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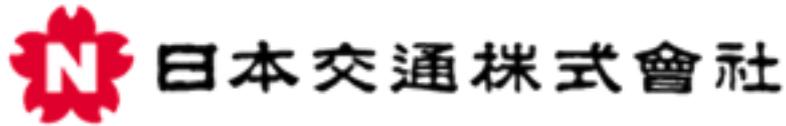
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# The Challenge of Nihon Kotsu – Transforming the Taxi Industry in Japan



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**Abstract:**

The paper discusses the challenges that faced Japan Taxi industry, and its leading company Nihon Kotsu, due to the ride-sharing services that entered the market. The industry is heavily regulated, hence when foreign services, such as Didi and Uber, entering the market caused a serious threat to the traditional taxi services that Nihon Kotsu offers. This paper analyzes the company from different strategic aspects, ranging from the non-market influence to comparing the industry with other industries in Japan with recent data (1998-2017).



**Acknowledgement:**

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## Introduction

### The history of the taxi industry in Japan

Introduced in 1912, the taxi industry has developed along with the growth of the Japanese population. During WW2, all taxi companies in Tokyo were integrated into four main agencies and allocated mainly to military, government and war industries by Tokyo municipal. While such a mode continued in postwar Tokyo, the number of retained taxis surged along with the economic rebound. The government soon intervened the industry by setting the maximum number of ownership to prevent excessive competition. Although the regulation was relaxed during the liberalism regime in 2002, drivers suffered from lower wages caused by harsh competition. Further, also, consumers began to complain about the degraded service quality. Thus the industry was regulated again in 2013.

### The structure of the Japanese taxi industry

The industry is characterized by a strict regulation, scale-down, and poor labor conditions. Firstly, under the current legislation, onerous transportation with private automobiles is explicitly prohibited, as well as taxi companies must register commercial vehicles to municipals and get licensed at their own expense. Tariffs are opposed by the region and calculated by a taximeter. Taxi drivers must have a specific license, different from ordinary ones, costing around \$2,000<sup>1</sup> (See **Exhibit 1**). Hence, sharing economy service, which enables amateur drivers to work as temporary cab drivers, to earn extra money, is regarded as illegal, and thus currently Uber Japan and other potential competitors only offer exclusive hire service with professional drivers collaborating with one domestic taxi enterprises.

Secondly, the industry is declining due to the development of other public transportation methods. For instance, the number of total customers decreased by 30% from 2.24 million in 2004 to 1.56 million in 2017, while the drivers declined by only 13% (See **Exhibit 2**).

Thirdly, it is evident that drivers are not treated well. In general, they work under a commission system and receive 50 to 60% of the taxi fares. Their average wage in the Tokyo region was \$44 thousand in 2016, which was even lower than that of all industries in Tokyo (\$53 thousand, See **Exhibit 3**). Additionally, according to the survey of Ministry of Land, Infrastructure, Transport, and Tourism (MLIT), taxi workers in Japan engage in business for 2,400 hours annually, which exceeds the industry average by 300 hours (See **Exhibit 4**). These working conditions are quenching the young generation to work as drivers. Consequently, their average age is 59 years (See **Exhibit 5**). Nevertheless, drivers are well-trained by their employers; there are only a few crimes, minor offenses, or cheatings of fares. From a customer's point of view, a taxi can be used in three ways: a.) by catching one (limited in the metropolis); b.) by entering one at a taxi stop; c.) by calling one by phone or mobile applications. Tokyo is the biggest market for the taxi industry in Japan, with around 300 taxi companies, compared to Singapore, which has a similar population as Tokyo and only seven taxi companies. Therefore there is a minimum of diversification in the market.

### Nihon Kotsu (Japan Transportation)

Nihon Kotsu (hereinafter "NK"), meaning "Japan Transportation", was founded in 1929, and was one of the wartime quartet mentioned above. Historically NK established a solid operating base in the Tokyo region and expanded its business area, by monopolizing several quite profitable taxi spots in Tokyo and franchising small-middle class companies around the area. Now NK is the industry's leader with the biggest market share in Tokyo (13%).

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<sup>1</sup> In this report, all currency is expressed in USD converting 100 JPY to 1USD.

Mr Ichiro Kawanabe, the grandchild of the company's founder and husband of the former prime minister's daughter, started his career at NK in 2000 after quitting McKinsey Japan and took over the position of CEO in 2005 when he was 34 years old. After devoting his first five years as CEO to the turnover of the company by disposing the bad-debt and withdrawing from some non-core, Ichiro noticed the potential impact that the sharing economy would bring into his industry and employees and began to play a leading role in resisting its entry from 2011. During this process, he was assigned to the president of Tokyo Hire-Taxi Association (THTA) and of Japan Federation of Hire-Taxi Associations (JFHA).

## IA<sup>3</sup> framework

Considering the entities' nonmarket strategy, the previous research by David Bach and David Allen<sup>2</sup> has shown "The (IA)<sup>3</sup> analysis" as an efficient framework, which consists of six factors: issue, actors, interests, arena, information, and assets. In the following, each factor NK is confronted will be described.

### Issues

Firstly, the industry to which NK belongs is heavily regulated, and even minor changes need administrative permission, making the market less innovative, less competitive with only 1% of other entrants. Only a handful of giants have formed strong relationships with regulators directly or through the industry association, leading to high taxi fares, especially in the Tokyo region, where a typical 8-kilometer (5-mile) ride costs about \$24, compared to \$18 for an UberX trip in San Francisco.

Secondly, NK, as an industry leader, has been confronted with the threat of disruptive innovation from overseas. In 2014, this new ride-sharing service had already begun conquering some markets, such as San Francisco and Australia.

Thirdly, with regards to the domestic market, public transportation has been lost in many local regions, because private transportations such as taxi, bus and train have retreated from unprofitable routes along with the decline of the population.

### Actors and their interests

The actors and their interests can be defined as follows (**Exhibit 6**):

Domestic taxi companies like NK want to maintain their profit levels, and thus the industrial associations such as THTA or JFHA are incentivized to be cooperative with current regulators that protect the domestic industry.

Taxi drivers are interested in better working conditions (e.g. labor hour and other benefits), and the exclusive taxi stops their companies own. The commissions to the company are also important because it affects their income directly.

Foreign ride-share servicers like UBER, Didi, or Lyft are eager to expand their service territory all over the world.

