

# The impact of shared accommodation for the overall accommodation industry

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## 1. Introduction

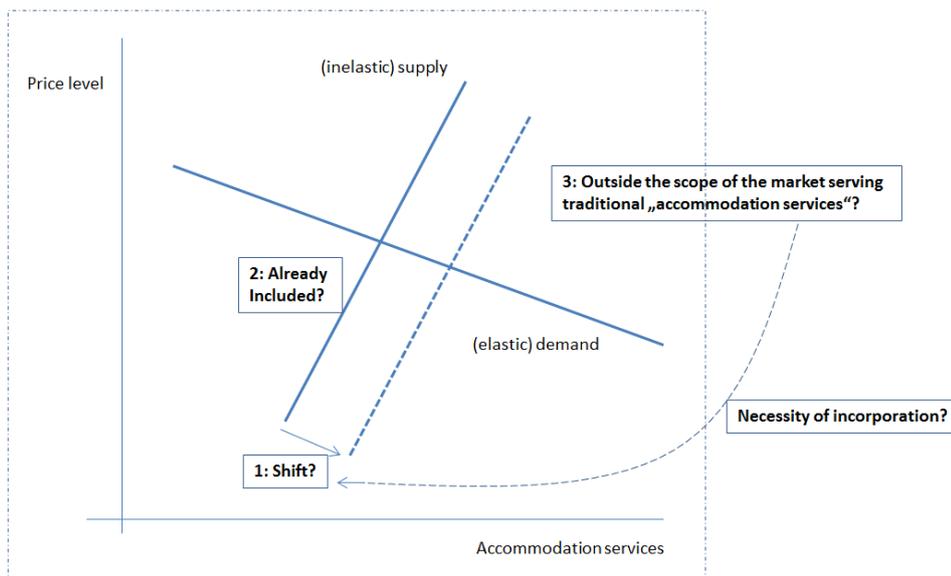
„The term „collaborative economy“<sup>1</sup> refers to business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals.

Collaborative economy transactions generally do not involve a change of ownership and can be carried out for profit or not-for-profit“<sup>2</sup>

Following this outline of collaborative economy the question arises what effects this has on the measurement of core tourism industries such as the **accommodation sector**. As already stated in various comments<sup>3</sup> the effects could be diverse but mainly focusing on two dimensions. On the one hand it could influence the price level in the accommodation industry and on the other hand it could influence the volume of supply and demand.

By drafting the market equilibrium of the accommodation sector very generally it displays the possible effects collaborative economy might have on a market. In Picture 1 the demand function is assumed to be elastic various the supply function is assumed to be inelastic when regarding a short- to midterm view within a given period.

Picture 1: Supply and demand in the accommodation sector



<sup>1</sup> For the purpose of this paper the term “collaborative economy” refers to accommodation services and the term is used synonymously with the terms “sharing” or “shared economy.”

<sup>2</sup> Collaborative Economy (2016), European Commission BSDG Business Statistics Directors Group, Item 11 of the Agenda

<sup>3</sup>See e.g. NIT, Renting out in the sharing economy: Assessing the meaning of the “shared accommodations” for city tourism, 2016

Collaborative economy might lead to three effects on the equilibrium whereas it is widely unknown to what extent each effect comes true. The first effect could lead to a simple shift of the supply curve. More services are provided and demanded at a lower average price level. Due to slimmer cost structures this would lead to allocation battles within the supply side. As shown by Zervas (2016)<sup>4</sup> this already was empirically measured as a rise in AirBnB supply leads to a loss in revenues in the traditional hotel market either caused by a price rally or a loss of demand as tourists tend to choose the substitute of an AirBnB. The first effect therefore leads to a widening of the accommodation market as it incorporates a new submarket in the overall accommodation segment.

The second effect of the collaborative economy might be regarded to be a deadhead as it could be assumed that the suppliers now distributing their services via collaborative platforms always have been part of the traditional supply side only having chosen analog distribution channels so far.

The third effect could lead to the assumption that collaborative economy does not influence a traditional market in any sense as a new market independently generating supply and demand parallel to the existing accommodation industry is created. In other words tourists who decide to rent an AirBnB wouldn't have chosen to stay in a Hotel anyway. By deciding to incorporate this new generated market in the traditional market the supply curve would be shifted towards South-East. The generation of completely new demand segments would also mean an additional shift in the demand function towards North-East, but any external effects on the demand function are neglected for the purpose of this paper as the focus is set on the supply side.

It can be assumed that all three cases can be observed, the question is the distribution of weights each single effect earns. For simplification in this paper no distinction between effect 1 and 3 are made so the question is reduced to the attempt of clarification to what extent collaborative platforms are generating a new respectively widened tourism market or if they are just representing an additional distribution factor based on the new technology within already existing markets.

## 2. Statistical Relevance

Besides the ongoing and high response of the collaborative economy in media an increased public interest from researchers and official authorities is recognized which can be summarized as public relevance. Moreover the statistical relevance both for tourism and travel statistics is clearly given. On the one hand paid overnights generated by P2P-platforms<sup>5</sup> are part of tourism following IRTS 2008<sup>6</sup>. The measurement itself is tricky as the hosts of the P2P-platforms are often not part of the supply side of tourism statistics. Therefore they are not institutionalized in a legal framework as they are not part of „official“ accommodation supply. On the other hand there is an unneglectable meaning for the balance of payments. The volume of expenditure which are primarily generated by and/or

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<sup>4</sup> Zervas, D. Proserpio & J.W. Byers: Estimating the Impact of AirBnB on the Hotel Industry. Revised January 27, 2016, <http://people.bu.edu/publications/airbnb.pdf>, retrieved March 2016

<sup>5</sup> P2P=private to private

<sup>6</sup> IRTS 2008, International recommendations Tourism Statistics, Madrid

through this segment of tourism have to be considered for TSA and the **travel item of balance of payments** following BPM 6<sup>7</sup>.

### 3. Definitions and assumptions

For the purpose of the study following definitions and assumptions are set:

#### Private holiday dwellings

Paid accommodation establishments with less than ten beds where the whole dwelling or flat is sold to the tourist. For simplification it is assumed that P2P-platforms mostly provide services from private holiday dwellings. This would go along with the definition of P2P-platforms where small businesses provide the services<sup>8</sup>.

#### Commercial holiday dwellings

The whole dwelling or flat is sold to the tourist. It might have more than 10 beds but the main assumption is that it is registered in NACE 55.2 and therefore part of tourism registers. It is further assumed that P2P-platforms do not provide services from commercial holiday dwellings.<sup>9</sup>

#### Urban phenomenon represented by AirBnB

Following Davidson/Infranca (2016)<sup>10</sup> it is assumed that P2P-platforms are an urban phenomenon. They give several reasons why the phenomenon of the collaborative economy is not commonly established in non-urban regions such as the lack of anonymity and the lower velocity of information spillover.

Though it might be quickly subject to change the study only focuses at the urban region of Vienna. Therefore no basis for extrapolation to the Austrian total is given and the study has to be characterized as a case study. AirBnB is the only P2P-platform which is taken into account. This happens for two reasons:

1<sup>st</sup>: AirBnB is the biggest player in this sector

2<sup>nd</sup>: If taking other platforms such as “Wimdu” or “nineflats” into account the problem of double counting can hardly be controlled as it is assumed that economically rational acting hosts would register in more than only one platform.

### 4. Aim

As stated in the introduction the aim of the paper is not to show the volume which is generated by P2P-platforms but to estimate the volume which is solely generated by P2P

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<sup>7</sup> Balance of Payments Manual, Volume 6, International Monetary Fund, New York, 2009 and BPM6 Compilation Guide (2014) Companion document to the 6<sup>th</sup> edition of the Balance of Payments and International Investment Position manual, IMF

<sup>8</sup> In contrast to P2P-platforms commercially run establishments are primarily represented by platforms such as booking.com

<sup>9</sup> This assumption is empirically falsified. However, the volume of commercial holiday dwelling which sell products via P2P-platforms is neglect able.

