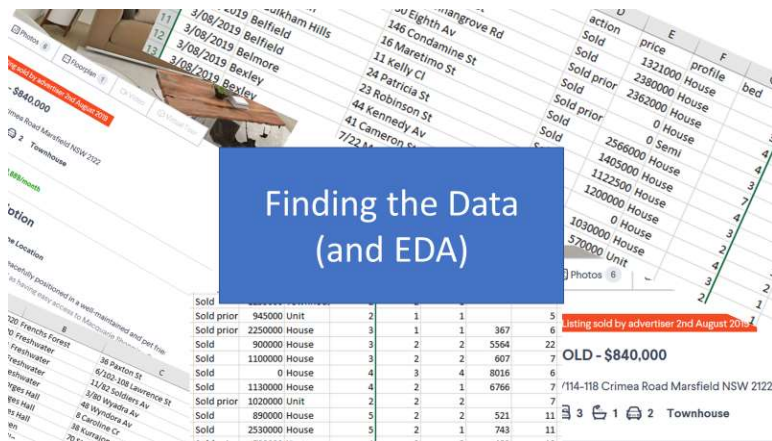




What's it going to sell for?



Finding the Data (and EDA)

Where is the data?

Domain



Photos 6 Floorplan 1 Video Virtual Tour

Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 1 2 Townhouse

Est. repayment \$3,889/month

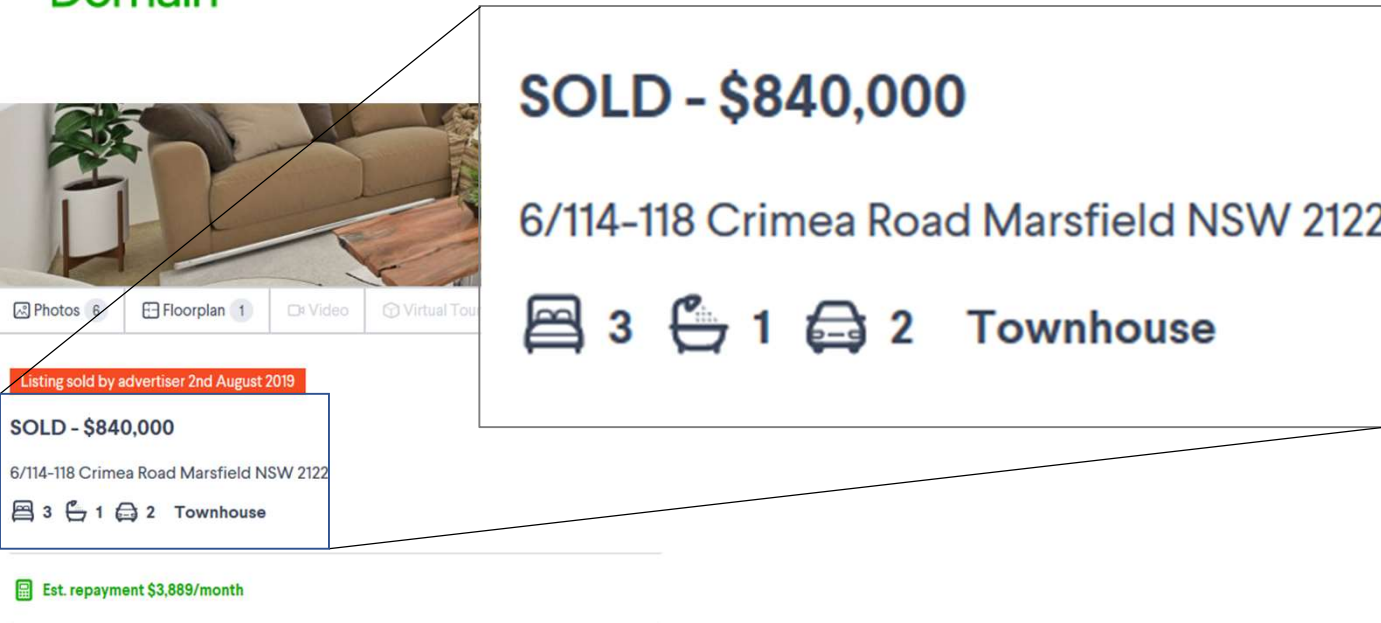
Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It offers easy access to Macquarie Shopping Centre, a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Where is the data?



Domain



The image shows a screenshot of a property listing on the Domain website. A large callout box highlights the 'SOLD' status and price. The listing includes a photo of a living room, a navigation bar with icons for Photos, Floorplan, Video, and Virtual Tour, and a summary of the property details. A red banner indicates the listing was sold by the advertiser on August 2nd, 2019.

SOLD - \$840,000




6/114-118 Crimea Road Marsfield NSW 2122


 3  1  2 **Townhouse**

Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

 3  1  2 **Townhouse**

 Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It offers easy access to Macquarie Shopping Centre, schools and buses to the city.

Where is the data?

Domain

Pricing
Address
Details

Photos 6 Floorplan 1 Video Virtual Tour

Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 1 2 Townhouse

Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It offers easy access to Macquarie Shopping Centre, School and buses to the city as well as having easy access to Macquarie Shopping Centre.

Where is the data?

Domain



The screenshot shows a property listing on the Domain website. At the top, there's a photo of a living room with a brown sofa and a coffee table. Below the photo, there are tabs for 'Photos', 'Floorplan', 'Video', and 'Virtual Tour'. The main text of the listing reads: 'SOLD - \$840,000', '6/114-118 Crimea Road Marsfield NSW 2122', and '3 1 2 Townhouse' (with icons for bedrooms, bathrooms, and cars). A red banner below the photo says 'Listing sold by advertiser 2nd August 2019'. Below the main text, there's a box containing 'SOLD - \$840,000', '6/114-118 Crimea Road Marsfield NSW 2122', and '3 1 2 Townhouse'. At the bottom, there's a green banner that says 'Est. repayment \$3,889/month'.

Pricing
Address
Details

Scaping the data...

```
df.at[hid, 'car'] = cars
df.at[hid, 'size'] = size
df.at[hid, 'photo'] = photos
else:
    print("Already done")
```

```
51 url= https://www.domain.com.au/1-mathewson-street-eastgardens-nsw-2036-2015436462
51 = 3.0 2.0 2.0 335 7
52 url= https://www.domain.com.au/2-11-orange-street-eastwood-nsw-2122-2015430800
52 = 3.0 2.0 1.0 nan 8
53 url= https://www.domain.com.au/82-elanora-road-elanora-heights-nsw-2101-2015475554
53 = 4.0 3.0 3.0 740 21
54 url= https://www.domain.com.au/6-7-wilga-street-elanora-heights-nsw-2101-2015454813
54 = 3.0 2.0 2.0 4662 20
55 url= https://www.domain.com.au/14-14-16-onslow-avenue-elizabeth-bay-nsw-2011-2015438660
55 = 2.0 2.0 1.0 nan 11
```


What we got...

Name	Type	Description
Date	Date	When the property was sold
Suburb	Text	Name of suburb (529 unique, 263 with more than 10 properties)
Action	Text	{Before, At, After} Auction
Price	int	From \$310K to \$8460K (2,288 missing)
Profile	Text	{House, Unit, Townhouse, Villa, Semi, Duplex, Terrace, Studio}
Beds	Int	1 to 12 bedrooms
Baths	Int	1 to 7 bathrooms (70 missing)
Car	Int	1 to 9 car spaces (1,162 missing)
Size	Int	Size in m2 (largest 1M m2) (4,965 missing)
Photo	Int	1 to 67 photos provided (1,040 missing)

10,989 records, 8,701 with price, 4,288 complete

Categorical to Numerical

Property type

8 Unique values

Added column

Mean of price for property type

$R^2 = 0.238$

Suburb

529 unique

263 with > 10 properties

Added column

Mean of suburb price

$R^2 = 0.711$

The background of the slide is a collage of three images. The top image shows a dark banner with the word 'AUCTION' in large white letters and the date 'Thursday 18th April at 5pm On Site' below it. The middle image is a photograph of a modern kitchen with white cabinets and a dark countertop. The bottom image shows a black sign with the words 'NOW OPEN' in white, slanted letters. The Forsyth logo is in the bottom left, and a box with property details is in the bottom right.

AUCTION

Thursday 18th April at 5pm On Site

What impacts the
Sale Price?

FORSYTH
SINCE 1818

4

BEDS

2

BATHS

2

CARS

When property is sold affects price?

Before	98% certainty \$1,420,000	(n=2956 , $\sigma=729K$)
At auction	3.0% less than Before	(n=4508 , $\mu=1,380K$, $\sigma=710K$)
After	98% certainty 3% less than Before	(n=71, $\mu=1,370K$, $\sigma=720K$)

Location affects property price

All with >10 properties

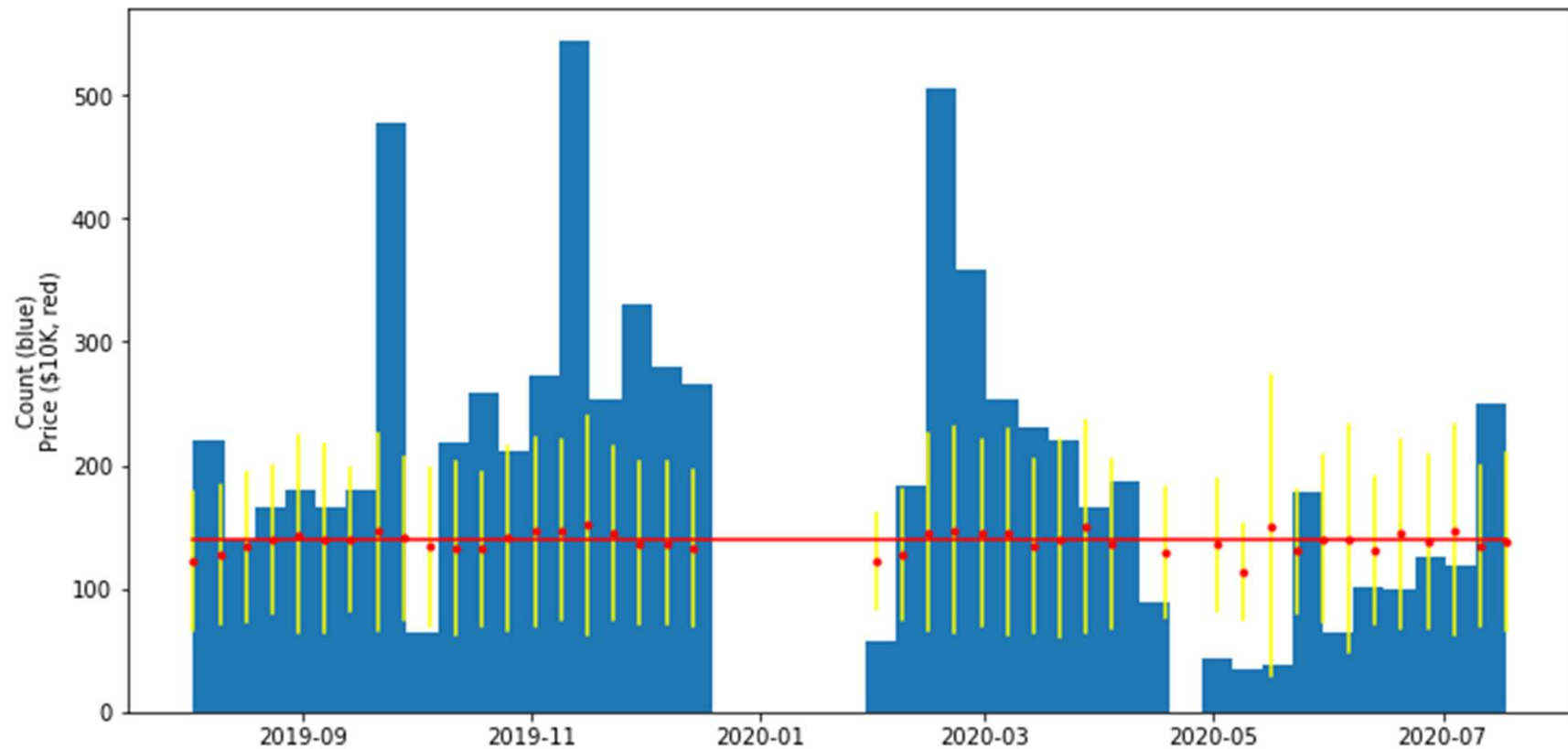
Range \$400K (Carramar) to \$4,9230K (Linley Point)

Largest sample was Epping with 121 properties

Type of property affects price

Property Type	Mean value
Villa	\$920K
Unit	\$1,030K
Townhouse	\$1,130K
Duplex	\$1,190K
Semi	\$1,450K
House	\$1,570K
Terrace	\$2,260K

COVID-19 hasn't affected price





Can we predict the
Sale Price?