Ministry of Land, Infrastructure, Transport and Tourism, the regulator have a mission to ensure the security and availability of public transportation. On the other hand, bureaucrats are reluctant to attack the domestic industry as it might be the place of their re-employment.

Urban customers need a taxi service at a reasonable price, coming on a regular base, while provincial consumers, especially elderly people, who can no longer drive cars, require convenient and timely transportation.

Foreign tourists demand a secure and familiar service or at least one where they can communicate in a common language like English or Chinese.

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<sup>2</sup> David Bach and David Allen, "What Every CEO Needs to Know About Nonmarket Strategy", Spring 2010, MIT Sloan Management Review (<https://sloanreview.mit.edu/article/what-every-ceo-needs-to-know-about-nonmarket-strategy/>)

## The arena where actors meet and the information moving the issues

Firstly, taxi companies exchange their opinions through regular meetings held by the industrial associations and lobby against the regulator through these associations. There have been only a few conflicts within the ride-sharing market, as usually, they have kept away from the market by maintaining the current regulation on the ground of security.

Regulators, however, have rights of legal inspections within the taxi companies whenever they want, instead of having regular meetings with them.

Foreign servicers must not only be approved legally by the regulator but also recruit drivers with an appropriate license, prepare operations and market themselves to Japanese customers. Since the current services are insufficient, most consumers believe, it seems very appealing to increase the options, by adding foreign car-sharing services, especially in the rural areas.

Due to the restricted market, taxi drivers have a difficulty in changing their employers as they like. Also, their union's lobbying power is not strong, as process and rules are set by the regulator and the bosses of the agencies. Additionally, the fact that there is no evaluation system for drivers failed to motivate drivers to enhance their hospitality or language skill.

While consumers can hardly try ride-sharing service in Japan, the information on these is limited to reviews of those who experienced it abroad. Therefore, the public's opinion is not strong enough to move the regulators to a less regulated taxi industry.

## Assets that actors need to prevail in the market

In a nutshell, regulatory easing for the ride-sharing would be a great opportunity for new entrants and a significant threat for existing taxi agencies. Alternatively, strong relationships and strategy lobbying are still essential to influence the Japanese government.

## Analysis of NK's strategy

### The non-market strategy towards regulators

As the industry is heavily regulated by the local municipality and MLIT, these reforms must follow a series of prudent politics between the industry and the regulator, which tend to charge companies with considerable transaction costs. For this reason, it is common in Japan that companies or industry associations hire retired civil servants as negotiators, who still hold influences on the current government members as well as the pragmatic knowledge and experiences in the sector. This Japanese revolving-door behavior is called "Amakudari" which literally means "descent from heaven". Currently three ex-bureaucrats - two from MLIT and one from national police - are listed as executive board members of JFHA, who are expected to lobby, to protect industry's vested interest. In general, "Amakudari" is even regarded to be embedded in the normal career paths of bureaucrats and technocrats, as their positions are no longer remaining at the same level of seniority when they turn 50 to 55 years. Consequently, highly-ranked government officials naturally tend to avoid fierce feuds with the related-industry association as they could be their new employer in the near future. In fact, just one month after Uber Japan started a demonstration experiment in 2015 in Fukuoka, one of the metropolitan areas in Japan, it was suspended by MLIT and petitioned harshly by JFHA. Likewise, although the practical test of ride-share was scheduled in Toyama, a provincial city with limited transportation, the budget was canceled within two weeks due to the pressure from local taxi companies and JFHA.

### The market strategy towards consumers

Despite that NK had already developed an Uber-like application with Microsoft in 2011, which enables customers to book and call taxis via their smartphones and got positive

reactions, Ichiro judged it inadequately to keep away the innovative foreign services (**Exhibit 7**). Therefore, he decided to allow his domestic competitors to join NK's mobile application, resulting in the expansion of its nation-wide coverage to 27% in 2017. In addition, NK succeeded to enhance the user-friendliness by linking its app with Google Maps so that users can call NK and its partner taxis just after checking the destination on Google Maps.

Moreover, Ichiro believes that one of the biggest advantages of shared-ride services is its flexible fare-rate under which short-range users could feel free to use taxis. Since it was obvious that users hesitated due to the high base fees, which in 2016 were around \$7 for the first two kilometers. Therefore, since the approval by the municipality of transportation is required for changes of taxi fares, NK collaborated with THTA and other taxi enterprises in Tokyo, together they presented a petition and achieved a reduction of the base fees to 4\$ for the first kilometer.

## B-plan

NK so far has succeeded to resist foreign ride-share services by making full use of its non-market strategy. The Japanese taxi industry, however, is entering a new phase.

Softbank became the main shareholder of Didi this January by spending more than \$8 billion<sup>3</sup>, announcing its alliance with Didi, a major Chinese ride-sharing. Softbank also adopted Daiichi Kotsu, the biggest taxi company in western Japan, to consociate with Didi, resulting in the collapse of the cooperative system among domestic taxi agencies<sup>4</sup>.

Due to the global expansion in tourism, the estimated number of international travelers to Japan in 2017 increased to 19.3%, reaching 28.7 million (**Exhibit 8**). Currently, the government plans to increase the number to 40 million inbound tourists annually by 2020<sup>5</sup>, with the start of the Summer Olympics. Nevertheless, considering that only a few Japanese drivers understand English and that NK's application was never recognized outside Japan, most foreign tourists are meant to use familiar applications such as UBER, Didi or Lyft.

## Growing demand for ride-sharing in unpopulated areas

As the urbanization into Tokyo and other big cities continuous, 57.3% of the land is suffering from depopulation, where many unprofitable public transportation systems have been abandoned, and 32.8% of the habitats were 65 years or older in 2015, and can't drive by themselves (see **Exhibit 9**).

