

McKinsey Center for Future Mobility

Shared mobility: Where it stands and where it's going

Having weathered a pandemic, regulatory whiplash, and a host of other hurdles, shared mobility endures. Here's where things stand today.

by Kersten Heineke, Benedikt Kloss, Timo Möller, and Charlotte Wiemuth



Regarding shared mobility today, did you know that:

- **more than 40 million e-hailing trips** are being booked on the two biggest e-hailing platforms every day?¹
- the **e-hailing market accounts for more than 90 percent** of consumer spending in shared mobility globally?²
- the **number of e-hailing trips almost tripled** in four years and the number of micromobility trips more than doubled within one year?³
- **auto players made only 5 percent of all investments** in the shared mobility industry?²
- according to McKinsey's 2020 ACES consumer survey, **more than 60 percent of people would share their shared-mobility ride with a stranger** if doing so would add less than 15 percent to their travel time while reducing their cost?

Shared mobility has deep roots. Stretching back to 1940s Switzerland, the idea has expanded over time to include shared micromobility offerings, such as bicycles in the 1960s. The modern manifestation began about a decade ago when the first major ride-hailing player appeared, and the field has grown significantly.

In recent years, new modes and services have emerged, such as pooled ridesharing with strangers, peer-to-peer car sharing (driving a stranger's private car), and shared electric scooters, pointing to a sizable potential market in the mobility space. The next big things include autonomous taxis (so-called robo-taxis) and airborne varieties, which have seen a huge investment acceleration and traction in recent months. (For more on the segmentation of shared mobility, see sidebar, "Shared mobility's many modern faces.")

This article describes the various segments of the shared-mobility market and offers an assessment of today's market and a perspective on its current state, with a particular focus on market size, investments, and consumer sentiment. We also preview our outlook for the future of the market.



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¹ This figure is drawn from McKinsey analysis of data, as of 2019.

² Capital IQ, accessed July 2021, spglobal.com; McKinsey Center for Future Mobility, McKinsey.com; McKinsey Growth Analytics – Horizon Scan, McKinsey.com; PitchBook, accessed July 2021, pitchbook.com.

³ This figure is drawn from annual reports and McKinsey analysis.

Shared mobility's many modern faces

We segment the shared-mobility market along seven mobility verticals, depending on vehicle-ownership structure (private versus fleet vehicles), whether the customer is driving or being driven, and whether or not rides are shared with strangers (pooled or nonpooled). Additional layers of granularity can always be added, depending on the context (exhibit).

E-hailing. In e-hailing, also called ride-hailing, riders order a car to pick them up via a virtual device. The driver, who in some regions does not need a business license, picks up the passenger and drives to the designated location.

Dynamic shuttle services and pooled e-hailing. Riders order car service via their mobile device and share rides with other passengers. The driver picks up passengers at itinerary-based locations and drives passengers to their drop-off points in an order that is optimized based on the itinerary.

Car sharing. Customers use cars provided by a company for shorter periods of time than rental, generally remaining in a geographically limited area. Sharing models can be free-floating (with cars picked up and dropped off anywhere) or station based, with cars returned to a dedicated location.

Peer-to-peer (P2P) car sharing and ridesharing. In P2P car sharing, car owners allow other drivers to use their vehicles for a charge. In P2P ridesharing, private-car owners drive paying passengers to their destination, mainly long distance.

Shared micromobility. Very light vehicles (for example, kick scooters, bicycles, or electric scooters) offered for shared use to the public for a fee, either free-floating or station based.

Aerial mobility. Flying taxis (powered by electricity or new energy) move people by air between dedicated stations, either piloted or semiautonomous.

Robo-taxis and shuttles. Robo-taxis and shuttles serve the same function as today's e-hailing and taxi services but substitute autonomous-driving technology for the human driver. Many companies, including start-ups, are investing in the research and development of this technology—not only in the automotive industry but also in the mobility industry, high-technology industry, software industry, and others. Because driver salaries make up about 40 to 50 percent of trip fares today, robo-taxi services are expected to become price competitive to driver-based services—and perhaps even to the total cost of owning a car.¹

Note: Public transportation, rental cars, and traditional taxi services would also fall under our definition of shared mobility because the vehicles are in a fleet, customers are driven, or they are pooled with strangers. However, because these mobility modes are already well established, we focus on new and emerging ones in this article.

Exhibit

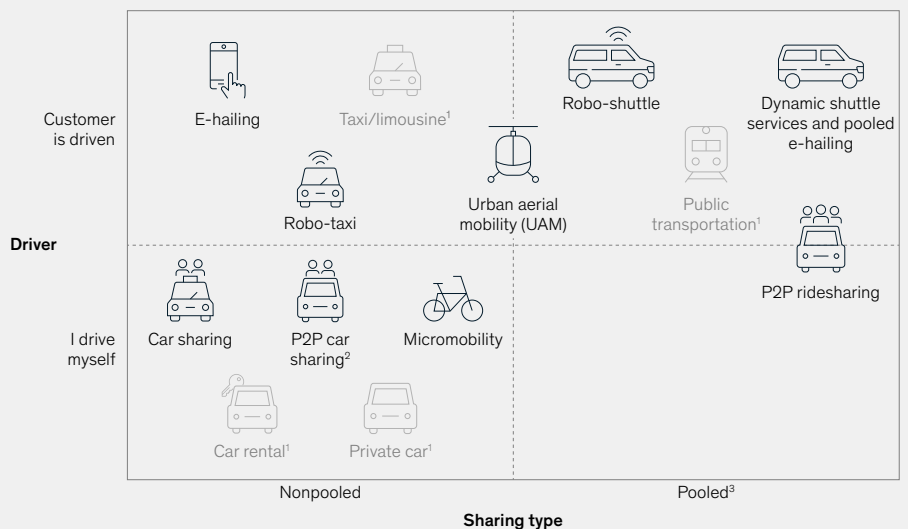
The shared-mobility market can be segmented in a variety of ways.

¹Not included in shared mobility in this publication.

²Peer-to-peer.

³Sharing rides with strangers.

Source: McKinsey Center for Future Mobility



¹ For more on our perspective on robo-taxis, see Kersten Heineke, Philipp Kampshoff, Martin Kellner, and Benedikt Kloss, "Change vehicles: How robo-taxis and shuttles will reinvent mobility," June 11, 2019, McKinsey.com.

Understanding the shared-mobility market today: Market size

The shared-mobility market (as defined in the sidebar) accounted for approximately \$130 billion to \$140 billion in global consumer spending in 2019 (Exhibit 1). Out of this, e-hailing accounted for the largest share, \$120 billion to \$130 billion, which is more than 90 percent of the total market. Taken together, car sharing and peer-to-peer car sharing account for less than 10 percent of this market, which reflects e-hailing’s higher convenience (that is, the customer is driven, can spend the time in the vehicle on other activities, and does not have to find a parking space).

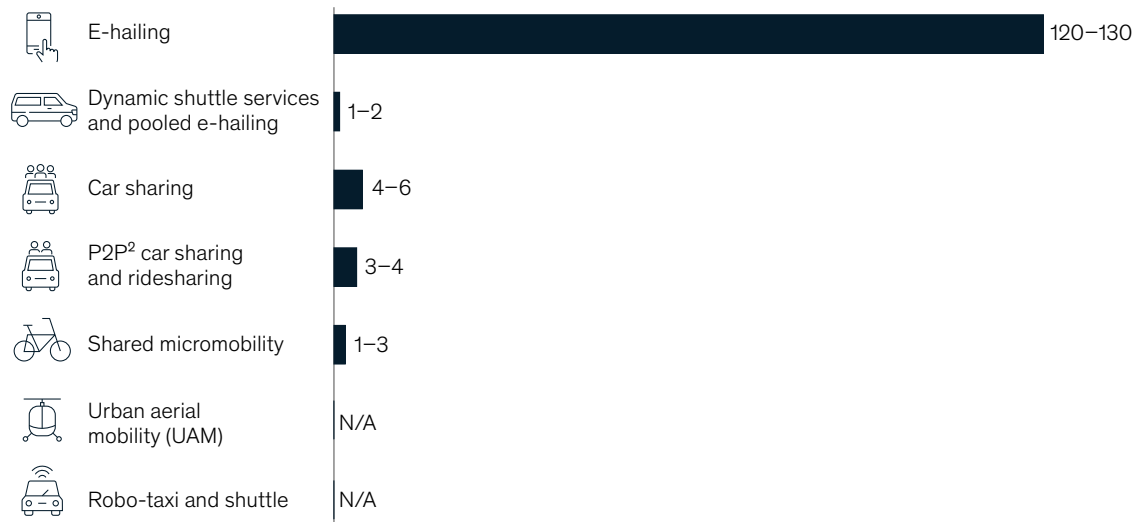
Looking at the evolution of trip development over time, Exhibit 2 shows that e-hailing retained a

clearly dominant role in the shared-mobility market from 2016 to 2019, showing massive growth over those four years (amount of trips tripled). Shared micromobility shows an even stronger evolution—while electric-scooter sharing did not play a major role before 2017, it accelerated in 2018 and 2019 (from fewer than 1 million trips until 2017 to greater than 160 million trips in 2019, when looking at the largest players). Our model shows micromobility could reach a consumer-spending potential of \$300 billion to \$500 billion globally by 2030 (combining shared and private micromobility), thus becoming three to four times larger than today’s global e-hailing market. This amount could grow even higher as the pandemic winds down and normal activities resume.⁴

Exhibit 1

E-hailing drove the prepandemic market for shared mobility.

Estimated global market size in 2019 (prepandemic), \$ billion¹



¹Defined as end-consumer spending for trips.

²Peer to peer.

Source: McKinsey Center for Future Mobility

⁴Kersten Heineke, Benedikt Kloss, Darius Scurtu, and Florian Weig, “Micromobility’s 15,000-mile checkup,” January 29, 2019, McKinsey.com; Kersten Heineke, Benedikt Kloss, and Darius Scurtu, “Micromobility: Industry progress, and a closer look at the case of Munich,” November 25, 2019, McKinsey.com; Kersten Heineke, Benedikt Kloss, and Darius Scurtu, “The future of micromobility: Ridership and revenue after a crisis,” July 16, 2020, McKinsey.com.

Exhibit 2

E-hailing tripled from 2016 to 2019, while use of shared electric kick scooters rose exponentially.

Not exhaustive

Number of trips (global leading players), million



Note: Overview shows estimated number of trips per mode by top two global market players.
¹Only free-floating car sharing displayed.
 Source: Annual reports; McKinsey analysis

Understanding the shared-mobility market today: Investments

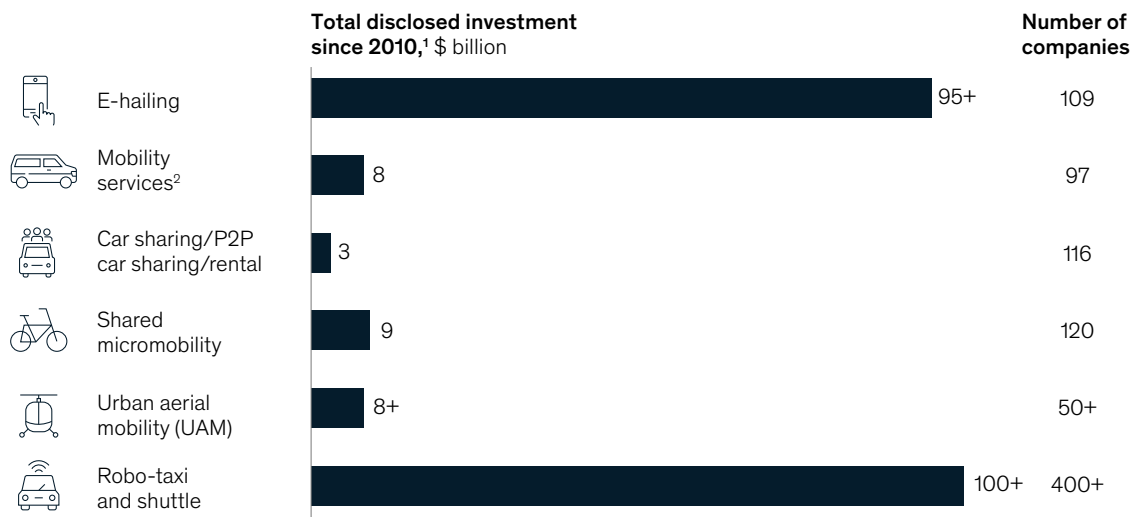
Since 2010, more than \$100 billion has been invested in shared-mobility companies (Exhibit 3).⁵ Looking deeper into types of investors, it's not the automotive players that are investing in shared-mobility companies. Instead, around 72 percent of the total amount of disclosed investment since 2010 has come from venture capital and private-equity

players, suggesting a bet on the future rather than on established and already sustainable business models. Tech players are second at approximately 21 percent, while automotive-company investments amount to approximately 4 percent. One reason for the traditional automotive industry's lackluster showing could involve shared mobility's potential for disrupting an automotive player's core business. Some automotive OEMs have attempted to face the

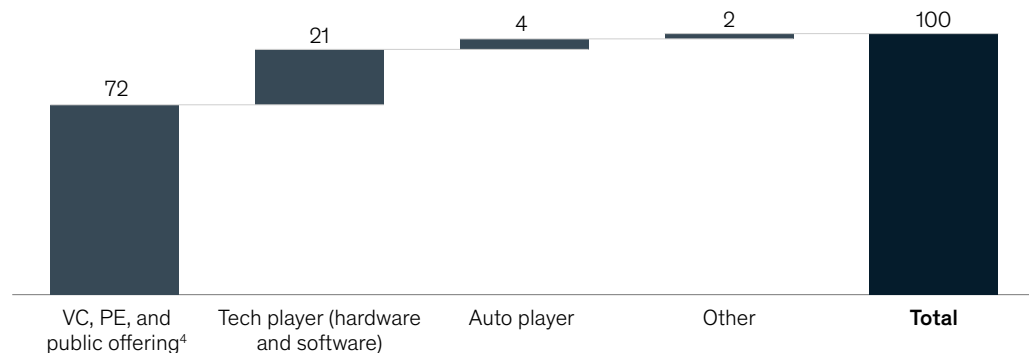
Exhibit 3

More than \$100 billion has been invested in nonautonomous shared-mobility companies, mainly by venture capital and private-equity players.

Investments in shared-mobility companies since 2010¹



Total disclosed investment amount since 2010 by investor type, percent of total³



¹As of June 2021.

²Includes ride-pooling, mobility-as-a-service players, etc.

³Figures may not sum to 100%, because of rounding.

⁴Venture capital; private equity.

Source: Capital IQ; McKinsey Center for Future Mobility; McKinsey Growth Analytics – Horizon Scan; PitchBook

⁵Daniel Holland-Letz, Matthias Kässer, Benedikt Kloss, and Thibaut Müller, "Mobility's future: An investment reality check," April 14, 2021, McKinsey.com.

challenge through in-house initiatives rather than investments in external, new start-ups. This displays a mindset shift from selling vehicles to providing shared-mobility services, while the latter may even cannibalize OEMs' core business of selling cars to private individuals.

The e-hailing market accounts for more than \$95 billion in investments; roughly half of all e-hailing investments have focused on the three largest global players. The core e-hailing business model seeks to gain (asset-free) access to drivers and customers rather than building fleets and operating vehicles, which seems to be attractive for investors. However, for investors it's a bet on the future. Robo-taxis and shuttles could become a game changer in the e-hailing market (due to expected lower operating cost compared to driver-based services); investors are waiting for industry players to commercialize autonomous-driving technology and become profitable at a large scale.

The shared-micromobility market keeps growing and shows a high degree of investment acceleration. While shared electric scooters have entered markets at large scale as recently as 2017, shared-micromobility players have already attracted funding investments of more than \$9 billion, putting that segment second behind e-hailing players. This reflects the accelerated uptake in shared-micromobility trips as outlined in the section on market size.

The investments in the car-sharing market, at approximately \$3 billion, are small compared with investments in e-hailing. On the one hand, some automotive OEMs develop car-sharing services in-house and leverage the opportunity to bring their own vehicles into the fleet at lower price points, which gives advantages in operating costs to start-ups. On the other hand, the lower investments reflect the market developments as outlined in the previous section. While the number of car-sharing

trips remained relatively small, e-hailing rides nearly tripled. Likewise, the number of electric-scooter rides increased exponentially, indicating that the scale-up of asset-light businesses, such as those that serve micromobility and e-hailing, require much lower investments compared with asset-heavy businesses, such as car sharing. It also points to some consumer pain points and challenges in the car-sharing service that e-hailing can solve. These include driving a personal vehicle in congested traffic, locating and walking to the vehicle, and finding a parking spot at the destination.

We have seen the most rapid acceleration of investment in advanced air mobility, especially flying taxis, displaying an exponential rise over the past two to three years—with more than \$8 billion total invested (as of June 2021). In addition, this capital is now more concentrated among a few players, which may give those players the financial ability to make advanced air mobility a reality in the next decade.

Some major shared-mobility players have even overtaken traditional automotive companies in terms of their valuations. The global leaders in the e-hailing market have the highest valuations by far, keeping up with the largest automotive OEMs and even exceeding the market capitalizations of long-established automotive OEMs in Germany. Valuations of shared-micromobility players are significantly lower today but showed strong acceleration, with some even gaining unicorn status in only a few years.

Understanding the shared-mobility market today: Consumers

Private vehicles remain the most popular mode of transport in almost every country (Exhibit 4). Globally, 67 percent of survey respondents said they use their private vehicles frequently (that is, at least once a week), whereas 38 percent said they used public transportation frequently. Car sharing is the least

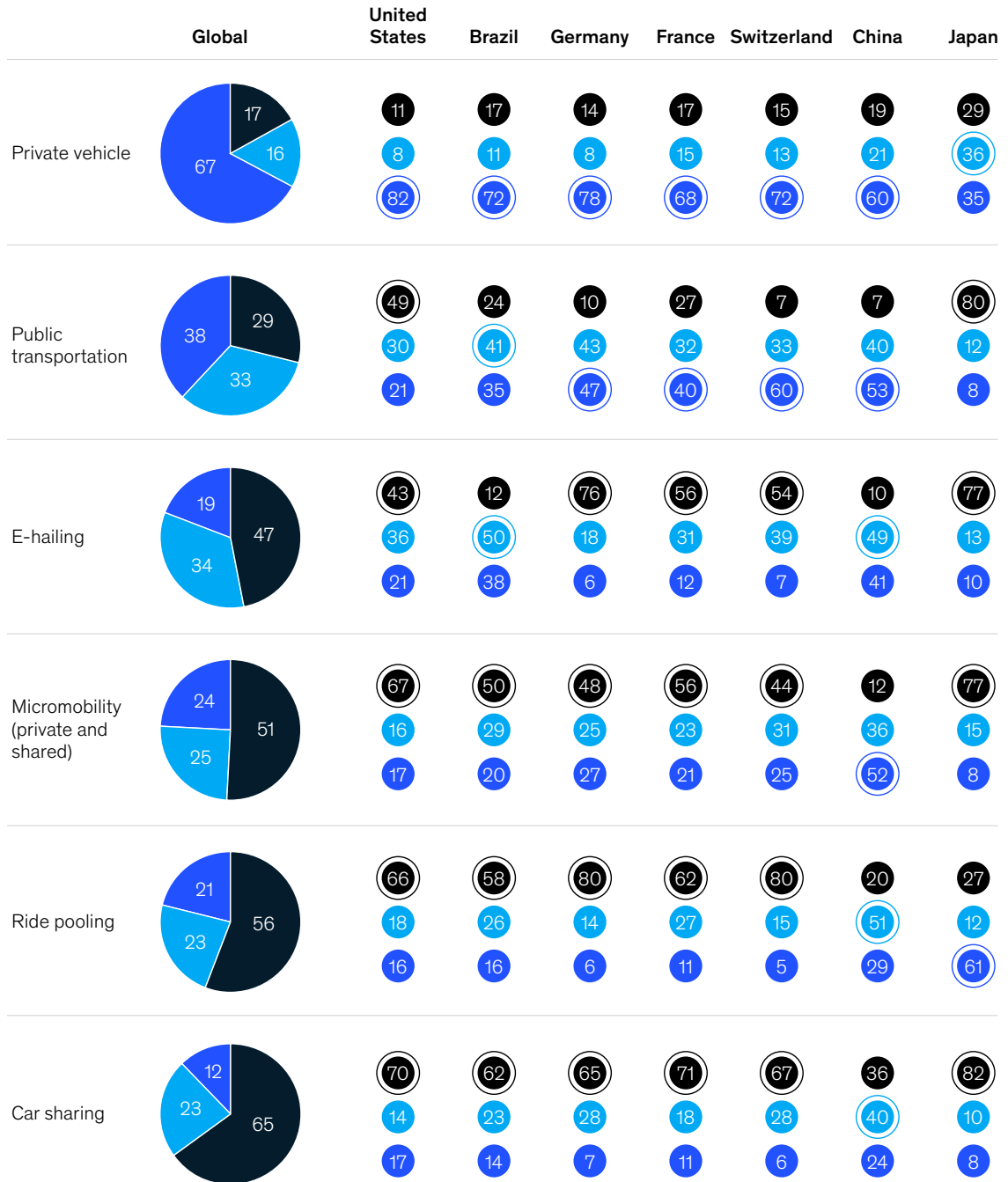
Since 2010, more than \$100 billion has been invested in shared-mobility companies.

Exhibit 4

Private vehicles are still the mode of transportation used most in every country surveyed except Japan.

Frequency of transportation used,
share of respondents, %¹

● Never ● Less frequently² ● Frequently³ ● Largest share



¹Figures may not sum to 100%, because of rounding.

²Less than once a week.

³At least once a week.

Source: McKinsey 2020 ACES Consumer Survey, n = 7,000

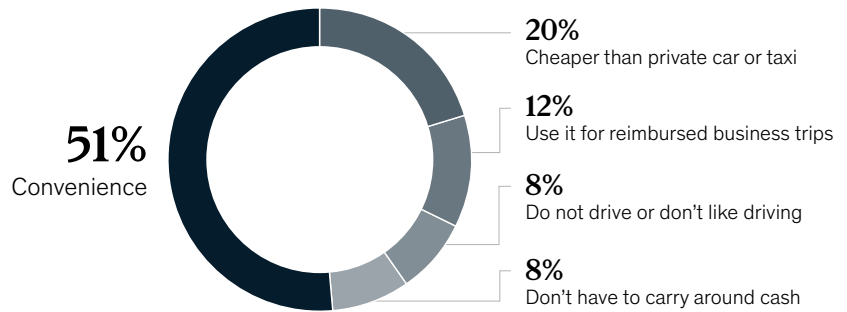
used mode on average by consumers today, which reflects the lower trip numbers. E-hailing is the most popular for consumers in Brazil, China, and the United States—in China, 90 percent of consumers stated that they use e-hailing services at least once per week.

Survey respondents said that their main reason for using shared mobility is convenience (Exhibit 5). This reflects today’s dominance of e-hailing over other shared-mobility modes. The most important features of shared-mobility services for consumers are safety (which may reflect the impact of the COVID-19

Exhibit 5

Convenience is the primary reason for using ride hailing, while safety, price, and reliability are its most important features.

Primary reason for ride sharing,
share of respondents, %



Top 10 most important features,
share of respondents, %

● Most important feature per country

	Global	United States	Brazil	Germany	France	Switzerland	China	Japan
Safety	20	22	22	11	18	14	23	21
Competitive price	14	11	17	17	14	27	6	11
Availability or reliability	13	13	13	18	15	17	9	11
Easy booking via app	10	10	8	14	13	14	10	8
Comfort	8	10	10	9	8	4	7	5
Payment via app	6	7	7	4	5	7	4	7
Customer service of mobility platform provider (eg, Uber)	5	6	7	3	4	2	6	7
Driver behavior	4	5	5	4	6	2	4	7
Green mobility (eg, battery electric vehicle)	4	2	1	6	2	3	6	7
Cleanliness	3	5	2	4	4	2	4	5

Note: Figures may not sum to 100%, because of rounding.
Source: McKinsey 2020 ACES Consumer Survey, n = 7,000

crisis on our consumer survey at the end of 2020), a competitive price, and availability. The latter, especially, might be an important factor in shared mobility's ability to replace private-car ownership in the long term. Notably, availability is the most important feature for German consumers.

When it comes to commuting, which is the most important mobility use case, private vehicles represent the overall preferred mode, especially in the United States. This preference is comparably low in China—most likely due to the uneven distribution of cars. But if all transportation modes were available, around 33 percent of Chinese respondents would see shared mobility as the preferred transportation mode for commuting, with the use of private vehicles in second place.

When considering future mobility modes, respondents are open to robo-taxis, with more than half of them interested in trading in their car in the future, while 7 percent of consumers express they would even pay a premium compared with owning a car. Brazilian and Chinese respondents expressed the greatest likelihood of switching to robo-taxis and

shuttles in the future. Exhibit 6 shows an illustrative outcome of our proprietary mobility market models for a scenario in which autonomous technology becomes available and affordable by the middle of this decade and in which cities are incentivizing new modes of mobility.

Mainly motivated by arriving at their destination more quickly, consumers are also interested in using flying taxis. A detailed overview of our advanced air mobility consumer survey can be found in a separate article.

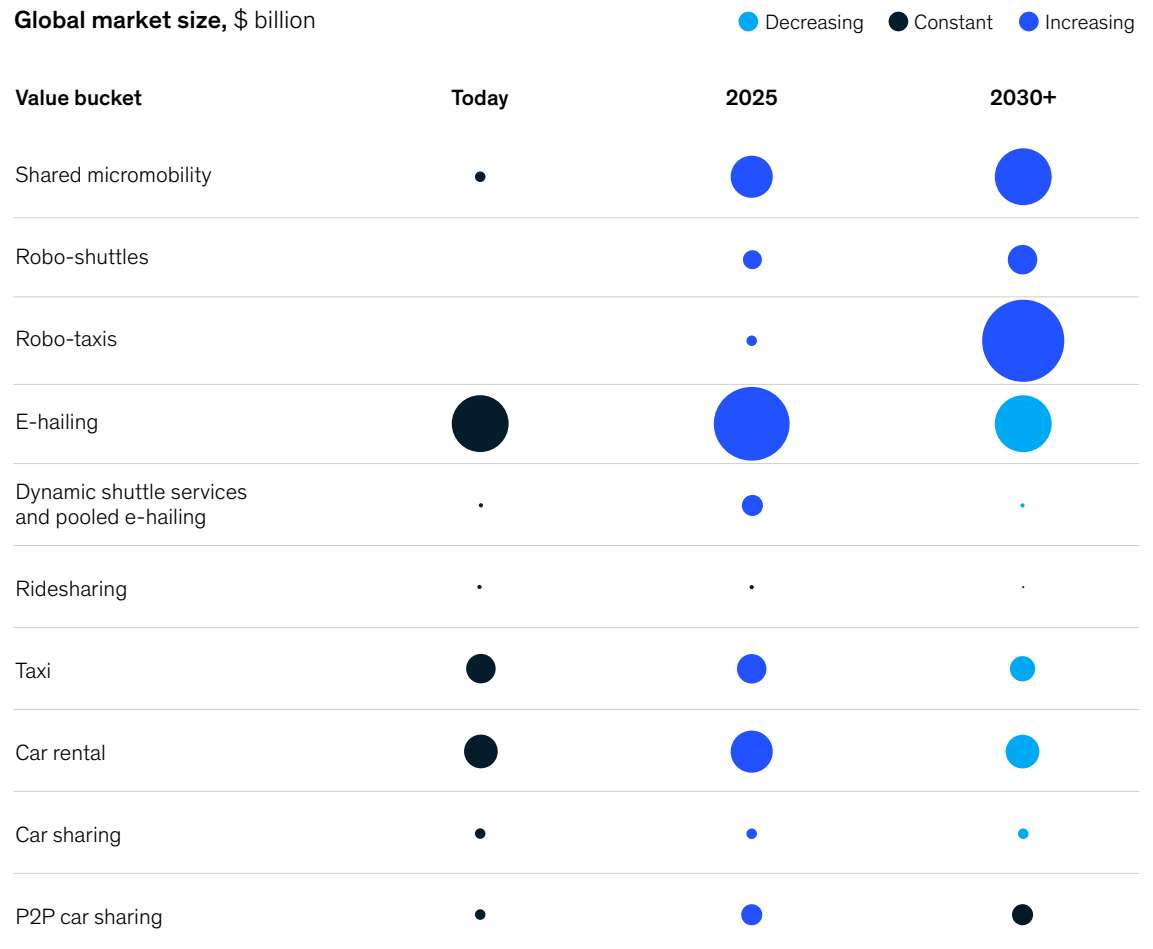
When new mobility modes do arise (for example, robo-taxis or flying taxis), we expect the market potential of other modes to decrease and shift or at least remain stable through 2030. This will depend on regulatory developments (for example, cities de-incentivizing or restricting private-car ownership), technology developments (for example, autonomous-driving readiness), and consumer adoption.

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Exhibit 6

Globally, robo-taxis are almost nonexistent today but will see a large increase in popularity by 2030.

Illustrative



¹Includes sales from private vehicles, robo-taxis, and robo-shuttles.
Source: McKinsey Center for Future Mobility—Mobility Insights September 2020 (preliminary pre-COVID-19 estimation)

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