

# A quick analysis of the Sharing Economy: Benefits and Opportunities



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# EXECUTIVE SUMMARY

The Sharing Economy (SE) can be defined as a massification of peer-to-peer (P2P) transactions. Technological advances and people's willingness to belong to an exchange community has enabled a fast-growing wave of innovative transaction models in a broad spectrum of economic sectors. In this paper, IMCO explores the benefits and opportunities of SE firms, understood as for-profit companies where primary service is delivered by peer-to-peer interactions and produced by individuals who are not formally organized.

Data has been the key element that has facilitated the emergence and growth of SE platforms. Today, leading SE companies have a capacity to store and use data to improve the performance of the platforms which creates confidence and provides client-specific tailoring that no other services in the world could provide before. Electronic recording of transaction details accelerates the market learning curve. However, it raises a lot of questions about user privacy.

In general terms, the existing SE firms have benefited consumers through lower prices, higher quality guaranteed through rating systems, safety and a broader set of options for the same service. They also seem to benefit owners of assets like houses or cars, who could translate idle hours of their assets into potential income. Through technological advances, SE platforms can also solve some market failures that traditional markets have (for example unplanned urban growth or anonymity in ride sharing), which in theory are the reason to use existing regulation such as zoning for controlling hotel supply and taxi registers for guaranteeing safety.

In macroeconomic terms, the SE's main contribution is the potential to optimize the use of existing capital which can promote economic growth. Using a highly-detailed general equilibrium model of the world economy, called "GTAPinGAMS", IMCO estimated that the Mexican economy long-term growth rate could double, if the capital were reduced by 1% due to efficiencies in transport, housing and financial services through SE businesses.

Despite the benefits for consumers, society and the economy, there are some challenges that need to be addressed. In specific, the effects on labor market, public revenue and the environment remain unclear and further research is necessary. This paper only mentions a summary of the main discussions around these topics.

The central problem we face in attempting to quantify the effects of these firms is the lack of independent evidence. The lack of information has allowed governments to adopt protective roles to ban or restrict disruptive services, often guarding special interests or pushed under the argument that there is an unlevelled playing field between P2P firms and its traditional competitors. This approach is not efficient since the services offered are similar but not the same.

Uninformed policy decision-making could hurt innovation instead of solving future market failures that will arise from technological disruption. This document offers a set of recommendations for authorities, firms and users to improve this situation, and take advantage of what the sharing economy has to offer.

# INTRODUCTION

In this paper, IMCO explores the nature of ‘Sharing Economy’ (SE) firms - defined as for-profit companies that allow massive peer-to-peer (P2P) transactions- and its impacts including potential benefits and challenges. In general terms, SE firms seem to benefit consumers, boost investment and optimize capital’s capacity. Through technological advances, they can also solve some market failures that traditional markets have (for example unplanned urban growth or anonymity in ride sharing), which in theory are the reason to use existing regulation such as zoning for controlling hotel supply and taxi registers for guaranteeing safety.

The central problem we face in attempting to quantify the effects of these firms is the lack of independent evidence. The lack of information has allowed governments to adopt protective roles to ban or restrict disruptive services, often guarding special interests or pushed under the argument that there is an unlevelled playing field between P2P firms and its traditional competitors. This approach is not efficient since the services offered are similar but not the same. The effects on labor market, public revenue and the environment remain unclear and further research is necessary. It should be said that this paper only mentions a summary of the main discussions around these topics.

Uninformed policy decision-making could hurt innovation instead of solving future market failures that will arise from technological disruption. The following document offers a set of recommendations for authorities, firms and users, to improve this situation.

## POLICY ANALYSIS

### What is the Sharing Economy?

It is difficult to pin down a clear definition for the Sharing Economy (SE). A widely-accepted definition is that SE is a set of technological and market disruptions to create massive intermediation of peer-to-peer (P2P) services. Although, sharing is not new, technological advances and people’s willingness to belong to an exchange community has enabled a fast-growing wave of new models in a broad spectrum of economic sectors.

The focus of this paper is commercial P2P sharing, that is commercial for-profit firms where primary service is delivered by peer-to-peer interaction and produced by individuals who are not formally organized. According to the European Commission and the Institute for Prospective Technological Studies, this kind of platforms represent a real regulatory challenge due to their volume and economic impact.<sup>1</sup>

SE endeavors operate in two-sided (or multi-sided) markets, “defined as markets in which one or several platforms enable interactions between end-users, and try to get the two (or multiple) sides ‘on board’ by appropriately charging each side”.<sup>2</sup> According to Jean-Charles Rochet and Jean Tirole, to understand the economic implications of this kind of markets, it is necessary to use the theories of network externalities and of multi-product pricing.

Information is the glue that keeps SE ecosystems bound together. The information generated by people in SE platforms trickles down to other markets and creates efficiencies in them. For instance, social networks such as Facebook reduce the screening costs of people trying to make friends, maintain old relationships, or find a significant other. Twitter provides a feed of news and comments curated by the

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<sup>1</sup> At the end of this document reader will find a section to deepen on the conceptual framework to define the Sharing Economy (SE) and the nature of SE firms.

<sup>2</sup> J.C. Rochet and J. Tirole, “Two-Sided Markets : An Overview”. *The Economics of Two-Sided Market*, (Toulouse, France, January 23-24 2004). (Consulted on February 26th, 2018) [http://web.mit.edu/14.271/www/rochet\\_tirole.pdf](http://web.mit.edu/14.271/www/rochet_tirole.pdf)

user, so she gets all the relevant content of a field and reduces the search costs of reading news, talking to colleagues, or attending networking seminars. Airbnb let worldwide travelers find a place to stay at lower prices while enjoying unique local experiences.

More industries should be keenly aware of the developments of collaborative economies. United Airlines, for example, already allows users to hail an Uber directly from the United application for cell phones. A global airliner of their size can take on these initiatives because it has clout at most of the major airports of the world. However, a smaller airline carrier might not be as willing to imitate this conduct, if its hub is based out of a local airport at a smaller city where taxi

unions could shut down airport operations until the airline ends their support of any disruptive applications.

SE endeavors have commonly been traditional monopoly breakers. If tourists can reduce transportation or lodging costs, they will be able to spend more on other activities during their vacation. Gigantic shopping spaces may become a thing of the past. The land they use for both stores and parking may, potentially, be put to a better use due as a result of the dominance of Amazon: another logistical SE. Although Amazon is a firm itself, it also pulls together the supply of many sellers of new and used products, who would not otherwise afford to be on such a visible platform.

## Technological disruption and data

The P2P economy has been present for a long time in almost all human activities. However, in the dawn of digital markets, transaction costs were high and there was a need for better coordination to find a match. Intermediaries stepped in, easing the interaction between providers and customers. Intermediaries became key elements for the correct functioning of markets. Marketing and publicity firms have had a similar role in providing information to market participants. Peer-to-peer transactions were a difficult task in a world where communications were very limited.

With the rapid development of communications technology, peer-to-peer interaction became easier, thus facilitating massive communication between providers and customers. SE platforms appeared when entrepreneurs became aware of the value of massive communications and its crucial role in markets.

Data has been, without a doubt, the key element that has facilitated the emergence and growth of SE platforms. Previously, the data that resulted from every transaction in the traditional economy was not always registered, at least not with the purpose of analyzing it and gaining insights on market behaviors. Today there is a growing awareness of the value and potential opportunities that can arise from proper information processing giving the clear evidence that data-based and data-fed algorithms have a higher performance in comparison to those that are not<sup>3</sup>.

Sharing Economy platforms facilitate and accelerate peer-to-peer transactions, but they also store the data generated by the millions of market interactions that happen within them. More importantly, they are creating and improving algorithms based on the collected data. Without this, the Sharing Economy would not be showing the current exponential growth.

Uber and Airbnb, leading SE companies, have both clear differences but they both represent a new way for markets to function in an era directed by technological development and interconnection. Their capacity to store and use data to improve the performance of the platforms creates confidence and provides client-specific tailoring that no other services in the world could provide before. These platforms have a clear advantage over firms that provide traditional services that do not use the power of structured data collection and analysis.

An additional key competitive advantage of P2P firms is that they do not need to own any assets. Almost all of their operations depend on the administration and performance of their platforms, which, in turn depend to a large extent on the analysis of transactional data. The entire value of the business resides on proper storage, debugging and analysis of transactions.

The large amount of data stored and its increasing value, makes these companies as valuable as traditional companies. Facebook owns the information generated

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<sup>3</sup>K. Radinsky. "Data Monopolists Like Google Are Threatening the Economy", *Harvard Business Review* (2015). (Consulted on December 21st, 2017).

by the users of its platform an asset worth 200 billion dollars, while United Airlines, owner of aircrafts, airport access licenses and transoceanic routes, is worth around 34 billion dollars<sup>4</sup>.

The new market giants are companies that base their business models on data. Alphabet (whose main subsidiary is Google), Amazon, Apple, Facebook and Microsoft are the firms with the highest monetary value in the world. Together, they reaped net profits of more than 25 billion dollars in the first quarter of 2017<sup>5</sup> alone.

These firms gather statistics of all the relevant activity on their platforms. They analyze the enormous volumes of data generated by users, and in doing so, they gain an extensive knowledge of their core market. These lessons allow them to optimize performance, select suppliers and customers, streamline processes, improve efficiency and correct mistakes.

Electronic recording of transaction details accelerates the market learning curve. Suppliers learn what their consumers like and what they don't much faster than had ever been possible in the past. Consumers find ways to get better deals from suppliers, and have a more informed understanding of the market.

SE companies facilitate collaboration and interaction. Each one coordinates suppliers and clients using a defined set of rules and enhanced real time quality control mechanisms. The processes facilitate optimal performance of every transaction and avoid harmful behaviors that could compromise the reliability and confidence people have in the platform.

By recording each transaction, the platform is able to pinpoint satisfaction criteria for both the supplier and

client for factors including: activity, price, quality and specific requirements. Unexpected activities can be detected and documented. It is precisely these abnormal data points that are crucial in checking and validating to improve processes or redefine responses to particular events. In the case of Uber, incentive data is a key part of pricing algorithms that are successful in maintaining both supply and demand.

Optimal performance of the platform depends on three key features: 1) carefully defined processes 2) pre-set rules and 3) freedom within the platform for both sides in carrying out the transaction. Without each of these components, the idea of shared economy in the era of mass communication would not be viable.

The storage of large amounts of data generated by the use of SE platforms raises a lot of questions about user privacy. These questions need to be addressed by SE endeavors and regulators. On one hand, platforms have incentives to protect the data generated by end-users given its high competitive value. Global firms like Uber or Airbnb also have incentives to use the same tools and data protection mechanisms for all the countries in which they operate. Having the same data privacy policy reduce the costs of complying with data privacy standards and regulation. It is likely that firm's data protection protocols respond to requirements set by the country with the most advanced standards within their service scope. For example, Uber and Airbnb have only one privacy policy that apply worldwide.<sup>6,7</sup>

On the other hand, data has become a source of income for an entire business ecosystem. This generates strong incentives for the adoption of closed and opaque storage processes. Potentially harmful behavior is linked with data transferred voluntarily by the firm to subsidiaries and affiliates.<sup>8</sup>

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<sup>3</sup> K. Radinsky. "Data Monopolists Like Google Are Threatening the Economy", *Harvard Business Review* (2015). (Consulted on December 21st, 2017).