## Growing public recognition for UBER, drivers' age and low salaries

UBER is gradually recognized by the public through experiences abroad. Therefore, once consumers see the benefit of the free pick-up of UBER compared to the \$4 of NK and other companies, customers will increase imposing the pressure on politicians to make changes. Japanese cab drivers are not well-compensated, mainly due to the relatively low commission (50-60%). If the regulator would authorize other ride-sharing services, with commissions up to 70-100% in other markets, the number of drivers changing to new companies increases. Moreover, the industry is confronted with aging drivers, the average age had risen gradually from 55 years in 2005 to 59 in 2015, and more than a quarter of these are now above 65

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<sup>3</sup> Source: Japan Times "SoftBank-led group completes acquisition of Uber stock worth \$9.3 billion", Jan 19<sup>th</sup> 2018 (<https://www.japantimes.co.jp/news/2018/01/19/business/softbank-led-group-completes-acquisition-uber-stock-worth-9-3-billion/>)

<sup>4</sup> Source: Nikkei Asian Review "China ride-hailing giant Didi sets sights on Japan", Oct 30<sup>th</sup> 2017 (<https://asia.nikkei.com/Business/Companies/China-ride-hailing-giant-Didi-sets-sights-on-Japan>)

<sup>5</sup> Source: Japan Times "Japan doubles overseas tourist target for 2020", Mar 30<sup>th</sup> 2016 (<https://www.japantimes.co.jp/news/2016/03/30/national/japan-doubles-overseas-tourist-target-2020/#.Wnxt8pM-fOQ>)

years, which is typically the retirement age. Considering, Japan's low unemployment rate of 2.8% in 2017, companies might be forced to rely on the available labor of ride-sharing<sup>6</sup>. Auto-driving cars are imposing a high risk on the current business models of the taxi industry. According to the paper of Oxford professors, Taxi drivers are ranked amongst the jobs with the least chances of survival ranked 571 out of 702 occupations (**Exhibit 10**).

## Uber entry in the Middle East region

### Ride-hailing services in the Middle East region

The ride-hailing business in the Middle East and Africa is estimated to be \$7.3 billion by 2023 due to factors such as growing urbanization, rise in the young population, growing number of internet and smartphone users as well as growing investments by various ride-hailing services like Careem, Uber, Lyft Inc., BMW AG, Robert Bosch GmbH, Didi Chuxing, Aptiv Plc., IBM Corporation, TomTom International, ANI Technologies Private Limited and Get Inc. The ride-hailing services have been developed, thus making it easy to book and improve passenger's comfort provided by the service providers in the Middle East. The market has grown significantly due to its focus on technology, such as the development of new smartphone apps that enables drivers and riders to pair up easily and conveniently. Such developments have increased the number of chauffeur seeking to make a side income. More so the companies have invested in technology that builds algorithms that are able to speculate in real time where the next demand in half hour's interval will come from thus dispatching drivers to those areas. Further, the companies incorporated the local norms and needs in their business model, thus attracting the young passengers into the business. The dimension of trust, culture and empathy has enabled customers to trust the ride-hailing service providers such as Careem. For instance, Uber has closed its business in various countries such as in Russia, China and Southeast Asia due to stiff competition and taking too many battles in so many fronts characterized with too many players.<sup>78</sup> Uber has developed a bad reputation around women, and the passengers' safety is particularly in question. However, Uber expects to dominate territories such as Africa, India and the Middle East. Some of the regional players that have dominated the region are Careem that capitalized on the primacy of cash and the centrality of women.

### The development of Careem in the Middle East

Careem was launched in 2012 in Dubai as a tech start-up, and today it is the only tech unicorn in the region. The firm grew at a faster rate because in the Middle East region, many adults are unable to drive themselves. For instance, in Saudi Arabia, nearly half of the adult population majority of them are under 30 years and resides in the urban hubs are not qualified to drive themselves thus Careem identified this opportunity and began providing chauffeur-driven car services with the user-friendly booking process and digital application. In the region, the Careem drivers are referred to as captains as a show of respect and a reflection of the quality of drivers the firm recruits. From its launch in the Middle East, the company has been growing at a rate of 30 percent per month while Careem has invested heavily on ICT structure to support the growing number of the captains per month. For example, in 13 countries, the firm has 400 agents that handle more than 10,000 calls every

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<sup>6</sup> Source: Statistics Bureau Japan (<http://www.stat.go.jp/english/data/roudou/results/month/index.htm>)

<sup>7</sup> Oxford Business Group. The Report: Dubai 2018. 2018

<sup>8</sup> Kantola, J. I. Nazir, S. Barath, T. Advances in Human Factors, Business Management and Society. Cham: Springer International Publishing AG. Pp. 282

day, and the company had over 150,000 captains in 80 cities. Additionally, Careem had established a strategic partnership with Didi Chuxing, who is a Chinese technology and ride-hailer conglomerate, thus enabling the company to access Didi's artificial intelligence expertise. It has also attracted investment worth \$62 million equivalent to 7.1 percent company stake from Kingdom Holding from Saudi Arabia businessman Prince Alwaleed bin Talal. Other investors in Careem are the Japanese Rakuten, which is an e-commerce leader as well as Saudi Telecom, thus giving the firm a \$1 billion. Due to its excellent performance in the region, the company was identified by Uber, which was one of its struggling competitor in the region.<sup>910</sup>

## Uber Acquires Careem

Uber has acquired Careem in a deal estimated to be \$3.1 billion comprising of convertible notes amounting to 1.7\$ billion and \$ 1.4 billion in cash while the notes are convertible at \$55 per share. Upon the completion of the deal, the Dubai Company will be a wholly owned Uber subsidiary but operating under the Careem brand and same leadership team. The deal will place Uber in a strategic position since Careem is a Dubai based ride-hailing service in 15 countries and over 90 cities. Additionally, the company offers digital payment platform dubbed Careem Pay and delivery service labelled as Careem NOW. Therefore, Uber will acquire all the businesses that were owned by Careem that span across the United Arab Emirates, Pakistan, Jordan, Egypt and Saudi Arabia. It is, therefore, an opportunity for both companies to rapidly expand and dominate the territory's underpenetrated mobility as well as to take advantage of the region's growing digital economy. Further, while Uber has a notorious reputation when it comes to women, Careem has a good reputation due to its dealing with women passengers, the Middle East is known for oppressing women in addition to the region being conservative; hence Careem has assessed the limitations and created the opportunity from it.<sup>11</sup>

The acquisition of Careem will enable Uber to negotiate with its regulator since Careem believes in collaboration and diplomacy, unlike Uber, that was known as notorious. Since the Middle East desperately seeks to create jobs in the region, Careem has been working with the officials to create them by exploiting a lot of resources, thus making changes in the region. Being a gig economy, Uber was callous towards its drivers operating on its platform. However, Careem is known for its congeniality and diplomacy; thus, it is expected to improve Uber's way of doing business.

