Airbnb in Prague: Analysis of the Status and Development of Short-term Private Rentals 2018–2023

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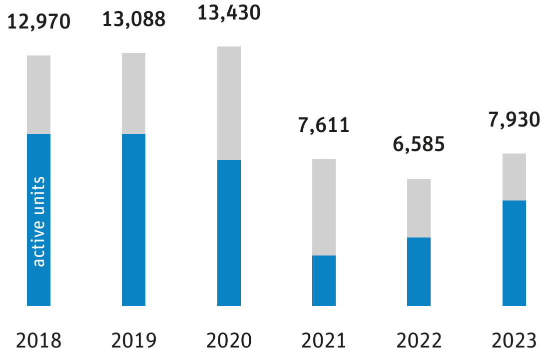
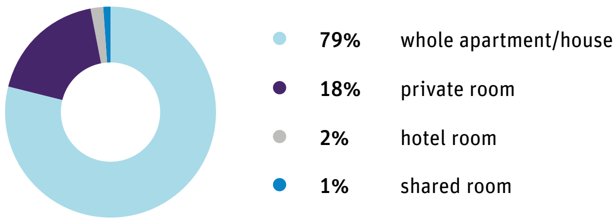
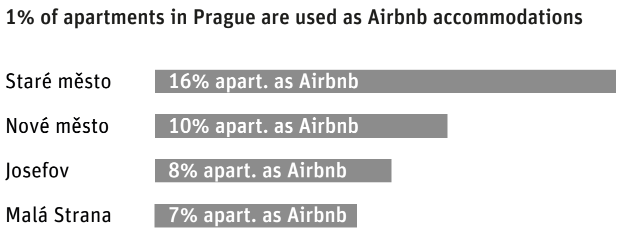
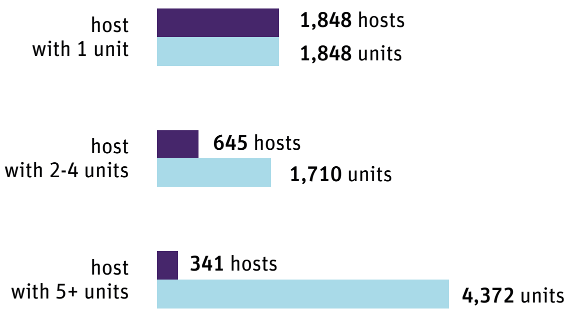








Airbnb in Prague in March 2023

EXECUTIVE SUMMARY

Short-term private accommodation offered through online platforms is a global phenomenon. However, the global impact of these platforms has a significant effect on the local physical and social environment of cities, often negatively affecting the quality of life of local residents. The monitoring and evaluation of the status and development of short-term accommodation can contribute to setting up an appropriate public administration approach to the development and regulation of this service sector, but also to mitigate its negative impacts on different components of the city.

The study examines the phenomenon of short-term private accommodation in Prague using the example of Airbnb, one of the largest providers of short-term accommodation in the city. The publication primarily aims to **analyze the structure of Airbnb listings, their spatial distribution and temporal evolution**. The next objective is to **assess the position of Airbnb in relation to selected components of the city** – namely population, housing stock and traditional accommodation services. The final objective is to **provide an overview of legislation** affecting Airbnb in Prague and to describe examples of approaches to regulating Airbnb in selected European cities. The analysis works primarily with publicly available data on Airbnb listings from the Inside Airbnb website. Inside Airbnb obtains this data by web-scraping directly from the Airbnb website. The study uses simple descriptive statistics methods to analyze indicators that describe the nature of Airbnb. The study is prepared at a time of the gradual recovery of tourism in Prague after the Covid-19 pandemic. The pandemic and its impact emerged in the analysis as a key factor influencing Airbnb supply and its development.

As of March 2023, there were **7,930 Airbnb units** available in Prague, of which almost **70% were active**. The number of offers dropped significantly at the time of the Covid-19 pandemic, concurrently with the drop in tourism intensity. As the pandemic fades and tourism begins to intensify, the number of offers is increasing again. **Most units** are offered in the form of a lease of an **entire apartment**. Airbnb in Prague is highly commercial, with **2.8 units per host**. Almost 80% of the units are also offered by hosts who rent 2 or more units (i.e. multi-hosts). With time, the commercialization of Airbnb in Prague is gaining strength. The shared accommodation sector only in the form of shared rooms can be considered practically non-existent.

Rental offers through Airbnb are **extremely concentrated in the city center**, especially in its historic core. In this area, Airbnb listings typically account for over a tenth of the housing stock. During the Covid-19 pandemic, the spatial concentration strengthened. In the central parts of Prague, compared to other parts of the metropolis, offers of whole apartments, more expensive offers and more units offered by so-called multi-hosts are more represented in the long term.

Although the **Covid-19 pandemic has significantly reduced the overall volume of Airbnb supply** in Prague, it has **not fundamentally changed its character**. The characteristics of Airbnb with the potential for the most serious negative impacts on cities and their inhabitants persist or even intensify – the spatial concentration in the center of Prague is intensifying, the long-term dominance of whole-apartment rentals and the purely commercial nature of Airbnb is strengthening. Along with the upward trend in the number of offers over the last few months, the volume of supply is likely to catch up with pre-pandemic levels. Unless current trends in the nature of the offers

change, the negative impacts of Airbnb on the city and its residents can be expected to intensify in the future.

In the Czech Republic, there are currently **no rules specifically aimed at the short-term rental sector**. However, the operation of Airbnb is subject to the applicable legislation, especially if Airbnb's offer can be defined as the provision of accommodation services. In this case, legal obligations arise for the operator of these services (i.e. the host), for example in terms of the Trade Licensing Act, the Building Act or the Local Tax Act. Thus, the **primary problem with Airbnb regulation** is not inadequate legislation, but rather a **lack of information** on Airbnb that could **improve the enforceability of existing legal obligations**. An amendment to the Act on Certain Conditions of Business in the Field of Tourism, which is currently being drafted, aims to introduce effective registration tools and streamline compliance with applicable laws. The amendment to the Trade Licensing Act submitted by the capital city to the Chamber of Deputies of the Parliament of the Czech Republic could further contribute to better targeting Airbnb regulation according to the needs of specific cities and municipalities.

1. INTRODUCTION

Short-term private accommodation offered through online platforms is a global phenomenon. Its intensive development, especially in the second decade of the 21st century, is related not only to advances in information technology and the availability of the Internet, but also to growth in the number of tourists and to changes in lifestyle and travel in general. However, the global impact of these platforms has a **significant impact on the local physical and social environment of cities**, often negatively affecting the quality of life of local residents [Garcia-López, Jofre-Monseny, Martínez-Mazza, & Segú, 2020]. Among the most serious is the intensification of tourist use, which increases pressure on space and can worsen housing affordability due to the transformation of residential apartments for commercial use [Grisdale, 2021]. Also problematic for public budgets are the impacts related to the insufficient records of business activities of accommodation services and the inefficient collection of taxes and other relevant fees. Monitoring and evaluation of the status and development of short-term accommodation in a given city can contribute to setting up an appropriate public administration approach to the development and regulation of this service sector and help mitigate its negative impacts on different parts of the city.

The study examines the **phenomenon of short-term private accommodation in Prague using the example of the Airbnb platform**, which is one of the largest providers of this type of accommodation in the world. The focus on Airbnb also ensures continuity with studies published by the Prague Institute of Planning and Development in 2018 and 2021. The study has **three main objectives**. The first objective is to find out what the **structure of Airbnb rentals** is, how it is distributed within Prague and how it evolves over time. Second, the analysis examines the **position of Airbnb in the context of other components of the city**, namely the population, the overall housing stock and traditional accommodation services. The third objective is to evaluate the **legislation affecting Airbnb** in Prague and to describe examples of approaches to regulating Airbnb in selected European cities.

The publication is prepared at a time of turbulent **global changes in tourism dynamics**. The first study in 2018 was created at a time of peak economic boom, which was reflected in the increase in foreign visitors and the high growth of units offered on the Airbnb platform [Marianovská & Němec, 2018]. The follow-up analysis from 2021 was prepared at a time of decline in tourism and visitor numbers to Prague following protection measures related to the **Covid-19 pandemic**. After years of intense growth, Airbnb accommodation has seen a significant decline [Marianovská, 2021]. The present study comes at a time of **renewed tourism recovery in Prague** [Prague City Tourism, 2023b]. Although a gradual return of tourism intensity to pre-pandemic levels can be expected, the specific nature of the development is difficult to predict. Tourism continues to be affected by the aftermath of the pandemic, manifested, for example, in the continuing decline in tourist arrivals from Asian countries or the outflow of Russian tourists in connection with the war conflict in Ukraine. The rising prices of services and post-pandemic economic stagnation in many countries have a complementary effect on the nature of tourist demand. These and other aspects are also reflected in the status, development and nature of the short-term rental sector, including Airbnb.

Monitoring of the Airbnb phenomenon in Prague and its long-term development and spatial distribution form an important

conceptual basis for the implementation or updating of the city's existing strategies (e.g. the Conception of the Inbound Tourism of Prague, the Prague Housing Development Strategy). The relevance of the study is underscored by the ongoing development of the sharing economy and services sector, but also by the still-emerging and debated legislative framework aimed at regulating Airbnb, both nationally and transnationally. A well-designed public administration approach can contribute to the sustainable use of Airbnb and other sharing economy tools, to the development of sustainable tourism and to the housing affordability. Due to these reasons, the study foresees future updates at a frequency of approximately 2 years.

The study is divided into **three main chapters**. The introductory section presents the objectives of the study, the data and methods used, and mentions the contextual background of the analysis. The second chapter focuses on the analysis itself. It includes an analysis of the basic characteristics of Airbnb in Prague, an analysis of the links between Airbnb and housing stock and tourism, and an assessment of the current state of Airbnb regulation in Prague and in selected European cities. The third chapter summarizes the results and concludes the study.

TECHNICAL TERMS

active unit
an Airbnb unit that has been used for accommodation at least once in the last 12 months from the time of the data download and that is also available for booking for at least 1 day in the 365 days following the time of the data download

Airbnb offer
synonym for Airbnb unit

Airbnb unit
one accommodation offered on the Airbnb website that has its own identification number and associated attributes (number of beds, number of rooms, unit type, price, etc.)

bed
standard indicator of accommodation capacity (Airbnb, mass accommodation facility, etc.)

guest
person staying in the accommodation unit/facility

host
the profile offering the unit for rent on the Airbnb website, which may be the owner of the unit(s), the intermediary company or the operator of the unit(s)

hotel room
a type of Airbnb unit where the room offered is part of a hotel

mass accommodation facility
an establishment with at least five rooms and at least ten beds serving tourism purposes, i.e. providing temporary accommodation for guests (hotel, guest house, campsite, etc.)

maximum number of guests
the figure showing the maximum number of guests the host is willing to accommodate in the unit/facility

multi-host
a host offering more than 1 unit for rent on the Airbnb website

occupancy
number of nights occupied in active Airbnb units

overnight stay
one night spent by one guest in the accommodation unit/facility

overtourism
excessive tourism in an area that negatively affects the quality of life of local residents or the experience of visitors

private room
a type of Airbnb unit where one room in an apartment or house is offered, the room is either rented out separately (i.e. the rest of the apartment is used for a long- or medium-term stay) or it may be one room of several that are rented out in the apartment or house (part of a hostel, bed & breakfast, aparthotel or other accommodation facility)

review
written reviews of individual stays by guests staying in the Airbnb unit

shared room
a type of Airbnb unit where a bed is offered in a room that is shared with the host or other guests, most often offered in hostels

sharing economy
the concept of commodity consumption based on prioritizing the sharing of goods and services over their ownership, often representing the shared use of unused or underused goods using digital technologies and the Internet

single host
a host offering 1 unit for rent on the Airbnb website

stay
accommodation in the accommodation unit/facility

unit price
price per night per Airbnb unit in the local currency

whole apartment/house
a type of Airbnb unit that occupies an entire apartment in an apartment building, single-family home, or other type of accommodation facility

ABBREVIATIONS USED

CSO	Czech Statistical Office
CZK	Czech koruna
EU	European Union
IA	Inside Airbnb
IPR Prague	Prague Institute of Planning and Development
MAF	mass accommodation facilities
VAT	value added tax

HOW TO READ THIS DOCUMENT

The analysis is largely structured to ensure continuity and basic comparisons of the results with the Airbnb studies already conducted by IPR Prague in 2018 and 2021. However, the comparison of outputs should be approached with caution due to different methodologies in calculating certain indicators (→ chap. 1.1).

The study is divided into **three main chapters**. The first (→ chap. 1) contains an introduction to the entire publication. In addition to presenting the objectives of the study, the chapter includes a summary of the data used and an explanation of the analysis methodology. It also includes an overview of the contextual background, which focuses on the introduction of the sharing economy, the potential impacts of Airbnb on different parts of the city, and the evolution of the status of tourism and the housing market in Prague over the last few years.

The second chapter (→ chap. 2) is the analytical part of the study and is divided into 3 sub-chapters. The first sub-chapter (→ chap. 2.1) presents the basic characteristics of units offered for accommodation through the Airbnb platform in Prague. Specifically, it looks at the nature of Airbnb listings, host and guest characteristics, and unit visitation. The basic attributes are presented within each theme, as well as the temporal development and spatial distribution of selected themes. The second sub-chapter (→ chap. 2.2) addresses links between Airbnb and other components of the city. It specifically focuses on the impact of Airbnb in relation to housing and tourism. The aim of the third sub-chapter (→ chap. 2.3) is to show the current state of Airbnb regulation in Prague and describe the relationship between Airbnb and the current legislation. A complementary theme of the sub-chapter is to present examples of regulations of Airbnb in four selected European cities.

The third chapter (→ chap. 3) forms the conclusion of the study. It summarizes the main results and outlines options for future developments, particularly with regard to addressing data and methodological constraints.

Technical terminology and abbreviations

Definitions of **technical terms** and a list of **abbreviations** used are introduced at the beginning of the document in section 1. Introduction.

In the text, the first occurrences of the terms are indicated graphically: technical term

Image attachments

The document contains visual annexes, mainly graphs but also map diagrams and tables. Each image attachment contains title, author, year of creation, and the source data and its dating. In selected charts, interesting or significant information may be marked with a different color.

The image appendices are numbered within the relevant part of the text.

In the text, references are marked graphically: (→ Fig. 2.2.1.1)

Expert resources

The APA citation system is used for cited and referenced expert sources such as books, studies, expert articles, datasets and strategic documents.

Within the text section, referenced materials are indicated in parentheses: [Marianovská, 2019] [Grisdale, 2021]. A list of all referenced material in the document is provided at the end of the document in Chapter 4. Indexes and lists under Sources cited.

Related text section

Chapters and sub-chapters within the document may be related and complementary. The reference to a part of the text (sub-chapter) within the document is indicated by the relevant number: (→ chap. 1.2.1).

1.1 Methodology and data

DATA USED AND SOURCES

The datasets that contain information about the units offered on Airbnb's website come from the independent, non-commercial source **Inside Airbnb** (IA). This data is collected directly from Airbnb's website via web scraping[1], always on a specific date of the month. All data contained in the datasets is publicly available on Airbnb's website.

The individual datasets contain three basic files:

- **listings** – contains data about all offered units that were publicly available at the time of the download and the attributes that are assigned to the unit on the website (e.g. number of reviews, date of last review, number of beds offered, host name and ID, etc.)
- **reviews** – contains information about all reviews that have been published on the site up to the time of download; each review is assigned a unit number, so that it is possible, for example, to examine their relevance in more detail
- **calendar** – contains information on the availability of units in the subsequent 365 days; however, this dataset has a significant methodological limitation, because a large number of calendars are not updated, so the information in this dataset may be misleading

In this study, only the **listings dataset**, which contains all the data needed to meet the objectives of the analysis, is used.

The IA data is complemented by the following data:

- **number of apartments** (source: Czech Statistical Office (2023) Register of Census Districts and Buildings)
- **number of apartments and houses for rent** (source: Sreality (2018-2023) Current real estate offer)
- **number of rental apartments** (source: Czech Statistical Office (2021) Census of the Population, Houses and Apartments 2021)
- **prices of rental apartments** (source: Deloitte (2021, 2022) Analysis of rental housing in Prague)
- **population** (source: Czech Statistical Office (2021) Census of the Population, Houses and Apartments 2021)
- **capacity of mass accommodation facilities** (source: Czech Statistical Office (2023) Mass accommodation facilities)
- **visitors to mass accommodation facilities** (source: Czech Statistical Office (2023) Mass accommodation facilities)
- **average length of stay of guests** (source: Eurostat (2023) Short-stay accommodation offered via online collaborative economy platforms)

1 —— Web scraping is a technique of extracting data directly from web pages. It is often used for automated data extraction that would be time consuming or difficult to collect manually.

Data limits

IA datasets offer quite detailed insight into the topic of Airbnb. However, the IA data has its limitations that apply both to the collection of data and to the data itself. The first important limitation is related to the fact that the **data are collected (downloaded) on a certain day**. It is therefore a one-time summary of data at a given point in time. Only data that is visible on the Airbnb platform at the time is downloaded. The datasets do not include data for units that are not offered at the time on the Airbnb website. So if we are tracking, for example, the number of reviews for the past year, from which we can calculate the number of stays in a city, the new data does not include the number of past reviews (if the unit has since stopped being offered on Airbnb). The datasets also do not include units that are for various reasons temporarily deactivated by both the host and the Airbnb platform.

Another problematic aspect of IA data is the **irregular frequency of release and the varying quality of data across the years**. While in some years the data are released monthly, in others this only occurs quarterly. In order to be able to track continuous development, this analysis tracks the status of Airbnb in Prague on a quarterly basis from April 2018 to March 2023.

Inaccurate information about the location of units can also be problematic in the case of IA data. IA datasets contain an indication of the specific geographical coordinates of each unit. For reasons of anonymity, which is carried out by the Airbnb website itself, this figure does not represent the exact address of the unit, but the center of a circle with a maximum radius of 150 m. This means that the listed location of the unit may differ by up to 150 m from its actual address. For this reason, positional data of units are only used in the analysis for the basic visualization of spatial distribution of Airbnb. For other analyses, the maximum detail of cadastral areas is used in terms of the internal division of Prague. Territorial units of lower orders (e.g. basic settlement units) could already significantly bias the results, as a significant proportion of the offers in a given area could potentially be located elsewhere.

Other problematic attributes contained in the IA data are particularly evident when **calculating indicators that are not directly contained in the IA data** but are based on a combination of several attributes. A problematic attribute is **reviews**, which are used in the analysis to determine the activity of units and to calculate the number of guests and related indicators (number of stays, occupancy, etc.). Each unit has an indication of the number of reviews left. Reviews are required from guests by the platform. At the same time, however, it occurs that guests do not write reviews, reviews are written even if the guest does not arrive ("no-show" reviews) or reviews are artificially inflated to increase the attractiveness of the unit. The IA portal works with the so-called San Francisco model, which assumes that, on average, 50% of guests leave a review of their stay [Inside Airbnb, 2023]. The calculation of **the number of guests** is then a product of the number of stays in the unit and the maximum number of guests that can be accommodated in the unit. In addition to the problematic number of reviews used to determine the number of stays, the maximum number of guests is also problematic. This indicates the maximum number of guests that can be accommodated in the unit at any one time. Compared to the actual number of guests, the calculated number of guests is therefore rather overestimated. The resulting data on the state of Airbnb visitation (number of guests, number of stays, occupancy, etc.) can be used for comparison with the official CSO statistics on MAF visitation. However, this comparison should be approached with caution due to the different methodological determination of MAF and Airbnb visitation data.

Finally, the IA datasets contain records with unrealistic or suspicious information about individual offers. For this reason, it was necessary to **clean the datasets** prior to the actual data analysis. Firstly, units with a zero minimum number of units required for reservation were eliminated. Secondly, units offered at a price of CZK 0 per night or at a price of more than CZK 50,000 per night were eliminated. This procedure eliminates offers with the most obvious inaccuracies. However, it is important to remember that the data file itself is not inaccurate. It merely reflects reality and the way units are offered and recorded on the Airbnb platform. In this context, it should be mentioned that the Airbnb platform is also used for advertising by some entities classified as more traditional accommodation facilities (hostels, hotels, guesthouses, etc.), which may lead to additional distortions in the results of the analysis.

In addition to the IA data itself, its **comparability with complementary data** from other sources is also largely limiting. For example, the study compares the supply of apartments for long-term rent on the Sreality portal and apartments offered for short-term rent on Airbnb (→ chap. 2.2.1). Although the trends described in these two accommodation phenomena can be considered comparable, the comparison of the quantity of supply should be approached with caution due to the different nature of long and short-term rentals, which influences the nature of supply on both platforms. While in the case of the Airbnb platform units are offered (i.e. visible on the platform) almost continuously, long-term rentals are offered on the Sreality portal only when they are currently available for new potential tenants. For this reason, Airbnb's offer may be significantly overpriced compared to long-term rentals.

Other possible limitations are mentioned directly under terms and terminology or in the text. Finally, it is important to emphasize the focus of the analysis on Airbnb, as it is one of the largest short-term private accommodation providers in Prague, and relatively detailed data on its activities are available. However, there are other platforms offering similar types of accommodation in Prague but compared to Airbnb they either do not offer accommodation on a similar scope (e.g. Vrbo) or data is not available on a comparably broader scale to Airbnb (e.g. Booking.com).

METHODS OF ANALYSIS

The study uses simple **descriptive statistics methods** (number, share, mean, median, etc.) to analyze the indicators that describe the nature of Airbnb. The indicators are summarized in the following paragraphs. The detailed methodology of the selected indicators is described in the relevant part of the analytical chapter. The baseline analysis shows the status of indicators whose values are as up-to-date as possible at the date of the main IA dataset used in this study (23 March 2023). The time evolution and spatial distribution within Prague is described for selected indicators. The values of the selected Airbnb indicators were relativized to the number of inhabitants and the number of apartments.

Airbnb indicators:

- **Units** are the basic indicator of the analysis. They are often analyzed in combination with other indicators (number of units per host, number of beds per unit, etc.).
- **Unit trajectories by activity** (→ chap. 2.1.1) allow tracking the presence of a unit on the Airbnb platform and the changing nature of its activity over the time periods tracked (active / inactive / newly on the platform / temporarily off the platform)[2].
- **Type of units** (→ chap. 2.1.1) indicates the nature of the unit according to the type of accommodation offered (whole apartment or house / hotel room / single room / shared room).
- **Beds** (→ chap. 2.1.1) indicate the number of beds available in the unit.
- **Rooms** (→ chap. 2.1.1) indicate the number of rooms available in the unit.
- **Maximum number of guests in the unit** (→ chap. 2.1.1) indicates the maximum number of guests that can be accommodated in the unit at any one time.
- **Price of units** (→ chap. 2.1.1) indicates how many CZK are required for 1 night in the unit. The price per person per night is calculated as the price per unit divided by the maximum number of guests in the unit.
- **Hosts/multi-hosts** (→ chap. 2.1.2) – each unit contains information about the host. This indicator can be used to distinguish between single hosts (offering 1 unit for rent) and multi-hosts (offering 2 or more units for rent).
- **Stays** (→ chap. 2.1.3) indicate how many stays took place in the active unit in a given year. The number of stays is calculated as twice the number of reviews in the last 12 months. This calculation is based on the assumption

2 —— For constructing trajectories, a unit is considered active in a particular year if it is active in at least one of the four time slots monitored in that one year. Conversely, a unit is considered inactive if it is not active in at least one of the four time slots in a given year but is also present on the Airbnb platform in at least one of these periods. If a unit appears on the Airbnb platform for the first time in a given year (in an active or inactive state), it is considered a new unit on the platform (this does not apply to 2018, which is the first year of analysis and the status of the unit in previous years cannot be determined). Additionally, a unit is considered to be temporarily off the platform if it is not present on the platform at all (in an active or inactive state) in a given year but is present in at least one previous and one subsequent year of analysis.

that, on average, 50% of guests leave a review [Inside Airbnb, 2023]. The resulting number must not exceed the maximum number of stays per unit per year (365 divided by the minimum number of nights required to book the unit). If this value is exceeded, the maximum possible number of stays is considered as the resulting number of stays. The indicator is calculated as of April 2019, as the calculation was not possible for 2018 due to the lack of data on the exact number of reviews.

- **Guests** (→ chap. 2.1.3) indicate how many guests stayed in the active unit in a given year. The number of guests is calculated as the product of the number of stays in the unit and the maximum number of guests that can be accommodated in the unit.
- **Overnight stays** (→ chap. 2.1.3) indicate how many nights guests spend in the unit per year. The number of overnight stays is calculated as the product of the number of guests and the average length of stay of guests (based on the Eurostat data). If the average length of stay is less than the minimum number of nights required to book the unit, the minimum number of nights required to book the unit will apply.
- **Average length of stay of guests** (→ chap. 2.1.3) shows the average number of nights guests spend in short-term accommodation. The indicator is derived from Eurostat data on the use of online platforms for short-term accommodation. There is no data on the average length of stay for 2023, so the value for 2022 is used for the analysis of the situation in March 2023.
- **Occupancy** (→ chap. 2.1.3) indicates how many nights per year the active unit is occupied. The number of occupied nights is calculated as the product of the number of stays and the average length of stay. If the average length of stay is less than the minimum number of nights required to book the unit, the minimum number of nights required to book the unit will apply. The realistic maximum number of occupied nights per year is 255 nights, as occupancy for 365 days is unlikely for active units [Inside Airbnb, 2023].
- **Occupancy rate** (→ chap. 2.1.3) indicates the percentage of nights per year that the active unit is occupied.
- **Annual yield** (→ chap. 2.2.1) indicates the value of the annual earnings from the operation of the active unit. The indicator is calculated as the product of the unit price per night and the number of occupied nights in a given year [Wang, Livingston, McArthur, & Bailey, 2023].
- **Maximum potential number of guests per year** (→ chap. 2.2.2) indicates the maximum number of guests that can be accommodated per year in all active units. The indicator is calculated as the product of the number of beds in active units and 365 days per year, divided by the average length of stay.