<sup>4</sup> H. Baldwin, "Drilling into The Value of Data", *Forbes* (2015), (Consulted on December 21st, 2017) <https://www.forbes.com/sites/howardbaldwin/2015/03/23/drilling-into-the-value-of-data/#2313a3ed65fa>

<sup>5</sup> "The world's most valuable resource is no longer oil, but data, Retrieved from", *The Economist* (2017). (Consulted on December 21st, 2017) <https://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource>

<sup>6</sup> Uber privacy policy, (Consulted on March 6st, 2018) <https://privacy.uber.com/policy>

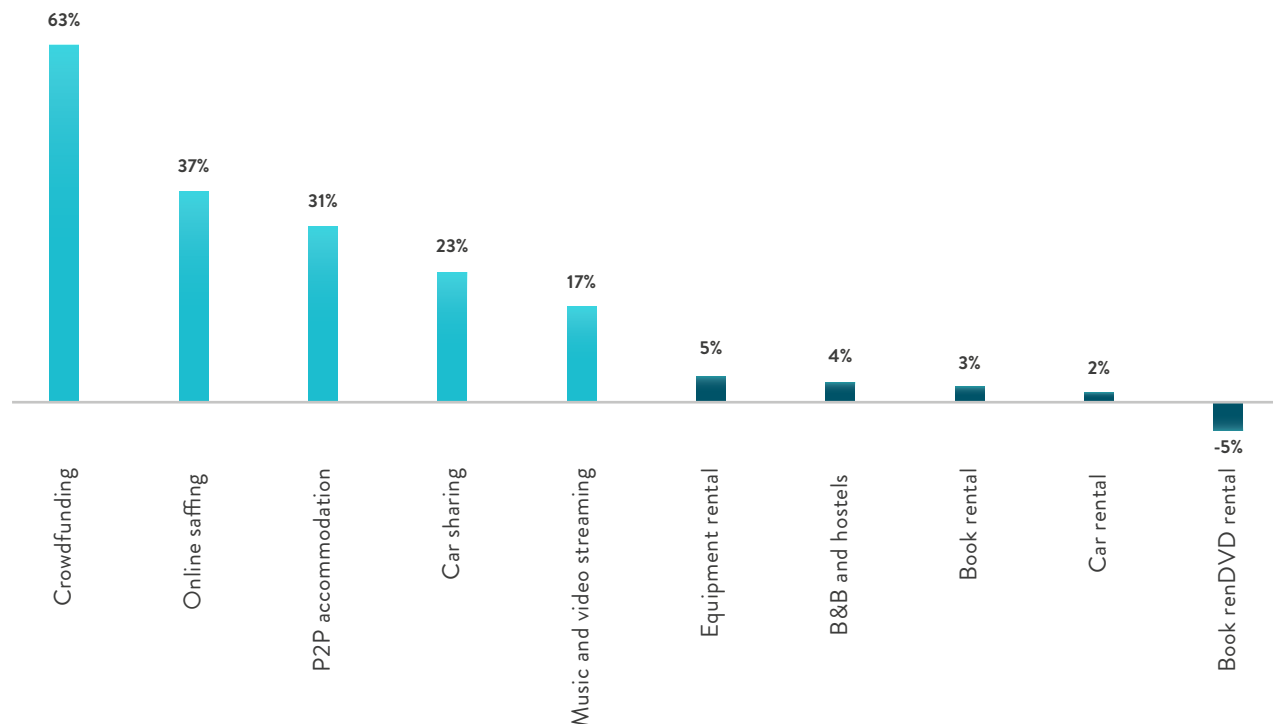
<sup>7</sup> Airbnb privacy policy (Consulted on April 30th, 2018) [https://www.airbnb.mx/terms/privacy\\_policy](https://www.airbnb.mx/terms/privacy_policy)

<sup>8</sup> O. Ruiz "Quién es dueño de tu información en la era digital", *Instituto Mexicano para la Competitividad* (2017) (Consulted on March 6th, 2018) [https://imco.org.mx/articulo\\_es/quien-es-dueno-de-tu-informacion-en-la-era-digital/](https://imco.org.mx/articulo_es/quien-es-dueno-de-tu-informacion-en-la-era-digital/)

# Main impacts of the Sharing Economy

Currently, the size of the Sharing Economy is relatively small in comparison with traditional rental firms. Nonetheless, it is expected that SE firms will grow considerably faster in the next decade (Figure 1). As an indicative, in 2013 the five main sectors of the Sharing Economy (P2P lending and crowdfunding, online staffing, P2P accommodation, car sharing, and music and video streaming) comprised a market of about \$15 billion US dollars, and it is projected that this summed value will increase 22-fold, to \$335 billion, in 2025<sup>9</sup>.

Figure 1. Projected growth rate of sharing economy and traditional rental (2013 - 2025)



Source: IMCO with data from Hawksworth et al (2014)

The growth trend described above can also be seen in the Mexican market. In November 2017, for example, Airbnb opened an office in Mexico as bookings grew 195% while properties increased only 114% since 2015.

To keep up with this pace, SE firms will have to reach new markets, improve their ability to adapt to local conditions and implement innovations in their own businesses<sup>11</sup>. One way to reach new markets is by diversifying the methods of payment, especially the ability to accept and process cash transactions.

In April 2017, Amazon launched Amazon Cash, a service that allows customers to add cash and have it credited to their Amazon.com balance by scanning a barcode at participating retailers. This process is seamless, very similar to the way a majority of people credit their mobile phone accounts.<sup>12</sup> This Amazon feature was launched in Mexico in October 2017, and could potentially benefit 63% of population that today does not own a debit or credit card<sup>13</sup>.

<sup>9</sup> PWC. "The Sharing Economy: How will it disrupt your business" Megatrends: the collisions. (2014). (Consulted on January 29th, 2017) [http://pwc.blogs.com/files/sharing-economy-final\\_0814.pdf](http://pwc.blogs.com/files/sharing-economy-final_0814.pdf)

<sup>11</sup> "N. Yaraghi and S. Ravi, "The Current and Future State of the Sharing Economy", Brookings India IMPACT Series No. 032017 (2017).

<sup>12</sup> S. Perez, "Amazon launches Amazon Cash, a way to buy on their site without a bank card", TechCrunch (2017). (Consulted on December 21st, 2017) <https://techcrunch.com/2017/04/03/amazon-launches-amazon-cash-a-way-to-shop-its-site-without-a-bank-card/>

<sup>13</sup> INEGI y CNBV, Encuesta Nacional de Inclusión Financiera 2015. p.96. (Consulted on December 21st, 2017) <http://www.cnbv.gob.mx/Inclusi%C3%B3n/Documents/Encuesta%20Nacional%20de%20IF/ENIF%202015.pdf>



Adapting to local conditions may imply adjusting the business model, even if the tweaks make the business model rely on more traditional and less innovative business features. For example, Uber is rolling out new features in India to attract customers without smartphones or with limited data availability. These features include allowing people to request a service for someone else or use an automated call center to request a service.<sup>14</sup> P2P firms should consider safety issues, among others, while developing ideas to open up to new markets or adapt to local conditions.

Another way to implement innovations is through new services. Uber recently announced that in 2020 they will start a pilot for aerial taxi services in three cities (Los Angeles, Dallas and Dubai).<sup>15</sup> Google has been exploring autonomous driving since 2009 (under the project name Waymo since 2016). Furthering innovation is possible, in great part, due to the data analytics that have increased firm's knowledge of the market and know-how of operating in the digital economy.

What are some of the main impacts of these rapid growing firms? The body of evidence regarding the real impact of the Sharing Economy is scarce<sup>16</sup>, mainly because SE is a relatively new phenomenon and data sources for independent research are limited. Literature available together with IMCO's estimation (see Macroeconomic effect: optimizing the use of existing capital) show that the SE can have a positive effect on the economy while benefiting consumers through lower prices and better products and services. However, there is debate around the labor market, environmental and fiscal effects that should be studied further in the short-term. Otherwise, information gaps will keep driving policy-makers to legislate and enforce norms against the potential benefits of this new economy.

## Lack of evidence and its implications

Most SE platforms emerge from highly innovative processes. Often this innovation occurs on the margins or even outside the limits of regulation.<sup>17</sup> Typically, regulation will attempt to constrain and control the use

of a service or asset even before it becomes available. However, for P2P services, we frequently see regulators that, even without a full understanding of the implications, prefer to take a preventive stance.<sup>18</sup>

Thus, the lack of evidence and the pressure from industries that have already been regulated has driven policy-makers to legislate and enforce norms that run against the benefits of the new market tendencies described above. These pre-emptive regulations have had a considerable negative impact on the innovative process and the perception of these new products. The abundant press coverage of Airbnb and Uber includes criticism that is many times on uninformed opinions. Few evidence-based studies have been published to shed light on the issue.

One important effort to generate objective, data-based research on the subject is a recent study produced by the University of London. A group of scholars analyzed the adoption of Airbnb in the city of London. Some of the results have suggested that even with the platform changing from year to year, there was a tendency for listings to become less predominant in central areas. These findings stand in contrast to the original belief that, as Airbnb listings proliferated, they would take over central neighborhoods with high touristic activity<sup>19</sup> displacing local inhabitants.

Beyond the findings of the study, what we seek to point out is the urgent need to generate objective information to allow regulators to move from protective policies towards a more open vision oriented towards understanding the real implications of innovation processes and acting to face them.

Sharing Economy platforms can play an important role in the dissemination of information that can contribute to regulatory shift towards flexibility. More data is crucial to study the implications of SE goods and services as well as the distortions they generate in other markets. This, in turn, could help authorities improve the design and delivery of policies and public services better suited to changing markets<sup>20</sup>. The aim of regulatory efforts should be correcting market failures of new markets to make them more efficient.

<sup>14</sup> D. Meyer, "Uber is rolling out ride-hailing for people without smartphones", *Fortune* (2017). (Consulted on December 21st, 2017) <http://fortune.com/2017/11/21/uber-india-features-connectivity/>

<sup>15</sup> A. J. Hawkins, Uber's 'flying cars' could arrive in LA by 2020 – and here's what it'll be like to ride one, *The Verge* (2017). (Consulted on December 21st, 2017) <https://www.theverge.com/2017/11/8/16613228/uber-flying-car-la-nasa-space-act>

<sup>16</sup> C. Codagnone and B. Martens. Op cit.

<sup>17</sup> W. Mougayar. "Rethinking Regulation To Lag Innovation" (2016), <http://startupmanagement.org/2016/01/07/rethinking-regulation-to-lag-innovation/>

<sup>18</sup> Ibid

<sup>19</sup> G. Quattrone, D. Proserpio, D. Quercia, L. Capra, & M. Musolesi. "Who Benefits from the "Sharing" Economy of Airbnb?" *Proceedings of the 25th International Conference on World Wide Web* (pp. 1385– 1394). Republic and Canton of Geneva, Switzerland: International World Wide Web Conferences Steering Committee.

<sup>20</sup> "Airbnb in Mexico City: Closing the Income Gap and Expanding the Economic Benefit of Tourism." *Instituto Mexicano para la Competitividad (IMCO)* (2018) [https://imco.org.mx/wp-content/uploads/2018/02/DocumentoAIRBNBIngles\\_26-02-18.pdf](https://imco.org.mx/wp-content/uploads/2018/02/DocumentoAIRBNBIngles_26-02-18.pdf)

Given the challenges that information gaps entail for regulators, the European Commission (EC) through its communication "A European agenda for the collaborative economy" published in June 2016, stated that "Collaborative platforms should cooperate closely with the authorities, including the Commission, to facilitate access to data and statistical information in compliance with data protection law." Sharing data has an added value for economic activity measurement purposes. Even with this positive outlook, even the European regulators are aware that new technologies raise important questions about legal requirements, privacy, costs, and data exchange for statistical purposes.

As part of their recommendations, the EC prioritized voluntary agreements between national statistics institutes and Sharing Economy firms. These agreements can arrive to a good term only if both sides have the necessary skills inside their organization that allow them to assess which data is needed in order to obtain real social benefit. For this purpose, it is not always necessary to have full access to privately held data and the regulator should be well aware of this.

The EC encourages arrangements that provide the right conditions and mechanisms to share data. In addition, it recognizes that access to collaborative platform data is the "magic bullet" to solve important regulatory and statistical challenges.

The dialogue between platforms and governments should first consider the social benefits derived from government access to privately held data. Secondly, the regulator should be aware of the privacy and user protection requirements that platforms have to comply with in every country. Finally, the regulator should understand the competitive value that data gives to SE firms.. SE firms and governments should collaborate to achieve the goal of understanding the new markets better and its implications on the rest of the economy. Aggregated data with medium granularity can be sufficient to generate the right kind of analysis to fulfill this goal.

A good example of SE platforms giving access to useful data while protecting its competitive interests is the case of the Uber Movement initiative. It represents a positive first step for both the company and cities to foster a relationship around data-sharing. Zak Accuardi at the Transit Center, a New York-based foundation,

believes it opens the door for productive conversation and makes it possible for cities to approach Uber and say: "We know you have this platform, and here's what we would like to see on it"<sup>21</sup>.

The Uber Movement initiative shows that it is possible to find the right conditions for sharing data, complying with legal requirements and data protection rules but also providing valuable input for high value analysis that could derive in social benefit. While the product is presented as a collaboration between Uber and city planners,<sup>22</sup> Uber has full control over the information they release and there are no formal obligations to consider opinions and needs of government planning agencies. An example of Uber's control over the initiative is the fact that while Uber operates in 633 cities,<sup>23</sup> up until today they have only released information for 21 of them<sup>24</sup>, although they plan to increase the number progressively.