## Region analysis

Five years ago, Uber was launched in Dubai but experienced direct conflict well established ride-hailing services. Dubai has huge opportunities for experimental transportation technologies, for instance, the mobility services for searching for a ride and the electric taxi drones. Therefore the partnering with Careem will enable Uber to tap the already-established client bases and services of more than 600 million-strong population in the Middle East. More so Uber will improve its balance sheet by use of new and already established business instead of depending entirely on booking rates. Careem has worked at

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<sup>9</sup> Stephens, M. Careem: Taking a Local Problem-solving Approach to the Sharing Economy, in (ed.) *Future Governments (Actions and Insights - the Middle East North Africa, Volume 7)* Emerald Publishing Limited, 2019, pp.347 – 365

<sup>10</sup> Tulder, R. Verbeke, A. Piscitello, L. *International Business in the Information and Digital Age*. Bingley BD; Emerald Publishing Limited. 2018 Pp. 204

<sup>11</sup> Browne, R. Uber announces \$3.1 Billion deal to Buy Middle East Rival Careem. *CNBC*. 2019. <https://www.cnn.com/2019/03/26/uber-to-buy-middle-east-ride-sharing-rival-careem-for-3point1-billion.html>

shaping the future of ride-hailing service across the Middle East, although it began in the region as a startup due to its ability to create innovative local solutions. It is expected that the acquisition will enhance the region's technology ecosystem due to its financial stability, thus supporting the budding entrepreneurs with resources from domestic and international investors.<sup>12</sup>

In Egypt, both Uber and Careem were banned due to fierce opposition from the country's taxi drivers who were not able to compete with two firms. However, the ban was lifted in February 2019. Both firms suffered a data breach that affected their riders and drivers in 2018.

Saudi Arabia has one of the largest regions in the market. Until recently, women were not allowed to drive themselves; thus, Careem gave the women in Saudi mobility. Therefore, in Saudi Arabia, the majority of Careem's customers are women who account for 70 percent of its business. To win the market in the region, the ride-hailing service it has to be safe and perceived as safe by the customers. For instance, a woman in the Middle East region will not enter into a stranger's car to avoid reputational risk and irrespective of her safety.<sup>1314</sup>

To enhance women, security Careem developed an option that provided them with call-masking, thus preventing the captains from seeing the customer's phone numbers, thus hindering the drivers from contacting them later. Further, the firm established an emergency hotline handled by call center operators which allow riders to call for assistance in real time. Further, to enhance security, Careem has been conducting extensive background checks to the captains such as dispatching investigators to the driver's neighborhood to obtain background information about them. Upon approval, the captains are not allowed to talk to women as well as the use of side mirrors to avoid staring at women through the rearview mirror since it is considered inappropriate. Careem has initiated female lens to improve the services for women drivers who are the minority but expect to improve the platform to 20,000 by 2020. With it being acquired by Uber, Careem can reconsider the bonus and income guarantee structures which are tied to peak or rush hours as well as having a flexible working schedule for women in some region (Boyd, 2018; Doumato, 2010, 4).<sup>1516</sup>

## Conclusion

The taxi industry in Japan has been growing over the years, although characterized by scale down, strict regulation and poor labor conditions. The present legislation prohibits burdensome transportation and demand that private automobiles should be registered with commercial vehicles. Nihon Kotsu or Japan transportation was the first to be founded. The ride-sharing companies have associations where they can share ideas and are regulated by the current regulations. Foreigner service providers like Uber and Careem must fulfill the regulatory requirements such as hiring drivers with appropriate qualifications and market themselves to Japanese markets.

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<sup>12</sup> Markle, L. Women and Economic Development in the Middle East and North Africa. *Student Papers in Public Policy*. 2013. Vol1, Issue 1.

<sup>13</sup> Alhareth, Y. Alhareth, Y. Dighrir, I. Review of Women and Society in Saudi Arabia. *American Journal of Educational Research*. 2015, Vol.3, No.2, Pp. 121-125

<sup>14</sup> Krane, J. Majid, F. Women Driving in Saudi Arabia: Ban Lifted, what are the Economic and Health Effects. *Rice University's Baker Institute for Public Policy*. 2018. Pp. 1-7

<sup>15</sup> Boyd, E.B. How A Middle East Start-up Took on Uber and Won. *FastCompany*. 2018.

<https://www.fastcompany.com/90248563/how-a-middle-east-startup-took-on-uber-and-won>

<sup>16</sup> Doumato, E., Saudi Arabia, In Sanja Kelly and Julia Breslin, eds., *Women's Rights in the Middle East and North Africa*, New York, NY: Freedom House; Lanham, MD: Rowman & Littlefield, 2010', pp. 2-30.

Transacting in the Middle East has been enhanced by the introduction of seamless payments by the new sharing economy. Apps like TaskRabbit, Airbnb and GrubHub have introduced users' friendly payment method, thus eliminating the tedious tasks of exchanging money. The companies collect pick the customer's credit card numbers and debit the customer, thus making the payment seamless and pleasant to the customers. Therefore, the more hassle-free the system is, the more they use. The Middle East is among the world unbanked regions in the globe; therefore, very few customers have credit cards. Companies offering e-commerce services are paid cash-on-delivery thus to support ride-hailing services the app tracks the amount owed by drivers to Careem. Therefore, the driver has to stop off at a nearby store to deposit funds to their e-payment terminals. Additionally, Careem has established a wallet feature to be used when drivers do not have exact change and for users to top-up their wallets; thus the drivers do not have to pay for rides every time they pick and drop a customer.