Additional indicators:

- **Offer of apartments for rent** (→ chap. 2.2.1) indicates how many apartments are available for normal long-term rent at a given point in time.
- **Annual rental income** (→ chap. 2.2.1) indicates the value of annual earnings from the long-term rental of the apartment. The indicator is calculated as the product of the average price per square meter per month, the average size of an apartment in Prague (71.4 m^2 according to the 2021 population census) and the number twelve (number of months in a year).
- **Beds in mass accommodation facilities (MAF)** (→ chap. 2.2.2) indicate the number of beds available in the MAF.
- **Guests in the MAF** (→ chap. 2.2.2) indicate how many guests stayed in the MAF in a given year.
- **Overnight stays in the MAF** (→ chap. 2.2.2) indicate how many nights guests spent in the MAF in a given year.
- **Average length of stay of guests in the MAF** (→ chap. 2.2.2) indicates the average number of nights spent by guests in the MAF.
- **Maximum potential number of guests in the MAF per year** (→ chap. 2.2.2) indicates the maximum number of guests that can be accommodated in the MAF per year. The indicator is calculated as the product of the number of beds in the MAF and 365 days per year divided by the average length of stay.

In terms of temporal development, the status of Airbnb is tracked quarterly from April 2018 to March 2023. The specific month for which the data was compiled was chosen to represent the seasons, as the nature of the seasons is one of the factors influencing the seasonality of tourism, thus also influencing Airbnb rentals [Lundtorp, 2001]. According to the availability of data, April was chosen as the spring month (replaced by March in the absence of data), July as the summer month (replaced by June in the absence of data), October as the autumn month (replaced by September in the absence of data), and December as the winter month (available in all the surveyed years). In total, the development of Airbnb is analyzed for 21 time slots. In terms of **spatial characteristics**, distribution within Prague is monitored at the level of cadastral areas. The unavailability of some supplementary data has led to the need to analyze some indicators at the level of municipal districts.

The analysis of the selected indicators also includes information on whether the **unit** is **actively offered** on the Airbnb platform or not. A unit is considered active if at least one review has been left on it in the 12 months preceding the download. This situation indicates that the unit has been used at least once in these 12 months. Units that have not received a single review in the 12 months preceding the download but whose host registered on Airbnb no later than 90 days before the download are also considered active. In this case, the host can be considered as a new host who may not yet have received a review of the accommodation offer. Additionally, units showing zero days available for booking in the 365 days following the data download (i.e. not available at all for booking in the following year) are considered inactive, since full reservation of the unit for the whole year is very unlikely. Rather, this situation indicates that the host has decided to make the unit inactive and not offer it for rent during the following year (the Airbnb platform allows hosts to mark days when they do not want to or cannot rent the unit as reserved, even if there is no actual reservation). A previous Airbnb analysis released by IPR Prague in 2021 defined an active unit as requiring at least one review in the 3 months preceding the data download [Marianovská, 2021]. For the purposes of the current study, this condition has been relaxed due to the anticipated lower intensity of unit use as a result of the Covid-19 pandemic.

1.2 Context

1.2.1 THE SHARING ECONOMY AND THE IMPACT OF AIRBNB

Airbnb is one of the world's most important players in accommodation services. By the end of 2022, the platform offered over 6 million units globally [AirDNA, 2022], representing more accommodation capacity than the top five hotel companies in the world [Kadi, Plank, & Seidl, 2022]. Airbnb itself was founded in 2007 as part of the sharing economy, building on early non-profit accommodation services using digital technologies and the internet for offering their services (e.g. HomeExchange, Couchsurfing). The foundation of Airbnb's success has been the use of a sophisticated marketing strategy that emphasizes the personal nature of guest-host transactions, the use of unused spaces, and forms of tourism that are generally more authentic, inclusive, and sustainable [Adamiak, 2022]. Over the course of a few years, Airbnb has become a global (even monopolistic) player in the accommodation market with multi-billion-dollar profits. The company makes its profits mainly from the fees paid by hosts for allowing the accommodation to be offered through the web platform, but also by guests, from whose payments for accommodation Airbnb collects a fee [Kadi, Plank, & Seidl, 2022].

In its early days, Airbnb could be seen as part of the sharing economy, but nowadays it is more a **part of the mainstream commercial services sector**. It is often classified as a sector of the so-called collaborative or hybrid economy. Because of the significant growth of Airbnb, **critical perspectives** nowadays even classify it as a platform capitalism company. This concept encompasses highly profitable or even monopolistic technology companies that significantly affect economies as a whole and the functioning of everyday life in general. In addition to Airbnb, these corporations include, for instance, Facebook and Amazon [Grisdale, 2021]. Airbnb can have a positive effect in a certain temporal, social or spatial context. However, most of its consequences for cities are negative.

For urban residents, Airbnb offers the **opportunity to gain financial value** by renting out unused space within their properties or by renting out the entire property. Compared to conventional long-term rental housing, short-term rentals often provide higher returns [Nieuwland & van Melik, 2020]. Rental profits can help city dwellers cope with rising housing prices and living costs, for example by using the revenues to pay off part of a mortgage on the property or its maintenance [Jefferson-Jones, 2015]. The presence of Airbnb also allows a wider range of actors to **participate in the city's tourism economy** and **spatially deconcentrate tourist activities** away from congested centers [Kadi, Plank, & Seidl, 2022]. An indirect positive consequence may therefore be the **emergence of related tourist services** and associated **new jobs** or the **revitalization** of previously neglected and uninteresting **municipal districts** for tourists [Nieuwland & van Melik, 2020]. In theory, Airbnb-related activities can therefore have many economic and social benefits for different social groups, including low-income groups.

Airbnb can also have positive consequences for tourists and visitors. Compared to traditional accommodation facilities, Airbnb offers a **greater variety of accommodation** types and price levels. Airbnb also declares the possibility to **explore a location more authentically,** through social interaction with the host (i.e. the resident) of the given place [Adamiak, 2022]. The growing demand for these experiences in recent years fits into the context of the emergence of so-called postmodern tourism, which is more intertwined with the exploration of everyday life in a given location, often outside the main tourist concentrations, than with traditional tourist attractions [Nieuwland & van Melik, 2020]. Last but not least, Airbnb‘s presence in a given city can generate **revenues for the public administration** if local taxes are effectively set and the relevant taxation system, for example on relevant business activities, is in place [DiNatale, Lewis, & Parker, 2018].

Airbnb was originally part of the so-called sharing economy, but today it cannot be referred to as sharing accommodation, as **the majority of the platform's activity does not involve sharing and renting out unused parts of properties by individual households**. Rather, these are purely commercial leases of whole apartments or houses adapted purely for accommodation purposes. Frequent hosts are owners of multiple properties who have multiple vacant spaces or entire properties to rent. In extreme cases, entire apartment buildings are being bought up purely for commercial rental by individuals as well as global multinational companies and investment funds [Grisdale, 2021]. In many cases, the management and rental are provided by specialized external companies. Often, the shared accommodation offers are therefore fully professionalized accommodation offers, as evidenced by the frequent appearance of offers of hotel rooms, hostels and guest houses on the platform, which in many cases already existed before the creation of the website and use Airbnb merely as another distribution channel for advertising their services. These uses of the platform are often at odds with Airbnb's stated ideals and marketing [Adamiak, 2022; Kadi, Plank, & Seidl, 2022].

The use of properties for rental through Airbnb has a **negative impact on the housing market, particularly on the price and supply of rental housing**. Price levels for short-term rentals are often much higher than for long-term rentals, as they provide a higher overall profit opportunity. At the same time, short-term rentals provide greater flexibility in the selection of tenants without the need to enter into longer-term lease agreements [Garcia-López, Jofre-Monseny, Martínez-Mazza, & Segú, 2020]. The supply of short-term rentals is thus reducing the number of regular long-term rentals. The limited supply of apartments for long-term rent may then contribute to rising rental housing prices [Grisdale, 2021].

Despite the ideal of deconcentrating tourist activities away from traditionally tourist-heavy locations, **Airbnb use** is **most often spatially associated with the central and inner-city areas of large or highly touristic cities**. It is here that the negative impacts on the housing sector, such as rising prices and the decline in the availability of rental housing, are most pronounced. This development **is encouraging further commercialization, touristification and gentrification** of the central parts of cities. The consequent direct or indirect displacement of the original residents may result in a regrouping of the population according to socio-economic level, including the so-called suburbanization of poverty to the periphery and beyond the urban boundaries [Grisdale, 2021].

Airbnb is also **boosting tourism**. Particularly in congested centers of larger cities, it reinforces the negatives associated with overtourism, which usually further deteriorates the daily life of residents [Rozena & Lees, 2023]. Negative externalities for residents are mainly **increased noise, disturbance of quiet hours, disruption of privacy or litter** [Garcia-López, Jofre-Monseny, Martínez-Mazza, & Segú, 2020; Nieuwland & van Melik, 2020]. The presence of Airbnb users in districts further transforms the use of public spaces by visitors, which is often different from that of residents, and increases the overall **pressure on space**. These effects can result in the **disintegration of local communities, disrupting social ties and severing residents' long-standing ties to the place** [Rozena & Lees, 2023]. Furthermore, the existence of Airbnb can create a conflict environment in cities and reinforce protests and negative attitudes of citizens towards tourism as such [Kadi, Plank, & Seidl, 2022].

Although Airbnb potentially generates new jobs in the tourism sector, **one of the negative impacts is the impact on the traditional accommodation sector**. In order to remain competitive, the operators of conventional accommodation have to reduce the prices of accommodation offers, but this may result in a reduction in the quality of services, job losses or a reduction in the wages of workers [Grisdale, 2021]. While a naturally competitive market environment is welcome in most economic sectors, in the case of Airbnb it is **unequal market competition**. This is because Airbnb operators do not have to comply with the same business conditions as conventional accommodation operators, such as safety, health and other standards, and often have different tax obligations [Nieuwland & van Melik, 2020].

The presence of Airbnb also **complicates tourism management** and relevant policies due to the lack of reliable data on offers, their characteristics and usage. **An insufficient data base and monitoring** complicate the ability to set and enforce safe standards for the use of real estate, but also to protect customers or ensure fair market competition [Kadi, Plank, & Seidl, 2022]. Last but not least, **they complicate the management and planning of urban areas**, such as planning parking capacity or waste collection [Nieuwland & van Melik, 2020].

Negative impacts have led many cities to limit Airbnb supply. The most common measures taken include the need for a formal permit to operate a lodging service, limiting the length of time a unit can be offered for rent, payment of a rental tax, or a complete ban on renting the unit under certain conditions [Garcia-López, Jofre-Monseny, Martínez-Mazza, & Segú, 2020]. In many cases, regulation only targets professional providers offering multiple rentals. However, to a large extent, it is difficult to realistically identify these landlords, as they may offer units under different profiles on the platform or offer apartments for rent through single room rentals [Adamiak, 2022].

1.2.2 TOURISM AND HOUSING AFFORDABILITY

Airbnb is one of the largest providers of short-term accommodation in Prague. It has been operating in the Czech capital since 2010, with a significant growth of the platform since 2016. Like other urban components, Airbnb is influenced by various contextual factors. In the case of Airbnb, this includes particularly the situation in the tourist and housing market sectors. Considering the close interdependence of Airbnb with tourism, it is necessary to present the development of tourism in Prague in the last few years in the context of the onset, climax and gradual disappearance of the **Covid-19 pandemic**.

In the period before the pandemic, **tourism had been increasing for a long time**. The peak was reached in 2019, when approximately 8 million tourists came to Prague in a year, of which 85% were foreign tourists. The onset of the coronavirus pandemic and the subsequent adoption of protective measures meant a **significant decline in tourism** and a decrease in the number of arrivals of both foreign and domestic tourists. In each of the years 2020 and 2021, just over 2 million tourists visited Prague. Anti-Covid measures limited the arrival of travelers from abroad more significantly than that of tourists from the Czech Republic which increased the share of domestic tourists in the total number of visitors of Prague [ČSÚ, 2023]. The increase in the share of domestic tourists also stemmed from the limited possibilities for Czech residents to travel abroad and the search for alternative tourist destinations in the Czech Republic, but also from Prague's campaign aimed at actively attracting domestic tourists [Prague City Tourism, 2023a].

The 2022 trend indicates a **return of tourism intensity** to pre-pandemic levels. Almost 6 million tourists came to Prague this year (75% were foreigners), which is comparable to 2014. The gradual return of foreign tourists is also emerging, although their more intensive influx has been hindered mainly by global influences, such as the limited number of East Asian tourists (e.g. Chinese, South Koreans) due to the prolonged anti-Covid measures, or the drop in the number of Russian tourists following the restriction of Russian entry to the Czech Republic after the start of the Russian military invasion of Ukraine [ČSÚ, 2023]. The tourism sector, the nature of tourist demand and, consequently, Airbnb supply are further influenced by the concurrent **effects of rising service prices and post-pandemic economic stagnation**.

The state and development of Airbnb is both influencing and being influenced by the **housing market** [Garcia-López, Jofre-Monseny, Martínez-Mazza, & Segú, 2020]. Prague's residential real estate market has been characterized over the last 10 to 15 years by a **steadily increasing housing unaffordability** and rising prices. Nowadays, Prague is a European metropolis with one of the worst levels of affordability of owner-occupied and rental housing. From 2011 to 2021, average purchase prices of apartments in Prague increased by approximately 125% [JLL, 2023]. The growth rate of residential property prices gained momentum especially in the period 2017-2021, when the average purchase prices of Prague apartments increased by almost 75%. However, the intensity of price growth stagnated in 2022 due to a combination of high mortgage interest rates, the emerging economic crisis and the overall overheating of the housing market. Yet today, even middle-income households cannot afford to buy their own housing in the capital, and if they do, it is usually at the cost of a significant drop in their standard of living.

Rental housing prices are also rising similarly, with an increase in rent by around 70% between 2014 and 2021. The development of the rental market in the last few years has been largely inverse to the development of apartment sales. Rental prices stagnated in the period 2019-2021 due to the Covid pandemic. Combined with rising incomes, the availability of rental housing in Prague improved during this period. But rental prices rose again significantly during 2022 [Deloitte, 2023]. The main reasons include market recovery after the pandemic, the shift of part of the demand for buying an apartment towards long-term rentals and the growing demand caused by the influx of Ukrainian refugees. Thus, the availability of rental housing is gradually deteriorating again.

2. ANALYSIS

2.1 Basic characteristics of Airbnb

The sub-chapter presents the basic characteristics of Airbnb units in Prague. It is divided into three topics according to the type of indicators analyzed. Within each topic, basic data are presented, and for selected topics, the temporal development and nature of the spatial distribution are also shown. The first topic focuses on Airbnb listings, examining the number of units offered, their activity levels and the nature of the units by size and price. The second topic addresses the Airbnb units by hosts. The third part of the sub-chapter focuses on the guest side – specifically, it addresses the visitation of Airbnb units and its intensity.

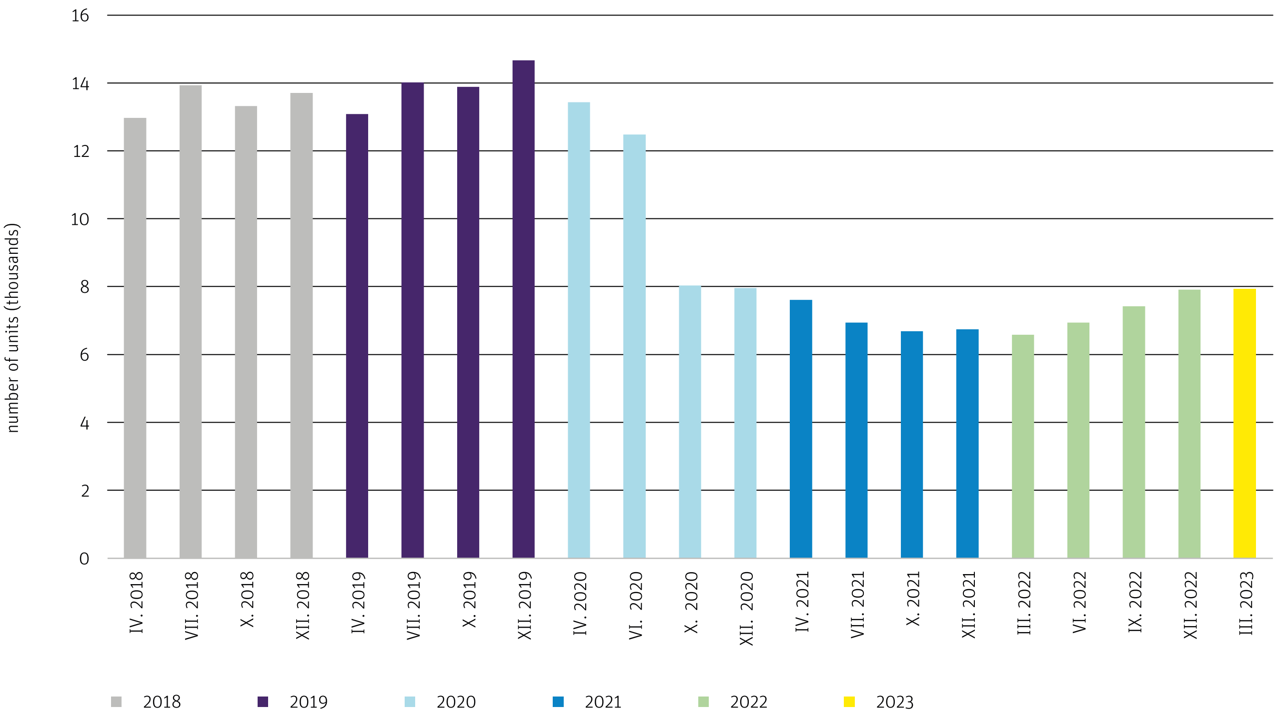
2.1.1 OFFERS

Number of units

In March 2023, there were a total of **7,930 Airbnb** units available in Prague. Most units were offered from 2018 to early 2020, when the number of units fluctuated around 13.5 thousand (→ Fig. 2.1.1.1). The development from spring 2020 onwards corresponds significantly to the evolution of the **Covid-19 pandemic** and global protection measures restricting the movement of people. This led to a significant reduction in the intensity of inbound tourism and demand for Airbnb. Specifically, the number of accommodation units offered fell by one half during 2020 and fluctuated around 7,000 units during 2021. With the Covid pandemic subsiding and tourism picking up again, the number of offers increased during 2022 and the first third of 2023. However, it still lags significantly behind pre-pandemic levels.

There may be several reasons for the rather slow return. The first is probably the continuing uncertainty of hosts regarding the future development of tourism and caution regarding the return to the short-term rental market. The second reason may be the shift of some units during the pandemic to the long-term rental sector due to a drop in demand for Airbnb. The shortest lease agreements for ordinary long-term rentals are usually for

2.1.1.1 Number of units offered on Airbnb from April 2018 to March 2023
IPR Prague 2023 / data: Inside Airbnb 2018–2023



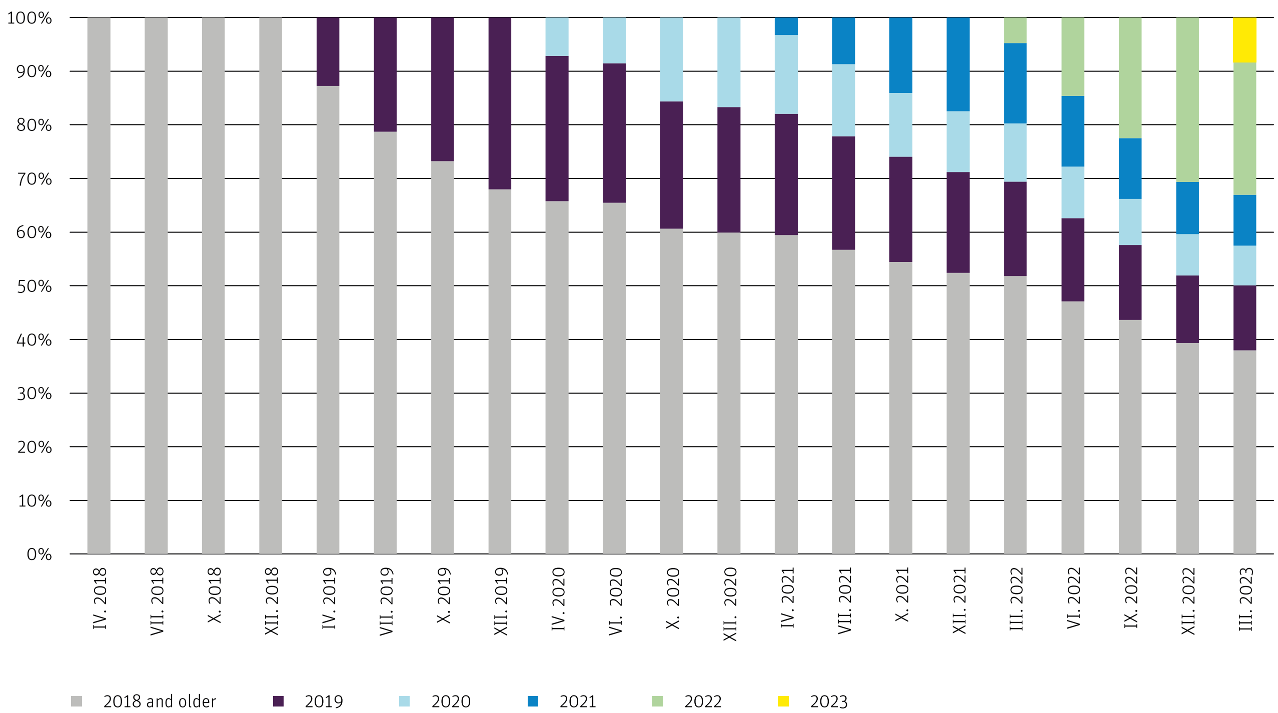
a period of six months to one year. Therefore, if hosts want to re-rent apartments through Airbnb with the post-Covid surge in demand for Airbnb, they usually have to wait at least until the expiration of their current rental contracts. However, Airbnb supply can be expected to gradually catch up with growing demand as tourism intensifies, especially as the short-term rentals provide greater flexibility and usually also higher returns for hosts compared to long-term rentals [Kadi, Plank, & Seidl, 2022].

The IA data allows us to track the evolution of the Airbnb structure over time, depending on the year in which units first appear on the platform (→ Fig. 2.1.1.2). The number of older units decreased significantly between 2018 and 2023. While the total number of units has dropped by about half, the number of older listings (from 2018) has decreased fourfold. However, in terms of the proportion of units by year of first appearance on the platform, units from 2018 and older are still the most heavily represented in March 2023 (38% of units), with a third (33%) from 2022 and Q1 2023. Units appearing on the platform for the first time in 2020 or 2021 are the least represented in the set of offers (12% in total). This evolution of Airbnb's structure again reflects the Covid-19 pandemic, i.e. the **lull in activity during the pandemic and the emergence of a new wave of Airbnb after the pandemic subsided**. However, the conclusions should be approached with caution, as the offer of some units may have been temporarily withdrawn from the platform during the pandemic and may have been offered again on the platform under a different ID number after a few months. Thus, it cannot be clearly declared that completely new units started to be offered on the platform.

Airbnb units are **significantly concentrated in the center of Prague**, reflecting the use of Airbnb by tourists in particular and their preference for accommodation close to major tourist destinations (→ Fig. 2.1.1.3). The cadastral areas of Nové Město (1,996 units), Staré Město (1,059), Vinohrady (1,012), Žižkov (696) and Smíchov (466) together account for two thirds (66%) of all offers in the metropolis. More than 200 units are also offered in the cadastres of Malá Strana, Karlín and Holešovice, and over 100 units in Nusle, Vršovice and Libeň. During the Covid-19 pandemic, the spatial concentration slightly increased – 58% of units were concentrated in the five cadastres with the highest number of units in April 2018, while as of July 2021, it was approximately 65% of Prague's offer (→ Fig. 2.1.1.4).

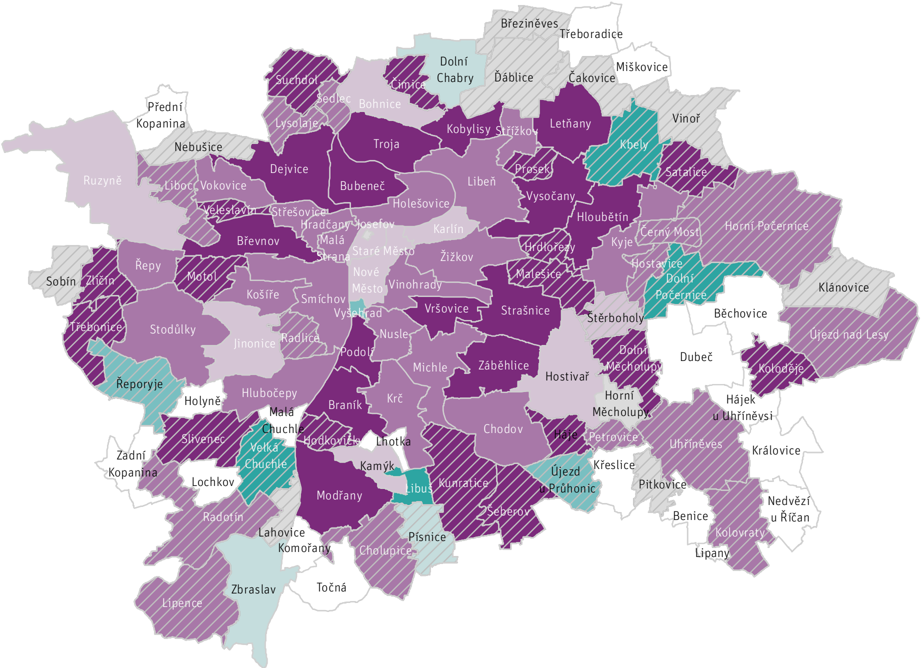
The spatial distribution of Airbnb units has a similar character when expressed relative **to the population** of the respective cadasters (→ Fig. 2.1.1.5). Again, there are **significant concentrations in the city center**. The areas with the highest values in the case of absolute and relative numbers of units (Nové Město, Staré Město, Vinohrady, Žižkov, Smíchov, Malá

2.1.1.2 Structure of Airbnb units by year of first appearance of the unit on the Airbnb platform from April 2018 to March 2023
IPR Prague 2023 / data: Inside Airbnb 2018–2023



2.1.1.4 Index of change in the number of units offered on Airbnb between April 2018 and March 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023



change in the number of units (April 2018 = 100%)

- ‹ 40.00
- 40.00 – 70.00
- 70.01 – 95.00
- 95.01 – 105.00
- 105.01 – 130.00
- 130.01 – 160.00
- › 160.00

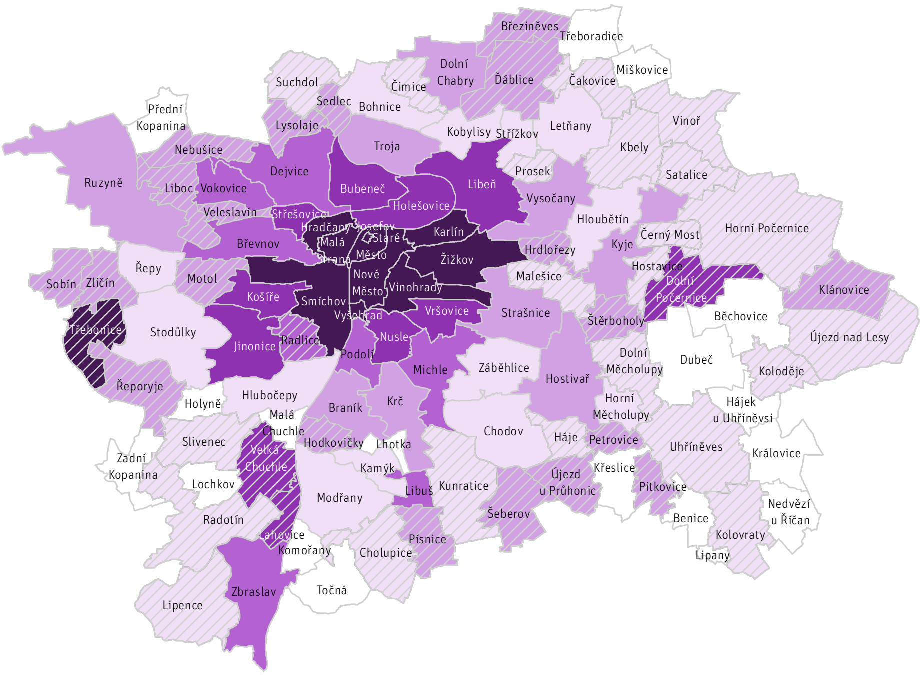
cadastres with less than 10 Airbnb units

cadastres without Airbnb units

0 10 km

2.1.1.5 Number of units offered on Airbnb per 1,000 inhabitants by cadastral area in March 2023

IPR Prague 2023 / data: ČSÚ 2021, Inside Airbnb 2023



number of units / 1,000 inhab.

- 0.01 – 1.00
- 1.01 – 2.00
- 2.01 – 3.00
- 3.01 – 10.00
- › 10.00

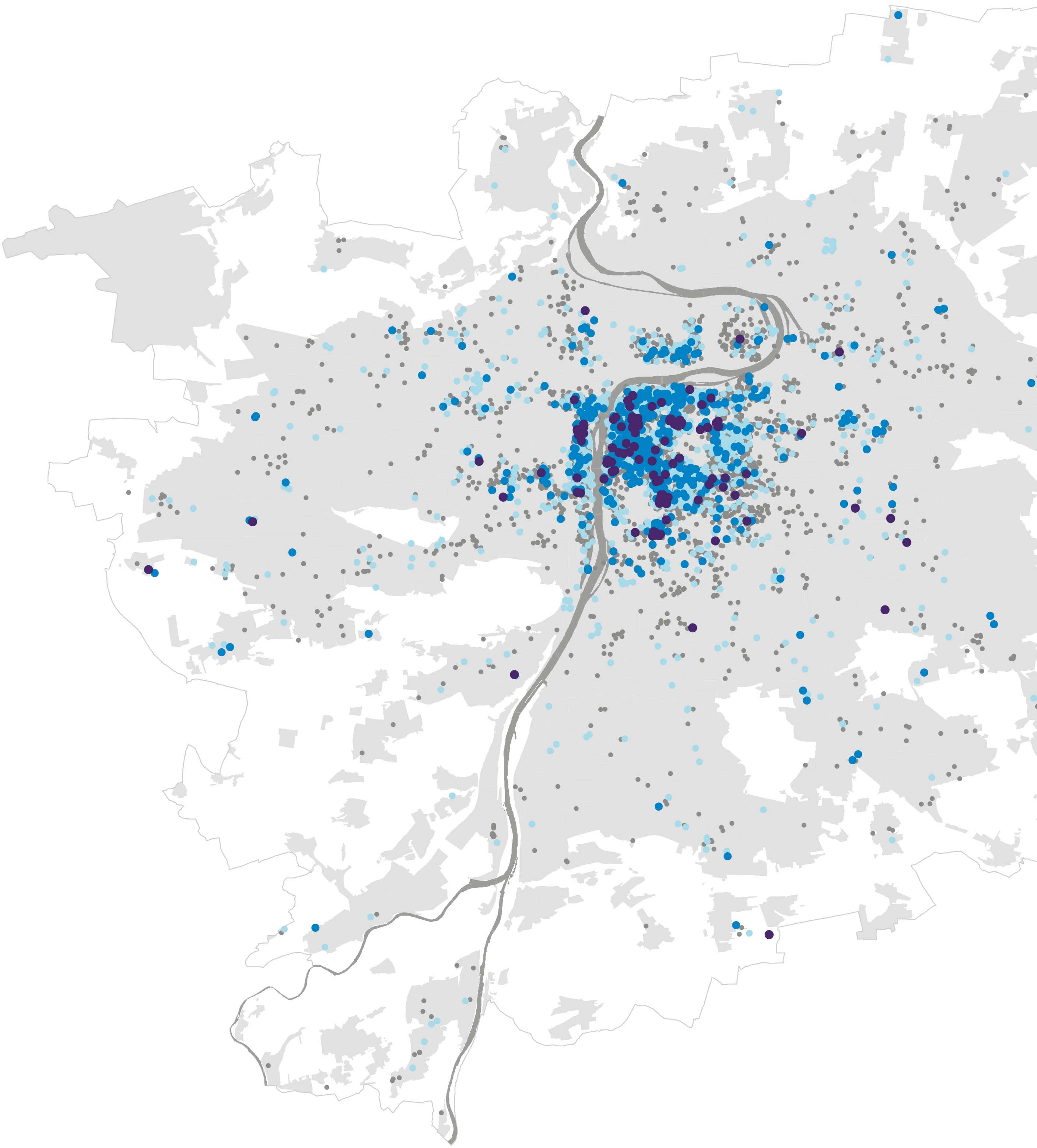
cadastres with less than 10 Airbnb units

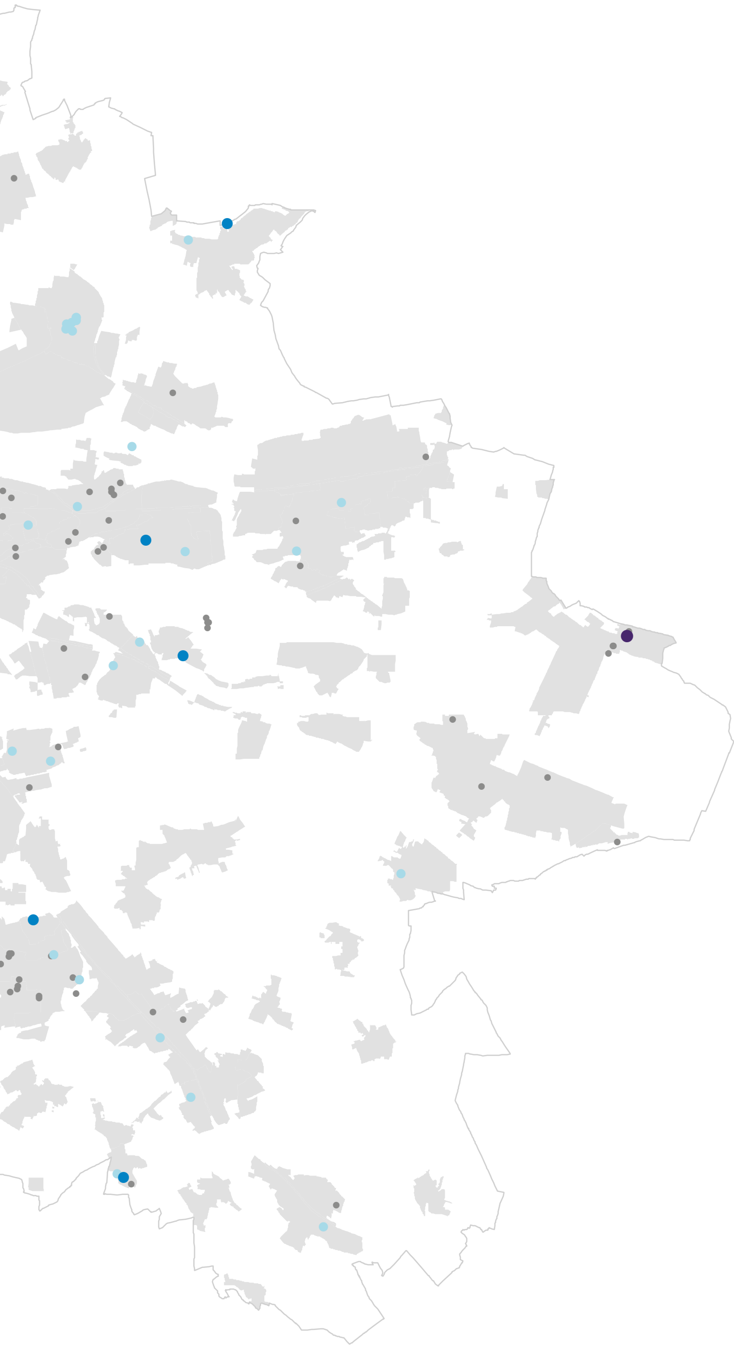
cadastres without Airbnb units

0 10 km

2.1.1.3 Location of units offered on Airbnb in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023





number of beds

- < 3
- 3 – 4
- 5 – 10
- 11 – 50

built-up current-state localities

Note: the location of the Airbnb unit on the map may differ by up to 150 m from its actual address due to Airbnb source data anonymization

0 5 km

Strana, Karlín) are joined by other small population areas in the city center (Josefov, Vyšehrad, Hradčany). There are more than 10 Airbnb units per 1,000 inhabitants in these ten cadasters. In the territory of Staré Město (169 units per 1,000 inhabitants), Josefov (96) and Nové Město (91), the values are above 90 units per 1,000 inhabitants. There are also over 10 Airbnb units per 1,000 inhabitants in Třebonice, but this is an anomaly due to the very low number of inhabitants. For context, it should be mentioned that according to the 2021 Census, there were 154 rental apartments per 1,000 inhabitants in Prague.

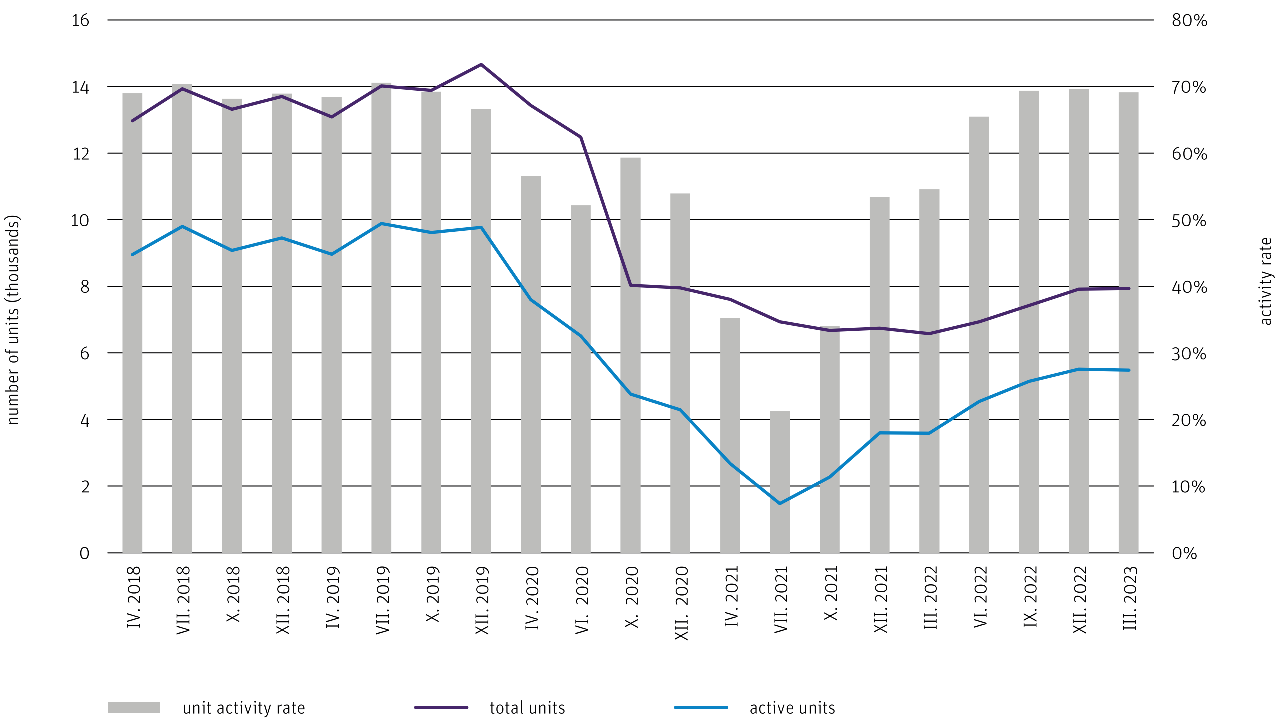
Activity of units

In March 2023, there were a total of **5,482 active units** in Prague (69% of all units). The trend in the number of active units more or less follows the trend in the total number of units (→ Fig. 2.1.1.6). However, the activity rate (the proportion of active units in the total number of units) fluctuates and again reflects mainly the **Covid pandemic**. The activity rate declined significantly from the end of 2020 and during 2021. It reached its lowest level in July 2021 (21% of units active). With 2022, activity returned to pre-pandemic levels. In terms of the spatial distribution of activity measured by cadastral area, the activity of the units is more or less similar across whole of Prague. Of the cadasters with at least 50 Airbnb listings (18 cadasters), the highest share of active units in March 2023 was in Staré Město (78%), Nové Město (74%) and Libeň (72%).

There were 30,455 accommodation listings on Airbnb over the examined period. A total of 6,843 (23%) of these units were never active, while 1,374 units (5%) were active at least once in each of the years examined. 2,977 (10%) units were active only in 2022 or 2023 (not active before 2022). **The year-on-year evolution of unit activity** again shows a significant **impact of the Covid-19 pandemic** (→ Fig. 2.1.1.7). In particular, there was a relatively high proportion of inactive units in 2021, especially those units that were active in 2020. At the same time, the proportion of units temporarily taken off the platform that later reappeared (as active or inactive units) has increased. The year 2022 marked a return after the pandemic – the proportion of active units increased, especially those that were inactive or temporarily invisible on the platform in 2021, but also brand-new units.

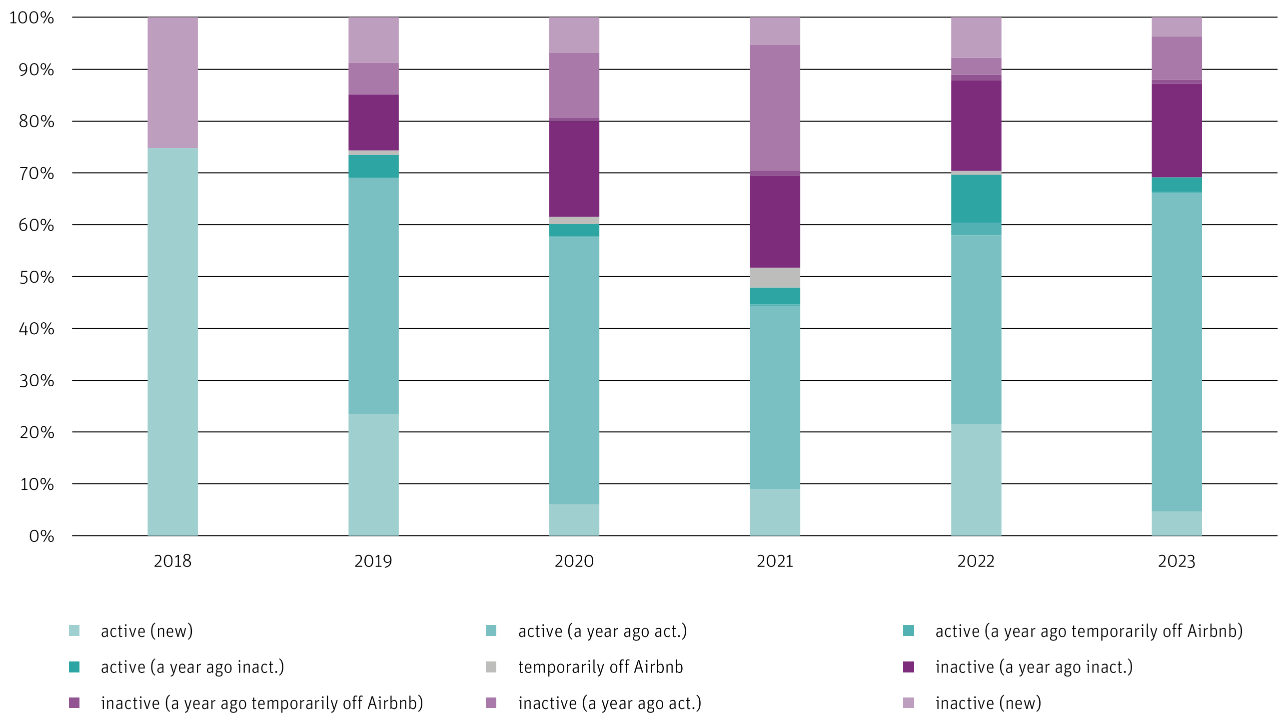
2.1.1.6 Number of units offered on Airbnb and their activity from April 2018 to March 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023



2.1.1.7 Structure of units offered on Airbnb by annual activity between 2018 and 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023



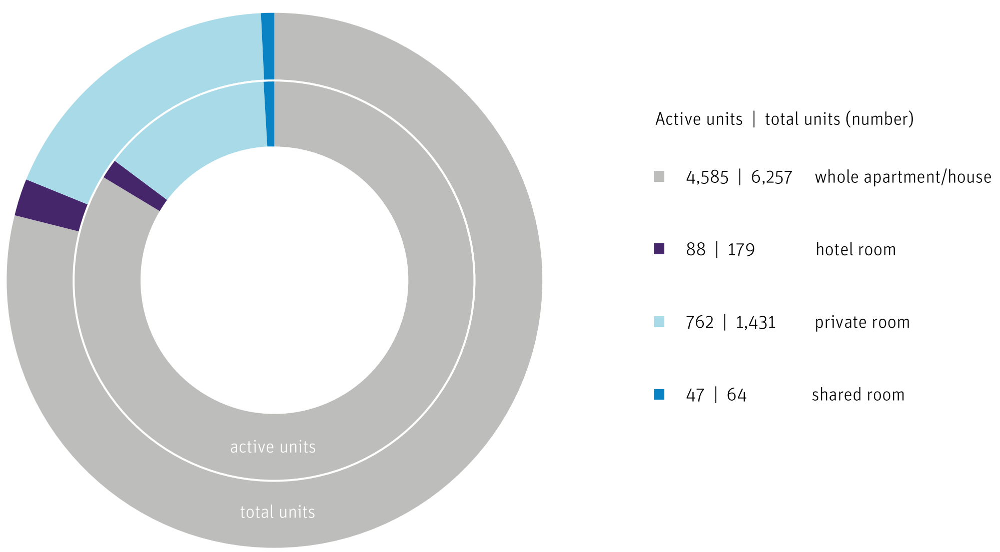
Type of units

The vast majority of units are rented out as a **whole apartment or house** (79% of units), with a fifth being private room listings (→ Fig. 2.1.1.8). Depending on the type of property, it is evident that some private rooms are actually part of a hotel but are not listed in this category. At the same time, private rooms are often part of other accommodation facilities (e.g. hostels, bed & breakfasts, aparthotels). Only a negligible number are shared room offers. This situation has been rather constant in the long term, with the share of renting whole apartments increasing slightly over time.

The shares of types of units in the individual cadasters correspond to the overall spatial distribution of units in Prague (→ Fig. 2.1.1.9). The structure of units in areas with high number of units is characterized by a high proportion of whole-unit rentals. Cadastral areas with a small number of rental units are more prone to significant deviations. Among the cadasters with a higher number of units (50 or more), Vyšehrad stands out, where 87% of the supply consists of private rooms, as well as Michle with an above-average share of hotel (21%) and private (23%) rooms, and Nusle with a higher proportion of shared rooms (8%). On the other hand, most of the city center cadasters have a very significant prevalence of whole apartments for rent (over 80% of units).

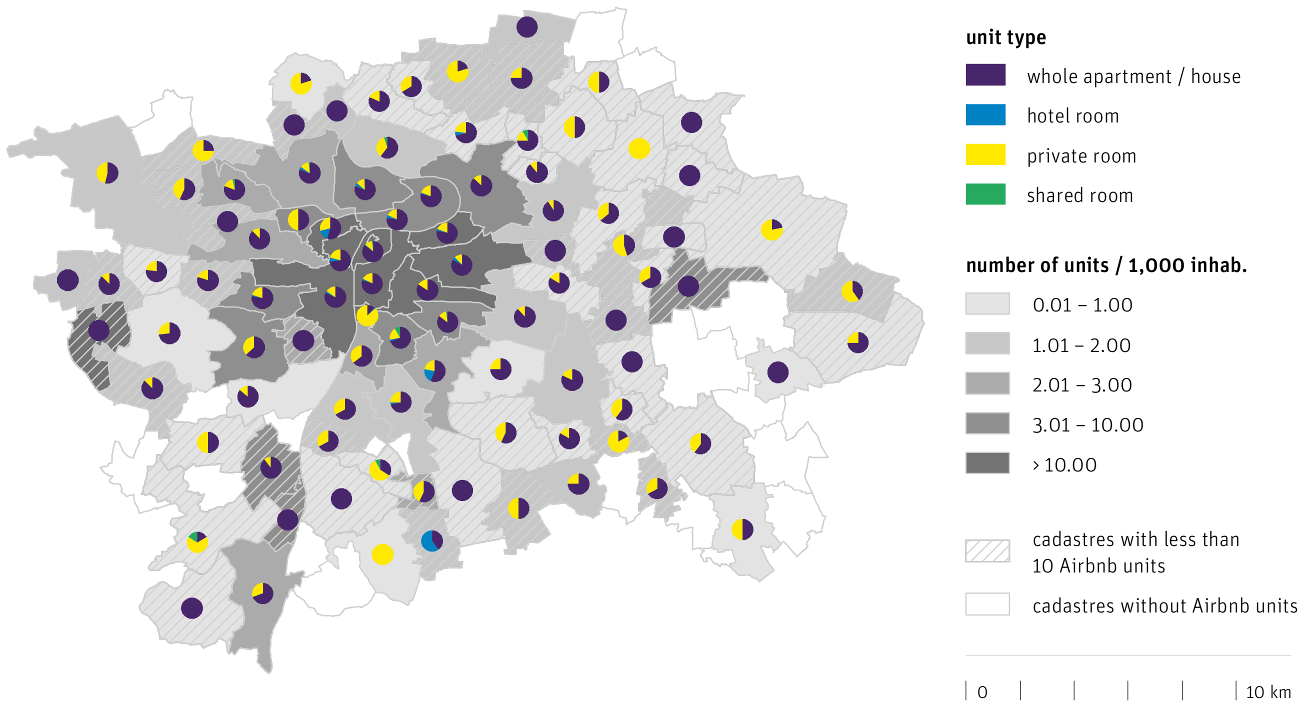
Prices for Airbnb units in Prague most often range from CZK 1,000 to 2,000 per night (→ Fig. 2.1.1.10). The price level usually corresponds to the type of the units offered. Shared rooms can be rented for the lowest prices (80% of units are cheaper than CZK 1,000 per night); private rooms and entire apartments are more expensive. The highest prices are paid for hotel rooms, but at the same time, the prices are relatively evenly distributed across price categories.

2.1.1.8 Structure of units offered on Airbnb by type of rental unit in March 2023
IPR Prague 2023 / data: Inside Airbnb 2023



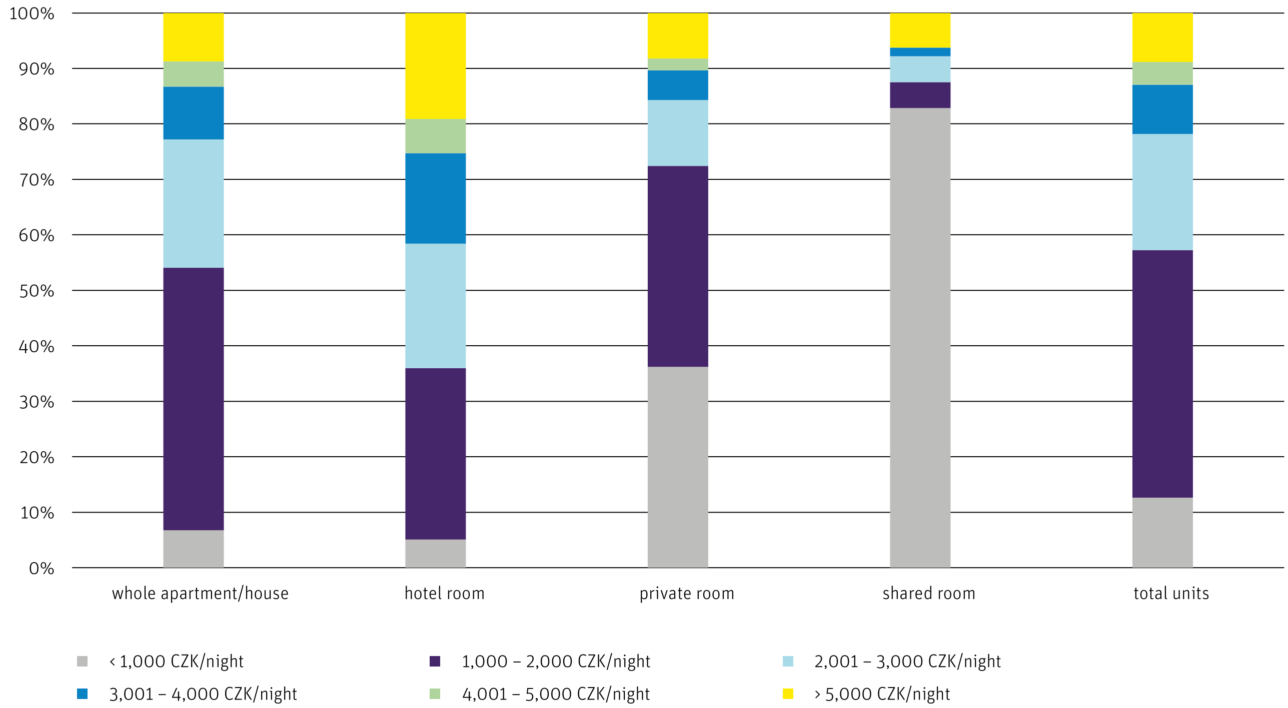
2.1.1.9 Structure of units offered on Airbnb by type of rental unit by cadastral area in March 2023

IPR Prague 2023 / data: ČSÚ 2021, Inside Airbnb 2023



2.1.1.10 Structure of units offered on Airbnb by type and price of rental unit in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023



Size of units

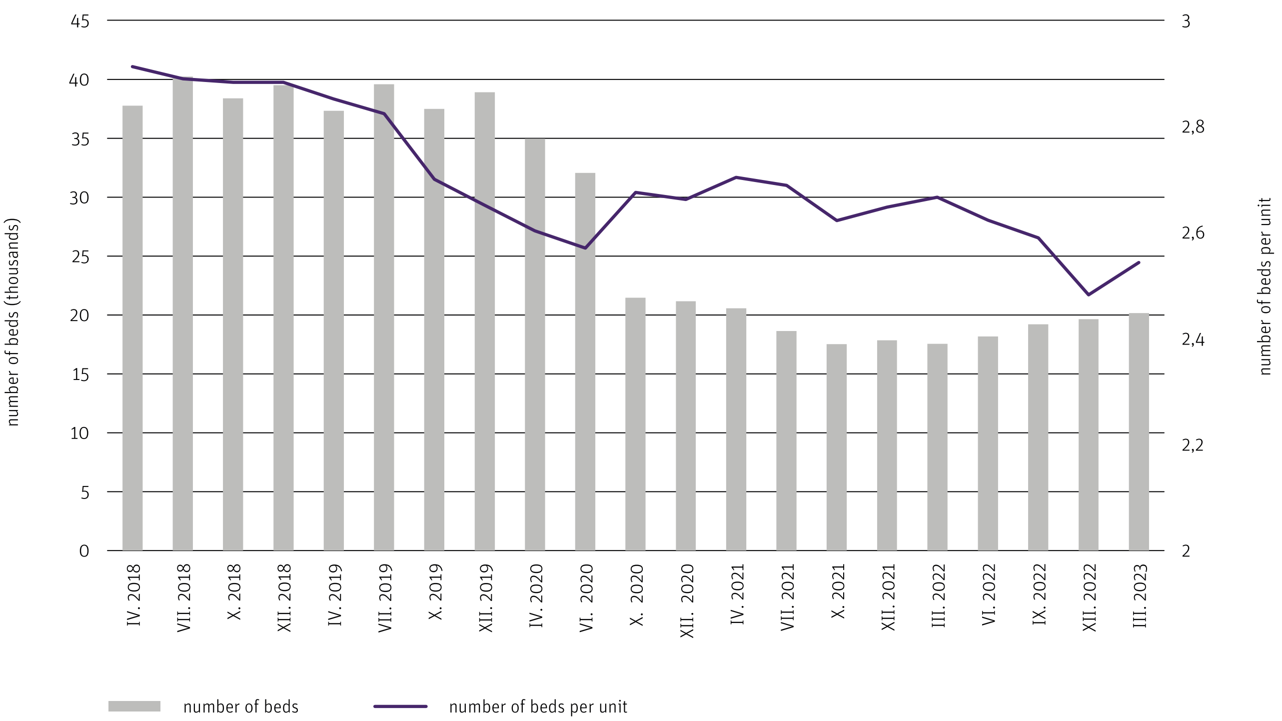
The size layout of Airbnb listings can be assessed through the number of beds, the number of rooms and the maximum number of guests that can stay in a unit. In March 2023, a total of **20,169 beds** were offered in Prague, of which 14,288 (71%) were in active units (→ Fig. 2.1.1.11). Compared to 2018 and 2019, this is a decrease by about one half, but a slight increase compared to the periods most affected by the Covid-19 pandemic (especially 2021). There are 2.5 beds per Airbnb unit. This value decreases slightly over time, indicating a gradual reduction in the size of the units offered.

The spatial differentiation of Airbnb bed capacity corresponds to the distribution of units (→ Fig. 2.1.1.12). The beds are significantly concentrated in the central parts of Prague. Ten cadasters account for 83% of all Airbnb beds – most of them in Nové Město (5,400 beds), Staré Město (2,829), Vinohrady (2,557) and Žižkov (1,721). A significant concentration to the center of Prague is also visible in the case of the analysis of the number of beds per 100 inhabitants (the so-called Defert's tourist function). Overall, there are 1.6 Airbnb beds per 100 inhabitants in Prague. **The historical center** of the metropolis is **extremely congested**. There are 45 Airbnb beds per 100 inhabitants in Staré Město, and over 20 beds per 100 people in Josefov, Nové Město and Malá Strana. There are more than 3 beds per 100 inhabitants in Vyšehrad, Karlín, Vinohrady, Hradčany, Smíchov, Žižkov and Třebonice (here, however, the value is distorted by the low number of inhabitants).

Most offers include **small units with one or two beds** (→ Fig. 2.1.1.13). However, there are also many units with five or more beds (11% of units). The size of units by number of beds has remained rather constant over time, with a slight increase in the proportion of small units with a maximum of two beds (58% of units in April 2018, 64% of units in March 2023). In terms of size characteristics of units in individual cadastral areas, similar characteristics apply as in the case of other indicators – size attributes of cadasters with a high number of offers (50 or more units) correspond to the nature of the overall Airbnb offer in Prague. In the cadasters more distant from the city center, the values of individual indicators are more variable due to the low number of units offered. Among the cadasters with a higher volume of supply, Vršovice with an above-average share of units with two or fewer beds (77% of units), Vyšehrad with an above-average share of units with three to four beds (54% of units) and Nusle with an above-average concentration of large units with four or more beds (19% of units) stand out.

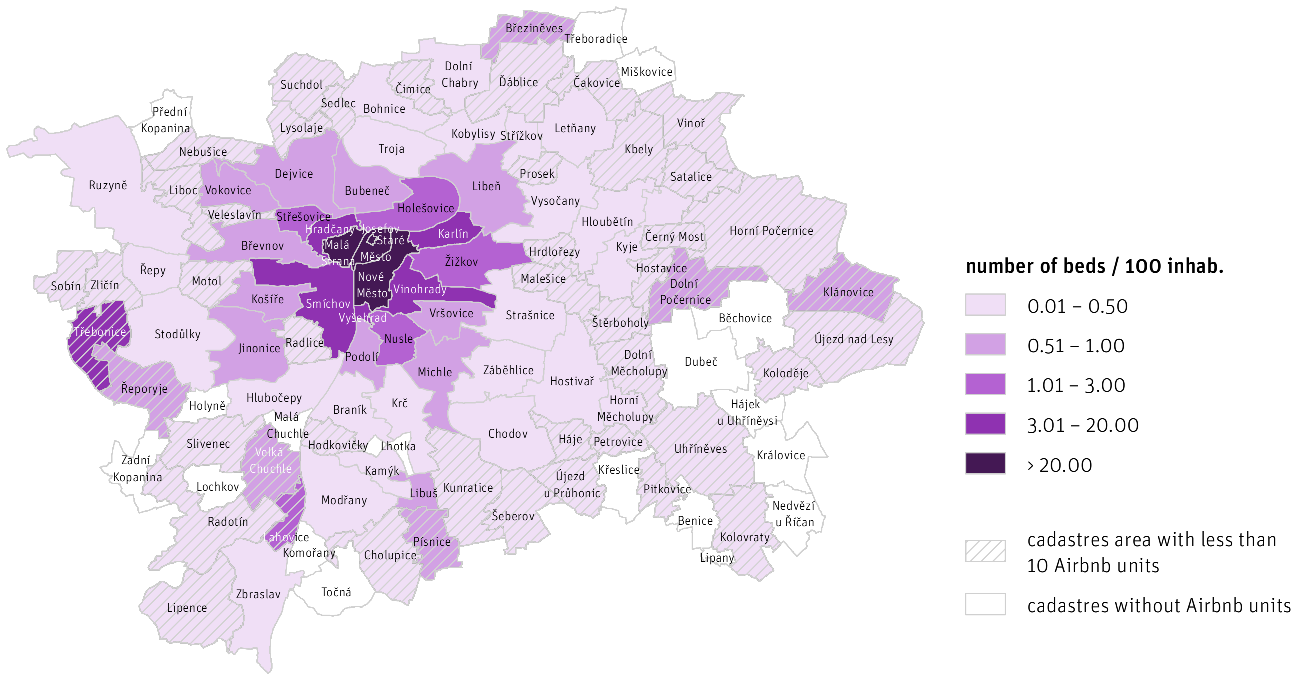
The character of Airbnb listings according to the number of rooms is similar to character analyzed by the number of beds. Most of the offers are **smaller, offering accommodation in one**

2.1.1.11 Number of beds offered on Airbnb from April 2018 to March 2023
IPR Prague 2023 / data: Inside Airbnb 2018–2023



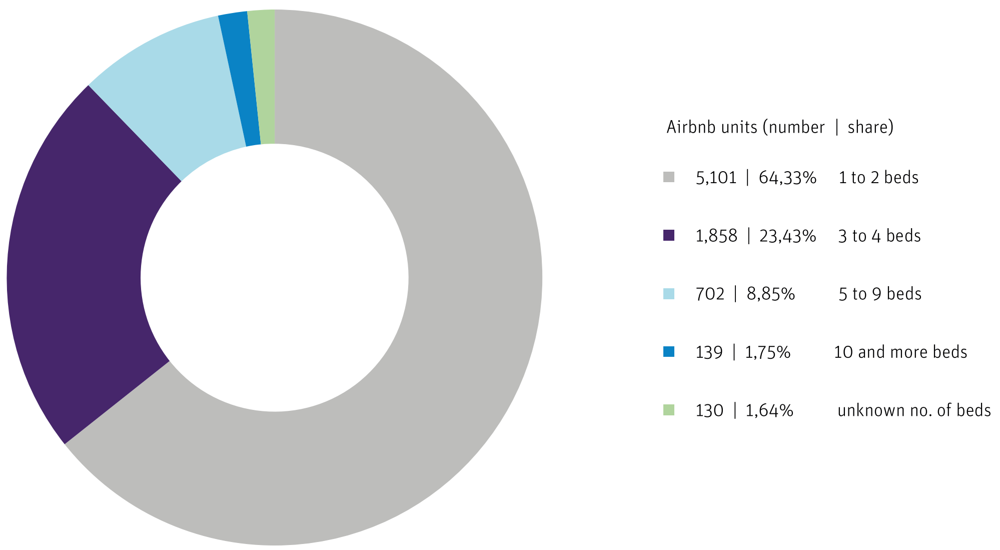
2.1.1.12 Number of Airbnb beds offered per 100 inhabitants by cadastral area in March 2023

IPR Prague 2023 / data: ČSÚ 2021, Inside Airbnb 2023



2.1.1.13 Structure of units offered on Airbnb by number of beds in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023

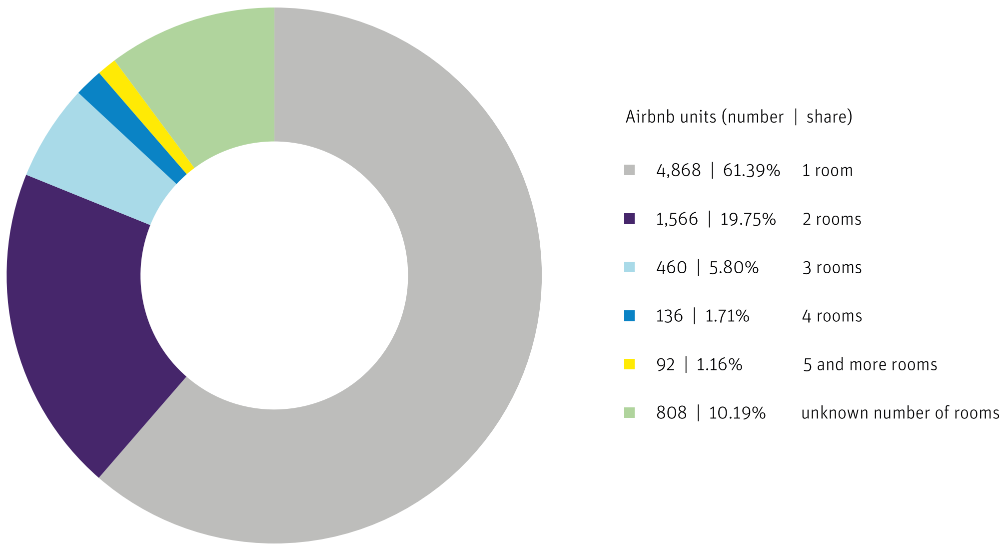


or maximum two rooms (→ Fig. 2.1.1.14). The size of units by number of rooms has remained rather constant over time, with a slight increase in the proportion of small one-bedroom units (57% of units in April 2018, 61% of units in March 2023). In cadasters with multiple offers (50 or more units), the size structure by number of rooms is similar to the overall Prague values. Among these cadasters, Vyšehrad (95% of units) and Michle (74% of units) have a higher-than-average share of one-room units, while small units are very underrepresented in Josefov (53% of units). The cadasters of Josefov (15% of units), Stodůlky (12% of units) and Staré Město (10% of units) have a higher proportion of larger units with 3 or more rooms.

At any one time, a maximum of 30,102 people can be accommodated in Prague through Airbnb, 21,723 guests in the case of active units. This number has declined since 2018, especially with the onset of the Covid pandemic. The maximum number of guests per unit is most often set at two (34% of units) or four (26% of units) persons (→ Fig. 2.1.1.15). A relatively high proportion of units offer accommodation for 6 guests (10% of units), while 323 units (4%) offer accommodation for 10 or more guests. The size structure of the units according to the maximum number of guests has not changed much over time, with only a slight decrease in the proportion of larger units and an increase in the proportion of smaller units. The average **maximum number of guests per unit is 3.8 persons**.

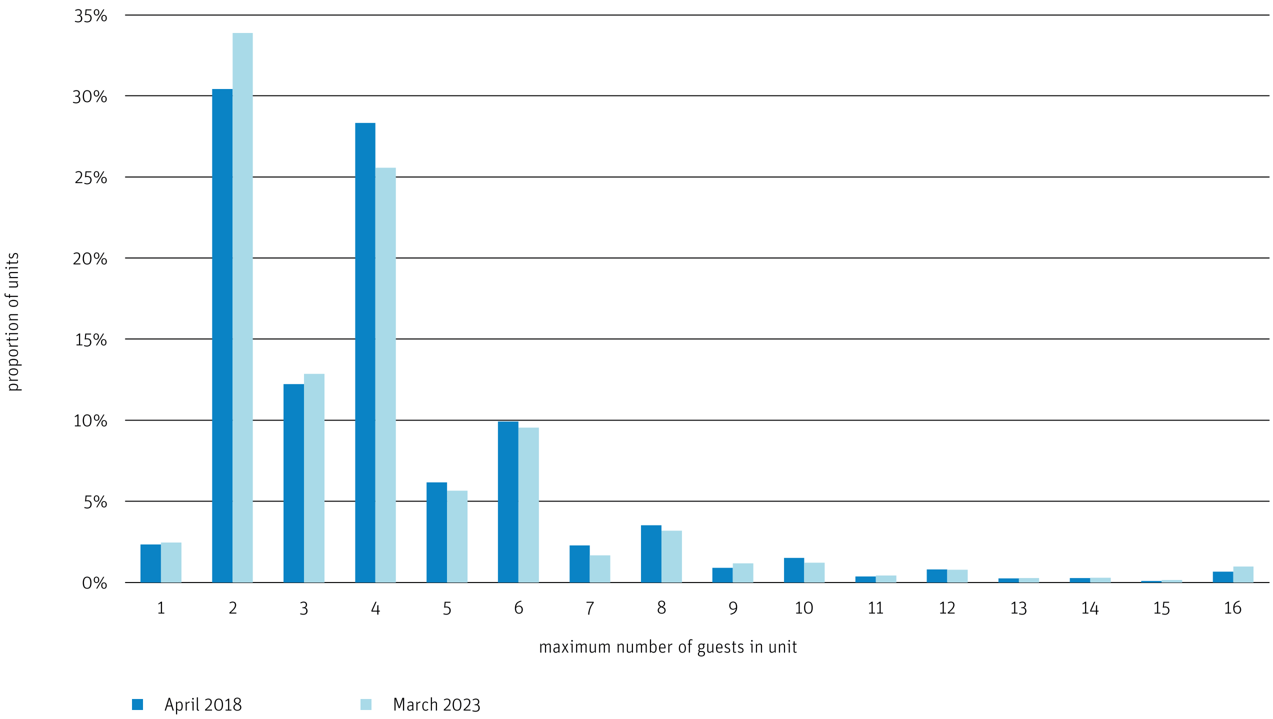
The maximum potential number of guests is **significantly spatially uneven**, which is in line with the overall distribution of Airbnb units in Prague. The 10 cadasters with the highest maximum number of guests concentrate 84% of the total potential number of guests. The spatial concentration becomes even more pronounced when calculated per number of inhabitants (→ Fig. 2.1.1.16). In the cadasters of Staré Město, Josefov, Nové Město and Malá Strana there can potentially be over 300 guests per 1,000 inhabitants (over 200 guests in the case of active units). In the Staré Město cadaster, it is as many as 731 guests per 1,000 inhabitants (589 guests in the case of active units).

2.1.1.14 Structure of units offered on Airbnb by number of rooms in March 2023
IPR Prague 2023 / data: Inside Airbnb 2023



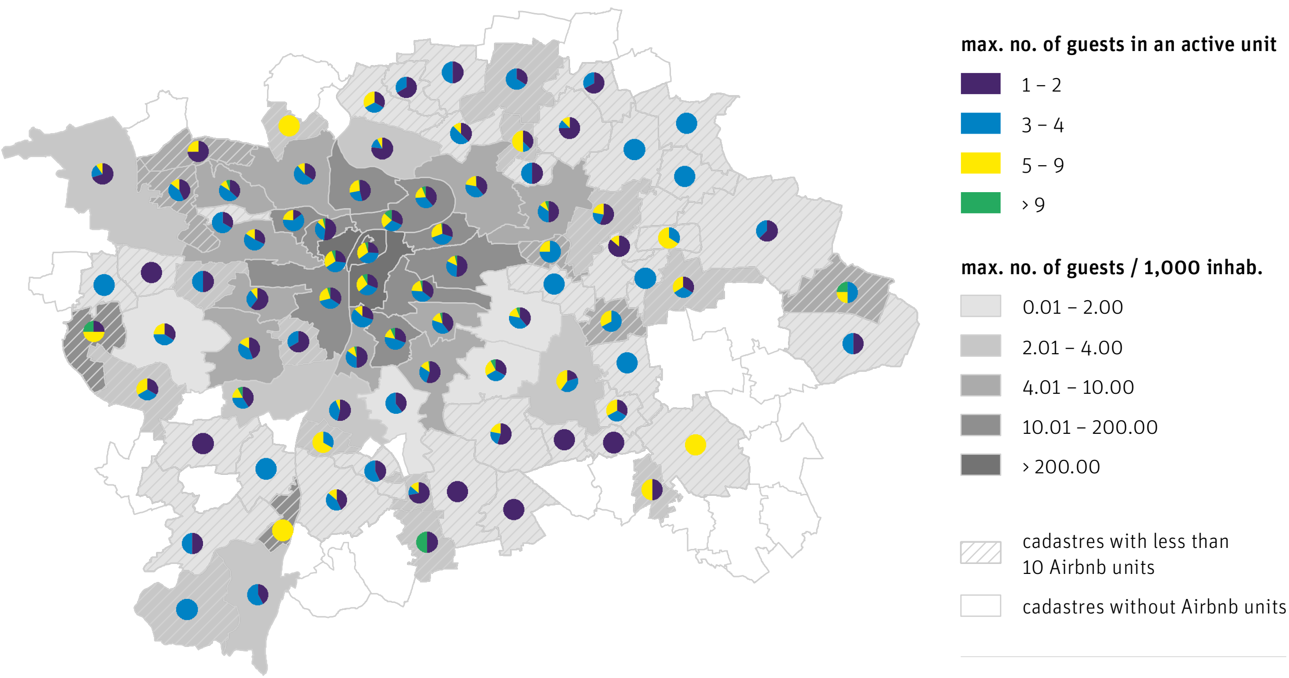
2.1.1.15 Share of units offered on Airbnb by maximum number of guests in April 2018 and March 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023



2.1.1.16 Maximum number of guests in active Airbnb units per 1,000 inhabitants by cadastral area in March 2023

IPR Prague 2023 / data: ČSÚ 2021, Inside Airbnb 2023

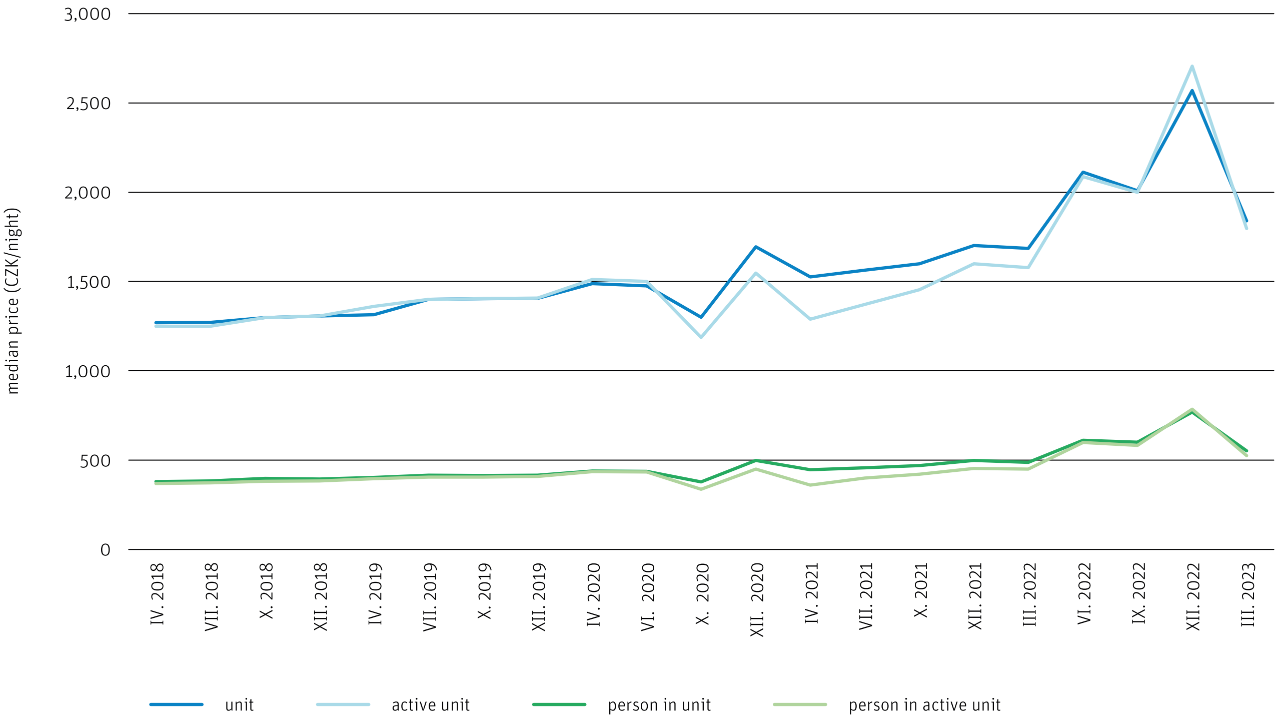


Prices of units

Airbnb prices amount to just under **CZK 2,000 per unit per night** – in March 2023 the median price was CZK 1,839 (→ Fig. 2.1.1.17). In the case of active units, the median price is CZK 1,796 per unit per night. The median price per person is **CZK 552 per person per night**, while the median price for active units is CZK 525. **Since 2018, the median price has increased by 45%** for both the unit price and the price per person. The most significant increase was seen in 2022, when prices increased by 75% from March to December. Part of the price increase is related to overall economic developments, in particular rising inflation and general growth of prices of goods and services. From 2022 onwards, prices are also likely to be influenced by the higher demand for Airbnb accommodation with the end of the Covid-19 pandemic and the still limited supply compared to the pre-pandemic period. Throughout the year, prices are always highest in winter, probably due to the high intensity of inbound tourism during Advent and Christmas, but also due to the long-term price growth, which is expected to reach its highest values at the end of the calendar year.

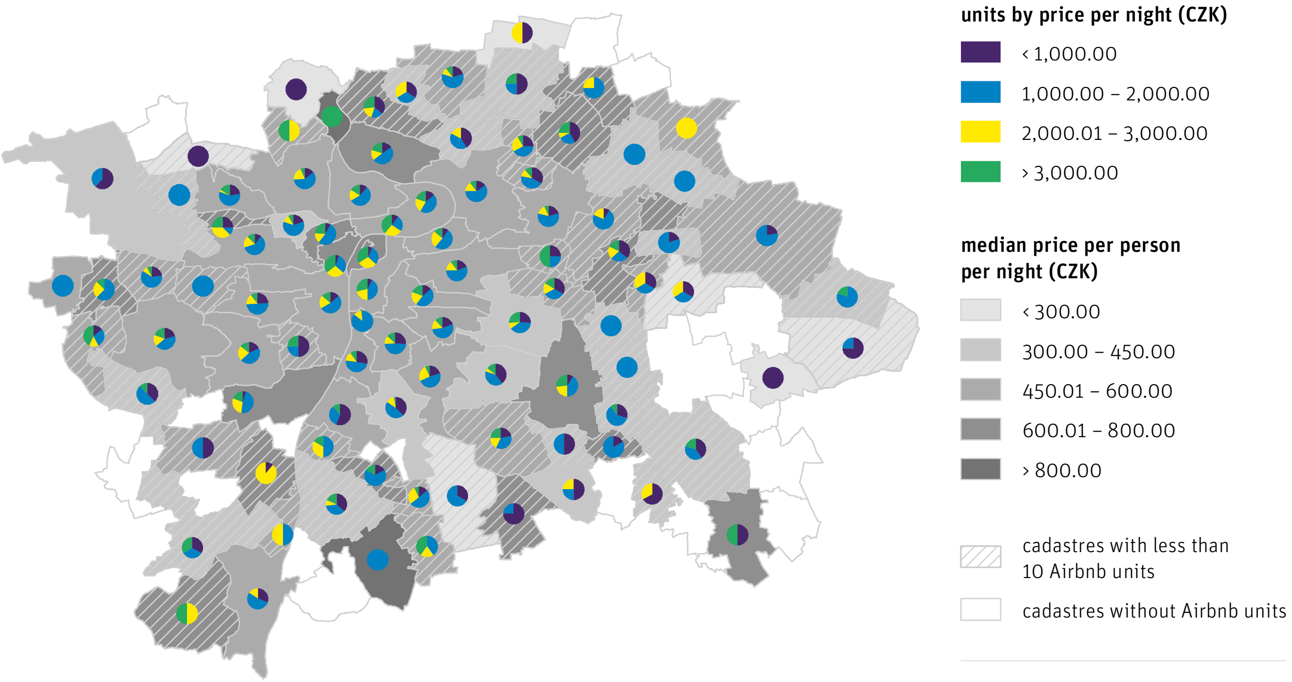
More expensive units are concentrated **in the central parts of Prague** (in terms of prices per unit and per person) (→ Fig. 2.1.1.18). However, the highest median prices can be found in selected cadasters on the outskirts of the metropolis (e.g. Sedlec, Cholupice, Veleslavín, Petrovice), but here the values are distorted by the very low total number of units offered. In the case of cadasters with a higher volume of offers (50 or more units), the price level reflects the location near the center. According to the price per person per night, the four most expensive cadasters are Josefov, Malá Strana, Vyšehrad and Staré Město, with median prices ranging between CZK 630 and 740 per person per night (between CZK 590 and 650 for active units).

2.1.1.17 Median price of units offered on Airbnb from April 2018 to March 2023
IPR Prague 2023 / data: Inside Airbnb 2018–2023



2.1.1.18 Prices of units offered on Airbnb by cadastral area in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023



2.1.2 HOSTS

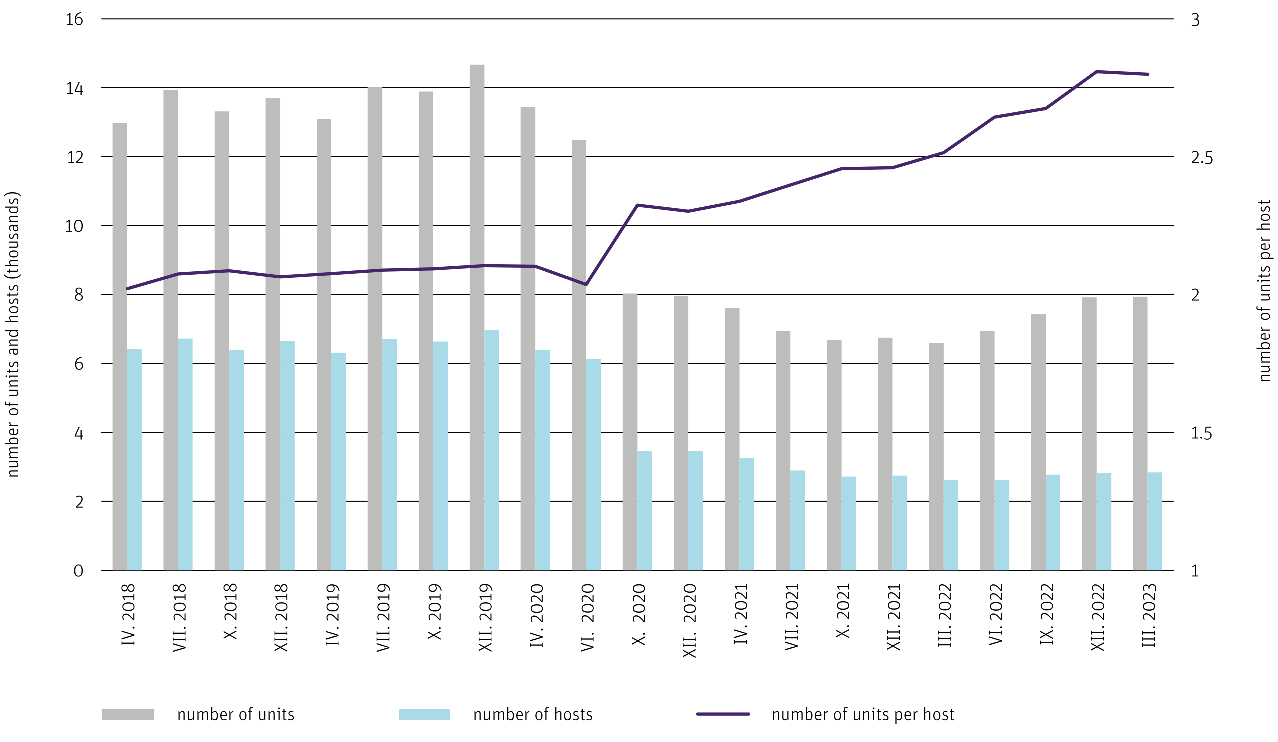
An analysis of the characteristics of Airbnb hosts shows the **highly commercial nature of Airbnb**, with a significant number of units used most probably only for short-term rentals and completely lacking a residential function. In March 2023, a total of **2,834 hosts** offered accommodation in Prague through Airbnb (→ Fig. 2.1.2.1). On average, there were **2.8 units per host**. A third of the hosts are multi-hosts, i.e. they offer more than 1 unit for rent. On average, one multi-host offers 6.2 units. **Multi-hosts rent out 77% of all units** in Prague. Over half of all units are offered by hosts who rent out 5 or more units. **The group of hosts offering 10 or more units rents out 39% of all Airbnb units in Prague**. The role of multi-hosts is more significant in the case of active units. 80% of the active units are offered by multi-hosts, while in the inactive unit group it is a "mere" 70%. The difference becomes even more pronounced when comparing the simple number of hosts. Almost half of the hosts offering active units are multi-hosts, while inactive units are dominated by single hosts (84% of hosts).

The number of hosts is steadily **decreasing**. The largest decline occurred in the context of the Covid-19 pandemic, with the number of hosts **gradually increasing again from March 2022**. Overall, the number of hosts decreased by more than a half between April 2018 and March 2023, which is a more significant decline than the decline in the simple number of units. This results in the fact that **the number of units per host is increasing** – while in April 2018 a host offered an average 2 units, in March 2023 it was 2.8 units. Similarly, the **role of multi-hosts is growing**. In the spring of 2018, there were 4.8 units per multi-host, and in March 2023 there are already 6.2 units per multi-host. Airbnb offer is therefore becoming increasingly concentrated in the hands of a small number of landlords, which further supports the thesis that the **commercialization** of the shared accommodation sector is **intensifying**.

In all the groups of hosts, by number of units rented, hosts most rent out entire apartments, followed by private rooms (→ Fig. 2.1.2.2). Medium-sized multi-hosts (offering 3 to 9 units) offer more private rooms than other types of hosts. Rather than being private rooms shared within predominantly residential apartments, these are rooms offered as part of mass accommodation facilities or rentals of entire apartments divided into several rooms and then advertised as individual rooms. A notable fact is that 64% of the units in the shared room category are rented by multi-hosts who also rent 10 or more units. Specifically, this case involves only two hosts offering hostel accommodation in shared rooms for multiple guests. In this respect, the shared accommodation sector in the

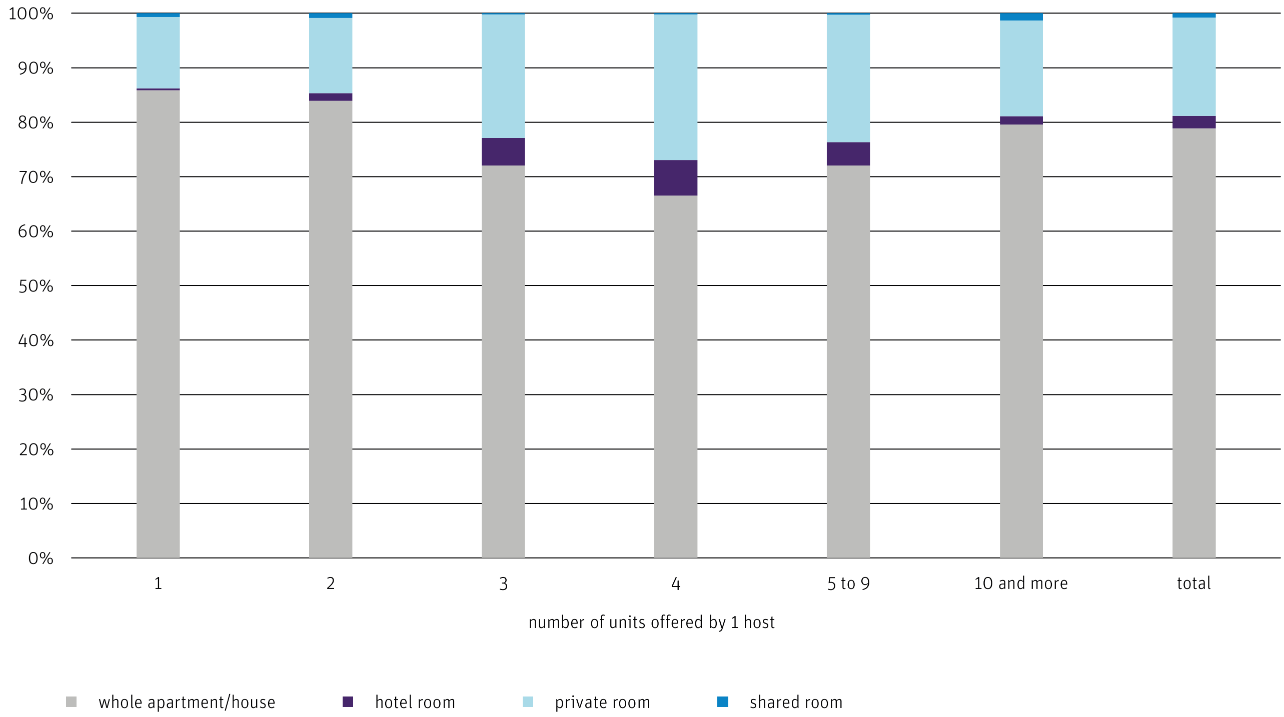
2.1.2.1 Hosts offering units on Airbnb from April 2018 to March 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023



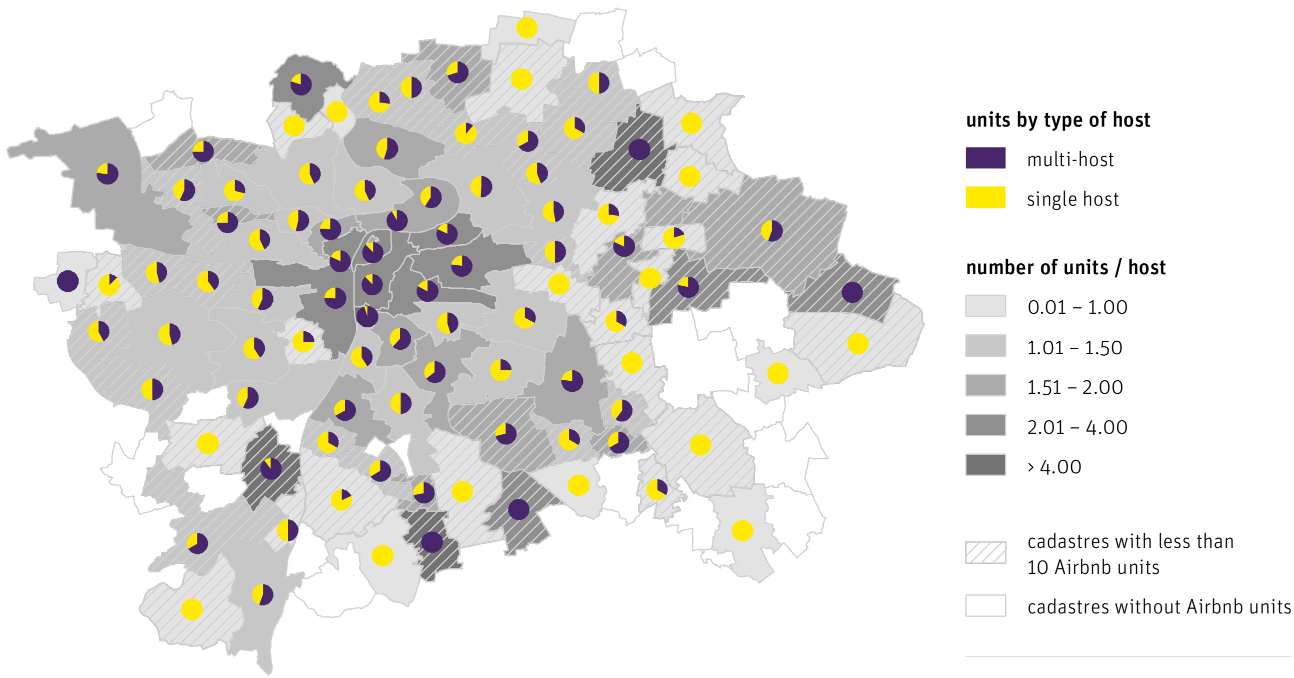
2.1.2.2 Airbnb units by number of units offered by host and unit type in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023



2.1.2.3 Units offered on Airbnb by host type in March 2023

IPR Prague 2023 / data: Inside Airbnb 2023



form of shared rooms in predominantly residential apartments can be considered virtually non-existent in Prague.

In terms of **spatial distribution, the cadasters with the highest share of units offered through multi-hosts are located in the central parts of the city** (→ Fig. 2.1.2.3). Conversely, the share of single hosts tends to increase with the distance from the center. Multi-hosts mostly operate in one cadaster (57% of multi-hosts), while one third of multi-hosts operate in two cadasters. Together, multi-hosts operating in no more than two cadasters rent out 66% of the units offered by multi-hosts. Approximately 6% of multi-hosts then operate in 4 or more cadasters and offer 22% of rental units offered by multi-hosts.

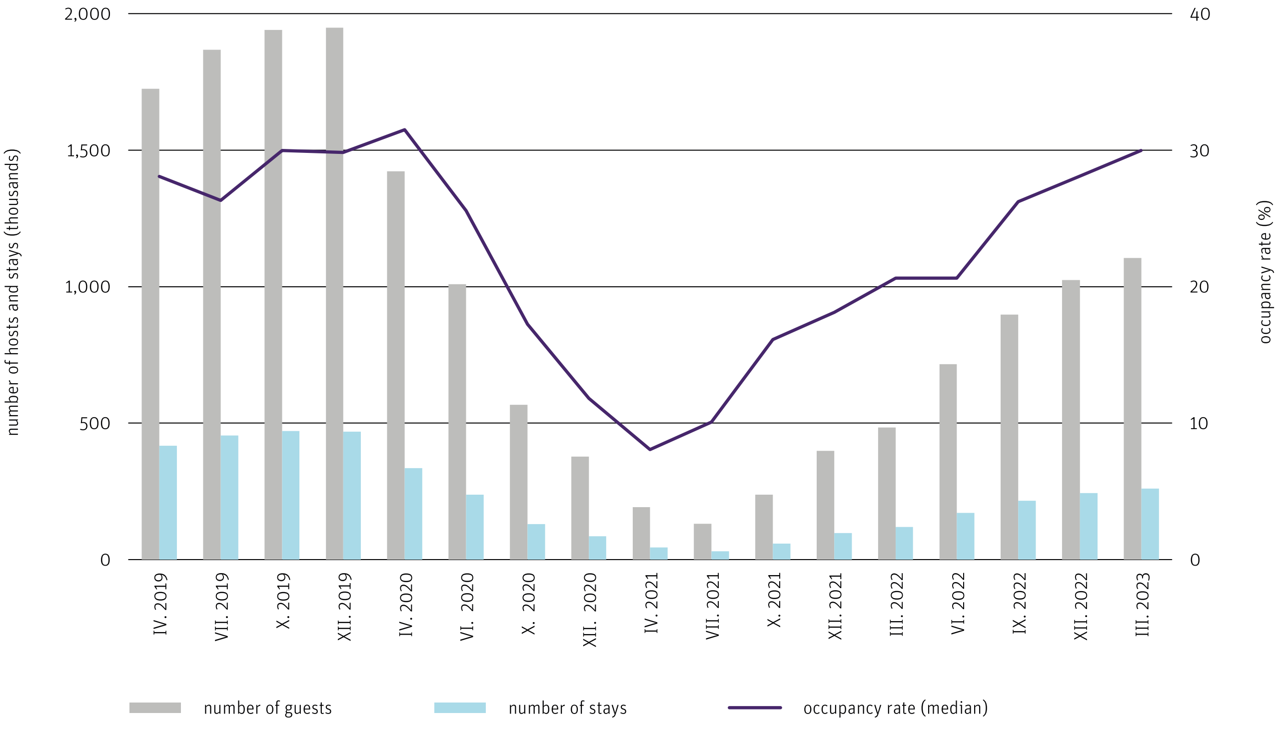
2.1.3 VISITATION

The **median annual occupancy rate for active Airbnb units in March 2023 was 30%** – i.e. units were occupied for one-third of the year (→ Fig. 2.1.3.1). In total, just under **260,000 stays** were made through Airbnb between March 2022 and 2023, and approximately **1.1 million guests** stayed in the Airbnb units. The total number of overnight stays amounted to almost 3.9 million nights in this period. However, it should be borne in mind that these are only estimates, as the number of guests, for example, works with the maximum possible number of persons accommodated in a unit, so the values are rather overestimated (→ chap. 1.1). **The average length of stay for guests** at the end of 2022 was **3.4 nights** [Eurostat, 2023].

The development of visitor numbers was significantly affected by the Covid-19 pandemic. From April 2020, the occupancy rate, the number of incoming guests and the total number of stays decreased significantly. The minimum was reached in April 2021, which was largely due to the inertia of the visitation analysis, which in a particular time slot always reflects values for the past 12 months. In April 2021, a year had already passed since the onset of the Covid-19 pandemic, so Airbnb visitation essentially only covered the pandemic period. From April 2021, the number of visitors was gradually increasing. As of March 2023, occupancy rates had reached pre-pandemic levels, but the number of stays and guests was still rather lower. The demand for Airbnb (expressed as occupancy rates) is therefore relatively high, but it has not yet been matched by a sufficient supply of Airbnb accommodation.

The occupancy of units is highly **diversified** (→ Fig. 2.1.3.2). Most often, units are either occupied for a very short period of time (up to 30 days per year) or for a very long period of time (over 70% of the year, i.e. 255 days or more). Private room rentals are more represented in the lower occupancy categories

2.1.3.1 Annual visitation to active units offered on Airbnb from April 2019 to March 2023
IPR Prague 2023 / data: Eurostat 2023, Inside Airbnb 2019–2023



compared to other occupancy categories. On the contrary, in the higher occupancy categories, whole apartments or houses have higher shares, which again indicates a significant commercialization of the entire shared accommodation sector through Airbnb.

2.1.4 SUMMARY OF THE SUB-CHAPTER

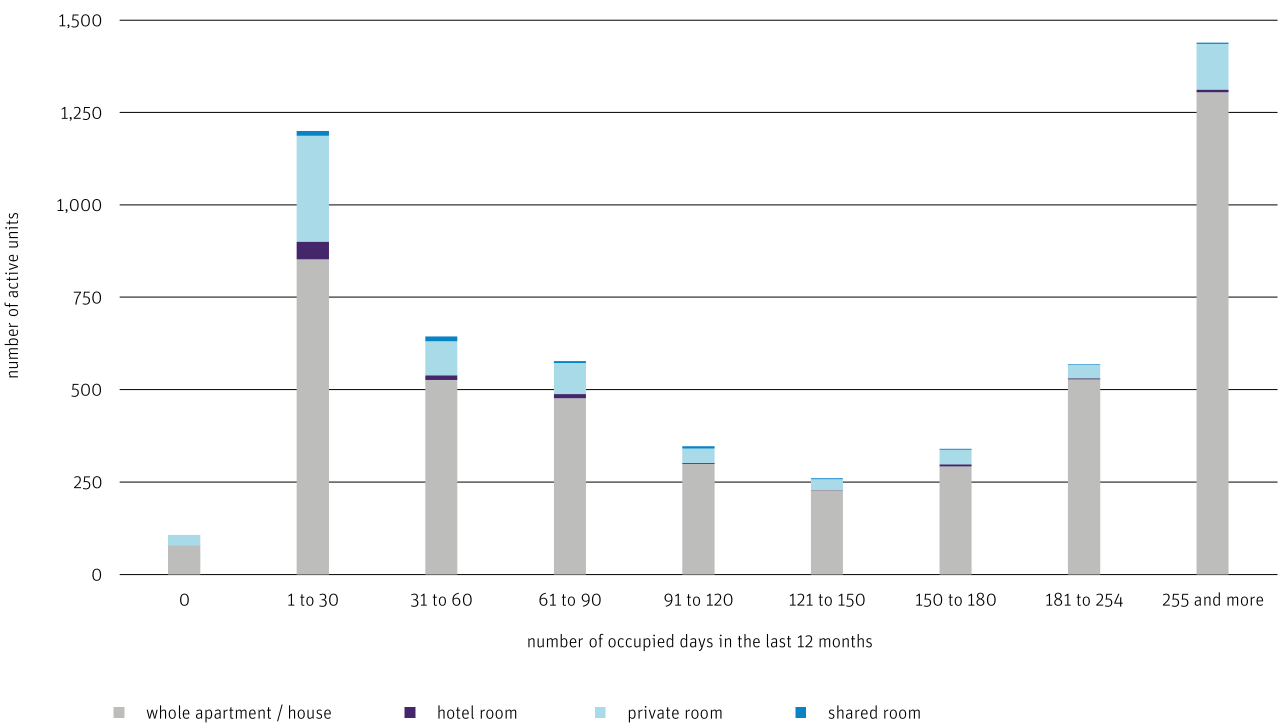
In March 2023, there were just under 8,000 Airbnb units in Prague, of which almost 70% were active. The number of offers declined significantly in recent years due to the Covid-19 pandemic but has been increasing again in recent months. The vast majority of units are offered as a whole apartment or house on a long-term basis. Most units offer accommodation in smaller units. Airbnb has a highly commercial nature in Prague, which is constantly intensifying. One third of the hosts are multi-hosts. At the same time, multi-hosts rent out almost 80% of all units in Prague. The shared accommodation sector in the form of shared rooms can be considered practically non-existent in Prague.

Airbnb units are extremely concentrated in the historic city center. Ten cadasters account for 83% of all Airbnb beds. Spatial concentrations are also evident in the case of sub-characteristics, both in terms of representation in the total population for Prague (e.g. the share of units in the cadaster in the total number of units in Prague) and in terms of relative indicators in individual territorial units (e.g. the number of units per 1,000 inhabitants in a given cadaster). In the central parts of Prague there are more offers of whole apartments, more expensive offers and also units offered by multi-hosts.

A maximum of 30,102 people can potentially be accommodated in Prague on any one day, and 21,723 hosts in the case of active units. Over the past year, the units were occupied for a third of the year. Airbnb visitation and occupancy dropped significantly during the Covid-19 pandemic. As of March 2023, occupancy rates have reached pre-pandemic levels, but the number of stays and guests continues to be rather lower.

2.1.3.2 Annual occupancy of active units offered on Airbnb by unit type as of March 2023

IPR Prague 2023 / data: Eurostat 2023, Inside Airbnb 2023



2.2 Airbnb and other urban components

The sub-chapter presents the development of Airbnb in the context of the other components of the city. The first part examines the position of Airbnb apartments in relation to the overall housing stock in Prague and in the relation to the available supply of rental apartments, and the relationship between Airbnb prices and the prices of regular long-term rentals. In the second part, we look at the relationship between Airbnb accommodation and conventional mass accommodation facilities. The bed capacities of both types of accommodation and the numbers of guests accommodated and stays made are compared.

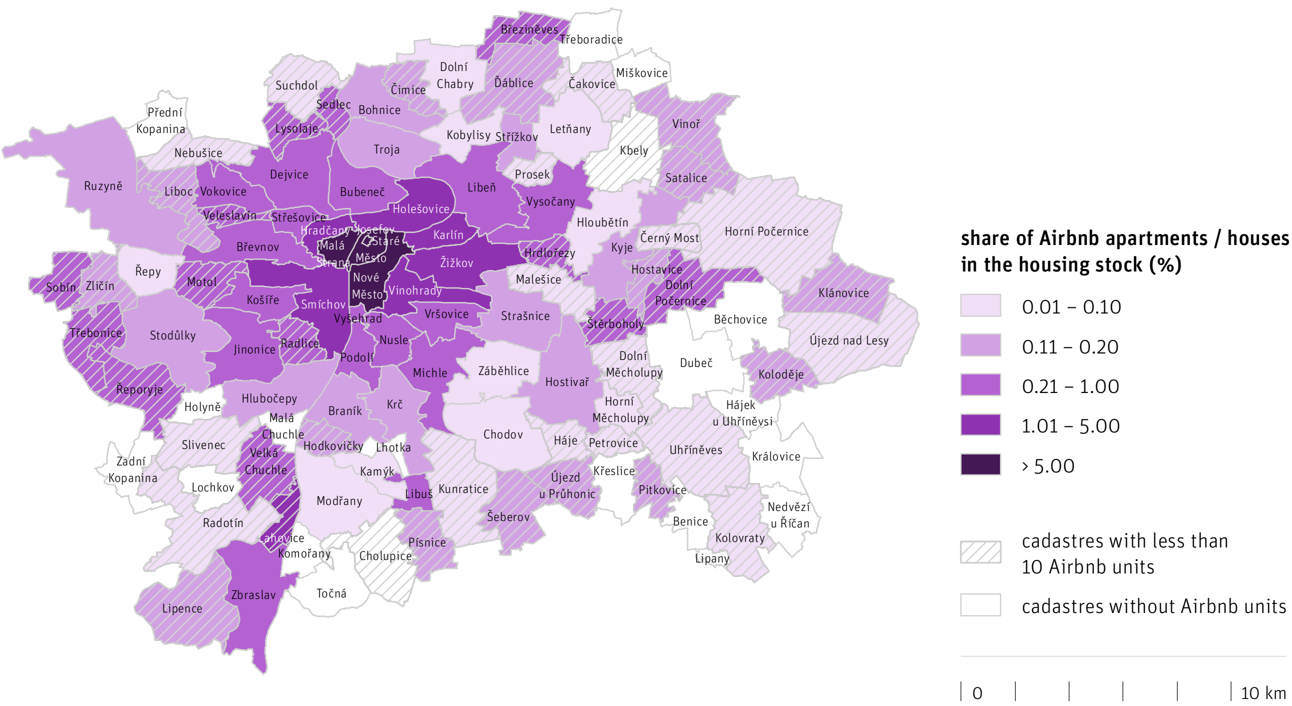
2.2.1 AIRBNB AND HOUSING STOCK

The original purpose of Airbnb was to offer shared accommodation or temporary housing by individual hosts, mostly in permanently or temporarily unused areas of their own properties. Gradually, however, there has been a shift away from this function and today, most often whole apartments or houses are offered for rent, adapted purely for the purpose of short-term accommodation. The intense commodification and purely commercial nature of Airbnb is underscored by the fact that hosts today are often not individual households, but multiple property owners, companies offering Airbnb accommodation around the world, or various global investment funds [Grisdale, 2021]. As a result, Airbnb influences the supply of housing in a given city, its prices and the status of the housing stock as a whole, especially the rental sector. Apartments intended for short-term rentals now practically form a separate type of parallel rental sector, which is also intertwined with the sector of long-term rentals intended for city residents. The most common effects of the presence of a high number of Airbnb rentals in a city include the decline of apartments for long-term rentals and the resulting consequences, such as rising rental prices due to lower supply or the direct or indirect spatial displacement of the original inhabitants from the affected districts, taking place mainly in the central areas of large cities [Grisdale, 2021].

Housing stock

In March 2023, Airbnb units rented as a whole apartment (or house) accounted for 0.9% of Prague's total housing stock, which is a rather insignificant share. A problematic aspect, however, is the **extremely uneven spatial distribution of Airbnb and its concentration in areas closer to the historic city center** (→ Fig. 2.2.1.1)**.** In the cadastral areas of Staré Město, Nové Město, Josefov and Malá Strana, Airbnb apartments occupy almost 11% of the housing stock (in total, 45% of units

2.2.1.1 Share of entire Airbnb apartments/houses in the housing stock in Prague's cadastral areas as of March 2023
IPR Prague 2023 / data: Inside Airbnb 2023, RÚIAN 2023



offered for rent in the form of entire apartments or houses are concentrated in these cadastral areas). They are mostly represented in the housing stock of Staré Město (15.9% of apartments), followed by Nové Město (10.1%), Josefov (8.2%) and Malá Strana (7.0%). The one percent share is also exceeded in the cadastres of Karlín (2.8%), Vinohrady (2.7%), Smíchov (1.9%), Hradčany (1.8%), Žižkov (1.7%), Lahovice (1.1%) and Holešovice (1.1%). In the case of Lahovice, however, there is a distortion due to the very low total number of apartments.

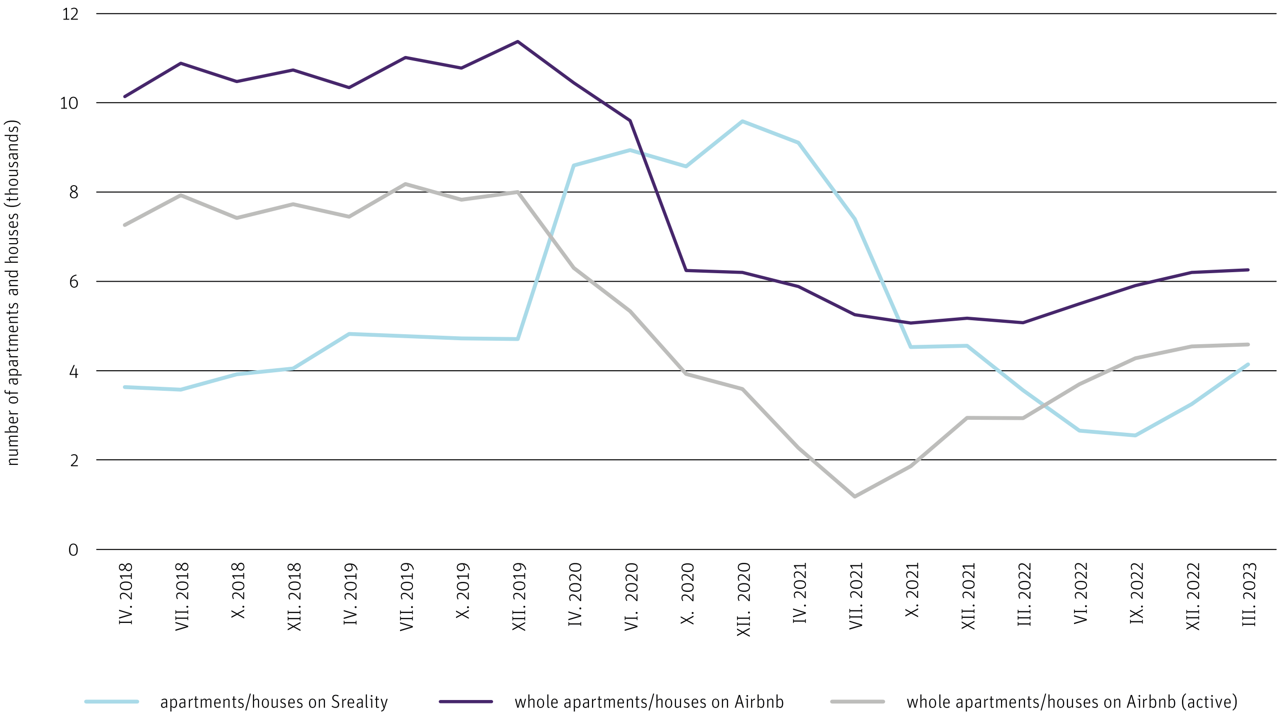
In terms of comparing the supply of apartments for rent, the **supply of short-term accommodation through Airbnb exceeded the supply of long-term rentals for housing in 2018 and 2019** (→ Fig. 2.2.1.2). There were almost three times fewer apartments and houses for long-term rent than all Airbnb offers (twice as few as active Airbnb units). The situation changed significantly during the Covid-19 pandemic. **Since April 2020, the amount of Airbnb accommodation has been decreasing significantly**, while the **supply of apartments for long-term rent has been increasing significantly**. This development probably has two causes. Firstly, it is likely that some of the Airbnb units have moved into the long-term rental sector following a significant drop in tourism intensity. Secondly, it is likely that some rental apartments became available, as many residents living in Prague only temporarily (e.g. for study or employment reasons) may have chosen to move to their permanent residence outside the metropolis during the pandemic, when the principles of hybrid telework began to be applied.

However, these changes were temporary. **During 2021 the supply of apartments for long-term rent started to decline quite significantly** with the retreat of the Covid-19 pandemic. While this decline has not yet been offset by a significant increase in the number of Airbnb listings, it has been partially offset by **an increase in the number of active Airbnb units**. These units were apparently inactive on the Airbnb platform at the time of the pandemic and were also offered for long-term rental. Nevertheless, it can be stated that the increase in the number of active units was not significant enough to represent the only factor causing a decline in the supply of long-term rentals. **Increased demand for long-term rental housing** is likely to have contributed to this situation, for example due to the return of employees to Prague, the resumption of full-time teaching at universities in the autumn of 2021, or economic uncertainty following the pandemic, which, combined with high property prices, is contributing to a shift in part of the demand for the purchase of apartments towards the demand for rental housing.

The **supply of Airbnb rentals has been growing** steadily **since 2022 as tourism intensity recovered** and the demand for

2.2.1.2 Apartments and houses for rent on Sreality and Airbnb from April 2018 to March 2023

IPR Prague 2023 / data: Inside Airbnb 2018–2023, Sreality 2018–2023



tourist accommodation increased. However, it falls far short of pre-pandemic levels. Despite the increased demand for Airbnb accommodation, a more significant increase in the number of listings may be dampened by inertia caused by the shift of some units to the long-term rental sector during the pandemic, where the shortest rental contracts are usually for at least 6 months to a year. The **supply of apartments for long-term rent**, on the other hand, experienced a **further decline during 2022**, probably following the beginning of the Russian invasion of Ukraine and the subsequent increased demand caused by the wave of incoming refugees.

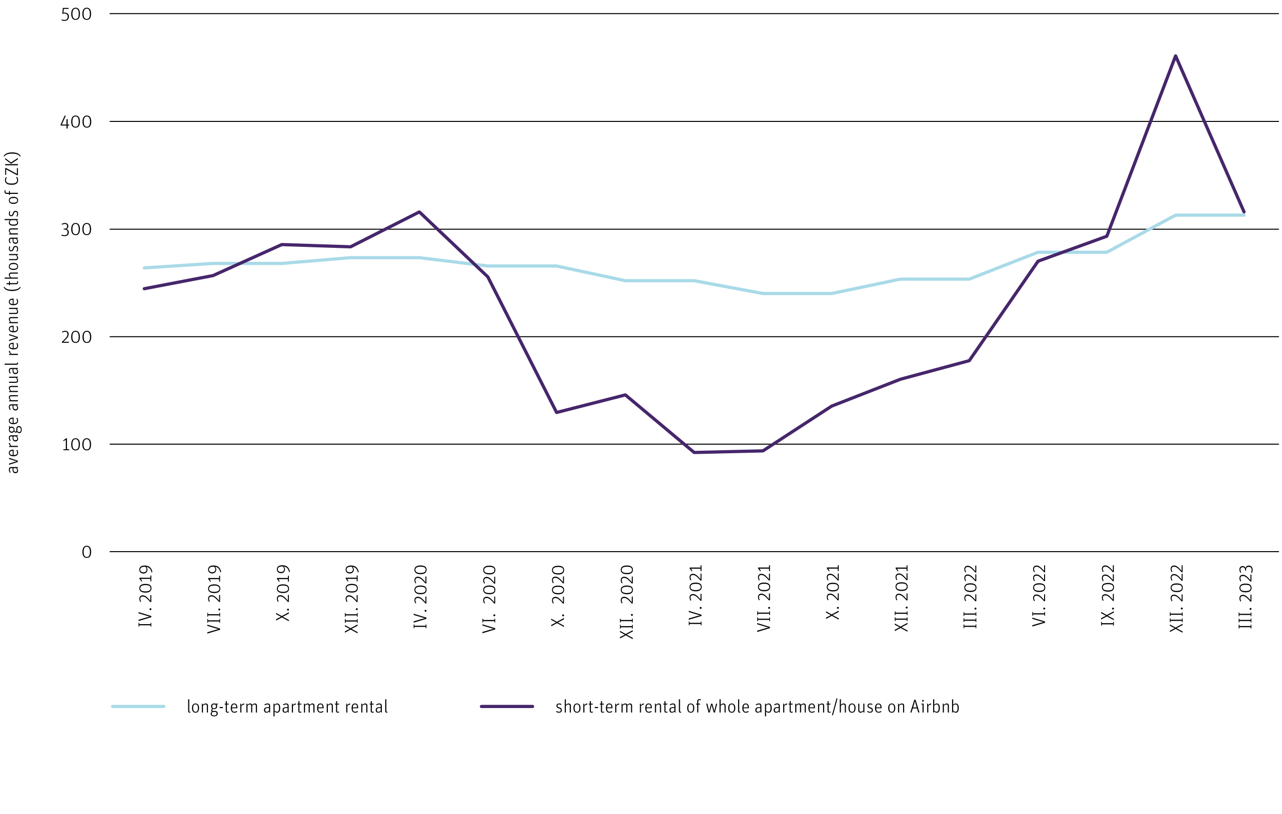
Housing prices

The following section compares the prices of apartments for long-term rentals with the prices of Airbnb units, i.e. for short-term rentals. A simple comparison of the prices of long-term and short-term rentals is not very relevant, as the prices of short-term rentals are, with few exceptions, always higher than the prices of long-term rentals due to the shorter duration of accommodation and the nature of tourist accommodation. Therefore, in addition to the usual comparison of rental prices, it is more appropriate to focus on the analysis of total returns from both rental sectors. The analysis then provides insight into whether rental property owners may potentially be motivated by higher earnings to move apartments from the long-term rental sector towards short-term rentals. However, the results of the analysis should be treated with caution as they do not take into account the additional costs for lessors associated with different input or operating costs, which may cause the final yields to differ. The analysis starts in April 2019, as it was not possible to calculate the occupancy of Airbnb units for 2018 due to the lack of data on the number of reviews.

In March 2023, **the yields on long-term rentals and short-term Airbnb rentals were almost identical** (→ Fig. 2.2.1.3). In the case of long-term rentals, they averaged approximately CZK 313,000 per year (CZK 26,000 per month). For Airbnb units, the average yield (at median occupancy rates) was almost CZK 316,000 per year (CZK 26,000 per month). However, at the maximum real occupancy (255 nights per year), the average revenue from Airbnb would be double (CZK 620,000 per year, CZK 52,000 per month). This fact illustrates to a large extent the flexibility of short-term rentals – in the case of high usability (occupancy), much higher yields can be achieved than in the case of conventional rentals [Kadi, Plank, & Seidl, 2022]. On the other hand, long-term leases provide more stability and lower day-to-day operating costs.

Short-term rental income has changed significantly in the wake of the Covid-19 pandemic. While long-term rentals provide a relatively stable return, **Airbnb's yield decreased** almost

2.2.1.3 Annual revenue from long-term apartment rentals and Airbnb whole apartment rentals from April 2019 to March 2023
IPR Prague 2023 / data: Deloitte 2022, Inside Airbnb 2018–2023



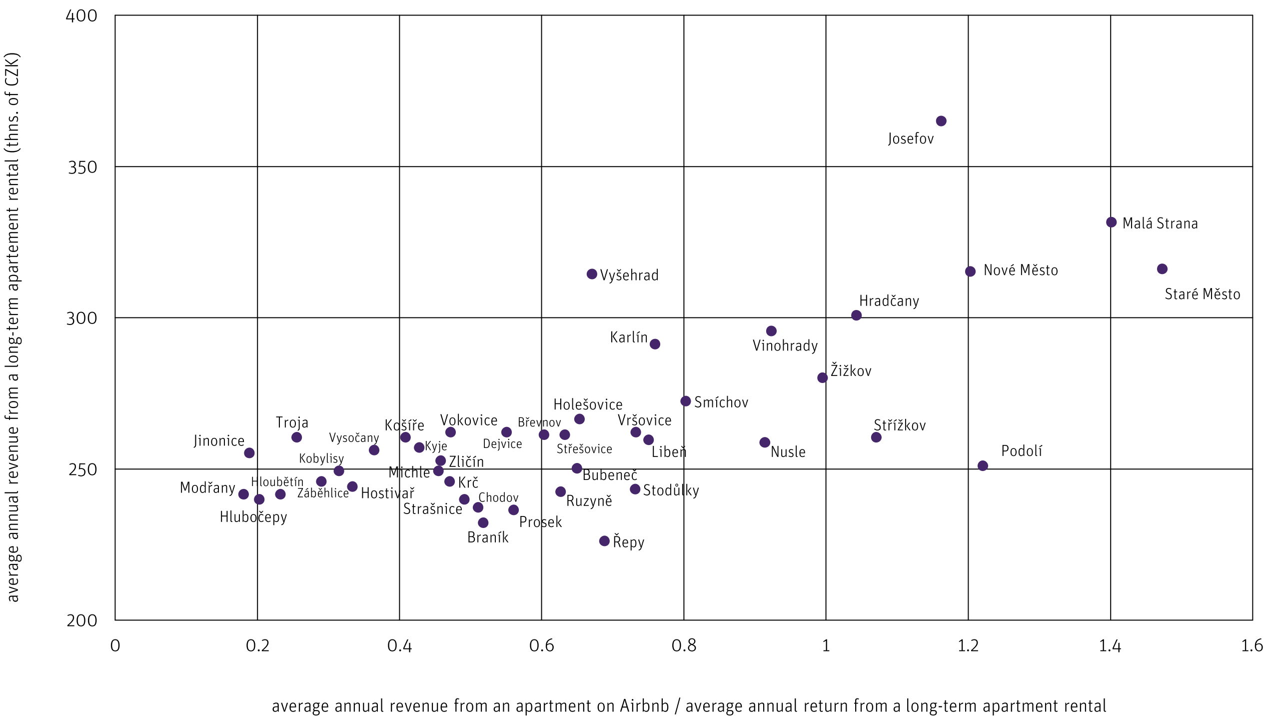
threefold between 2019 and 2021. The main cause was the downturn in tourism and the resulting drop in occupancy of units. The second reason could have been the decline in Airbnb rental prices, which, however, was not very significant compared to the impact of the decline in unit occupancy.

In terms of spatial differences between the yields from regular long-term and short-term Airbnb rentals, the data for December 2019 is shown (→ Fig. 2.2.1.4)[3]. This is because at the time of this analysis, detailed spatial data on current rental prices in the cadasters for 2022 and 2023 were not available. While data for 2020 and 2021 were available, their evaluation would be biased by developments during the Covid-19 pandemic. The last time slot before the onset of the pandemic (December 2019) thus best reflects the current state of differences between the types of rentals in Prague.

A comparison of returns from long-term and short-term Airbnb rentals between cadastral areas does not yield very surprising conclusions. Revenues from Airbnb exceeded revenues from long-term rentals especially in some locations close to the city center (e.g. Staré Město, Malá Strana, Nové Město, Josefov). The local high yields from Airbnb are not offset even by the relatively high prices of regular rentals compared to other Prague cadasters. Almost identical yields from long-term and Airbnb rentals are achieved in some central cadasters or in the immediate vicinity of the center (Hradčany, Žižkov, Vinohrady, Nusle). An interesting group is represented by areas where Airbnb revenues exceed or almost equal the regular rentals and at the same time there are relatively low revenues (prices) from long-term rentals (e.g. Podolí, Střížkov, Nusle, Libeň, Vršovice, Stodůlky, Řepy). It is these cadasters that may be most susceptible to a shift of rental housing from the long-term rental sector to the short-term Airbnb rental sector.

3 —— Fig. 2.2.1.4 shows data for cadastral areas with 10 or more active Airbnb units of the whole apartment/house type in December 2019.

2.2.1.4 Annual revenue from long-term rentals and from renting Airbnb apartments in December 2019 in Prague cadasters
IPR Prague 2023 / data: Deloitte 2021, Inside Airbnb 2019



2.2.2 AIRBNB AND TOURISM

The operation of Airbnb intensifies the tourist load in the city. Together with traditional mass accommodation facilities (MAF), it increases the supply of accommodation and the intensity of tourism, especially in the central parts of the cities, which, however, are already overwhelmed by tourism and the negatives associated with it. Airbnb also creates competition with traditional MAF, but this competition takes place in a context of unequal market competition, as Airbnb operators do not have to comply with the same business conditions as conventional accommodation operators.

The following topic compares the supply of Airbnb (active units) and MAF on the municipal district level. The analysis works with the bed capacity in both types of accommodation facilities, as a comparison of simple numbers of facilities is not possible, because Airbnb and MAF units are different in nature. MAF are defined as accommodation units with a minimum of 5 rooms and 10 beds. Airbnb, on the other hand, has the nature of individual accommodation with a low number of beds. The total number of Airbnb facilities would therefore be significantly higher. The analysis works with data available at the end of each year. Airbnb's analysis thus uses data from the last time slot of the year (i.e. December). It should be borne in mind that MAF properties are often also offered through the Airbnb platform, which can skew the comparison. At the same time, the number of guests and overnight stays in Airbnb units are only estimates, as the data are based on the maximum possible number of people staying in the unit, so the values are rather overestimated.

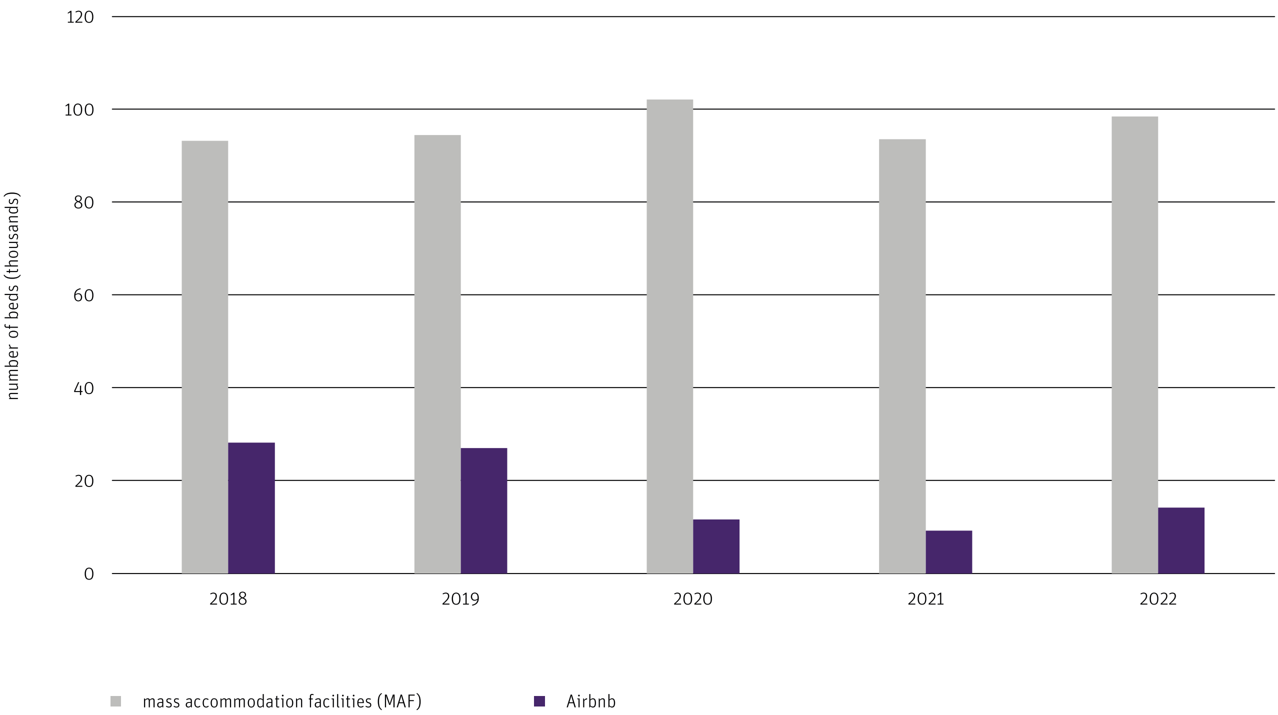
The Airbnb and MAF offer

At the end of 2022, there were approximately 99,000 beds in MAF and 14,000 beds in active Airbnb units in Prague (→ Fig. 2.2.2.1). **The bed capacity of MAF** is therefore **seven times higher than the capacity of Airbnb.** Compared to previous years, the representation of Airbnb units in Prague's accommodation capacity (the sum of MAF and Airbnb) has decreased – in 2018 and 2019 they amounted to a quarter of Prague's bed capacity. Again, the impact of the Covid-19 pandemic is shown here, where the drop in bed capacity in the case of MAF was not as significant as in the case of Airbnb accommodation. This shows the greater flexibility of Airbnb offers – the units are often not approved as accommodation services, so they can be transformed into other uses (e.g. housing) much more quickly and flexibly than regular beds in MAF.

Almost all the bed capacity of MAF and Airbnb is concentrated **in the 10 districts** of Prague 1 through Prague 10. In the case

2.2.2.1 Bed capacity of mass accommodation facilities and active Airbnb units

IPR Prague 2023 / data: ČSÚ 2023, Inside Airbnb 2018–2022



of MAF it is 93% of the bed capacity in Prague, in the case of Airbnb units it is 97% of all Prague Airbnb beds. At the same time, 61% of all Prague residents live in these ten districts. The largest share of beds in MAF and Airbnb is concentrated in the Prague 1 and Prague 2 districts. **Concentration of Airbnb** beds in the city center **is more pronounced than in MAF** – 62% of Airbnb beds and 44% of MAF beds are in Prague 1 and Prague 2. If we exclude urban districts without MAF and with very low number of Airbnb units (under 50 active units), Airbnb has the highest shares of the total bed capacity of a given municipal district in Prague 2 (21%), Prague 7 (17%), Prague 3 (16%), Prague 1 (16%), Prague 13 (15%) and Prague 5 (13%) (→ Fig. 2.2.2.2). In these urban areas, Airbnb thus competes relatively significantly with traditional accommodation facilities.

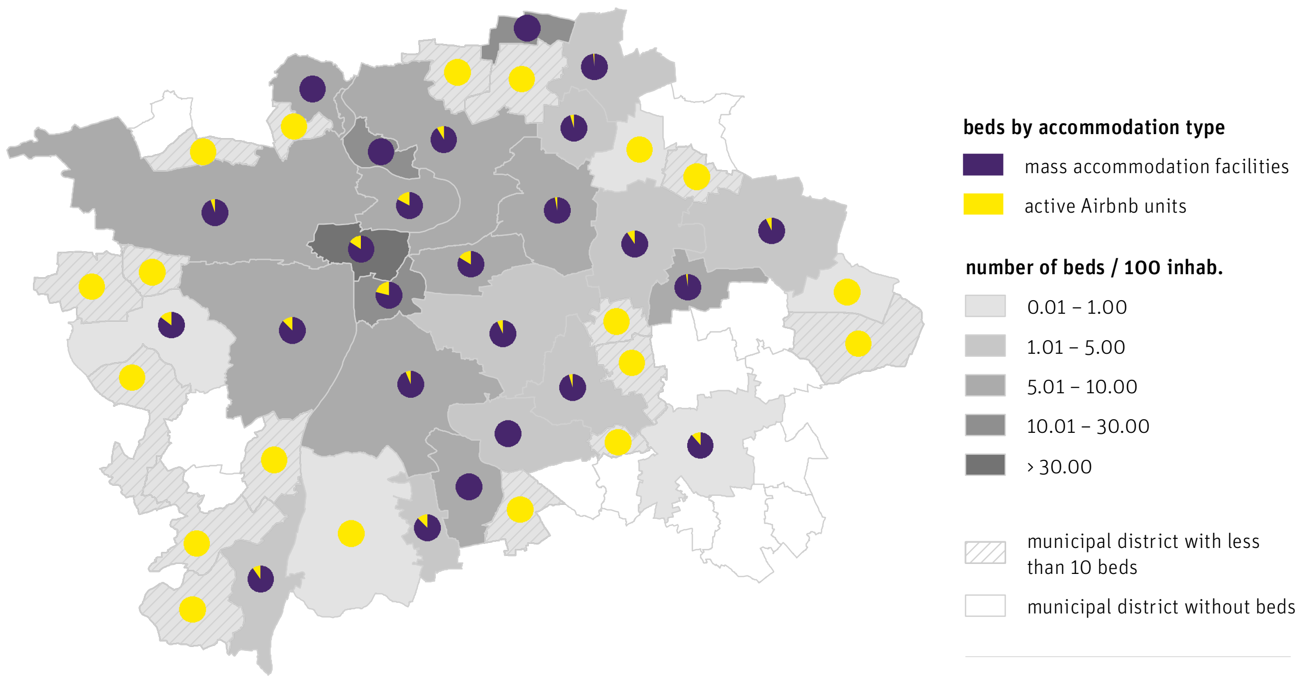
Demand for Airbnb and MAF

In 2022, **approximately 1 million guests stayed in Airbnb** in Prague (→ Fig. 2.2.2.3). The total number of overnight stays reached almost 3.6 million nights. The average length of stay for guests at the end of 2022 was 3.4 nights [Eurostat, 2023]. **Nearly 6 million guests stayed at MAF** in 2022 and spent a total of 13.4 million nights in Prague. On average, guests stayed for 2.2 nights, which is significantly less than in the case of short-term accommodation. Overall, 7 million guests stayed in 2022 through MAF and Airbnb, of which 15% stayed in an Airbnb.

Visitation of MAF and Airbnb has been **significantly impacted by the Covid-19 pandemic**, which is evident in the decline in guest arrivals in 2020 and 2021. With 2022, tourism gradually started returning to pre-pandemic numbers, which is also noticeable in the growing number of visitor arrivals. A more significant outflow of guests was evident in the case of Airbnb – in 2019 it accounted for 20% of the total number of visitors to Prague, since 2020 it has been approximately 15%.

Two indicators illustrate **the intensity of demand** for accommodation in MAF and Airbnb. The first is the number of guests per bed, which in 2022 is higher for Airbnb (72 guests) than for MAF (61 guests). The second indicator is the extent to which the actual number of guests reached the maximum potential visitation. In 2022, MAF reached 37% of the maximum potential visitation, while Airbnb reached 69%. Thus, despite methodological limitations stemming from the different method of determining the number of guests in Airbnb and MAF, it can be concluded that the **demand for Airbnb is relatively more intense than the demand for accommodation in MAF**.

2.2.2.2 Bed capacity of mass accommodation facilities and active Airbnb units in the municipal districts of Prague in 2022
IPR Prague 2023 / data: ČSÚ 2021, Inside Airbnb 2022



2.2.3 SUMMARY OF THE SUB-CHAPTER

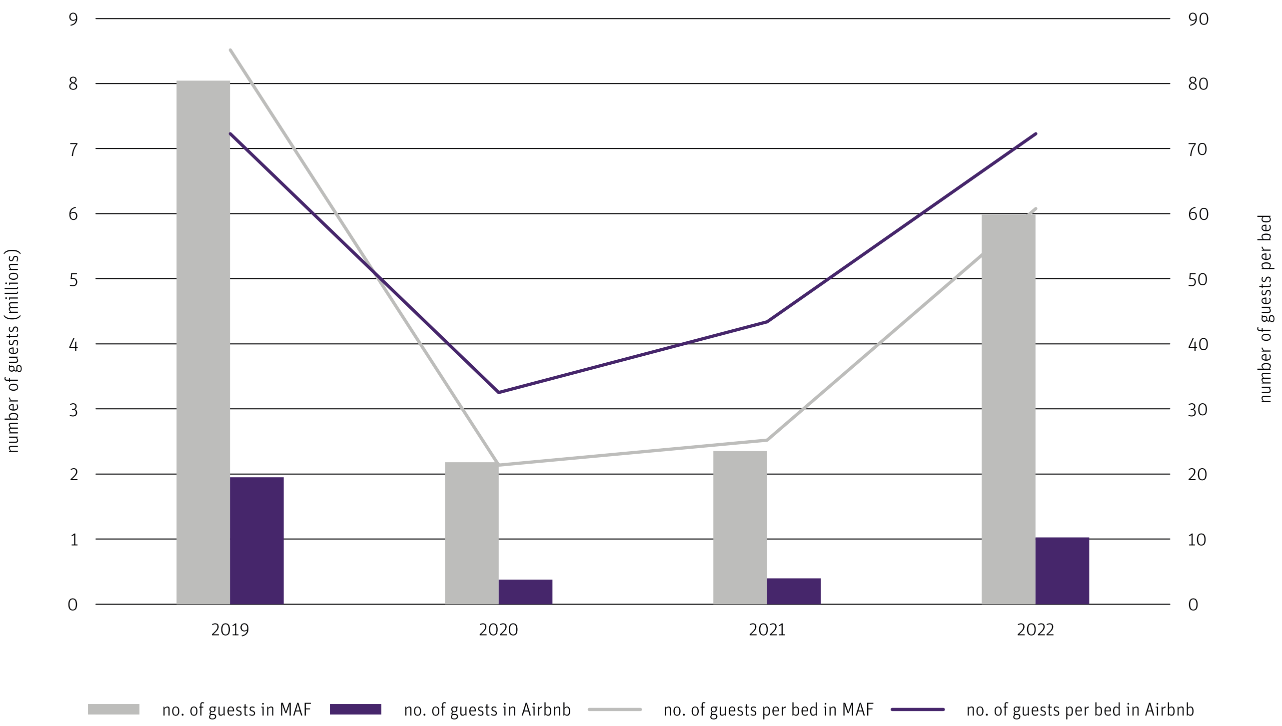
Airbnb units make up less than 1% of Prague's housing stock. A problematic aspect, however, is the extreme spatial concentration in areas closer to the historic city center. In city center areas, Airbnb apartments often represent over a tenth of the housing stock. The supply of housing for short- and long-term rentals was significantly affected by the Covid-19 pandemic. While the supply of short-term Airbnb rentals has dropped significantly, the supply of apartments for long-term rentals has significantly increased. The main reasons were probably the decline in demand for Airbnb accommodation due to the decline in tourism intensity, the shift of some of these apartments to long-term rentals, but also the overall decline in demand for long-term rentals. With the pandemic receding, the demand for short- and long-term rentals increases again, which is reflected in both the increasing number of Airbnb units and the decreasing number of long-term rental offers visible on the Sreality portal.

Yields from long-term rentals and short-term Airbnb rentals are almost identical at normal Airbnb occupancy. However, at maximum realistic occupancy, the average yield from Airbnb would be double. In the wake of the Covid-19 pandemic, Airbnb revenues have almost tripled. When comparing Airbnb and long-term rental yields, the spatial disparity between the city center and other parts of the city is, again, striking. In cadasters in the center, the revenues from Airbnb exceed revenues from long-term rentals.

At the end of 2022, approximately 113,000 beds were offered for accommodation in Prague in MAF and Airbnb. The bed capacity of MAF was seven times higher than the capacity offered by Airbnb. Similarly to Airbnb, MAF offers are significantly concentrated in the center of Prague. The concentration of Airbnb beds in the city center is, however, more pronounced. In total, 7 million guests stayed in Prague in 2022 through MAF and Airbnb, of which 15% stayed in an Airbnb. The intensity of demand for Airbnb is relatively higher than the demand for accommodation in MAF.

2.2.2.3 Number of guests in mass accommodation facilities and active Airbnb units

IPR Prague 2023 / data: ČSÚ 2023, Inside Airbnb 2019–2022



2.3 Airbnb and legislation

The sub-chapter describes the relationship between Airbnb and current legislation. It further contains a summary of proposed legislative and other measures that can be expected to influence the supply and nature of Airbnb in Prague in the future. The second topic of the sub-chapter presents the way in which four European cities approach the regulation of Airbnb. At the same time, it presents basic statistical data about Airbnb in these cities compared to Prague.

2.3.1 LEGISLATIVE FRAMEWORK AFFECTING AIRBNB IN PRAGUE

The nature of the relationship between Airbnb and current legislation is influenced by the frequent operation of short-term rentals outside the normal commercial activities of providing accommodation services. The main negatives stemming from this setup are the difficulty in enforcing the legal obligations of Airbnb hosts, the unequal business environment between Airbnb hosts and hosts in "legal" MAFs, and also the resulting financial losses for the public administration. There are no rules in the Czech Republic specifically targeted at the short-term rental sector as in the case of other foreign cities (→ chap. 2.3.2). However, the operation of Airbnb in the Czech Republic is subject to the **legislation in force, which sets a relatively broad framework of obligations**, especially for hosts offering accommodation consistently throughout most of the year in the form of whole apartments or houses. The operation of these types of accommodation can also have the most significant negative impacts on the city and its residents.

The anchoring of the operation of Airbnb rentals within the current legislation mostly concerns the interpretation of whether or not the short-term rental of an apartment through the Airbnb platform can be considered as the provision of accommodation services. In the case of identification of the operation of accommodation services, legal obligations arise for the operator of these services (i.e. the Airbnb host). In particular, this concerns the obligation to have a trade license, to fulfill tax obligations related to the business activity, to pay local fees for accommodated guests, to keep a guest register and a house book on foreigners, to report foreigners to the foreign police or to ensure the disposal of waste after guests at own expense. Another important obligation is the need to comply with specific rules concerning the construction and technical requirements for the operation of the trade according to the Trade Licensing and Building Act. A key problem is the fact that accommodation services are mostly provided in premises intended for housing and therefore not approved for the purpose of providing accommodation [Ministerstvo pro místní rozvoj, 2022].

Past or current **legislative proposals** can be seen as an effort to straighten relationships and rights between Airbnb hosts and other city constituents affected by their activities (e.g. other residents, MAF operators, local government). The most significant current bills focus on improving transparency and the monitoring of Airbnb offers and host information. The framing objective is to clearly distinguish when Airbnb is only the occasional rental of a spare room or apartment (in accordance with the principles of the sharing economy) and, on the contrary, when it is a standard business in the field of providing accommodation services. Effective monitoring should improve enforcement of existing laws.

The sub-chapter offers basic insight into the legislation related to Airbnb, including an overview of the main upcoming amendments to the law. The text is also supplemented by examples of several court decisions that illustrate the controversies arising from different interpretations of existing laws in the context of Airbnb and the sharing economy in general.

Civil Code

The Civil Code (Act No. 89/2012 Coll.) deals with the concepts of rent and accommodation, with the main particularly important factor in this respect being the purpose of using the rented property. In particular, in the context of short-term accommodation, the Civil Code defines the concept of an accommodation agreement, which provides for the possibility of providing accommodation for a temporary period of time in a facility designated for that purpose. However, accommodation establishments are governed by different legal rules (e.g. under the Building or Trade Licensing Act) than residential establishments. A key aspect is the **identification of the provision of accommodation services** (see below). If accommodation services are provided, there is also a business activity (i.e. a trade), which is governed by the relevant legislation [Ministerstvo pro místní rozvoj, 2023].

The classification of Airbnb as an accommodation service was **confirmed by the Municipal Court in Prague in August 2021** (judgment of the Municipal Court in Prague of 19 August 2021, ref. no. 6 Af 20/2020-28). In the specific case under review, it identified short-term rentals offered by the owner through the accommodation platform Airbnb as a business activity that satisfies the need for accommodation, not the need for housing. The accommodation service in this case was identified through the type of activity carried out in the property (e.g. regularity of activity, duration of stay offered, targeting of the offer, how the offer is advertised, offer of additional services). According to the Civil Code (Act No. 89/2012 Coll.), Airbnb must therefore be in this case classified as accommodation and the provision of accommodation services and subsequently comply with the relevant statutory obligations. Although this is a judgment in a specific case of the continuous commercial rental of an entire apartment, it is highly likely that it can be applied to the majority of Airbnb units in Prague, as a significant part of offers according to the data analyzed in this study corresponds to this nature.

The Financial Administration of the Czech Republic justifies in detail the distinction between accommodation services and real estate leases in its **information instruction on the tax**

assessment of the obligations of accommodation service providers effective from 1 January 2023 [Generální finanční ředitelství, 2023]. According to this guideline, the provision of accommodation through online platforms such as Airbnb can be considered as accommodation services based on the nature and duration of the provision of these services. It is the objectively assessable nature of these services that is key to the classification, including the length of time the accommodation is provided, the nature of the needs provided (housing, recreation, accommodation for seasonal workers, etc.), the nature of the ancillary services (provision of linen, cleaning of the premises used by the tenant, etc.) and other attributes. In defining the difference between rent and accommodation services, the tax administration refers to the judgments of the Court of Justice of the EU [Generální finanční ředitelství, 2023].

Trade Licensing Act

The offer of short-term accommodation through the Airbnb platform falls under the **category of accommodation service operation**. This can be inferred from the above-mentioned court judgment (judgment of the Municipal Court in Prague of 19 August 2021, re. no. 6 Af 20/2020-28), as well as from the definition of the Financial Administration of the Czech Republic following the judgments of the Court of Justice of the EU [Generální finanční ředitelství, 2023]. The Trade Licensing Act (Act No. 455/1991 Coll.) defines activities consisting in accommodation for remuneration in apartment buildings and houses, if it is operated in a business manner (i.e. independently, on one's own behalf and responsibility, for profit), as activities according to the field of "accommodation services". The scope of this field is, according to the government regulation (Regulation No. 278/2008 Coll.), the provision of accommodation in all accommodation facilities (e.g. hotel, motel, camp, hostel) and in apartment buildings, houses or buildings for family recreation. In the case of accommodation in houses, family houses or buildings for family recreation, the capacity cannot exceed 10 beds.

The operation of the accommodation services business is governed by several rules. First and foremost, it is necessary to obtain the relevant trade license. According to this authorization, the premises where the accommodation is provided must comply with the characteristics of a trade establishment with the relevant requirements. The premises for the provision of accommodation services (i.e. the apartment) must be approved for this purpose in accordance with the Building Act. The entrepreneur (i.e. the host) must notify the relevant trade authority of the commencement or termination of the business. The establishment (i.e. the apartment) must be permanently and visibly marked on the outside, including the hours of operation and the name of the person responsible for the operation of the establishment. The operator (i.e. the host) must comply with other obligations in connection with the performance of the business of accommodation services, including the Public Health Act (Act No. 258/2000 Coll.), the Fire Protection Act (Act No. 133/1985 Coll.) or the Waste Act (No. 541/2020 Coll.). In connection with the Act on Local Fees (Act No. 565/1990 Coll.), they must also collect the relevant fees and keep a register of guests (see below). According to the Act on the Residence of Foreigners on the Territory of the Czech Republic (Act No. 326/1999 Coll.), in the case of accommodation of foreigners, they must report the accommodation of the foreigner within 3 working days and keep a house book in which they record the data on the accommodated foreigners according to the relevant law. Similarly, as a business, hosts must comply with the tax obligations imposed by law (see below).

Already in 2020, the City of Prague used its legislative initiative and submitted a **draft amendment to the Trade Licensing Act** to the Chamber of Deputies of the Parliament of the Czech Republic [Zastupitelstvo hlavního města Prahy, 2021]. However, the hearing did not make it onto the agenda of the Chamber of Deputies before the October 2021 elections, so Prague submitted the proposal to the new Chamber of Deputies in November 2021 (Parliamentary Document No. 41) The proposal is currently at first reading, however, its consideration has been postponed and proposed for the agenda of the House of Commons from 16 January 2024. The amendment should allow municipalities to issue regulations regulating accommodation services provided in apartment buildings or houses outside of traditional accommodation facilities. The municipality could, for example, determine within its territory for how long accommodation can be provided in apartments or family houses, limit the number of overnight stays per calendar year or set a maximum number of persons accommodated, etc. In the future, this proposal may provide Prague with an additional effective tool to target Airbnb regulation more specifically as needed.

Building Act

The operation of Airbnb is problematic from the point of view of the Building Act (Act No. 183/2006 Coll.) mainly due to the **offer and operation of accommodation services in premises not intended for this purpose** or in contradiction with the approval of the property in accordance with the valid zoning documentation. According to their purpose, buildings must meet the requirements for land use and technical requirements according to the relevant ordinances and regulations. Apartments intended as living and accommodation units have different requirements, e.g. connection to technical and transport infrastructure, parking capacity, ventilation requirements, noise protection or building safety. **The Methodological Manual of the Ministry of Regional Development for the Application of Building Law** for Building Authorities directly states that "an apartment building or house cannot be used spontaneously for the provision of accommodation services, as this leads to use by the owner of the building that is in contradiction with its intended purpose". Again, therefore, it is a question of the classification of the activity that is carried out in the housing unit. In the context of the activities of building authorities, a suggestion from the trade office can be an important basis for verifying the actual use of the property, providing information on whether accommodation services are being operated in the building. Alternatively, the building authority may use information from the trade register in cases where the provision of accommodation services within Airbnb must meet the relevant legal conditions under the Trade Licensing Act [Ministerstvo pro místní rozvoj, 2022].

In the case of the Building Act, we can again mention the already cited **court judgment** (Judgment of the Municipal Court in Prague of 19. 8. 2021, ref. no. 6 Af 20/2020-28), which established the rental of an apartment through Airbnb as a service that satisfies a need for accommodation, not a need for housing. According to this designated use of the property, it is therefore necessary to proceed with the verification of the obligations arising from the Building Act. Similarly, we can mention the **decision of the building authority** in Prague 1, subsequently confirmed by the Department of Building Regulations of the City of Prague [Magistrát hl. m. Prahy, 2021]. It examined a complaint from an association of owners of residential units (SVJ) in the center of Prague about the use of one residential unit as an accommodation facility. In this case, the authority ruled that the apartment must meet the same building regulations as the accommodation units. Again, it is important to note that the decision is relevant to a specific single case, however, it does set a potential precedent for apartments used in a similar manner.

Act on Local Fees

In connection with the Act on Local Fees (Act No. 565/1990 Coll.), hosts must **collect a fee from guests** (CZK 50 per day per guest). All short-term stays of up to 60 days are subject to the fee, regardless of the place and purpose of the stay. Fees must also be paid by hosts who offer short-term accommodation in their own apartments or houses, regardless of whether or not the place of accommodation is approved as an accommodation facility or whether the apartment directly defines the provision of accommodation services. The host must submit a registration notification to the fee administrator (in Prague, the authorities of the relevant municipal districts) within 30 days from the date of commencement of the activity consisting in the provision of paid accommodation. Among other things, the notification must include the address of the stay, i.e. the specific address of the Airbnb unit offered. This data (together with, for example, data from the Trade Register) can contribute to more effective monitoring of Airbnb and to a more rigorous control of compliance with the legal rules. At the same time, hosts must **keep a register of guests**, which means keeping a paper or electronic log book for each place where they provide paid accommodation.

It is possible to estimate the financial losses of Prague in connection with the collection of local fees. According to calculations in this study, an estimated 3.6 million overnight stays were made in 2022. If none of the Airbnb hosts paid the local fees from their stay, Prague's financial losses would amount to CZK 180 million. In 2022, a total of CZK 557 million was collected in local fees in Prague in all types of accommodation facilities [Czech Tourism, 2023].

Amendment to the Act on Certain Conditions of Business in the Field of Tourism

The current Czech government has committed in its program statement to enforce clear rules for shared accommodation that would differentiate occasional room or apartment rental from standard business and improve enforcement against hosts and platforms operating in the Czech Republic [Vláda České republiky, 2023]. One of the steps leading to the fulfillment of this declaration should be an **amendment to the Act on Certain Conditions of Business in the Field of Tourism** (Act No. 159/1999 Coll.) [Ministerstvo pro místní rozvoj, 2023]. The proposal of the Ministry of Regional Development went through the comment procedure in August 2023. If the amendment successfully passes the entire legislative process, it should enter into force in July 2025. The law should build on the EU regulation on the collection and sharing of data relating to short-term accommodation rental services and amending Regulation (EU) 2018/1724 [Rada Evropské unie, 2023]. The Regulation unifies the European approach to data sharing with short-term accommodation platforms and the registration process for hosts. The EU Regulation is likely to be adopted in autumn 2023 and will then have to be incorporated into national legislation by individual EU countries.

The amendment to the Act on Certain Conditions of Business in the Field of Tourism (Act No. 159/1999 Coll.) will set a clear **obligation for Airbnb hosts to register with the relevant authorities and electronically report guest data to them**. It also sets similar operating conditions for Airbnb providers as for operators of traditional accommodation services. The amendment should help to **clarify the identification of Airbnb units and make existing laws more effectively enforceable**. While there is currently legislation in place that Airbnb operators must comply with, this is often not the case. At the same time, the authorities do not have effective tools to identify operators. Registration will be performed through a **new online register** (eTurista) where accommodation providers will register and at the same time fulfill other obligations towards the public administration (e.g. towards the trade office, tax authorities, municipalities collecting local residence fees). Hosts will also fill in the register with the address of the accommodation unit, including the apartment number or the location of the apartment within the apartment building, and the number of beds offered. The above mentioned EU regulation will also make it possible to require Airbnb to advertise only those accommodations that meet the registration conditions, i.e. have a unique registration number. States will have the option to suspend these numbers or cancel them outright if hosts violate their legal obligations.

Other legal obligations of hosts

Among the obligations of Airbnb hosts that have not yet been mentioned are, in particular, the rules related to the operation of business activities, i.e. the operation of the accommodation services business. Firstly, it is necessary to have the relevant trade license for the provision of accommodation services. In addition, the host must **file the relevant tax return and pay**

income tax. They must also **pay social security and health insurance**. Furthermore, the host becomes a person liable for **value added tax (VAT**) as he/she carries out an economic activity. The obligation to register as a VAT payer applies when the annual turnover exceeds CZK 2 million. However, even hosts who are not subject to VAT are subject to rules regarding the use of the Airbnb platform and the associated fees. Last but not least, the host must pay the relevant **tax on the property** provided for the business and, as a natural person engaged in business, must keep proper accounting records.

In general, inefficiently levied taxes related to accommodation income are among the areas with the highest financial losses for the public sector, along with non-tax charges (e.g. residence fees) and the **taxation of the income of the accommodation intermediary** (i.e. Airbnb). The last-mentioned losses are addressed by the **amendment to the Act on International Cooperation in Tax Administration** (Act No. 164/2013 Coll.). The amendment introduces the application of the new EU directive on international cooperation, the so-called DAC 7 (Council Directive (EU) 2021/514) into national legislation. As of January 2023, digital platforms must report to the relevant tax authorities the identification of sellers using the platform (i.e. hosts) and their income and expenses arising from their use of the platform for the previous calendar year. The first report will be due in January 2024. Primarily, the obligation applies to the platforms themselves, but the platforms will have to cooperate with the users of the platforms (i.e. the hosts) to obtain the relevant information. The EU Directive and the relevant amendment affect four main areas of digital entrepreneurship: the provision of immovable property (e.g. Airbnb), the provision of a means of transport, personal services and the sale of goods.

2.3.2 EXAMPLES OF REGULATION FROM ABROAD

Similarly to Prague, short-term rentals and Airbnb are influencing the development of other European cities, especially the capitals, larger in population and attractive for tourists. Related to this is a similar type of potential impact of Airbnb on cities and their residents. In the aftermath, there are then different ways in which the public administration is approaching Airbnb. Most approaches aim to protect the affordability of housing for residents and to maintain a sustainable balance between commercial and residential functions in individual towns or parts of towns. The regulations are based on both national and regional legislation and are usually refined by local ordinances. In general, approaches can be classified from the absence of any regulation (laissez-faire approaches) to the extreme form of a complete ban on Airbnb in a given city [Nieuwland & van Melik, 2020]. Most cities tend to take the middle way – allowing short-term rentals, but under strictly defined conditions and set penalties for violations.

This topic **summarizes the Airbnb regulations in selected European cities** in force at the time of this study. Specifically, the cities of Amsterdam, Barcelona, Paris and Vienna are presented. These cities were already included in the previous Airbnb analysis prepared by IPR Prague in 2021, which allows to track the long-term development of regulations. The information on regulations is mainly based on information provided on the official websites of the cities or other relevant links. The use of the city's official website was chosen primarily because the information provided here serves the citizens or users of the city, and therefore it is assumed that this information is up-to-date and verified. The description of regulations is complemented by basic data on Airbnb for selected cities (→ Fig. 2.3.2.1).

The featured cities differ from each other in the specific rules for regulating Airbnb. However, all of them share a **desire for some form of mandatory registration of Airbnb listings**. The registration obligation can be seen as an effort to improve the enforceability of both existing rules for the operation of accommodation services and the relevant rules for the use of real estate, as well as the newly introduced rules for the operation of short-term accommodation through an online accommodation platform. Enforcement of regulations is one of the most serious problems associated with Airbnb operation [Nieuwland & van Melik, 2020]. Cities also tend to impose stricter conditions for professional and purely commercial rentals of whole apartments and, on the contrary, favor to some extent renting part of the property with the presence of the host (in line with the principles of the sharing economy).

Amsterdam

Property owners or persons who have permission from the owner may provide apartments, houses or houseboats for short-term rentals. The city distinguishes between two types of short-term rentals – **holiday rentals** and **bed & breakfasts**, which are subject to different operating rules. Beyond short-term rentals, mainly for tourists and visitors, Amsterdam also defines short-term stays. These include stays from 7 days to 6 months, are intended for temporary stays of international business travelers and workers and are governed by different operating rules than short-term rentals.

A holiday rental is defined as an offer of accommodation in the entire property when the resident is not present at the accommodation. To operate it, you need to apply for a permit and then pay for it (EUR 48.10). The applicant must also be registered as a resident of the city at the holiday rental address. The permit is valid only temporarily (until 1 April of the following calendar year). The accommodation offer must also be registered in the national registration system for tourist rentals. The relevant registration number must be provided on the websites where the rental is advertised (Airbnb, Booking.com, etc.). The rental may not exceed 30 days per calendar year and may accommodate no more than 4 persons at a time. At the same time, the rental must not be located at the same address as the bed & breakfast. Prior to each individual provision of accommodation, a notification shall be filed with the City indicating the guest's arrival and departure dates, the holiday rental permit number, and the rental registration number. The hosts must also comply with the relevant tax obligations (tourist tax, income tax) and ensure that the safety standards of operation are met (e.g. fire protection). Failure to comply with the prescribed obligations exposes hosts to fines of tens of thousands of euros.

Bed & breakfast is more of a shared accommodation. It is therefore the rental of only part of the property. When accommodating guests, the host must also live in the unit and be present at night. Therefore, the unit cannot be offered in the absence of the host (during his/her vacation, business trip, etc.). The rental location must be the host's primary residence (they must have spent at least 6 months at the address in the past 12 months) and the host must be registered as a resident of the city. A maximum of 40% or 61 m^2 of the property may be rented and the space offered for accommodation must be a fixed part of the space occupied by the host. A maximum of 4 persons can be accommodated. As with holiday rentals, it is necessary to apply for an operating permit and then pay for the permit (EUR 362.4 for 8 years). The permit shall include the exact designation of the rooms to be rented. Unlike for holiday rentals, individual municipal districts are limited in the number of permits they can issue. The accommodation offer also needs to be registered in the national registration system for tourist rentals. The registration number must be provided on the websites where the rental is advertised (Airbnb, Booking.com, etc.). Unlike holiday rentals, each rental does not need to be reported to the city, but a register with guest information needs to be kept. Failure to comply with the prescribed obligations exposes hosts to fines of tens of thousands of euros.

Barcelona

The rules for the provision of short-stay accommodation are governed by the **Regional Tourism Act of Catalonia**, the 2020 update of which has allowed individual municipalities to adapt the conditions in their territory. On the basis of this change, the City of Barcelona created the **PEUAT** (Plan especial urbanístico de alojamientos turísticos) document, which came into force on 22 January 2022. It sets out both the general conditions for the provision of short-term accommodation and the conditions in individual municipal districts. The basic rules distinguish between **housing units for tourist use** (HUT – habitatges d'ús turístic) and **shared housing**. At the same time, the rules divide Barcelona into territorial units with specific rules. Both types of accommodation can offer a maximum continuous duration of 31 days of accommodation, and operators are required to register and obtain a permit. The operator of the accommodation must provide the occupants of the unit and neighbors in the apartment building with a telephone number to contact in the event of problems arising with the operation of the accommodation. Operators must also comply with relevant tax obligations (e.g. income tax, VAT) and pay tourist taxes.

2.3.2.1 Airbnb units in selected European cities in March 2023
IPR Prague 2023 / data: Inside Airbnb 2023

name of the city	total number	share of active units (%)	number of units per 1,000 inhabitants		share of units the type of unit (%)				median price per unit/night (EUR)	
			units total	units active	whole apartment/ house	hotel room	private room	shared room	units total	units active
Amsterdam	6,998	54.9	7.6	4.2	73.6	0.9	24.9	0.6	186	195
Barcelona	15,655	59.9	9.4	5.7	60.4	1.0	37.6	1.0	99	120
Paris	56,726	43.2	26.4	11.4	85.3	1.6	12.6	0.5	110	144
Prague	7,930	69.1	6.1	4.2	78.9	2.3	18.0	0.8	75	74
Vienna	12,525	56.3	9.6	5.4	78.6	0.4	20.4	0.6	70	76

Housing Units for Tourist Use (HUTs) consist of apartments rented repeatedly for a financial consideration for seasonal stays. The activity falls under the offer of accommodation services, so the operator must have the relevant permits for the operation of these services. At the same time, the dwelling unit must meet all relevant technical, sanitary and safety requirements. The maximum number of persons accommodated must not exceed the number specified in the approval of the property and must not exceed 15 persons. The unit registration number must be stated and clearly visible in all activities related to the operation of the units (marketing, offer on platforms, physical marking of the place of residence, etc.). The number of HUTs that can be operated in Barcelona is limited to a specific maximum number. A new HUT license can only be obtained if another unit is no longer offered and only in certain areas of the city as defined by PEUAT.

As in the case of Amsterdam, **shared accommodation** is an accommodation offer in which the host must be present in the accommodation unit at the time of the guest's stay. A maximum of 4 people can be accommodated in the unit at any one time. The website where the unit is offered must clearly state the maximum number of guests and the relevant license to operate the shared accommodation.

A major contribution of the **PEUAT document** is the division of Barcelona into 4 zones and several localities with specific rules for the provision of short-term accommodation. The rules respond to the significant spatial concentration of short-term accommodation in the city center and the associated overtourism. They are trying to disperse accommodation more into other parts of the city (but still under very strict conditions). The most stringent conditions are set for the first zone (the city center), which is the most heavily visited. Any addition of housing units for tourist use (HUT) is prohibited here. New shared housing units can then only be created by converting existing tourist accommodation. In the event of termination of a housing unit for tourist use in this zone, a new unit may be created for this purpose in other zones of the city.

Paris

The main mechanism determining the conditions for the provision of short-term accommodation is the **place of residence of the host**. It is easiest to offer accommodation in cases where the accommodation address is also the **host's main residence** (they live here for at least 8 months of the year). In this case, the offer must be registered. The registration number must be provided on the online platform (e.g. Airbnb, Booking.com) of the accommodation advertised. The unit can be rented for a maximum of 120 days in a 12month period. One guest can stay for a maximum of 90 days. At the same time, accommodation cannot be offered in apartments designated for social housing.

Rules for the operation of offers in properties **other than the host's main residence** are divided according to whether the operator wishes to offer accommodation in properties designated for residential or commercial activities according to the applicable zoning plan (Le Plan local d'urbanisme). In the case of **properties zoned for residential use**, an application to change the residential function to a commercial function is required. The use of the property must be further changed to the operation of accommodation services. To **lease commercial premises** for the purpose of offering accommodation services, it is necessary to apply for a permit for the operation of these services. For both types of offers, registration of the accommodation offered is again required and a registration number must be obtained, which must be provided with the advertised accommodation on the Airbnb web page. Airbnb accommodation providers can be fined up to tens of thousands of euros for failing to comply with the prescribed conditions.

Vienna

The rules for the operation of short-term accommodation are primarily regulated by the Vienna Building Act, according to which the **regular provision of residential space for short-term accommodation for remuneration** (commercial use of residential space) **is not permitted in residential zones in the central parts of the city.** So basically, it is not possible to run an Airbnb in the sense of renting out the entire property during most of the year. The only option is to offer **shared accommodation** in line with the principles of the sharing economy. The offer of this type of accommodation must be for the occasional earning of the hosts only and the use of the property must be predominantly for self-catering accommodation in terms of time and space. Over and above the shared accommodation offer, whole apartments used primarily for student accommodation during the holidays can be rented out during the year. It is also possible to offer the rental of the entire apartment if the resident is on holiday. Renting an apartment for the purpose of tourist accommodation requires the consent of the owners' association of the building in which the apartment is located (according to a 2014 Supreme Court decision).

A trade license is not required for the provision of short-term rentals where no more than 10 beds are offered, no additional services such as regular meals are offered, the services are provided by ordinary household members as a sideline activity in the household and the accommodation provider is the occupier of the dwelling itself. Hosts must also maintain a guest book in electronic or paper form and report guest data to the City on a monthly basis. Each host is required to pay local tourist taxes for guests staying at the property, set up a local tax account and register on the City of Vienna portal. At the same time, online accommodation platforms must report information on registered accommodation and its providers to the City of Vienna.

2.3.3 SUMMARY OF THE SUB-CHAPTER

The current Czech legislation sets a broad framework of legal obligations for Airbnb operators when the rental can be considered as the provision of accommodation services. In particular, these are units that can be objectively identified as operating a business aimed at satisfying the demand for accommodation rather than housing. The primary problem of Airbnb regulation in the Czech Republic is therefore not the absence of legislation, but the lack of information on individual rentals that could improve the enforceability of existing rules.

Many foreign cities, especially major or touristic ones, are struggling with Airbnb and its negative impacts. Most cities do not ban Airbnb completely and leave the possibilities of operating rentals, but under strictly defined conditions and set penalties. The specific rules vary between cities, but all share a desire to introduce mandatory registration of individual rentals. In the Czech Republic, an amendment to the amendment to the Act on Certain Conditions of Business in the Field of Tourism is heading in a similar direction. This should set a clear obligation for Airbnb hosts to register with the relevant authorities and report guest data.

Apart from efforts to improve the enforceability of existing rules through the registration requirement, most foreign regulations regulate Airbnb through piecemeal legislative measures ranging from the local to the national level. Most of these measures depend on the local context, and often differ even between neighborhoods in different cities. Cities often try to strictly regulate purely commercial accommodation in the form of renting out entire apartments throughout the year (e.g. by setting a maximum number of days for renting, or a maximum number of permits issued). Simultaneously, they set the conditions allowing the rental of the part of the property where the host lives at the same time as the guest. The aim is to allow Airbnb to operate in the sense of shared accommodation according to the original principles of the sharing economy. In the Czech Republic, recently, the possibility of setting similar rules has been the focus of the proposal for an amendment to the Trade Licensing Act, which would allow individual municipalities to issue their own regulations regulating accommodation services outside traditional accommodation facilities. This would allow regulation to be better targeted to the specific local context and be an effective complementary tool to Airbnb governance.

3. CONCLUSION

The study examines the phenomenon of short-term private accommodation in Prague using the example of the Airbnb platform. The first objective is to understand the nature of these rental offers, their spatial distribution and their temporal evolution between 2018 and 2023. The second objective is to understand the link between Airbnb and other components of the city, specifically in relation to residents, housing stock and traditional accommodation services. Thirdly, the study aims to evaluate the legislation affecting Airbnb in Prague and to describe examples of approaches to regulating Airbnb in selected European cities. The study is conducted at the time of the gradual recovery of tourism in Prague after the period of the Covid-19 pandemic. The pandemic and its impact emerge in the analysis as a key factor influencing Airbnb supply and its development.

In March 2023, there were **7,930 Airbnb units** offered in Prague, of which almost **70% were identified as active**. The number of offers declined significantly in 2020 and 2021 with the drop in tourism intensity during the Covid-19 pandemic. As the pandemic faded and tourism intensified again, the number of offers increased but continues to significantly lag behind pre-pandemic levels. **Continued growth in the number of units can be expected** in the future with the renewal and further strengthening of tourist demand. Most of the units are offered in the long term **as a whole apartment**. Most of the offers are accommodation **in smaller units** – on average there are 2.5 beds per unit.

Airbnb in Prague is highly commercial in nature. In March 2023, a total of **2,834 hosts** had offers on Airbnb, with **2.8 units per host**. One third of the hosts are also multi-hosts, i.e. they rent 2 or more units. However, these **multi-hosts rent out almost 80% of all units** in Prague, and nearly 40% of units are rented out by a group of multi-hosts with 10 or more units. With time, the commercialization of Airbnb in Prague is gaining strength – **the number of units per host and the proportion of multi-hosts among hosts is increasing**.

Airbnb units are **extremely concentrated in the city center** in terms of absolute and relative values of almost all the indicators analyzed. The five cadasters with the largest number of units (Nové Město, Staré Město, Vinohrady, Žižkov, Smíchov) account for two thirds of all Prague offers. Airbnb also represents a significant load for the cadasters of Karlín, Malá Strana, Josefov, Vyšehrad, and Hradčany with a high relative number of units (per 1,000 inhabitants). **In areas closer to the historic center, Airbnb often accounts for over a tenth of the housing stock**. During the Covid-19 pandemic, the spatial concentration strengthened. In the central parts of Prague, compared to other parts of the metropolis, offers of whole apartments, more expensive offers and also more units offered by multi-hosts are more represented in the long term.

The aggregate accommodation capacity of mass accommodation facilities (MAF) and Airbnb reached approximately 113,000 beds at the end of 2022. **MAF bed capacity** was **seven times higher than Airbnb's**. In 2022, a total of **7 million guests** stayed through MAF and Airbnb, of which **15% preferred to rent through Airbnb**. On average, Airbnb units are occupied for a third of the year. Visitor numbers and occupancy rates for both types of accommodation dropped significantly with the Covid-19 pandemic. The intensity of demand for Airbnb is currently relatively greater than the demand for accommodation in MAF. However, it has probably not yet been matched by a sufficient supply of Airbnb accommodation.

The Covid-19 pandemic has significantly reduced the overall volume of **Airbnb supply in Prague but has not fundamentally changed its character**. The characteristics of Airbnb with the potential for the most serious negative impacts on the city and its inhabitants persist or even increase – the spatial concentration in the center of Prague is intensifying, the long-term dominance of whole-apartment rentals and the purely commercial nature of Airbnb is strengthening. Along with the upward trend in the number of offers over the last few months, the volume of supply is likely to catch up with pre-pandemic levels. Unless current trends in the nature of the offers change, **the negative impacts of Airbnb on the city and its residents can be expected to intensify in the future** and may be more intense even compared to the pre-Covid-19 pandemic period. However, due to the dynamic development of tourism, the uncertain situation on the housing market and the potential application of new legislative measures, the development of Airbnb in Prague cannot be clearly predicted.

Most **foreign regulations** aim to protect housing affordability for residents and maintain a sustainable balance between commercial and residential functions. Cities with Airbnb regulation in place generally allow short-term rentals, but under **strictly defined conditions and set penalties** for violations. Although the foreign cities presented in this study differ in the specific nature of the measures put in place, they share a desire to introduce **some form of mandatory registration** of Airbnb listings, which aims to improve the monitoring of Airbnb and consequently the enforceability of the rules set. Cities also tend to impose stricter conditions on professional and purely commercial rentals of entire residential units, and conversely, to some extent, favor rentals of parts of properties with a host present.

In the Czech Republic, there are currently **no rules specifically aimed at the short-term rental sector** as in the case of other foreign cities. However, the operation of Airbnb in the Czech Republic is subject to **existing legislation**, which sets a **relatively broad framework of obligations for hosts**. A key factor in this regard is the interpretation of whether or not the short-term rental of an apartment through the Airbnb platform can be considered as the provision of accommodation services. In the case of identification of the operation of accommodation services, legal obligations arise for the operator of these services (i.e. the host), for example in terms of the Trade Licensing Act, the Building Act or compliance with tax obligations.

Thus, a critical parameter for **effective Airbnb management** is the ability to obtain detailed information about specific Airbnb units in order to identify accommodation service operations, especially in the case of purely commercial units offering entire apartments for rent on a consistent basis throughout most of the year. Thus, **the primary problem** is not inadequate legislation, but rather a **lack of information on units that could contribute to the improvement of the enforceability of existing legal obligations**. The introduction of effective registration tools and more efficient compliance with applicable laws is currently targeted by the emerging amendment to the Act on Certain Conditions of Business in the Field of Tourism (Act No. 159/1999 Coll.). At the same time, many foreign cities often have additional rules governing the operation of Airbnb, allowing for better targeting of regulations to the needs of specific cities. The amendment to the Trade Licensing Act (Act No. 455/1991 Coll.), which the capital city submitted to the Chamber of Deputies of the Parliament of the Czech Republic, should contribute to this.

The presented study relatively reliably shows the basic development trends of Airbnb in Prague. However, the interpretation of the results should be approached with caution due to the **limitations of the data used**. The analysis works primarily with Inside Airbnb data, which mirrors the information about listings on the Airbnb platform in a fairly detailed manner. However, information from the platform itself can be problematic and may not contain reliable data. At the same time, some of the information is not available at all and had to be calculated or estimated indirectly based on additional statistics for the analysis. This may again lead to certain distortions and inaccuracies. The new accommodation services registration system that is currently being developed could enrich the data base on Airbnb and, as a result, refine and deepen the analytical possibilities of future studies of Airbnb in Prague.

MAIN ATTRIBUTES OF AIRBNB IN PRAGUE

- In March 2023, there were 7,930 Airbnb units offering 20,169 beds in Prague. A total of 5,482 units (69%) were active. The temporal evolution of the number of units reflects the impact of the Covid-19 pandemic on tourism. The highest number of units was offered from 2018 to early 2020 (nearly 14,000 units). Between 2020 and 2021, the number of units almost halved. Since 2022, the number of units has been increasing, but still lags behind pre-pandemic levels.

- 79% of Airbnb units are rented out as a whole apartment or house, while a fifth are private rooms. The majority of listings (64%) are small units with one or two beds. At any one time, 30,102 people can be accommodated through Airbnb, with 21,723 guests in active units. The median price per night per unit is CZK 1,839.

- Airbnb is significantly concentrated in the center of Prague and its surroundings. The cadastral units of Nové Město, Staré Město, Vinohrady, Žižkov and Smíchov account for 66% of all listings in the metropolis. The extreme pressure on the center is underlined by the more than 20 Airbnb beds per 100 inhabitants in the cadasters of Staré Město, Josefov, Nové Město and Malá Strana.

- In March 2023, 2,834 hosts offered accommodation through Airbnb. There are 2.8 units per host. A third of hosts are multi-hosts who rent out 77% of all units in Prague. The number of units per host is increasing over time.

AIRBNB AND OTHER URBAN COMPONENTS

- Airbnb units rented out as a whole apartment or house make up less than 1% of Prague's housing stock. In the cadasters in the center of Prague, the share of Airbnb apartments usually exceeds one tenth of the housing stock.

- The average annual yields from long-term rentals and short-term Airbnb rentals are almost identical under normal Airbnb occupancy. In the center of Prague, Airbnb revenues exceed those from long-term rentals.

- At the end of 2022, there were approximately 113,000 beds offered in Prague in mass accommodation facilities (MAF) and Airbnb. The bed capacity of MAF was seven times higher than that of Airbnb. The concentration of Airbnb in the center of Prague is more pronounced than MAF.

- In 2022, approximately 7 million guests (15% in Airbnb) were accommodated through MAF and Airbnb. The intensity of demand for Airbnb is estimated to be relatively higher than the demand for accommodation in MAF.

AIRBNB AND LEGISLATION

- The current Czech legislation sets out obligations for Airbnb operators, particularly in cases when short-term rentals can be qualified as the provision of accommodation services. This classification is met in particular by Airbnb units that can be objectively determined as a business activity of satisfying the need for accommodation rather than housing. These are usually units rented out consistently throughout most of the year in the form of entire apartments.

- The main legal obligations of the hosts include the requirements associated with the operation of a business, compliance with the related construction and technical conditions of operating a business according to the Trade Licensing Act and the Building Act, compliance with tax obligations, payment of local fees for guests, ensuring the disposal of waste after guests and others.

- The primary problem with Airbnb regulation is not the absence of legislation, but the lack of information about individual Airbnb rentals and the subsequent difficulty in enforcing existing rules. An amendment to the Act on Certain Conditions of Business in the Field of Tourism should contribute to a more precise identification of Airbnb units.

- The possibility of setting specific regulatory measures for Airbnb is the focus of the proposal of the amendment to the Trade Licensing Act. It will enable municipalities to issue regulations regulating accommodation services provided in apartment or family houses beyond traditional accommodation facilities.

4. INDEXES AND LISTS

RELATED LEGISLATION

The generally applicable rules and regulations are stated in the latest valid version as amended, unless otherwise stated.

Laws

Act No. 89/2012 Coll., Civil Code

Act No. 455/1991 Coll., on Trade Licensing

Act No. 258/2000 Coll., on the Protection of Public Health

Act No. 133/1985 Coll., on Fire Protection

Act No. 541/2020 Coll., on Waste

Act No. 565/1990 Coll., on Local Fees

Act No. 326/1999 Coll., on the Residence of Foreigners on the Territory of the Czech Republic

Act No. 183/2006 Coll., on Spatial Planning and the Building Code (Building Act)

Act No. 159/1999 Coll., on Certain Conditions of Business in the Field of Tourism

Act No. 164/2013 Coll., on International Cooperation in Tax Administration

Regulations

Government Regulation No. 278/2008 Coll., on the content of trades

Decisions

Judgment of the Municipal Court in Prague of 19 August 2021, ref. no. 6 Af 20/2020-28

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Airbnb in Prague:
Analysis of the Status and Development of Short-term Private Rentals 2018–2023

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