## Potential benefits

Users of P2P platforms perceive a series of benefits, which can partly explain their growth and acceptance. Some of the client benefits include: lower prices, higher quality guaranteed through rating systems, safety and a broader set of options for the same service. On the supply side, there are many perceived benefits as well. For owners of assets, these websites offer flexibility, not only to schedule working hours but also to define arrangements. There is a myriad of options to work with these firms. With Uber, for instance, there are drivers who own a car, car owners that rent it to a driver in exchange for a fixed fee or a percentage of the weekly income, fleet owners, or drivers in search of cars. For most sharing-economy firms, their model seems highly competitive against traditional firms that are subject to rigid regulation. This, in turn, may increase resources for innovation. Moreover, they generate highly valuable data that can make their business more productive.

Given the nature of P2P firms, social benefits are also generated as a result of the extreme flexibility and speed with which these firms can respond to solve market failures. For instance, in some Mexican cities, Uber and Cabify control a key element to guarantee taxi safety: there is no anonymity of passengers or taxi drivers. For every ride, their websites can track the identity of the registered driver. Additionally, the GPS in smartphones allows the journey to be traced and

<sup>21</sup> L. Poon, "Finally, Uber Releases Data to Help Cities with Transit Planning", Citylab (2016). (Consulted on December 21st, 2017) <https://www.citylab.com/transportation/2017/01/finally-uber-releases-data-to-help-cities-with-transit-planning/512720/>

<sup>22</sup> Ibid

<sup>23</sup> Uber (2018). (Consulted on April 30th, 2018) <https://www.uber.com/en-MX/>

<sup>24</sup> Uber Movement (2018). (Consulted on April 30th, 2018) <https://movement.uber.com/cities?lang=es-MX>

recorded. Furthermore, Uber has the option to “share the ride” and create a “family profile”<sup>25</sup> to alert family members and friends when an Uber is taken and the trip is over. These elements reduce the probability that the user will become a victim of crime.<sup>26</sup> These advantages are added onto lower prices, at least in Mexico City, in comparison with taxi stations (taxi de sitio) which may appropriate a larger share of the consumer surplus.<sup>27</sup> People that would have otherwise never taken a taxi in Mexico, suddenly became clients of Uber or Cabify, overcoming their fear of being mugged or kidnapped.

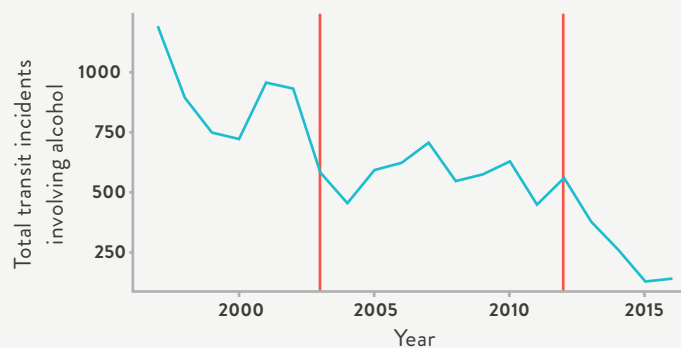
Ride-sharing companies have also become an option as part of a new safe driving culture, offering a solution to illegal drinking and driving. According to the World Health Organization (WHO), drunk driving is one of the main causes of road crashes worldwide. In high income countries, around 20% of fatally injured drivers had excess alcohol in their blood, whereas in low and middle-income countries this number increased up to 69%<sup>28</sup>. A study for different cities in the State of California, found that the entry of UberX, between 2009 and 2013, resulted in a 3.6 to 5.6% decrease in the rate of deaths due to alcohol related car accidents<sup>29</sup>.

In Colombia, drunk drivers cause at least one death per day and more than 1,500 injuries each year.

Authorities have implemented high fines and sanctions for those who drive under the influence of alcohol, including the permanent suspension of the driver’s licenses.<sup>30</sup> As a response to these policies, in Bogotá -considered Uber’s lab for creative services<sup>31</sup> - users have the option to take an Uber Angel. This option allows users to request a driver who will drive the user’s car to a destination for a minimum rate of approximately 10 dollars<sup>32</sup>. Before Uber, some Colombian restaurants and insurance companies provided the service. Today, Uber has expanded and simplified the ability for intoxicated users to call an “angel”.<sup>33</sup>

Also in Mexico City there are signs of positive impact of Uber operation in the reduction of transit incidents involving drunk driving. Since 1997 in Mexico City, there is a descending trend for this type of incidents. Figure 2 shows a first fall of incidents apparently linked to the Drunk Driving Control Program that began in 2003, mainly implemented through breathalysers. A second fall seems to take place when Uber started operations in 2012. It should be noted that our statistical tests do not confirm significant impact of the mentioned events, but this could be attributed to lack of enough data points. Therefore, further study of this line of research is suggested.

**Figure 2. Transit incidents involving alcohol (1997 - 2016). Start of the drunk driving control program in cdmx (2003) and start of operations for uber (2012) are marked with vertical lines.**



Source: IMCO with data from INEGI (Statistics of land traffic accidents in urban and suburban zones)

<sup>25</sup> Uber (2018). (Consulted on April 18th, 2018). <https://www.uber.com/es-MX/drive/resources/perfil-familiar>

<sup>26</sup> J. E. Pardini. “Aprender de Uber”, *Reforma* (2015). (Consulted on August 22nd, 2017) <http://www.reforma.com/aplicacioneslibre/preacceso/articulo/default.aspx?id=65284&urlredirect=http://www.reforma.com/aplicaciones/editoriales/editorial.aspx?id=65284>

<sup>27</sup> C. E. García Tejada. “La regulación de Uber en la Ciudad de México, la ganancia de los consumidores y el problema público de la movilidad”. *The Latin American and Iberian Journal of Law and Economics*. Vol. 2, no.2 (2016). (Consulted on February 28th, 2018) <https://lajle.alacde.org/cgi/viewcontent.cgi?article=1027&context=journal>

<sup>28</sup> WHO, “Drinking and driving – an international good practice manual” (2017). (Consulted on August 22nd, 2017) <http://www.who.int/roadsafety/projects/manuals/alcohol/en/>

<sup>29</sup> B. N. Greenwood and S. Wattal. “Show Me The Way To Go Home: An Empirical Investigation of Ride Sharing and Alcohol Related Motor Vehicle Homicide,” *MIS Quarterly* 41, no.1 (2017). (Consulted on August 22nd, 2017)

<http://misq.org/show-me-the-way-to-go-home-an-empirical-investigation-of-ride-sharing-and-alcohol-related-motor-vehicle-fatalities.html>

<sup>30</sup> BBC Mundo. “Para borrachos, ricos y hambrientos: 7 adaptaciones de Uber más allá de taxi” (2016). (Consulted on August 22nd, 2017)

[http://www.bbc.com/mundo/noticias/2016/01/160121\\_sociedad\\_uber\\_adaptaciones\\_locales\\_borrachos\\_ricos\\_ng](http://www.bbc.com/mundo/noticias/2016/01/160121_sociedad_uber_adaptaciones_locales_borrachos_ricos_ng)

<sup>31</sup> R. Jiménez Cano. “Uber experimenta en Colombia” *El País* (2015). (Consulted on August 22nd, 2017)

[https://elpais.com/tecnologia/2015/11/30/actualidad/1448844934\\_784904.html](https://elpais.com/tecnologia/2015/11/30/actualidad/1448844934_784904.html)

<sup>32</sup> According to Uber’s website, Uber Angel in Colombia has a minimum rate of 27,000 Colombian pesos. Assuming an exchange rate of one Colombian peso for 0.000335 dollars, the rate is equivalent to 9.045 dollars.

<sup>33</sup> In Colombia, the word “angel” is associated to the government’s efforts to prevent drinking and driving.

The Sharing Economy may also be an option to avoid investing in infrastructure that has low returns, allowing resources to be invested in financing better projects. For example, the City of Summit, New Jersey - 30 miles from Manhattan - currently has an agreement with Uber to free-up parking space. It began in October 2016, as a six-month pilot program to subsidize Uber rides to get to the train station. To start, the program focused on 100 commuters with parking passes who were eligible for free rides, as well as an additional group of commuters that could opt-in for extremely low fares<sup>34</sup>. The usage rate of this program was initially only one-third of the capacity (freeing up 30 parking spaces, instead of 100). Six months later, in April 2017, the City Council extended the program for another six months and increased the number of parking slots to 150<sup>35</sup>. Local officials estimate that this program will cost the City around 167 thousand dollars a year, which is almost 60 times less than the cost of building a new parking lot<sup>36</sup>. Successful policies aimed at reducing the number of parking spaces can have a two-fold effect: first, save taxpayers money and second, encourage the use of public transportation<sup>37</sup>.

Over the past few years, Airbnb - the largest player in the home-sharing sector - has discouraged unnecessary investments in the hotel industry. Airbnb is able to increase supply almost overnight to host a large influx of visitors when demand peaks due to major events in specific places. This capacity reduces the need to build new hotels that may not be sustainable in the long term. The first event home-sharing solved a significant surge in demand was during the World Cup 2014 in Brazil, followed by the Olympic Games 2016 in Rio. More recently, this occurred at the Republican and Democratic National Conventions in the United States<sup>38</sup>.

Ride-sharing and home-sharing applications increase the information flow about their respective sectors, which in turn can also have effects on financial markets.

For instance, Uber has agreements with car dealers to offer discounts, financing plans and pre-authorized credits for their drivers that want to purchase their own car<sup>39</sup>. These programs combined with the knowledge that Uber generates about the driver's behavior can have positive externalities. IMCO met an Uber driver who did not own a car when he received a letter from a car dealer offering him credit at a 21% rate because he was ranked among the 200 best Uber drivers in Mexico City. When he shared this story with his family, a nephew made him an even more competitive offer: 7% interest on the loan. Without the Uber ranking the banks or the nephew would not have had information to know that this efficient driver was credit-worthy. The anecdote is a fine example of how SE data can trickle down to more traditional markets, including access to credit. In fact, a new branch of collaborative endeavors promises to revolutionize financial markets. The fintech ecosystem might be able to overcome the classical credit problem: asymmetry of information, discrimination, and moral hazard through carefully tuned behavioral models built from the clues we leave behind in our digital lives.

## The macroeconomic effect: optimizing the use of existing capital

In macroeconomic terms, the Sharing Economy's main contribution is the potential to optimize the use of existing capital. Thus far, and given its current size, its effect is not yet captured by GDP calculations, at least in the United States. Thus, IMCO set out to attempt to measure the Sharing Economy's contribution to economic growth.

To achieve this, we ran an experiment, using a highly-detailed general equilibrium model of the world economy, called "GTAPinGAMS" that combines: bilateral trade, transport and protection data characterizing economic linkages among regions, as well as individual country input-output data bases which account for inter-sectoral linkages within

<sup>34</sup> A. Hawkins. "New Jersey town decides to pay Uber instead of building a parking lot", *The Verge* (2016). (Consulted August 22nd, 2017) <http://misq.org/show-me-the-way-to-go-home-an-empirical-investigation-of-ride-sharing-and-alcohol-related-motor-vehicle-fatalities.html> <https://www.theverge.com/2016/10/3/13147680/uber-new-jersey-free-ride-parking-lot-train-commute>

<sup>35</sup> B. Faszczewski. "Summit Council Votes to Purchase 21 Parking Pay Stations at a Cost of \$235,000, Extends Ridesharing Program for Six Months". *Tapinto.net* (2017). (Consulted August 22nd, 2017) <https://www.tapinto.net/sections/government/articles/summit-council-votes-to-purchase-21-parking-pay-s>

<sup>36</sup> A. Hawkins. *op cit*.

