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Sharing Economy and its Effects on Housing Markets

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UNECE Real Estate Market Advisory Group

This publication summarizes a larger report containing a literature review of published academic and non-academic articles as well as published statistics on the sharing economy and its impact on the housing market. The review* was conducted by the Real Estate Market Advisory Group in its consultancy activity for the United Nations Economic Commission for Europe (UNECE)

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INTRODUCTION

The term "sharing economy" refers to various actions aimed at sharing the use of services, assets, property, spaces or capital between two or more people. It is also known as peer-to-peer (P2P) economy or collaborative economy. It is a recent, prevalent business model that is applied to the markets of multiple sectors.

The sharing activity specific to the housing sector involves sharing housing space in exchange for part of the housing costs. With the proliferation of very-short-term rentals since the beginning of the second decade of the 21st century, especially in cities, residential rental markets have undergone a shift from the usual concept of shared housing space. This reversed the inflexibility of conventional rental markets, and housing rentals became the standard, frequent and regular way to meet short-term housing needs instead of hotel rooms. This practice has spread around the globe and even to regions where rental markets were traditionally small and inflexible due to lower demand and regulatory restrictions. Other housing-share models exist, such as co-living arrangements, although they are less popular than rent-sharing.

The success of very-short-term rental activity in cities has generated strong reactions from the civil society regarding its influence on the "normal" housing market and its adverse external effects on the population.

The success of the very-short-term rental model lies with the use of technology in sharing platforms (e.g. Airbnb and HomeAway) that have facilitated the exchange of the use of residential space. These platforms became a new form of business and popular in the wake of the financial crisis 2008. These business formulas involving short-term rentals exist in other sectors (e.g. transport) and were born out of the desire to share costs, mostly in services, to satisfy existing needs at a lower price than the market price. Sharing activities refers to the collaboration between owners and users (the "collaborative economy"); they are accepted as non-business services and are included in the European Union (EU) regulations on service liberalization.[1]

The role of collaborative economy is relevant in the new productive model outlined in the EU plans; it is a fundamental element in a circular economy, in which all assets and goods must have the possibility of re-use when their primary life cycle ends. In the housing arena, re-using is "sharing space" between the owner and third parties to cover costs. According to a circular cities guide (UN, 2020, p. 8), the sharing of city assets and products is a circular action and circularity in cities will enhance the use of resources and lengthen their life cycle.

1 Directive 2006/123/CE of the European Parliament and Council, 12 December 2006.

With the initial success of technological platforms, companies in conventional markets (such as those managing rentals for tourists) began to participate in this intermediate system. It is difficult to differentiate between a collaborative economy and a business activity, mostly due to the entry of tourism service providers into the technological platforms and the fact that market players are not businesses. Therefore, it is not easy to recognize whether the exchange of space is an act of sharing or a regular business transaction, and to what extent the housing provider is a seller, a lessee or simply sharing assets. The boundary is not clear, which creates challenges for identifying regulations and application of tax laws, among others to govern the sharing economy (Codagnone and Martens, 2016).

With the rise in affordability problem and the simultaneous growth of short-term rental transactions, many analysts have hypothesized that the latter could have worsened the issue of housing affordability. However, this has generated a big debate and a contradiction. The P2P activity of short-term rental housing is considered positive because it benefits owners, especially those who are unemployed or have no-income but, at the same time, harmful due to its impact on the city and on the affordability of longer-term rentals.

This report's first objective is to clarify the scope of sharing activities in housing markets and their principal features. It reviews literature on sharing economy to clarify what is considered a collaborative sharing activity, focusing on two primary examples of sharing residential space: co-housing and short-term rentals.

The second objective is to describe in-depth the features of house-sharing activities. This can only be achieved with statistical information. As it was possible to find data only for short-term rental activity,[2] this report is mostly devoted to explaining the structure of that market. Information is provided for 43 countries in the UNECE region. These locations were selected because of data availability and because their housing markets have published information on sharing economy. Locations in the UNECE region where this market is best known and documented (mainly in the United States) served as the basis for the analysis.

This document includes a short reference to the relevant regulation found in the literature, as a compilation of laws on short-term rentals does not exist.

Why is it important to analyse the short-term rental market?

There are many reasons why this analysis is relevant to an economy. First, citing the one that appears most often in the media, is the civil society's rejection of how the massive emergence of the temporary rental accommodation has changed living habits in cities, causing noise and disrupting the everyday life of communities.[3]

Second, the short-term rental market brings wealth, connects cities and promotes population movement. It became a global phenomenon until the COVID-19 pandemic hit. To date, there is no estimate of the benefits of short-term rentals in each city nor any quantification of the human densification. Therefore, it is not possible, due to the lack of data. The latest available information supports the theory that short-term rental remains important despite limited population movements due to the pandemic.

Wealth, employment creation, and new work formulas would support cities' economies and contribute to the circularity of buildings and, therefore, to improved efficiency in the allocation and use of resources. The objective of this report is to add information regarding these aspects.

2 This report used the enormous database of short-term rentals on the InsideAirBnB website.

3 The increase in the number of people moving every two or three days from a home disrupts the quiet life in buildings. It is one of the arguments of those who are against this short-term activity.

SECTION I. DEFINITION OF SHARING ECONOMY: A REVIEW OF THE LITERATURE

This section covers several aspects of the sharing economy. It focuses on its impact on the general economy and market effects.

There is no consensus on the definition of collaborative economy, nor, therefore, on establishing a distinction between collaborative and business activities. Most studies associate collaborative economy with activities that share costs but do not pay rent. The European Commission (EC-SWD, 2016) [4] advanced the notion that collaborative economy "refers to business models where activities are facilitated by online platforms that create an open marketplace for the temporary use of goods or services often provided by individuals". Such transactions do not involve a change of ownership and can be carried out for profit or not.

Codagnone and Martens (2016) contains an extensive and well-documented review on the different concepts of sharing economy and its components. The study agrees that there is no consensus on the definition of collaborative economy (Ibid., p. 6), and indicates that most literature refers to it as collaborative consumption. Collaborative consumption is defined as "the coordination of the acquisition and distribution of a resource in exchange for a fee or other compensation" (Belk, 2014a, p. 1,597); or "the reinvention of traditional market behaviours - renting, lending, sharing, collaboration, bartering, technology donation - occurring at a large scale not possible before technological changes" (Botsman, 2015). Belk (2014b) distinguishes between "true exchange" and "pseudo exchange" and described "true exchange" as one that involves temporary access to resources rather than ownership; is without fees or compensation; and involves the use of digital platforms, while a "pseudo exchange" is any other exchange that involves the payment of associated surcharge or fee.

However, services are often not provided without free of charge. The literature classifies market exchanges into three categories: free of charge, cost-sharing, or exchange for remuneration (EC-SWD, 2016). In other words, these activities can follow the traditional model of charity, exchange or business. The latter is the characteristic that fundamentally distinguishes a collaborative transaction from a collaborative consumption. A collaborative transaction in the sharing economy is where "consumers (or businesses) grant each other temporary access to their underutilised physical assets (what in economics is called "idle capacity"), possibly for money" (Fradkin and others, 2015 and Frenken and others, 2015, as cited in Codagnone and Martens, 2016, p. 6), while Hamari, Sjöklint and Ukkonen (2015) defines collaborative consumption as "*a peer-to-peer-based activity of obtaining, giving or sharing access to goods and services, coordinated through community-based online services*". Therefore, the main difference between the two concepts -relates to when the transaction is done by a business.

Codagnone and Martens (2016) also added that sharing activities can compete with more formally organized economic actors, while collaborative economy activities are related to less formal activities because they are provided by individuals who do not act like businesses. This distinction would indicate that sharing activities create challenges to existing regulatory provisions and affects service workers in various ways, not least through the perceived existence of potential unfair competition from the collaborative economy.

The ease of using technology on sharing platforms is the root of the emergence and growth of collaborative economy, which offers a solution to market supply shortages when there are sharp increases in demand. Traditionally, regulations and the cost structure of business have limited the production or generation of services have undermined the expansion of numerous markets, mostly for services. However, driven by technological change, services have overcome barriers (maximum number of exchanges), boosting transactions

4 See European Commission, Staff Working Document, SWD (2016) 184, 2016. Available at: https://ec.europa.eu/transparency/documents-register/detail?ref=SWD(2016)184&lang=en

while lowering costs, similar to what happened in financial and retail markets during the 1990s. The role of technological revolution in the process has been to accelerate the relevance of a sharing economy (Görög, 2018; ECE-SWD, 2016; OECD 2015a) and act as an incentive to create new business models. Thus, digital platforms' role has been vital in defining sharing economy: "the sharing economy uses digital platforms to enable customers to access tangible and intangible assets generated by economic assets, rather than ownership" (Vaughan and Hawksworth, 2014, p. 2).

The massive and rapid growth of short-term rentals has given rise to fundamental changes in three main areas: economic markets, consumer welfare, and the real estate sector's efficiency.

On the economy, sharing economy has brought about:

- An increase in the market size of the sectors where it has developed, boosting both suppliers (protected by the freedom to provide services) and buyers (attracted by the market incentive) because the use of online platforms gives the collaborative providers the possibility to offer their services beyond their locality
- A positive final net effect, because the total volume of transactions has grown, even though some applicants left the general services market to enter the sharing market
- An increase in the number of transactions and a rise in income generated
- An increase in market flexibility and responsiveness to consumer needs
- Increased competition with traditional markets, potentially leading to a fall in prices of goods and services
- An increase in the aggregate wealth of the whole economy
- Creation of employment in the non-conventional market such as managing the sharing exchange and maintaining the property which is normally outside of the conventional market
- Creation of new activities related to technological platforms which contributes to digital transformation, supports social relations and economic development.

Regarding consumer welfare, sharing activities have given rise to:

- Reduction in costs arising from transactions without intermediaries lowering prices in the activities carried out as a business
- More availability of information allowing for product substitutability and rational decision-making
- The removal of barriers to market entry for the demand[5]
- Reduced uncertainty associated with increased product information and transparency that draws on the players' ratings in the market. Information gathered from ratings helps to customize and improve the quality of services following customer reviews or other feedback mechanisms
- Cost-sharing due to shared usage.

Regarding economic efficiency, sharing activities:

- Create markets for activities that did not exist previously or were very small in size
- Reduce entry barriers for producers and suppliers
- Mobilize idle resources thus increasing productivity
- Promote wealth creation with lower levels of capitalization or investment by using existing capital goods
- Increase competition in the markets in both sharing economy activities and regular service activities
- Reduce prices compared to the traditional market given the lower production costs of sharing economy transactions (especially when the market is active and competition is intense)
- Improve efficient use of resources by making past investments in depreciated assets profitable.[6]

5 The concept of market barriers comes from the economy domain. A market has a barrier when some conditions (other than price) impede the suppliers of goods and services or consumption demand from entering the market. Sharing activities have removed most of these barriers, for instance, the lack of information.

6 For instance, the rental of an old and unrenovated building in the sharing rental market only corresponds to maintenance costs. The income generated by the rent could now cover the building's maintenance costs. This makes the owner's past investment (for the purchase of the building) profitable now and thus, much more efficient.

Positive effects of rent-sharing activities

The positive effects of sharing economy on markets where it is active can be summarized as follows:

1. Sharing economy has overcome barriers and physical limits to the number of exchanges in some markets, allowing an increase in market size. In sharing space (short-term rental housing), the barriers to payment uncertainty or lack of information have mainly disappeared, increasing market transparency (Vaughan and Hawksworth, 2014).

2. Sharing economy triggered transparency in the market through improvements in two areas:
   - **(a)** Information on the characteristics of goods, reducing asymmetry information[7]
   - **(b)** Reputation and feedback system on both buyers and sellers which is publicly available.
   - **(c)** Both increase trust and credibility in transactions, and reduce risk factors (Görög, 2018).

3. Sharing economy has enhanced productivity through the broader use of production capacity (increasing production by a unit of capital) and has increased production in the collaborative markets, which is accumulated into the whole economy.

4. Collaborative economy business models and tools have contributed to an increase in quality of products and services by implementing rating and reputational systems; at the same time, this reduced risks for consumers by reducing information asymmetries.

5. Collaborative economy business models have changed the way services are traditionally provided and consumed. They are driven by technological, economic and societal factors, and allow new players (as individuals) to act as providers and find alternative sources of work, flexible activities and complementary income.

6. The whole collaborative economy made markets more competitive and efficient by improving the match between demand and supply.

7. In some collaborative markets, transactions have mobilized idle assets through more intensive use of resources, increasing productivity and economic efficiency.

8. The expansion of sharing activities had some effects on traditional markets which should be analysed.

9. The collaborative economy "turns" the consumer into a supplier and brings the business culture closer to the mainstream consumer. This shift has already been analysed in the energy sector, with the "prosumer" graph (Parag and Sovacool, 2016).

10. Peer-to-peer transactions may have been very relevant in providing economic resources to unemployed households during the financial crisis, maintaining minimum levels of welfare and avoiding extreme poverty.

Public institutions openly recognize these positive effects of sharing economy. The European Union, in its directives on the liberalization of services (Directive 2000/31/EC - E-commerce Directive and Directive 2015/1535), considers the provision of virtual services as an activity that should be liberalized, and not be prohibited or over-regulated (EC, 2016, p. 5,). The European Union agenda for the collaborative economy (EC, 2016) states that, driven by innovation and technology, this economy creates new business models and has significant potential for contributing to competitiveness and economic growth by enabling individuals to offer services, with the benefits derived from the effects explained above, which can contribute to the sustainability agenda and the transition to a circular economy of the European Union. In other UNECE regions, like the United States and Canada, the regulation about services is also flexible allowing the free provision of services and goods, albeit some restrictive regulatory requirements summarized in the regulation section.

Codagnone and Martens (2016) provide an additional list of benefits across the collaborative economy's different dimensions, including non-economic social advantages (Ibid., p. 18), such as greener commerce, richer social experiences, community revival, and increased social capital. Examples of commercial

7 Asymmetric information is a situation when the agent and customer have different information about the asset, which impedes correct decision-making. It is the normal situation in the housing market. The new platforms of sharing rents are reducing this problem, increasing market transparency.

and managerial advantages include transparency, openness and collaboration, and less bureaucracy or institutionalization (Ibid., p. 19). Görög (2018, p. 176) agrees that sharing economic goods has positive environmental and social effects; reduces environmental impact (lower relative energy consumption leads to lower emissions); results in efficient utilization of physical assets; and facilitates new social contacts (Botsman and Rogers, 2010). Collaboration can create innovation, jobs and community (Krueger, 2012); and sharing can bring people together and stimulate social cohesion in neighbourhoods (Agyeman and McLaren, 2015) and promote circular economy.

Negative effects of rent-sharing activities

The existing literature also highlights some negative or uncertain effects. There is an agreement that collaborative sharing activities cause distortions that affect conventional activities, like changes in the provisioning mechanism, lack of social protection and other effects on productive factors. The European Union (EC, 2016) recognizes that collaborative economy blurs the demarcation between consumer and provider, employee and self-employed, and the professional and non-professional provision of services, which raises questions regarding the application of existing legal frameworks. Moreover, the lack of legal regulation could reduce consumer protection and working conditions (Malhotra & Van Alstyne, 2014) and undermine workers' rights (Schor, 2014, as cited in Görög, 2018, p. 176).

Such factors undermine the efficient allocation of resources in the same sector. The lack of regulation of collaborative activities undermines the protection of labour rights.

Literature highlighted the risk that the emerging competition between P2P providers of goods and services and conventional companies. In addition, the sharp increase in market share gained by the former could evolve into situations of market power (monopoly), especially given the increasing use of artificial intelligence methods to identify consumers' tastes and their ability to target specific groups of goods (and recommend prices).

Further negative economic effects, according to Sheppard and Urdell (2016), are:

1. "Hotelization" of the housing market (Lee, 2016; Cocola Gant and Gago, 2019) due to the use of housing for tourist accommodations. Therefore, this competes with demand for hotels and created what has become known as the shadow hotel industry.

2. A decrease in the affordability of conventional rental housing due to two mechanisms - the effect of short-term rental prices on conventional long-term rental prices (demand-side effect) and the absorption of some long-term rental units from the market for short-term use (supply-side effect) (Wachsmuth and Weilsler, 2018; Barron and others, 2021).

3. The emergence of negative externalities, caused by the rapid growth of short-term rental activity, which have been widely contrasted.

   Two main groups of externalities are highlighted by international experience:

   (a) *Population agglomeration in city centres*. The consequences of such agglomeration can be seen in the overuse of public and health services, and transport, as well as negative externalities such as noise and change in the quality of life of neighbourhoods[8] (Sheppard and Udell, 2016; Filippas and Horton, 2018).

   (b) *Gentrification of city neighbourhoods resulting from an investment incentive to refurbish units rented on the sharing market*. This investment process attracts commercial activities and causes residents to move away to other areas of the city or to other cities. This effect is the main source of the controversy over short-term rental activity (Wachsmuth and Weilsler, 2018; Yrigoy, 2019; Amore and others, 2020).

8 A negative externality is a much-used concept in socioeconomic analysis. It appears when an activity developed by one agent negatively affects other people who did not participate in its provision.

4. Unfair competition stemming from the lack of regulation of collaborative economy activities.

The role of regulation is crucial for the future of collaborative activities, especially where there is a set of conditions that could create any type of market control. Collaborative platforms are rarely (but increasingly) regulated, although, under EU law, it is possible to impose rules where market power is demonstrated.[9]

The criteria that determine whether the collaborative platform could develop market control are the following:

(a) Price - where the collaborative platform sets the final price to be paid by the user. The price is not considered appropriate if there is a price recommendation or if the service provider is not free to decide on the price.

(b) If there are key contractual terms and certain conditions, other than the price, that determine the contractual relationship between the service provider and the user (such as mandatory instructions).

(c) Ownership of residential assets - if the collaborative platform owns the assets used to provide the underlying service.

(d) The platform could incur the costs and bear all the risks related to the provision of the service.

(e) There is an existing employment relationship between the collaborative platform and the service provider.

(f) The platform manages the service providers in such a way that it provides more services than what the owner and user need, and, in this case, the sharing platform could also be considered as a service provider.[10]

If the first three criteria are met, the platform is considered as exercising significant influence or control over the service provider. Otherwise, if one or all the other listed conditions are met, the platform is considered as a technological instrument for carrying out the transactions.

Typology of collaborative activities

The typology of collaborative platforms is vital for classifying activities as collaborative or business, depending on how the transaction is carried out. OECD (2015b) includes the collaborative economy as a section of the digital economy, and identifies three types of platforms that link demand and supply in specific markets, most of which are in the residential market:

(a) Platforms that promote P2P transactions in both sales and rentals (e.g. eBay and Etsy);

(b) Platforms that promote P2P service/space-sharing (e.g. Airbnb, Uber, and TaskRabbit);

(c) Platforms that manage crowdsourcing (e.g. Mechanical Turks, Kickstarter and Angel List).

Codagnone and Martens (2016, p. 10) identifies different categories of platforms according to the use of the goods and services they intermediate:

(a) *Recirculation of goods (second-hand and surplus goods markets are used to sell services)* - examples include Airbnb, CouchSurfing, Zipcar, Uber, Lyft, BlaBlaCar, and Relay Rides. Food or meals (e.g. Leftoverswap, Soup Sharing and EatWithMe) can be considered as non-commercial recirculation of goods; other building space sharing can be classified as "building social connections" (Ibid., p.18).

9 That is, when the use of technology and quality management may cause the platform to have market power (by setting prices) or any other form of control over the provider or the consumer. The condition to be a "collaborative platform" is that it is underpinned by an Internet-based tool that enables transactions between the people offering and using the service generated by the asset without a transfer of ownership (definition contained in the European Agenda for the Collaborative Economy, EC,2016). Regulation to guarantee competition and reduce the negative effect of market power is implemented in most of the UNECE region under the anti-monopoly or anti-trust body of rules.

10 For instance, when the platform suggests the price of the service, organizes the owners, suggests when they could supply the accommodation, or imposes some conditions, then the platform is a provider. The differences are key to be considered a business agent. It is currently a hot topic of debate.

(b) *Assets* - includes platforms that utilize existing assets that are idle or underused and could be considered a market for production factors. Examples include Getaround, and all crowdfunding initiatives where capital is considered an idle asset. The sharing of real estate space for productive and collaborative activities, such as Weworko or Sharedesk, also falls into this group.

(c) *Services and labour (labour market)* - also includes non-commercial, temporary banking activities, and generic and professional labour marketplaces, such as TaskRabbit, Mytaskangel, Freelancers, and oDesk.

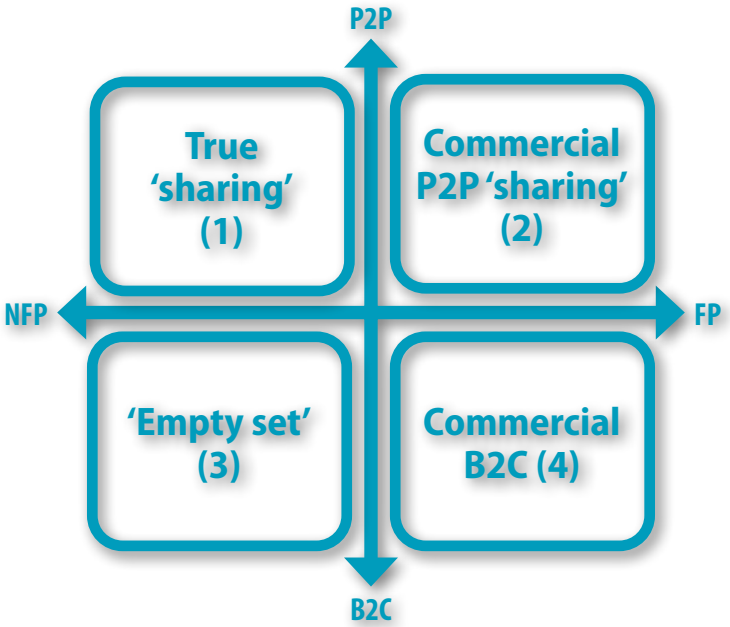
(d) *Others* - such as those involving specialized professional collaborations, platforms for some intangible goods, such as solar energy (where the solar energy produced by one of the participants is exchanged, such as Yeloha), and other cases.

The most popular classification system divides platforms according to the purpose of the exchange, that is, whether it is for profit or not (see figure I).

Platforms could be i) Business to Business (B2B) (which would not fall under the classification system in figure I); ii) Business to Consumers (B2C); or iii) Peer to Peer (P2P), which includes Government to Government (G2G). They also operate for-profit (FP) or not-for-profit (NFP). "True sharing" in quadrant (1) is classified as NFP and P2P, while quadrant (2) refers to commercial P2P platform that seeks profit in transactions. A platform that is business benefit-oriented for the consumer falls under quadrant (4), while (3) is defined as an empty quadrant. G2G is a new phenomenon with unclear classification (it would be a public-sector innovation platform), and B2B could be included in quadrant (4). Most collaborative economy activities fall under quadrant (1).

The rise of the short-term rental market coincides with the emergence of technological platforms with global coverage specializing in the intermediation of living space for residential purposes. Airbnb is the leading platform currently in existence; it has spread worldwide and has arguably initiated the debate on short-term rental effects. Most of the debates and problems with the hospitality industry stem from the collaborative activity not complying with the regulations applied to that industry; sharing house space in the short-term rental market is therefore seen as creating unfair competition, as discussed above. Institutional support for the development of these platforms as a P2P formula (and a successful example of circular activity) and the difficulty of measuring their effects fuel the debate because it is difficult to separate which part of the activity is B2C and which is P2P.

Figure I. Map of conceptual exchange platforms



Source: Codagnone and Martens (2016), p. 12.

SECTION II. HOUSING IN THE SHARING ECONOMY: PRINCIPLES AND EMPIRICAL EVIDENCE

This report aims to quantify the housing sector's collaborative activity and its key characteristics discussed in section I to enable an understanding of the real nature of sharing housing. It focuses on the housing market and the related sharing activities.

There are two types of activity that involve residential sharing: co-living and sharing space. Co-living is sharing common residential spaces between households while preserving a specific private space for exclusive use. These arrangements are attracting increasing interest for some cohabitation cases between households of different generations and, in recent years, groups of elderly households. Unfortunately, no statistical information is available to analyse this formula of sharing residential space. There is a lack of statistics on the transactions of this specific housing use and, as it does not involve renting, no contracts are recorded either, so it is not possible to know its general relevance or evolution.

Regarding short-term rentals, statistics are available through platforms, mainly Airbnb, which publishes raw data for some of the cities it intermediates. Sharing rent can be analysed from these data and combined with aggregate variables for each location, it is possible to approximate each market's situation according to the most relevant issues assessed in the literature.

Thus, the statistical information answers the following questions:

1. Is there competition in this market? The evaluation of prices and their evolution I reflect the level of demand.
2. Is there a monopoly in this market? The answer requires an assessment of the ownership and management structure.
3. Is it true that temporary rental activity absorbs a significant and growing share of the housing stock? It is necessary to know the number of properties used for temporary rental and the percentage of the total housing stock.
4. How much transient population arrives in each city, and does it produce enough agglomeration to justify civil society's complaints? To answer these questions, an approximation of the population flow that could potentially use temporary rental housing is required.
5. How much wealth does it generate for the local economy? The contribution to gross wealth would be calculated using the amount paid in rent as an initial base.
6. Are there diffusion effects on prices? This question refers to whether the accumulation of temporary renting determines the rental prices in the area. Geo- and spatial econometric techniques help to answer these questions.
7. Is temporary renting concentrated in the centre or in a particular neighbourhood straining their markets? The concentration of properties in the same location would answer this question.
8. Is the temporary rental activity a P2P or is it an economic activity using technological platforms? It is necessary to establish a boundary separating the P2P part of this market from the B2C part, that is, the part that shares costs and the part that seeks profit.

None of these hypotheses are currently answered or quantified. The discussion of the effects and consequences in the literature is not based on quantitative analysis in this document, these measurements are provided.

The literature provides information about the two main activities which can be considered sharing activities in housing markets. One is P2P housing sharing, that is, sharing housing to reduce costs. This represents one option for homeowners that have unused space. It gained considerable popularity with the widespread of online platforms, especially in cities with cultural or tourist attractiveness.

The second option is community housing (Jarvis and others, 2016; Czischke, 2018) in the form of cooperatives and co-housing solutions. Co-housing is understood to be a collaborative, communal or collective solution, which allows for affordable housing and common spaces for activities, and services (Vestbro, 2010). A brief reference to co-housing is made in the following discussion. A full analysis cannot be done due to the lack of statistics.

Co-housing

The conventional concept of co-housing is that of a housing group that involves several independent homes for individual use but with standard facilities such as common spaces and shared kitchens, dining rooms, child-care facilities, libraries, laundries, gymnasiums, cafeterias, offices, gardens, and guest rooms, among others (Beck, 2020:43; Ruiu, 2014:321). The component of sharing space and services is the reason why co-housing is seen as part of the sharing economy.

Co-housing entails using space privately and communally. The co-housing concept is based on three pillars (Tummers, 2016):

Social - promoting a sense of community and socializing members;

1. Environmental - sharing common spaces like gardens or saving space by having shared dining-rooms increases the role of sustainable homes;
2. Economic - sharing space and services can diminish individual costs and make houses more affordable.

The current concept of co-housing is adapted to prevailing social needs. Co-housing embraces the concepts of an ageing society, lack of housing affordability, sustainability and green houses. The existing evidence suggests that:

- Co-housing for seniors is a solution to implement the increasingly popular philosophy of "ageing in place" (Rowles, 1993). This philosophy demonstrates an improvement in the welfare and health of the elderly population.
- Co-housing is seen as a way to implement green solutions in sharing areas and services, creating "ecovillages" in co-housing communities (Daly, 2017).
- Affordability associated with co-housing is highly debatable, with some analysts defending the idea that sharing costs makes co-housing more affordable (McGee and Benn, 2015) and others supporting the theory that shared facilities increase housing costs (Ruiu, 2014).

Short-term rental market

Short-term rental involves renting out the home (or available space in the occupied or non-occupied house) for very short time periods to visitors. It was traditionally used in the tourism sector, and its use has increased since 2009.

As mentioned previously, the rise in the short-term rental market was driven by the online platforms with global coverage specializing in housing space intermediation. This section is devoted to empirically identify the main features that define the market. The analysis quantifies different variables, which help study the structure and evolution of this market.

■ Main indicators required for the study of short-term rental activity

There are several issues which can be highlighted from the review of available statistics. to the review focused on the following four points:

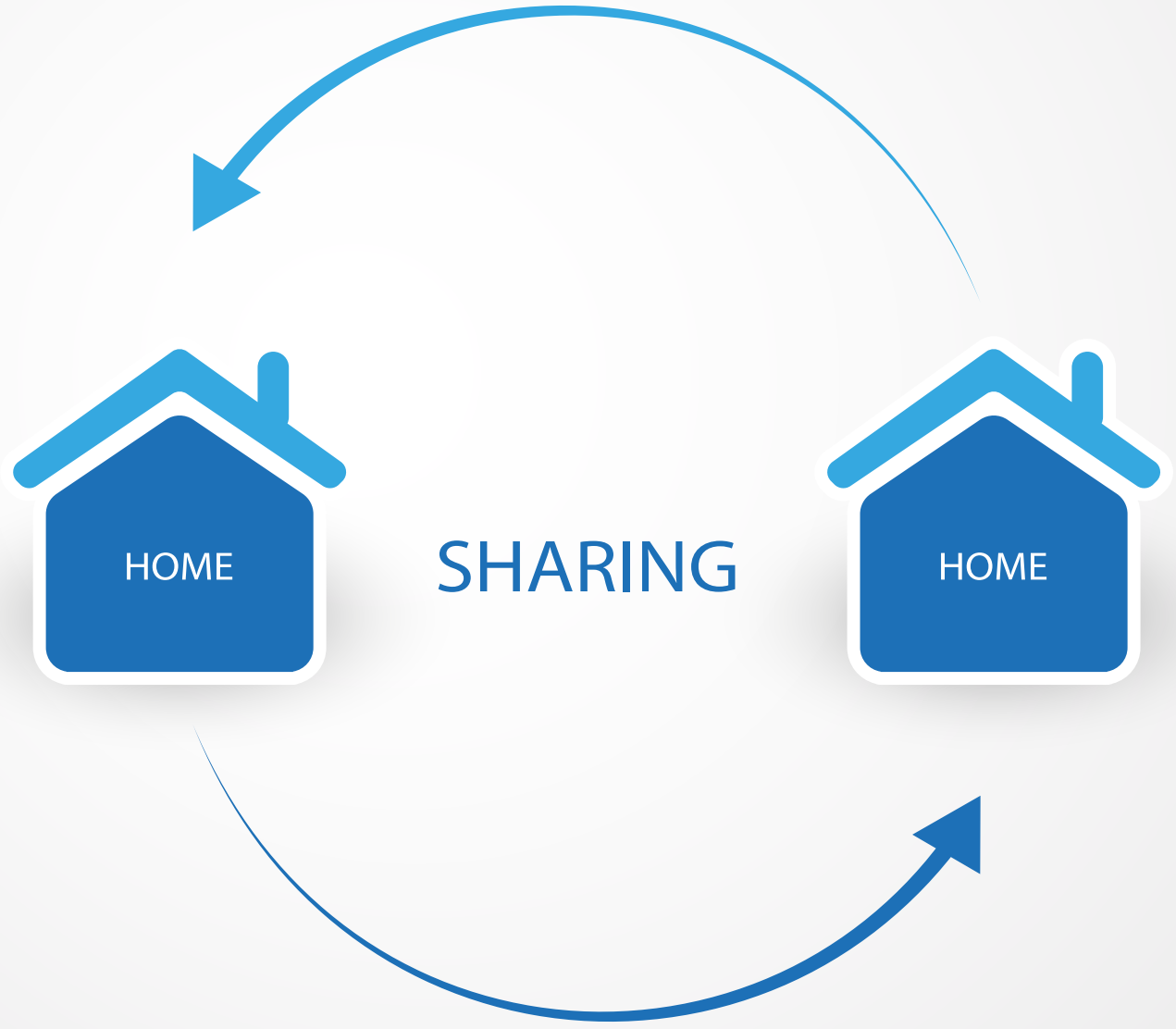
1. To identify the market characteristics and dynamics from the supply side (units), the required variables are the number of units used for short-term rental, the characteristics, the location (allowing for spatial analysis) and the number of days supplied on the market.
2. To identify the economic activity and market structure, the variables are the number of hosts, the type (differentiating between P2P and business-oriented), the number of people using the houses, and the transient population in the city.
3. Rental prices and wealth generated for the city's economy.
4. Market transparency indicators required to check competence in the market - these cover information (response rates, and information verification, both in hosts and properties), quality (super-hosts), and market power (share of market relative to the type of host).

■ Details of data source

The database used for this analysis was created from the data downloaded from the InsideAirbnb.com website[11] based on two types of files (listing and calendar), which contain full information about listings and bookings (potential contracts). As of 2021, data was available for 43 locations (consist of regions, cities, islands and other areas) in Europe covering the period 2015 to 2020. The information used includes that on rented dwellings, both in terms of their characteristics and the daily rental of the properties, and daily transactions and information on the managers or hosts but excluding customer reviews.

The final database was obtained by merging the different files downloaded and eliminating duplicates. The dataset consists of individual-level information (house level), with daily observations since 2015 in some of the locations but with activity concentrated between 2017 and 2020. The vast amount of data from daily observations is challenging to manage and has high costs in terms of computation time.

11 The statistics give all rentals supplied, including every property registered on the platform for renting purposes. Houses can be "non-rented"; these are also included in the register.


HOME
SHARING
HOME

SECTION III. HOUSING AND SHARING ECONOMY: EVIDENCE FROM 43 EUROPEAN LOCATIONS

For purposes of analysing the short-term rental market, the report used the database containing extrapolated data from the InsideAirBnB website as previously discussed. A list of the 43 European locations analysed is given in the following table.

From the database information, indicators were created and are explained below.

The extracted information came from only one platform (AirBnB) so data representativeness would have been an issue in this case. However, no data is available from other platforms; otherwise, the true number of short-term rentals presented in this report would have been larger. Since Airbnb carries out the majority of short-term rental transactions, the volume of information they have is large enough to be considered a significant sample of the whole population and the results of the analysis based on this data could be generalizable.

This report gives a quantitative estimation of the minimum (observed) amount of activity in the sharing rental market, both in terms of price, volume of activity or any other of the derived variables calculated (for example, the total transient population or the wealth generated). The conventional tourist activity is not covered.

Table 1. European locations analyzed

No.	City	Country
1	Amsterdam	Netherlands
2	Antwerp	Belgium
3	Athens	Greece
4	Barcelona	Spain
5	Bergamo (province)	Italy
6	Berlin	Germany
7	Bologna	Italy
8	Bordeaux	France
9	Brussels	Belgium
10	Bristol	UK
11	Copenhagen	Denmark
12	Dublin	Ireland
13	Edinburgh	UK-Scotland
14	Euskadi-San Sebastian	Spain
15	Euskadi-Bilbao	Spain

NO.	City	Country
16	Florence	Italy
17	Geneva	Switzerland
18	Ghent	Belgium
19	Girona (province)	Spain
20	Manchester	UK
21	Istanbul	Turkey
22	Lisbon	Portugal
23	London	UK
24	Lyon	France
25	Madrid	Spain
26	Malaga	Spain
27	Majorca (island)	Spain
28	Menorca (island)	Spain
29	Milan	Italy
30	Naples	Italy

No.	City	Country
31	Oslo	Norway
32	Paris	France
33	Porto	Portugal
34	Prague	Czech Republic
35	Puglia-Bari (province)	Italy
36	Rome	Italy
37	Seville	Spain
38	Sicily (island)	Italy
39	Stockholm	Sweden
40	Trentino	Italy
41	Venice	Italy
42	Vienna	Austria
43	Valencia	Spain

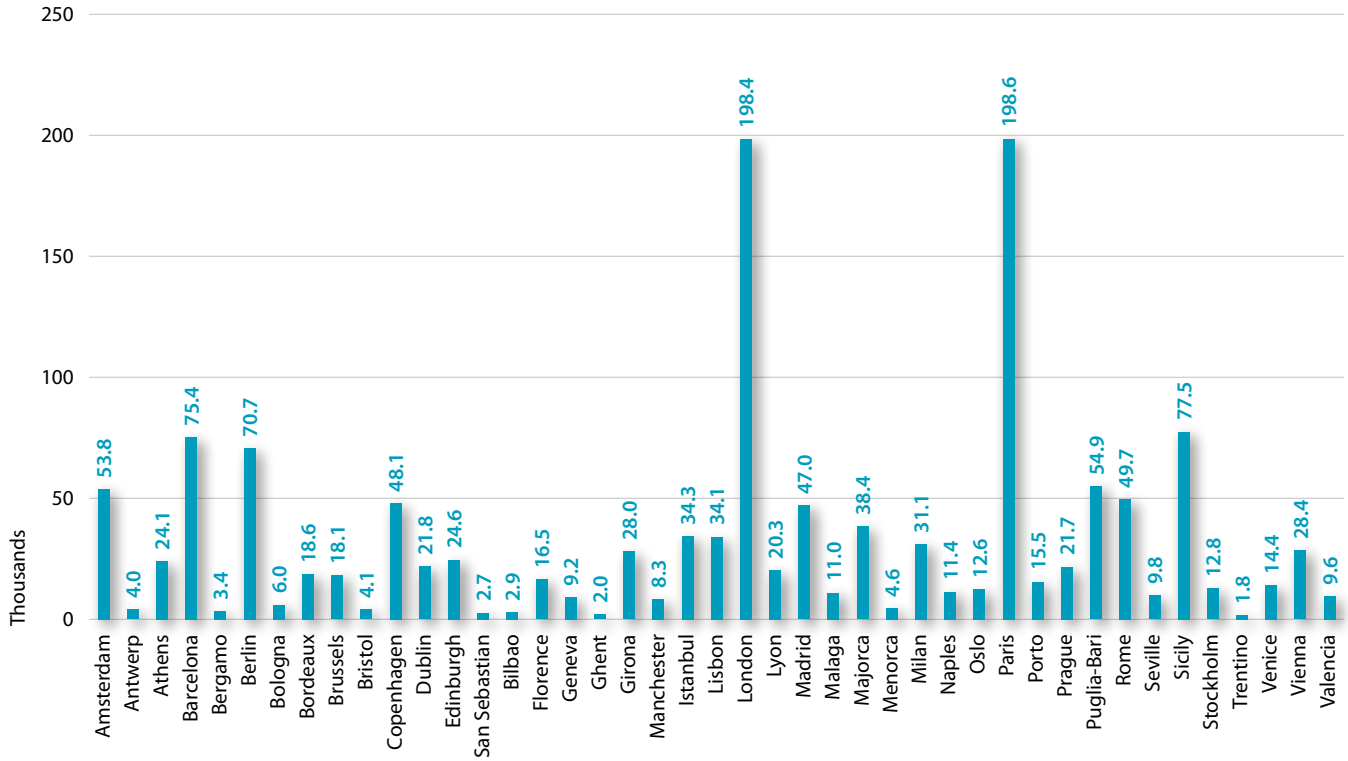
The vast Airbnb database used distinguishes between available and unavailable units. A unit or property becomes unavailable when it is rented out already or because the host decided not to rent it out (to keep it for their own use, or it is rented out on other platforms or networks, or because of regulation).[12] The database of this report does not have information about regulations limiting the number of rental days, or on unavailability of a house due to self-use. For example, data in the city of Valencia suggests that around 35 per cent of the unavailable properties in the listings are reserved for owner's use or have been rented out via other networks. As this figure is stable, the report's estimations are thought to be a good proxy of the real contribution of short-term rental activity to the economy.

III.1 Market characteristics and dynamics analysis

■ Related to the number of housing units used and hosts

The average number of units on the short-term rental market is approximately 35,000 per city, and there are around 20,490 hosts on average in every city or region observed (see figure III.1A). London and Paris are the largest markets, with around 200,000 units listed. The second tier of locations comprises Amsterdam, Barcelona, Berlin, Puglia, Rome and Sicily. Data for Puglia, Sicily, Majorca, Menorca, Girona and Bergamo are at the regional level (the whole province); all are conventional tourist areas.

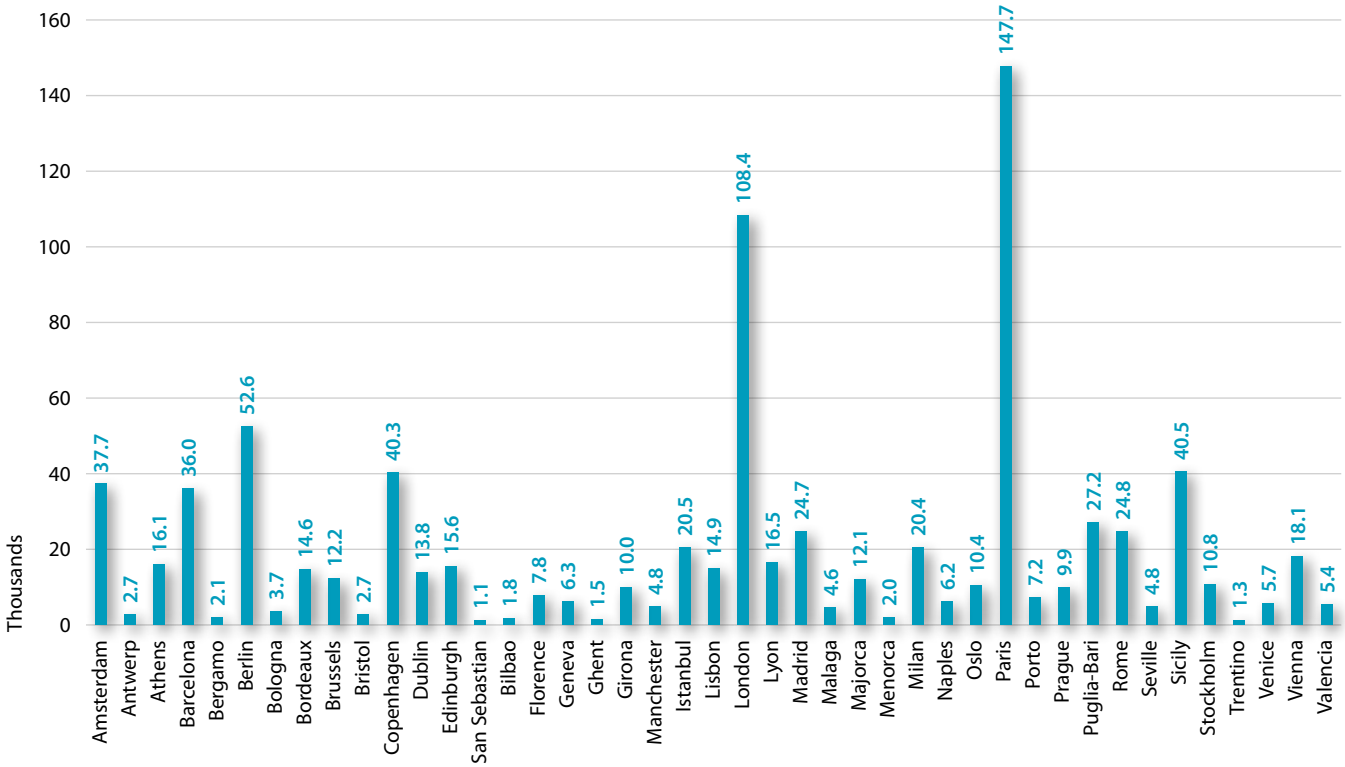
Figure III.1A Number of units short-term rented at least once during the period



Source: InsideAirBnB

12 Regulations could limit the number of days of rental on the short-term rental market. Such rules exist in several cities.