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## Appendix

### Exhibit 1

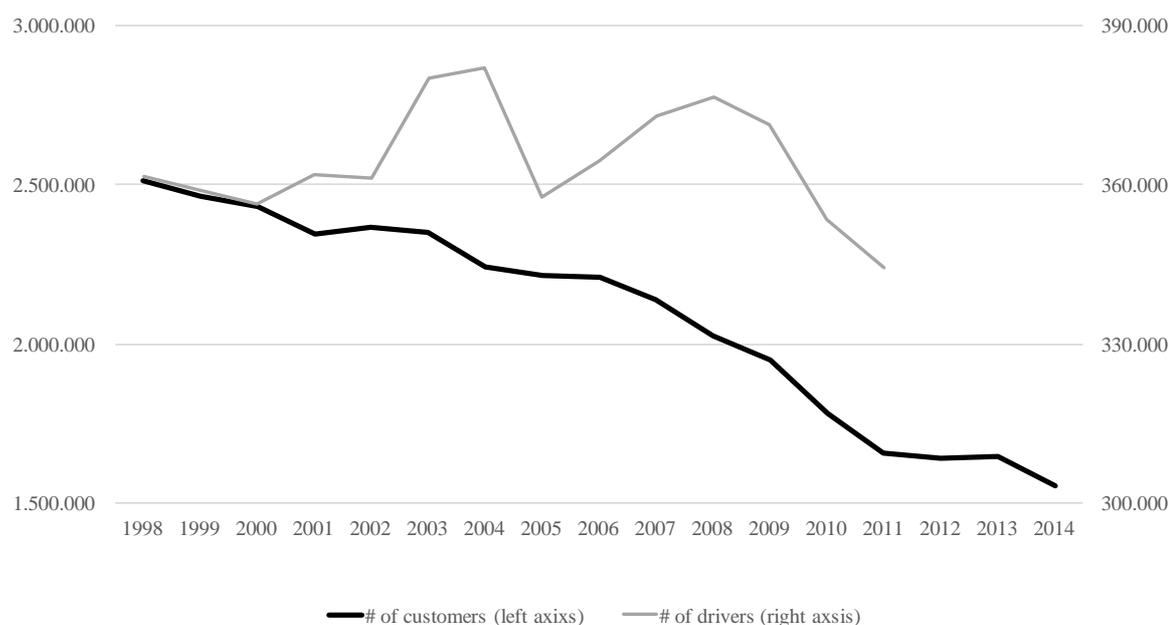
#### The comparison between ordinary and taxi licenses in Japan

(for MT car)	Ordinary license (Class 1 license)	Taxi license (Class 2 license)
Age	18 and over	21 and over
Experience	-	3 years' experience with class 1 license
Drivable vehicle	Private cars Motorcycle less than 50cc	Bus Taxicab
Eyesight	Monocular: over 0.3 Binocular: over 0.7	Monocular: over 0.5 Binocular: over 0.8
Minimum lessons	In a class: 26 hours In a car: 34a hours	In a class: 19 hours In a car: 21 hours
Cost	Around \$2,000	Around \$2,000

Source: Police Headquarters (<http://www.keishicho.metro.tokyo.jp/menkyo/menkyo/annai/nishu/index.html>,  
<http://www.keishicho.metro.tokyo.jp/menkyo/menkyo/annai/futsu/index.html>) \*translated by the author  
Tokyo Driving School (<http://www.tokyodrivingschool.com/car-license.html>)

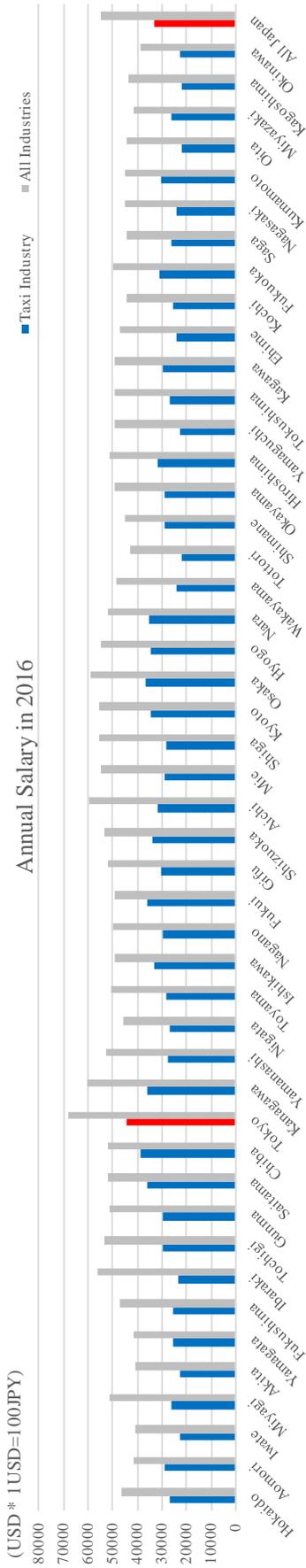
### Exhibit 2

#### Historical Taxi Customers and Labors in Japan

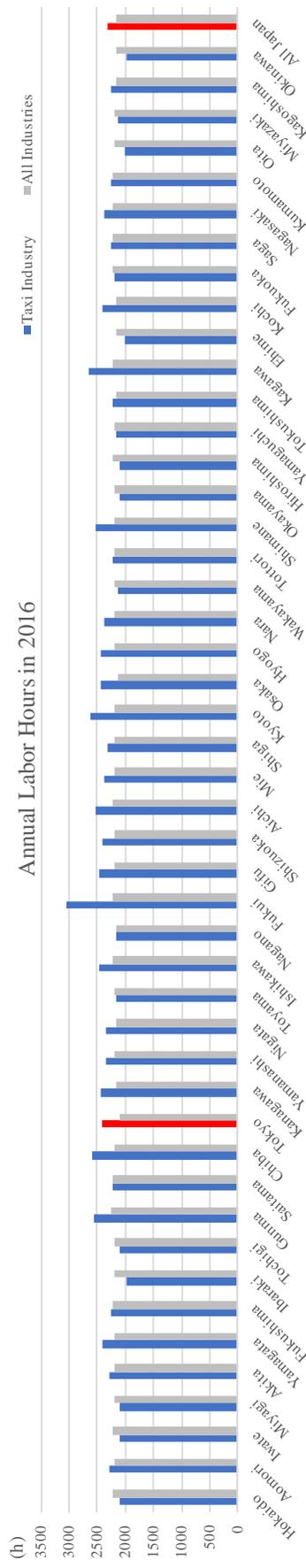


Source: Japan Federation of Hire-Taxi Associations (<http://www.taxi-japan.or.jp/content/?p=article&c=575&a=15>)  
\*Translated by the author