<sup>37</sup> Studies by Hermann Knoflacher from the Technological University of Vienna show that parking space reduces the number of users of public transportation. (ITDP. *Menos cajones, más ciudad: El estacionamiento en la Ciudad de México* (2016), p.15, <http://mexico.itdp.org/wp-content/uploads/Menos-cajones-m%C3%A1s-ciudad.pdf>)

<sup>38</sup> D. Ting, "Airbnb has a golden moment at the Rio Olympics", *Skift* (2016). (Consulted August 22nd, 2017) <https://skift.com/2016/08/11/airbnb-has-a-golden-moment-at-the-rio-olympics/>

<sup>39</sup> Uber website, "Conduce" <https://www.uber.com/es-MX/drive/rewards/> (Consulted August 23rd, 2017)

<sup>40</sup> M. Redmond. "Waiting for a Pickup: GDP and the Sharing Economy". *KcFED The Macro Bulletin* (2017)

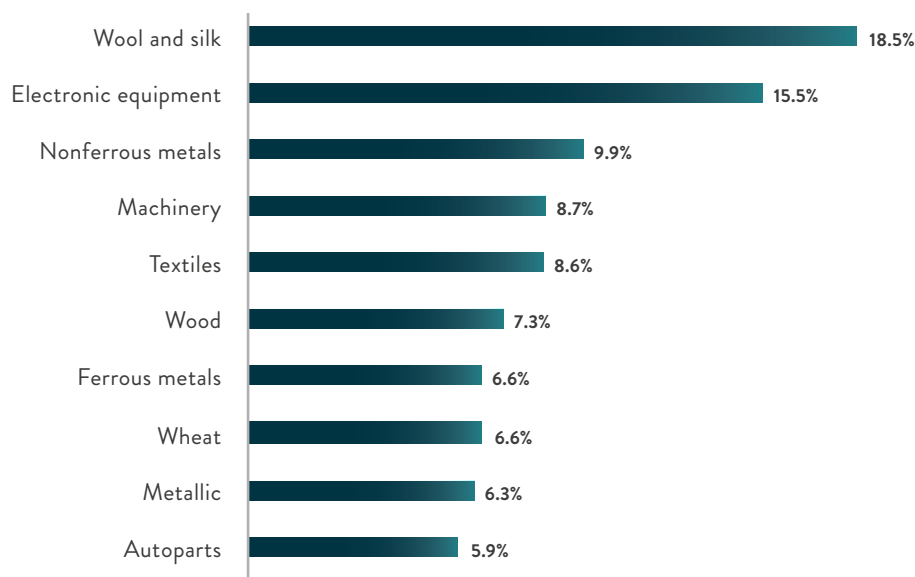
regions<sup>41</sup>. The model allows us to test the impact of changing conditions in the world economy by running simulations with varying parameters. For the experiment the varying parameter we used was the total use of capital in all sectors (assuming that SE firms or platforms could offer their services in all sectors of the economy). We wanted to know what would happen to the world economy and particularly to the Mexican economy if the capital used to maintain production was reduced by 3% at any given moment in time due to efficiencies in transport, housing and financial services through SE businesses.

The simulation results for Mexico showed an increase in the growth rate of the economy of 2.55%. That is, a change of this nature in the efficiency of capital would double our current long-term rate (that currently sits at around 2.5% per year). In a scenario where Mexico

becomes an early adopter of SE models it could seize a slightly higher payoff from that efficiency (2.58%). However, prices in the economy would drop 9.30% (or 2.08% if Mexico becomes an early adopter).

The model shows that most sectors measured in the model, 89% of them, could have a positive change in the use of capital. However, different sectors accrue more benefits from this transformation (see Figure 3). The sectors that could grow the most would be wool and silk sector (18.5%) along with electronic equipment sectors (15.5%). Even though these sectors do not represent a significant part of the demand for shared products, they – as potential capital-starved sectors – might accrue spillover benefits from a reduced demand of assets (cars, hotel buildings, office space) in the rest of the economy.

**Figure 3. The 10 sectors with the largest changes after a reduction of 3% in the demand for capital worldwide given efficiencies in transport, housing and financial services**



Source: IMCO with GTAPinGAMS model using data from National Accounts 2008 adapted to show a more recent equilibrium.

Overall, if the SE continues its growth tendency, we can expect positive direct effects. Users who voluntarily take part in in these platforms, only do so because there is a perceived benefit for them. A rise in income or consumer welfare can be the product of lower transaction costs. However it is noteworthy to state that the economic gains may be distributed unevenly and the full indirect effects are complex (see the Political economy of SE section).

<sup>41</sup> GTAP (Global Trade Analysis Project) is a fully documented general equilibrium model of the global economy, developed by the Center for Global Trade Analysis and the Department of Agricultural Economics in Purdue University. See Badri Narayanan, Angel Aguiar and Robert McDougall, Editors (2012). *Global Trade, Assistance, and Production: The GTAP 8 Data Base*, Center for Global Trade Analysis, Purdue University. Available online at: [http://www.gtap.agecon.purdue.edu/databases/v8/v8\\_doco.asp](http://www.gtap.agecon.purdue.edu/databases/v8/v8_doco.asp). GTAPinGAMS is an implementation of GTAP using the GAMS platform by Thomas Rutherford. See MPSGE: Rutherford, Thomas F. 1997. *Applied General Equilibrium Modeling with MPSGE as a GAMS Subsystem: An Overview of the Modeling Framework and Syntax*, March. Available online at: <http://www.mpsge.org/mpsge/syntax.pdf>

<sup>42</sup> K. Frenken and J. Schor. "Putting the sharing economy into perspective", *Environmental Innovation and Societal Transitions* (2017). (Consulted August 22nd, 2017) <http://www.sciencedirect.com/science/article/pii/S2210422417300114>,

## Potential challenges

As stated in the introduction of this section, there are three areas where the benefits of the Sharing Economy are unclear: the labor market, public revenue and the environment. Debate regarding the labor market centers on whether the flexibility of working arrangements may lead to a deterioration of worker conditions and welfare. In a country with high informality rates, this issue may also see a reduction in the tax base. Debate around environmental effects focus on whether the SE reduces the demand of new goods and buildings, and in the case of ride-sharing on a possible crowd-out effect of more sustainable modes of transportation. Evidence in these three areas is limited and in some cases inconclusive, therefore more studies are needed to better understand the potential challenges of the SE. However, it is important to say that as these innovative markets grow, SE endeavors seem to be willingly to collaborate with authorities as needed.<sup>43</sup>

### Effects on the labor market

The overall impacts of the SE on the labor market are unclear, mainly because the expected effects may vary depending on the type or the nature of the platform. Therefore, it is very important to center any analysis on a very defined set or group of platforms that have more or less the same characteristics and features. As stated at the beginning of this paper, we are focusing on the SE platforms that have a commercial component, that is, when one of the peers in the P2P interaction generates a profit from the exchange of services.

The nature of P2P firms offers participants three advantages: low barriers to entry, flexibility to manage their time, and freedom to define the best business conditions for each case. Thus, these firms offer a myriad of types of arrangements depending on each participant. For example, it may be that a ride-sharing app driver is a car owner or a partner, or an employee of the owner of a car. The platform is indifferent to what kind of contract takes place between the parties that supply labor and capital to produce car rides. Flexible arrangements allow for minority groups as students, women and the disabled to participate as well<sup>44</sup>.

Changing this flexible scheme to return to traditional work relationships would be detrimental to the operation and attractiveness of the platform.

A study by Jonathan Hall and Alan Krueger found that Uber driver-partners tend to provide fewer hours of independent service per week and earn as much, or sometimes more, than traditional taxi drivers and chauffeurs. According to this study, more than 50% Uber drivers-partners provide independent services less than 16 hours a week, perhaps because these drivers have other employments and they take advantage of Uber's flexibility. However, almost half the drivers who started in 2013 stopped using the app over the course of a year. As the costs of entry are low, many drivers try this self-employment option and leave it if it does not match their expectations or if they find another job.<sup>45</sup>

Another study by Cramer and Krueger found that Uber drivers are more efficient than taxi drivers. UberX drivers spend a significantly higher fraction of their time, and drive a substantially higher share of miles, with a passenger in their car than do taxi drivers. In part, higher capacity rates may be related to the combination of Uber's flexible model with surge pricing that helps matching supply and demand throughout the day.<sup>46</sup>

As regards to working equality there is a debate. On one hand, there are studies that show that the alternatives offered by SE firms could be highly valued in countries with high rates of unemployment. In India, for example, Uber has created thirty thousand business opportunities for the unemployed in Tamil Nadu while its local competitors have given training programs for an additional 50 thousand women throughout the country.<sup>47</sup> Landier, Szomoru and Thesmar (2016) show that in France, Uber has reduced the barriers to entry the labor market for people who is young and come from low-income neighborhoods where is difficult to find a job, even for those with education<sup>48</sup>. A recent report from the International Finance Corporation (IFC) and Accenture found that ride-sharing apps reduce barriers to entry for women to work as drivers in this traditionally male-dominated industry and, in Mexico's case they boost women's average income 11%.<sup>49</sup>

<sup>43</sup> M. Issac, "Uber 2.0: New C.E.O. wants to put his stamp on the company". (Nov. 9 2017) (Consulted on April 18th, 2018) <https://www.nytimes.com/2017/11/09/business/dealbook/uber-ceo-dara-khosrowshahi.html>

<sup>44</sup> L. Meza González, "Digitalización y mercados de trabajo", Seminario Internacional: ¿Cómo medir las actividades económicas basadas en plataformas digitales? (2017) <http://www.beta.inegi.org.mx/eventos/2017/digital/>

<sup>45</sup> J. Hall and A. Krueger. "An Analysis of Labor Market for Uber's Driver-Partners in the United States." NBER Working Paper No. 22843 (2016), <http://www.nber.org/papers/w22843> (Consulted March 5th, 2018)

<sup>46</sup> J Cramer and A. Krueger. "Disruptive change in the taxi business: The case of Uber." NBER Working Paper No. 2208 (2016). <http://www.nber.org/papers/w22083.pdf> (Consulted March 5th, 2018)

<sup>47</sup> N. Yaraghi and S. Ravi. *Op cit.*

<sup>48</sup> A. Landier, D. Szomoru and D. Thesmar. "Working in the on-demand economy: An Analysis of Uber-driver partners in France". (March 4th, 2016) <https://drive.google.com/file/d/0B1s08BdVqCgrZWZrQnVWNUFPNFE/view> (Consulted on May 1st, 2018)

<sup>49</sup> IFC and Accenture. "Driving toward equality: Women, ride-hailing and the Sharing Economy". (March 2018) [https://www.ifc.org/wps/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/gender+at+ifc/drivingtowardequality](https://www.ifc.org/wps/connect/topics_ext_content/ifc_external_corporate_site/gender+at+ifc/drivingtowardequality) (Consulted on May 1st, 2018)

However, some experts point out that flexible working arrangements have considerable downsides including the deterioration of labor standards and inequality. According to the Center for American Progress, the rise of independent contractors for the gig economy mirror the zero-hour contracts<sup>50</sup> that have been criticized in the United Kingdom because they decrease bargaining power for workers, make income flow unpredictable and lead to exploitation of workers.<sup>51</sup> Also, on-demand platforms are increasing income inequality among the bottom 80% of the distribution in the United States, as highly educated providers capture market opportunities like driving, cleaning and household tasks that used to be limited to less-educated workers.<sup>52</sup>

In Mexico, although employment has grown almost twice as much as the economy (in 2016, formal employment grew 4.1% annually, while the economy only grew at 2.2%), other indicators suggest that work conditions have deteriorated. One of these indicators is the proportion of workers that earn less than three minimum wages in Mexico. Between the third quarter of 2015 and the third quarter of 2016, approximately 1.3 million jobs were created in Mexico<sup>53</sup>. And yet, the number of workers that earn less than three minimum wages increased by 1.875 million, while those who earn more than three minimum wages decreased by 675 thousand. As a percentage of the total employed population, employees with wage perceptions of up to three minimum wages went increased from 60% in 2008 to 67% in 2014<sup>54</sup>.

Another sign of deterioration of the productivity and contractual conditions in the Mexican labor market is the share of the national product that wages and salaries represent. While in 2003 they represented 28.2% of Gross Added Value (GAV), in 2008 this percentage fell to 25.5%.

Labor deterioration has remained despite a growth tendency in the educational level of the population in Mexico. In 2000, the average number of school years at the national level was 7.5, by 2010 it increased to 8.6 years, and in 2015 up to 9.1.

In Mexico, informality is a major economic problem. By 2015 over 76% of GDP<sup>55</sup> was produced by only 43% of workers employed in the formal sector<sup>56</sup>. Given the lack of contracts between platforms and providers, some jobs created by P2P firms could be considered informal. This means that some providers do not have access to social security and their benefits: saving for retirement, incapacity leaves, or access to the public health system (other than the lowest assistance system, the “Seguro Popular”).

To nourish this debate, an interesting line of research would be a measure of how productive these jobs are compared to the rest of informal, semi-formal and self-employed occupations. At the same time, the Mexican government should identify and advance policies to improve workers’ wellbeing despite the high-levels of informality. One idea might include the implementation of universal social security, where insurance status is not tied to labor market situation.

