and Taipei are hubs for urban innovation but must also navigate specific challenges for the taxi industry to remain viable. All three cities have limited experience with differentiated pricing for taxis and different fare types (although a dynamic pricing program is being explored in Tokyo). This analysis helps to set the context for geographies that have not embarked on major taxi pricing reforms.

Chapter 3 examines the taxi pricing policies and reform processes of four “case study cities” (San Francisco, Singapore, Vienna, and Sydney) that have started on their taxi pricing reform processes, including understanding the steps taken as policies were crafted. This chapter explores details regarding how agreements were reached, with insights from transport regulators who navigated these challenges to reach a solution.

In addition, Chapter 3 highlights the impacts of the policies from these case study cities from primary and secondary data. The aim is to understand if allowing flexibility in taxi pricing options for taxi rides booked via applications would result in positive outcomes for the industry. The data includes:

- Survey data collected in April 2023 from drivers and riders in the four cities.
- Public government data relevant to taxi pricing and key outcomes.
- Regulatory insights and, where possible, analysis from experts and academics familiar with the taxi landscape in these jurisdictions.

Finally, Chapter 4 suggests six policy levers for policymakers deliberating on taxi pricing reforms. These are intended to ensure that the taxi industry remains viable and continues to innovate.



2.

Deep dives into key geographies

This section outlines the regulations, recent developments, and policy impacts of taxi pricing policies in three key geographies: Japan, South Korea, and Taiwan. In three major cities (Tokyo, Seoul, and Taipei), regulations limit different fare types. (However, the Japanese government has recently approved dynamic pricing rules that, when implemented, will allow for moderate price flexibility for taxis on e-hail platforms). These regulations implicate myriad issues, including long hours for drivers and a limited range of payment options, long wait times, and unstable fares for riders. However, it is encouraging that although many issues are prevalent, governments in these geographies are seeking to innovate in certain areas, showing an appetite for change.



2.1 Key geography 1: Japan

Japan's taxi industry is renowned for its high-quality service, safety, and convenience. Taxis are widely praised for having spotless cars, polite drivers, and a culture of no tipping.⁸ However, taxis are often considered an expensive alternative to public transport.

As riders consider more efficient and affordable mobility options, Japan's national government is exploring a pilot program with a dynamic pricing scheme. These measures are indicative of the Japanese government's objective to improve the current taxi system with innovative solutions.

Japan's Road Transport Act

Japan's Ministry of Land, Infrastructure, Transport, and Tourism (MLIT) regulates the Japanese taxi industry. The current regulatory framework governing taxis in Japan is the Road Transport Act.⁹ There is no regulation governing ride-share, but "taxi booking companies" can partner with taxi firms and serve as a booking app for riders.¹⁰

Fare pricing regulations, calculated by meter from time and distance measurements, are managed by the federal government. However, pricing also depends on the regions and taxi operating districts. The Special Measures Act of 2009 further defines three geographical categories with different pricing schemes.¹¹

Recent developments

In October 2021, MLIT and Uber partnered on a pilot program regarding "pre-determined variable fares," or dynamic pricing.¹² The pilot helped MLIT identify key challenges to introducing dynamic pricing in competition with traditional street-hailing; namely, the positive fare surge did not happen much because the riders could choose to street-hail during busy hours, negative feedback was reported from participating drivers, and the need for post-trip fare recalculation owing to certain trips took far longer than originally estimated.¹³

In 2022, MLIT announced a new Committee to revisit upfront dynamic pricing for taxis. MLIT concluded that taxi operators will have the option to flexibly set upfront dynamic prices up to 50% above or below the regulated fare in the first six months.¹⁴ Furthermore, MLIT's goal with the latest dynamic pricing pilot is to help balance supply and demand for rides.¹⁵ The results will be monitored and reviewed every three months during the six-month monitoring period.

The agency has stated that the average over three months should be within the legal fare range, with operators required to report total taxi fares earned every three months. This upfront dynamic pricing system will only be available for taxis hailed via e-hail apps with a predetermined route and pricing. Riders who hail a taxi on the street will not be able to utilize this system.

Observed impacts of current policies

Regulations have limited competition. Long-standing strong government involvement in the taxi industry to control supply and pricing has helped to create a sector too dependent on regulations. In turn, the taxi industry is protected from competition and late-to-market developments.¹⁶

Taxi regulations may limit options for riders and cause concern about affordability. A 2018 discussion paper by McKinsey & Company on Japan's mobility market found that taxi regulations in Japan limit options for riders and mobility providers.¹⁷ For instance, younger people around the country believe that more competitively priced services could offer an alternative to public transit for shorter trips.¹⁸ A 2019 study also detailed that Japanese taxis have the second-highest fares worldwide, creating affordability concerns.¹⁹

2.2 Key geography 2: South Korea

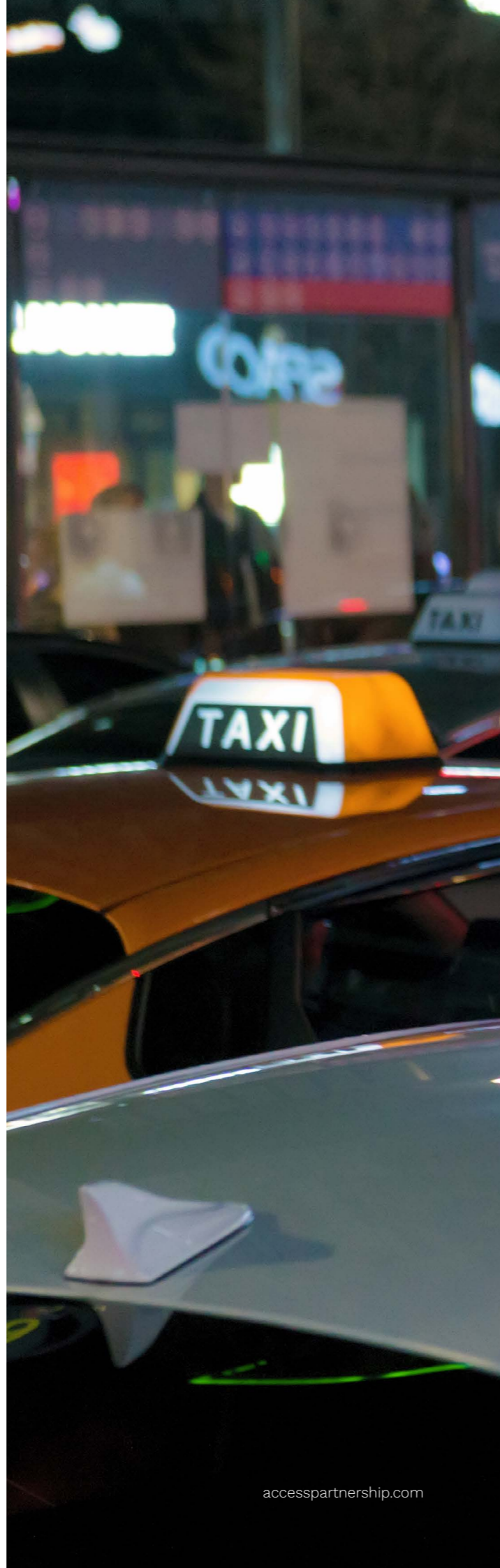
The South Korean taxi industry maintains stringent taxi pricing regulations. These taxi policies have come under public scrutiny for many years, and many issues have come to the forefront since COVID-19 restrictions were lifted.

For example, many older drivers have left the profession, creating an imbalance of supply and demand. To overcome this lopsided marketplace, the government has increased fares to entice drivers back to the profession. However, rather than solving the driver retention problem, the resulting price increase lowered consumer demand as taxis became viewed as an unaffordable point-to-point transit option, which in turn has ensured that driver pay remains low.²⁰

Under current regulations, apps are permitted to offer upfront pricing with an estimated taximeter rate adhering to time and distance measurements (applicable only to luxury or jumbo taxis, which only account for roughly 2% of the market).²¹

Passenger Transport Service Act (PTSA)

The Passenger Transport Service Act (PTSA), which regulates public passenger transportation services in South Korea, was first enacted in 1962.²² In addition to determining time and distance rates, as well as a base fare, the right to add surcharges (for late-night and intercity trips) or apply flat fares (for specific areas/time) was devolved to each local government. “Standard” (i.e., mid-size, five-seater) taxis have lower base fares (approx. USD 3.64 in Seoul) compared to deluxe and jumbo (approx. USD 5.30 in Seoul), and these base fares also change for late-night or intercity rides due to surcharges. Rates are calculated at the increment of 1.6 kilometers.²³



Recent developments

Stringent pricing regulations have negatively impacted both drivers and riders, with the former still receiving low pay and the latter exploring other transportation options. In addition, government regulations limit the ability of ride-sharing platforms to operate.

Amendments to the PTSA enforced in 2020 established a regulatory framework for app-based taxi-hailing businesses.²⁴ The amendments introduced “passenger vehicle platform services” as a new category, defining three types of platform business. However, the amendment blocked services like Tada, which used rental vehicles to circumvent the ban on paid rideshare, and Poolus, which gave drivers the option to perform rideshare trips twice a day using a loophole clause that allowed paid rideshare during commute hours. Moreover the amended PTSA gave the Ministry of Land, Infrastructure, and Transport (MOLIT) the authority to control the number of licenses accorded to non-taxi vehicles.²⁵

On 4 October 2022, MOLIT announced “Measures to Alleviate the Late-night Taxi Problem through Regulatory Reform and Mobility Innovation.”²⁶ The government’s aim was to raise the booking fee cap during late-night hours (an additional USD 3.49) and ease regulations, such as vehicle age limit, to bring back drivers who left the industry during the pandemic and entice drivers to work at night.²⁷ Fares have also increased by about 25% for daytime rates, which has upset riders.²⁸

After announcing the late-night fare hike, Transport Minister Won Hee-ryong stated “[W]hether taxis’ increased base fare is acceptable to the public or whether it is better to apply a booking fee for calling and reserving taxis only according to supply and demand, we will decide that based on the results of implementing this policy.”²⁹

There have not been active discussions on allowing dynamic pricing beyond those allowed

for luxury and jumbo taxis in South Korea. Dynamic pricing is not being considered for standard taxis, which constitute the majority of taxis in South Korea.

Observed impacts of current policies

Persisting mismatch of drivers and riders. While MOLIT’s late-night booking fee plan is aimed specifically at late-night taxi fees, its effects impact issues beyond Seoul’s late-night rides. Initially, raising taxi rates or increasing surcharges may make the industry slightly more profitable by incentivizing drivers to provide more night-time rides.³⁰ However, there are still outstanding issues of supply and demand that persist, and with the fee hike’s limited effects, riders will still encounter issues finding taxis.³¹ In sum, higher taxi prices likely result in lower demand, while the government’s desired outcome may have mixed results for taxi drivers.

Young drivers leaving due to low earnings. Seven out of ten taxi drivers are in their 60s and 70s, according to data released by the Korea National Joint Conference of Private Taxi Association. During the COVID-19 lockdowns, younger drivers left taxi jobs to seek work in more flexible and less regulated industries, like delivery services. Predominantly elderly drivers, who are more hesitant to drive at night, remained in the profession, intensifying the shortage of late-night taxis.³² According to taxi company officials, drivers earn an average of KRW 130,000-150,000 a day (approx. USD 97-112).³³

Change in transport methods due to high fares. Riders are also changing their transport methods due to high fares. A young university student in Seoul reacted to the latest price hike policy by stating she would be switching from taxis to bus rides for short distances.³⁴

While the government seeks to improve driver pay, the MOLIT late-night fee plan underscores the fact that the current taxi system requires myriad advancements.

2.3 Key geography 3: Taiwan

Taiwan's taxi industry faces similar issues to Japan and South Korea. Rising costs due to inflation and COVID-19 resulted in the Taipei City Commercial Taxi Union proposing increased fares in November 2022.³⁵ In addition, riders have complained of customer service problems with drivers, such as impoliteness, talking on smartphones while driving, detours, only taking cash payments, and unclean taxis.³⁶

The majority of taxis in Taiwan are traditional yellow taxis, which adhere to time and distance pricing by the meter. However, there is evidence that the taxi industry is changing. Data from the Ministry of Transportation and Communications (MOTC) details that modernizing the taxi industry through its "multi-purpose taxi service program" nets improvements like low vehicle vacancy rates and higher incomes.³⁷ This has seen a generally positive reception from both drivers and riders. The number of multipurpose taxis (MPTs) in Taiwan is also rising amidst these changes, more than doubling from 8,683 in 2019 to 17,878 in 2021. However, despite these increases, MPTs accounted for only about 20% of all newly registered taxis in 2021, highlighting the continued dominance of traditional taxis.³⁸

Ride-share regulations also impact the taxi industry. In Taiwan, ride-share drivers must obtain transportation business licenses and taxi license plates, which are limited in supply.³⁹ These regulations also allow for upfront pricing measured by the taxi meter.

Regulations on the Management of the Automobile Transportation Industry

The October 2019 amendments to the Regulations on the Management of the Automobile Transportation Industry created the most recent version of the MPT program,



under which all e-hail services fall. Under the amended Regulations, MPTs are defined as taxi services that integrate supply and demand information and provide reserved passenger transportation through an Internet platform.⁴⁰ Under this definition, e-hail services are required to comply with the same requirements as traditional taxis except where specified under other sections of the law.

This classification subjects e-hail services to many of the provisions applying to

yellow taxis, such as adhering to the approved fare range set by municipal transportation authorities (subject to approval from relevant authorities) and requiring drivers to obtain a transportation business license and taxi license plates.⁴¹ There are several exceptions that differentiate MPTs from traditional taxis. For example, MPTs are limited to accepting requests by reservation and cannot accept passenger requests off the street.⁴² In addition, while MPTs are required to have taximeters installed in the vehicle by default, the Regulations allow operators to apply for exemptions from having to display and use a taximeter.⁴³ In order to receive this exemption, MPT operators must submit their proposed alternative pricing model to be tested by a professional institution designated by MOTC demonstrating that the payable fare provided is always within the tariff range approved by the competent highway authority.

In essence, this provision allows e-hail services to use any pricing method they so choose as long as they can demonstrate through a professional audit that the trip outcome always falls within the approved tariff rates set by municipal transportation authorities. It also provides consumers with prescribed information, including the estimated driving route and payable fare.

Recent developments

Prompted by pushback from the taxi industry following a 2017 decision by MOTC to allow e-hail apps to operate legally in Taiwan through local rental car firms, the agency introduced Article 103-1, popularly referred to as the "Uber Clause," to the Transportation Regulations in June 2019.⁴⁴ Article 103-1 divided the market into conventional taxis and rental vehicles, with e-hail apps falling under the latter category.⁴⁵ The introduction of Article 103-1 led to a renewed round of negotiations between industry groups and the government, ultimately leading to the October 2019 amendments largely defining the current MPT system.

In December 2022, the Taipei City Public Transportation Office announced a fare increase to begin in April 2023.⁴⁶ This includes a base fare increase, a waiting fare where the rate decreased from 80 seconds to 60 seconds before riders are charged a waiting fee, and a night-time surcharge for riders between 11pm and 6am.⁴⁷ With the April 2023 fare increase, the government aims to reasonably reflect the costs of operating taxi services, such as drivers' salaries, fuel, and vehicle maintenance. Additionally, by shortening the waiting fare interval, the government hopes to encourage taxi drivers to accept short-distance passengers.⁴⁸

Observed impacts of current policies

In Taipei, the current landscape encompassing the taxi industry has riders feeling that there is room for improvement.

In the National Taxi Industry Development Association's recent survey of taxi users in Taiwan, taxi services in Taiwan's six biggest cities received an average score of 65.5/100. Of the respondents in Taipei and New Taipei (where fares were raised on April 1), 36.6% considered the upcoming fare hike to be reasonable, while 35.5% found it unreasonable.⁴⁹ Meanwhile, 55.2% of those surveyed in Taipei and New Taipei said they would take taxis less frequently following the fare hike, with a mere 2% responding that they would take more taxis and 42.8% stating they would leave their habits unchanged.

Modernizing the taxi industry nets real benefits. The government's MPT program enables increased pay for drivers and a lower vehicle vacancy rate.⁵⁰ A 2021 survey conducted by MOTC illustrates that despite driving similar hours per day and taking a similar number of days off, full-time MPT drivers earn NTD 6,264 more per month in profits. They also tend to have lower vacancy rates.⁵¹

2.4 Challenges faced by the three key geographies

Japan, South Korea, and Taiwan have common regulations that limit flexible taxi pricing. Based on a review of these geographies, there seem to be adverse impacts from the stringent taxi pricing policies on taxi riders and drivers.⁵²

In Japan, national regulations have limited pricing flexibility, resulting in the sector's inability to handle growing societal challenges like aging drivers and an increasing population

gap between rural and urban areas. In South Korea, stringent pricing regulations have negatively impacted both drivers and riders, with the former still receiving low pay and the latter exploring other transportation options. In Taiwan, riders feel there is room for improvement with taxi pricing fares, and more licenses could reverse supply and demand imbalances. In summary, several key challenges that could be exacerbated by the lack of differentiated taxi pricing include:

1. Mismatch of supply and demand.

Taxi fleets are dwindling, and the profession has become less attractive in recent years, especially post-pandemic when many drivers left to pursue other options. As a result, there is a chronic shortage of drivers, making it challenging for demand to be met. Furthermore, despite some taxi companies offering e-hail options, riders sometimes end up waiting for long durations before they are matched with drivers.

2. Long working hours and low pay for taxi drivers.

Drivers often end up working long hours to maximize peak-hour windows with high demand; for instance, from early in the morning till midnight, when surcharges may kick in. However, given that they may spend many hours idle during non-peak hours waiting or looking for riders, overall earnings have not increased in line with the rising cost of living, making the industry more unviable – especially for older drivers.

3. Limited payment options for taxi riders.

Riders may sometimes only be allowed to pay through limited options (i.e., cash-only or with no digital or credit card payment option), especially for rides obtained via street-hail. The lack of payment options has been cited as an inconvenience for riders; for instance, in cases where the taxi in which they are riding does not have a cashless payment terminal but they do not have cash on hand.

4. Lack of affordability for riders and unstable taxi rates.

The three key geographies have undergone several fare hikes in recent years in response to factors such as driver shortages or low pay among taxi drivers. However, this has affected the affordability of taxi fares, resulting in some choosing alternative forms of transportation instead.

5. Long wait times for riders.

As highlighted above, riders often find it challenging to find a taxi driver due to poor allocation of drivers or mismatched supply and demand. This is made worse in cases where they have a lack of e-hail options (e.g., there are only a few main licensed providers in the city).

6. Lack of adequate choice for riders.

Given the lack of incentive to encourage innovation and competition in the market, riders are limited in terms of e-hail app options as well as fare types.

7. Strict licensing requirements.

Strict licensing requirements, which result in license shortages, could further worsen the above challenges, especially in cases where market players are heavily restricted in how they can operate.

These issues create a challenging climate for both riders and drivers. However, they are not unique to any market alone and have been faced by many markets around the world outside of Asia during different stages of the taxi reform process.⁵³ It is also encouraging to know that governments, particularly in the three key geographies, have acknowledged these and are exploring possible solutions to mitigate them. To facilitate this process, the next chapter seeks to glean insights from other places that are further along in their reform journey.

3. Deep dives into the case study cities

This section provides background on the case study cities and why they were chosen for analysis. It also includes deep dives into their taxi policy reform landscapes, as well as key insights derived from rider and driver surveys that have been conducted. San Francisco, Singapore, Sydney, and Vienna have been chosen to inform the evidence base as they are at different stages of the reform process and have taken varied approaches to updating their taxi pricing regulations. Our analysis reveals that allowing differentiated taxi pricing (like upfront fares) for trips booked via mobile applications has observed benefits, such as increased flexibility for taxi riders and drivers. Learning from the experiences of these cities could provide valuable lessons for others planning to enact similar policies.



3.1 An evidence base to understand the impacts on societies

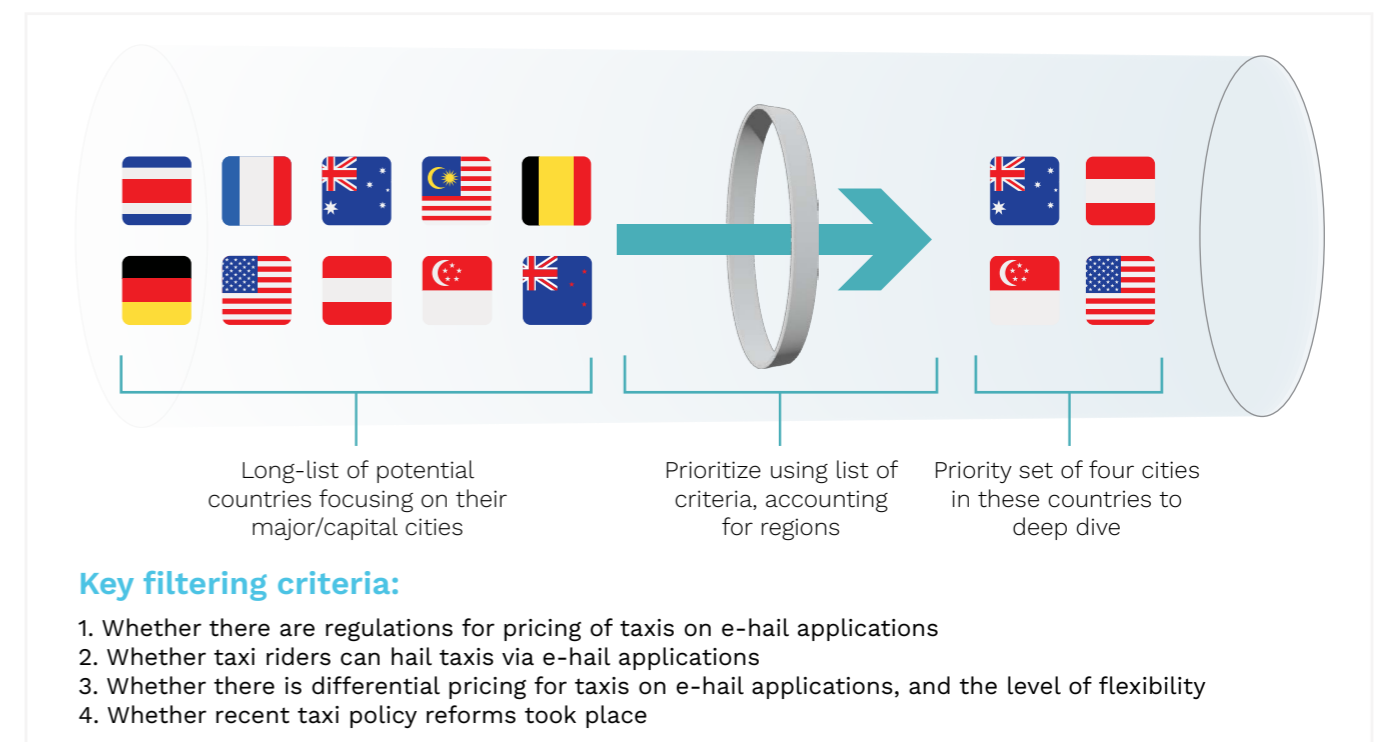
Several cities are already reviewing their taxi pricing regulations and implementing changes as part of efforts to mitigate the issues mentioned earlier in this report. These cities can be found across the globe, including Singapore (Asia), Auckland and Sydney (Oceania), Brussels and Vienna (Europe), and San Francisco and New York (Americas). For instance, San Francisco is currently running a pilot program that allows taxi e-hail apps to offer upfront pricing, with fares being calculated based on an estimate of the metered fare (in contrast to the dynamic pricing mechanism currently used by ride-share apps in the city). As part of the same pilot, third-party ride-sharing apps are allowed to refer trip requests to taxis and offer upfront fares, which are calculated based on the dynamic pricing mechanism.⁵⁴

Learning from the experiences (including approaches) of these cities could help build a fact base and provide guidance for others planning to review similar regulations. Understanding the impacts of taxi pricing reforms on societies is crucial to aid decision-making. Of the available sample, San Francisco, Singapore, Sydney, and Vienna present good learning examples, as they have updated taxi pricing policies and allow an array of taxi-hailing methods and pricing options for taxi rides (*Exhibit 1*). In these cities, taxi pricing regulations started as restrictive and have gone through periods of adjustment.

Furthermore, these case study cities are also geographically diverse and have taken different approaches to changes, including varied policy positions. This showcases how cities can consider a range of approaches to achieve the common outcomes of innovation and flexibility. Box 2 also highlights the relevance of these four cities to this report's key geographies of Japan, South Korea, and Taiwan.

EXHIBIT 1 Filter criteria used to select case study cities

Four cities emerge as good learning examples through a prioritization exercise



SOURCE: Literature review; Access Partnership analysis

BOX 2

Comparison between case study cities and major cities in the key geographies

How are the case study cities relevant to the major cities in Japan, South Korea, and Taiwan?

Comparing the case study cities (San Francisco, Singapore, Sydney, and Vienna) to the three key geographies of interest (Seoul, Taipei, and Tokyo) reveals strong similarities between the two groups, indicating that the case study cities are suitable peer economies for East Asian regulators to reference when discussing their taxi pricing reforms. The similarities include:

**Economic development**

All of the selected cities serve as major economic centers in their respective countries, which have high income levels.

**Governance structure**

These cities have a stable governance structure, ensuring engagement with key stakeholders when passing reforms.

**Infrastructure development**

All cities have placed a high priority on developing modern and resilient infrastructure and possess well-connected roads and public transportation networks.

**Technological advancement**

The selected cities are known for being advanced in terms of technology and innovation.

**Role of the private sector**

The taxi industry in these markets has seen the rise of several key players in the form of ride-share companies such as Uber, Lyft, Bolt, and Grab, among others. These companies have played a part in encouraging innovation in the industry. In all cities, governments also have a positive relationship with key stakeholders in the private sector, coordinating and consulting closely with them whenever reforms are passed.

3.2 Case study city 1: San Francisco

San Francisco is one of the only US cities with a law (pilot program) that allows upfront dynamic pricing on e-hail apps. Trips originating from the Uber app offer fares not based on taximeter rates.⁵⁵ Therefore, its taxi pricing is one of the most forward-leaning models in the US, providing riders with more flexibility within point-to-point transportation.

Taxi Upfront Pilot Fare Program

At the outset, the SFMTA (San Francisco Municipal Transportation Agency) sought to improve taxi services for both riders and drivers. Through the Taxi Upfront Pilot Fare Program, regulators wanted to allow additional price certainty for trips, increase the number of taxi trips, and allow taxis to be more competitive in the for-hire transportation marketplace.⁵⁶

In September 2021, the SFMTA Board authorized the creation of a one-year Taxi Upfront Fare Pilot Program (Pilot). The first iteration of the pilot aimed to test the concept of providing riders with a flat-rate fare estimate through a taxi e-hail application (not ride-share).⁵⁷ Under this program, riders had the option of choosing an upfront fare or paying for the trip based on the taximeter amount.

After the SFMTA Board approved the original pilot, taxi industry stakeholders requested that e-hail app providers be allowed to dispatch trips that originate with third-party entities (e.g., entities that do not receive permits issued by the SFMTA), which may offer upfront fares that are not based on taxi meter rates, such as upfront dynamic pricing.⁵⁸ These trips are known as Third-Party Pilot Trips.⁵⁹

The Third-Party Pilot began in November 2022. Through this program, riders in San Francisco can now book a taxi trip through two approved apps: FlyWheel (a taxi e-hail apps) and Uber (the only ride-sharing app in San Francisco that allows users to book taxis). Through this program in San Francisco, riders request an

Uber trip that may be fulfilled by its Pilot partner apps.

Trips originating from a third-party app, like the Uber app, will offer upfront fares that are not based on taximeter rates.⁶⁰

Reform process

For the original pilot program, SFMTA wanted to provide certain features that e-hail and ride-share apps offer to the public, like allowing customers to book rides and pay in advance for on-demand services.⁶¹ Sensitivity to pricing and price shopping were top of mind for the regulators, so the original pilot prioritized giving riders a range for the cost of a trip.

For Third-Party Pilot trips, the taxi industry approached SFMTA about partnering with dispatchers and other entities. During the reform process, SFMTA heard from stakeholders across the industry. According to SFMTA representatives, certain segments of the taxi industry voiced opposition to the pilot. Based on that feedback, SFMTA added a provision to allow drivers to opt out of providing third-party trips without facing penalties.⁶²

The open attitude towards innovation, as well as prioritization of driver and rider interests, appears to have paid off in San Francisco. This is supported by our survey results, which show a high degree of optimism regarding the state of the taxi industry and the adoption of taxi and ride-share apps. In particular, we see that:

- **Taxi riders have increased their demand for taxi services in recent years.** Of the respondents surveyed, 71% of riders in San Francisco are currently taking taxis more frequently than they were two years ago, while a similar share is using taxi and ride-share apps to book trips more often. This is significantly higher than the averages of 49% and 59%, respectively, among the four case study cities surveyed. While much of this demand can be attributed to general increases in travel following the loosening of pandemic

restrictions, San Francisco has seen a much higher increase in taxi travel as compared to other case study cities due to increased driver supply following the pandemic.⁶³

- **Despite the increasing prevalence of ride-share applications, traditional methods, such as street-hail and phone calls, remain popular among riders as compared to other cities.** This is likely to be the result of inherent taxi dominance in the industry in the context of San Francisco, given that there are only two major ride-share platforms currently being used in the city: Uber and Lyft. Only 20% of taxi rides among survey respondents are still being made via street-hail, compared to an average of 16% across the case study cities. At 30%, San Francisco also has the lowest share of total taxi trips being booked via any application (i.e., taxi or ride-share), compared to an average of 45% across the case study cities.
- **Similar to riders, taxi drivers are highly optimistic about the city's taxi industry.** 94% of drivers agree that they are currently facing higher demand for their services than before the COVID-19 pandemic, outlining that the industry is seeing a positive trajectory for recovery. Furthermore, increased uptake of technology, as well as greater modernization and innovation in the industry, have contributed to increasing demand to drive a taxi. This is illustrated in how **135 new A-Cards** (required for drivers to be able to drive a taxi in the city) **were issued to new drivers in 2022, more than six times the 22 A-Cards that were issued in 2021.**⁶⁴ This represents a huge increase from pre-pandemic times as well, given that only 43 A-Cards were issued in 2018.⁶⁵

3.3 Case study city 2: Singapore

Singapore's taxi industry has undergone frequent policy changes, which consider new market entrants and industry developments. Their taxi pricing regulations allow an upfront dynamic pricing option for taxis, providing riders and drivers with flexibility.

Furthermore, because car ownership is very expensive in Singapore, taxi services are expected to be affordable and taxis are often taken by people as part of their regular commute.⁶⁶

Point-To-Point (P2P) Passenger Transport Industry Act Bill

Singapore's Public Transport Council (PTC) is an independent regulatory board that regulates public transport fares and ticket payment services.⁶⁷ Historically, taxi fares in Singapore have been deregulated since 1998, and "PTC does not intervene in the setting of taxi and (private hire car) fares, which are determined by dynamic market forces."⁶⁸

In 2017, the Land Transport Authority and Public Transport Council in Singapore gave taxi companies the option to implement an upfront dynamic pricing system following a proposal put forward by taxi operators.⁶⁹ Metered rates still had to be made available. This policy paved the way for the Point-to-Point (P2P) Passenger Transport Industry Bill.

Following the passing of the Point-to-Point (P2P) Passenger Transport Industry Act in August 2019, the P2P regulatory framework commenced in October 2020.⁷⁰ Under the P2P regulatory framework:

*"The new regulations will ensure that licensed ride-hail service operators can continue to offer metered fare trips on taxis as per the regulations today. Licensed ride-hail service operators will also be able to independently set flat fares for ride-hail trips on taxis and Private Hire Cars (PHCs). The flat fare to be charged for taxi and PHC bookings by licensed ride-hail service operators must be provided upfront to the commuter."*⁷¹

PTC details that all ride-hail "flat fares" will be dynamically determined by operators; however,

this flat fare must be provided upfront to the commuter prior to booking.⁷²

Reform process

Since November 2018, the Land Transport Authority (LTA) has engaged with key industry stakeholders, such as taxi associations, PHC drivers and operators, as well as operators that provide pre-booked chauffeured services, on the proposed changes to regulations for the P2P sector.⁷³

A public consultation and comment period was held in 2019 as the P2P bill was being debated seeking the public's views on the proposed changes.

Our survey results show general optimism regarding the state of the taxi industry and the adoption of taxi and ride-share apps in Singapore. In particular, we see that:

- **Taxi riders have increased their demand for taxi services in recent years.** Of respondents surveyed in Singapore, 52% are currently taking taxis more frequently than they were two years ago, while 65% are using taxi and ride-share apps to book trips more than they were two years ago. This is slightly higher than the averages of 49% and 59%, respectively, among the four case study cities surveyed.
- **This growth in Singapore's taxi industry is gradually moving toward app-based hailing methods.** 66% of taxi trips among riders surveyed were made via a taxi or ride-share application, which is more than double the 29% of rides obtained through street-hail or taxi stands. This is supported by national statistics, which show that street-hail trips are decreasing and ride-share trips are increasing.⁷⁴
- **Similar to riders, taxi drivers are largely optimistic about the taxi industry in the country.** 76% agree that overall demand in the city is higher compared to before the pandemic.

3.4 Case study city 3: Sydney

Taxis in Sydney underwent a robust reform process, with two major reviews in 2015 and 2020.⁷⁵ Regulators have focused on safety, increasing competition, and improving the customer experience. Taxi fares are deregulated for booked fares (those originating on e-hail apps).⁷⁶

In Sydney, companies set their own fares for booked trips, including on e-hail apps. Customers will need to agree on fares before bookings are confirmed, but a rate and estimate of the total fare should be provided.

Taxi fares for street-hail journeys are currently regulated by the NSW (New South Wales) Government.

P2P transport regulations

Transport for NSW (TfNSW) is the New South Wales (NSW) government's transport and road agency. TfNSW oversees point-to-point transport and NSW government reforms.

The Point to Point Transport (Taxis and Hire Vehicles) Act 2016 (the Act) and the Point to Point Transport (Taxis and Hire Vehicles) Regulation 2017 (the Regulation) set the rules for fares charged by taxi service providers and booking service providers in NSW.

The NSW P2P transport regulatory framework distinguishes between booked services (including taxi trips on e-hail apps) and street-hail.⁷⁷ Fares for booked services (including booked taxi services) are not regulated other than government paratransit service trips.⁷⁸

Reform process

In 2014, Uber began operating in Sydney, which prompted a reform of the taxi industry.⁷⁹ The NSW Government announced reforms to the point-to-point transport sector in late 2015, following the establishment of an independent Point-to-Point Taskforce, which published a

discussion paper and final report. The Point to Point Transport (Taxis and Hire Vehicles) Act 2016 was passed by the NSW Parliament on 22 June 2016.⁸⁰ Transport for NSW then worked with industry to finalize the Point to Point Transport (Taxis and Hire Vehicles) Regulation 2017.⁸¹

In Sydney, companies set their own fares for booked trips. Customers will need to agree on fares before bookings are confirmed, but a rate and estimate of the total fare should be provided. However, the NSW Government, through the Independent Pricing and Regulatory Tribunal of New South Wales (IPART), continues to set maximum fares for street-hail taxis. At the moment, companies can charge less than the maximum fare. Therefore, TfNSW only makes fares orders in relation to taxi rank (taxi stand) and hail services, not for pre-booked or app-based trips.⁸²

In 2019, the Minister for Transport and Roads announced a further review of the point-to-point transport industry, to take place in 2020, in recognition of its continued evolution and advances in technology. An independent review was published in February 2021, which recommended further deregulation of taxi fares.⁸³

In 2022, the NSW Parliament passed the Point to Point Transport (Taxis and Hire Vehicles) Amendment Bill 2022. Fares for booked taxis remained deregulated.

When detailing the P2P reform process, the NSW government has outlined why reforms are necessary. Due to changing customer expectations as a result of emerging technologies, the NSW government states that it responded with “demand-driven, outcome-focused reforms” for the P2P industry.⁸⁴

In addition, our survey results underscore positive growth in Sydney’s taxi industry. In particular, we see that:

- **While overall demand for taxis has not increased substantially, there has been increased uptake in the use of taxi and ride-sharing applications.** 39% of riders surveyed in Sydney agree that they are currently taking more taxis than they were two years ago. This is lower than the average across the four case study cities at 49%. Nonetheless, there has still been positive growth with regard to the use of taxi and ride-sharing applications, with 56% of respondents indicating that they are using such platforms more frequently than they were two years ago.
- **Drivers are significantly more optimistic than riders about the city’s taxi industry.** 94% feel that Sydney is seeing higher overall demand for taxi services compared to before the pandemic, while 90% are currently facing higher demand for their services. In contrast, as highlighted above, only 39% of riders agree that there is increased demand for taxi services.

3.5 Case study city 4: Vienna

In Vienna, regulations governing taxi pricing on e-hail apps allow for some flexibility, even while the taxi industry remains highly protected. There is both a pricing cap and floor set on taxi prices for e-hail (+/-20% of the metered rate).⁸⁵

Occasional Traffic Act 1996 and 2021 Tariff Regulation

At the national level, Amendments to the Occasional Traffic Act 1996 allow cities in Austria to establish parallel pricing rates for e-hail apps. Vienna promulgated the 2021 Vienna Taxi Tariff in March 2021, which holds that the fare agreed for a journey ordered using a communication service may not exceed the binding tariff that would apply for the same journey within the scope of this Ordinance by a maximum of 20% (above or below).

Within the federal legislative landscape, there was one “major” and one “minor” reform. The

“Major Reform” (Federal Law Gazette I No. 83/2019) eliminated Private-Hire Vehicles (PHV) business license from the market beginning in January 2021 by merging it with the taxi license.⁸⁶

The “Minor Reform” (Federal Law Gazette I No. 13/2021) allowed pre-booked trips to be excluded from the taximeter, allowing states to set the price bands for pre-booked trips (on phone, e-hail, and online; i.e., not on the street).⁸⁷ In sum, this means that a pre-book or e-hail trip no longer needs to use a taximeter to calculate fares.

Reform process

The tariff regulation had to be approved as a European Union (EU) regulation, and there was also a review period. The Institute for Advanced Studies (IHS) completed a study in 2019 after the “major” federal change was decided upon. The researchers proposed a route planning system with pre-arranged prices calculated based on an enacted tariff (which later became the “minor reform”).⁸⁸

When this study was released, it was not yet clear that a “minor” federal change enabling trips with upfront pricing for taxis was going to be implemented.

Furthermore, our survey data revealed that riders in Vienna have a bleaker perception of the city’s taxi industry compared to respondents in other locations. However, drivers hold a highly positive outlook in this regard, which could highlight that efforts to engage key industry stakeholders are yielding positive results.

- **Riders generally do not agree that there is increased demand for taxi services in the city.** Only one in three respondents feel that they are currently taking taxis more frequently than they were two years ago, compared to an average of 49% of respondents across the four case study cities. Furthermore, only 38% are currently

using taxi or ride-sharing applications to book taxis more frequently, which is likely the result of traditional hailing methods remaining popular.

- **However, contrary to the dim outlook from riders, drivers appear to have an optimistic view of the industry.** Of the drivers surveyed, 96% of respondents agree that there is higher demand for taxi services compared to before the pandemic, while 83% agree that they are facing higher demand for their services compared to two years ago. This gap between driver and rider perspectives could be the result of drivers leaving the profession during the pandemic, resulting in perceived optimism among remaining drivers despite the fact that riders may not necessarily be showing increased demand for taxi services.

3.6 Seven key insights observed across the four case study cities

The taxi industries in San Francisco, Singapore, Sydney, and Vienna have grown in recent years, with rising rider demand and increased uptake of ride-sharing and taxi applications. Across the four cities, 90% of drivers and 49% of riders agree that demand for taxi services has increased compared to two years ago. In addition, 59% of riders are currently using taxi or ride-sharing applications to book rides more frequently than they were two years ago, outlining positive growth and a shift from traditional street-hail to e-hail.

These insights are based predominantly on surveys conducted among taxi drivers and riders in the four case study cities. The surveys were conducted both online and in person through an independent survey provider. A minimum sample size of 100 drivers and 100 riders was obtained in each city. For the rider survey, quotas were added to ensure that the survey sample matched the demographics of the respective city (e.g., gender, age, income level).

The surveys aimed to gain insights into the state of the taxi industry in the four cities by understanding rider and driver preferences and perceptions of fare types and hailing methods. The driver survey also provided information on how different fare types affect driver metrics (such as trip time and utilization rates), while the rider survey explored factors that affect the choice of fare type.

While efforts were taken to ensure that the survey responses were as representative of the population as possible, it is important to note that the results only serve as an indicative measure and do not reflect the views of all riders and drivers in the respective cities. Apart from these surveys, other primary and secondary data utilized include expert interviews and public data relevant to taxi pricing and reforms.

Survey results

In summary, the survey data revealed that riders and drivers have become more optimistic about the taxi industry in their respective cities. This could in part be attributed to the openness of their governments, as illustrated through recent reforms. While drivers and riders showcase an inherent trust in taximeters, they have become more open to the concept of upfront fares, acknowledging several benefits that pricing flexibility offers. Riders have generally responded positively to differentiated taxi pricing, appreciating the ability to choose between fare types based on different factors, such as timing, trip length, and destination. While some drivers may still feel more comfortable using metered fares for their trips, they acknowledge the advantages of upfront fares, which could allow them to make higher earnings for peak-hour trips where rider demand may be high. Upfront fares have also been shown to generally perform better on metrics such as wait time, price, and trip duration, outlining the positive benefits this could bring to both drivers and riders.

As such, taxi pricing reforms in these cities have proven to be a step in the right direction, creating a strong base for the industry to continue growing and innovating during times of

changing demand. Seven key insights regarding the impacts of differentiated taxi pricing on taxi drivers, riders, and societies can be observed.⁸⁹ Note that these overall insights are based on averages across respondents in the four case study cities; similar trends may not necessarily be observed at the individual city level.

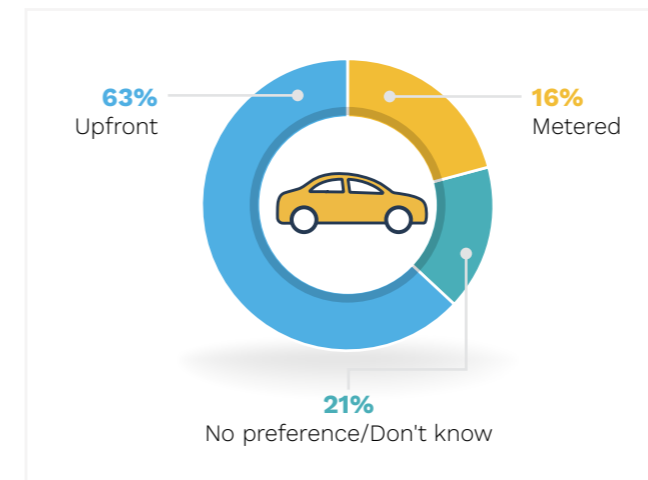
- Riders value the ability to choose between upfront and metered fares.** Survey results indicate that consumers are highly price-sensitive, with 60% of respondents selecting “price of trip” as the most important factor when choosing whether to book taxi trips based on the upfront or metered fare (either through different options offered via an app or across apps).⁹⁰ In addition, riders exhibit a stronger preference for upfront fares during peak hours, with 63% selecting it as their preferred fare type, compared to 16% who prefer metered fares (*Exhibit 2*). In contrast, the share of respondents preferring upfront fares is lower during non-peak hours, at 50%. This shows that consumers are discerning when booking rides and will select the fare type based on factors such as where they are going and the time during which the trip is made (i.e., peak or non-peak hours). For instance, during peak hours, when traffic conditions may be unpredictable, riders value the certainty of upfront fares and choose this method over the metered fare, which is dependent on factors such as traffic conditions, among others.

Policy implications: Given that riders value choice, policies should seek to encourage innovation and allow for differentiated taxi pricing, which would provide additional options for riders.

- Riders generally prefer the upfront fare option due to factors such as certainty and convenience. However, they occasionally tend toward selecting metered fares in situations where they expect minimal journey delays.** On average, consumers prefer the upfront

EXHIBIT 2 Rider fare type preferences during peak hours

Share of respondents preferring each fare type during peak hours, rider survey



fare option as they find that it offers them several benefits, including certainty, fairness and convenience. For instance, 58% of respondents agree that upfront fares are fairer and more beneficial overall for taxi riders, while others have cited the fact that upfront fares completely eliminate meter anxiety during taxi trips.⁹¹ However, there are some exceptions to this, and riders still prefer metered fares in certain situations, highlighting that they place a degree of inherent trust in taximeters given their legacy and longstanding role in the taxi industry. These include during trips to unfamiliar locations (where they may be unsure how to gauge the upfront fare quoted to them) or during non-peak hours, where there is likely to be little or no traffic congestion on the roads.

Policy implications: There is no one-size-fits-all or consistently preferred fare type across the various cities. Riders exhibit varying preferences for different fare types depending on several factors, and it is thus crucial for policy to be open in allowing for the exploration of different pricing options.

- Differentiated taxi pricing can create more affordable options for riders, enabling them to make better-informed decisions.** This is because metered fares and upfront fares tend to be priced differently based on multiple factors, and allowing for differentiated pricing would empower riders to select the option best suited for them. There is an observed difference between perception and reality. Riders perceive metered fares as cheaper and can feel like the price quoted for upfront fares may be higher than what it would be if they were charged by the meter, especially when taking short trips or traveling to unfamiliar destinations. This can be attributed to (i) the inherent trust placed in the meter and its fairness when calculating fares and (ii) riders’ knowledge of the surge pricing mechanism (which results in higher fares in situations where rider demand is high but driver supply remains low). This creates the perception that the upfront fares quoted are higher than they should be. However, survey data of actual fare amounts shows that, most of the time, riders end up paying higher fares when they take rides via the metered fare option via street-hail or app-based bookings (compared to upfront fares). For example, in Vienna, metered fares can be up to 30% more expensive than upfront fares. The only exception to this is likely to be during peak hours when surge pricing is in operation, leading to riders paying higher fares.

Policy implications: Policymakers should allow for differentiated taxi pricing, enabling riders to make more informed decisions based on their needs and preferences.

- On average, upfront fares tend to yield shorter wait times than metered fares.** According to the survey data, when comparing rides booked using the two fare types via booking applications, those booked via upfront fares face 2.7

minutes shorter wait times before riders are matched with a driver, and about 1.4 minutes shorter wait times before riders can board the vehicle. This is crucial given that “waiting time” was selected across all four cities as being the second most important factor when selecting fare type. Nonetheless, it should be noted that this may not be driven only by upfront fares but also by improved technology (such as enabling better matching between drivers and riders).

Policy implications: Allowing for differentiated taxi pricing could improve service standards in the taxi industry, resulting in improved experiences for riders and higher efficiency.

Drivers favor the fare type that they perceive allows them to maximize earnings and utilization. On average, while they generally tend toward the upfront fare option, preferences may vary depending on the time of day. Upfront pricing is strongly preferred during peak hours (by 65% of drivers on average, compared to only 31% who prefer metered fares) in all cities. This is consistent with rider preferences in Insight 1 above, outlining how upfront pricing has the potential to provide

benefits for both drivers and riders. However, during non-peak hours, across the four cities, 46% of drivers tend toward metered pricing, which is the preferred fare option (compared to 42% preferring upfront pricing). This is because drivers perceive upfront fares to be fairer during peak hours due to dynamic pricing, which adjusts based on rider demand. By contrast, during non-peak hours, metered fares serve as a more accurate pricing model based on trip time and distance covered. Box 3 highlights measures taken by ridesharing companies to help drivers make more strategic decisions based on data.

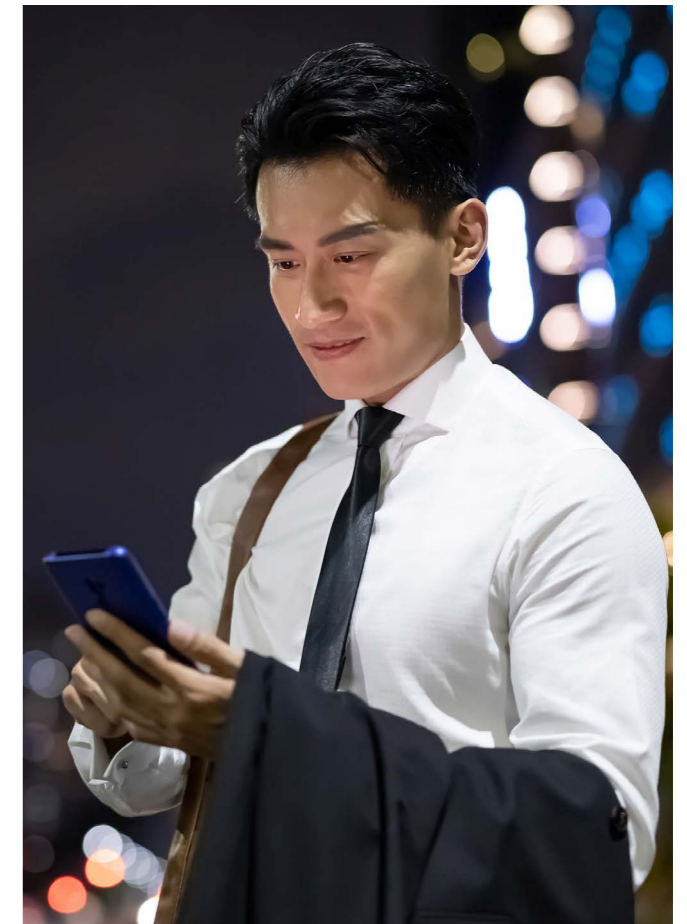
Policy implications: Allowing for differentiated taxi pricing can result in mutually beneficial outcomes for both drivers and riders. As highlighted above, upfront fares have become the preferred option for both sides during peak hours, albeit for different reasons. While drivers appreciate the dynamic pricing mechanism, which enables them to make higher earnings during peak hours, riders value the certainty and are willing to pay more for upfront fares to avoid meter anxiety, especially when traffic conditions are unpredictable.



Trips made via upfront fares tend to be shorter and may not always result in higher per-trip earnings, but they could enable drivers to get new trips more quickly, potentially boosting utilization rates and overall earnings.⁹² On average, trips made via upfront fares are about 1.6 minutes shorter than those charged by metered fares (booked by e-hail methods). This could be the result of different factors, such as trip length and driver performance.⁹³ These results are consistent with data showing that, on average, per-trip earnings through upfront fares may be lower than metered fares for comparable trips. However, when making trips via upfront fares, drivers spend less time waiting (1.4 mins) before getting new trips. This contributes positively to higher utilization and could enable drivers to see higher overall earnings through upfront fares. Drivers also acknowledge this when asked about preferences between upfront and metered fares, with 81% of respondents agreeing that overall monthly earnings would be higher if all trips were made via upfront fares only.

Policy implications: Policy should allow for flexibility in taxi pricing reforms. Allowing drivers to make rides based on differentiated pricing options could enable them to better utilize their time and generate higher earnings overall.

Taxi pricing reforms involving upfront fares have been generally accepted by the population, although such processes usually take time. The general population across the four cities has been adopting rides with upfront taxi fares over time. However, this process has not always been smooth sailing, with each city seeing its own share of resistance whenever reforms and changes are put forth. For instance, the taxi industry typically opposes reforms involving upfront fares as they fear that they may lose their customer base. Over



time, however, taxi drivers have become more open, for instance, by engaging regulators to allow similar pricing innovation for their fare systems.

In Singapore, when taxi companies obtained approval to introduce upfront dynamic pricing in addition to the existing metered pricing on e-hail applications, the then Second Minister for Transport, Ng Chee Meng, said in Parliament that “The taxi industry should be allowed to innovate and adapt to new market conditions and competition. Our taxi drivers have to make a living, and we should not restrict their ability to compete effectively.”⁹⁴

Conversations with stakeholders, such as academics and regulators, in the case study cities similarly highlighted that the introduction of upfront taxi fares in e-hail and ride-share apps help drivers and riders. For instance, representatives from San Francisco Municipal Transportation Agency (SFMTA) mentioned “there will always be a need for both” when

referring to upfront and metered taxi fares. Similar attitudes have also been seen regarding other past initiatives and reforms in the transportation industry. For instance, when congestion pricing was first introduced in Singapore in 1975, it was met with much resistance from drivers and commuters. However, the system has since developed and undergone significant reform and is now hailed as one of the world's most successful models.⁹⁵

Policy implications: Processes to pass taxi pricing reforms may not always be straightforward in nature and often face pushback from different stakeholders, such as drivers, associations, and riders. However, over time, consistent dialogue with key stakeholders can help to ensure that new policies are beneficial for the industry.

BOX 3

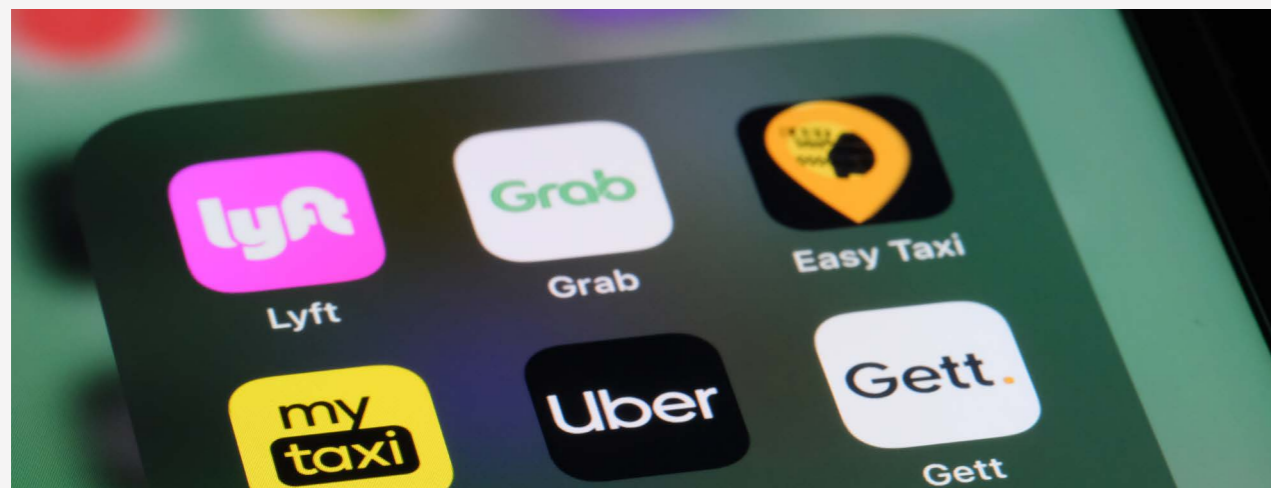
Ride-sharing applications use forecasting systems to direct drivers to high-demand areas, aiding in their decision-making process

Uber leverages forecasting to build better products and services. One example of this is marketplace forecasting for its ride-share platforms, which enables the platform to provide information to drivers about areas where there is high rider demand. Drivers can use this information to find matches more efficiently, creating better outcomes for riders and drivers. For drivers, this means shortened waiting times and higher utilization rates. Riders, meanwhile, can find rides more quickly and easily.⁹⁶

A similar practice is adopted by Grab in markets such as Singapore. The app shows drivers a heatmap that outlines

the distribution of supply and demand, encouraging drivers to move away from oversupplied areas to areas where there is unmet demand.⁹⁷

The above outlines how ride-share and taxi companies leverage data and technology to give drivers information they can use to maximize their productivity and earnings. For instance, drivers enjoy increased earnings by servicing high-traffic areas during high-demand periods, while times with low demand could be used for other purposes such as making street-hail trips, taking a break, or pursuing other personal commitments.



BOX 4

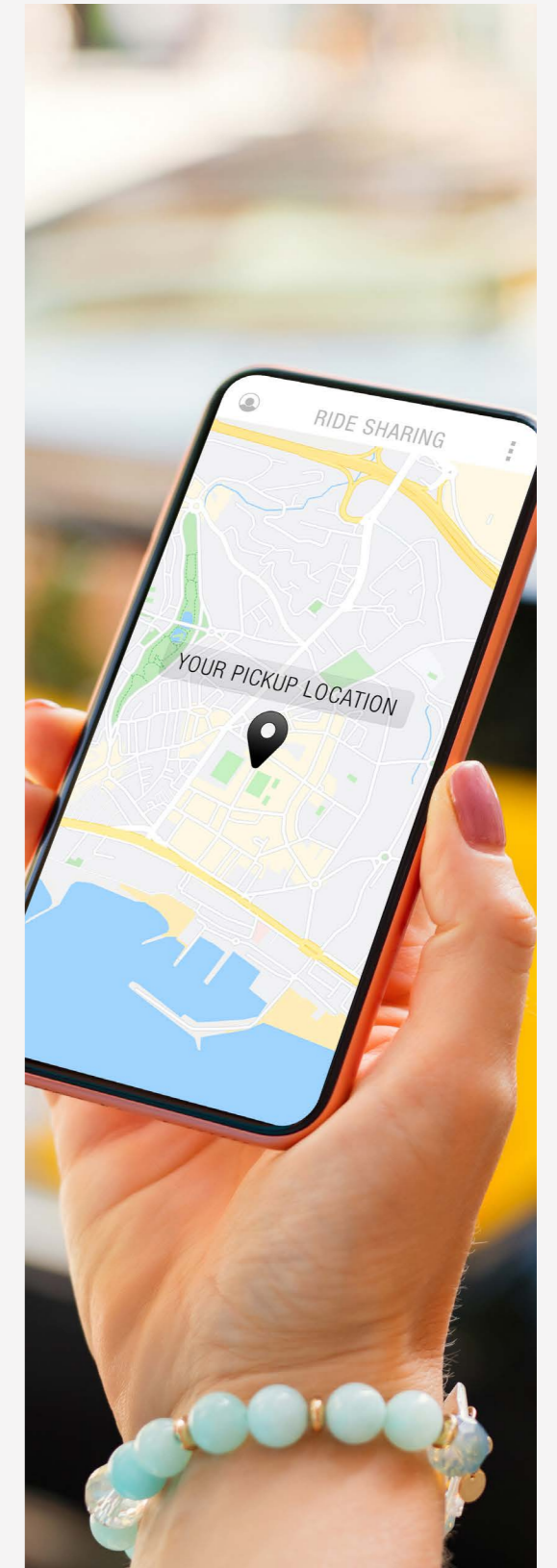
Existing literature on dynamic pricing in the taxi industry

External studies are consistent with our research, outlining that the adoption of surge pricing by ride-share and taxi applications can have a broadly positive impact on both drivers and riders. For instance, a 2022 study in Singapore found that surge pricing could lead to a 9.4% reduction in the average vacant roaming time of taxi drivers, as well as a 2.6% increase in the number of trips made per driver. This is correlated with lower waiting times for riders, who are matched to drivers more quickly.⁹⁸

Similarly, a study by Uber also underscores the potential benefits of surge pricing for both drivers and riders.⁹⁹ For the former, surge pricing incentivizes them to move to areas with high demand, allowing them to earn higher fares while being matched with riders more quickly. Similarly, riders can find rides more easily while optimally allocating rides to those that value them the most (e.g., some riders may choose to use alternative apps or modes of transportation when they see that surge pricing is in effect).

Nonetheless, there is also other literature providing alternative perspectives on surge pricing. For instance, a 2019 study conducted using Uber data in Houston outlines potential negative implications of surge pricing – it could lead to lower hourly earnings among drivers and reduce the dispersion in earnings, resulting in a larger share of drivers seeing low earnings. However, there could be positive implications for drivers if they plan their actions around surge pricing, allowing them to get substantially higher earnings from driving for shorter spans of time.¹⁰⁰

This illustrates that dynamic pricing could be beneficial to drivers, provided that they are equipped with sufficient information and support on how they can leverage the mechanism to work more strategically (e.g., in terms of adjusting work hours and the areas that they service).



3.7 Summary

All four case study cities provide valuable lessons for regulators seeking to reform taxi pricing policies. Based on a review of these policies, coupled with survey data, enacting dynamic pricing on e-hail apps can offer positive outcomes for both drivers and riders.

- Regulators in San Francisco prioritized driver and rider interests and began conversations around reform, with an open attitude towards innovation and choice.
- In Singapore, regulators engaged early and often with key industry stakeholders, such as taxi associations, PHC drivers and operators, and operators that provide pre-booked chauffeured services, on the proposed changes to regulation.

- Regulators in Vienna conducted an independent policy process with two government-led studies to ensure transparency and outline their reasoning behind the regulated price range.
- In Sydney, the NSW government wanted to ensure that changing consumer expectations were met, so it reformed the P2P industry through a robust process that addressed emerging technologies from the outset.

Building on these policy reform reviews, the following chapter outlines six policy levers that regulators considering taxi pricing reforms could adopt to meet these goals.



4. Seizing the opportunities

This section seeks to link key takeaways from the four case study cities (San Francisco, Singapore, Sydney, and Vienna) to how they could help to meet challenges faced by the three key geographies (Japan, South Korea, and Taiwan). It outlines six policy levers, focused on both reforms and the processes behind them, that can be used to guide regulators as they navigate taxi pricing reforms.

Analysis of the four case study cities highlights that there are observed benefits when authorities allow some flexibility in taxi pricing for riders and drivers. These learnings could be valuable in addressing challenges identified in the three key geographies. Moving the focus from “What are the impacts of differentiated taxi pricing on societies?” to “How to move the discussion forward to tap these opportunities?” is an essential attitude that can be adopted to define actionable steps for governments looking to revisit their taxi pricing regulations.



4.1 How differentiated pricing could meet challenges faced by the three key geographies

As outlined in Chapter 2.4 above, several key challenges in the taxi industry have been exacerbated in recent years, including in the three key geographies. In Chapter 3, we identified seven key insights from primary and secondary analyses of the four case study cities (San Francisco, Singapore, Sydney, and Vienna), as well as how they have benefitted from differentiated taxi pricing. Our analysis indicates that allowing some flexibility in taxi pricing could help to address some of the concerns identified in Chapter 2. These findings are summarized below and in the accompanying *Exhibit 3*.

Mismatch of supply and demand

Differentiated taxi pricing could help to better ensure that driver supply is sufficient to meet rider demand through more strategic matching, especially during peak hours. For instance, as outlined in Box 3 above,

platforms can direct idle drivers towards areas with high rider demand, allowing both parties to be matched with each other more quickly.

Long working hours and low pay of taxi drivers

Differentiated taxi pricing could help address the issues of long working hours and low pay for drivers. For instance, dynamic pricing can enable drivers to plan their work hours more strategically, as they are able to work more during high-demand periods where they make higher hourly earnings. Off-peak hours with low demand can instead be used for drivers to rest or engage in other activities.

Our findings indicate that dynamic pricing increases earnings over the longer term.

Limited payment options for taxi riders

Differentiated taxi pricing could indirectly help address the issue of limited payment options for taxi riders by encouraging competition and

innovation in the industry. This is because taxi and ride-hail companies would be encouraged to find ways to improve service to better meet the needs of riders. Since upfront taxi rides are typically booked via taxi or ride-hail applications, they usually provide riders with a wide range of payment options (e.g., cash, a card linked to the app that is automatically debited at the end of the trip, or via other cashless payment options offered by the driver in-vehicle).

Long wait times for taxi riders

As highlighted in Chapter 3, rides based on upfront fares tend to perform better than rides based on metered fares in terms of wait times (before being matched with a driver and before the driver arrives).

In addition, with better matching of supply and demand through e-hail apps offering upfront fares adjusted through the dynamic pricing mechanism, wait times for riders are more likely to be shortened as idle drivers will be directed to areas with higher demand.

Affordability for riders and stable taxi fares

As highlighted in Chapter 3, rides based on upfront fares tend to perform better than rides based on metered fares in terms of average prices.

Cities like Vienna have also introduced price caps on taxi fares to ensure that rates remain stable and affordable for riders.

Providing riders with choices

Differentiated taxi pricing (i.e., through the introduction of upfront pricing) provides an additional option for riders as they are able to choose between different apps offering a wide range of fare types.

Stringent licensing requirements

While licensing requirements are not directly linked to upfront taxi pricing, strict requirements can result in license shortages and exacerbate the above challenges, especially in cases where market players are heavily restricted in how they can operate.

EXHIBIT 3 Differentiated taxi pricing policies could help to mitigate some of the challenges in the key geographies of Japan, South Korea and Taiwan



Challenges identified	Could differentiated taxi pricing help in this case?	Relevant key geographies
Mismatch of supply and demand	✓	
Long working hours and low pay of taxi drivers	✓	
Lack of payment options for taxi riders	✓	
Long wait times for taxi riders	✓	
Affordability for riders and stable taxi rates	✓	
Providing riders with choices	✓	
Stringent licensing requirements	—	

NOTE: In our analysis, differentiated taxi pricing is defined as the introduction of new fare types, and most commonly refers to the use of upfront fares priced based on the dynamic pricing mechanism.

SOURCE: Literature review; Access Partnership analysis

BOX 5 Insights from Hong Kong: negotiated fares and flexible taxi pricing

Under section 38 of the Road Traffic (Public Service Vehicles) Regulations, Hong Kong maintains a “hire as a whole” regulation.¹⁰¹ This was based on tourist travel, allowing visitors to hire a taxi for a day and pay a negotiated fare, rather than use the meter. App providers now use this existing “hire as a whole” structure to provide e-hail trips for taxis, which allows for flexible pricing. This unique provision enables differentiated pricing, highlighting a taxi pricing model that gives riders greater choice. Stakeholders from all sides, including the taxi associations,

are calling for an updated regulatory model for taxi pricing, which is currently outdated. However, some of the law’s provisions add operational complexity to upfront pricing for app operators.

Hong Kong’s taxi industry is due for reform to upgrade taxi services and meet rider expectations. In 2019, the chairman of the Hong Kong Taxi Council said the government could improve the taxi industry by “introducing e-hailing services for existing cabs and allowing drivers to charge freely, instead of having fares regulated.”¹⁰²

4.2 Six policy levers to guide future taxi pricing reforms

Based on the policy reform process, challenges in the key geographies, and survey insights from the four case study cities, six policy levers to implement a dynamic pricing framework have been identified.

As there is no universal solution that will tackle every problem in a particular city, the below options can be explored to fit a city's needs and objectives for different stakeholders.

These policy levers can serve as tools for regulators to address challenges and are relevant for drivers, riders, industry (ride-share and e-hail platforms), and governments.

1 Enable flexibility and choice in regulations. Key stakeholders should discuss options for driver flexibility before implementing a dynamic pricing framework. For example, drivers may want the option to opt out of certain types of trips, like ride-share-originated trips. San Francisco allows this option for drivers.

The importance of flexibility also came to light from survey data. Based on the four case study cities, some drivers may still feel more comfortable using metered fares. However, they acknowledge the advantages of upfront fares, which could allow them to make higher earnings for peak-hour trips where rider demand may be high. Riders also value the certainty this offers and are willing to pay more for upfront fares to avoid meter anxiety, especially when traffic conditions are unpredictable.

In sum, regulations that allow both metered and dynamic pricing offer significant benefits. Pre-booked trips (e-hail, phone dispatch, etc.) can be priced dynamically, while street-hail and taxi-rank trips can be priced by the meter.

2 Develop pilot program(s) and incentivize participation. Ahead of implementing upfront pricing, authorities can utilize a pilot program to test partnerships with taxi companies and collect data for different categories, such as number of trips taken, new licenses issued for drivers, weekly driver fare revenue, and more. These insights will inform future legislation and address any issues that may arise. For instance, San Francisco and Japan are currently implementing pilot programs to test new taxi fare policies. Subsequently, regulators can share non-personal data from the pilot program related to taxi rides with the public. Authorities should carefully measure this data against the initial goals of the pilot program before arriving at decisions.

Regulators can also scale up pilot programs if there are proven positive results (e.g., innovation and choice). Policymakers and e-hail apps could consider incentives for taxi companies and their drivers to participate in pilot programs, such as a quarterly bonus or time off, to address issues like long working hours and low pay. Regulators could play a role by encouraging e-hail companies and the taxi industry to come together to discuss how such incentives could be implemented.

3 Establish a framework to educate drivers. To ensure a smooth transition to a dynamic pricing policy framework, policymakers could support drivers by developing a framework to educate them about app-based features, such as payments, navigation, and dispatch. Taxi drivers around the world are used to the metered fare system. App-based technologies provide many modern features but can confuse drivers who are not familiar with these systems.

4 Diversify the employment environment of taxi drivers. Regulators can ease licensing requirements for app-only drivers to lower the barrier to entry. Policies can support drivers working part-time to allow more drivers during peak hours when supply is needed to meet demand. Regulators can also ease onboarding processes for drivers, many of whom are younger. Speeding up the onboarding process may entice drivers to the profession and ease some of the late-night supply and demand issues that cities like Seoul currently face. To increase efficiency, regulators can consider moving application and permitting processes online, removing "local knowledge" sections of driver exams, and reducing or waiving different fees. Getting more drivers on the road can ease driver shortages.

5 Prioritize multi-stakeholder collaboration. There is a need to facilitate coordination among internal and external stakeholders (local government, national government [if applicable], taxi associations, regulators, ride-share companies, workers' unions) throughout the policy process. This can help with

knowledge-sharing across the different sectors, as well as understanding what is happening out in the field. For instance, regulators in San Francisco, Singapore, Vienna, and Sydney consulted with relevant stakeholders (e.g., ride-share, taxi operators, drivers, partners, industry associations). Engagement can be both public and private. The government should remain impartial throughout negotiations, allowing for all opinions to be heard.

6 Ensure transparency. Regulators should be clear with the public on partnerships, taxi data (non-personal), costs, and other variables when seeking to implement taxi pricing on e-hail or ride-share apps. For instance, San Francisco publishes quarterly data across ten categories, while Sydney undertook an independent review outlining its decision-making process for deregulating taxi fares. Vienna commissioned two government-led studies prior to implementing legislation. Authorities could consider organizing one or two public consultations to facilitate discussions from all stakeholders and publish the notes, agenda, participants involved, and/or slides.

4.3 Conclusion

Across the world, taxi regulation has a long and varied history. No universal regulatory solution has been discovered to resolve all its modern problems, and many of the issues faced by riders and drivers are common to both.¹⁰³

Among these challenges, taxi pricing is an aspect of transport policy that implicates other point-to-point issues, such as supply and demand, meter anxiety, fare transparency, and service quality. Transport policymakers, riders, drivers, and taxi associations recognize the changing landscape and how upfront pricing models put riders and drivers at ease.

Through this report, seven key insights reveal that upfront pricing models, implemented via different approaches, have the potential to bring about improved outcomes for both riders and drivers. In addition, six policy levers can provide regulators with options to reform taxi regulations, resolve some of these challenges, and ensure that the taxi industry remains viable.

Above all, understanding both the policy landscapes and primary source data from cities around the world can shape future regulatory conversations and guide stakeholders within the taxi industry towards a modern solution for taxi pricing.

5.

Appendix



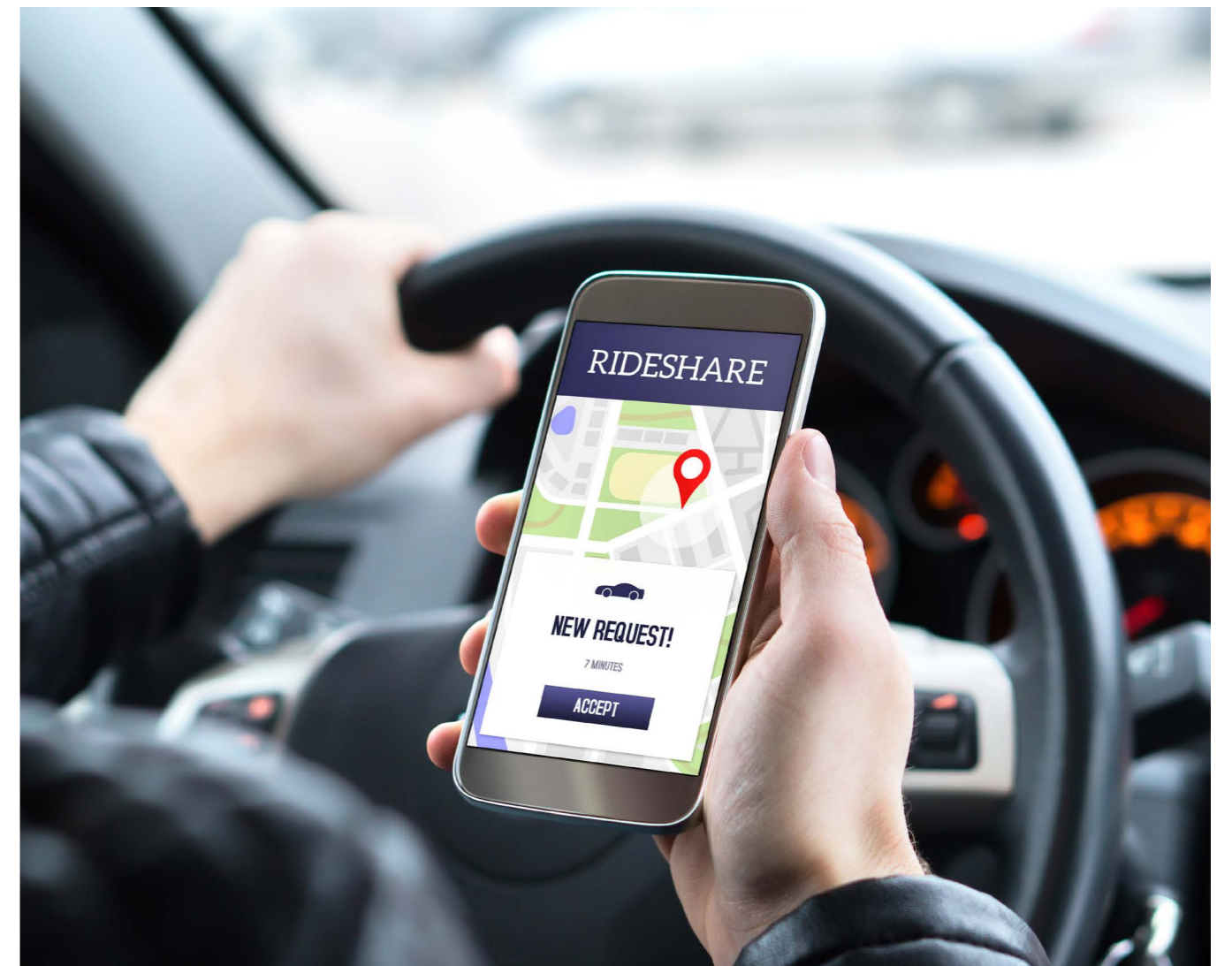
5.1 Approach used for rider and driver surveys

This report used online and in-person rider and driver surveys across the four case study cities: San Francisco, Singapore, Sydney, and Vienna. Surveys were conducted in English for San Francisco, Singapore, and Sydney and in German for Vienna. The minimum sample size for riders and drivers in each city was 100, meaning that at least 200 respondents were surveyed per city. The surveys were disseminated via an independent survey provider in April 2023. For the rider survey, demographic guidelines were added to ensure the sample matched the demographics of the country (e.g., gender, age, income).

For the rider survey, the filtering criterion for respondents was that they must have taken a taxi in the last 12 months.

For the driver survey, the filtering criterion for respondents was that they had to be employed as a taxi driver as either their primary or secondary occupation and must have used at least one taxi or ride-sharing application to obtain riders within the last 12 months.

Both the rider and driver survey results presented represent the views of surveyed respondents only and should be taken as an indicative measure (i.e., they do not reflect the views of all riders and drivers in each city).



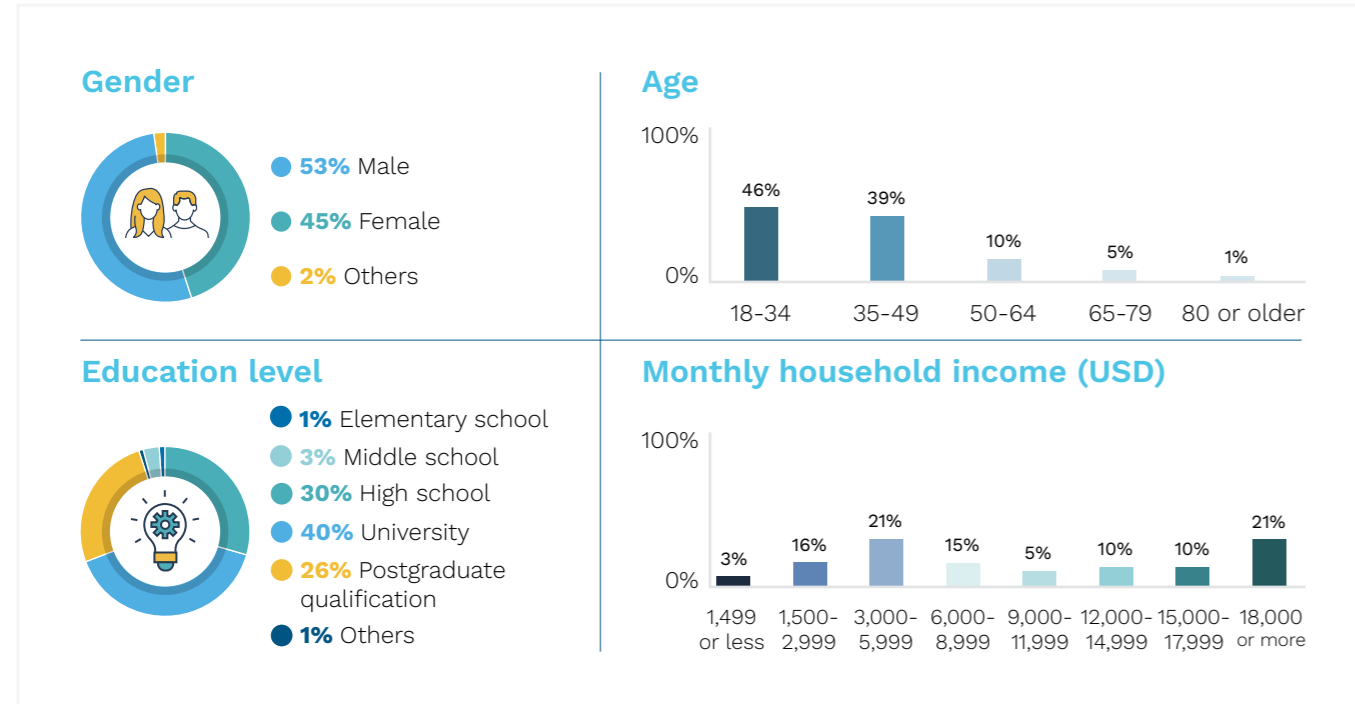
5.2 Demographics of survey respondents

Rider survey

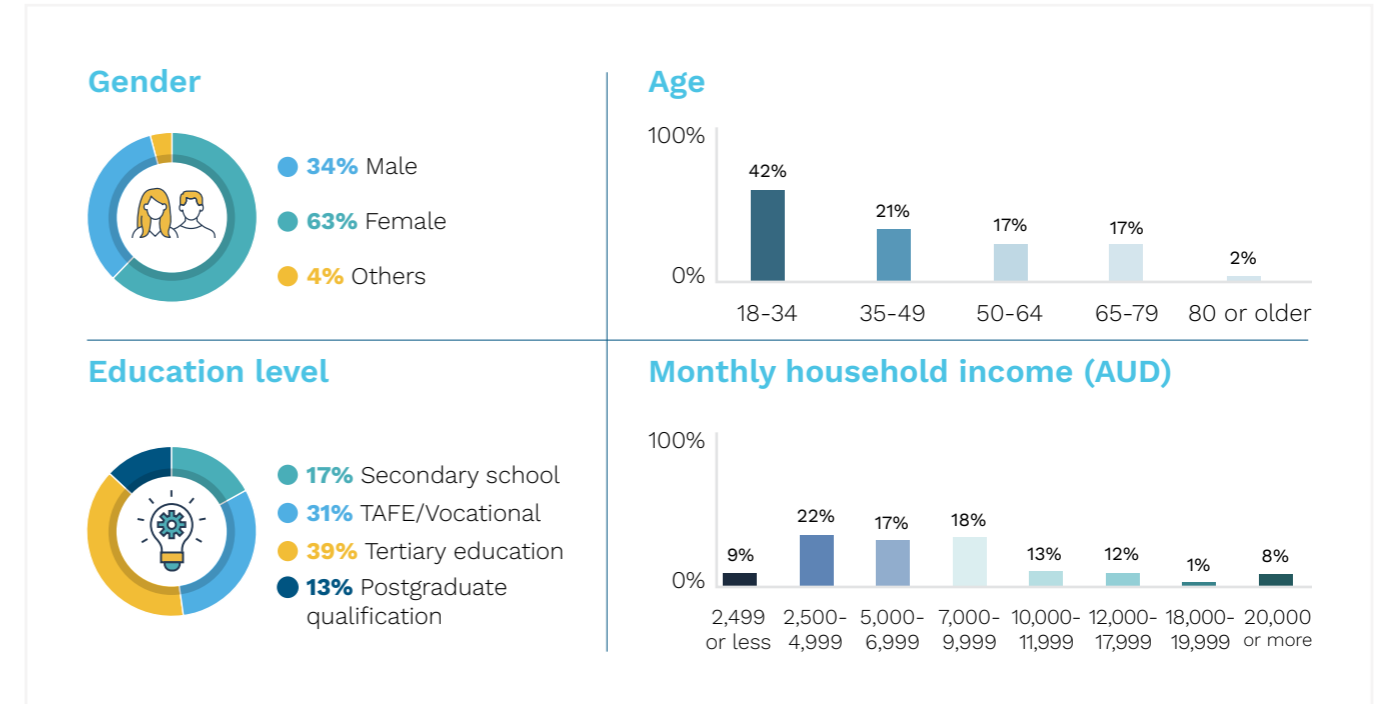
A total of 412 riders were surveyed across the four case study cities. The breakdown of respondents by city is as follows:

City	Number of responses
San Francisco	101
Singapore	103
Sydney	104
Vienna	104
Total	412

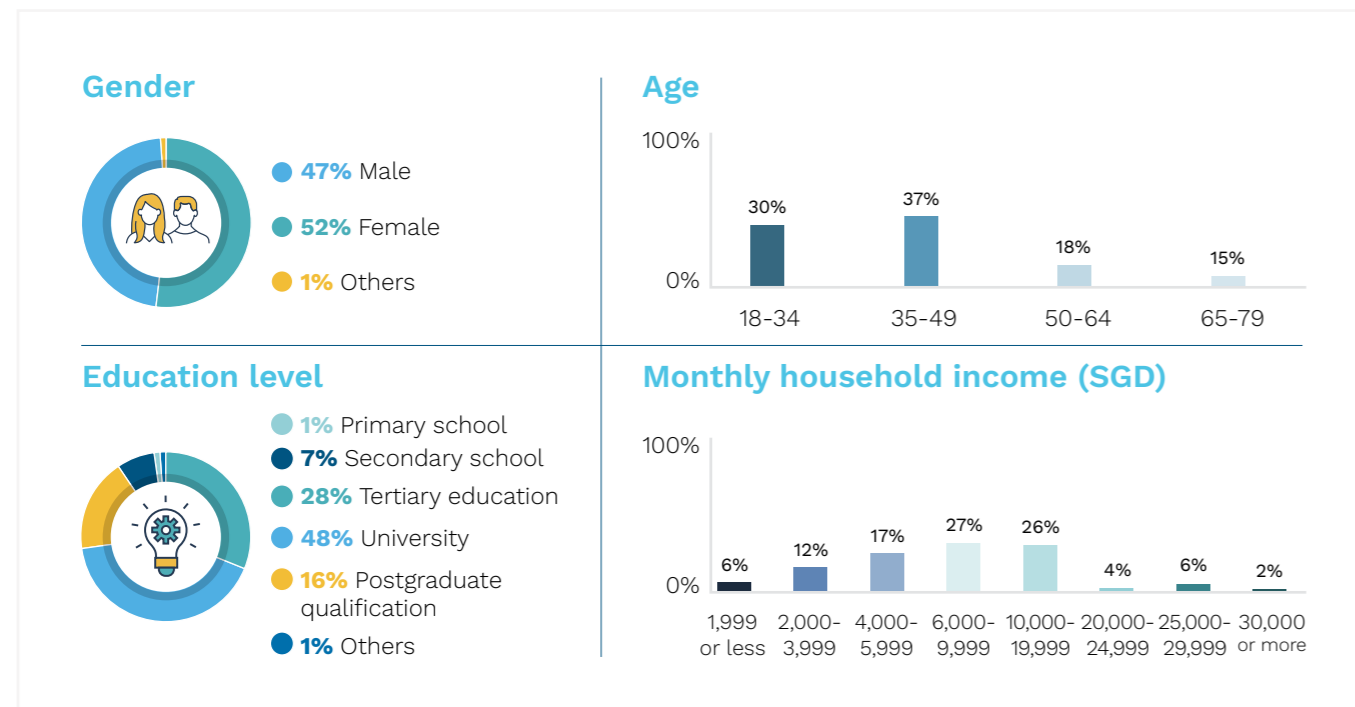
Overview of rider survey respondent demographics - San Francisco



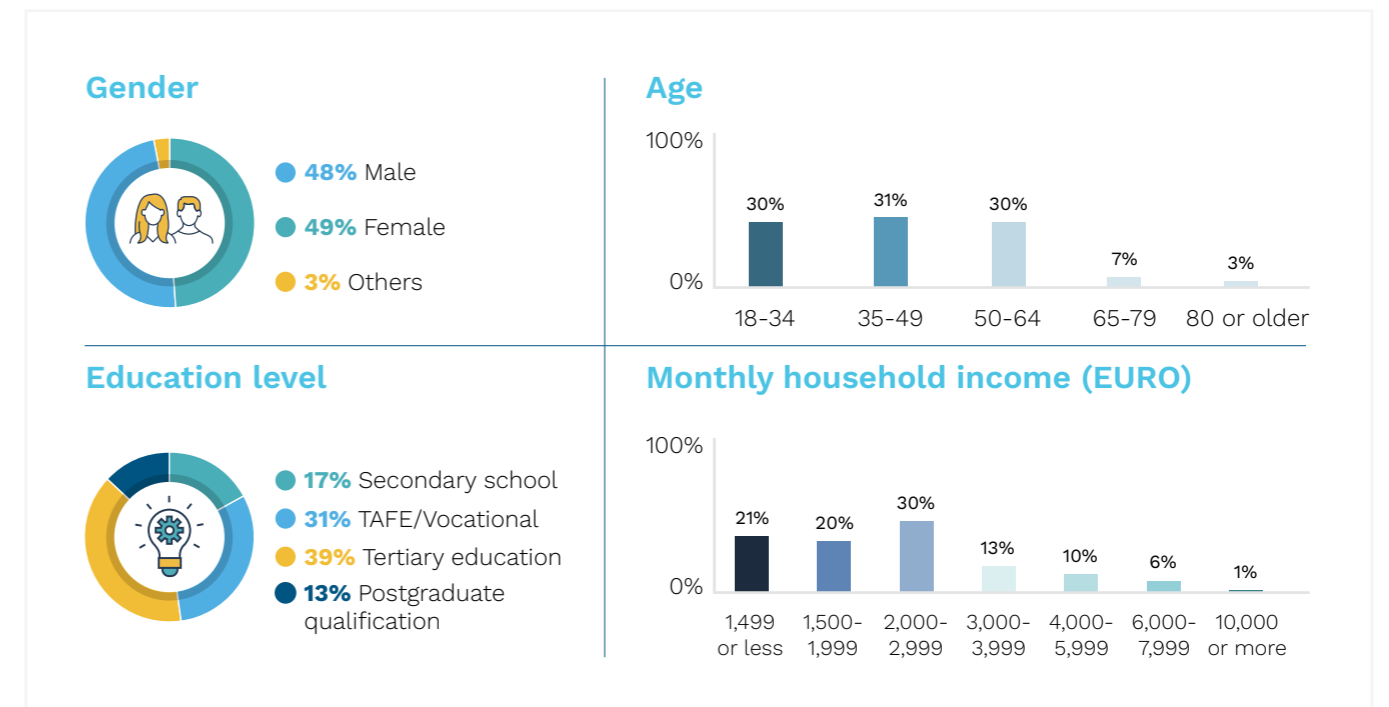
Overview of rider survey respondent demographics - Sydney



Overview of rider survey respondent demographics - Singapore



Overview of rider survey respondent demographics - Vienna



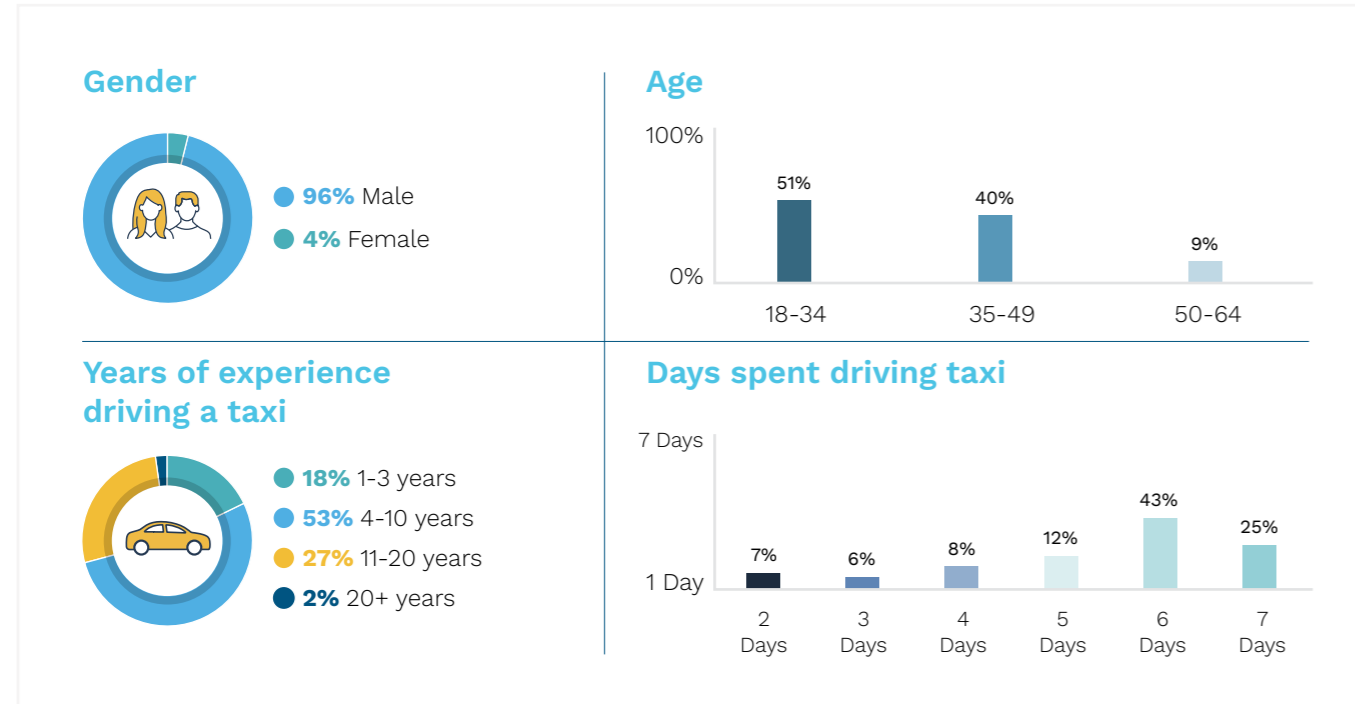
NOTE: Percentages may not sum due to rounding.

Driver survey

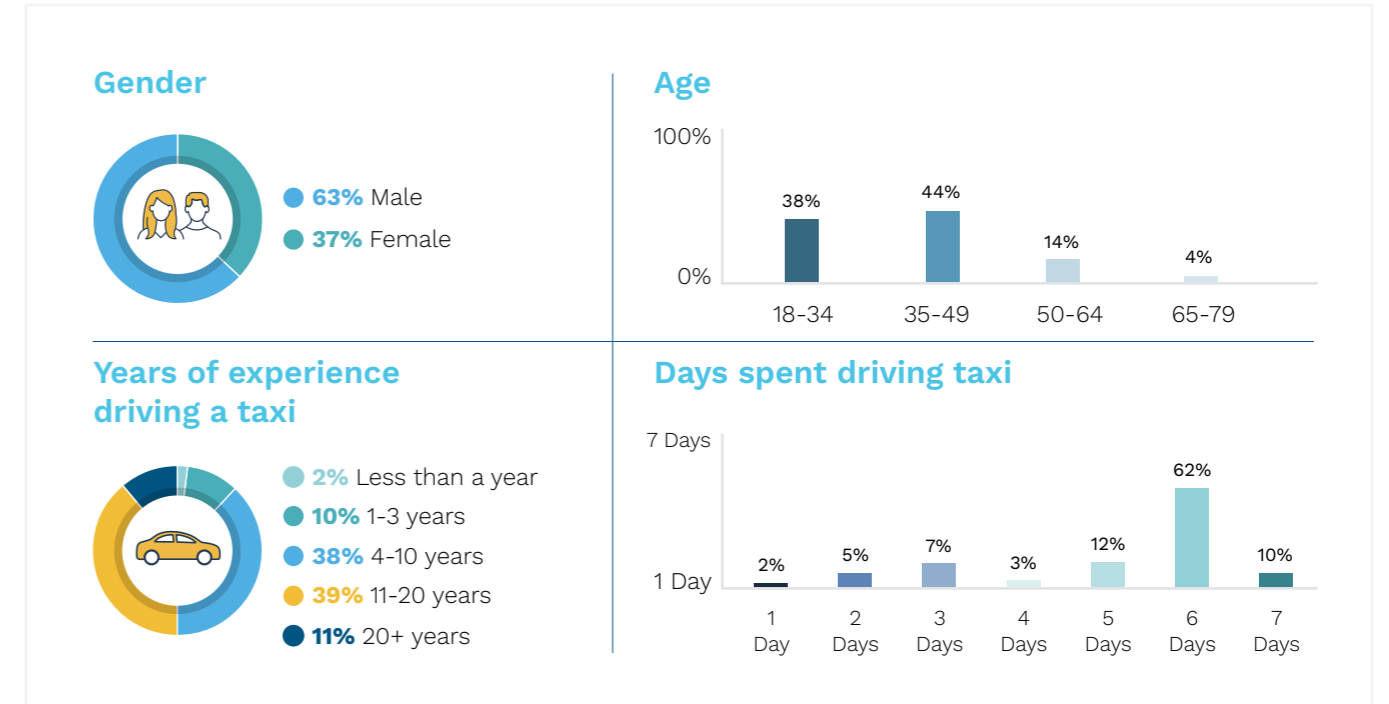
A total of 422 drivers were surveyed across the four case study cities. The breakdown of respondents by city is as follows:

City	Number of responses
San Francisco	105
Singapore	105
Sydney	105
Vienna	107
Total	422

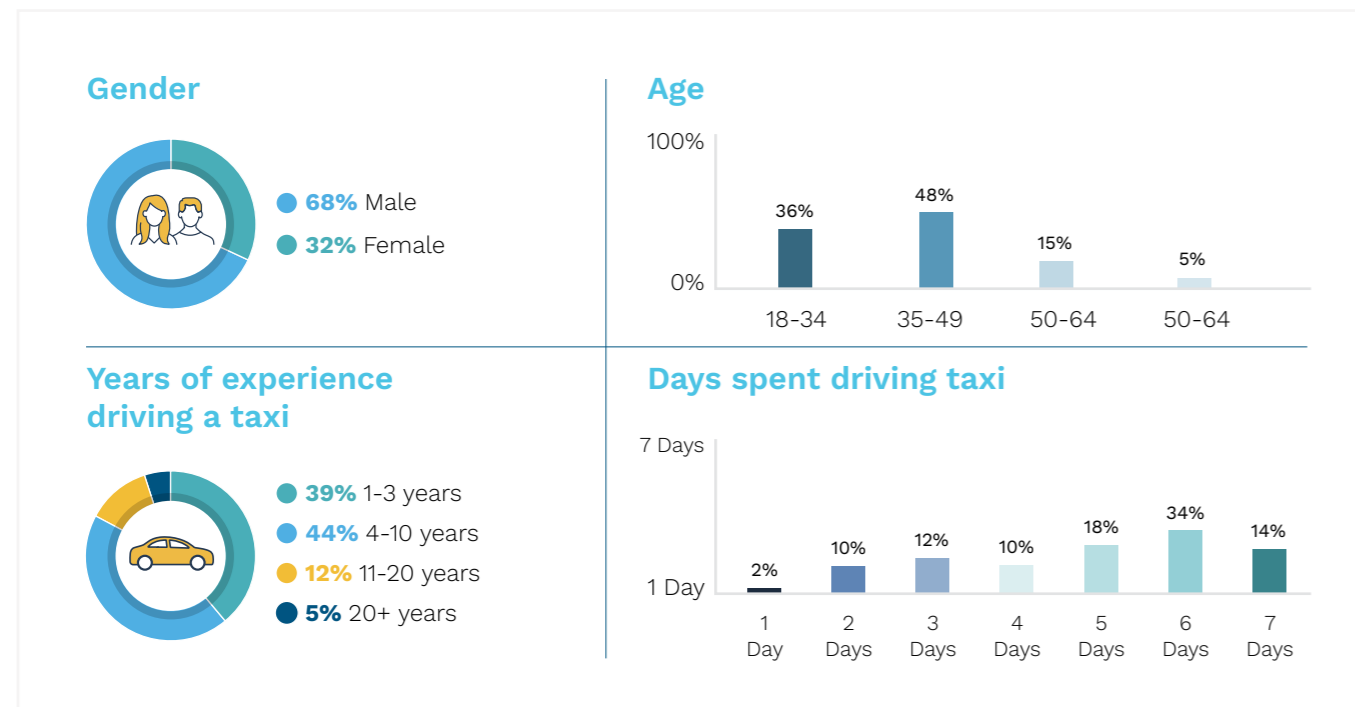
Overview of driver survey respondent demographics - San Francisco



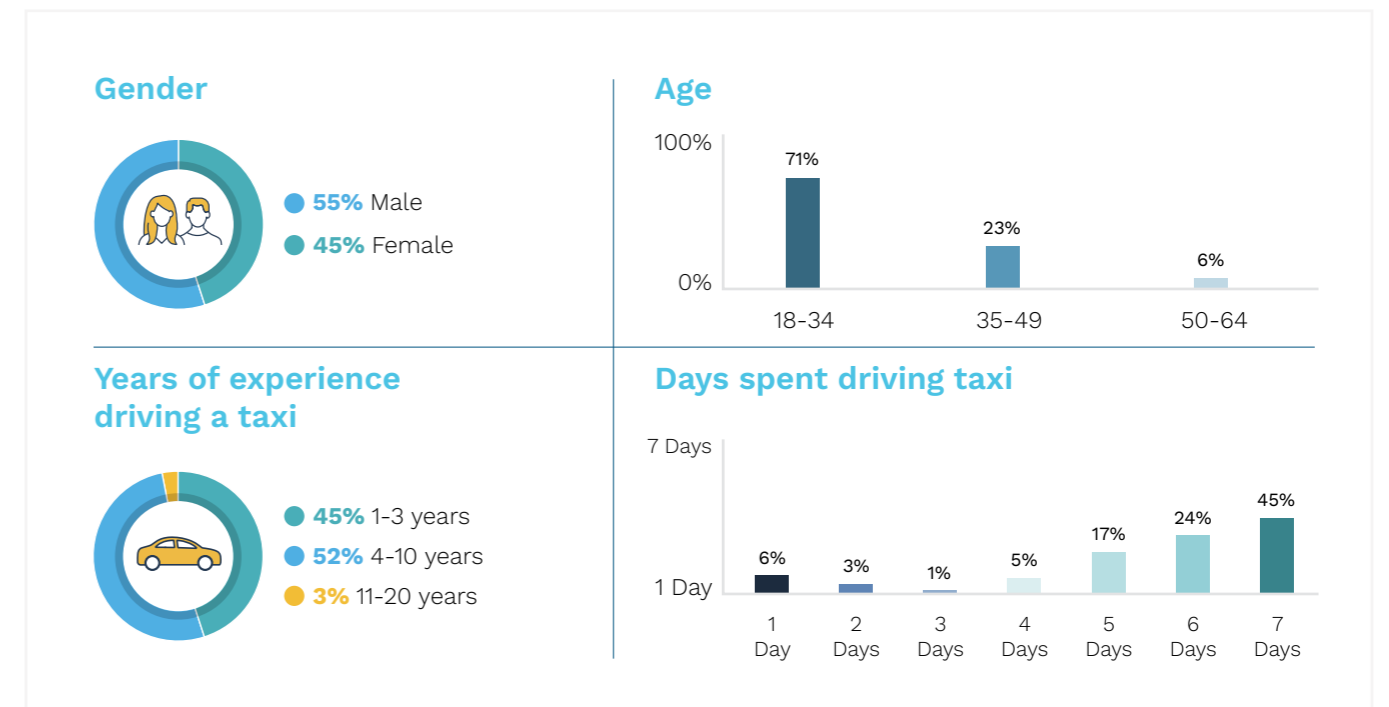
Overview of driver survey respondent demographics - Sydney



Overview of driver survey respondent demographics - Singapore



Overview of driver survey respondent demographics - Vienna



NOTE: Percentages may not sum due to rounding.

5.3 City-specific survey insights

San Francisco

In San Francisco, both riders and drivers appear to have a general preference for upfront fares for several reasons. These trips tend to cost less than metered options (either through street-hail or apps) and perform better on metrics such as wait times. However, riders still enjoy the flexibility of choice and sometimes opt for metered fare options instead.

Key insights:

Riders

Although riders find themselves more likely to use apps offering the metered fare option when booking taxi trips, they appear to show a strong preference for rides made via upfront fares if given a choice.

Overall, 37% of respondents would prefer an upfront fare (compared to 32% who prefer a metered fare while the remaining have no preference. This preference appears to be even stronger during peak hours, with 59% choosing upfront fares (compared to 19% choosing metered). This could be the result of rides made via upfront fares performing better overall; for instance, such rides tend to have shorter wait times (both before being matched with a driver and before boarding the vehicle). However, despite this preference, 63% of respondents still find themselves more likely to use apps that offer the metered fare option. A key reason for this could be the lack of availability of apps offering upfront fares, prompting riders to turn to taxi apps that offer metered fares.

Taxi trips booked via the upfront fare option tend to cost less per minute than metered trips booked via apps or obtained from street-hail. On average, riders tend to pay similar fares for trips booked via upfront fares compared to rides based on a metered fare. For instance, survey data has shown that metered trips obtained via street-hail can cost up to 5% more than upfront ones, while metered trips booked via taxi apps cost around the same, even when they are shorter in duration.

In addition, taxi trips booked via the upfront fare option have shorter wait times as well. When comparing taxi trips booked via apps, riders who book trips via upfront fares tend to wait 2.4 fewer minutes before being matched with a driver and 0.4 fewer minutes before boarding the vehicle compared to those who book trips via metered fares.

Drivers

Drivers have a general preference for upfront fares for several reasons. On average, 63% of respondents have stated that the upfront fare would overall be their preferred fare type if given a choice (compared to 19% selecting metered fare). This preference is consistently exhibited during both peak and non-peak hours. Key drivers behind this preference include (i) perceptions by drivers that they would get higher monthly earnings overall through upfront fares, (ii) ease of finding riders through upfront fares, and (iii) having a more stable income through upfront fares compared to metered fares through apps or street-hailing.

However, some key concerns remain regarding upfront fares, causing drivers to lean toward metered fares in several instances. A central concern among drivers is that rides based on upfront fares tend to be shorter, resulting in them having to make more trips per day to make up for lower earnings from each ride. They find that metered fares sometimes give them better payouts (i.e., per-trip earnings), as rides tend to be longer.

Singapore

In Singapore, both riders and drivers have a general preference for upfront fares, particularly due to perceptions of metered fares costing more. However, metered fares are sometimes preferred by drivers, particularly in times when surge pricing may not be in effect.

Key insights:

Riders

Riders generally prefer upfront fares for several reasons. Overall, 48% of riders surveyed in Singapore prefer upfront fares if given a choice (compared to 18% choosing metered fares), especially during peak hours, when the share of respondents preferring upfront fares increases to 59% (compared to 17% preferring metered fares). This preference is driven by rider perceptions that (i) metered fares are likely to cost more (during both peak and non-peak hours), (ii) metered fares are likely to be longer in distance and duration, especially if drivers are unsure of the route to take, and (iii) it is easier to obtain rides based on upfront fares.

Trips made via upfront fares tend to cost less than metered trips obtained via app-based booking but more than metered trips obtained through street-hail or taxi stands. Comparing trips booked via apps, those priced using metered fares can cost up to 14% more than upfront fares despite being of similar durations. However, metered trips from street-hail or taxi stands can cost 14% less than upfront fares, which is likely to be the result of upfront trips being further (and longer in duration).

Drivers

Drivers have a general preference for upfront fares but prefer metered fares in certain situations, such as during peak hours. On average, 70% of respondents have stated that the upfront fare would be their preferred fare type if given a choice (compared to 24% selecting metered fare). However, in non-peak hours, 68% of drivers prefer metered fares (compared to only 28% who prefer upfront fares). The main reason for this is that dynamic pricing enables drivers to make higher earnings, especially during peak hours. However, during non-peak hours, when fares are not surging, metered fares usually offer higher earnings and the possibility of getting paid immediately (in contrast to apps, which may not automatically disburse earnings at the end of the trip).

Societal

A robust and competitive environment for the taxi industry is a priority for government officials. After the 2017 policy allowing upfront dynamic pricing for taxis, Second Minister for Transport Ng Chee Meng stated in Parliament that the taxi industry should be allowed to “innovate and adapt to new market conditions and competition,” adding that “our taxi drivers have to make a living, and we should not restrict their ability to compete effectively.”¹⁰⁴ Authorities include all stakeholders in the conversations, considering new market entrants and industry developments as they arise.

Sydney

In Sydney, riders prefer upfront fares, as they tend to perform better than metered fares in terms of affordability and wait time. However, on the other hand, drivers seem to prefer metered fares as they find that it provides them with fairer compensation for time and distance traveled.

Key insights:

Riders

Riders appear to have a strong preference for upfront fares. Overall, 62% of riders surveyed in Sydney prefer upfront fares if given a choice (compared to 16% choosing metered fares). This preference is consistently exhibited in both peak and non-peak hours. The share of respondents who prefer upfront fares (52%) is also higher than the average across the four case study cities. This is also consistent with survey findings that showed that riders in Sydney select the upfront fare option 74% of the time when booking taxis via ride-sharing apps.

Trips made via upfront fares in Sydney tend to perform better in terms of fare affordability and wait time. Riders feel that rides booked through upfront fares tend to be cheaper, have shorter waiting times, and more reliable drivers. This is broadly consistent with data showing that, on average, metered rides (both from street-hail and via applications) tend to cost up to 13% more compared to trips based on an upfront fare. Similarly, trips based on an upfront fare also tend to perform better in terms of key metrics, such as wait time before being matched with a driver and wait time before boarding the vehicle.

Drivers

Drivers appear to have a general preference for metered fares for several reasons. On average, 58% of respondents indicated that they prefer metered fares overall (compared to 30% preferring upfront fares). In addition, 65% of respondents also prefer when riders select the metered fare option. Key reasons for this include perceptions that metered fares provide drivers with fairer, more competitive pricing, especially for longer trips, since it would be based on trip time and distance covered.

However, despite the general preference for metered fares, drivers acknowledge and recognize the benefits of upfront fares, which are preferred during non-peak hours. 61% of drivers surveyed in Sydney agree that the upfront fare is their preferred option during non-peak hours (compared to 31% who prefer metered fares), which is much higher than the average of respondents across the four case study cities who prefer upfront fares during non-peak hours (42%). Generally, drivers in Sydney find that upfront pricing offers several advantages, such as allowing drivers to know their earnings before the trip is made and the competitiveness of fares, even when there are no price surges.

Vienna

In Vienna, riders are highly price sensitive and thus prefer upfront fares, which tend to cost less. However, these services may sometimes result in poorer driver performance in terms of metrics such as wait time. While drivers in Vienna exhibit an inherent trust in meter-calculated fares, they are becoming more open and accepting of the use of upfront fares due to the advantages they offer.

Key insights:

Riders

Riders are highly price sensitive, resulting in an overall preference for upfront fares. When asked about the factors most important to them when choosing fare type, almost 70% of respondents stated that “price of trip” was the top factor. This is in contrast to an average of 60% of respondents across the four case study cities who selected the same factor. This high degree of price sensitivity could explain why riders in Vienna prefer upfront fares – 62% prefer it overall (compared to 18% who prefer the metered fare), with this share increasing to 65% during peak hours (compared to 15% who prefer the metered fare). This is because the flexibility of upfront fares means that they can sometimes cost less than metered fares, resulting in rider preferences for upfront fares in such situations.

However, despite upfront fares being more affordable, trips made based on such fare types may not perform well in terms of key rider metrics when compared to metered fares. On average, when comparing trips booked via apps, those based on an upfront fare tend to have slightly longer wait times before being matched with a driver, as well as before boarding the vehicle, compared to trips on metered fares. Despite this, as highlighted above, riders still prefer trips based on upfront fares. This is consistent with survey findings showing that only 4% of respondents selected “waiting time” as the most important factor when booking rides. Longer wait times are unlikely to deter riders in Vienna from booking upfront rides since these trips usually cost less.

Drivers

Drivers are more comfortable with the use of metered fares, primarily because they perceive them as a reliable way to calculate taxi fares. Across respondents surveyed in Vienna, drivers appeared to have a strong liking for metered fares due to the impression that it gives them a stable income and is the fairest form of pricing (i.e., drivers are compensated adequately based on the time spent ferrying a rider as well as the distance traveled). 76% of respondents feel that their income would be more stable if all their fares were based on the metered option, and similar sentiments were expressed in open-ended responses.

Nonetheless, drivers recognize the advantages of upfront fares and prefer them in certain situations, such as during peak hours. 71% of drivers prefer upfront fares during peak hours (compared to 29% preferring metered fares). This is because surge pricing during peak hours enables them to make higher earnings compared to metered fares. In addition, other advantages of upfront fares include the ease of finding riders compared to metered fares.

Comparing survey results across cities

There is some level of variation in observed impacts across the four cities regarding preferences for different taxi fare types.

In the rider survey, although upfront fares are generally the preferred option, respondents show varying degrees of preferences across cities. For instance, respondents from Sydney showed a strong preference for upfront fares, with about 60% selecting them as their preferred fare type. On the other hand, respondents in San Francisco felt less strongly about upfront fares, with only 37% selecting them as their preferred fare type. Key reasons for these sentiments include difficulty in getting taxi rides based on upfront fares in San Francisco (due to the availability of apps) and respondents feeling that metered fares are likely to be cheaper for shorter trips.

Driver responses also tend to vary by city, with those in Sydney and Vienna preferring metered fares, whereas those in Singapore and San Francisco prefer upfront fares. For instance, in Sydney, drivers tend to exhibit a strong preference for metered fares over upfront fares. 67% of drivers prefer when riders select the metered fare option and find it more convenient, and they also make higher earnings through this option. These sentiments are shared by drivers in Vienna. In both cities, drivers also feel that it is easier to find riders choosing metered fares and these riders tend to travel longer distances.

On the other hand, in Singapore and San Francisco, drivers have a general preference for upfront fares. In Singapore, 40% of drivers prefer when riders select the upfront fare option (compared to 24% who prefer metered fares). They also find that it is easier and more convenient to find riders who book trips based on upfront fares. However, they tend to spend longer driving to pick up riders who select upfront fares. These differences between cities may be the result of varying degrees

of openness in regulations. For instance, regulations in Singapore generally allow for high levels of choice and autonomy among drivers, while San Francisco has been a leader in allowing taxi drivers to experiment with other fare types.

Lastly, drivers surveyed feel that more can be done to better support and safeguard their interests. 86% of taxi drivers surveyed are interested in having access to more extensive benefits; for instance, in terms of insurance coverage. Other concerns include improving working conditions, ensuring the safety of taxi drivers (specific to San Francisco), and providing opportunities for drivers to upskill themselves (e.g., providing them with access to courses about digital and financial literacy).

5.4 Organizations engaged

- International Association of Public Transport (UITP)
- San Francisco Municipal Transportation Authority (SFMTA)
- School of Business, Singapore University of Social Sciences (SUSS)
- Dept. of Industry and Market Policies, KDI School of Public Policy and Management

6. Endnotes

- 1 Aarhaug, Jørgen (2016), Taxis as a Part of Public Transport. Available at: https://www.researchgate.net/profile/Jorgen-Aarhaug/publication/307936266_GIZ_SUTP_TD16_Taxi_EN/links/57d2a13d08ae6399a38d75c0/GIZ-SUTP-TD16-Taxi-EN.pdf (stating that some cities view taxi services as "semi-private")
- 2 Aarhaug, Jørgen (2016), Taxis as a Part of Public Transport. Available at: https://www.researchgate.net/profile/Jorgen-Aarhaug/publication/307936266_GIZ_SUTP_TD16_Taxi_EN/links/57d2a13d08ae6399a38d75c0/GIZ-SUTP-TD16-Taxi-EN.pdf
- 3 Aarhaug, Jørgen (2016), Taxis as a Part of Public Transport. Available at: https://www.researchgate.net/profile/Jorgen-Aarhaug/publication/307936266_GIZ_SUTP_TD16_Taxi_EN/links/57d2a13d08ae6399a38d75c0/GIZ-SUTP-TD16-Taxi-EN.pdf
- 4 Note that the term ride-share is used to describe instances where riders engage a private driver to take them to their destination, and is typically done through the application, website or a phone call to the ride-share company. In cities such as Singapore, this concept is often referred to as ride-hail instead, and in the context of this report, both terms are synonymous.
- 5 ZHONG, Jun; ZHOU, Huan; LIN, Yan; and REN, Fandxiao (2022), The impact of ride-hailing services on the use of traditional taxis: Evidence from Chinese urban panel data, <https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/itr.2.12237>
- 6 SFMTA (2022), Taxi Upfront Pricing Pilot Begins, <https://www.sfmta.com/blog/taxi-upfront-pricing-pilot-begins>
- 7 E-hail (or electronic hailing) is a service provided for riders to book either taxi or ride-share using electronic applications. Through this hailing method, booking is done in-app, in contrast to street hail where the hailing is done physically. The booking of rides through ride-sharing platforms and applications constitutes a type of e-hailing.
- 8 Hornyk, Tim (2018), "Japan's big brands are trying to shake up its taxi industry". Available at: <https://www.cnn.com/2018/04/03/japans-big-brands-are-trying-to-shake-up-its-taxi-industry.html>
- 9 Road Transport Law (Law No. 183 of 1951) (2009), Available at: <https://elaws.e-gov.go.jp/document?lawid=326AC0000000183>
- 10 Reuters (2020), "Uber widens taxi app to Japan's Tokyo but ride-sharing still barred". Available at: <https://www.reuters.com/article/us-uber-japan-idUSKBN24416F>
- 11 Special Measures Act on Adjustment and Revitalization of General Ride Passenger Auto Transportation Business in Specified Areas and Quasi-Specified Areas], Act No. 64, Available at: <https://elaws.e-gov.go.jp/document?lawid=421AC0000000064>
- 12 タクシーの『事前確定型変動運賃』の実証実験を行います! (2021), Available at: https://www.mlit.go.jp/report/press/jidosha03_hh_000337.html; see also Uber Japan (2021), "Uber Participates in Demonstration Experiment of "Pre-determined Variable Fares" for Taxi by Ministry of Land, Infrastructure, Transport and Tourism". Available at: <https://www.uber.com/ja-jp/newsroom/taxi-dynamic-pricing/>
- 13 The pilot program operated from October 21 to December 15, and was conducted with 12 taxi companies (approximately 1,000 vehicles) in certain wards of Tokyo. MLIT partnered with GO, a leading e-hailing app company in the Japan market, to conduct the pilot program as well.
- 14 Exum, Anika Osaki (2023), "Dynamic pricing aims to accelerate Japan's taxi market". Available at: <https://www.japantimes.co.jp/news/2023/04/26/business/taxi-dynamic-pricing-system/>
- 15 NHK World Japan (2023), "Japan to allow taxi apps to change pricing based on demand". Available at: https://www3.nhk.or.jp/nhkworld/en/news/20230424_24/
- 16 Inagaki, Kana (2016), "Japan taxi industry seeks to navigate new roads". Available at: <https://www.ft.com/content/402c455a-6038-11e6-b38c-7b39cbb1138a>
- 17 McKinsey (2018), Rebooting Japan's Mobility Market, Available at: <https://www.mckinsey.com/-/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Rebooting%20Japans%20mobility%20market/Rebooting-Japans-mobility-market.ashx>
- 18 McKinsey (2018), Rebooting Japan's Mobility Market, Available at: <https://www.mckinsey.com/-/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Rebooting%20Japans%20mobility%20market/Rebooting-Japans-mobility-market.ashx>
- 19 Kobayashi, Hinano (2019), "Costly cabs: Japanese taxis have second-highest fares worldwide, research finds". Available at: <https://www.japantimes.co.jp/news/2019/06/12/business/costly-cabs-japanese-taxis-second-highest-fares-worldwide-research-finds/>
- 20 Sang-yun, Kim (2019), "Ineffective Taxi Fire Hikes". Available at: <http://annalsyonsei.ac.kr/news/articleView.html?idxno=10955>
- 21 Mid-sized "franchise" (i.e., having exclusive contracts with a e-hail platform) taxis are permitted to offer upfront pricing, but the price must adhere to the complex time & distance measurement of the meter fare structure for regular mid-sized taxis.
- 22 Passenger Transport Service Act, Available at: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=57566&lang=ENG
- 23 YEONG, Kim and HYE-RIM Han (2022), "Now they won't have any passengers" Available at: <https://koreajoongangdaily.joins.com/2022/10/27/opinion/WordOnTheWeb/basic-fares-latenight-taxi-taxi-fares/20221027151820619.html>
- 24 KBS News (2022), "Ministry of Land, Infrastructure and Transport announces late-night taxi crisis measures". Available at: <https://www.youtube.com/watch?v=UbMjypJHa2E>
- 25 KBS News (2022), "Ministry of Land, Infrastructure and Transport announces late-night taxi crisis measures". Available at: <https://www.youtube.com/watch?v=UbMjypJHa2E>
- 26 KBS News (2022), "Ministry of Land, Infrastructure and Transport announces late-night taxi crisis measures". Available at: <https://www.youtube.com/watch?v=UbMjypJHa2E>
- 27 Yoo, Hong (2022), "Transport ministry offers increase of taxi-hailing fee to resolve nighttime cab shortage". Available at: <https://www.koreaherald.com/view.php?ud=20221004000688>
- 28 Ji-hyoung, Son (2023), "Seoul hikes taxi fares after 4 years". Available at: <https://www.koreaherald.com/view.php?ud=20230201000630>
- 29 Yeon-woo, Lee (2022), "Gov't raises late-night taxi fares to ease shortage of cabs". Available at: https://www.koreatimes.co.kr/www/nation/2023/03/113_337267.html
- 30 Arirang News (2022), "Experts on Taxi Crisis in South Korea: Higher taxi fees unlikely to bring taxi drivers back behind the wheel". Available at: <https://www.youtube.com/watch?v=DMF49FpFnE>
- 31 Arirang News (2022), "Experts on Taxi Crisis in South Korea: Higher taxi fees unlikely to bring taxi drivers back behind the wheel". Available at: <https://www.youtube.com/watch?v=DMF49FpFnE>
- 32 Yeon-woo, Lee (2022), "Where did all the young taxi drivers go?". Available at: https://www.koreatimes.co.kr/www/nation/2023/04/113_337693.html; see also Arirang News (2022), "Experts on Taxi Crisis in South Korea: Higher taxi fees unlikely to bring taxi drivers back behind the wheel". Available at: <https://www.youtube.com/watch?v=DMF49FpFnE>
- 33 Yeon-woo, Lee (2022), "Where did all the young taxi drivers go?". Available at: https://www.koreatimes.co.kr/www/nation/2023/04/113_337693.html
- 34 GYEONG-SEON, Yu and SE-HUN, Kim (2023), "Seoul Citizens, 'Taxi Fare Went up 2,000 Won. I'm Scared to Take the Taxi'". Available at: http://english.khan.co.kr/khan_art_view.html?artid=202302021554217&code=940100
- 35 WEI-CHI, Cheng; and CHUNG, Jake (2022) "Taxi union proposes Taipei fare hikes". Available at: <https://www.taipetimes.com/News/front/archives/2022/11/17/2003789083>
- 36 Wang, Ching-Huang et al., (2022) Exploring the Voices of Uber Users in Taiwan, Available at: <https://libap.nhu.edu.tw:8081/Ejournal/AA01350304.pdf>
- 37 Shan, Shelley (2022), "Diversified taxis have a competitive edge". Available at: <https://www.taipetimes.com/News/taiwan/archives/2022/12/13/2003790631>
- 38 交通部統計處 (2022), "計程車營運狀況調查報告". Available at: <https://www.motc.gov.tw/uploaddowndoc?file=survey/202211021009180.pdf&filedisplay=202211021009180.pdf&flag=doc>
- 39 Fulco, Matthew (2020), "Uber Stays in Taiwan, But at a Price". Available at: <https://topics.amcham.com.tw/2020/03/uber-in-taiwan/>
- 40 Article 2(4), Regulations on the Management of the Automobile Transportation (Amended 6 December 2022)
- 41 Taichung City Government Tourism and Travel Bureau (n.d.), "Taxi / Car rentals". Available at: <https://travel.taichung.gov.tw/en/traffic/taxi>
- 42 Article 91(4), Regulations on the Management of the Automobile Transportation (Amended 6 December 2022)
- 43 Article 91(1) and 91(5), Regulations on the Management of the Automobile Transportation (Amended 6 December 2022)