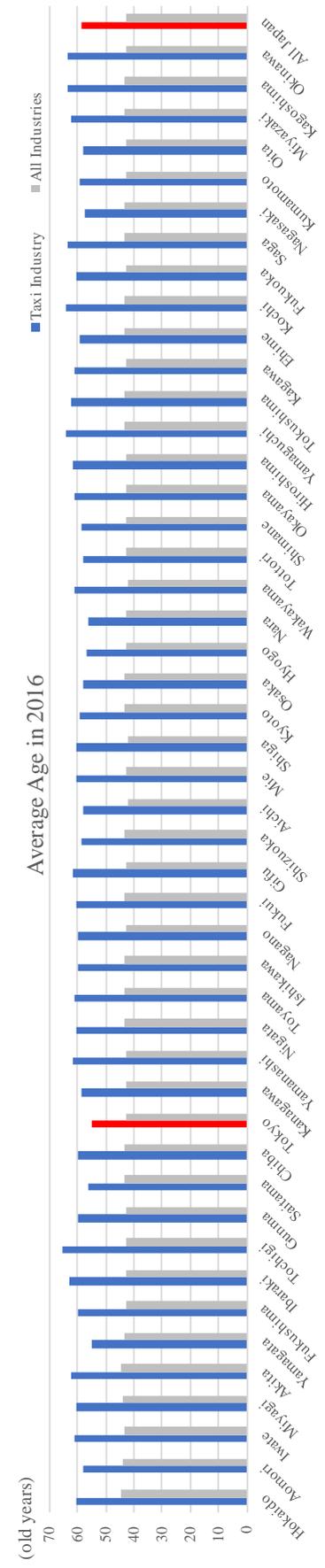
**Exhibit 3**



**Exhibit 4**

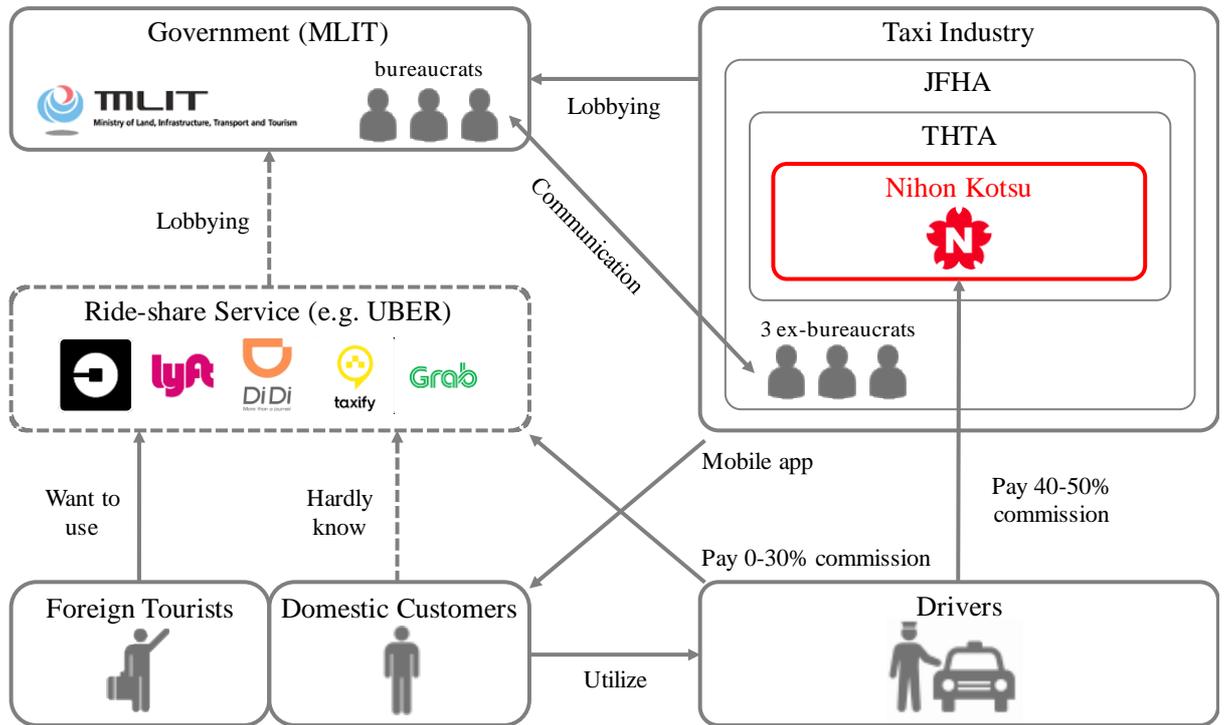


**Exhibit 5**



Source: Japan Federation of Hire-Taxi Associations (<http://www.taxi-japan.or.jp/content/?p=article&c=575&a=15>)  
 \*Translated by the author

Exhibit 6

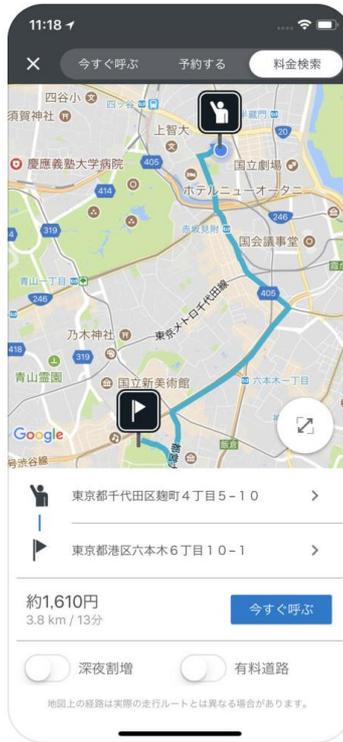


## Exhibit 7

“Specified Time Booking”



“Routing”



“Taxi calling”



“Link with Google Map”



Source: Japan Taxi, Google play ([https://play.google.com/store/apps/details?id=jp.co.nikko\\_data.japantaxi](https://play.google.com/store/apps/details?id=jp.co.nikko_data.japantaxi))

## Exhibit 8

# Overseas Residents' Visits to Japan 16 February 2018



According to JNTO, the estimated number of international travelers to Japan in December reached to 2.5 million with an increase of 23.0% compared to December 2016, recording the highest figure for December. The total number of 2017 reached 28.7 million, being the best year ever since 1964 when JNTO started to collect statistics.