Figure III.1B Number of short-term hosts acting at least once during the observed period



Source: InsideAirBnB

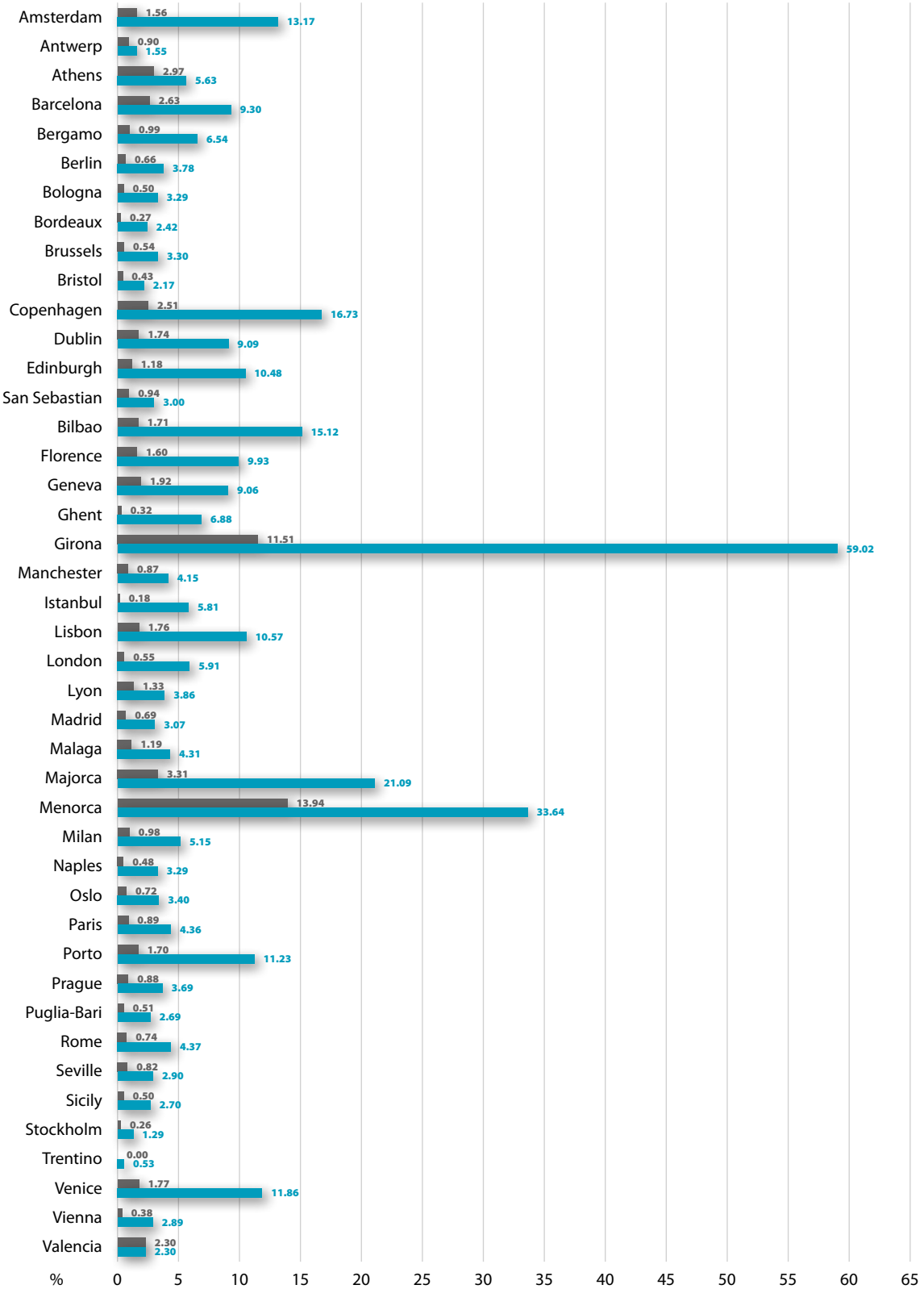
The number of hosts (see figure III.1B) follows a similar structure, with the first tier consisting of Paris and London, and the second tier having Amsterdam, Barcelona, Berlin, Copenhagen, Sicily, Puglia and Rome.

The ratio of the number of properties to the total existing stock (2011 Census data) is low across the locations. Approximately 7.6 per cent of the total housing stock on average was used for short-term rentals between 2015 and 2020. This proportion refers to the total number of properties during all the years considered. In 2018-2019, the average number of units used for short-term rental dropped substantially at 1.5 per cent of the housing stock (see figure III.1C).

The ratio of short-term rental units to total housing stock is called short-term rental density. According to this indicator, the locations can be grouped into low density (1.5 per cent to 3 per cent) and high density (more than 3 per cent). The high-density locations coincided with locations that are conventional tourist areas (see figure III.1C).

Figures III.1A and III 1.B suggest a high level of rotation (number of whole days rented) as the number of listings is large but a low proportion of the housing stock (conventional houses) is used. The proportion of short-term rental units to the total number of occupied dwellings is 3.1 per cent on average, and 22.14 per cent if unoccupied ones are counted. The two figures support the hypothesis that most houses used for the short-term rental market are unoccupied. This also suggests that not much housing stock for short-term rentals is used in the 43 locations. The extent to which the permanently used stock is dripping to the short-term market is unknown and should be investigated.

Figure III.1C Properties short-term rented as a percentage of housing stock



Source: EUROSTAT and AirBnB.

Note: Percentage of housing stock = percentage over conventional dwellings, Census 2011.

Occupancy rate

The relationship between the number of total days listed and booked gives the occupancy rate. This rate is calculated similar to hotel occupancy rates (weighted average of occupied/booked days over the total number of days of the year). The average occupancy rate for each location is shown in figure III. 1D. Findings also show that, on average, a unit is virtually booked around 199 days per year, which is a little more than half of the year. Occupancy rates vary considerably in the 43 locations averaging at 52.4 per cent, which supports the theory of high rotation of every unit in the market. The figure III. is a proxy of the occupancy ratio in the short-term rental market.

For comparison purposes, occupancy rates were classified according to "intensity" of bookings:

1. Occupancy rates of 60 per cent or more are considered highly intense. It was observed that locations with coastal areas fall into this classification.
2. Average booking intensity refers to bookings of units for 10-12 days a month, that is, with occupancy rates between 40 and 50 per cent. Most of the locations fall into this category.
3. Low-intensity occupancy rates (around 20 per cent) are those below the average. Copenhagen, Oslo and Stockholm fall into this category.

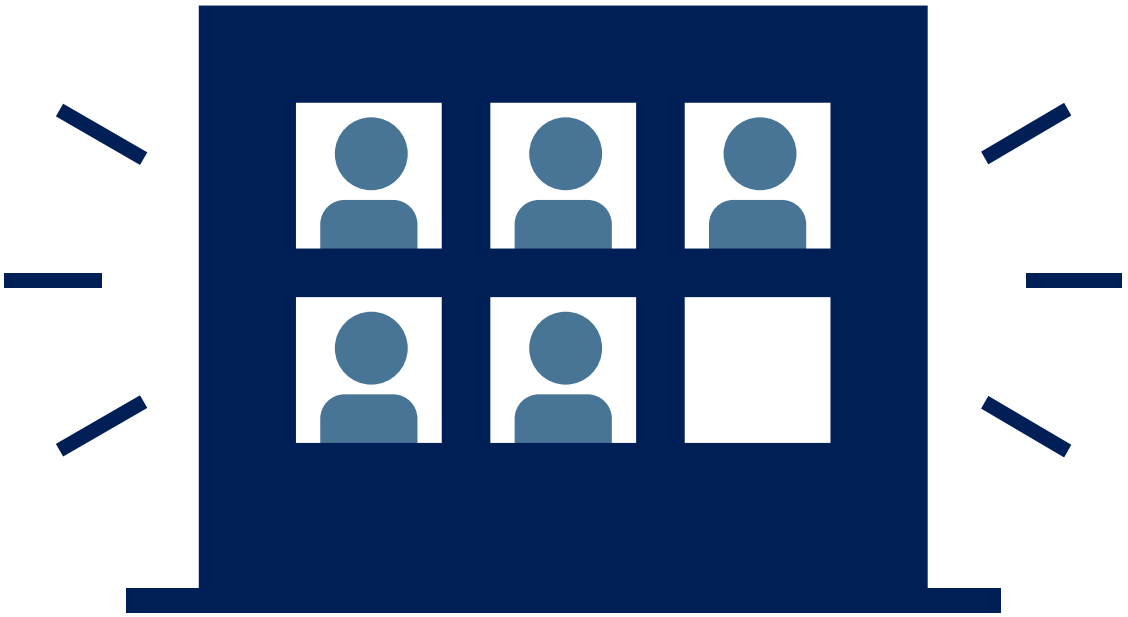
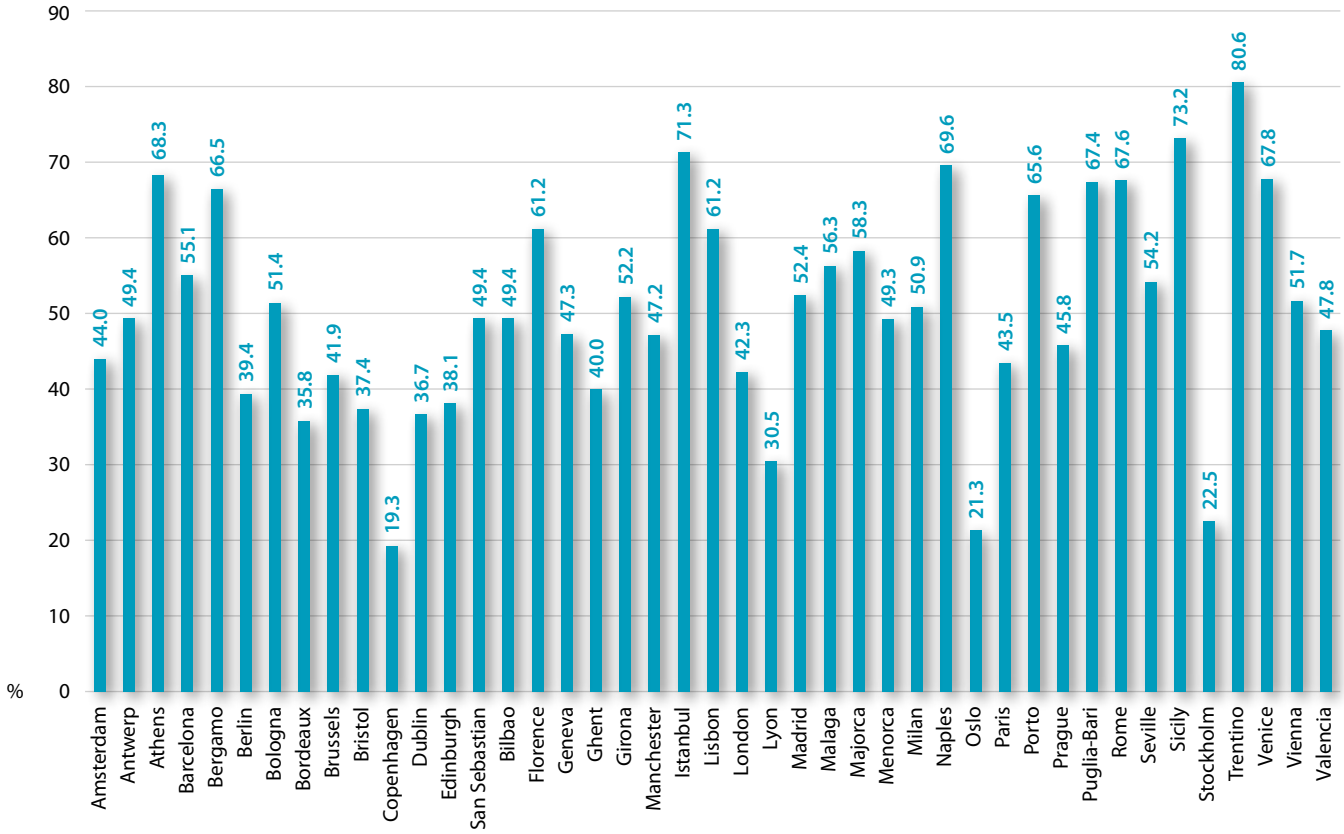


Figure III.1D Occupancy rate of the short-term rental market by location



Source: Author's estimates based on InsideAirBnB data.

Note: Occupancy rate of the short-term rental market = average days booked over days listed.

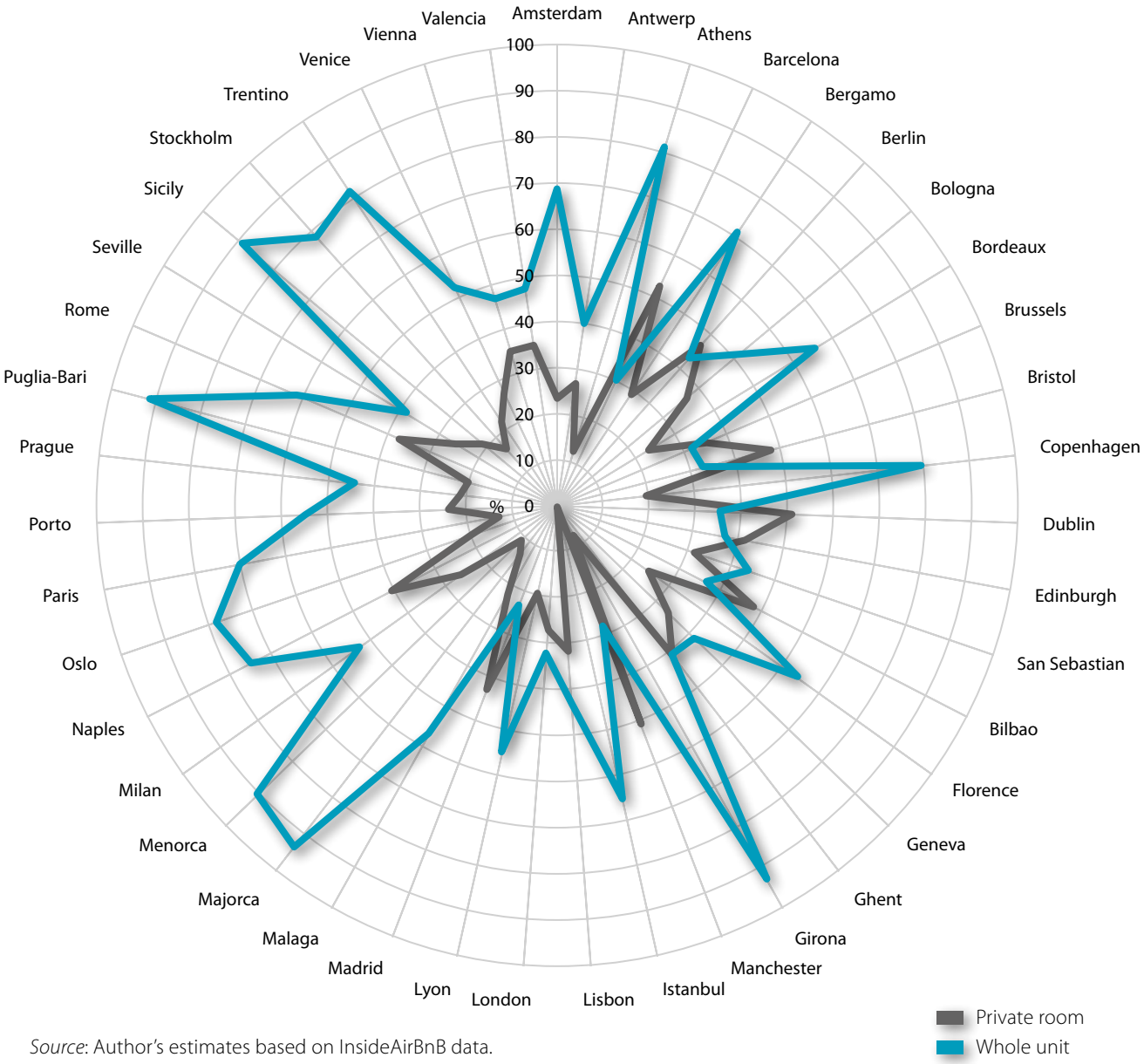
Figure III.1D shows how Istanbul, Sicily and Trentino-Venice could be defined as having the highest booking ratio, all with an average of over 70 per cent, followed by Athens, Barcelona, Bergamo, Florence, Lisbon, Naples, Porto, Puglia, Rome and Venice, with over 60 per cent. The average occupancy rate of Valencia (47.8 per cent) is similar to the average occupancy rates of all other areas; this equates to between 10 and 12 days per month. A third group of locations is classified as having low occupancy rates, namely Lyon, Oslo, Stockholm and Copenhagen.

■ Type of housing unit booked

The study database provides information about the type of housing unit booked - single house, castle, room, apartment, etc and about the type of rental contract - rental of an entire property, individual room or shared room. Almost 70 per cent of renters booked an entire property while less than 30 per cent booked private rooms (see figure III.1E). Rented shared rooms had a marginal percentage share at around 2.2 per cent.

A whole property is preferred by guests in very tourist-oriented locations: Malaga, Menorca, Majorca, Puglia, Sicily, Trentino, Naples and Girona and in cities of Milan, Rome, Prague, Stockholm, Athens, Copenhagen and Florence. In some cities (Barcelona, Bristol, Dublin, Bilbao, Manchester and Madrid), there were more private room bookings.

Figure III.1E Short-term rental contracts by type of properties, average for the period 2015-2019, percentage of total in each category



Source: Author's estimates based on InsideAirBnB data.

The typology of the unit booked depends on the stock. Apartments are the most-rented properties in most of the locations analysed (in the largest locations in Southern and Eastern Europe) while single-family homes are most popular in the Northern European locations. Thus, apartments is the primary type of property for short-term rental.

However, single-family home is also a popular property type in two groups of locations:

In coastal areas - Sicily, Puglia, Menorca, Majorca, and Girona - which, on average, have 50 per cent single-family houses or apartments in the short-term rental-sharing market stock.

1. In cities of Manchester, Ghent, Dublin, and Bristol, where most of the units in the market are mainly detached or single-family houses.
2. Regarding the type of rental contract, data showed that around 58 per cent of single-family houses are rented entirely, while in 30 per cent of them only rooms are rented. Guests rented full apartments in 74 per cent of the cases, while less than 23 per cent rented rooms only.

The data showed considerable amount of activity on renting rooms in single-family houses compared to apartments, suggesting that:

1. The P2P rental market is more highly developed in single-family homes than in apartment markets.
2. Rooms in housing units are rented out short-term without the owner or household permanently living there; they are being managed for business purposes.

The estimated numbers suggest that there are two models of locations regarding the short-term rental market by property typology:

1. *Apartment-sharing locations*. Apartments dominate short-term rental activities and only few houses or other types of properties are being rented out.
2. *Single-family-home-sharing locations*. Locations where the single-family house comprise the majority of the housing stock. Some 30-40 per cent of the total rental properties fall into this category.

The data show considerable rental activity of rooms in single-family houses compared to apartments, which could reflect a pure P2P model where the owner shares unused space. However, it could also reflect management of vacant units (i.e., not permanently inhabited by a household) for their efficient use in which rooms are rented out by "professional" management companies for commercial or sharing purposes. It is impossible to identify which of the two characteristics is more prominent with the current data.

The geographical distribution suggests differences between the markets associated with tourist regions and those associated with locations, whether touristic or not.