<sup>10</sup> Davidons,N/Infranca,J. (2016) The Sharing Economy as an Urban Phenomenon, Volume34, Issue 2, Art.1, Yale Law&Policy Review

platforms which clearly creates a completely new (sub) market in the total accommodation market on the one hand. In contrast to this a certain amount of overnights created by P2P-platforms always has been part of the traditional accommodation market whereas P2P-platforms nowadays only fulfill an additional function to facilitate the market mechanism as distribution instrument.

It is to estimate the share between the number of overnights taking place in traditional supply versus the number of overnights taking place in newly created supply both under the umbrella of P2P-platforms.

## 5. Method

A comparative approach is used to evaluate the amount of supply and demand generated by P2P-platforms:

1<sup>st</sup> approach:

In a first attempt the volume of overnights in private accommodation establishments is estimated by only using information gained by the platforms. Data scraping<sup>11</sup> from AirBnB indicate the amount of supply. For the urban region of Vienna around 3,000 establishments are listed where the entire home/ apartments is to be rented.

The raw data give reason to assume that not the total number of all listed establishments is subject of interest as deadhead registrations as well as multiple registrations could be included. But it could be stated that the active number of establishments is at least 1,000 when assuming a very defensive estimation of active hosts that regularly rent apartments to tourists<sup>12</sup>. Scraped data also show the number of beds. By assuming an occupancy rate of 21%, which corresponds with the occupancy rate of private accommodation establishments in Austria, the total yearly overnight volume is about 300,000 which is an absolute market share of 2.4% in the total overnights in Vienna.

2<sup>nd</sup> approach:

In a second attempt the estimation of supply of private holiday dwellings is estimated by ignoring any available information from P2P-platforms. The figure generated by this approach indicates the amount of supply of private holiday dwellings that independently exists and has been existing for a longer period of several decades without P2P-platforms.

The model sets following preconditions for the urban region of Vienna:

P1: Even without the existence of P2P-platforms private accommodation establishments have always been part of tourism supply in Vienna

P2: Commercial holiday dwellings are "well captured" via Nace 55.2 whereas private accommodation establishments are „well hidden“ in the tourism register of Vienna.

The volume of total holiday dwellings consisting of private and commercial holiday dwellings in Vienna is therefore unknown:

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<sup>11</sup> <http://tomslee.net/category/airbnb-data>, request in August 2016

<sup>12</sup> It could be subject for further investigation to measure the degree of activity of hosts that are registered at P2P-platforms.

Precondition one (P1) is also true for the situations in all municipalities of Austria. The private accommodation sector lists around 30,000 accommodation establishments which have less than 10 beds each and which are not commercially led but offer paid accommodation. Precondition two (P2) is not valid for all municipalities of Austria, other than cities with more than 100,000 inhabitants. As in the Austrian compilation system the authorities of municipalities collect data, the supply of private accommodation establishments is in most municipalities well captured. Unless in bigger cities the local authorities have quite reliable information whether private households do small businesses in the field of accommodation services. In other words: It is not that easy to hide from being registered in a tourism register. To carry out the comparison following working thesis is formulated:

*“The more similar non-urban municipalities are to the urban region of Vienna the more accurate is the indication about the share of commercial holiday dwellings in total holiday dwellings.”*

The hypothesis incorporates an estimated share of commercial holiday dwellings in total holiday dwellings in Vienna. This share should be displayed by comparing the urban region of Vienna with the most similar Austrian municipalities. In a first step it was necessary to identify criteria and characteristics that define the most similar municipalities.