### December 2017

Overseas Residents' Visits to Japan (Estimated figures)

# 2,521,300 Visits

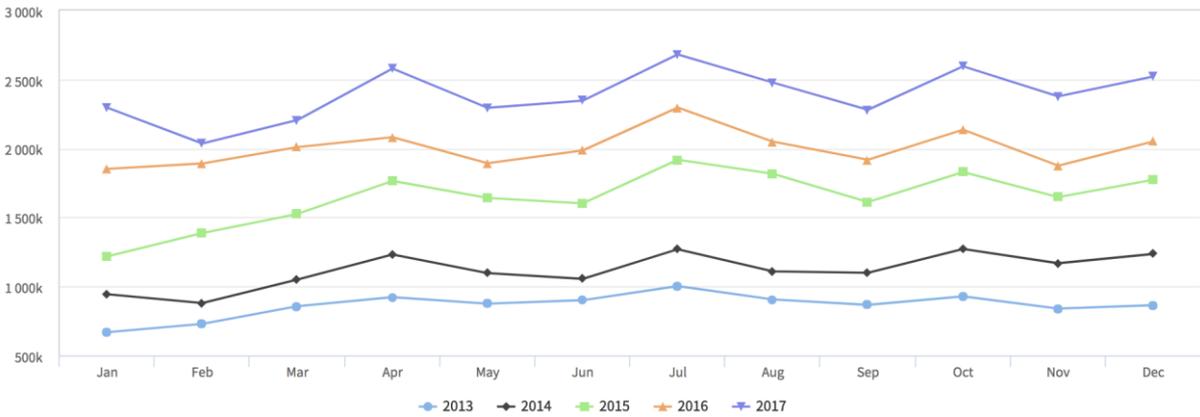
YOY +23.0%

### 2017 YTD

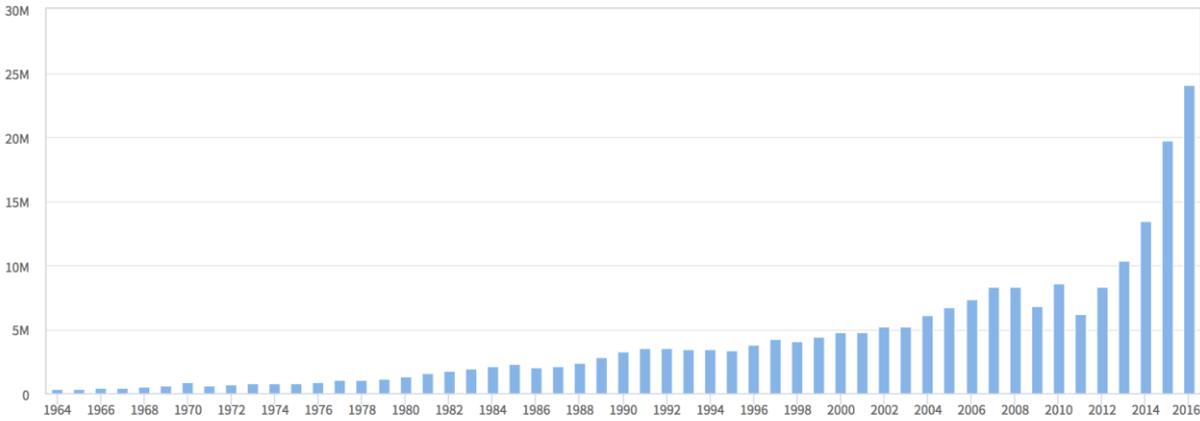
January to December

# 28,690,932 Visits

### 1.1 Overseas Residents' Visits to Japan by month



### 1.2 Overseas Residents' Visits to Japan by year Annual

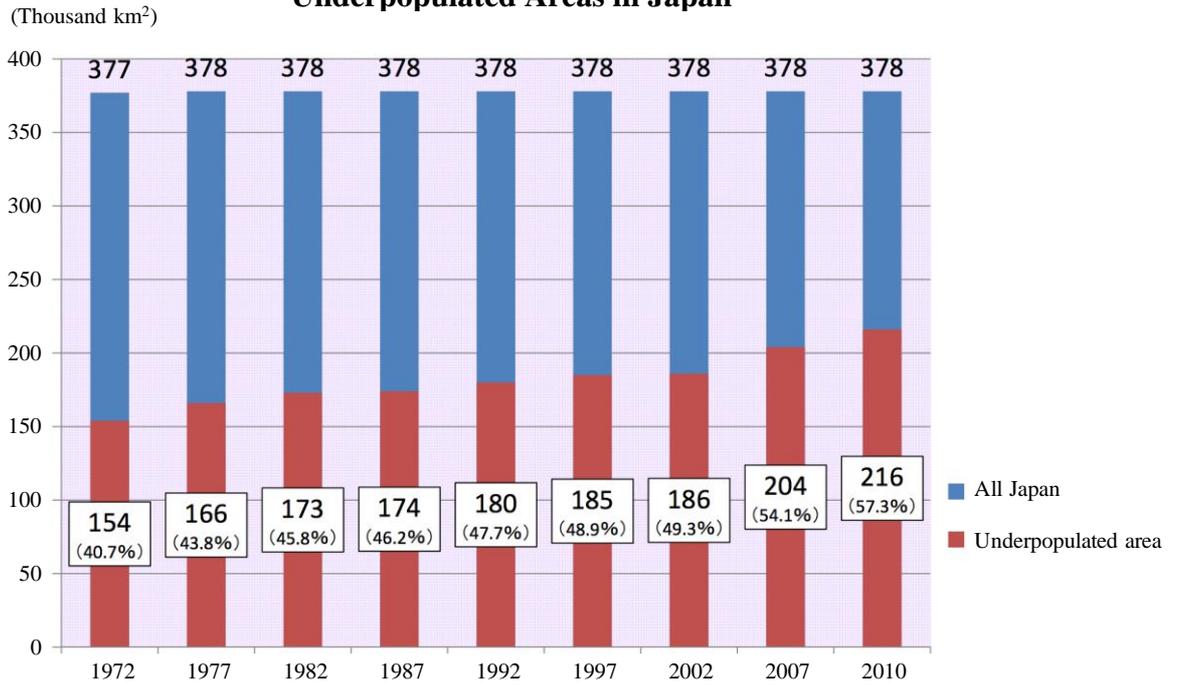


Source : Japan National Tourism Organization (JNTO)

Source: JTB Tourism Research & Consulting Co., "Japan-bound Statistics", 16<sup>th</sup> Feb 2016 (<https://www.tourism.jp/en/tourism-database/stats/inbound/>)