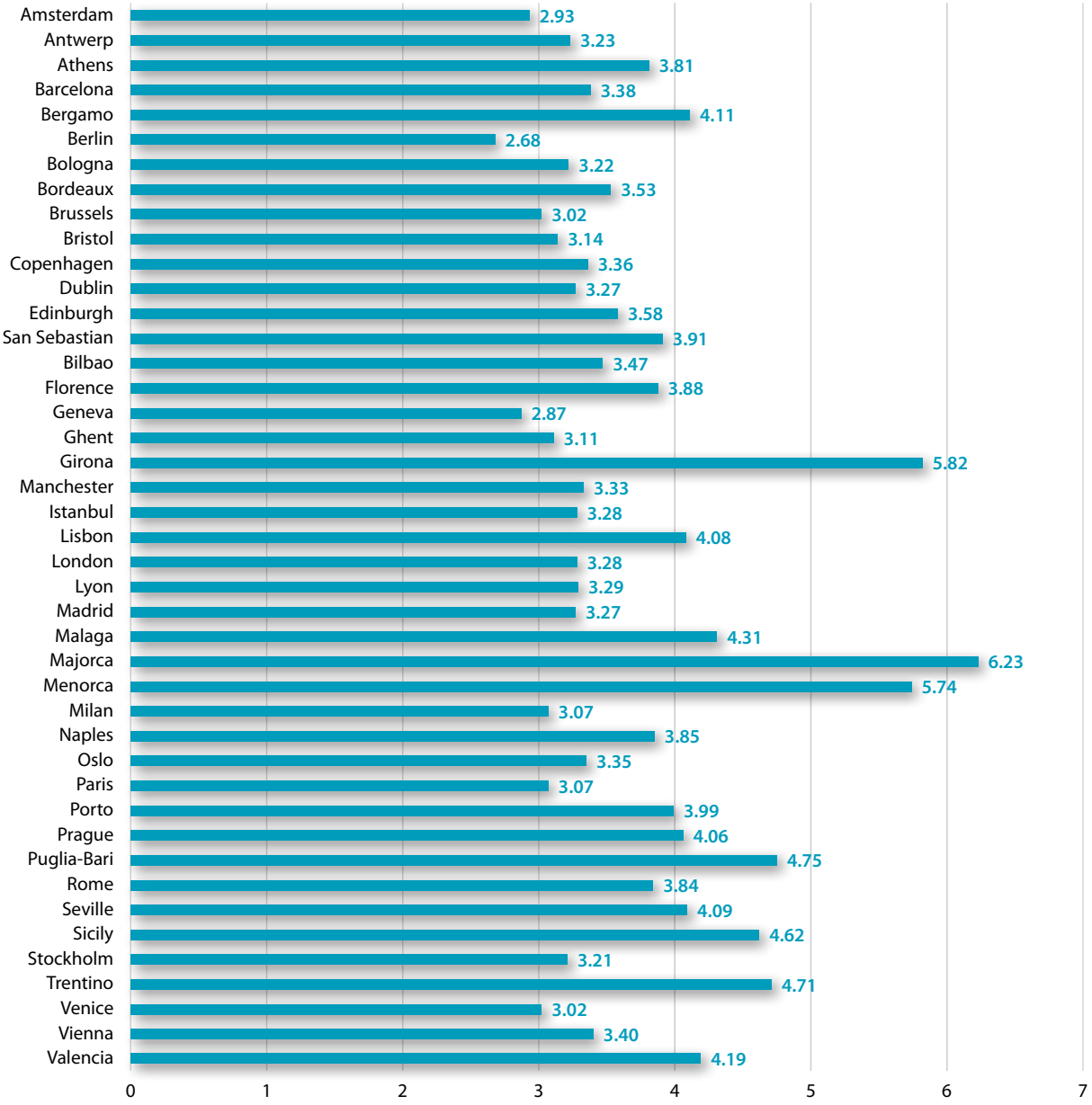
III.2. Market structure

In describing the structure of the short-term rental market, the study focused on the estimation of indicators showing the potential volume of demand based on the number of visitors residing in the rented dwellings, and the volume of supply based on the number of hosts and their portfolio size (in terms of the number of units managed by the online platforms, such as AirBnB).

■ Market size from the demand side

The data collected indicates that the average number of visitors staying in a rental accommodation is three persons per property per visit. Again, there is great variation between locations (see figure III.2A).

Figure III.2A Average number of people hosted in a property



Source: Author's estimates based on InsideAirBnB data.

Note: Average number of people = average number of guests.

The analysis shows several of the locations are capable of hosting a larger number of people than average; these are mainly the more touristic and coastal locations.

Trentino, Sicily, Puglia, Menorca, Majorca, Malaga, Lisbon, Girona, Valencia and Bergamo rent out properties adapted to host more than four people on average, and three could host more than five (Menorca, Majorca and Girona). Venice and Valencia also fall in this group, although they are not beach areas. It could be said that these locations have larger dwelling sizes and allow for greater densification. They are also the locations where the average length of stay is the longest. Larger-sized units, a larger number of people and longer temporary residence are three characteristics associated with tourism areas, which Venice and Valencia have.

The rest of the locations have average capacity (up to three people per property).

Given this average and the number of days the properties are booked (and rented), the total number of visitors per year can be calculated. This will give an approximation of the city's transient population from temporary rentals. The ratio of the transient population to the resident population is the transient population density.

The average transient population density of the 43 locations is 21.8 per cent of the permanent resident population.[13] Figure III.2B shows the transient population density by location.

Some observations are:

- The first group of locations consists of those with very high population density (Puglia, Majorca and Trentino). The ratios were computed based on the count of all short-term rental housing in the whole region (or island) relative to the housing in the capital city only. Therefore, transient population densities in these locations are exceptionally high.

  For instance, in 2018, the population visiting Trentino was equivalent to 52.4 per cent of the population of the capital, Trento; and in all of the islands of Majorca, rental visitors represented 51.8 per cent of the population of Palma. In other locations, the proportion is lower ranging from 13.1 per cent in Sicily to 14.6 per cent in Malaga to 27.6 per cent in Girona. In the cases of Sicily, Malaga and Girona, the densification of the short-rental market is more limited; however, as these are among the most popular touristic destinations, a proportion of the transient population uses other residential services (hotels, regulated rental housing, etc).

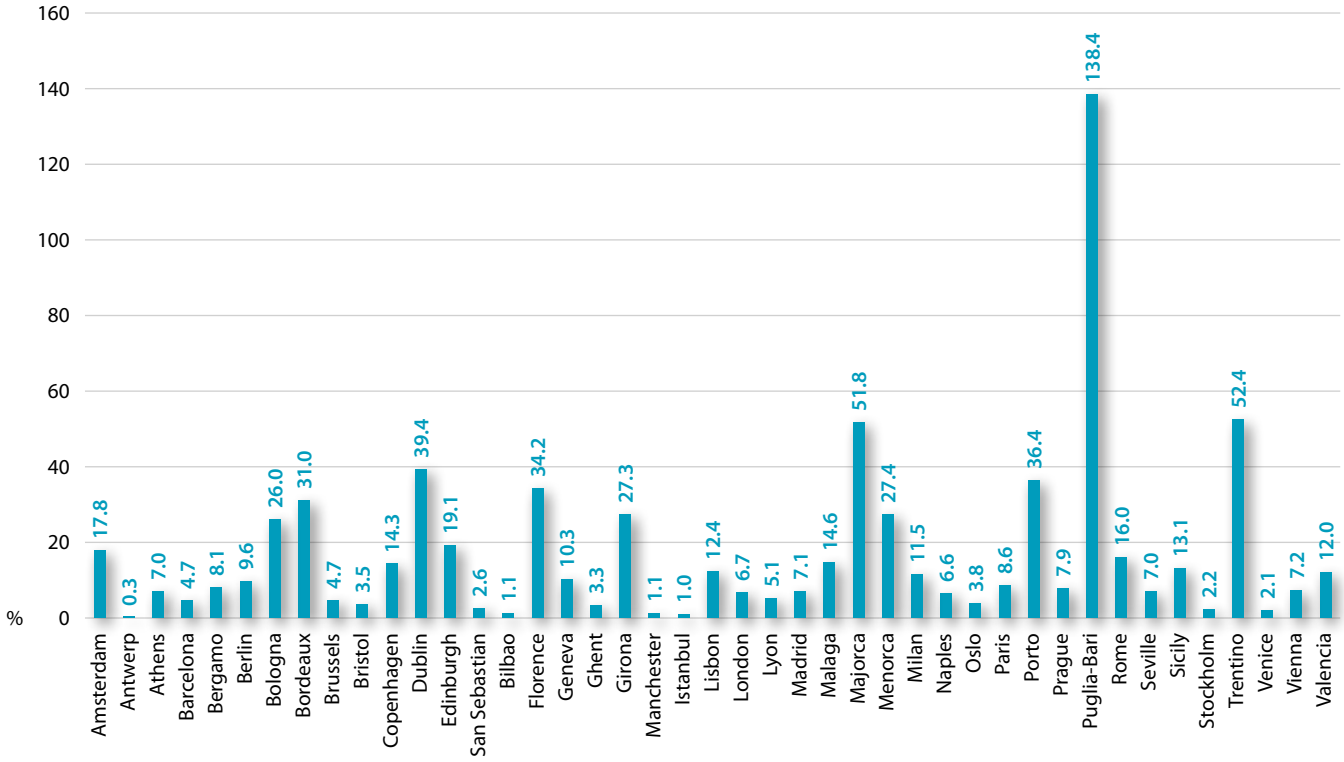
- The second highest level is in locations like Bordeaux, Dublin, Florence and Porto, which received more than 30 per cent of their local population as transient people.

- Copenhagen, Lisbon, Geneva, Malaga, Milan, Rome and Valencia had between 12 per cent and 15 per cent transient population.

- The transient populations of Barcelona (4.7 per cent), Berlin (9.6 per cent), Prague (7.9 per cent) and Vienna (7.2 per cent), despite having the lowest in the sample transient population, generated social reactions because of excessive tourism.

13 The total number of people using the short-term rental market is equivalent to 21.8 per cent of the local population.

Figure III.2B Transient population accommodated in short-term rental market (percentage of total residents, Census 2011)



The transient population density that would explain the social problems generated (and the associated complaints) appear in locations where these complaints are expressed in the public domain.[14] Figure III.2B clearly shows that cities like Bordeaux, Dublin, Florence and Porto (with more than 30 per cent of their local population as transient in a year) experienced a large influx of foreigners. Interestingly, they are not the cities with more short-term rental protests. On the contrary, public reaction seems to occur in locations with lower transient population densities. This could imply that the discontent is a reaction to tourism in general, and not only to the shared housing market. There are also cities with high transient population density but seemingly no public reaction. It is possible that these cities see the short-term rental phenomenon as a productive activity and one that brings wealth. Another reason for public reaction against short-term rentals could be that visitors are concentrated in the centre of municipalities, which are densely populated, so that the density would be much higher there than the calculated average.

■ Market size from the supply side: the hosts

The average number of hosts per location was 20,500. This figure is also variable, with a higher number in London (more than 100,000) and Paris (more than 140,000), followed by Berlin (around 54,000) and Amsterdam, Barcelona, Copenhagen and Sicily (about 40,000 each). The rest of the locations have less than 20,000 each.

14 For example, people demonstrating in the streets rejecting visitors using sharing rental units. See Nieuwland and Van Melik (2017). Also, city reactions are documented. See: https://www.theguardian.com/travel/2017/aug/10/anti-tourism-marches-spread-across-europe-venice-barcelona; https://www.cnbc.com/2018/05/23/unwelcome-guests-airbnb-cities-battle-over-illegal-short-term-rentals.html; and https://www.bbc.com/news/business-45083954.

This study identifies whether the manager of the online platform is a single manager (P2P) or a business activity reoriented to this platform as an alternative means of intermediation. Evaluating the hosts' housing supply indicates its market power. For this analysis, the hosts have been classified by the number of units they manage, which showed a clear map of the existing management structure in this market.[15] Results showed that 74.5 per cent of all hosts in the locations manage just one property, and 22.8 per cent manage between two and five. This indicates that, on average, 96.8 per cent of hosts are P2P-oriented (see figure III.2C).

The proportions varied widely. For instance:

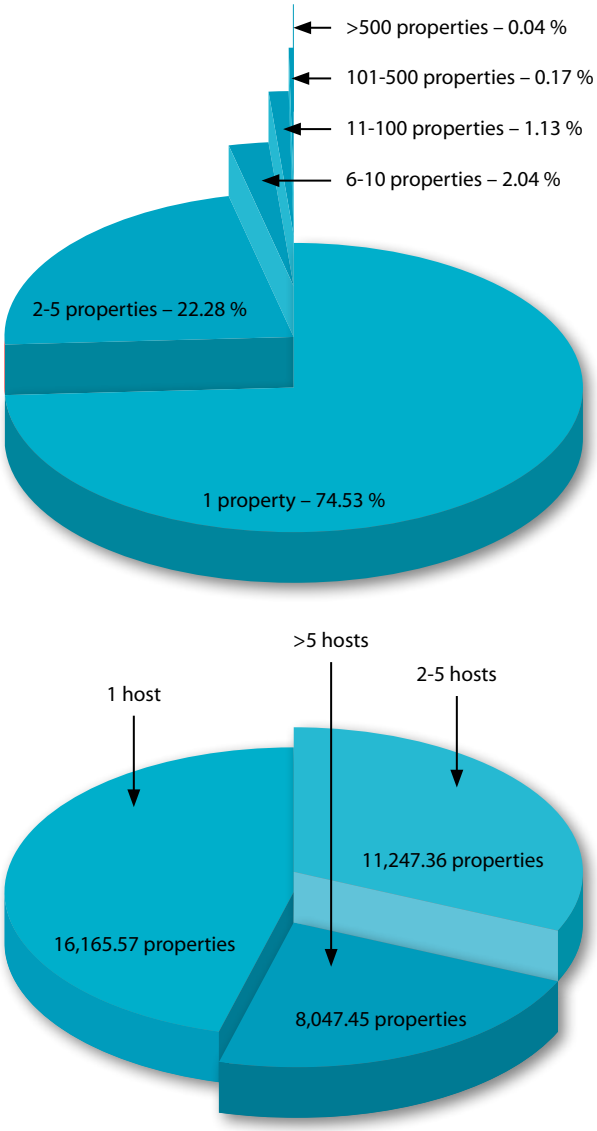
- In Amsterdam, 50 per cent of hosts manage one property, 47 per cent manage two to five properties, and 4 per cent manage more than five properties.
- In Stockholm, Lyon and Oslo, about 90 per cent of hosts operate one unit, 9 per cent operate two to five units, and less than 1 per cent operate more than five units.
- In Brussels and Copenhagen, 80 per cent of hosts manage one property.

The average number of hosts managing more than five units is 3.5 per cent across the sample. It can be said that these hosts are business-oriented (business-hosts). The locations where the number of business-hosts are the highest are not only locations but also in areas or islands like Barcelona, San Sebastian, Florence, Girona, Lisbon, Malaga, Majorca, Porto, Prague and Venice.

Analysis of hosts classified according to the number of properties they manage, included rented and not rented, showed different results. Hosts managing one property represent 45.3 per cent of the total units rented (15,848 units), while those managing more than five units (business-oriented hosts) represent 23.2 per cent of total number of properties (8,079 units) in the sample (see figure III. 2C). The locations with more than 50 per cent of dwellings managed by hosts with more than five properties are Girona, Majorca and Prague (see figure III.2E). This suggests that there is a significant number of business-oriented hosts in the market.

The percentages of properties managed by business-hosts showed varied significantly among the locations (see figure III.2D and figure III.2E).

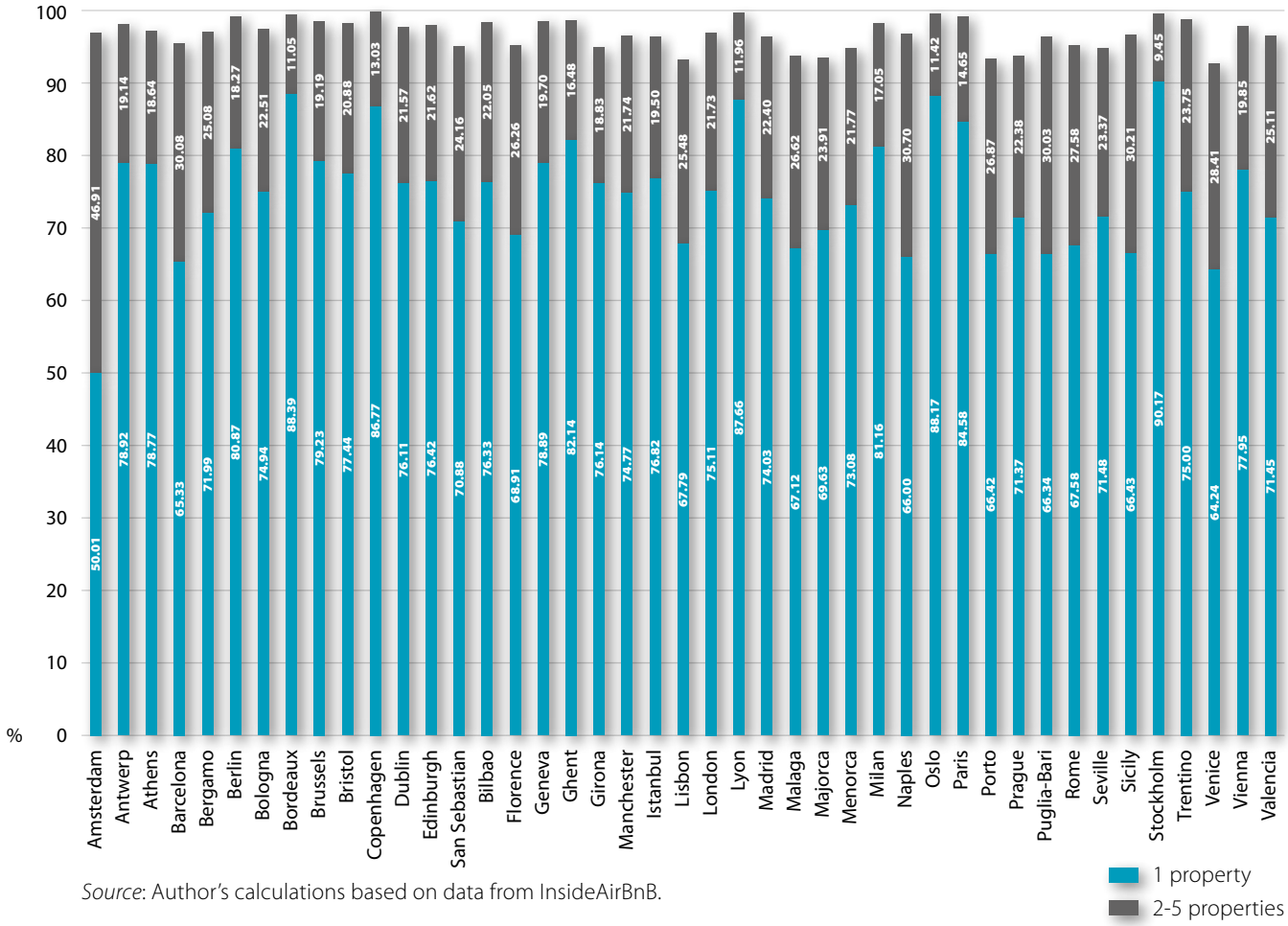
Figure III.2C Hosts managing short-term rental units (percentage of total hosts) and the number of properties managed, by size



Average in the 43 locations

15 Assuming that managing more than five homes may be a regular business. Additional research made by authors concludes that companies interact in this market for business purposes with no association to a specific minimum number of units, sometimes one or two units. Therefore, it is possible that the sharing rental market could be a marginal channel for renting homes for business purposes in periods of weak demand or excess vacancies. Such use seems reasonable, given that Airbnb is one of the platforms with the lowest prices.

Figure III.2D Peer-to-peer short-term rental hosts, by number of properties managed (Percentage of total hosts registered)



Source: Author's calculations based on data from InsideAirBnB.

In San Sebastian, Lisbon, Malaga, Menorca and Venice, more than 40 per cent of properties are managed by large companies.

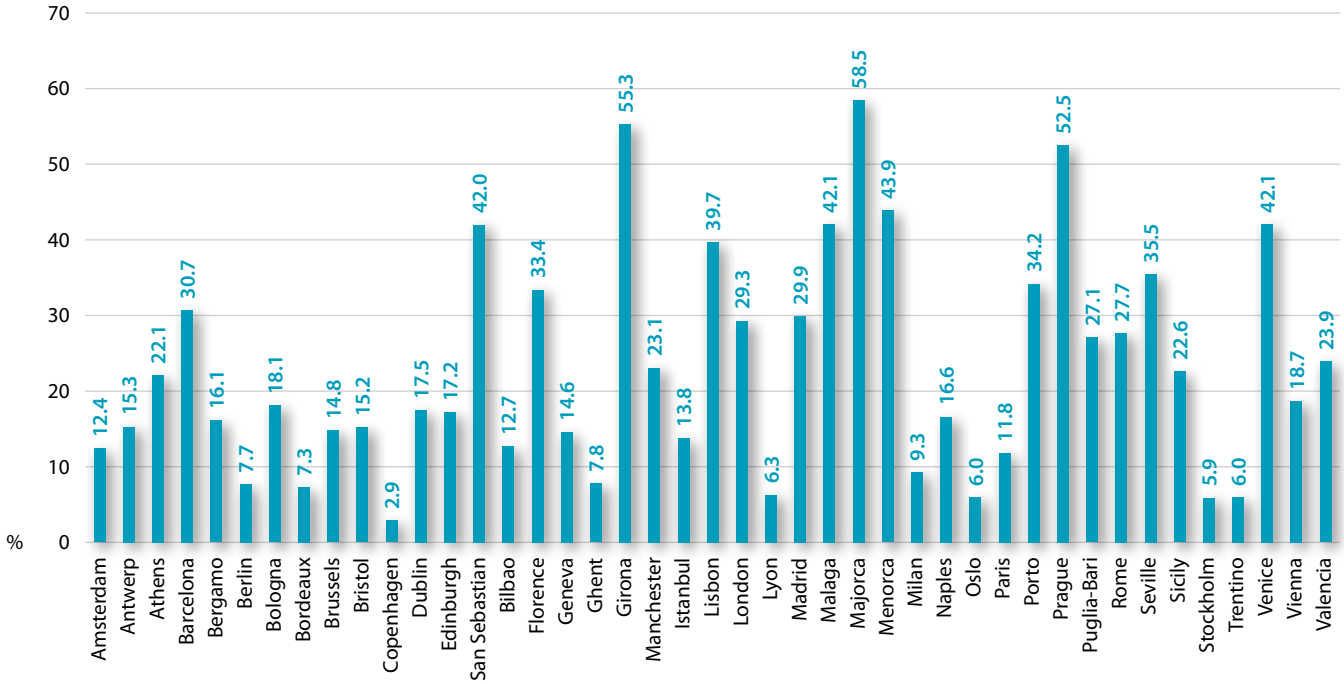
In Barcelona, Florence, London, Madrid, Puglia, Rome and Seville, around 30 per cent are managed by large companies.

In the first two cases, the short-term rental market is driven by business reasons, and the existence of market power cannot be denied.

In Berlin, Bordeaux, Copenhagen, Ghent, Lyon, Milan, Oslo, Stockholm and Trentino, less than 10 per cent of properties are managed by business-hosts, suggesting that they are mainly P2P markets.

The analysis suggests that the higher the number of business-oriented hosts in a location, the higher the likelihood of each host managing a larger number of properties (see figure III. 2E). In these cases, there are more properties per host, which would imply an evolution from the P2P mode to the B2C mode. This trend is not related to the market size.

Figure III.2E Peer-to-peer short-term rental activity: market quota for business orientation (Percentage of dwellings managed by hosts with more than five properties)



Source: Author's calculations based on data from InsideAirBnB.

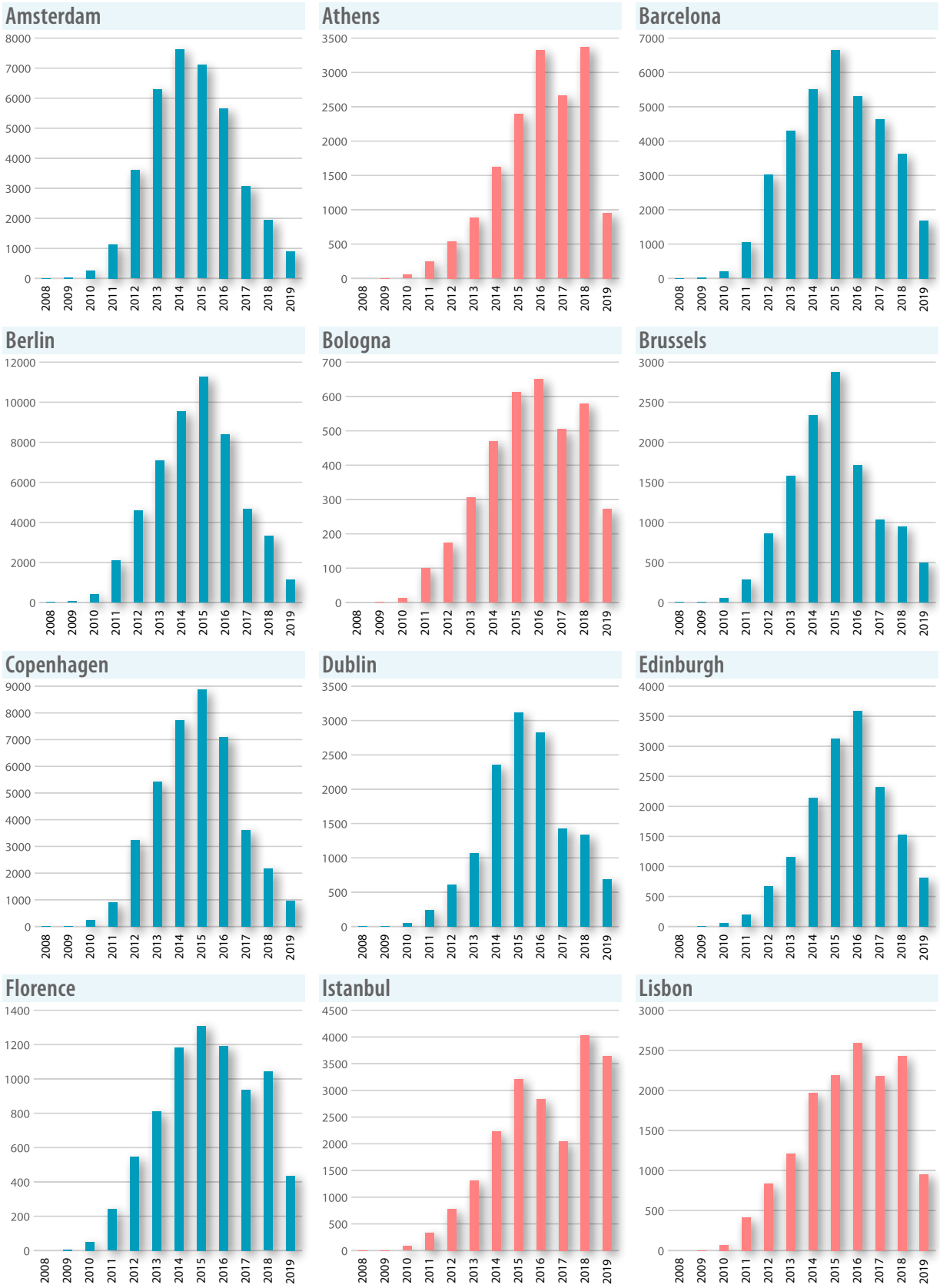
The role of the platform regarding recommending or fixing rental prices has been deliberately left out from the analysis. The literature in the technology field refer to special software for setting average prices by location in P2P markets. The software automatically sets prices through using algorithms that use mass information captured from the past and information on current demand, calculating and advising prices that, by definition, constitute a form of price-fixing (Einav and others, 2018). The price-fixing practices observed in this report do not intend to control the market, as literature would imply.

The final point in this section shows when the currently active hosts began their activity on the platform. Data showed that, since 2010, the number of active hosts increased until 2015 in most of the locations. Based on this indicator, two types of locations were identified: locations where the decline of new hosts started in 2015; and those in which the number of new hosts is still increased after 2015. Panel III.1[16] presents a sample of locations representing the two types of locations. Blue pertains to locations where the number of new hosts showed a decline from 2015 while red represents locations which still showed an increase in the number of hosts after 2015.

In addition to the locations in panel III.1, Bergamo, Bilbao, Manchester, Naples, Porto, and Sicily have also shown increased number of hosts from 2015.

16 This is a partial sample for illustration purposes. Details of all the cities can be found in Panel 4, page 81 of the full report. It can be provided upon request.

Panel III.1 Number of registered hosts in selected locations, by year



Panel III.1 Number of registered hosts in selected locations, by year (continued)

Source: Author's work based on extrapolated data.

III.3. Market efficiency

Market efficiency was analysed using three host characteristics: speed of response in closing a booking; trust in existing information; and quality of services. These are the direct variables available in the InsideAirbnb website.

■ Response speed

Hosts respond in different time parameters. On average, 40.3 per cent responded "immediately" to a request for information (within an hour) (see figure III.3A), but this average varies substantially between locations. Those located in Valencia are among the fastest.

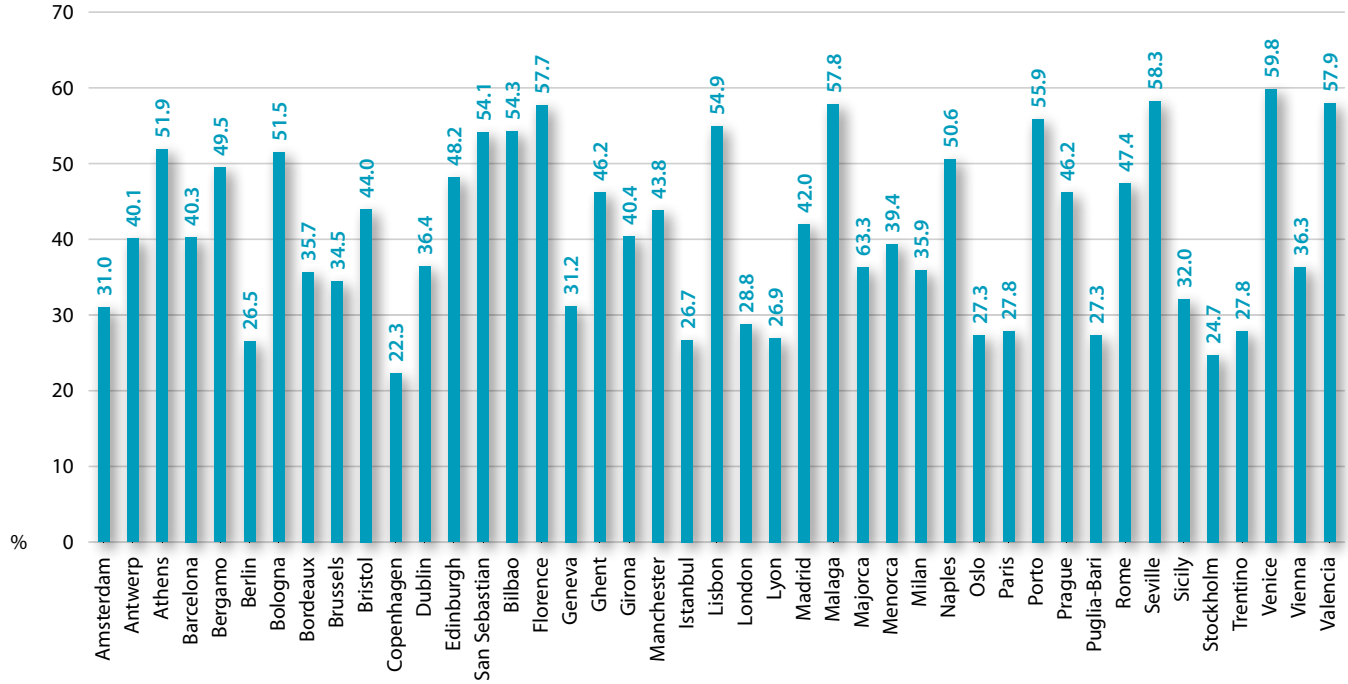
When classified according to speed, the locations with low speed (with only between 20 per cent and 30 per cent of hosts responding quickly) are mainly cities like London, Paris, Berlin, Copenhagen and Stockholm. Those with very high speed (with 50 per cent-60 per cent of hosts answering clients within one hour) are Valencia, Vienna, Seville, Porto, Malaga, Lisbon, Florence, San Sebastian, Bilbao and Bologna.

High speed in closing deals could generate a high housing rotation (or simply, rotation) that would create an ideal "free market", where available housing would be used intensively over time. Data allow for the testing of this hypothesis, and the results show that the average number of times a property is rented out is 8.2 times a year, which is very stable, and is the average across most locations. However, Amsterdam and Paris are above average, with properties rented out more than 12 times a year. Regarding the speed of hosts responding to a new booking requirement, Figure III. 3B shows that the larger the city, the lower the speed and the higher the turnover; that is, turnover is higher in the slower-speed locations and lower in the high-speed locations (see figure III.3B).

Higher rotation (the number of times the house is rented in a year) with lower response speed could be due to several reasons, such as:

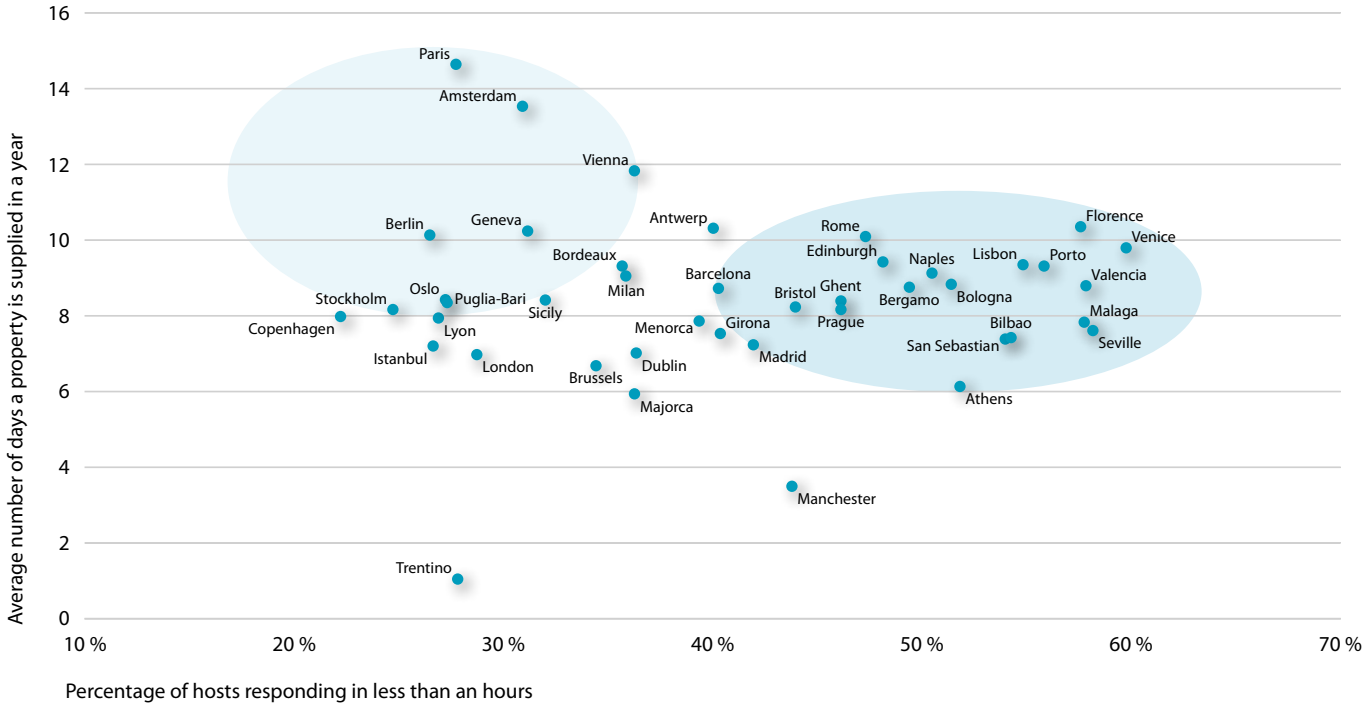
- Intense demand (or limited supply) impedes the hosts from reacting quickly
- A P2P market is only supplying properties occasionally because their owners use them
- Regulations limiting the use of a property on the short-term rental market.

Figure III.3A Short-term rental market efficiency indicators: hosts answering within an hour, percentage of total



Source: InsideAirBnB.

Figure III.3B Short-term rental market: host response speed and property rotation



Percentage of hosts responding in less than an hours

Source: Author's calculations, based on data from insideairbnb.com

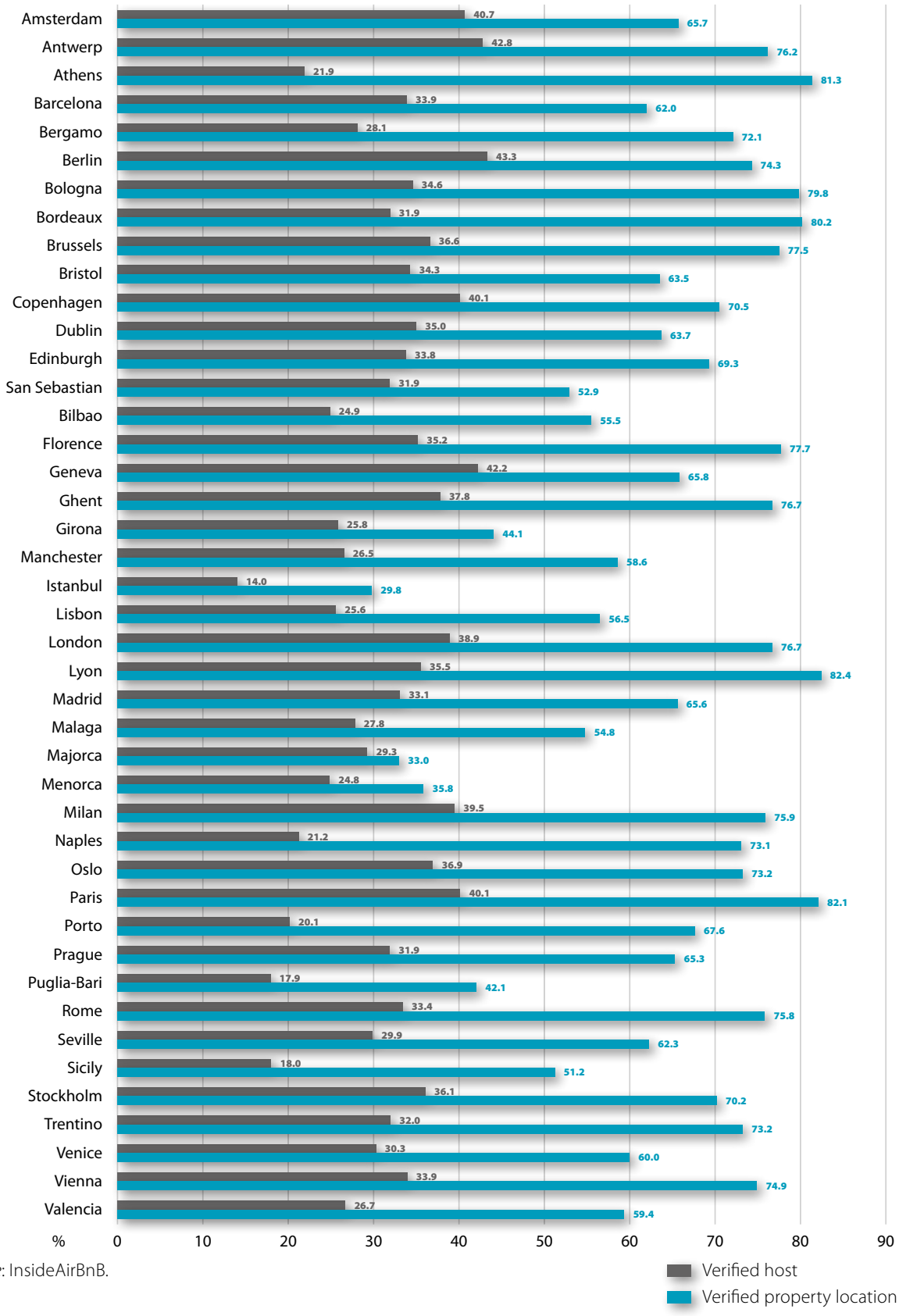
The degree at which information provided about the properties and the hosts are verified by the platform was also analysed as an indicator of information transparency. In terms of property information verification, the data show that, 63.7 per cent of the properties on average are verified. In Athens, Lyon and Paris, more than 80 per cent of the properties are verified, while Istanbul, Majorca, Menorca and Puglia have the lowest verification rates (30-40 per cent of the total number of properties).

In contrast, host verification is very low across the sample, with only 30.2 per cent of hosts information verified. In Athens, Istanbul, Naples, Porto, Prague and Sicily, less than 20 per cent of hosts are verified, while in Amsterdam, Antwerp, Berlin, Copenhagen, Geneva, Milan and Paris, the figure is around 40 per cent (see figure III.3C).

There seems to be an association between the host and property verifications that can be interpreted as "the more accurate the property information is, the better the verification of the hosts". If this is the case, this relationship could be the effect of existing regulation (city level) applied to short-term rental market activities.

An indicator of the quality of housing is the number of "superhosts" in the market. Figure III.3D shows the proportion of superhosts out of the total number of hosts operating in the city. The number in each column represents the proportion of company superhosts running the rental as a business (B2C, not P2P). For example, in Istanbul, almost 5 per cent of all hosts are superhosts and 2.5 per cent of them are business oriented (B2Cs).

Figure III.3C Short-term rental market transparency indicators, percentage of verified host and property location



Source: InsideAirBnB.

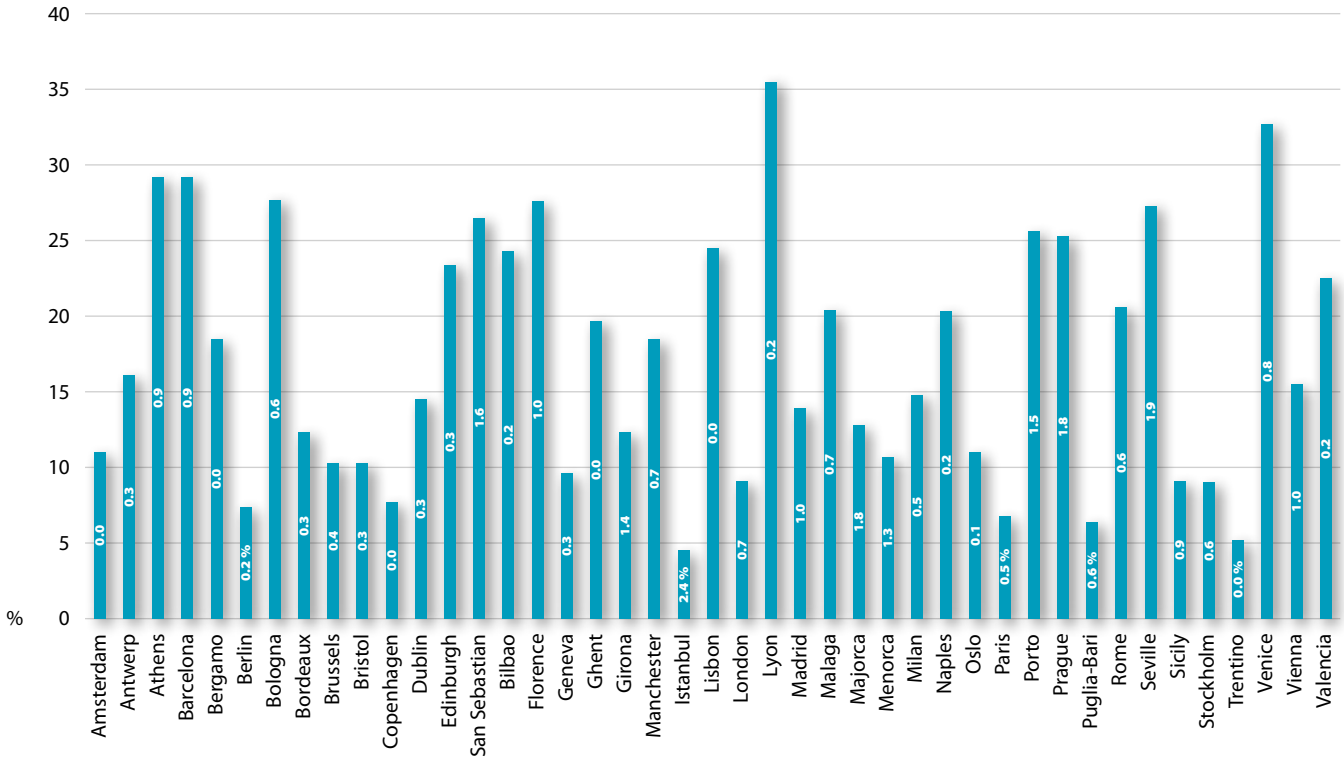
Some locations have more than 25 per cent superhosts, and they are mainly in cities such as Lyon, Venice, Athens, Barcelona, Bologna, San Sebastian and Florence. Of these, less than 1 per cent are companies. In contrast, Istanbul, Trentino, Berlin, Copenhagen, Paris, and Puglia have only around 7 per cent or less of superhosts, with very little or no B2C. The locations with the highest proportion of superhosts oriented towards B2C are Istanbul (2.4 per cent), Prague (1.8 per cent), Seville (1.9 per cent) and Porto (1.5 per cent).

Speed of response, as an indicator of quality, increases efficiency in the market, and this is shown in the evolution and lead time of bookings. If there is trust in the platform, customers will make longer duration bookings which increases future revenues and the earlier a booking is made, the more secure the future revenue is for the host. These data can be used to estimate the impact of COVID-19 in each city and the results are presented in the last section.

Business dynamics

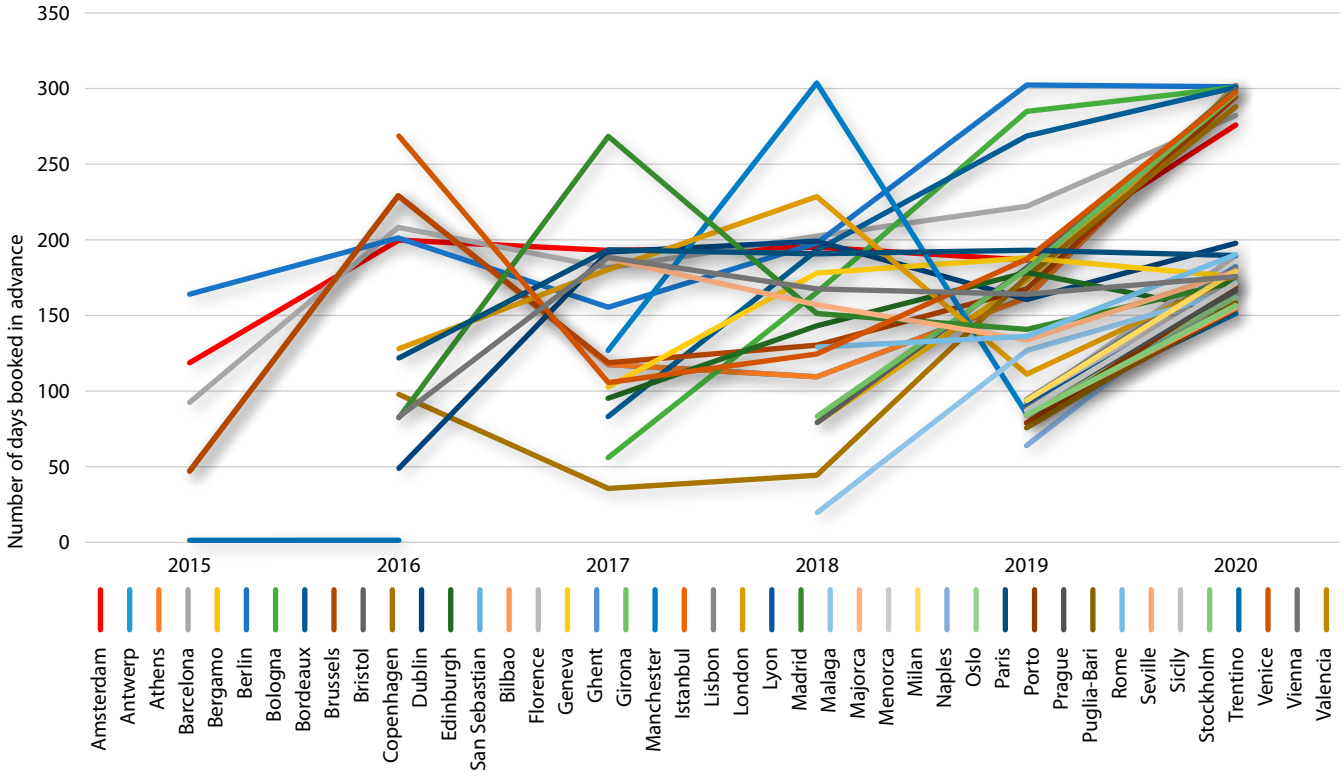
The database shows that almost all locations have experienced an increase in the number of days being booked since 2018. The pre-booking time increased from 122.4 days in 2017 to 274.7 days in 2020, which means that guests were booking around nine months in advance of their stay date. The increase in rentals and advance bookings gives stability to this market, and stability is one condition for generating wealth and positive effects in the economy. The lengthening of the booking period is a sign that the market has grown, and demand is expanding. Figure III.3E shows the evolution of housing stock with data up to January 2020. The effects of the COVID-19 pandemic are not yet visible with the data.

Figure III.3D Short-term rental market efficiency indicators: Superhosts, percentage to total hosts in the location



Source: Author's calculations, based on data from insideairbnb.com

Figure III.3E Short-term rental rotation: Average number of days booked in advance



Source: Author's calculations based on data from insideairbnb.com

Berlin, Bologna and Bordeaux were the most pre-booked capitals since 2018. From 2019, they were joined by Valencia, Copenhagen, Oslo, Amsterdam and other cities. Interestingly, the more-tourist focused provinces or islands have shorter pre-booked time, possibly because most of the homes are offered in other specialised platforms or tourist channels.

Early Booking

III.4. Rental prices and wealth creation

This sub-section analyses the economic aspects of the short-term rental market: prices; spatial distribution; rental dynamics; and the contribution of rental activity to the wealth of the city's economy.

On average, the rental price per night is 105.30 euros per dwelling per day. This figure increased during the period 2015-2019 by almost 40 per cent. Using the average rental price, an entire dwelling is more expensive to rent (122.50 euros/day/property) than a private room (70.20 euros) or a shared room (53.50 euros) (see figure III.4A).

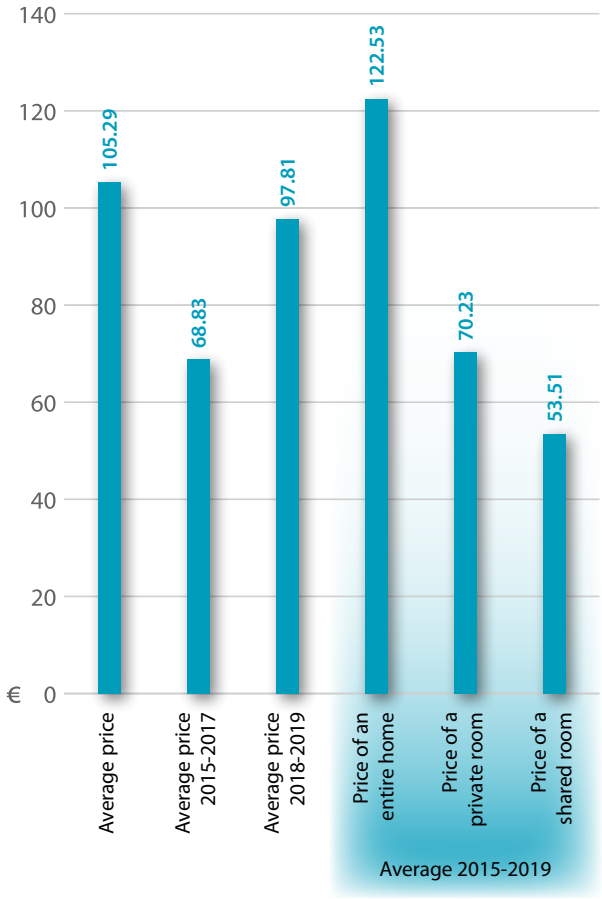
The more expensive locations are Amsterdam, Majorca and Menorca, at more than 150 euros/day/property, followed by locations with rents ranging from 100 to 150 euros (Barcelona, Dublin, Edinburgh, San Sebastian, Bilbao, Florence, Geneva, Girona, London, Paris, Rome and Venice).

Rental of entire properties is expensive, with prices around 200 euros in Bilbao, London and Majorca, and more than 150 euros in Amsterdam, Barcelona, San Sebastian, Geneva, Menorca and Venice. Private rooms are half those prices at an average of 70.20 euros/day/property. However, there are cases where renting a private room is quite expensive and sometimes costs almost the same as renting a whole property like in Athens, Bergamo, Naples, Porto, Prague, Lyon and Trentino (see figure III.4B).

Higher rental prices for entire homes and private rooms are in very touristic areas (Majorca, Menorca, and San Sebastian) and in some cities (Amsterdam, London, Barcelona, Geneva, and Venice). In the rest of the locations, the average rental prices are quite similar. Analysis of the collected data showed that:

- The prices of renting entire properties influence the rise of average rental price in the short-term rental market as this is the most-valued type of property to rent (see figure III.4B for the rental price distribution of property types per location).
- Short-term rental prices have risen since 2018, reaching maximum levels in 2020; on average, the increase in prices was 14.7 per cent between 2018 and 2019, and it was expected to increase again by 19.23 per cent for 2020.

Figure III.4A Short-term rental market: Prices, average and by property type, in euros per day

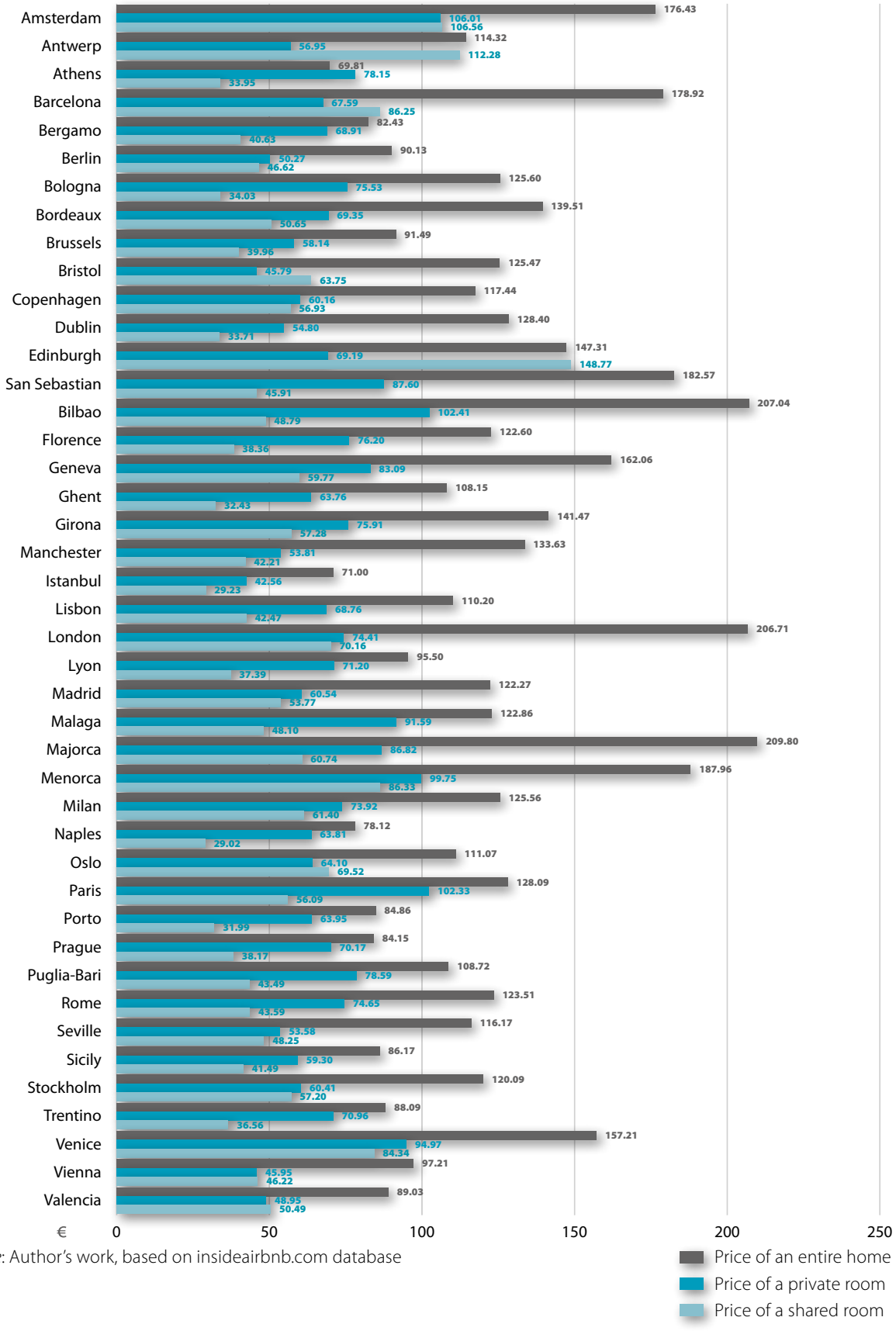


Source: Author's work based on data from InsideAirBnB (listing and calendar files).

The rapid increase in rental prices since 2018 may have been due to a substantial increase in demand. The possible lack of supply (shown by the small number of properties on the market, as seen in the previous sub-sections, and by the limited number of hotel rooms available) may have increased housing prices and short-term rentals during the period 2018-2019. This phenomenon occurred asymmetrically across locations, with one group growing strongly while the rest maintained lower rental rates appreciation.

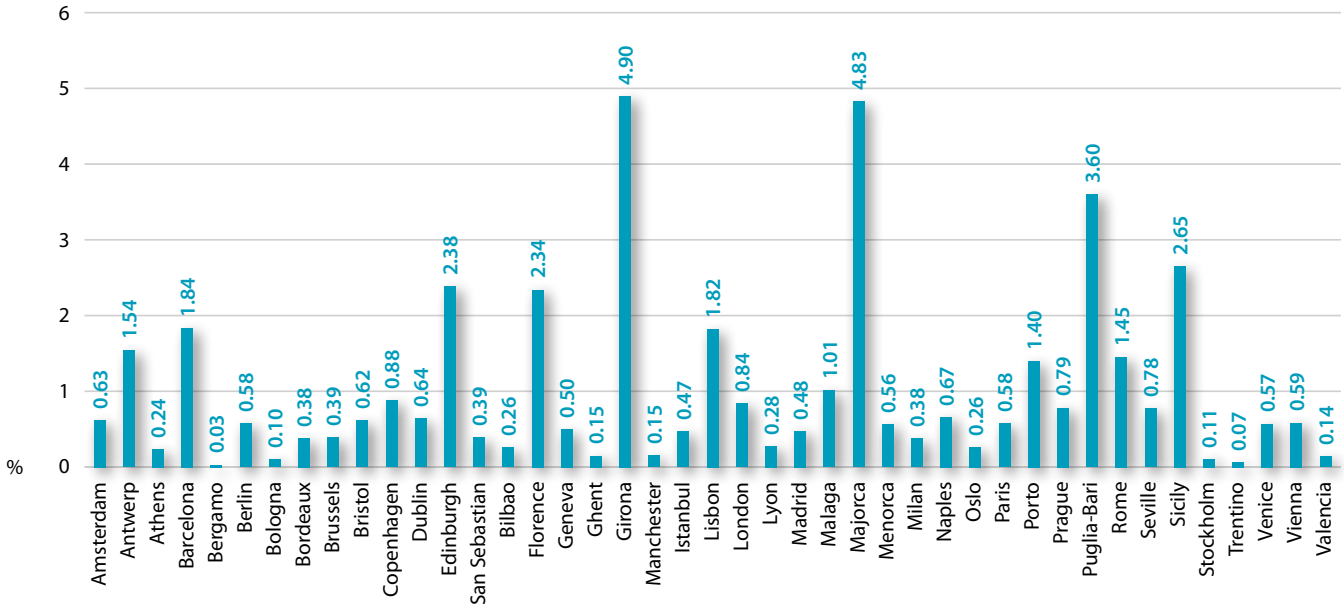
This development seems to support the literature arguing that the temporary rental sector acts as a balancing element for hotel supply and may have played a relevant role by adding to the supply of hotel rooms in some locations. However, this evidence would need to be verified.

Figure III.4B Short-term rental prices in 43 locations, by typology, in euros per day



Source: Author's work, based on insideairbnb.com database

Figure III.4C Peer-to-peer short-rental income relevance: Share of GDP, 2018-2019* (percentage)



Source: Author's calculations based on InsideAirBnB data.
* NUT 3-province's GDP

The wealth generated by short-term rentals

Knowing the daily rental price and the days booked per dwelling it is possible to estimate the total amount of income brought in by the short-term rental sector. In 2018 and 2019, the rents amounted to an average of 1.5 billion euros per location per year. London had the highest estimate annual average at 7 billion euros. Paris and Puglia came second, with around 4.8 billion euros over the same period, and Rome, Sicily and Barcelona came in third with 3 billion euros or more.

The ratio of short-term rental income to the GDP of the region[17] measures the contribution of short-term rental activity to the local wealth (Fig.4C).

In 2018, short-term rental income in each city was 1.2 per cent of regions' GDP on average. The short-term rents in the province of Girona and island of Majorca were 4.8-4.9 per cent of the region's GDP and in Puglia and Sicily they were around 3.6 and 2.7 per cent, respectively.[18]

Edinburgh (2.4 per cent of GDP) and Florence (2.3 per cent) topped the cities with the highest wealth contribution of short-term renting to the local economy. Six locations contributed between 1 and 2 per cent to GDP: Antwerp, Barcelona, Lisbon, Malaga, Porto and Rome. In the remaining locations, the figures were less than 1 per cent and some of these are the largest cities in size such as Amsterdam (0.6 per cent), London (0.8 per cent) and Paris (0.6 per cent). This is mainly because the main source of wealth in those cities comes from a large range of and more diverse productive sectors.

17 This calculation uses GDP at the provincial level or NUTS 3.

18 It should be noted that Girona, Puglia, Majorca and Sicily are some of the few cases in the database where the data cover the whole region and not only the main city (Girona province, Puglia coast, and Majorca and Sicily Islands). Others are Menorca, Lisbon and Bergamo, which are very touristic areas. Data for rest of the locations refer to the city.

The percentages shown in Figure III.4C demonstrate that locations earn a substantial amount of income through short-term rents.

This additional flow of income plays an important economic role through:

(a) The generation of a substantial income redistribution effect in favour of the city;

(b) The creation of other economic activities (services associated with goods, transport, and cultural activities, among others) that generate employment and increase the gross value added of the sectors generating new employment opportunities;

(c) The rise in income because of the new jobs created.

The ratios presented measure only the initial gross effect of short-term rental income to the income of the city. Such initial flow of resources may generate a multiplier effect on employment and income, that is, a knock-on effect on the rest of the productive activities that remains to be analysed that could more than double the economic impact.

■ Price diffusion or spill-over effects

Lastly, this sub-section analyses the ability of short-term rental prices to "spill over" into the prices of other properties offered on the market. The diffusion effect of rental prices identifies areas of price stress, which could be the result of a concentration of demand. This analysis tests the hypothesis that visitors want to be in historical centres, and that this generates the negative externalities of noise and distortion of social life discussed at the beginning of this paper.

The Moran's I test was calculated in local markets. The results support other evidence that demand is oriented towards city centres, coastal areas, and rural regions with specific tourist services. Such concentration generates a spatial spill-over effect on short-term rental prices in most locations, which "overheat" in areas where demand is concentrated, which usually is in highly attractive areas. In the case of cities and coastal areas, this demand puts pressure on prices in historical centres and on the seafront. Therefore, popular perception seems to be accurate. Despite not finding a dense concentration of transient population in some capitals, this population may be mainly in a small area of the city (the centre), generating the mentioned negative externalities. Figure III.4D shows the values of Moran's I for the locations.

In general, the spatial correlation is not large in the locations analysed, although there are particularities that can be summarized as follows:

- Locations with considerable spatial influence in their centres are Amsterdam, Berlin, Brussels, Geneva, Ghent, London, Lyon, Madrid, Naples, and Paris. An increase in short-term rents in specific neighbourhoods has an immediate indirect effect on other properties in the same area.
- Porto, Menorca and Puglia also show a significant spatial influence but in coastal areas.
- There is no spatial relationship between rental prices in Bristol, Bilbao, Girona, Manchester and Trentino.

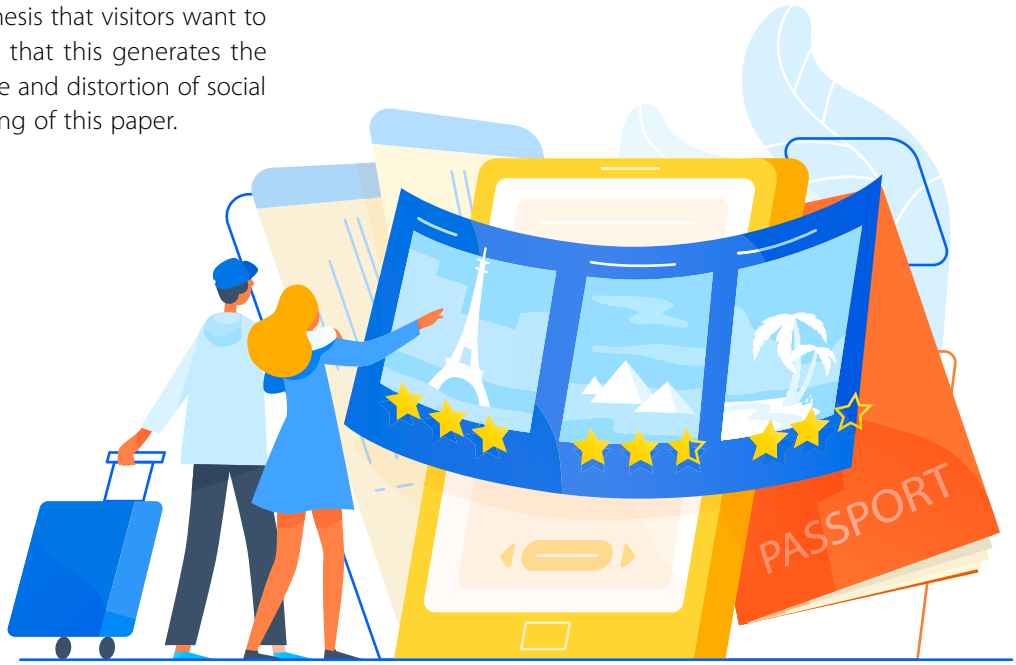
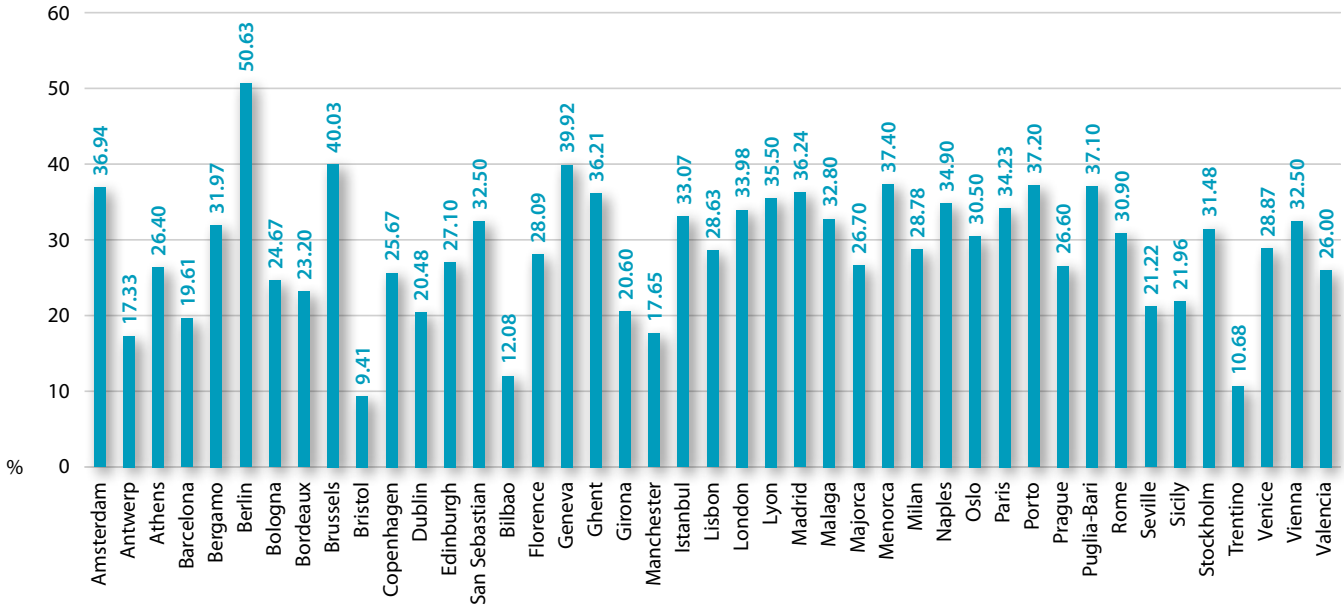


Figure III.4D Short-term rental market prices: Spillover effects (Moran's I test value)



Source: Author's own estimations based on data from InsideAirBnB.

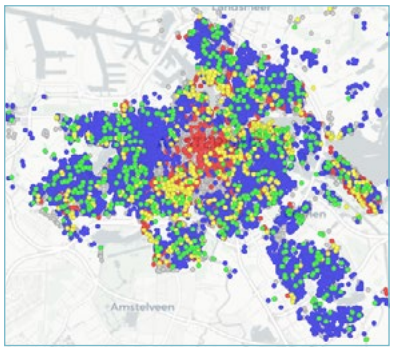
The fact that main cities show spillover effects[19] into the city centre is a sign that the main attraction is the centre's characteristics (buildings, culture, etc). The closer the property is to amenities, the higher the price will be. If this hypothesis is correct, proximity to amenities determines rental prices because amenities act as demand-pull factors. This interpretation is consistent because, in coastal areas, the sea view is the central amenity defining short-term rental prices in conventional tourist locations.

Selected price impact maps were reproduced below (see panel III.2). The maps show the effects on short-term rental prices in colours: red areas are those with the strongest price transmission, causing them to grow by proximity to other temporarily rented dwellings; yellow areas are areas showing increasing rental price; and blue and green areas are those with stable lower or decreasing prices.

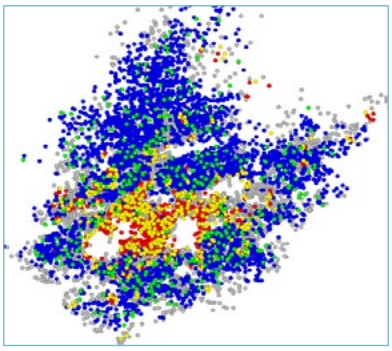
19 Cluster with spatial correlation in their centres.

Panel III.2 Spillover effects on prices in the short-term rental market

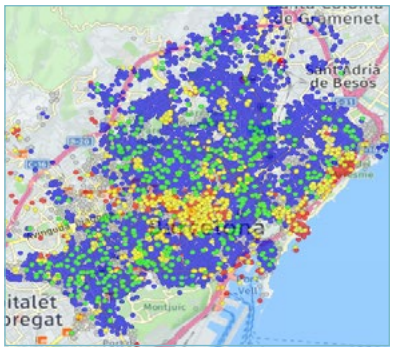
Amsterdam



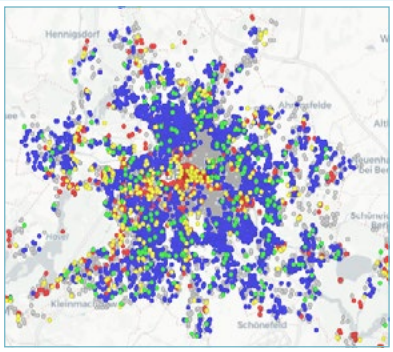
Athens



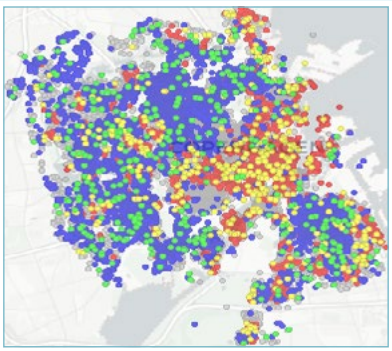
Barcelona



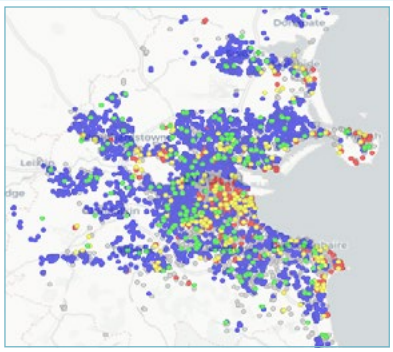
Berlin



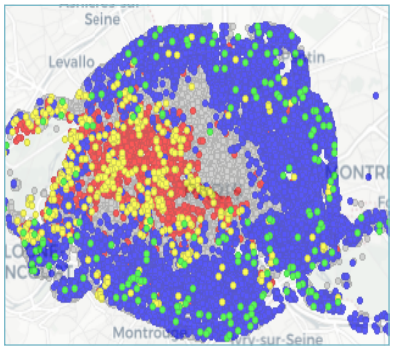
Copenhagen



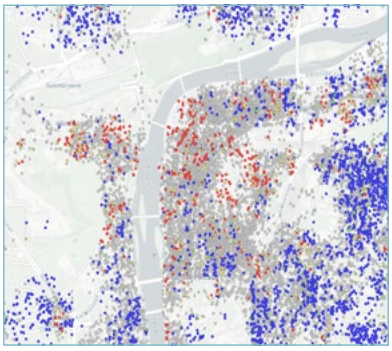
Dublin



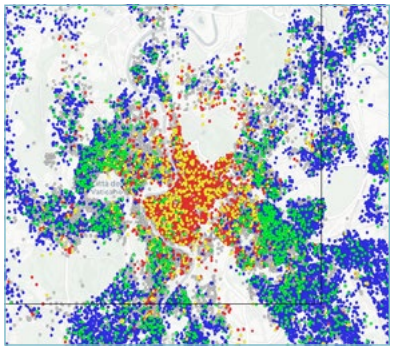
Paris



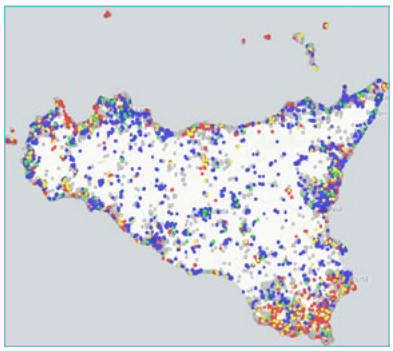
Central Prague



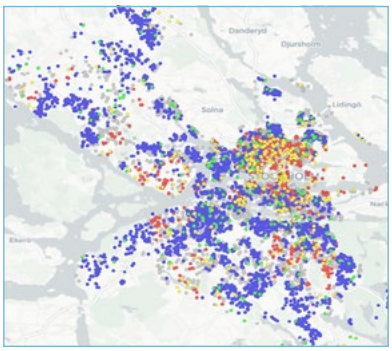
Rome



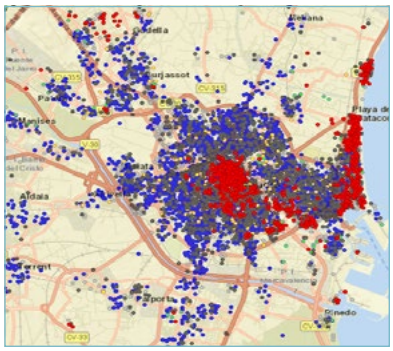
Sicily



Stockholm



Valencia



Source: Author's work based on data from insideaibnb.com.

Note: The red areas are those with more intensive price transmission.

SECTION IV. SHORT-TERM RENTAL MARKET REGULATION

The previous sections of this report show how short-term rental activity can substantially impact housing markets. The increase in short-term rental has been exponential in many cities and has led to benefits and adverse external effects, mainly through overcrowding and population densification. Technological facilities associated with the automatic contract processes (booking, and agreement and services provisions), together with both the stable (global) demand and market signals, have facilitated transactions (in real time) and the consequent population mobility to particular destinations.

The process described may have several effects on the local housing market. For instance, the activity in the short-term rental markets may increase rental prices but, at the same time, may be a source of income for the local economy. Higher prices can decrease residential affordability while rental management becomes a new economic activity for the unemployed in the area. The concentration of people using short-term rent could negatively affect social life by creating bustling areas, noise and loss of tranquillity, but it may increase the activity of restaurants, bars and other services in the neighbourhood, raising their revenues.

The ultimate effects of an increase in the short-term rental market seem to show both positive and negative impacts, and most research recognizes and quantifies this (as seen in the literature review). The variety of results means that implementing any policy measure that attempts to solve some of the negative aspects has undetermined effects. The asymmetric effects, depending on the location, reinforce the idea that any regulation should take into account (and have an in-depth knowledge of) the problem to solve and the location where the solution should be applied.

Short-term rental activity management has a particular mechanism that makes it challenging to design and apply regulations to. Since it uses an international platform, it follows similar formulas to that of transnational corporations (i.e. Google), which implies that no specific regulatory environment can establish rules for this market. It is not easy to determine the legal scope of application as the (global) short-term rental market is in a supra-national domain where regulation should be agreed upon between States. However, the housing markets are local, indicating that regulation is also needed at the national level, and for cities and tourist destinations. The two dimensions (international and local) may have created a discrepancy between the need for regulation at the local or regional level and the global scope of the short-term rental phenomenon, which may have acted as the main barrier to understanding the lack of (unified) regulation in this sector. The newness of short-term rentals in cities, and a lack of understanding regarding full performance and the different areas it affects may have also contributed to a certain inconsistency among regulations and a lack of balanced and adequate rules.

Public authorities (most at the local level) are increasingly regulating different aspects of the short-term rental market, to control the adverse external effects or compensate for those effects perceived as problematic for each society. Much of the regulation follows the findings remarked upon in the literature and in practice and tends to give solutions to specific problems identified regarding the short-term rental market; however, a full body of regulation adapted to this market does not exist.

The existing regulation develops rules in different directions, including carrying out some population movement controls (through registration requirements); avoiding adverse external effects at the social level (establishing limits to the number of rental days); ensuring competition with conventional tourism sectors (by administrative rules); and following fiscal reasons.

This Section presents some existing rules and evidence based on published research, reports and general practice. It is not a full compilation of the existing norms in European countries. Rather, it summarizes several sources of information, such as the regulatory proposals highlighted by the analysed documentation; existing practice; missing regulation as evidenced by the short-term rental activity in 43 locations; and some regulations applied in EU countries.

What the current research shows

The research shows empirical evidence of the adverse effects of the short-term rental market. Most research identifies the need for regulation in some areas, especially regarding compensation for negative externalities. However, not much research focuses on the detailed regulation applied by locations to compensate for the latter.

This Section summarizes the existing literature containing the debating on and testing of regulations regarding short-term rental housing markets.

The research published covering the largest number of cities[20] is by Nieuwland and Van Melik (2008). They evaluate the standard features of regulations applied to the short-term rental market in 11 cities of the United States and Europe. They found that:

- Most ordinances try to regulate rather than prohibit the activity, so as not miss out on the benefits of it (or avoid legal problems with platforms).
- Regulations focus on hosts claiming when rules are violated. Only a few impose duties on the platform or penalize guests.
- Fines are commonly determined related to the number of days rented, or the property size.

These three characteristics frame the sets of different measures that cities implement that specifically reflect the regulator's perception of the short-term rental impact. The authors found significant disparity among rules with a heterogeneous list of measures. They found that classification according to the final objectives (problems to solve) was the relevant way to clarify the regulatory process followed in most cities over recent years.

In a later work, Nieuwland and Van Melik (2020, p. 817) collected and analysed the measures applied in 11 cities. Most of the rules had been put in place to prevent three types of problem:

1. Those related to housing (whether or not the house is affordable housing, to guarantee enough supply in the formal permanent market or to prevent commercial or business activity in the short-term rental of this type of housing);
2. Those related to neighbourhoods (to preserve residential living and neighbourhood quality; protect public health and welfare; prevent nuisance issues; reduce the pressure of tourism; preserve quality of life; and maintain the equilibrium in a mix of uses);
3. Other issues (for example, taxation and economy, safety issues, the creation of a hotel industry in the area, or law enforcement).

Usually, cities apply a combination of objectives when defining a specific regulation However, it is difficult to apply some of these rules, due to a lack of empirical-based evidence regarding the overall impact of short-term rental and the potential (contrary) effects of hard policies (Barron and others, 2021, p.24; and Nieuwland and Van Melik, 2020). "The reality in most cities is that although … regulations are in place, enforcement is problematic, and the short-term rent-related problems remain" (Nieuwland and Van Melik, 2020:818). These authors highlight a crucial issue in short-term rental market regulation, namely whether the definition of the measure to be applied is sufficiently precise to enable it to solve the problem for which it has been created. The authors concluded that current applied rules are not precise enough.

20 From the literature review made when this report was finished in mid-2019.

The differences in the impact of Airbnb across the cities and the need for different regulation responses are also analysed in the other studies (Wegman and Jiao, 2017). Furthermore, the need to clearly understand and evaluate the effect of Airbnb in the housing market is vital for defining regulations and avoiding perverse effects of a bad-shape rules limiting[21] or rules prohibiting certain activities (Sheppard and Udell, 2016). Some studies found the regulations in the United States stricter than those in European cities, for example regarding number of days rented, or number of properties managed (Barron and others, 2018a). Barron and others suggest that "regulations on home-sharing should (at most) seek to limit the reallocation of housing stock from long-term rentals to short-term rentals without discouraging the use of home-sharing by owner-occupiers" (op. cit, p.33) by using tax or occupation fee. Such evidence should be similar in other countries' cities, such as European countries.

Similarly, the proposals of Lee (2016) include applying a set of measures which distinguish between the type of short-term rental managers. This would differentiate between "bona fide" homeowners who occasionally host guests, and professional Airbnb managers. This would prevent "hotelization" and impede subsidized or rent-controlled homes being listed. He proposes three measures: to exempt non-professional hosts from short-term rental revenue taxation; to set a limit of 75 days that a unit can be listed; and to control the number of units in a building that owners could list. Recognizing the economic benefits of short-term rental activity, this author also proposes establishing rules that could provide incentives to host managers to build additional and affordable housing.

21 Bad-shape rules appear when the norm is imprecisely defined to address a specific problem (because it is so general, for instance). A rule forbidding some specific and legal activity would have the contrary effect to that expected.

Crommelin et al. (2018) analyses regulatory responses to Airbnb in five cities (Hong Kong, London, New York, Paris and Sydney). The analysis confirms the need to evaluate the impact of short-term rental activity in each city when deciding the regulatory responses to that activity.[22] The regulation implemented by those five cities is in the private law framework, and each stresses rules and obligations related to the homeownership domain or the use in condominium buildings; these apply to the short-term rental contracts. The regulatory instruments used found in the analysis, are:

- A compulsory licence when rental accommodation length is under 28 days, and housing insurance covering different events
- Notarized deeds, and property rights restrictions (such as, a homeowner permanently living in a residence not being allowed to short-term let housing space [23])
- Co-owner by-laws or condominium by-laws
- Other by-laws, from which lots of regulations are being developed.

Through these instruments, the cities have: (i) restricted use other than as a private residence; (ii) restricted sub-letting undertaken by occupants, not owners; (iii) a requirement of co-owner permission in condominiums; and (iv) other measures restricting the possibility of sub-letting.

Aguilera and others (2019) identify three different regulatory responses in their study on three leading European cities (Barcelona, Paris and Milan):

- The type of actors who mobilize short-term rental activity
- The multi-level government arrangements
- The pre-existing policy instruments, which have been adapted to short term rental.

In addition to these three, new forms of corporate "digital capitalism" (op. cit., p. 20) affect the cities differently and require some type of regulation to apply to platforms managing the rental market.

Most of the regulatory tools mentioned in the literature refer to rules applied by cities under the city legal framework limit.

An example of how precise rules have been applied in selected cities to solve short-term rental market-specific problems is given in figure IV.1.

Regarding the whole list of rules analysed, three main options for the regulation of short-term rental activity would be:

- Full prohibition
- Laissez-faire
- Limitations under certain restrictions.[24]

Maximum freedom (laissez-faire) would have the same effect as regulation where no concrete measures are taken (auto-regulation); the municipalities agree with the platform on some issues, such as paying taxes or providing information. Prohibition implies the application of significant fines to any short-term rental participants who ignore the rules. Those measures and their application are limited, as has been evidenced by the authors.