Following regression criteria have been selected:

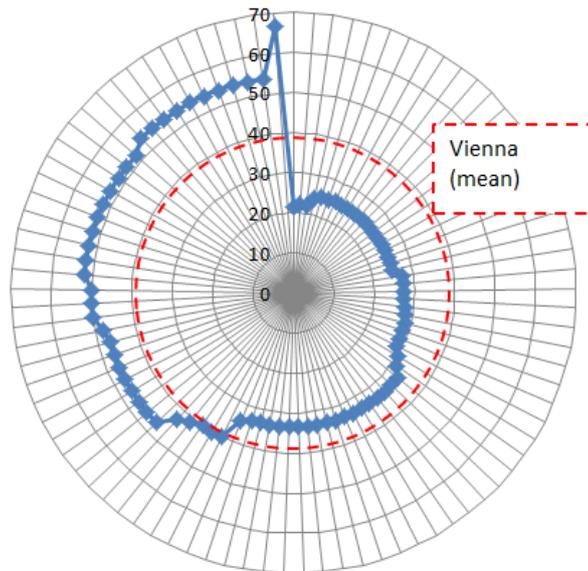
- Municipalities with urban character except the cities with more than 100,000 inhabitants (Graz, Linz, Innsbruck, Salzburg)
- Municipalities with international guest mixture
- Municipalities with balanced proportion between private and commercial accommodation establishments
- Municipalities which do not have one high season such as winter or summer tourism destinations
- Municipalities which are connected to at least two of the main three transport opportunities stated as airport, train station or highway (Autobahn) within 1 hour driving time by car

Criteria and corresponding characteristics can be directly derived from the accommodation statistics. Criteria which also would have been promising such as reason for trip which delivers the share between business and personal were not taken into account as the accommodation statistics has no information on that. Consequently the selection process of criteria is both given and restricted by the data source “accommodation statistics”.

89 out of 1,550 municipalities were selected and defined as most similar to Vienna relating to the regression criteria. The share between commercial holiday dwellings and private holiday dwellings in these municipalities are as follows:

	Share of commercial holiday dwellings	Share of private holiday dwellings	Total holiday dwelling
Mean	38%	61%	100%
Median	33%	67%	100%

**Picture 2: Share of commercial holiday dwellings in total holiday dwellings in most similar municipalities**



Picture 2 gives an overview about the single shares. It displays that the share of commercial holiday dwellings is between 25% and 55% in the selected municipalities.

By using the mean the total share of commercial holiday dwellings in total holiday dwellings is estimated to be 38% in Vienna.

In 2014 the accommodation statistics shows a share of 100%, as no single private holiday dwelling was registered in the urban region of Vienna. The number of commercial holiday dwellings accounted to 98. Assuming a „fair share“ of 62% for private holiday dwellings this would equal to a total number of private holiday dwellings of 159.

## 6. Outcome

Referring to Picture 1 the difference between the figures gained by the two approaches is the size of the new market generated by P2P-platforms. Without the existence of P2P-platforms at least 159 private holiday dwellings should exist in the urban region of Vienna. The listings on AirBnB show that at least 841<sup>13</sup> additional accommodation establishments were created through the presence of the platform. Collaborative platforms cause a shift towards South-East of the accommodation supply function. Only 15% of private accommodation supply at the maximum has been part of the traditional accommodation supply distributing via AirBnB whereas 85% at the minimum are a totally new created supply by AirBnB.

## 7. Further discussions

The paper tried to show whether P2P-platforms are simply a new form for distributing the supply of private accommodation to tourists which has always been existing or if P2P-platforms create a totally new tourism market that would probably not exist without the existence of these platforms whereas it is at the moment unknown to what extend P2P supply is a substitute to traditional forms of accommodation.

<sup>13</sup> Based on the very conservative assumption of 1,000 active hosts of the more than 3,000 registered hosts

The supply of P2P-platforms is at the moment transparent and therefore quite easy to observe. The physical flows created by this accommodation segment are out of scope of tourism statistics as long as no occupancy data is gained by the platforms. Therefore demand has to be estimated on a very uncertain basis.

The phenomenon has to be further observed as it might increase in volume and as it might indicate a step away from traditional market economy to the so called „collaborative economy“ also influencing other parts of the traditional tourism economy.

## **8. References**

Balance of Payments Manual, Volume 6, International Monetary Fund, New York, 2009

BPM6 Compilation Guide (2014) Companion document to the 6<sup>th</sup> edition of the Balance of Payments and International Investment Position manual, IMF

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