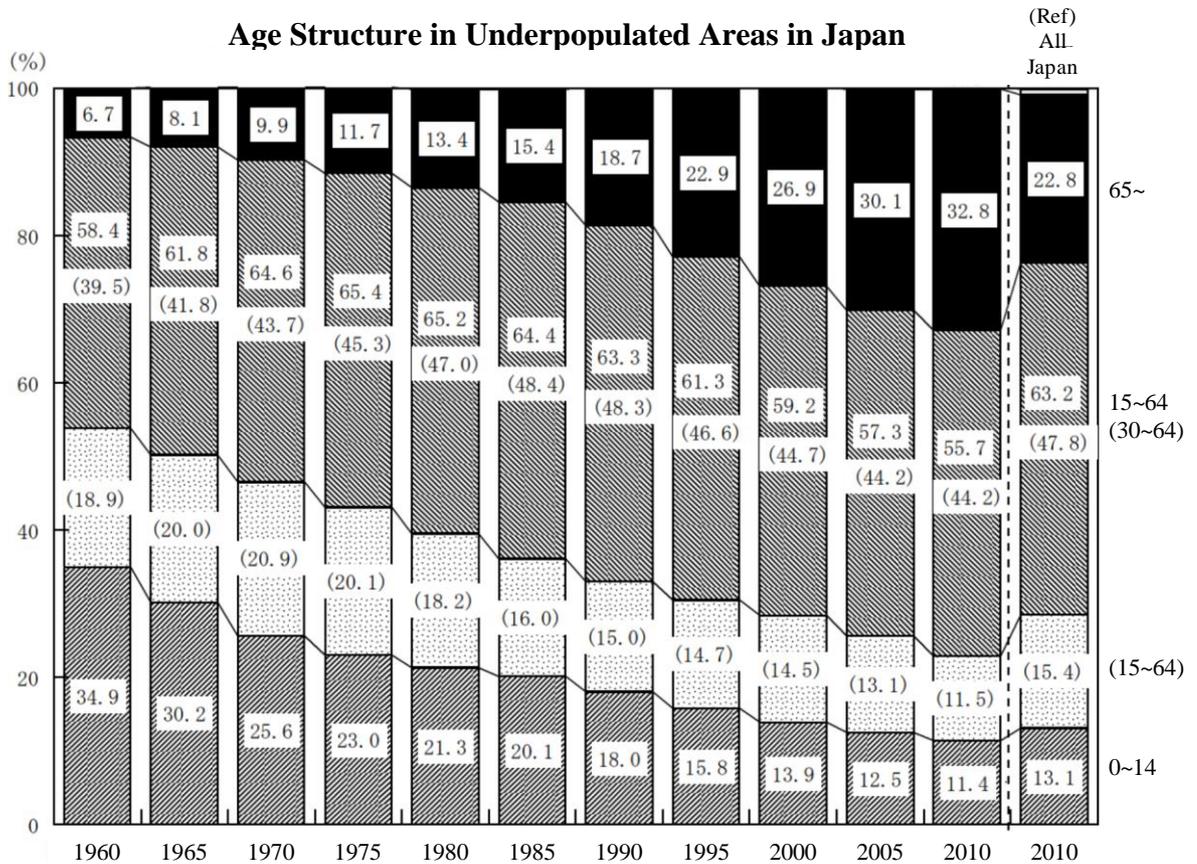
**Exhibit 9**

**Underpopulated Areas in Japan**



Source: Ministry of Internal Affairs and Communications “Current Status and Issues of depopulation measures”, 28<sup>th</sup> Jul 2011 ([http://www.soumu.go.jp/main\\_content/000473003.pdf](http://www.soumu.go.jp/main_content/000473003.pdf)) \*Translated by the author

**Age Structure in Underpopulated Areas in Japan**



Source: Ministry of Internal Affairs and Communications “The situation of underpopulated areas, 2015”, 2016 ([http://www.soumu.go.jp/main\\_content/000473003.pdf](http://www.soumu.go.jp/main_content/000473003.pdf)) \*Translated by the author

## Exhibit 10

Computerisable				
Rank	Probability	Label	SOC code	Occupation
509.	0.87		47-2043	Floor Sanders and Finishers
510.	0.87	1	53-6021	Parking Lot Attendants
511.	0.87		47-4051	Highway Maintenance Workers
512.	0.88		47-2061	Construction Laborers
513.	0.88		43-5061	Production, Planning, and Expediting Clerks
514.	0.88		51-9141	Semiconductor Processors
515.	0.88		17-1021	Cartographers and Photogrammetrists
516.	0.88		51-4051	Metal-Refining Furnace Operators and Tenders
517.	0.88		51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
518.	0.88		51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
519.	0.88		47-2053	Terrazzo Workers and Finishers
520.	0.88		51-4194	Tool Grinders, Filers, and Sharpeners
521.	0.88		49-3043	Rail Car Repairers
522.	0.89		51-3011	Bakers
523.	0.89	1	31-9094	Medical Transcriptionists
524.	0.89		47-2022	Stonemasons
525.	0.89		53-3022	Bus Drivers, School or Special Client
526.	0.89	1	27-3042	Technical Writers
527.	0.89		49-9096	Riggers
528.	0.89		47-4061	Rail-Track Laying and Maintenance Equipment Operators
529.	0.89		51-8021	Stationary Engineers and Boiler Operators
530.	0.89	1	51-6031	Sewing Machine Operators
531.	0.89	1	53-3041	Taxi Drivers and Chauffeurs
532.	0.9	1	43-4161	Human Resources Assistants, Except Payroll and Timekeeping
533.	0.9		29-2011	Medical and Clinical Laboratory Technologists
534.	0.9		47-2171	Reinforcing Iron and Rebar Workers
535.	0.9		47-2181	Roofers
536.	0.9		53-7021	Crane and Tower Operators
537.	0.9		53-6041	Traffic Technicians
538.	0.9		53-6051	Transportation Inspectors
539.	0.9		51-4062	Patternmakers, Metal and Plastic
540.	0.9		51-9195	Molders, Shapers, and Casters, Except Metal and Plastic
541.	0.9		13-2021	Appraisers and Assessors of Real Estate
542.	0.9		53-7072	Pump Operators, Except Wellhead Pumpers
543.	0.9		49-9097	Signal and Track Switch Repairers
544.	0.91		39-3012	Gaming and Sports Book Writers and Runners
545.	0.91		49-9063	Musical Instrument Repairers and Tuners
546.	0.91		39-7011	Tour Guides and Escorts
547.	0.91		49-9011	Mechanical Door Repairers
548.	0.91		51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
549.	0.91		53-7071	Gas Compressor and Gas Pumping Station Operators
550.	0.91		29-2071	Medical Records and Health Information Technicians
551.	0.91		51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders
552.	0.91		51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic

Source: Carl Benedikt Frey and Michael A. Osborne, "THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?", page68, Sep 17<sup>th</sup> 2013 ([https://www.oxfordmartin.ox.ac.uk/downloads/academic/The\\_Future\\_of\\_Employment.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf))