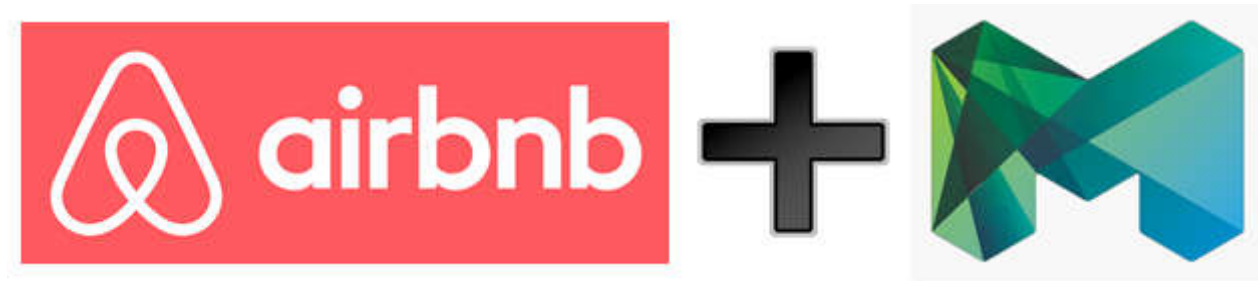# A Census of Airbnb in Melbourne

By Andy Krause[1] & Gideon Aschwanden[2]

Highlights

1. **Market Size** 17,500 properties are currently listed for booking in the Melbourne Metro region.

2. **Growth Trend:** The number of monthly bookings has increased 6-fold in the last 2 years.

3. **Local Clusters:** The largest concentration of Airbnb properties are in the CBD near Southern Cross Station. Other clusters exist on the northern end of Chapel Street, St Kilda, the Carlton/Fitzroy/Collingwood area and the southern end of Bay Street in Port Melbourne.

4. **Revenue:** During the last summer approximately A$12 to A$14 million per month was spent on Airbnb in Melbourne

5. **Hosts:** 70% of all hosts have only one property.

Introduction

This research presents a `census' of the current state of Airbnb in the Melbourne metropolitan region.[3] We document and analyse trends for the 22-month time period from October 2014 through August 2016. The data that we analyse has been obtained from www.airdna.co, a data provider specializing in Airbnb data collection and analysis.[4] The data includes information on each property – such as location, bedrooms, bathrooms, first date on the website, etc. – as well as information on the daily booking status and price of each property for each day since October 2014.

Definitions

It is important to begin by discussing a few critical definitions or fundamental components of Airbnb and, thereby, Airbnb data. The first is booking status. Airbnb units can be in one of three states:

1. **Available**: Open for booking but not booked
2. **Reserved**: Booked for the night
3. **Blocked**: Not open for booking at the owner's request

Next, Airbnb units can be listed as one of three types relating to the extent of the property which is able to be booked:

1. **Entire Home/Apt**: The entire home or apartment is available
2. **Private Room**: One room within a house or apartment is available
3. **Shared Room**: A bed within a room shared by other occupants is available

And third, Airbnb units are classified into a property type. There are 19 different property types within the Melbourne data. The most common are Apartments and Houses, the least common are Igloo, Tent, Treehouse and Yurt.[5] For the sake of this analysis, we will collapse these twenty types into three types:

1. **House**: Includes properties labeled 'House' or 'Townhouse'
2. **Apartment**: Includes properties labeled as 'Apartment' or 'Condominium'
3. **Other**: Includes properties labeled as 'Bed & Breakfast', 'Boat', 'Bungalow', 'Cabin', 'Camper/RV', 'Chalet', 'Dorm', 'Earth House', 'Hut', 'Igloo', 'Loft', 'Other', 'Tent', 'Treehouse', 'Villa' and 'Yurt'.
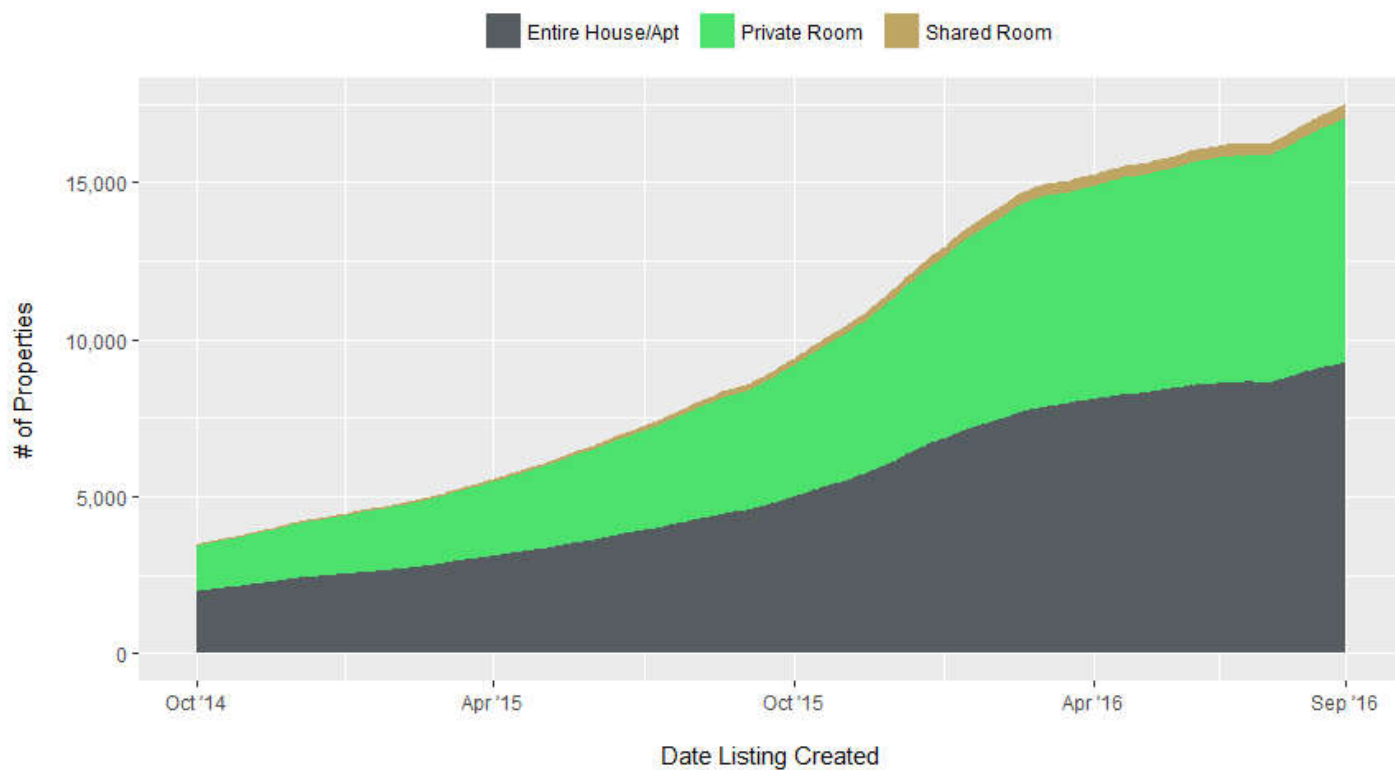
Analysis

Before discussing our analysis, three points about the data should be noted. First, we have removed a number of suspect observations due to outlier values. Next, some daily observations are missing from the data in later 2014 and early 2015 and have been confirmed as unavailable from the data provider. We impute these observations in order to maintain accurate aggregation in our analyses. Finally, because so few 'Other' property types and 'Shared Room' listing types exists, we will consider these observations in the aggregated analyses but will not analyze them separately as 'sub-markets' of the broader Airbnb market.

How many Airbnb properties in Melbourne?

The plot below shows the change in the total number of properties listed on the Airbnb site broken down by their listing type. These counts indicate the day in which the property was first created on the Airbnb website, not the date of first available or reserved booking. Note that this plot counts the cumulative net number of properties as some properties have de-listed over this time period.[6]
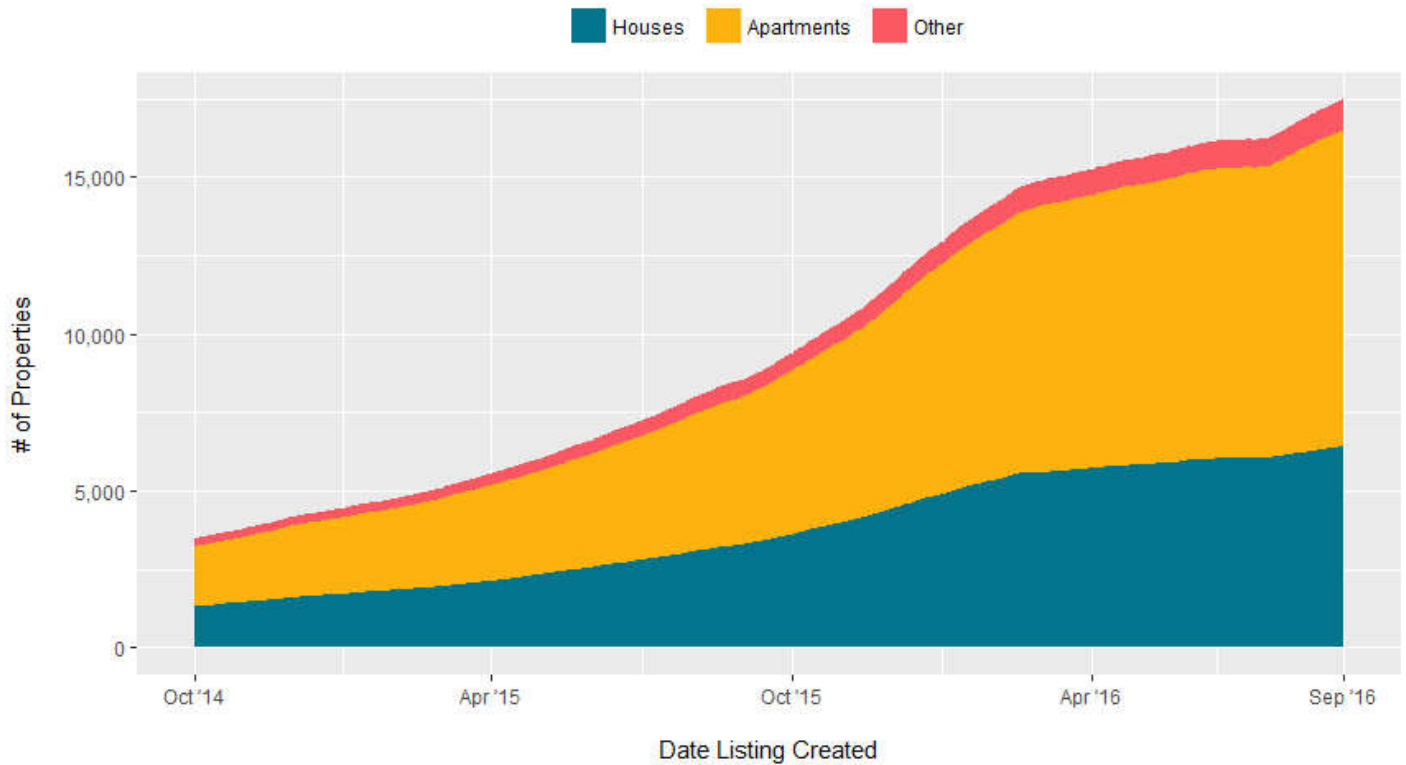
The total number of properties has grown steadily since October 2014, with around 17,500 now listed on the site. Approximately 60% of these are Entire Homes or Apartments with most of the remainder being Private Rooms. There are very few Shared Rooms offered. The total number of properties increased most quickly during the summer months of December 2015 to February 2016. Additions to the Airbnb market in Melbourne increased more slowly over the winter but look to be on the rise again in spring. It will be interesting to see if a similar seasonal marked increase occurs again this coming summer or if we have already witnessed 'peak' Airbnb.

Growth of Airbnb Listings in Melbourne
By Listing Type

■ Entire House/Apt ■ Private Room ■ Shared Room

Breaking the listings down by property type shows that nearly 60% of listings are apartments, 35% houses and around 5% other property types such as bed and breakfast units.
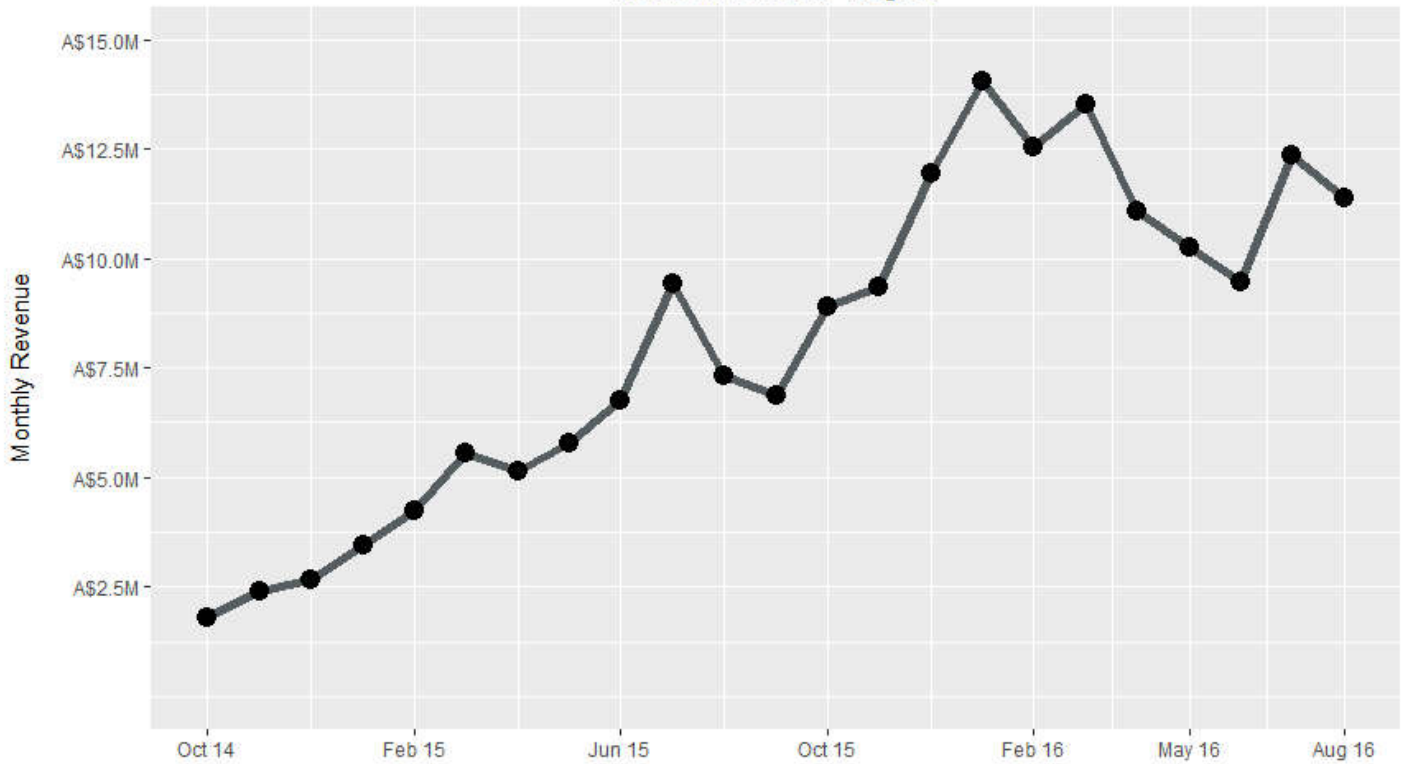
Growth of Airbnb Listings in Melbourne
By Property Type

Houses   Apartments   Other

How much money? (current Market size)

Next, we track the total revenue generated by the Airbnb properties. In the month of October 2014, total revenue reached around A$2 million per month, or about $65,000 per night. By January 2016, revenues rose to over A$14 million per month (~$500,000 nightly). Revenues have since decreased over the winter months of 2016 on a month-to-month comparison but are still about 50% higher then in the same month last year.
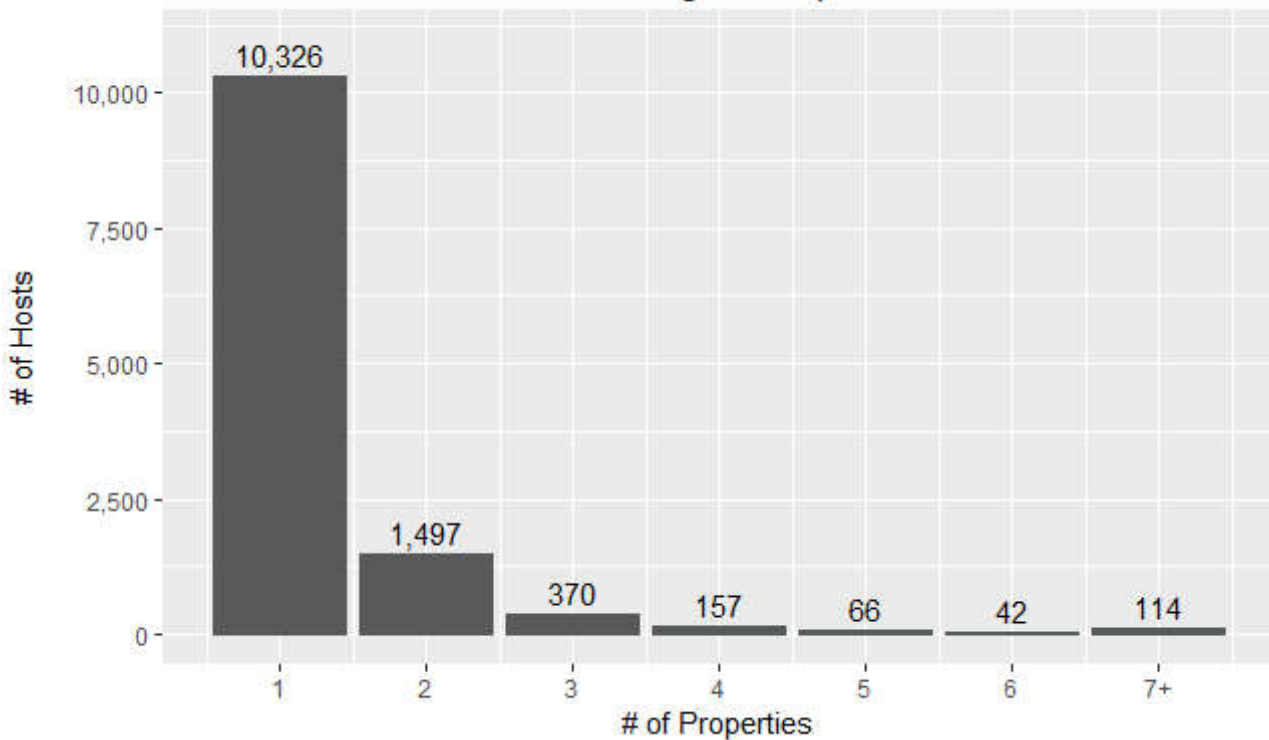
Airbnb Monthly Revenue
Melbourne Metro Region

Who are the hosts? (Characteristics of hosts)

Next, we look at the owners or hosts of the listings. When we break hosts down by the number of properties that they have listed we see that the vast majority (70%) of hosts have a single property listed, only 3% have four or more properties and 114 hosts have seven or more properties. On the high end, there are four hosts that have more than 70 units listed on the Airbnb site. All of these hosts are either rooming houses/hostels and/or professional property management companies using the site to augment business.

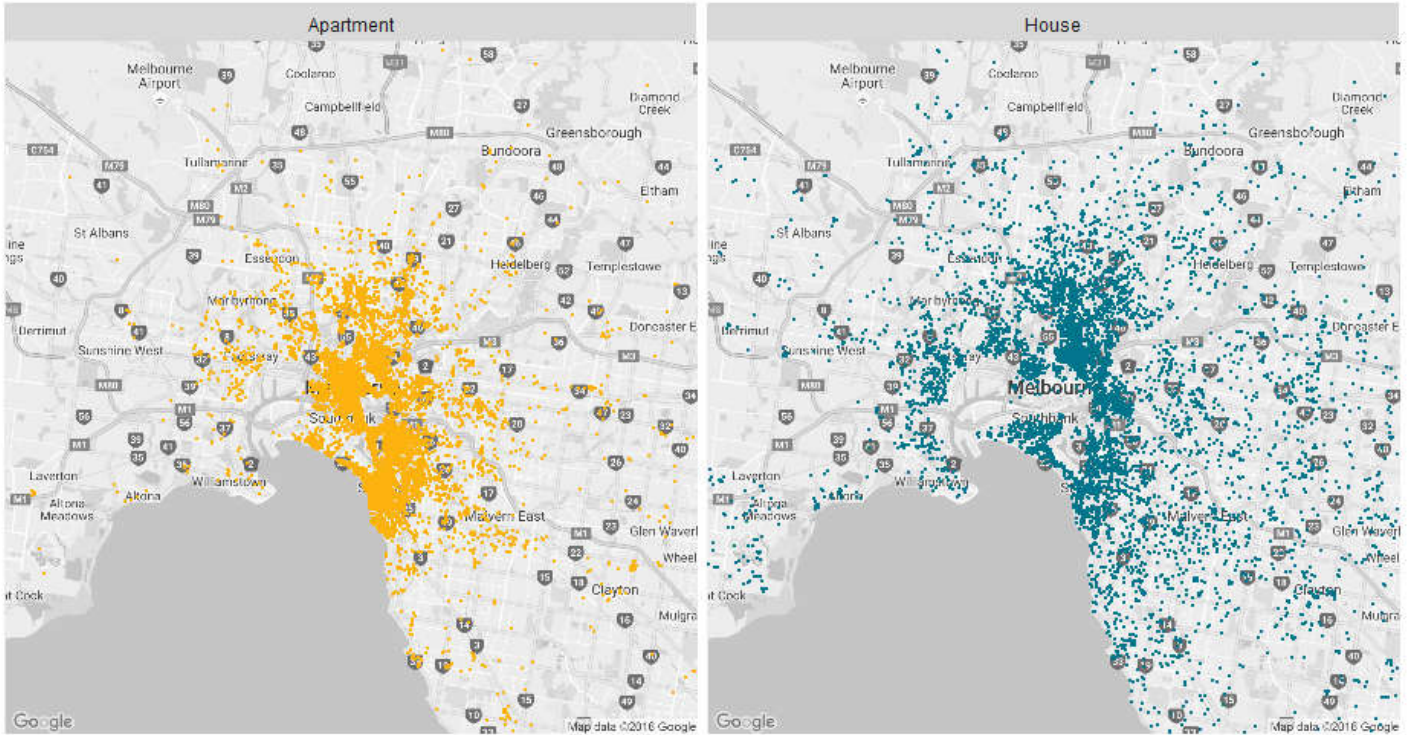## Airbnb Listing Count per Host

Where are the properties?

The Airbnb listed properties are heavily concentrated in the inner suburbs of Melbourne, particularly within the CBD near Southern Cross station. Secondary clusters are in St Kilda, South Yarra (northern end of Chapel St), the near northern suburbs and the southern end of Bay Street in Port Melbourne. Shared rooms are located almost entirely in the CBD and near north.

In general, the overall spatial distribution of Airbnb houses and apartments roughly mimics the overall make-up of development in the metropolitan area. In general, the overall spatial distribution is highly concentrated around the CBD and several sub-centres.

Airbnb Locations in Melbourne:
By Property Type

The two density plots below better highlight the localized clusters of Airbnb listings. For apartments (yellow) there are notable concentrations in the CBD, particularly on the west and north, and in Southbank. Additional clusters for apartments show up in the St. Kilda region and in South Yarra.

APARTMENT

0 0.3 0.6   1.2   1.8   2.4 Kilometers

House listings (blue) are concentrated in the near north suburbs of Carlton, Fitzroy and Collingwood, as well as in Richmond and down into St. Kilda. Most of the difference between the apartment and house locations are based on the underlying built enviroment (land use) differences in the city. Overall, nearly all Airbnb units in the Melbourne area are clustered within 5 to 7 km of the CBD.
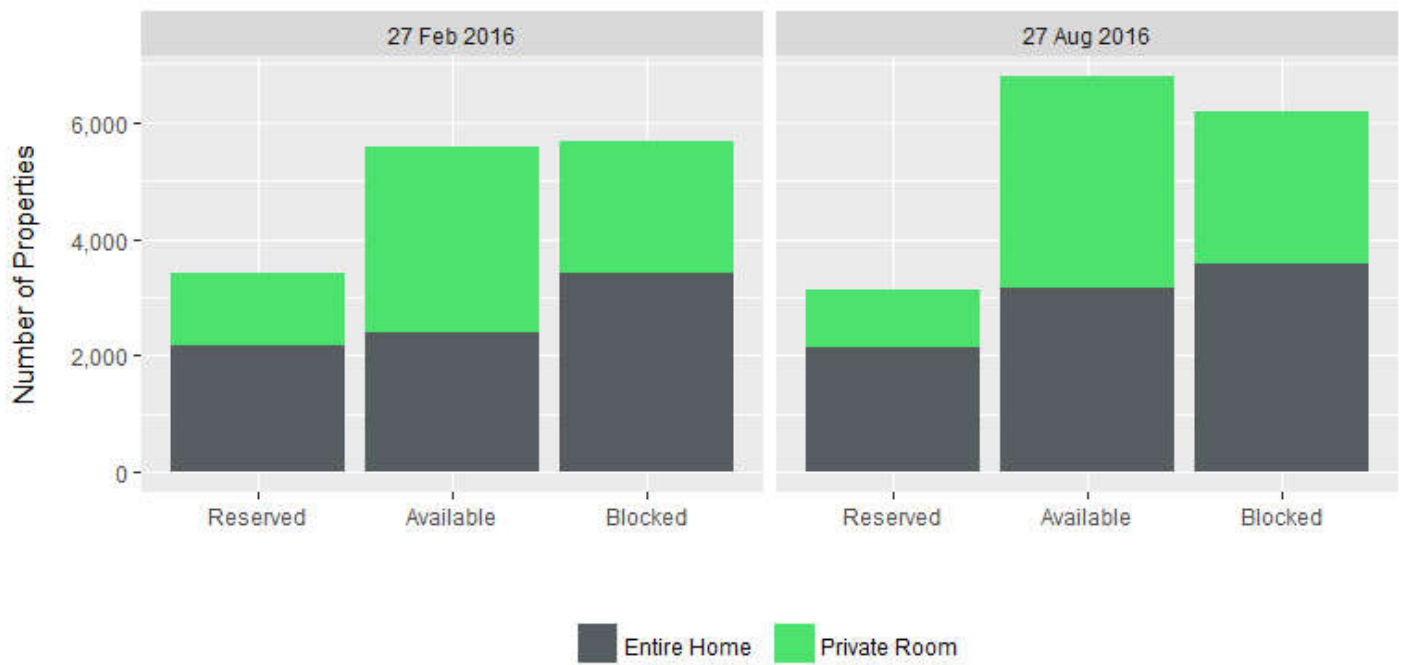
Deeper analysis

Below, we take a deeper look at some of the trends in the Airbnb market in Melbourne.

We start with a snapshot of the Airbnb market on the most recent Saturday night in our data, August 27th, 2016. As this is winter weekend, we will also contrast this with data from Saturday February 27th, 2016 to provide some idea to the seasonal extremes in the market.
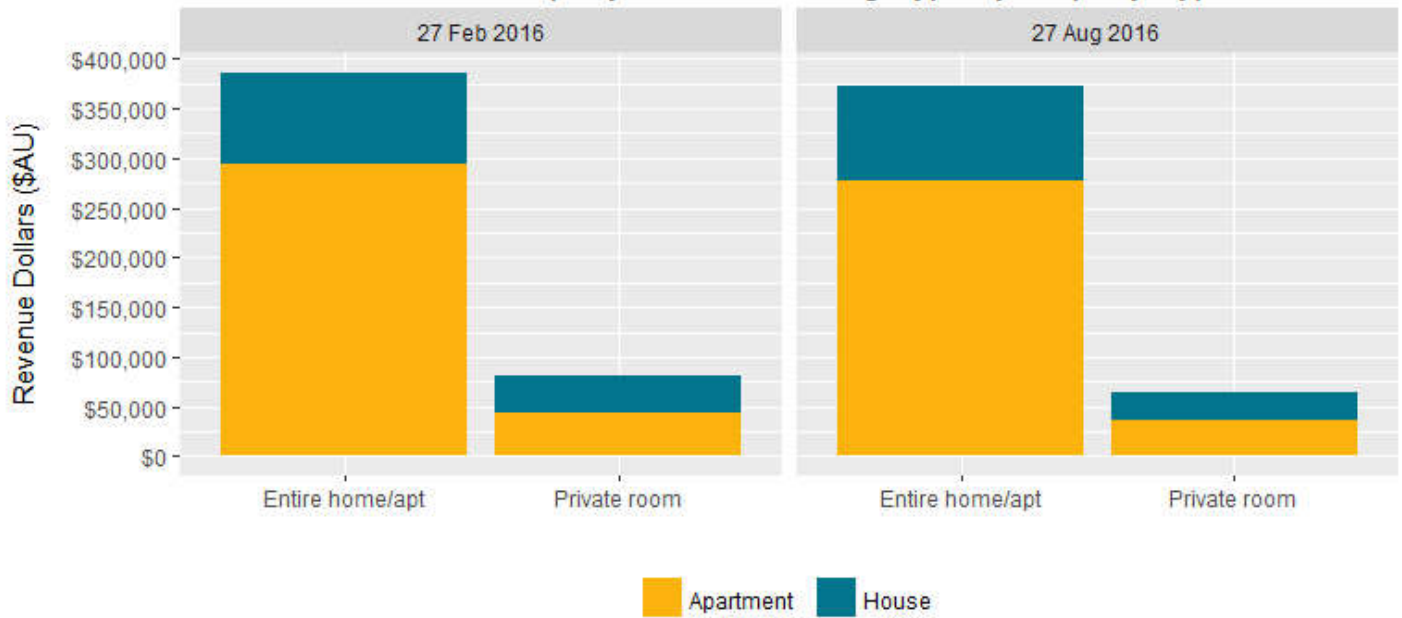
First we look at the status of all Melbourne Airbnb properties on these two days, broken down by listing type. Comparing the summer (Feb) and winter (Aug) dates we see similar numbers of Reserved and Blocked properties, with a higher number of Available units in the winter. Additionally, in the winter months Entire Home/Apts make up a larger proportion of the Reserved properties than in the summer. This tells us two rather predictable things: 1) Occupancy rates are lower in the winter; and 2) Single or pairs of travelers, such as backpackers, who booked Private Rooms make up a larger component of the Airbnb market in the summer than the winter.
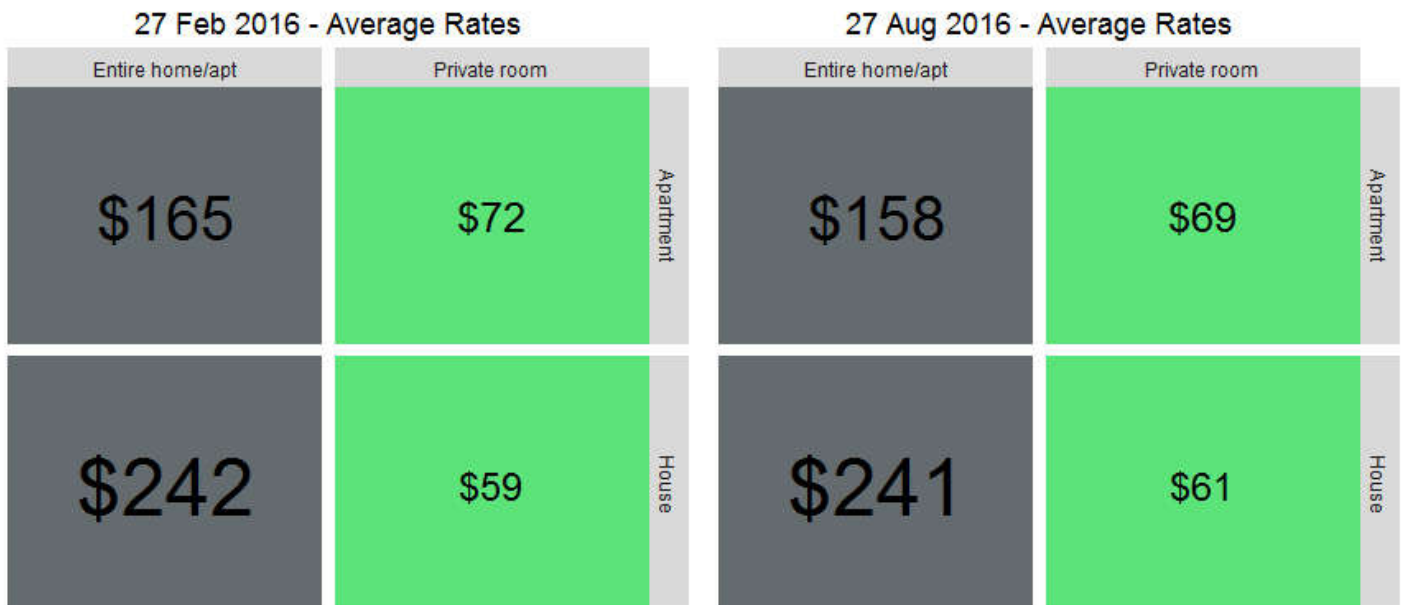
Breaking the reserved properties down into property types we find that the breakdown of bookings between houses and apartment dwellings by listing type is nearly identical in both the summer and the winter. Over both days, nearly 80% of all Entire Home/Apt bookings were for apartments. For Private Rooms, apartments made up around 50% of all bookings. From a revenue standpoint the proportions within each listing type are about the same, however the overall proportion of revenue is weighted more heavily in favour of Entire Homes/Apts versus Private Rooms due to their higher unit rates. In pure dollar figures, Entire Homes/Apts brought in nearly A$400,000 in revenue on each of the nights, with another A$75,000 from Private Rooms.

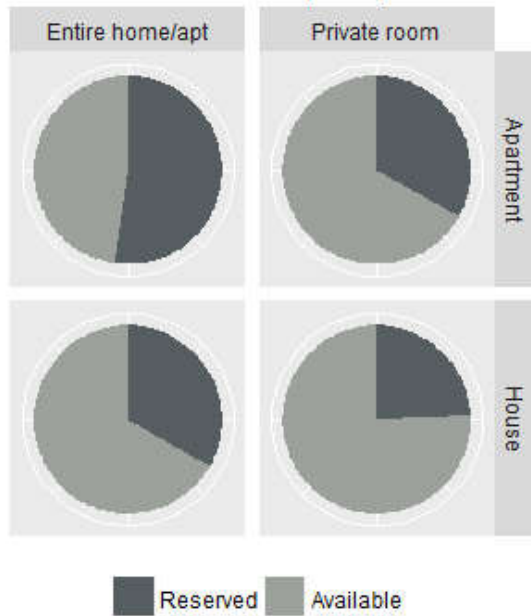Reserved Property Revenue: Listing Type by Property Type

Next, we look at the average nightly rate for each of the three listing types split by house and apartment. Overall, the prices for each type of property do not vary much between the summer and winter dates analysed. Between property types, we see rates of nearly A$240 per night for an entire house and around A$160 per night for an entire apartment. Private rooms in both houses and apartments cost around A$65 per night, although, interestingly Private Rooms in Apartments are slightly more expensive than those in Houses. This is likely due to the fact that apartment dwellings are often newer and located in more desirable inner city locations than houses, all else equal.
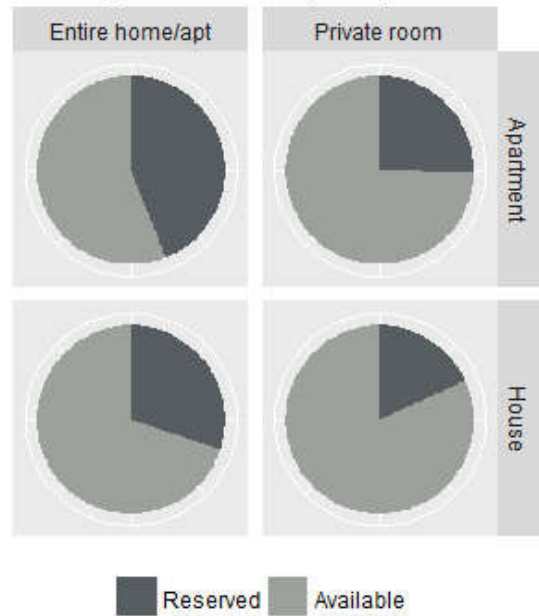
As alluded to above, occupancy rates are lower in the winter. Below, we break down the occupancy rate on both days by listing type and property type (house vs. apartment). Across all four categories, the occupancy rates are lower for a weekend in August versus a weekend in February. Looking between categories, Entire Homes/Apts have the highest occupancy. In all cases apartments have higher occupancy rates than houses. Even on a busy summer weekend night, private rooms are only about 33% booked. Entire apartments on the other hand have an occupancy rate of greater than 50% in the summer months suggesting that people are will to pay the considerably higher prices for use of the entire home as opposed to merely a bedroom.
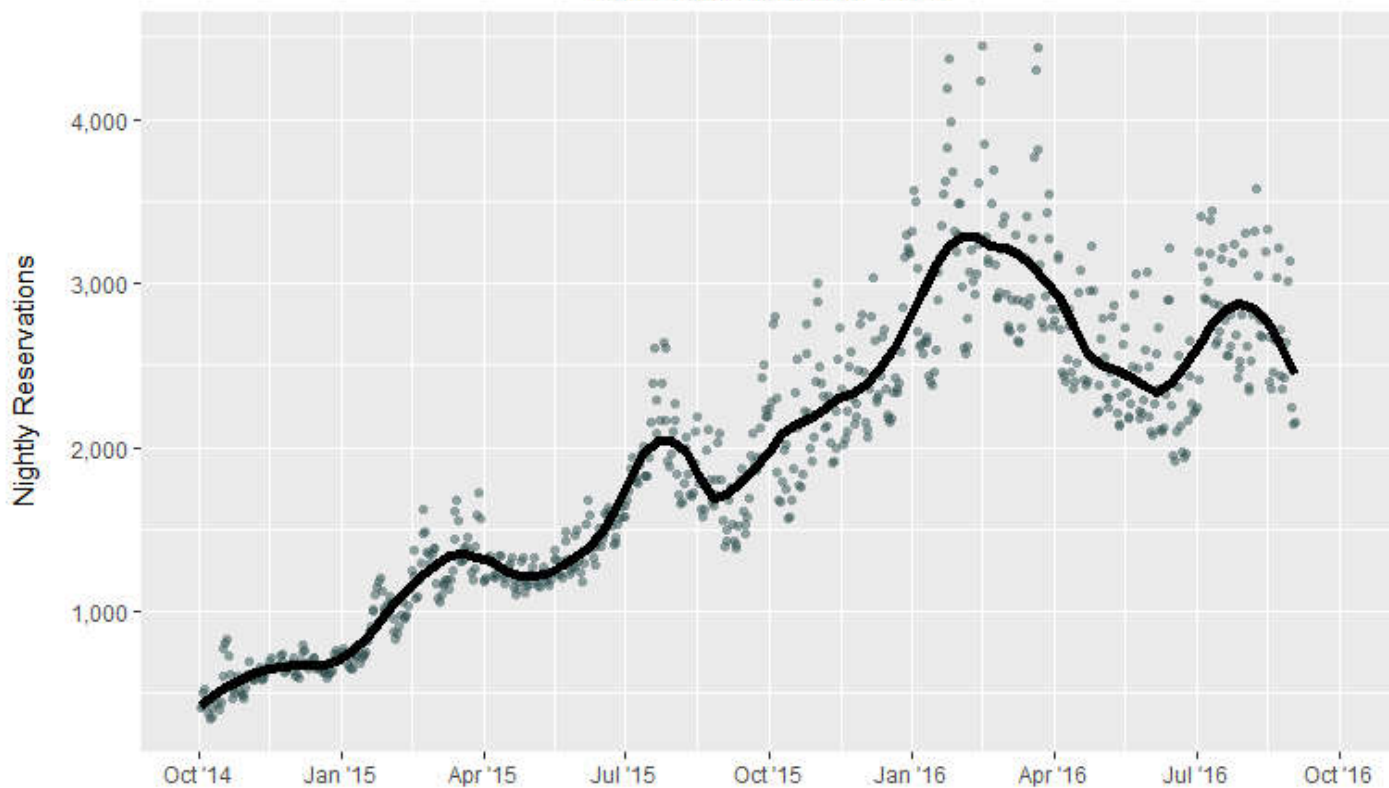

Growth of Airbnb in Melbourne

From October 2014 to January 2016, the number of nightly Airbnb reservations increased steadily at nearly 15% per month, with a notable seasonal cycle mixed in. From January 2016 to April 2016 the growth rate slowed but the total number of reservations still increased year over year.
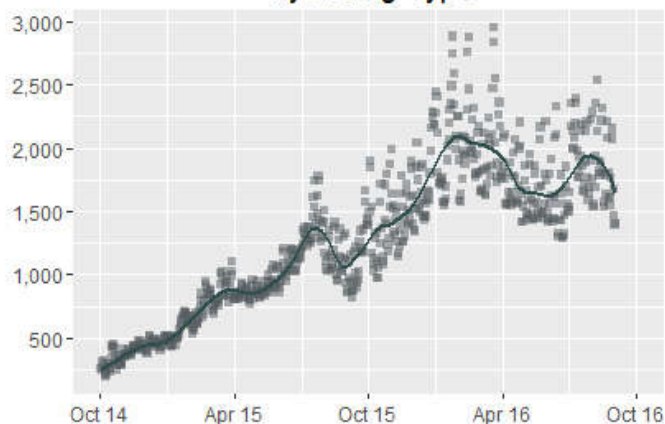
So, have we reached peak Airbnb? This summer will answer that question for certain, but it is likely that the recent downturn is seasonal (as evidenced by past decrased during the winter months) and that total summer reservations counts this coming summer will be higher than last summer. Likely gone, however, are the average monthly growth rates of 15% seen from October 2014 to January 2016. It appears from the reservation data the Airbnb market in Melbourne has matured and while it is likely to grow this summer, it will likely do so at a considerably smaller rate than last year.
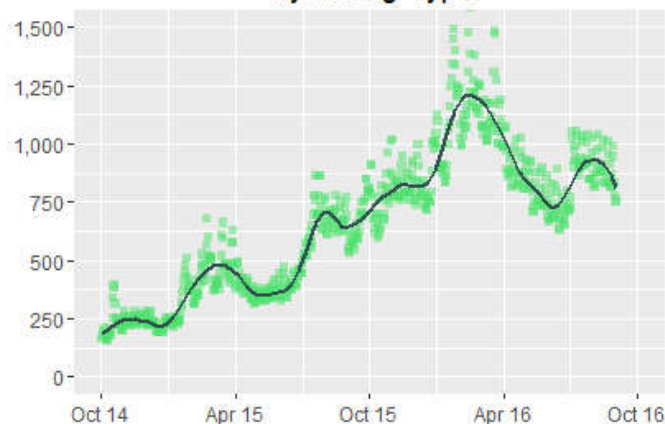
Reservations over Time

We see identical growth patterns across all both listing types; that of steep increases during the October 2014 to January 2016 followed by a leveling off and small decline into winter. While the total counts are different for both plots below, the overall shape of growth for all three market segments are remarkably similar, with each showing large peak during the key summer weekends.
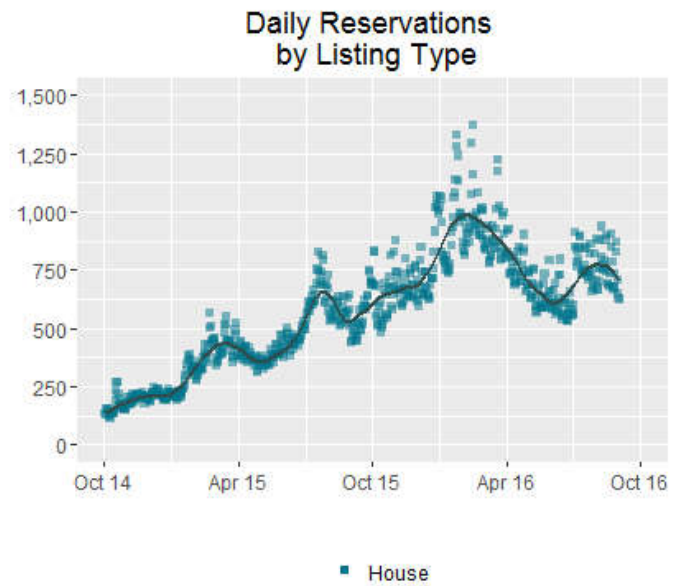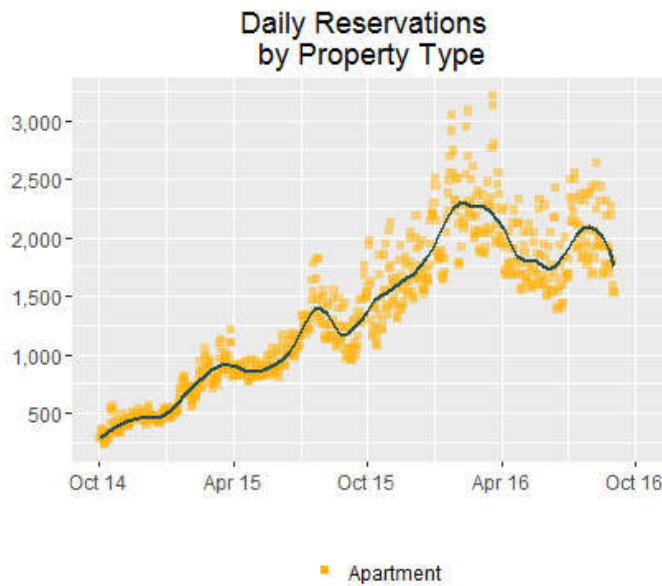

Daily Reservations by Listing Type — Entire Home

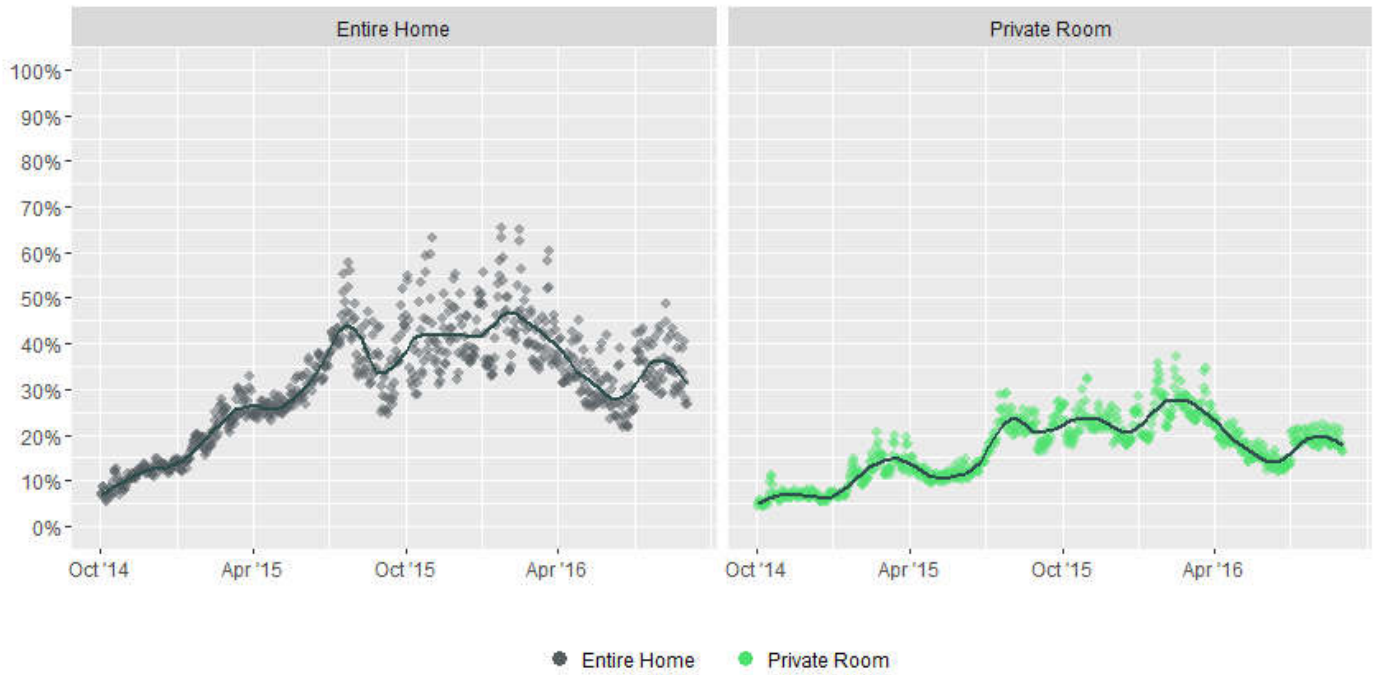Daily Reservations by Listing Type — Private Room

Examining the growth in researvations by property type shows remarkably similar trends, with apartments growing at a similar rates (though at a higher overall level).
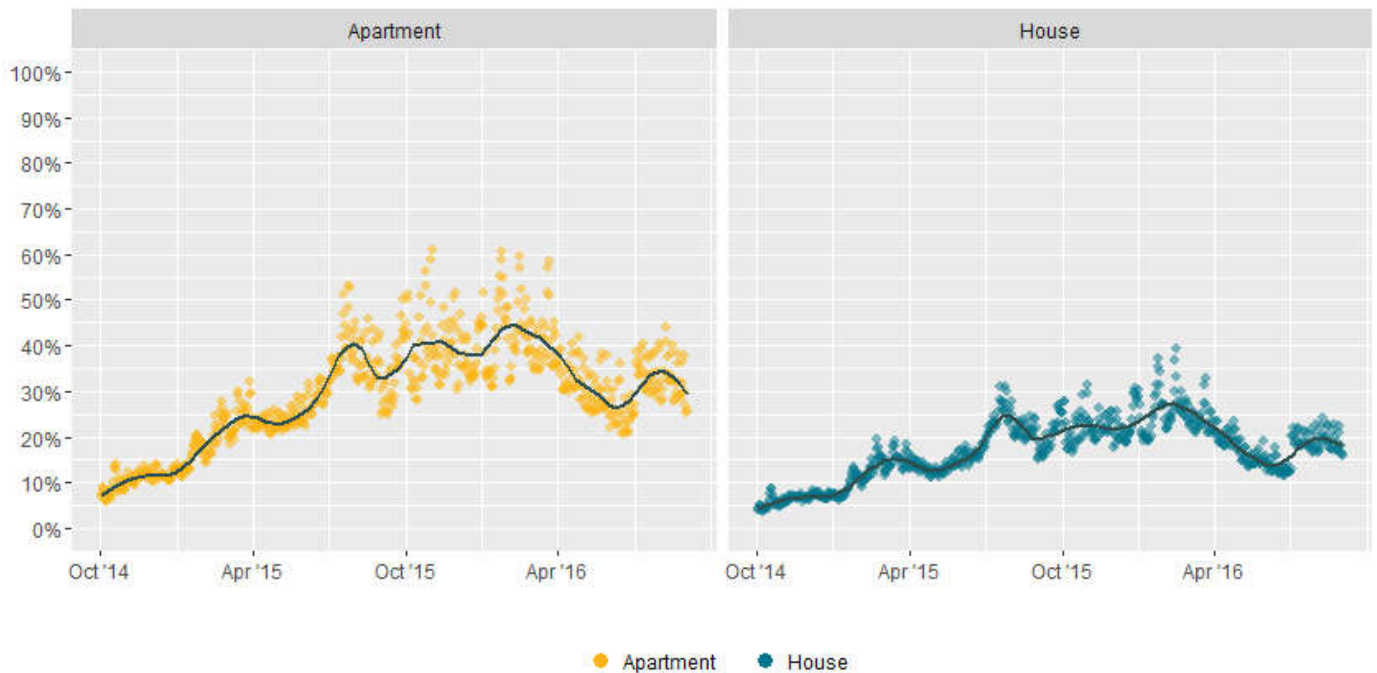

Occupancy Rates

As the total number of offered units has increased rapidly, simple reservation counts may not tell the entire story. Occupancy rates over time (as shown below) peaked in December 2015 and have fallen slowly since. Again, much of this decrease is due to seasonal impacts, however, the occupancy rate data shows an early and more substantial weakening of the Airbnb market than the pure reservation count data.
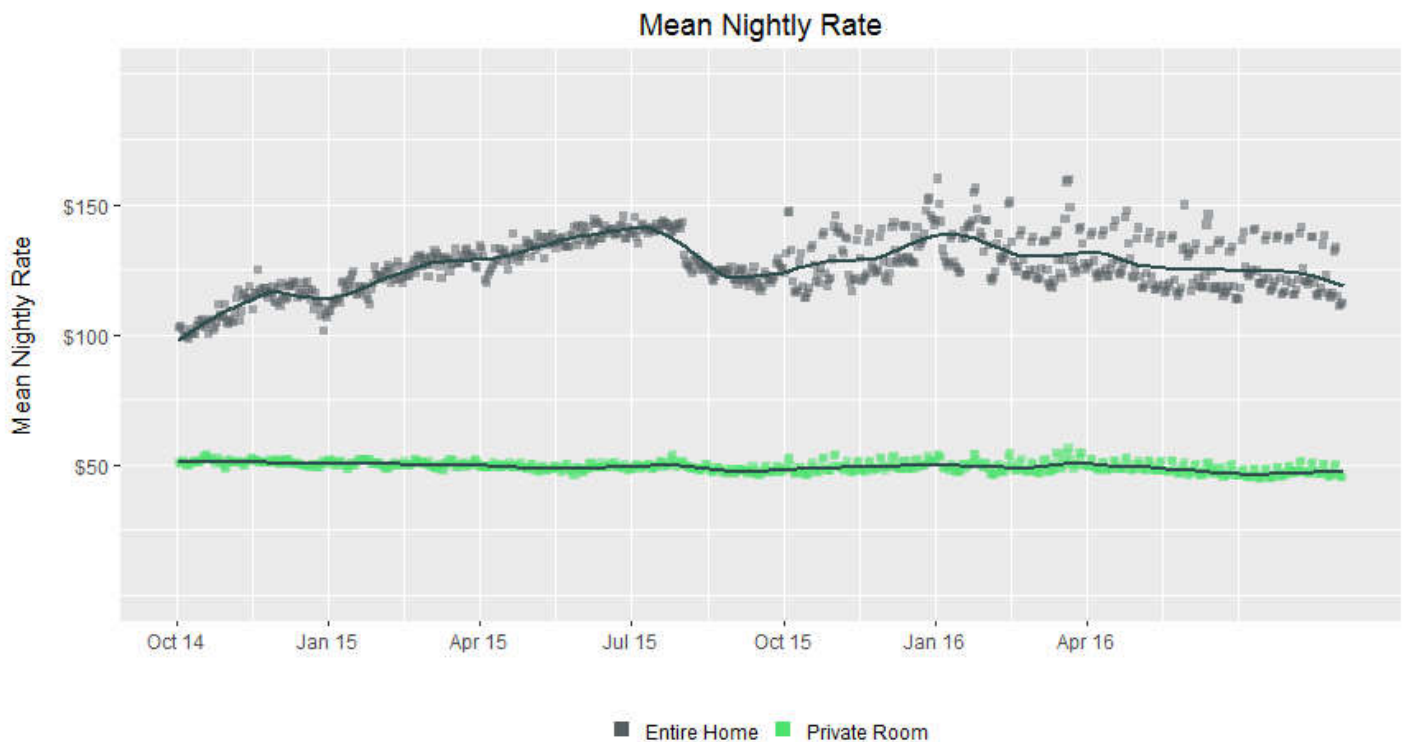
Occupancy Rate by Listing Type

In general, occupancy rates for apartments are higher than those for houses, regardless of the season. This is likely due to the fact that apartments are smaller and cheaper, two factors that cater to a larger constituent of potential clients than houses.

Occupancy Rate by Property Type

Nightly Rates

In examining the average nighly rate of Airbnb properies over the 22-month period for which we have data, we find moderate deviation in rates. Private Rooms have remained around $50 for entire period. Average rates for Entire Homes/Apts rose from $100 to around $130/night but have decrease sligtly since. As this analysis does not control for the ever changing composition/location of properties being listed some of the recent decrease in price may be due to the listing of less desirable properties over time. As Private Rooms are more homogenous than entire houses, it is not surprising that their rates are more consistent. In looking at the Entire House/Apt trend the weekend points show up clearly above the trend line and the weekday below it, hinting at the different type of traveler mix that this listing types attracts based on the day of the week (larger groups on the weekends).

Mean Nightly Rate

1. Lecturer in Property at the University of Melbourne. www.andykrause.com

2. Lecturer in Urban Analytics at the University of Melbourne.

3. Does not include the Mornington Peninsula

4. Data purchased through a grant funded by the Real Estate Research Institute, Chicago, USA.

5. Property types are owner/lister defined, therefore it is likely that the Igloo, at the very least, is not a completely true representation of the property type

6. Due to the manner of data collection by www.airdna.co, de-listings are clustered at the end of the month. To improve the visualization these clustered de-listings have been smoothed out.