### Public revenue

The effects of P2P firms on public revenue are also unclear and deeply linked to federal, state and municipal tax laws. The fiscal effects that new technologies might have are a serious concern for many governments. The Trades Union Congress in the UK estimates that the rapid rise in insecure work is costing the government almost 4 billion pounds a year in lost tax income and benefit payouts.<sup>57</sup> The Institute on Taxation and Economic Policy estimates that if taxi, limo and Transportation Network Companies (TNC) services had been subject to local sales tax, they would have generated 1.2 billion dollars to state and local governments in 2014.<sup>58</sup> At the time of the publication of this report, an estimation of this sort in Mexico was not available.

Generally, on-demand platforms may drive a reduction of the tax base at three levels: consumer taxes for the goods or services they exchange, income taxes for independent contractors, and income tax of SE firms.

<sup>50</sup> M. Issac, “Uber 2.0: New C.E.O. wants to put his stamp on the company”. (Nov. 9 2017) (Consulted on April 18th, 2018)

<https://www.nytimes.com/2017/11/09/business/dealbook/uber-ceo-dara-khosrowshahi.html>

<sup>51</sup> Center for American Progress, “Report of the Commission on Inclusive Prosperity” (2015), 32-35. (Consulted on August 18th, 2017)

<https://cdn.americanprogress.org/wp-content/uploads/2015/01/IPC-PDF-analysis.pdf>

<sup>52</sup> J. B. Schor. “Does the Sharing Economy Increase Inequality Within the Eighty Percent? Findings from a Qualitative Study of Platform Providers”, *Camb. J. Reg. Econ. Soc.* (forthcoming, 2017). (Consulted on August 20th, 2017)

<sup>53</sup> INEGI, *Encuesta Nacional de Ocupación y Empleo (ENOE), select quarters.*

<sup>54</sup> L. Meza González *Op cit.*

<sup>55</sup> T. Martínez and Z. Flores. “Informalidad captura hasta un cuarto de la economía del país” *El Financiero*, (2016). (Consulted on August 20th, 2017)

<sup>56</sup> IMCO calculations with data from the National Survey of Employment 2016 (ENOE)

<sup>57</sup> K. Allen. “Booming gig economy costs £4bn in lost tax and benefit payouts, says TUC”, *The Guardian* (2017) (Consulted on August 20th, 2017)

<https://www.theguardian.com/business/2017/feb/14/insecure-work-bad-uk-economy-tuc-zero-hours-contracts>

<sup>58</sup> Zach Schiller and Carl Davis. “Taxes and the On-Demand Economy”, *IETP Report* (2017). (Consulted on August 20th, 2017)

<https://ittp.org/taxes-and-the-on-demand-economy/>

First, services may not be subject to all federal and local consumer taxes. In most states in the US, both taxi fares and rides with TNCs such as Uber are exempt from sales taxes. Some states like Pennsylvania and South Carolina are tailoring specific taxes for TNCs. However, this is not the case in every country. In Mexico City ride-sharing services pay value-added tax (VAT) plus a 1.5% fee per ride for the Taxi, Mobility and Pedestrian Fund (Fondo para el Taxi, la Movilidad y el Peatón). Other cities are adopting similar schemes for ride-sharing services. Likewise, starting in June 2017, Airbnb rentals were requested to withhold a 3% hosting tax in Mexico City.

Although obtaining additional resources from disruptive activities may be attractive for local authorities, transparency is key. For instance, the Taxi, Mobility and Pedestrian Fund was created as a private escrow that cannot be audited. Therefore, there is no public accounting on the resources obtained or how the Mexico City authorities have invested the money and whether they are accomplishing the Fund's objectives.

Second, services may not be subject to paying all income taxes associated with labor status. Providers of these platforms are not employees. Although this gives them flexibility, it does not obligate providers to pay labor and social security taxes. For example, Uber in Mexico requests that car owners be registered with the Tax Administration Service (SAT for its acronym in Spanish) and should individually declare their income. This request is not verified or enforced by Uber. Both car owners and drivers are responsible for declaring their income and deducting relevant expenses. Airbnb does not consider this requisite at all. In a country where almost half of all workers are informal, it is likely that a large percentage of providers of these platforms neither declares their income nor pays taxes.

Third, international P2P firms can define offshore strategies to reduce taxes paid in the jurisdictions where they operate. This practice is frequent in most firms that have representation in different countries, not limited to firms in the Sharing Economy. Yet, this practice reduces the public revenue that could potentially be obtained from these fast-growing services.

In the future, these effects on public revenue should be studied further and companies could help collaborate to design the mechanisms for providers and fiscal

authorities to work together. It should be emphasized that these firms can track all transactions through the platform and is easier to request an invoice in comparison to other traditional firms. Both elements could be an advantage for fiscal authorities.

### Environmental impacts

The environmental effects of the SE are also complex. "Sharing is thought to be eco-friendly because it is assumed to reduce the demand for new goods (cars) or the construction of new facilities (in the case of hotels, parking spaces or shared spaces). Despite these widespread beliefs, there is not yet empirical evidence on these claims, apart from car sharing where substantial reductions in CO<sub>2</sub>-emissions are realized."<sup>59</sup> Most studies available are commissioned by SE firms and only address one round of substitution among types of goods and services. However, to determine full carbon and environmental effects it is necessary to analyze all changes that are set in motion within the system as a result of a new sharing practice. Analysis should consider both the rebound effects and changes in income among classes.<sup>60</sup>

For the transport sector, there is no question that ride-hailing services are incapable of replacing true mass transit and be more efficient in terms of CO<sub>2</sub>-emissions or road space. At Uber Movement's launch event in Washington D.C., a demonstration of the product showed off what the Movement could do by showing what gridlocked D.C. when its entire metro system shut down in March for emergency inspections<sup>61</sup>.

On the subject Andrew Salzberg, Uber's Head of Transportation, said that "there's no way in any system that Uber and any sharing models can move as many people as rail trains can, and I think we've demonstrated that with the shutdown [...] If you look at the data for that day, you get a dramatic increase in congestion when rail transit doesn't run."<sup>62</sup>

When looking at environmental impacts, tensions between that platforms like Uber or Lyft have with traditional taxicabs are irrelevant, but their effects on the rest of the transportation modes are not. There is not yet enough data to objectively study and determine what the relationship is between ride-sharing services and other forms of transportation. Many studies suggest that ride-sharing alternatives draw people away from public transport<sup>63</sup>. Most of these studies draw

<sup>59</sup> K. Frenken and J. Schor. *Op cit.*

<sup>60</sup> K. Frenken., "Political economies and environmental futures for the sharing economy." (2017) *Trans. R. Soc. A 375: 20160367*. (Consulted on August 18th, 2017) <http://rsta.royalsocietypublishing.org/content/roypta/375/2095/20160367.full.pdf>

<sup>61</sup> L. Poon *Op cit.*

<sup>62</sup> L. Poon *Op cit.*

<sup>63</sup> E. Badger, "Is Uber Helping or Hurting Mass Transit?", *New York Times* (2017). (Consulted on December 21st, 2017) <https://www.nytimes.com/2017/10/16/upshot/is-uber-helping-or-hurting-mass-transit.html>



data from surveys, hence, it is difficult to be sure if the claims are reliable. Nonetheless, it is important to address the possibility and think of how the interaction between transportation options could be used to reduce environmental risks.

As part of the above-mentioned study, authors Regina Clewlow and Gouri Shankar Mishra, estimate that users of 49% to 61% of ride-sharing trips would not have made the trips at all if these platforms did not exist, or would have chosen to walk, bike or use public transport. In other words, all the added cars to the road would have otherwise not been there. Regardless of if these numbers hold true, the blame should be evenly distributed. Preferences of means of transportation are inevitably linked to quality and convenience. An obvious question arises: how is the demand for ride-sharing services linked to quality of mass transit?

A majority of users in public transportation systems have the generalized perception of insufficient, low quality services that are likely pushing users to individual - and hence relatively inefficient - modes of transportation.

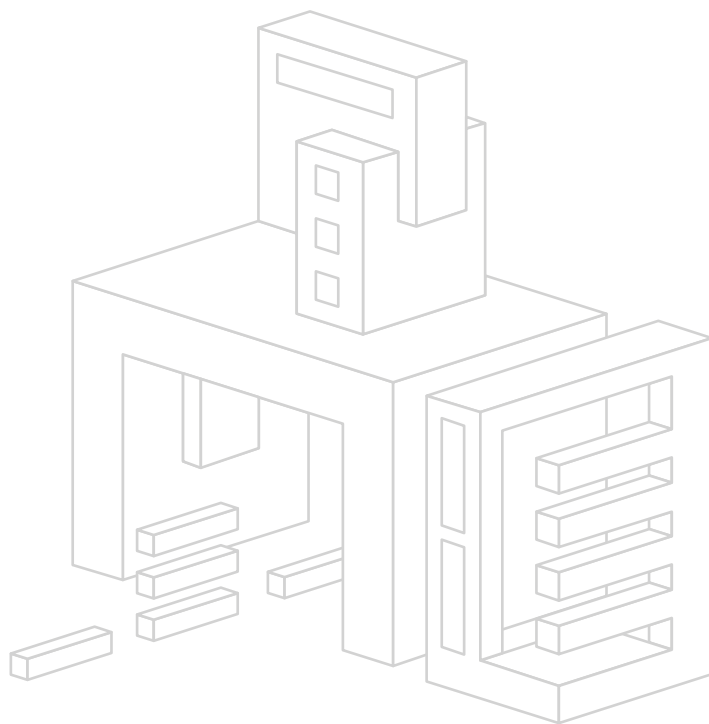
Many times, these perceptions are a result of lack of investment in collective transport infrastructure and financially unsustainable models of public transportation systems. Public investment is very important for the development of quality mass transit, where mechanisms like land value taxation are commonly used to pay for capital costs of infrastructure. But the key to improve and sustain quality is not only public investment but also having sustainable financial models. Systems should pay for their own operation and maintenance from usage-derived revenue. If new transit infrastructure is built but it cannot cover its operating costs from user revenue, quality is likely to suffer<sup>64</sup>.

Real costs should, mostly, be directly reflected on fares. Alternatives to boost financial sustainability of mass transport systems could include membership plans such as seasonal or annual passes where users are incentivized to use the service exclusively. These payment models could encourage public transportation use over other options.

Subsidies should be used only for people with disadvantages and should come from non-transportation specific revenue sources. Place-based subsidies do not allocate resources efficiently. Instead, subsidies could be funneled with much more precision and less graft if they

are targeted directly at families and individuals<sup>65</sup>. Governments could learn from SE businesses in arranging the necessary databases and digital platforms to individualize government disbursements.

On the ride-sharing side, fare controls distort the transport decision process and in many cases, encourage people to use the service given that the convenience-price ratio is very uneven when compared to low quality mass transit. Pricing models that consider peak and off-peak moments are commonly used in hotels, airlines, even commuter trains and represent a good way to deal with demand swings<sup>66</sup>.



<sup>64</sup> D. Levinson and D. King, "Here's How The Government Should Be Subsidizing Public Transit", *Business Insider* (2013). (Consulted on December 21st, 2017) <http://www.businessinsider.com/the-right-way-to-subsidize-public-transit-2013-4>

<sup>65</sup> *Ibid.*

<sup>66</sup> R. Mohammed, "The Taxi Industry Can Innovate, Too", *Harvard Business Review* (2015). (Consulted on December 21st, 2017) <https://hbr.org/2015/02/the-taxi-industry-can-innovate-too>

# The Political Economy of SE

The effects of the Sharing Economy, just as the effects of most markets, are distributed unevenly. In addition to consumers, who see a surplus from lower prices and an increase in competition and consumer options. There are two big winners of the Sharing Economy: SE firms and asset owners. SE multi-sided platforms are characterized by strong network externalities that allow for high margins to be charged by the platform. In this sense, even though ratings are generated by platform users, their value is appropriated by the platform itself. Moreover, the level of innovation of these firms let them operate -at least in early stages- without complying with costly regulation, giving them an advantage when competing with traditional firms. Despite this advantage, there is no concrete evidence that their behavior is anti-competitive.<sup>69 70</sup>

Asset owners is the second group that profits the most from SE models, as their consumer assets are turned into capital assets that earn rents. Typically, valuable consumer goods are concentrated in small groups of relatively wealthy people. This is most evident in home sharing, but it can also be applied to any scarce resource such as cars or parking spaces.<sup>71</sup>

The Sharing Economy could foster inclusion while improving the distribution of benefits. However, according to Business for Social Responsibility (BSR) -a global nonprofit organization that works with a network of more than 250 member companies to build a just and sustainable world- many of those who have the most to gain from these new models face the greatest barriers to using them. To increase inclusion, SE initiatives should identify and develop ways of becoming attractive and viable choices for low-income asset owners and workers in underserved markets.<sup>72</sup> This would increase access for underserved

communities as well as create growth opportunities for SE firms.

In countries like Mexico where financial inclusion continues to be a challenge, using cash for SE transactions is a good example. As mentioned earlier, Amazon Cash could benefit up to 63% of population without a debit or credit card.<sup>73</sup> In ride-sharing, for instance, Uber in certain cities make up for the lack of necessary infrastructure for people with disabilities. However, some populations cannot benefit from these services because they are not aware of the existence of these special services, they do not own a card or because the regulation prohibits the use of cash and/or even pre-paid cards.

Including people outside the financial system is SE services could, in turn, become an initial step to increase financial inclusion. In a recent conference organized by the Asian Development Bank it was mentioned that microfinance institutions “had a lot to learn from experiences of offering mobile money cash-in and cash-out services as well as mobile money-enabled banking services, especially with regard to expanding outreach to adoption and usage challenges”.<sup>74</sup> In that sense, win-win strategies developed by partnerships between financial institutions and SE firms could serve to widen the reach of services offered through SE platforms and at the same time drive financial inclusion of the population in the new market. These new strategies should be very careful to maintain the mechanisms that technology offer for dealing with anonymity and potential safety hazards in every transaction.

Traditional competitors and local governments are among the main stakeholders affected by the SE

<sup>66</sup> R. Mohammed, “The Taxi Industry Can Innovate, Too”, *Harvard Business Review* (2015). (Consulted on December 21st, 2017)

<https://hbr.org/2015/02/the-taxi-industry-can-innovate-too>

<sup>67</sup> Network externalities have been defined as a change in the benefit that an agent derives from a good when the number of other agents consuming the same kind of goods changes. For example, as the number of Uber users increases, the company’s income rises as well as the data collected from the market.

<sup>68</sup> K. Frenken and J. Schor. *Op cit*.

<sup>69</sup> N. Yaraghi and S. Ravi. *Op cit*

<sup>70</sup> COFECE. “Opinión sobre las empresas de redes de transporte” (2015). (Consulted on December 21st, 2017)

<http://www.cofece.mx:8080/cfresoluciones/docs/Mercados%20Regulados/V6/16/2042252.pdf>

<sup>71</sup> K. Frenken and J. Schor. *Op cit*.

<sup>72</sup> “An Inclusive Sharing Economy”, *Business for Social Responsibility (BSR)* (2017). [https://www.bsr.org/reports/BSR\\_An\\_Inclusive\\_Sharing\\_Economy.pdf](https://www.bsr.org/reports/BSR_An_Inclusive_Sharing_Economy.pdf)

<sup>73</sup> INEGI y CNBV, *Encuesta Nacional de Inclusión Financiera 2015*. p.96. (Consulted on December 21st, 2017)

<http://www.cnbv.gob.mx/Inclusi%C3%B3n/Documents/Encuesta%20Nacional%20de%20IF/ENIF%202015.pdf>

<sup>74</sup> Tanya Hotchkiss at the conference *Financial Inclusion in the Digital Economy*, Asian Development Bank (2016)

<https://www.adb.org/sites/default/files/publication/200001/financial-inclusion-digital-economy.pdf>

economy. On the one hand, traditional firms lose competitiveness because they face high costs of rigid regulation. On the other, governments have a much harder time to applying and collecting taxes from these transactions, since new technological business models are often not contemplated in tax laws.<sup>75</sup> In general,

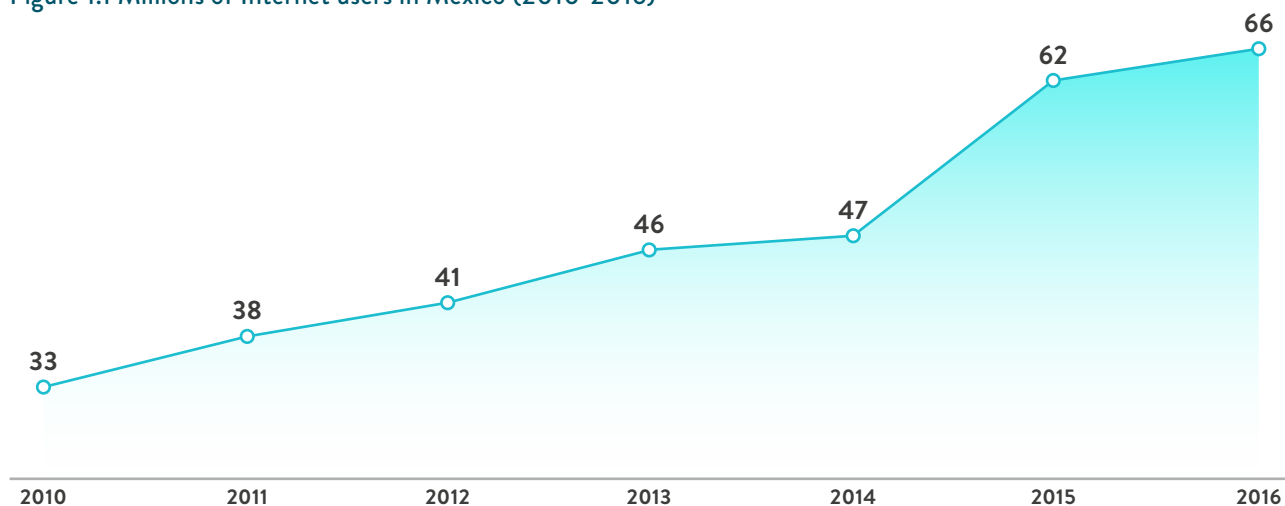
reactions from both stakeholders towards the SE economy have been negative. For instance, Airbnb was banned in Berlin in 2016 while Uber was regulated by a decree in Mexico City in 2015 and was recently given only 200 permits to operate in the state of Guanajuato, Mexico.

#### Box 1. Enablers of the SE in Mexico

According to data of the National Institute of Statistics and Geography (INEGI), in 2016 more than 65 million Mexicans older than six years old used Internet. This number is equivalent to almost 60% of the population in this age range, or 73% of urban populations.<sup>76</sup> Even though Internet access has doubled since 2010 (Figure 1) the percentage of Internet users is still low in comparison to the average of 82% amongst member countries of the Organization for Economic Co-operation and Development (OECD) countries in 2014.

There is also an important lag in firms' digitalization. In 2014, almost 80% enterprises had broadband connectivity and 42% had websites or home pages. These numbers are smaller than the average for the OECD that stand at 95% and 76%, respectively.

Figure 1.1 Millions of Internet users in Mexico (2010-2016)



Source: IMCO with data from INEGI 2016

In Mexico, slightly over half of the population older than six years old has a smartphone, and eight out of 10 smartphone users don't depend on a Wi-Fi connection for Internet access. Even with the development of content and entertainment that websites and apps have offered to users or the quantity of information available nowadays, the main use that Mexicans give to Internet continues to be communication. Almost 90% of users interviewed responded that they use Internet mainly for this purpose. The second most important use is access to information at 85%, followed by audiovisual content (82%), entertainment (80%) and social media (76%).

Although most people are not aware of the "Sharing Economy" concept and how it works, seven out of 10 Mexicans with Internet access made online purchases from May to July 2016<sup>77</sup>, including services through SE websites. According to the Mexican Association of Internet (AMIPCI), almost four out of five mobile device users register at least one type of transaction.

<sup>75</sup> J. L. Kerner. "Challenges of Taxing the Sharing Economy", *Lexis Practice Advisor Journal* (2015). (Consulted on December 21st, 2017) <https://www.lexisnexis.com/lexis-practice-advisor/the-journal/b/lpa/archive/2015/11/25/challenges-of-taxing-the-sharing-economy.aspx>

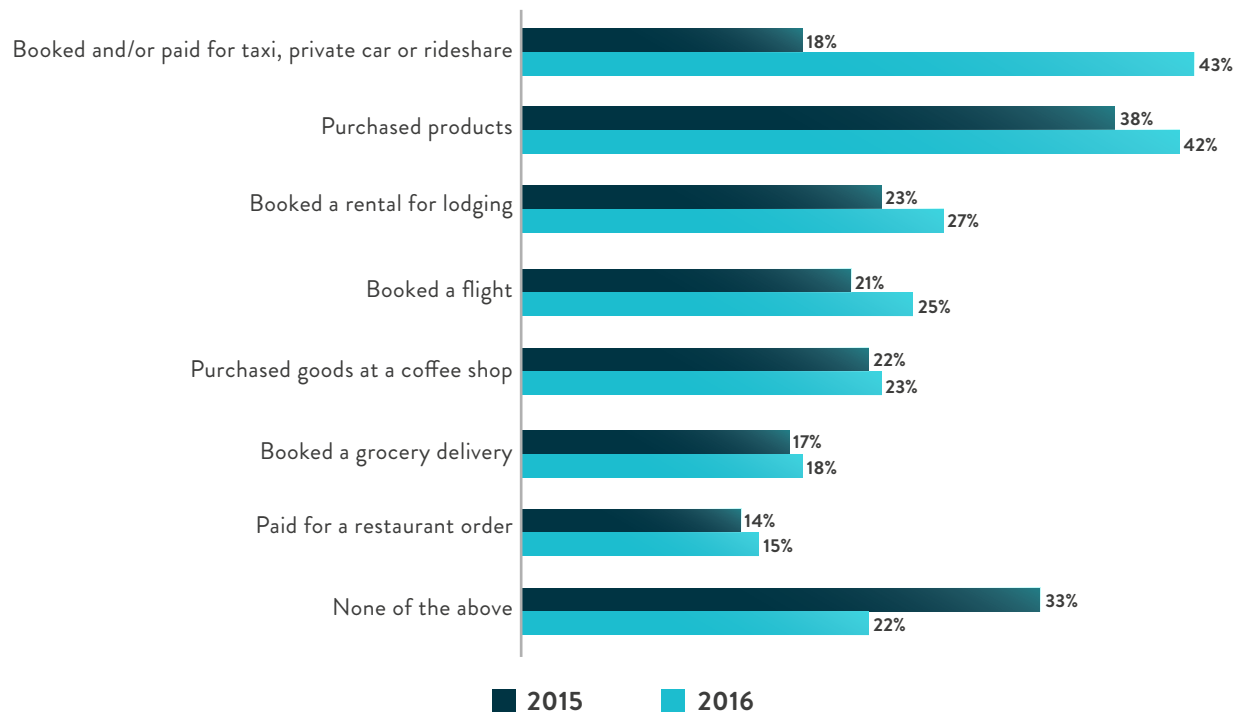
<sup>76</sup> INEGI. *Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares 2016*.

[http://www.inegi.org.mx/saladeprensa/boletines/2017/especiales/especiales2017\\_03\\_02.pdf](http://www.inegi.org.mx/saladeprensa/boletines/2017/especiales/especiales2017_03_02.pdf)

<sup>77</sup> Asociación Mexicana de Internet. *E-Commerce study in Mexico* (2016). (Consulted on December 21st, 2017) <https://www.asociaciondeinternet.mx>

It should be emphasized that booking or paying for transportation and ridesharing services using mobile apps increased 25 percentage points between 2015 and 2016 (Figure 2).

Figure 1.2 Types of transaction via mobile devices 2015-2016



Source: IMCO with AMIPCI<sup>78</sup> data 2016

Despite that close to 45 million Mexicans has access to Internet via a mobile connection<sup>79</sup> independent of Wi-Fi, and the growth of transactions via mobile devices, the share of Mexicans with a bank account could still be considered as a major barrier for the development of apps or transactions via mobile devices. In 2015, almost 6.8 million Mexicans in urban areas held owned a credit card and 11.45 million Mexicans had a departmental or self-service store credit card, which translates to 8.9 and 15% of Mexicans over 18 years of age, respectively. In the case of debit cards, the share rises to 22% for payroll or pension accounts (16.7 million Mexicans in urban areas) and 13% for savings accounts (10 million Mexicans in urban areas)<sup>80</sup>.

Despite the lack of knowledge surrounding the concept of “Sharing Economy”, it has emerged in response to the needs of users. Factors such as the decrease in search and transaction costs, as well as technological development have been key to its success.

The success of platforms such as Uber or Airbnb, arises from the need to solve a problem and a distrust of both the demand of supply users of the service. P2P platforms have been built on the shoulders of other e-commerce such as Amazon or e -Bay, in addition to social networks and an increase in the availability of information.<sup>81</sup> As a result, technological shocks summed to the innovation of companies and their acquired knowledge, have changed the way users interact and resolve their needs.

<sup>78</sup> Desde el 1° de diciembre de 2016 la AMIPCI se convirtió en la Asociación del Internet (AsociacionDelInternet.org.mx)

<sup>79</sup> INEGI. Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares 2016.

[http://www.inegi.org.mx/saladeprensa/boletines/2017/especiales/especiales2017\\_03\\_02.pdf](http://www.inegi.org.mx/saladeprensa/boletines/2017/especiales/especiales2017_03_02.pdf)

<sup>80</sup> INEGI-CNBV. Encuesta Nacional de Inclusión Financiera 2015. <http://www.cnbv.gob.mx/Inclusi%C3%B3n/Documents/Encuesta%20Nacional%20de%20IF/ENIF%202015.pdf>  
It's important to mention that one person could have more than one type of card, so it's not possible to add percentages as such.

<sup>81</sup> J.J Horton and R.J. Zeckhauser, “Owning, using and renting: some simple economics of the sharing economy”. National Bureau of Economic Research (2016).

# The role of regulation

There is considerable debate regarding the regulation that should be applied to P2P firms. From an economic perspective, government should intervene to solve market failures. In that sense, regulation is needed to protect consumers, promote public safety, generate open data and meet other legitimate governmental goals. The ways in which interventions are applied are very important, since they can generate costs and create barriers to entry that can decrease incentives for innovation and deprive consumers of the benefits of new product and service offerings.<sup>82</sup>

One of the main concerns is that existing regulation creates an unlevelled playing field between P2P firms and its traditional competitors. As a result, traditional firms have lobbied governments to include P2P products as subject to the same legislation. The approach may not be the most efficient since the services rendered are similar but not the same. According to the Cologne Institute for Economic Research, authorities should be quick to review existing regulation in the light of new technological possibilities and consider pertinent adjustments. Changes might include reducing the costs of adhering to existing regulation for traditional competitors.<sup>83</sup>

P2P models operate by default with mechanisms that allow them to solve some of the market failures addressed by the old regulation, that is the case of accurate record keeping that allow them to make better decisions for their business but also to create mechanisms to prevent crimes, frauds or any harmful behavior that would negatively impact their operation. In this sense, the first step for the regulators should be deregulate P2P firms and avoid the negative impact that old regulation could have on this new business models. Nevertheless, regulators should focus on identifying possible new failures and address them. Their new task should be answering the question: what are the new market failures linked to P2P models that regulation should be addressing?

Since there are various network effects that create profit for SE firms as they grow, the incentive of

platforms to become monopolies is enormous, especially if they are in jurisdictions with weak competition policies, or where bigger competition problems exist (such as the conflict between Mexican COFECE and Mexico City airport cab companies). Although smartphones reduce the costs of changing among platforms, the regulator must give clear signals that monopolistic behavior will not be tolerated and concentrations will be dismantled. Effective policies by competition authorities can create the right incentives to boost competition amongst platforms allowing, for example, that their service providers operate on more than one competing platform at the same time.

Another concern is **public safety**. As stated in previous sections, technology may reduce opportunities for crime, through the use of GPS tracking systems that establish the identity of users. Likewise, firms have defined internal policies to increase safety. Uber applies filters to admit drivers while Airbnb will use machine learning and artificial intelligence to identify risky behavior among users (hosts or guests) of the platform. To increase trust from users and government, firms could be more transparent about their safety policies and actions to protect users. In that sense, it should be noted Uber's efforts with the recent campaign "7 acciones por tu seguridad" in Mexico to inform concisely users and drivers about their safety actions.<sup>84</sup> In addition, firms could formalize agreements to collaborate with local authorities in cases of crime.

The potential social benefits of **data gathered by SE firms** are not limited to public safety, they can also improve other markets and policy areas like mobility, financial markets, insurance markets and many more. However, for society to internalize these benefits, part of SE data must become open. This should not be taken as a reason for authorities to proceed with caution but as a detonator for a dialogue between SE firms and governments to define a minimum of information that should be disclosed with the aim of generating public benefits while protecting privacy and commercial secrets.

<sup>82</sup> Federal Trade Commission. "The "Sharing" Economy: Issues Facing Platforms, Participants & Regulators" (2016). (Consulted on December 21st, 2017)

<https://www.ftc.gov/reports/sharing-economy-issues-facing-platforms-participants-regulators-federal-trade-commission>

<sup>83</sup> Cologne Institute for Economic Research. "Competition in the Sharing Economy", IW policy paper 19/2015 (2014). (Consulted on December 21st, 2017)

[https://www.iwkoeln.de/\\_storage/asset/235443/storage/master/file/7255909/download/Sharing%20Economy%20Policy%20Paper.pdf](https://www.iwkoeln.de/_storage/asset/235443/storage/master/file/7255909/download/Sharing%20Economy%20Policy%20Paper.pdf)

<sup>84</sup> Uber (2018). (Consulted on April 30th, 2018) <https://7accionesportuseguridad.com/>

**Consumer protection** is another concern when it comes to regulation. At least in Europe, copyright and consumer laws apply as much to the Sharing Economy as they do to traditional markets. Some firms, including Uber and Airbnb, have added insurance contracts in place to face contingencies.<sup>85</sup> Authorities should continue to review how vulnerable the consumer is while firms should be increasingly transparent about their actions to protect consumers. In a way, the insurance market provides a mechanism for self-regulation of the activities of the SE platform owners and both sides of the market, but some intervention of regulators to adjust the nature of the insurance contracts might be necessary. One option could be setting a standard based on the best practices found in the market.

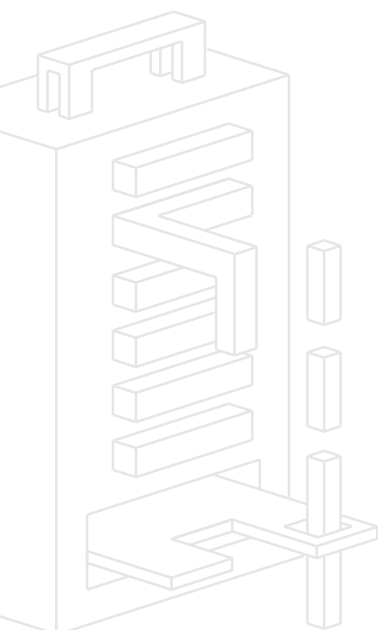
Another concern regarding consumers are information asymmetries. In consumer theory, it is assumed that preferences are complete. This means that buyers (in this case any end-user) will make rational choices only if they fully understand their own preferences. This, in turn, is achieved if they know all the details regarding the goods or services they are acquiring through P2P platforms, which are contained in the terms and conditions (T&C) of each firm. However, T&C change for almost every platform, they are written with legal jargon and some are quite long (for example Spotify's T&C of use have almost 8 thousand 900 words which are equivalent to more than half the words in Shakespeare's Macbeth!). Having complex T&C's may increase the costs of consumers to change among platforms.



As mentioned previously, the labor status effects remain unclear. Providers on P2P platforms are considered independent contractors. Although this gives them flexibility, it may also have downsides like the lack of access to social security benefits. The approach to this issue may not be simple and it requires a better understanding of how to provide solutions for providers without sacrificing benefits. For instance, authorities could create incentives for providers to save part of their income for their retirement by partnering up with P2P firms to create an option to withhold and send providers' contributions directly to their retirement account.

Two additional issues associated with the largest P2P companies are environmental pollution and gentrification. Authorities should work together to find innovative ways to mitigate associated problems. Examples could include requesting ride-sharing companies to gradually elevate pro-environment standards for their vehicles or help municipalities use data generated on the platform to better understand traffic flows in cities as a means to improve policy and decision making.<sup>86</sup>

In summary, authorities should regulate around specific market failures that arise as a result of new technological business models. Authorities should improve their capacity to analyze and implement solutions much more quickly, given the speed of innovation and the flexible nature of new business models. Authorities should also identify synergies to reach win-win policy options for consumers, providers and firms. It is important to point out that as more studies are generated to understand the effects of these new models, the better the solutions can be.



<sup>85</sup> A. Marchi and E. J. Parekh. "How the sharing economy can make its case". McKinsey Quarterly (2015). (Consulted on December 21st, 2017) <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-the-sharing-economy-can-make-its-case>

<sup>86</sup> Federal Trade Commission. op cit.

# RECOMMENDATIONS

As the saying goes, “it’s hard to make predictions, especially about the future”. The goal of regulation should be to reduce market failures without stifling innovation. This is not an easy task. In the following section IMCO presents a list of recommendations for authorities, SE firms and users to address some of the challenges.

## Recommendations for authorities:

- **Deregulate first.** IMCO’s estimation, as one of the first attempts to quantify the benefits of the Sharing Economy at a macroeconomic level in Mexico, shows that the SE could double the Mexican economy long-term growth rate. As presented above, technology in SE markets reduce some inefficiencies that were the reason for burdensome regulations in traditional markets such as: crimes, frauds, crises, and conflicts. In SE business, accurate record keeping for every market participant creates enormous incentives to behave properly, which might reduce many of the usual risks that regulation looked to address. Given the economic potential benefits, regulators must analyze the rationale of current regulations and engage with the SE industry to find creative ways in which technology can help solve issues that the old regulation tackled. This will reduce enforcement costs for the authority and can help re-focus the efforts of the State on the new issues and concerns.

- **Help market participants adapt to the new reality.** SE is a significant force of change in the world economy. As with past innovations, jobs can be destroyed as a result of new solutions, but new jobs and avenues to increase productivity will also be created by these highly innovative businesses. Forbidding SE on the grounds of job destruction is a monumental mistake. The authority must refrain from producing regulation without a clear understanding of the new business environment. Instead, the authority must set in place policies to retrain and help displaced workers gain new abilities, or gain access to technology and improve the quality of their service.

- **Define and prioritize federal standards instead of local regulations that create unjustified asymmetries for market development and open opportunities for corruption.** A way to establish these standards could be through a general law that apply to the whole country. Today, many states regulate the same service

differently which impose operation costs for SE firms, create barriers of entry for smaller firms, and generate unequal treatment for consumers across regions.

- **Allow for contractual diversity.** Since SE businesses are collaborative, different people can have different ideas about what is needed for them to cooperate. Contracts between parties should be as free as possible. Platforms and regulators should allow for people to rent capital as a means to contribute their labor, and vice versa. Partners in SE endeavors should decide freely how to split the rent from their efforts.

- **Favor competition.** Regulation must favor a competitive environment. Preserving business models because of their attachment to a labor-intensive technology, or because of their capacity to fill the public coffers through taxation is a common idea that stifles innovation and growth. In countries with weak institutions such as Mexico, corruption may be the underlying explanation to the regulators’ insistence not to allow market disruptions. Monopolies usually focus on maintaining the regulatory status quo and neglect to invest in innovation of both the technology used and the business model. Hence, regulators would benefit society if they refrain from forbidding SE endeavors, however big the disruption that they bring to current markets.

- **Set clear regulatory objectives.** Sometimes, regulation to favor investment may have the opposite effect on the interests of some groups. People want public transportation to be less crowded, but they also want it to be cheap, and many fail to see this contradiction. The regulation-making process must set clear objectives of their actions and find ways to meet those goals at the minimum cost for society.

- **Encourage incumbents to adopt the new technologies and business models.** If Kodak had embraced digital photography instead of trying to impede its introduction to the market, it would have

had a chance of surviving the end of analogue film. If the existing capital of hotel and transportation businesses can be harnessed into SE models, the resulting efficiencies and competition can create unparalleled economic growth.

- **Follow the data, not the money.** Regulators tend to try to tax or extract a rent from SE endeavors, in the same way that they have historically extracted resources from traditional businesses. However, the data produced by SE businesses can be an important tool to produce better regulation. There should be a dialogue between SE companies and the authorities to define a minimum of information that should be disclosed with the aim of generating public benefits while protecting privacy and their commercial secrets.

- **Create capacities to use and analyze data.** For the dialogue described above to be productive, it is extremely important that regulators generate in-house capacities 1) to understand the value data represents for firms, 2) to understand the privacy requirements that these firms have to comply with and 3) to know how data can be used for generating public benefits. This implies hiring key personnel such as mathematicians and data scientists and creating special areas for them to research and get the most out of data to shape debate and guide decision-making. It should be said that excessive demands from unexperienced regulators may lead to pullouts of SE endeavors and the loss of valuable information for the public.

- **Favor evidence-based regulation.** Instead of regulating SE business and trying to produce ex-ante predictions of their behavior, the regulator would serve society best if it allows the platforms to launch, observe their operation, and regulate cases ex-post where the SE business creates risks or costs much higher than the benefits.

- **Increase the tax base and incentivize providers to pay taxes.** To ease taxpayer compliance, P2P firms could be responsible for calculating and remitting taxes owed by individual host or drivers. This should not be interpreted as modifying the labor relationship between individual providers and the platform. Likewise, tax laws for disrupted markets should be reviewed and recalculated to avoid exemptions.

- **Study labor implications and explore ways to offer social security for suppliers to SE platforms.** Authorities should measure how productive SE self-employment is in comparison with the rest of informal occupations. At the same time, the Mexican

government should explore ways to improve independent contractors' wellbeing, for example through new retirement products that are not tied to labor market status.

### Recommendations for SE firms:

- **Release some data sets for independent research.** Aggregated data, to avoid violating personal data protection laws, can be used to deepen knowledge on SE effects. Disclosure and transparency would increase trust on SE firms, which is a key element of its business model.

- **Build alliances with similar firms.** All over the world, SE firms have failed to build the sort of powerful trade associations and alliances found in other traditional markets. According to McKinsey, the most successful and influential associations share three characteristics: 1) align their members on one important topic, 2) have a strong and committed leader (such as a CEO from a member company) and 3) use analytical capabilities to defend their ideas and shape debate. SE firms will share common ground with other digital firms even if they also face different issues depending on the market where they operate. In Mexico, this recommendation could imply the launch of a new organization for SE or digital firms or to identify an existing association interested in creating a special chapter for digital activities or platforms.

- **Be proactive on building regulatory frameworks.** The sharing economy is quite new in comparison to traditional markets, and also moves much faster than authorities. Data analytics and SE mindset can be useful to shape regulatory frameworks in favor of most parties, instead of just pushing back or litigating regulatory barriers for their own operation.

- **Add transparency as part of the efforts to increase safety.** Technology offers features to reduce the probability of crime, however it is not immune to it. To overcome scandalous news of negative events, SE companies should be very clear and transparent about their efforts to increase safety for users of their platforms. This includes stating the standards to accept new providers, guidelines used to ban users with bad behavior, types of insurance to protect users in case of disaster, among others.

- **Collaborate with authorities to identify fraudulent behavior from its users.** These collaborations could be formalized to improve public opinion and increase user trust.



• **Simplify and unify terms and conditions (T&C) for P2P platforms.** Central Ciudadano y Consumidor A.C.,<sup>87</sup> a Mexican organization that aims to empower consumers through citizen participation, market competition and self-regulation mechanisms, is working on a minimum standard to include key elements in T&C's. If this standard, or a similar one, is adopted by most platforms, consumers will be able to understand better the services they are acquiring, as well as compare T&C's from similar firms.

### Recommendations for SE users:

• **Understand the service acquired through P2P firms.** End-users are responsible for the service they acquire, and it is key that they know how the disruptive firm works and read their T&C. Although these businesses are based on trust, people should remember that they allow deals between strangers. Therefore, users should take precautions.

• **Rate the service.** Rating systems create incentives structures for those involved in multi-sided markets. However, they only work if people use them. People may not understand the importance and the implications of rating systems. Thus, firms should communicate their benefits.

• **Use tools or mechanisms to comment or solve controversies.** As stated above, P2P platforms have the incentive to attract and retain end-users. To achieve part of this goal, they offer simple tools for commenting, complaining and solving controversies. These options may be more efficient than losing time

• **Reward, complain or change P2P platforms based on their T&C.** Once T&C become more simple and easier to read, consumers should consider them to make choices regarding the acquisition of goods and services through P2P platforms. If they do not agree with certain T&C, they may stop using the platform or choose a competitor. As demanded, simple T&C's may become a distinguishing element that could generate healthy competition and ensure better conditions for all users.

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<sup>87</sup> Carlos Martínez Velázquez, general director, e-mail to authors as external peer reviewer, February 12th, 2018.

# TO DEEPEN ON THE CONCEPTUAL FRAMEWORK

## Definition of the Sharing Economy

In the article “The Nature of the Firm”, Ronald Coase established that the emergence of firms is a response to high transaction costs in peer-to-peer interactions. When the first firms emerged, communication and coordination among peers was very hard and limited by infrastructure. Hence, in “Production, Information Costs, and Economic Organization” Armen Alchian and Harold Demsetz argue that firms were needed as coordinators and monitors of a team in a production process that involved many suppliers or participants.

With the development of mass communication tools and Internet platforms, peer-to-peer interactions became less costly. One of the first examples of low cost peer-to-peer transactions was the music desktop application Napster, an ancient relative of current music Internet services. Although the story did not end well, it was the first platform to show the power of interconnected peers who wanted to share their assets (songs or albums) with others in exchange for easy access to the peers’ assets.

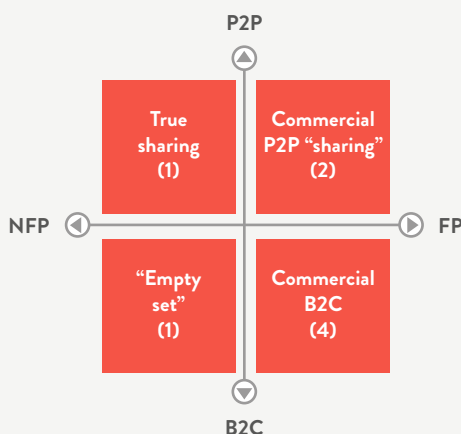
Recently, there has been a rapid growth of activities involving disruptive technologies, new kinds of intermediation, service provision and consumption.

The common characteristic of this new set of growing activities is digitalization. Giving rise to a very ubiquitous concept: the “digital economy”<sup>88</sup>.

There is no precise definition of ‘digital economy,’ but there is a consensus that one of its manifestations is peer-to-peer (consumer-to-consumer) transactions facilitated by web or app-based intermediaries in the corporate sector<sup>89</sup>. In turn, the massive intermediation of peer-to-peer services give rise to the concept of ‘Sharing Economy’.

Peer-to-peer or sharing economy transactions are not new activities. However, technological advances and people’s willingness to belong to an exchange community has enabled a fast-growing wave of new models. The vast presence of peer-to-peer platforms in a broad spectrum of economic sectors makes it difficult to pin down a clear definition for them.

Even without a clear definition<sup>90</sup>, according to the European Commission and the Institute for Prospective Technological Studies, it is still possible to map the sharing economy initiatives using a simple two-dimensional matrix: one for profit level and the other for the kind of users involved (see Figure 3).



The first dimension (horizontal axis) of the matrix classifies sharing platforms into for-profit (FP) and not-for-profit activities (NFP). On the NFP side of the axis there are firms that resemble “true sharing”. One example is BlaBlaCar where the cost of an interurban ride is split between peers and the platform only charges a service fee.

On the FP side of the horizontal axis there are two quadrants where, in addition to a service fee, the platform and users can make profits from their interactions. The main players in this arena include Airbnb and Uber.

<sup>88</sup> N. Ahmad, P.I Schreyer. “Measuring GDP in a Digitalized Economy”, OECD (2016).

<sup>89</sup> Ibid.

<sup>90</sup> C. Codagnone, B. Martens, “Scoping the Sharing Economy: Origins, Definitions, Impact and Regulatory Issues”, European Commission (2016)

Although peer-to-peer (P2P) based platforms and sharing economy are taken nearly as synonyms, the European Commission considers a second dimension (vertical axis) that makes a difference. On the upper side of the axis, there are platforms whose primary service is produced by individuals who are not formally organized: P2P or what can be referred to as “commercial P2P sharing”. On the lower side of the axis, there are firms that interact with individuals or business-to-consumers (B2C). The last group refers to e-commerce or online firms like Amazon, Zipcar or Carrot.

In the proposed classification (Figure 3), Quadrant 1 is very small in terms of users and far smaller in terms of economic impact. Quadrant 4 contains traditional companies whose only innovation is their online activity. In terms of regulation these firms do not represent much of a challenge. Given the nature of B2C activities, any NFP activity is dismissed and thus

Quadrant 3 is empty. Finally, Quadrant 2 represents the largest share of the ‘Sharing Economy’. Thus these kind of platforms represent a real regulatory challenge due to their volume and economic impact.

Given all the above, when talking about sharing economy firms in this paper we will refer to the ones located in Quadrant 2. That is, commercial for-profit firms where primary service is delivered by peer-to-peer interaction and produced by individuals who are not formally organized.

Amongst these firms, Airbnb and Uber traditionally attract most of the attention due to their extremely rapid growth and disruption of the market. Airbnb is the biggest Sharing Economy platform in the hospitality service industry<sup>91</sup>, while UBER is the highest-valued private technology company<sup>92</sup> leading the ride-sharing sector.

## Nature of the Sharing Economy firms

Are Sharing Economy (SE) endeavors firms or markets? The answer to this question depends on each business and industry structure, but the answer is probably: both. SE endeavors operate in two-sided (or multi-sided) markets, “defined as markets in which one or several platforms enable interactions between end-users, and try to get the two (or multiple) sides ‘on board’ by appropriately charging each side”.<sup>93</sup> According to Jean-Charles Rochet and Jean Tirole, to understand the economic implications of this kind of markets, it is necessary to use the theories of network externalities and of multi-product pricing. In these sense, SE firms court two (or more) sides to use its platform to interact with each other. The platforms’ usage or variable charges impact the two sides’ willingness to trade, and thereby their net surpluses from potential interactions. In turn, the platforms’ membership or fixed charges determine the end-users’ presence on the platform.<sup>94</sup>

These platforms transmit information to suppliers and consumers and settle transactions just as any sophisticated market for any commodity would have

since the 18th century. However, they also include characteristics of the firms described by Coase. The rules are decided by the platform, not by suppliers and/or consumers. Unlike traditional firms, SE platforms change the rules dynamically to adapt in case of unexpected problems or to attract more users of either side. These firms have the incentive to evolve to stay in the market. The platform can extract fees from market participants and the design of these fees have an effect over the market. Moreover, these platforms have rating systems and reviews that aggregate other users’ previous experiences about the service (or other end-users), which are helpful to take more rational decisions. These systems build an incentive structure because they are a mechanism to reward or punish the service and/or other participants.

The supplier is an independent market participant that understands the difficulties in finding customers and assessing their reputation on the fly, so they willingly pay the platform fees to gain access to a pool of pre-screened clients.

<sup>91</sup> Haywood, J., Mayock, P., Freitag, J., Kwabena A. O., Fiorilla, B., “Airbnb & Hotel Performance: An analysis of proprietary data in 13 global markets”. STR (2017).  
<sup>92</sup> L. Abboud, “Uber’s \$69 Billion Dilemma”, Bloomberg (2016). (Consulted on December 21st, 2017)  
<https://www.bloomberg.com/gadfly/articles/2017-03-16/uber-needs-to-get-real-about-that-69-billion-price-tag>

So, are SE endeavors firms or markets? They are probably both. In biology, the microorganisms of the kingdom Monera are half way between plants and bacteria. In physics, Heisenberg found out that photons are light or energy, depending on the fraction of a second that you look at them. The excess of regulation on formal firms in most countries and the hard constraints to the growth of small businesses have created an incentive for a new form of business life to emerge: super-connected, self-regulated, self-contained and exponentially growing collaborative endeavors. This new business species might change the world, only if we let it. Some forms of regulation might stifle its growth and convert it into a regular, old-style, Coase-like firm, or even kill it, as we will see in the later part of the paper. Quadrant 3 is empty. Finally, Quadrant 2 represents the largest share of the 'Sharing Economy'. Thus these kind of platforms represent a real regulatory challenge due to their volume and economic impact.

Given all the above, when talking about sharing economy firms in this paper we will refer to the ones located in Quadrant 2. That is, commercial for-profit firms where primary service is delivered by peer-to-peer interaction and produced by individuals who are not formally organized.

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# A quick analysis of the Sharing Economy: Benefits and Opportunities



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