- 44 Fulco, Matthew (2020), "Uber Stays in Taiwan, But at a Price". Available at: <https://topics.amcham.com.tw/2020/03/uber-in-taiwan/>
- 45 Article 103-1, Regulations on the Management of the Automobile Transportation (Amended 6 June 2019)
- 46 Taxi fares in Taipei, New Taipei, Keelung to rise in April (2022), <https://focustaiwan.tw/business/202212140028>.
- 47 Chiang, Stephanie (2023), "Taxi fares in north Taiwan to increase starting Saturday". Available at: <https://www.taiwannews.com.tw/en/news/4850028>
- 48 Chiang, Stephanie (2023), "Taxi fares in north Taiwan to increase starting Saturday". Available at: <https://www.taiwannews.com.tw/en/news/4850028>
- 49 HSIAO-han, Yu and YEN-HSIANG, Chao (2023), "Riders give taxis an above-average rating ahead of April fare hike". Available at: <https://focustaiwan.tw/society/202303310019>.
- 50 Shan, Shelley (2022), "Diversified taxis have a competitive edge". Available at: <https://www.taipetimes.com/News/taiwan/archives/2022/12/13/2003790631>
- 51 <https://www.motc.gov.tw/upload/down/doc?file=survey/202211021009180.pdf&filedisplay=202211021009180.pdf&flag=doc>
- 52 Note that no causality analyses were conducted but these are observations based on existing literature. Further studies could be commissioned to draw more direct linkages between taxi pricing and outcomes.
- 53 AP (2022), "Italy's taxi drivers keep protesting, fear new competition". Available at: <https://apnews.com/article/technology-rome-italy-naples-91805bf826e8414313299a3f93a3d9f9>; see also Matt Blockbourn and Holly Raiborn (2017), "Regulatory reform of the taxi industry is long overdue". Available at: <https://pioneerinstitute.org/blog/regulatory-reform-taxi-industry-long-overdue/>.
- 54 SFMTA (2022), "Taxi Upfront Pricing Pilot Begins". Available at: <https://www.sfmta.com/blog/taxi-upfront-pricing-pilot-begins>
- 55 SFMTA (2022), "Taxi Upfront Pricing Pilot Begins". Available at: <https://www.sfmta.com/blog/taxi-upfront-pricing-pilot-begins#:~:text=In%20September%202021%2C%20the%20SFMTA,through%20approved%20third%2Dparty%20apps>, see also NYC Taxi & Limousine Commission (2023), "Taxi Fare". Available at: <https://www.nyc.gov/site/tlc/passengers/taxi-fare.page>.
- 56 SFMTA (2022), "Amending Transportation Code, Division II, Article 1100, Section 1124(b)(5) to expand the Taxi Upfront Fare Pilot Program to allow Taxi E-Hail applications to dispatch trips that originate with third-party entities, which may offer upfront fares that are not based on Taximeter rates and extend the implementation date of the Pilot". Available at: https://www.sfmta.com/sites/default/files/reports-and-documents/2022/03/4-5-22_mtab_item_11_to_amendment_-_taxi_upfront_fare_pilot.pdf
- 57 SFMTA (2022), "Transportation Code, Division II, Article 1100, Section 1124". Available at: https://www.sfmta.com/sites/default/files/reports-and-documents/2022/03/4-5-22_mtab_item_11_to_amendment_-_taxi_upfront_fare_pilot.pdf
- 58 Interview with SFMTA representatives, May 2, 2023.
- 59 SFMTA (2022), "Taxi Upfront Pricing Pilot Begins". Available at: <https://www.sfmta.com/blog/taxi-upfront-pricing-pilot-begins#:~:text=In%20September%202021%2C%20the%20SFMTA,through%20approved%20third%2Dparty%20apps>
- 60 SFMTA (2022), "Taxi Upfront Pricing Pilot Begins". Available at: <https://www.sfmta.com/blog/taxi-upfront-pricing-pilot-begins#:~:text=In%20September%202021%2C%20the%20SFMTA,through%20approved%20third%2Dparty%20apps>
- 61 Interview with SFMTA representatives, May 2, 2023.
- 62 Interview with SFMTA representatives, May 2, 2023.
- 63 Next City (2022), "Taxis are making a cautious comeback". Available at: <https://nextcity.org/urbanist-news/taxis-are-making-a-cautious-comeback>
- 64 SFTMA (2023), "Taxi Quarterly Meeting". Available at: https://www.sfmta.com/sites/default/files/reports-and-documents/2023/03/draft_taxi_outreach_2.28.23_final_web-.pdf
- 65 SFMTA (2023), "Taxi Upfront Fare Pilot – First Quarter Report". Available at: https://www.sfmta.com/sites/default/files/reports-and-documents/2023/06/mtab_memo_23.0622_taxi_upfront_fare_pilot_q1_report.pdf. Also to adjust all footnote numbering accordingly
- 66 Interview with Professor Walter Theseira, April 20, 2023.
- 67 Public Transport Council (2021), "Overview". Available at: <https://www.ptc.gov.sg/about/overview>
- 68 Abdullah, Ahmad Zhaki (2022), "All taxi operators to raise their fares in March". Available at: <https://www.channelnewsasia.com/singapore/all-taxi-operators-raise-fares-march-comfortdelgro-transcab-premier-2519371>
- 69 Public Transport Council (2017), "Joint Media Statement by Public Transport Council and Land Transport Authority". Available at: <https://www.ptc.gov.sg/docs/default-source/news/dynamic-pricing-of-taxi-fares.pdf>
- 70 Public Transport Council (2020), "Joint News Release with Land Transport Authority (LTA), Commencement of the New Point-to-Point Transport Regulatory Framework". Available at: <https://www.ptc.gov.sg/newsroom/news-releases/newsroom-view/commencement-of-the-new-point-to-point-transport-regulatory-framework>
- 71 Public Transport Council (2019), "New Regulatory Framework For The Point-To-Point (P2P) Transport Sector". Available at: <https://www.ptc.gov.sg/newsroom/news-releases/newsroom-view/new-regulatory-framework-for-the-point-to-point-transport-sector>
- 72 Public Transport Council (2020), "Point-to-Point Transport Services". Available at: <https://www.ptc.gov.sg/fare-regulation/taxi-PHC/P2P-Transport-Services>
- 73 Interview with Professor Walter Theseira, April 20, 2023; see also Public Transport Council (2019), "New Regulatory Framework For The Point-To-Point (P2P) Transport Sector". Available at: <https://www.ptc.gov.sg/newsroom/news-releases/newsroom-view/new-regulatory-framework-for-the-point-to-point-transport-sector>
- 74 Department of Statistics Singapore (2023), "Transport". Available at: <https://www.singstat.gov.sg/publications/reference/ebook/industry/transport>
- 75 NSW Government (2015) "Point to Point Transport Taskforce". Available at: <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/point-to-point-transport-taskforce-report-to-minister.pdf>; see also Transport for NSW (2020) "Point to Point Transport Independent Review 2020". Available at: <https://www.transport.nsw.gov.au/system/files/media/documents/2021/Point%20to%20point%20independent%20review%20report.pdf>
- 76 Transport for NSW (2023), "Point to Point Transport Reforms". Available at: <https://www.transport.nsw.gov.au/operations/point-to-point-transport/taxi-information>
- 77 Transport for NSW (2023), "Point to Point Transport". Available at: <https://www.transport.nsw.gov.au/operations/point-to-point-transport>
- 78 Transport for NSW (2018), "Booked Fares". Available at: https://www.transport.nsw.gov.au/system/files/media/documents/2018/p2p-booked-fares-fact-sheet-feb-2018_0.pdf.
- 79 NSW Legislation, "Passenger Transport Act 2014 (2014)". Available at: <https://legislation.nsw.gov.au/view/html/inforce/current/act-2014-046>.
- 80 Parliament of New South Wales (2016), "Point to Point Transport (Taxis and Hire Vehicles) Bill 2016". Available at: <https://www.parliament.nsw.gov.au/bills/Pages/bill-details.aspx?pk=3308>
- 81 NSW Government (2017), "Point to Point Transport (Taxis and Hire Vehicles) Regulation 2017". Available at: <https://legislation.nsw.gov.au/view/html/inforce/current/sl-2017-0424>
- 82 Transport for NSW (2020), "Point to Point Transport Independent Review.: Available at: <https://www.transport.nsw.gov.au/projects/programs/point-to-point-transport/point-to-point-independent-review-2020>
- 83 Transport for NSW (2020), "Point to Point Transport Independent Review.: Available at: <https://www.transport.nsw.gov.au/projects/programs/point-to-point-transport/point-to-point-independent-review-2020>
- 84 Transport for NSW (2023), "Point to Point - About the reform process since 2015". Available at: <https://www.transport.nsw.gov.au/projects/programs/point-to-point-transport/point-to-point-about-reform-process-since-2015>
- 85 Federal Ministry of Finance (2021), "Amendment of the Occasional Traffic Act 1996" Available at: <https://www.ris.bka.gv.at/eli/bgbl/i/2021/13>
- 86 Federal Ministry of Finance (2019), "Amendment of the Occasional Traffic Act 1996" Available at: <https://www.ris.bka.gv.at/eli/bgbl/i/2019/83>
- 87 Federal Ministry of Finance (2021), "Amendment of the Occasional Traffic Act 1996" Available at: <https://www.ris.bka.gv.at/eli/bgbl/i/2021/13>
- 88 City of Vienna (2019), "Study on the passenger transport business with cars – taxis". Available at: <https://www.wien.gv.at/wirtschaft/standort/personenbefoerderungsgewerbe-studie.html>.
- 89 Note that in the context of the surveys, the terminologies used in the questions were upfront and metered pricing. However, in the four cities covered, upfront taxi fares tend to be priced based on the dynamic pricing mechanism. References made to "upfront pricing" in this section may thus include aspects of dynamic pricing.
- 90 At the time of research, riders and drivers in the four case study cities are able to obtain and provide trips based on metered and upfront taxi fares. They are able to access such fares either through a single app or can choose different fare types across various apps.
- 91 Note that "fairness" may sometimes be defined differently for riders and drivers. In the rider survey, respondents most commonly defined fairness as being charged accurately based on the trip time and distance covered, whereas for drivers, fairness also included other factors such as being compensated more highly if there is higher rider demand or fewer drivers available.
- 92 Note that we are unable to deduce the main reason for this based on our survey data alone. It could be due to a variety of factors such as riders who book upfront trips traveling to nearby destinations, or drivers taking more optimal routes when trips are booked via upfront fares.
- 93 Note that this conclusion has been drawn only through survey data and is an indicative measure that does not seek to represent all taxi trips across the case study cities. We also note that this could be affected by many factors which have not been controlled for in our surveys.
- 94 Straits Times (2017), "Taxi companies get green light to implement dynamic pricing system". Available at: <https://www.straitstimes.com/singapore/transport/authorities-give-taxi-companies-green-light-to-implement-surge-pricing-system>
- 95 US Department of Transportation (2008), Lessons Learned From International Experience in Congestion Pricing. Available at: <https://ops.fhwa.dot.gov/publications/fhwahop08047/02summ.htm#:~:text=Congestion%20pricing%20has%20been%20a,9%3A30%20in%20the%20morning>.
- 96 Uber Blog (2018), "Forecasting at Uber: An Introduction". Available at: <https://www.uber.com/en-SG/blog/forecasting-introduction/>
- 97 Grab Tech Blog (2019), "Understanding Supply & Demand in Ride-hailing Through the Lens of Data". Available at: <https://engineering.grab.com/understanding-supply-demand-ride-hailing-data>
- 98 AGARWAL, Sumit; CHAROENWONG, Ben; CHENG, Shih-Fen; and KEPPO, Jussi. (2022), The impact of ride-hail surge factors on taxi bookings. Available at: https://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=7958&context=sis_research
- 99 Uber Blog (2015), "The Effects of Uber's Surge Pricing: A Case Study". Available at: <https://www.uber.com/blog/research/the-effects-of-ubers-surge-pricing-a-case-study>
- 100 Castillo, Juan Camilo (2022), Who Benefits from Surge Pricing? Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3245533
- 101 Hong Kong Transport and Housing Bureau, Section 38 of The Road Traffic (Public Service Vehicles) Regulations, Available at: <https://www.elegislation.gov.hk/hk/cap374D>
- 102 Hong Kong Transport and Housing Bureau, Section 38 of The Road Traffic (Public Service Vehicles) Regulations, Available at: <https://www.elegislation.gov.hk/hk/cap374D>
- 103 Aarhaug, Jørgen (2016), Taxis as a Part of Public Transport. Available at: https://www.researchgate.net/profile/Jorgen-Aarhaug/publication/307936266_GIZ_SUTP_TD16_Taxi_EN/links/57d2a13d08ae6399a38d75c0/GIZ-SUTP-TD16-Taxi-EN.pdf
- 104 Straits Times (2017), "Taxi companies get green light to implement dynamic pricing system". Available at: <https://www.straitstimes.com/singapore/transport/authorities-give-taxi-companies-green-light-to-implement-surge-pricing-system>



Access
Partnership

Founded in 1999, Access Partnership shapes policy on behalf of the world's leading technology companies, introducing fairness and stability for services and products entering new markets. We create policy, regulatory, and legal routes to markets being adopted worldwide, remaining fair to all parties.

Access Partnership

9th Floor, Southside
105 Victoria Street
London SW1E 6QT
United Kingdom

t: 020 3143 4900

e: london@accesspartnership.com