Five steps

1. Start with your suburb

Suburb	Add
Carramar	\$433K
Claremont Md	Too little data
Epping	\$1724K
Hornsby	\$1344K
Manly	\$2178K
Milson Point	\$4072K
Sydney	\$1367K
Surry Hills	\$1448K
Vaucluse	\$4262K
Zetland	\$1226K

Five steps

1. Start with your suburb
2. Add \$120K for every bedroom

Suburb	Add
Carramar	\$433K
Claremont Md	Too little data
Epping	\$1724K
Hornsby	\$1344K
Manly	\$2178K
Milson Point	\$4072K
Sydney	\$1367K
Surry Hills	\$1448K
Vaucluse	\$4262K
Zetland	\$1226K

Five steps

1. Start with your suburb
2. Add \$120K for every bedroom
3. Add \$32K for every photograph

Suburb	Add
Carramar	\$433K
Claremont Md	Too little data
Epping	\$1724K
Hornsby	\$1344K
Manly	\$2178K
Milson Point	\$4072K
Sydney	\$1367K
Surry Hills	\$1448K
Vaucluse	\$4262K
Zetland	\$1226K

Five steps

1. Start with your suburb
2. Add \$120K for every bedroom
3. Add \$32K for every photograph
4. Add the house profile value

Suburb	Add
Carramar	\$433K
Claremont Md	Too little data
Epping	\$1724K
Hornsby	\$1344K
Manly	\$2178K
Milson Point	\$4072K
Sydney	\$1367K
Surry Hills	\$1448K
Vaucluse	\$4262K
Zetland	\$1226K

Property Type	Add
Villa	\$506K
Unit	\$550K
Townhouse	\$613K
Duplex	\$671K
Semi	\$756K
House	\$813K
Terrace	\$968K

Five steps

1. Start with your suburb
2. Add \$120K for every bedroom
3. Add \$32K for every photograph
4. Add the house profile value
5. Subtract \$1,500K

Suburb	Add
Carramar	\$433K
Claremont Md	Too little data
Epping	\$1724K
Hornsby	\$1344K
Manly	\$2178K
Milson Point	\$4072K
Sydney	\$1367K
Surry Hills	\$1448K
Vaucluse	\$4262K
Zetland	\$1226K

Property Type	Add
Villa	\$506K
Unit	\$550K
Townhouse	\$613K
Duplex	\$671K
Semi	\$756K
House	\$813K
Terrace	\$968K

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 1 2 Townhouse

Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Example calculation



Photos 6 Floorplan 1 Video Virtual Tour

Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 1 2 Townhouse

Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb

\$1284

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 Bedrooms 1 Bathroom 2 Cars Townhouse

Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb

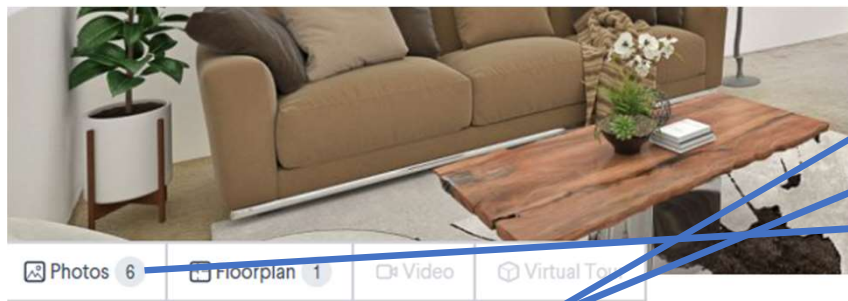
\$1284

3 * Bedrooms

\$120 * 3

\$360

Example calculation



Suburb			\$1284
3 * Bedrooms	$\$120 * 3$		\$360
6 * Photos	$\$32 * 6$		\$192

Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 Bedrooms 1 Bathroom 2 Cars Townhouse

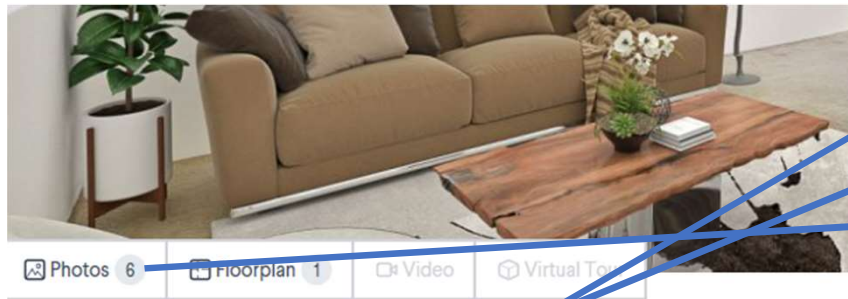
Est. repayment \$3,889/month

Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 Bedrooms 1 Bathroom 2 Cars Townhouse