The standard regulation is a mixed bag of rules, with the application of restriction to different issues. The restrictions are:[25]

1. Quantitative restrictions regarding: the number of units rented, or the unit size; the number of days rented, or the number of visitors; and the number of times the property can be rented per year;
2. Locational restrictions, when the activity is restricted to certain neighbourhoods of the metropolitan area;
3. Density restrictions, for instance, by limiting the number of short-term rented properties in specific neighbourhoods;

22 "The targeted regulatory responses need to be underpinned by careful conceptual and empirical analysis of the Airbnb impact. … [so that] … Airbnb should share their data with regulators but it is unwilling to do so indicating that its sharing rhetoric is more of a sales pitch than a guiding philosophy" (Crommelin and others, 2018, p. 442).

23 In the United States regulation.

24 As Guttentag, 2015 also remarked.

25 The classification from Nieuwland and Van Melik (2020:814) is reproduced here.

Figure IV.1 Regulatory approaches in 11 European and United States cities

FULL BAN		
MEASURES	**CITIES**	**MEASURES**
	Anaheim	**Full ban in the whole city** Start phasing out existing short-term rentals, January 2018.
Partial ban for new licences in the Old Town Quantitative: one listing per property owner, no more people than the property is built for. Qualitative: hygiene, contact details provided for neighbours.	**Barcelona**	
	New Orleans	**Partial ban in Vieux Carre** Quantitative: one party of guests per unit. Qualitative: insurance, safety and emergency precautions, contact details provided, infomation about trash collection and noise provided, no nuisance.
Restrictions Quantitative: no entire units, host present during rental period, only in spaces intended for living, emergency information provided.	**Santa Monica**	
	New York	**Restrictions** Quantitative: only one listing per address. Qualitative: permanent resident needs to be present during rental period in multi family dwellings.
Restrictions Quantitative: maximum 90 hosted nights. Qualitative: permanent residents only, safety precautions provided.	**San Francisco**	
	Berlin	**Restrictions** No entire apartments, only allowed if at least 50 per cent of apartment is used by property owner.
Restrictions Quantitative: maximum 4 guests, maximum 60 nights renting per year, owner on site at least 6 months per year. Qualitative: no nuisance, safety precautions provided.	**Amsterdam**	
	Paris	**Restrictions** Quantitative: maximum 4 months a year (otherwise, a registration as business is required).
Restrictions Qualitative: primary residence only, safety precautions provided.	**Denver**	
	London	**Restrictions** Quantitative: maximum 90 nights renting per year.
LAISSEZ-FAIRE		

Source: Based on Nieuwland and Van Melik (2020:816).

4. Qualitative restrictions, such as the type of accommodation, or the requirement of specific types of installation or equipment;
5. Other obligations, such as permissions or licences, are also simplified.[26]

The idea of combining several different regulations, due to the different impacts of short-term rental depending on location or property type, underlies most of the research. The heterogeneity on findings in the short-term market analysis performed supports the idea that short-term rental is a complex issue which requires the correct combination of rules to compensate for impacts.[27]

The Spanish regulation is an example of how countries could structure the regulations regarding short-term rental market among several legal, social and economic dimensions. In Spain, the short-term rental market is considered part of the tourism sector, and the properties rented are considered tourism properties; thus, this market comes under the tourism rental regulation, which is subject to three levels of law:

1. The first level is the national regulation (as the property is considered a tourism production good), bringing the activity and revenues under the national tax regulation, and the properties under the building (technical) conditions and security rules.
2. The second is the regional laws which are responsible for land regulation and social housing conditions.
3. The third is the city regulation, which can define planning and any other issue related to the housing market and social equilibrium.

Several other regulations were modified at the national level to apply to the short-term rental sector. For instance, in 2018, the condominium management law (Ley de Propiedad Horizontal) included a new rule allowing homeowners to decide to permit or prohibit short-term rental activity in buildings (this is a case of a national law with local application). Another regulation at the national level considers the short-term rental contract as being the same as any other property transaction (such as long-term contracts) and requires an energy-efficiency certificate every time the unit is rented.

As tourism and housing regulation is under the competence of the regional governments, the application of national regulation differs depending on where the short-term rental takes place. Differences can be seen regarding specific regulation among Spanish regions as well, and each Regional Authority decides which ones to put in place or specifically define for their territory. A summary of the main rules for tourism apartment rentals in Spanish regions are given in figure IV.2; they also apply to short-term rentals. One of the essential rules covers the minimum nights of stay. In the general tourism rental market, the apartment must be rented out to tourists for a minimum of five days per rental[28] to be considered as tourism related. Recently, the Madrid Metropolitan l Government determined that tourism rental apartments would be considered when they accommodate at least one day per guest; such rule has the automatic effect of including short-term rental activity under the tourist regulation framework.

The compulsory registration for tourism rental units implies several other obligations for the owner or manager: the host must give details of the property to the local government, give information about the owner (if it is a different person) and give details of the number of days per year it is rented out for tourist purposes. This information is required at the time of the property registration as a tourist house. The owner or manager must also identify the tenants, declare revenues, put the registration number (of the tourist house) on all contracts entered into, and it is compulsory to provide information (to the local government) about the rental contract start- and end-dates and the payment means used.

In countries without any specific regulation in short-term rental activities, more general mandatory regulations may remain unenforced.

26 Guttentag (2015); Cocola Gant (2016); Codwell (2017), among others.

27 Guttentag (2015), Edelman and Geradin (2015), Oskam and Boswijk, quoted in Nieuwland and Van Melik (2020).

28 A tourist apartment is considered different to a dwelling home. It cannot serve as a permanent home and should be rented short term. This rule has the effect of fully separating both markets.

Figure IV.2 Regulations regarding the provision of rental housing to tourists in Spain

REGION (autonomous communities and autonomous cities)	LIST OF OBLIGATIONS						
	Register	Minimum stay (days)*	Maximum stay (days)	Distinctive Plate**	Permanent home rental prohibited	Rent of whole property by room prohibited	By-law prohibition
Andalusia	YES	YES	NO	NO	NO	NO	NO
Aragón	YES	YES	NO	YES	NO	YES	YES
Asturias	YES	YES	NO	YES	YES	YES	ND
Balearic islands	YES	YES	YES	YES	NO	YES	YES
Valencian community	YES	YES	NO	YES	NO	NO	NO
Canary islands	YES	YES	NO	YES	NO	YES	YES
Cantabria	YES	YES	NO	YES	NO	YES	NO
Castile-La Mancha	YES	YES	NO	YES	NO	NO	YES
Castile-León	YES	YES	NO	YES	NO	YES	NO
Catalonia	YES	YES	YES	NO	NO	YES	YES
Extremadura	YES	YES	NO	YES	NO	NO	NO
Galicia	YES	YES	YES	YES	NO	YES	YES
La Rioja	YES	YES	NO	NO	YES	YES	YES
Madrid	YES	NO	NO	YES	YES	YES	NO
Murcia	YES	YES	NO	YES	NO	NO	NO
Navarra	YES	YES	NO	YES	NO	NO	NO
Basque country	YES	YES	YES	YES	NO	NO	NO
Ceuta	YES	ND	ND	ND	NO	NO	NO
Melilla	YES	ND	ND	ND	NO	NO	NO

* Number of days determined at the municipality level.

** Distinctive Plate is a sign on a plaque located in the housing wall indicating it is eligible for short-term rental. Regions are known as 'Autonomous communities'.

Source: Compiled by Vicente Ruiz and Paloma Taltavull.

This occurs in the following cases:

1. Collection of taxes and fees, and the official declaration of income;
2. Building security and management;
3. Observance of hygiene standards in the rented property;
4. Observance of the internal and legal rules for living in residential buildings;
5. The registration of the people temporarily using the property;
6. Non-regulated competition between the touristic and residential segments;
7. The withholding of a change in the purpose of the property from residential to tourist purposes;
8. Lack of a mechanism for the curbing of violations regarding the use of condominiums.

Other rules are also applicable to all agents in the market.

Potential regulatory areas from the evidence of the 43 locations

The empirical evidence collected from the data of 43 European locations gave a broad perspective of the scope the regulation of short-term rental activity would require. The domains of regulation highlighted in this section result from the evidence mentioned above and the author's knowledge, and it reflects the author's opinion exclusively.

Two main dimensions determine the regulatory domain for short-term rentals: international and local. The international one comes from the sharing economy activity concept, which establishes a kind of freedom in the service provision between customers and providers of any geographical origin. The freedom to supply housing services is fully recognized in the EU Service Directive, and there are special rules for sharing activities when they are P2P services.[29]

The local dimension comes from the universal regulatory principle: the regulatory framework is determined by the proximity to the affected citizens. As the housing market and the effects of the short-term rental market are local, the regulation should be determined at a lower geographical level, which is the municipality one.

Both dimensions seem to be opposed and point to different regulatory domains where the rules that normalize the short-term rental market should be developed. Figure IV.3 shows the regulation levels.

Figure IV.3 identifies sharing activities as a group of economic initiatives fulfilling the P2P principles and being part of those free initiatives in the market. A short-term rental market can provide properties in any country, taking into account that peers may or may not be residents. Business companies can also provide units in this market, in both the local and foreign markets. As a result, the short-term rental market is developed at a local level in different countries, having hosts which can be local or foreign.

From the demand side, the visitors could also come from the country or from overseas; thus, the housing market in the short-term rental activity would provide accommodation services to both locals (residents) and foreigners (non-residents).

The international participation of both hosts and guests has implications for the national accounts: the income paid for the accommodation plus the fee by a non-resident (or paid in other currencies) should be considered an export of services.

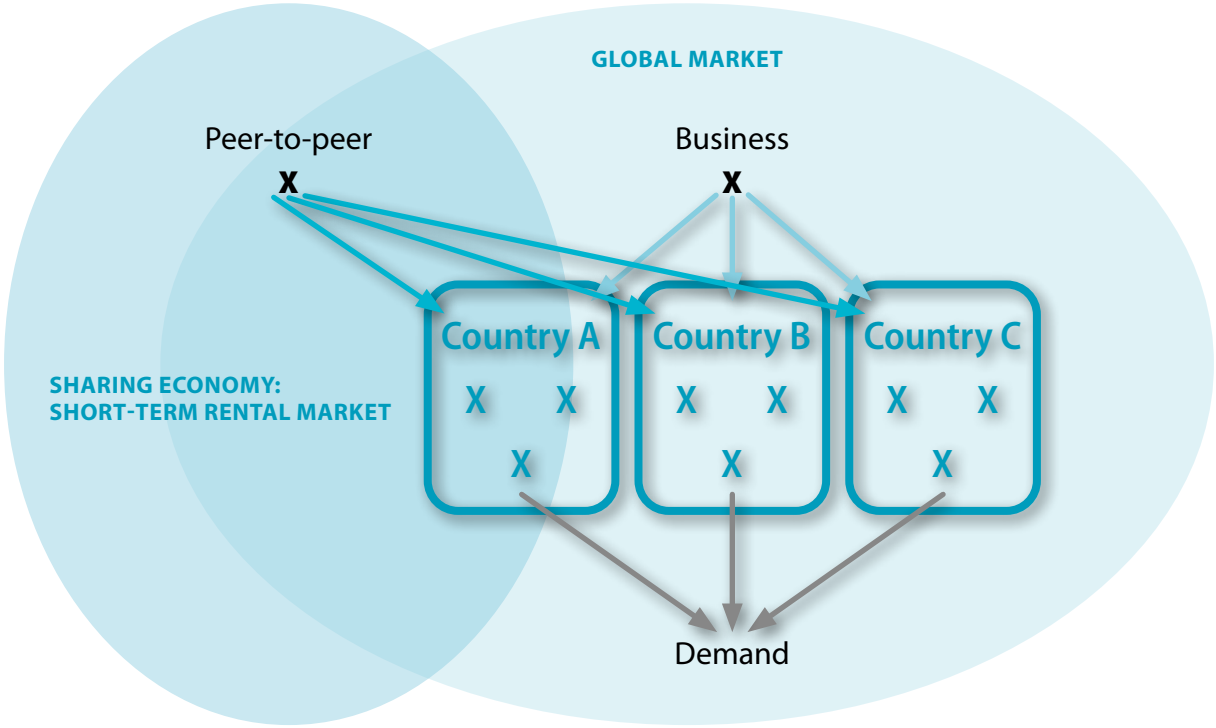
The consideration of revenues is not the same from the host's perspective. The origin of the revenues is the property that locally produces the accommodation service streams, which is considered part of the domestic production, either the host is a resident or a non-resident. When the homeowner uses the house, the estimated amount of housing service's costs (so-call imputed rents) is already accounted for in the GDP through the added value of services associated with the housing sector. The National Accounting methodology considers it as an income generated in services. When the owner is a non-resident, it is not accounted for in the GDP. Furthermore, when the owner is short-term renting the property, the rents should be considered international income, which should be indicated in the Balance of Current Accounts in the Balance of Payments. If the non-resident host gets the rental income paid by the customer into a bank account located outside of the country where the property is located, this should also be considered as international income movement, which should also be accounted for in the Balance of Payments.

This suggests that short-term rental activity has several implications for the national accounts and should be taken into account in the macro variables' collection. The P2P rent would be considered as third sector accounts, while the B2C or B2B rent is seen as a regular rental activity in the housing sector. All these aspects have fiscal effects and are relevant to the national/regional tax regulations.

The role of the platform (which charges a fee for each transaction) is another issue that should be understood as international activity (as the same platform may be located in different countries) although it can be regulated at the national level. This is a complex issue, as taxes and rules are different across countries, and there is no experience regarding transnational regulation being applied to the short-term rental market.

29 It declares the freedom for P2P sharing of capital or goods. SWD (2016) 184 final. Available at https://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX%3A52016DC0356.

Figure IV.3 Regulatory frameworks



Source: Author's work.

The evidence of the 43 locations shows that the regulations to be applied would be taken from the existing experience, shown above, and may follow the evidence given in this document. Some suggestions for rules would be:

Rules related to the property unit

- The amount of stock devoted to the short-term rental market per year is small, around 1.5 per cent of total conventional homes and 22 per cent of unoccupied units. It is critical to collect information on which type of housing is used in the market, and to evaluate whether the activity is mobilizing unused stock or using pre-existing rental units. This information should be gathered directly (through registration), through the platform or by any indirect method. Specific registration of short-term rental units is strongly recommended.
- Verification of information related to the property is relatively high, and the property is located precisely on the map, which ensures property controls according to the regulations. It allows the local government to determine effective measures to support the neighbourhoods, reduce the negative externalities (if they exist), limit the activity to particular areas, and increase public services.
- The majority of properties in the short-term rental market are apartments. Here, regulation through condominium networks would be beneficial.

Rules related to the hosts

- The number of hosts is linearly related to the number of units, suggesting that the more units in the market, the greater the number of hosts. This can be interpreted as an increase in the P2P short-term rental market. The host should be identified for classification purposes and to assign the correct regulatory framework. Full identification of each host is strongly recommended. In the case of P2P hosts, the EU recommendations on tax exemption are recommended, as they incentivize the activity and increase the wealth to the economy.

- However, information on hosts is deficient. The lack of identification has adverse effects from several perspectives: it is not possible to identify them as P2P or business, so it is not possible to apply the correct regulation (for example, international or national taxation, and international revenue movements for the balance of payments). It is critical to identify the host and his/her information, in order to organize the sector. Measures oriented towards incentivizing the host to give their details could be developed at city level.

- The majority of hosts (97 per cent) manage less than five units; those managing more than five control, on average, around 23 per cent of the total units in the market. It seems that the short-term rental market suffers from a certain degree of market control, which should be regulated (as a market failure). There is considerable variability by city, indicating that the measures should differ depending on the location. However, the municipalities would decide the number of units to be managed by a P2P host, analyse the market correctly, and identify the business share to apply the existing rules.

Rules regarding visitors

- The information on visitors suggests that the properties are not overloaded but that there is a significant rotation of guests staying 1-2 days for reasons other than tourism and 4-5 days for tourism, on average. The rotation rate is a sign of efficiency in this market, and also of the amount of new people visiting it, which could be the origin of overcrowding in certain areas where the most demanded properties are located. The estimated number of visitors relative to the native population suggest that the effect of overcrowding differs depending on the city. As the population flow is one of the sources of externalities, each city would decide whether the flow of visitors should be regulated. The collection of information on visitors is recommended and counting of those arriving at the city and location is key to evaluating the needs of additional public services.

- Gross revenue is large, around 1.2 per cent of the city GDP on average per year. The short-term rental market's contribution to the economy varies across locations, with larger revenues relevant to more tourist-oriented areas. This suggests that part of the income is going to the tourism sector, which is already regulated. It is crucial to understand the share of the wealth created by short-term rental originated in the P2P sector and in business-oriented management.
- Information at the local/geographical level would help the municipalities to precisely define interventions in neighbourhoods to reduce negative externalities. The externalities should be identified and defined.

The evidence does not give information about whether or not the short-term rental activity creates negative externalities, gentrification, or an impact on the long-term market's housing prices; however, it provides information for research. The proposals of regulation here are a first step towards gathering enough information to allow the authorities to better understand the short-term rental market and its implications, and to correctly define the regulatory measures fitting each city or urban area.

Summary: main highlights

In conclusion, the regulation of short-term rental markets under the sharing economy depends on the P2P definition and how hosts give or share goods or services (coordinated by the platform, Hamari and others, 2015). It should differentiate between P2P and market-based provision, with consumers or companies mutually guaranteeing temporary access to underutilized physical assets.[30] The critical issue is the identification of whether the activity is business-oriented or not. Once this is done, then the regulatory process is easier to define.

Regulation adapted to the situation seems to be needed. The creation of national or regional rules to distinguish between residential properties that can be rented for short time periods and those for long-term rent would improve the rental market performance, with positive consequences for society, including fiscal, social, societal and economic. A lack of regulation and a failure to distinguish between tourist and residential properties could affect the overall property market and affordability of housing for the population.

The location, development, use and control of the rental market comes under public and regional responsibility, and depends on factors outside the condominium and housing policies.

For the correct definition and application of the specific regulation, in-depth statistical information and new technologies are critical.

More sweeping statistical information on the rental market can be used to precisely define rules regarding short-term rental activities and be used in other analyses to help the development and regulation of a territory. In this regard, the sharing economy can provide many advantages through Internet platforms for collecting information in an easy and accessible way, and its automated processing produces fast results.

The adaptation of the data technologies already known (networks, apps, blockchains, machine learning and others) will aid in the design of new and precise legal tools to support the short-term rental market.

The purpose of regulation is to achieve the interests of public administration, protect consumers, and preserve the right to property; thus, legal certainty must be fostered in short-term rental activity regulation. To ensure this, easy access to certain information about the characteristics of the unit, conventional or legal limits regarding its use and the legitimacy and capacity of the owner or the lessor are required.

Initiatives already exist regarding the implementation of public tools to gather information, such as creating an electronic registry for short-term rental contracts.[31]

30 Fradkin, A., Grewal, E., Holtz, D., and Pearson, M. (2015).

31 An automatic system to register short-term rentals would avoid legal gaps and help customers to diminish the risk in their contracts. It also gives legal certainty and security to both the person renting out the unit and customers, and also to public administration and other stakeholders. An example already implemented can be found at: https://www.iuristech.es/2020/03/regturi-turismo-y-blockchain.html

V. CONCLUSIONS

The sharing rental market (short-term rental) is a new service activity which was developed benefiting from the advances in the IT sector and follows similar trends as other sectors. This market has created new dynamics, distorting the status quo and requiring that regulation, social life, and citizens adapt to the new activity. The short-term rental market falls between conventional rental markets and tourism in different degrees depending on the location and the percentage of the housing stock shared. It creates considerable wealth (around 1 per cent of GDP), which is shared mainly among the owners, especially if the city has a large number of hosts managing few units. Transparency on the number of transactions would increase income taxation and public budget resources, although it is not known how much is already included in corporate tax returns.

It also creates an "activity" rather than real jobs (it is not accounted for in labour statistics), protecting citizens from the adverse effects of economic shocks. The COVID-19 pandemic has directly affected the basic principles that have driven the short-term rental market, that is, the population mobility worldwide. The reaction of users of this market to the pandemic differs between locations where the length of stay was longer (small effect) and those with shorter lengths of stay (greater effect). This issue is analysed in a further report.

The rental-sharing market promotes population mobility and plays a role in the temporary densification of some city areas, with different effects depending on the city.

The size of the transient population using short-term rental units can be large, which can create negative externalities in terms of the intensive use of public transport, public services, and health services. This should be taken into account by local authorities to minimize adverse effects on the quality of social life and services for locals.

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Sharing Economy and its Effects on Housing Markets

The continuous advances in information and communications technology have been transforming markets, enabling producers and consumers to make timely, informed decisions, which carry a direct contribution to improving efficiency in resource allocation. Most notable in driving this transformation is the sharing economy model, which involves using the internet and digital applications for gathering idle, under-utilized assets and services from private owners and making them available for sharing through short-term peer-to-peer transactions based on fees/commissions and/or affiliation taxes. This model, also known as peer-to-peer (P2P) economy, has gained popularity in the housing market as a way of meeting the demand for affordable short-term accommodation needs.

This publication clarifies the scope and salient features of sharing economy activities in the housing market, drawing on a review of literature as well as available data on short-term rentals in the UNECE region. It also highlights the main regulatory approaches to the sharing economy. The aim is to allow policymakers to better understand the short-term rental market and its implications and to correctly define the regulatory measures fitting each city or urban area.

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