Est. repayment \$3,889/month

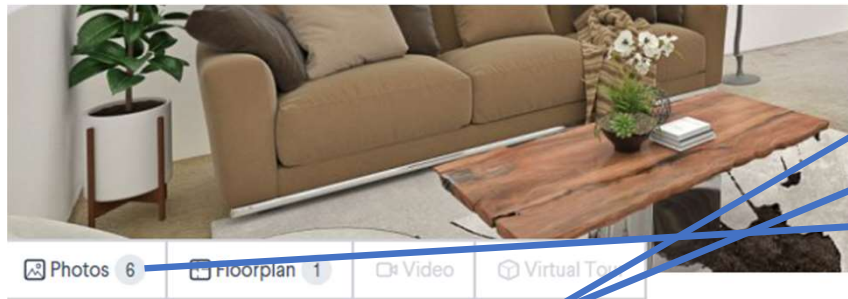
Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb			\$1284
3 * Bedrooms	$\$120 * 3$		\$360
6 * Photos	$\$32 * 6$		\$192
Type of house			\$613

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 Bedrooms 1 Bathroom 2 Cars Townhouse

Est. repayment \$3,889/month

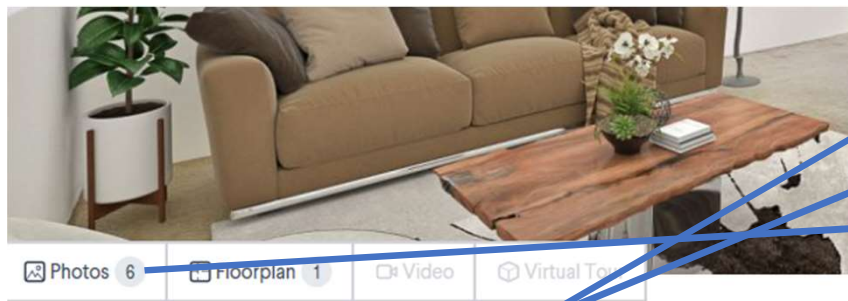
Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb			\$1284
3 * Bedrooms	$\$120 * 3$		\$360
6 * Photos	$\$32 * 6$		\$192
Type of house			\$613
Less			<u>-\$1500</u>

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 Bedrooms 1 Bathroom 2 Cars Townhouse

Est. repayment \$3,889/month

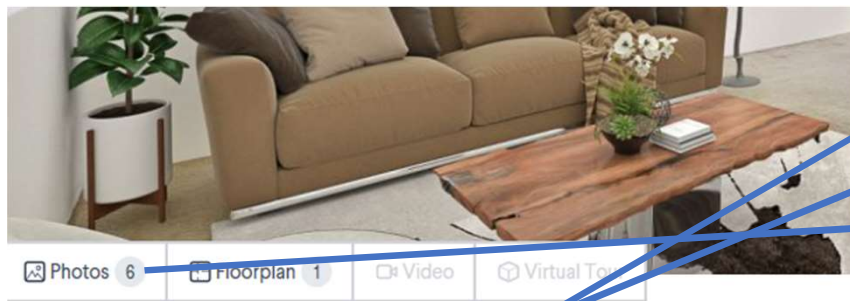
Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and pet friendly area. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb			\$1284
3 * Bedrooms	$\$120 * 3$		\$360
6 * Photos	$\$32 * 6$		\$192
Type of house			\$613
Less			<u>-\$1500</u>
Calculated valuation			\$949

Example calculation



Listing sold by advertiser 2nd August 2019

SOLD - \$840,000

6/114-118 Crimea Road Marsfield NSW 2122

3 1 2 Townhouse

Est. repayment \$3,889/month

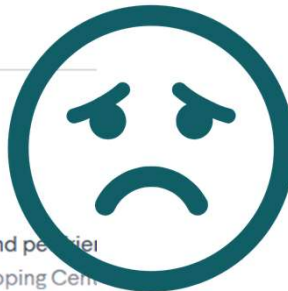
Property Description

Spacious, Tranquil & In A Prime Location

This double brick townhouse is peacefully positioned in a well-maintained and peaceful location. It is close to a primary school and buses to the city as well as having easy access to Macquarie Shopping Centre.

Suburb			\$1284
3 * Bedrooms	$\$120 * 3$		\$360
6 * Photos	$\$32 * 6$		\$192
Type of house			\$613
Less			<u>-\$1500</u>
Calculated valuation			\$949

\$109K ERROR!

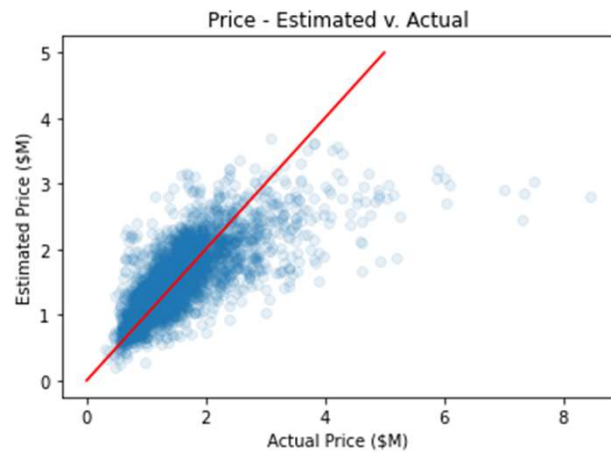


For Data Scientists Only

$R = 0.725$ so what is going on? Is our data OK?

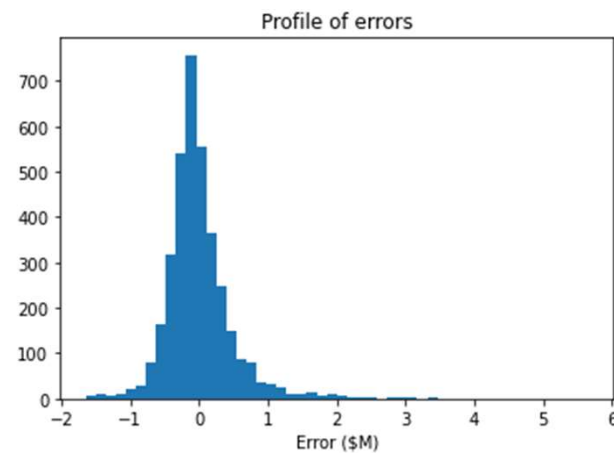
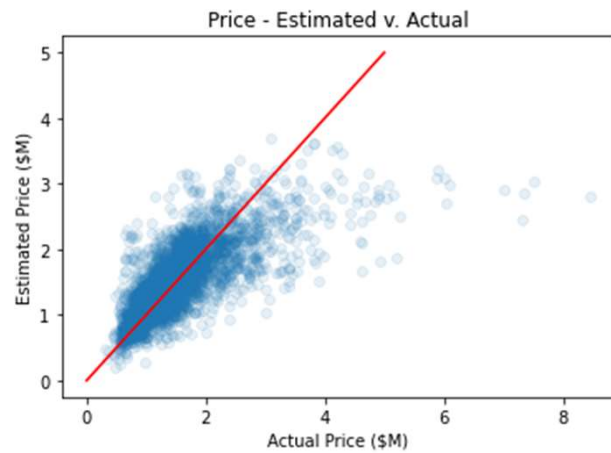
For Data Scientists Only

$R = 0.725$ so what is going on? Is our data OK?



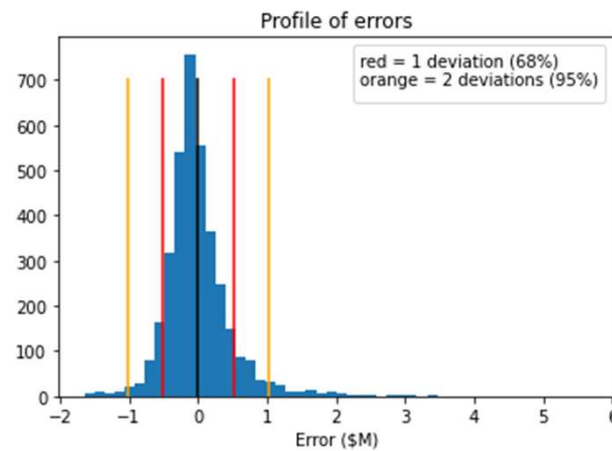
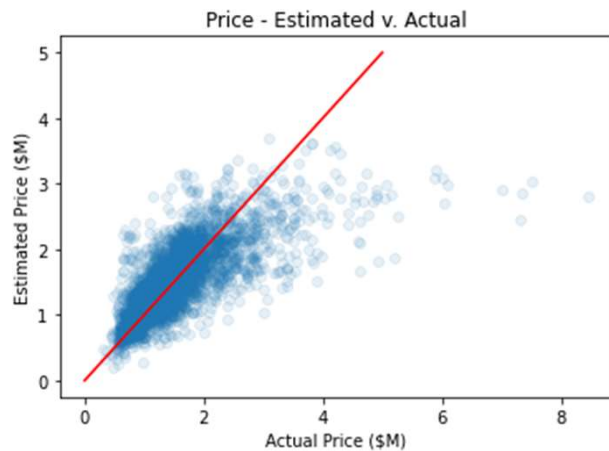
For Data Scientists Only

$R = 0.725$ so what is going on? Is our data OK?



For Data Scientists Only

$R = 0.725$ so what is going on? Is our data OK?

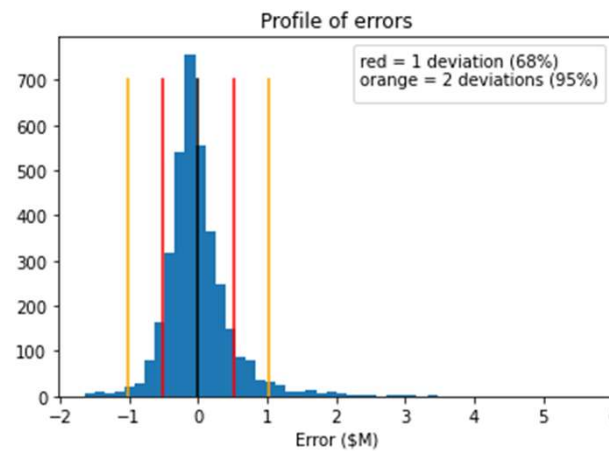
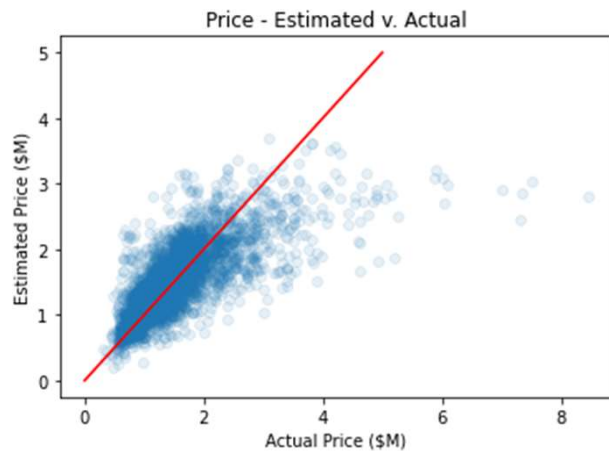


Error profile:

n=3594
 $\mu=66K$
 $\sigma=510K$
68% in (-440K to 570K)
95% in (-950K to 1090K)
Slight skew in errors

For Data Scientists Only

$R = 0.725$ so what is going on? Is our data OK?



Error profile:

$n=3594$

$\mu=66K$

$\sigma=510K$

68% in (-440K to 570K)

95% in (-950K to 1090K)

Slight skew in errors

0.725 sounds high but not really...

...we need > 0.95 for prediction



NATIONAL HOUSE PRICE CHANGES, FROM THE CHEAPEST TO THE DEAREST

December 2018



What have we
discovered?



Summary of findings

Sell before auction

potential 3% uplift on value

Summary of findings

Sell before auction

potential 3% uplift on value

Add a new bedroom

but only if it costs you less than \$120K

Summary of findings

Sell before auction

potential 3% uplift on value

Add a new bedroom

but only if it costs you less than \$120K

Use lots of photos

each one is worth \$32K

Summary of findings

Sell before auction

potential 3% uplift on value

Add a new bedroom

but only if it costs you less than \$120K

Use lots of photos

each one is worth \$32K

Predicting what your property will sell for

need more data

What to try it?

Head to:

<https://github.com/briandorricott/DataScience-Exchange.git>