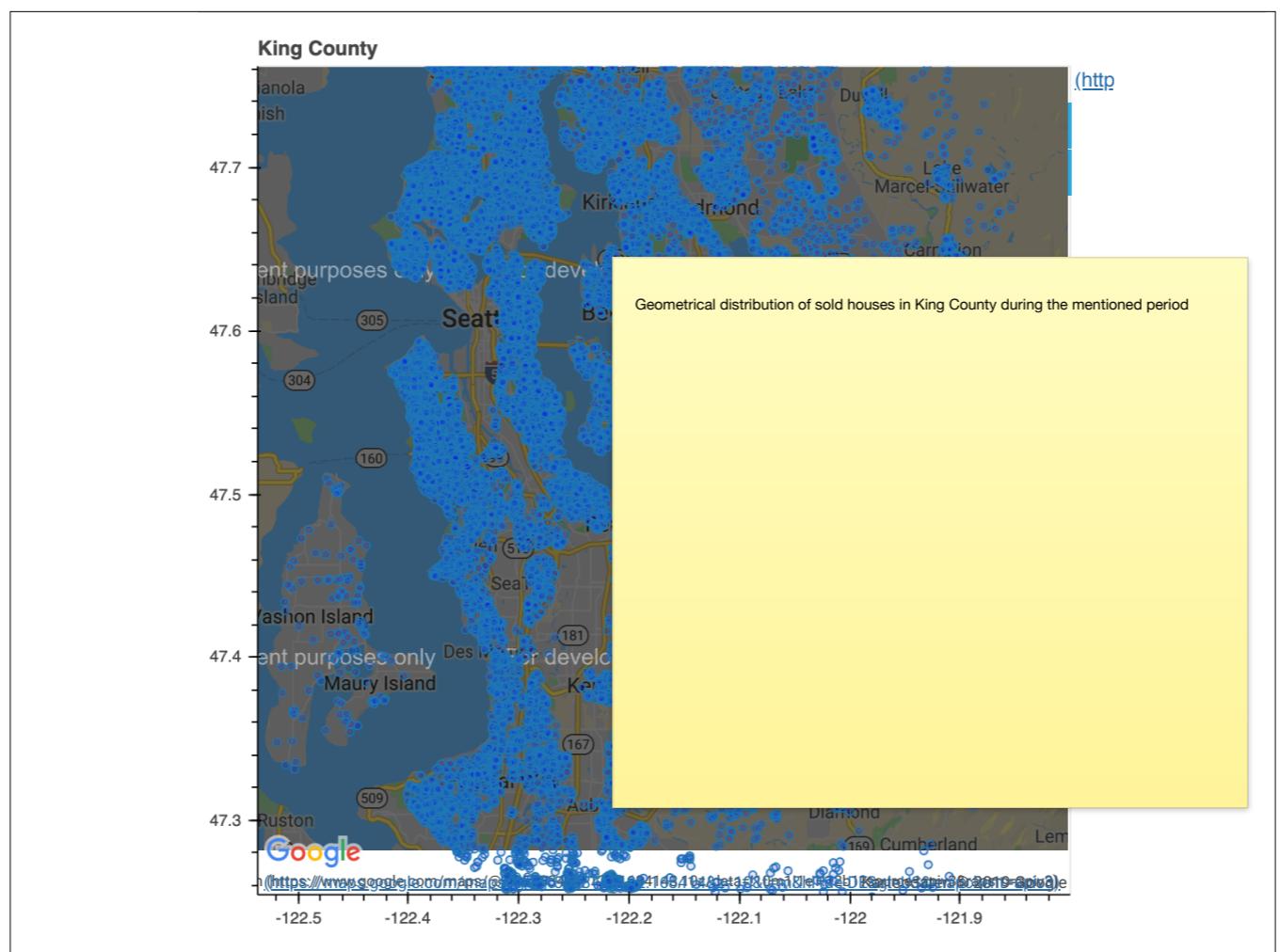


King County:
House Price Analysis 4/2014 to 4/2015

<http://www.usgarchives.net/maps/washington/wa-crams/king.jpg>

KING COUNTY

House-Price Analysis 4/2014 - 4/2015

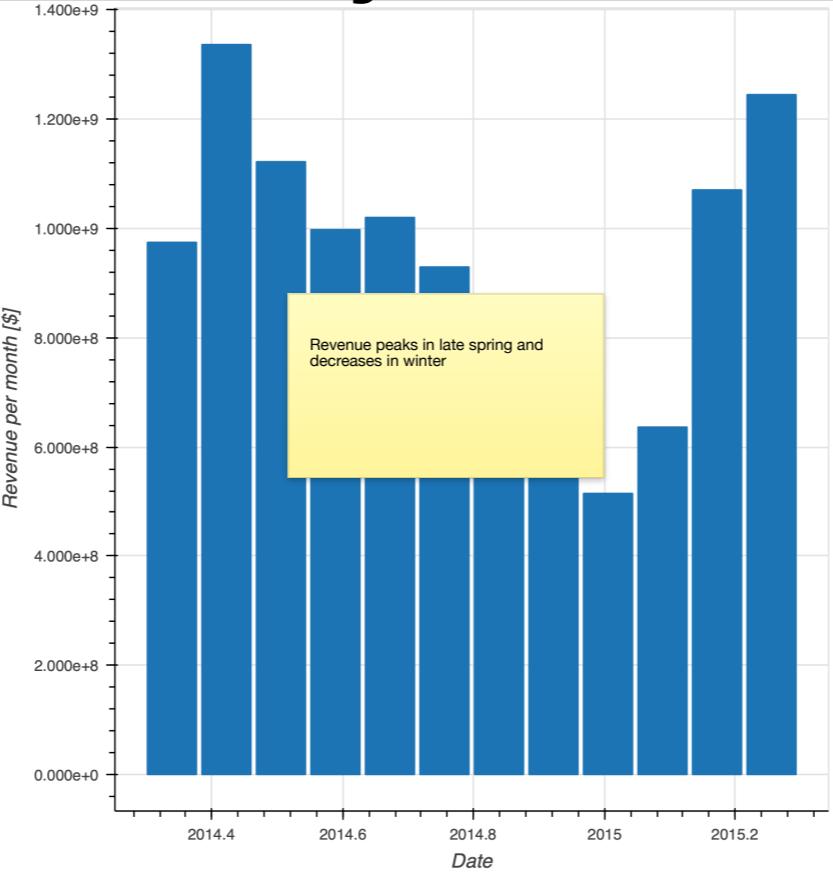


Key

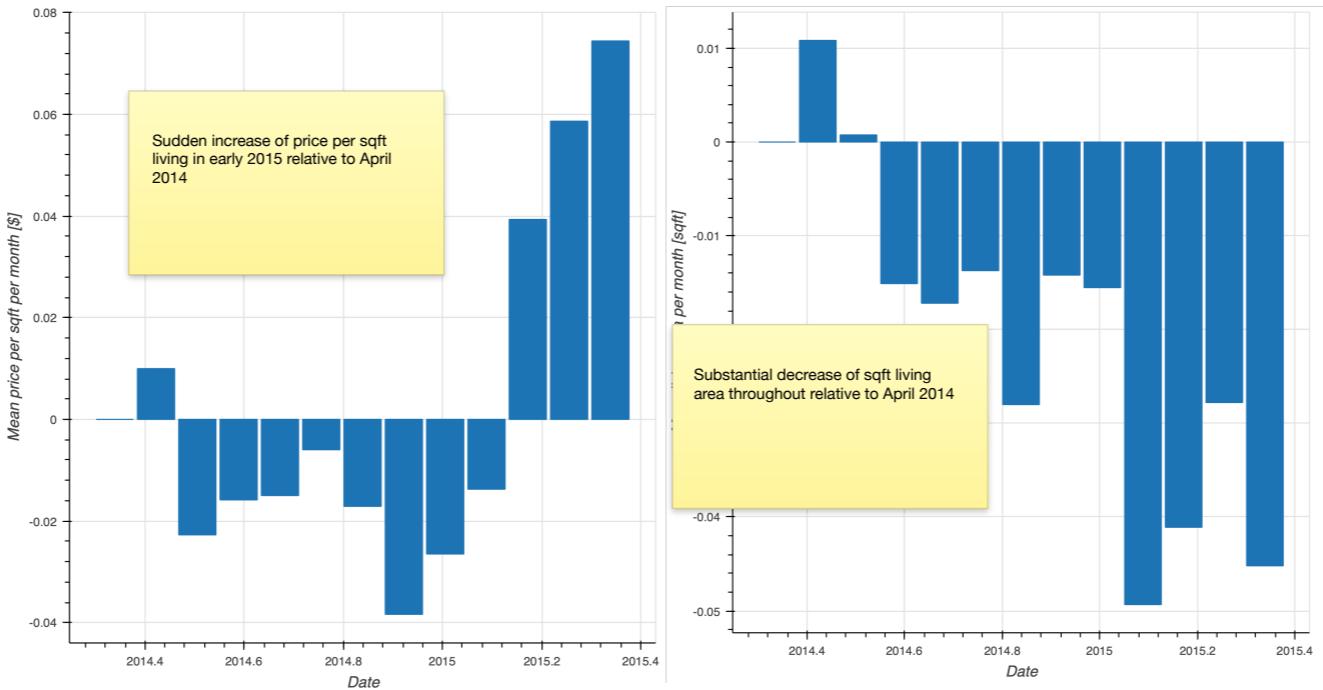
Number of house sales 21_600
Total revenue 11.7 billion \$
House price 540 \pm 367 k\$
Growth by 0.86% from April 2014 to April 2015
Price per ft²: 264 \pm 110 with strong 7.44 % growth
Living area substantially decreases by -4.5%
Age of house 42 \pm 29

	Mean		
House Sales	21.6k	-	-
Total Revenue	11.7 G\$	-	-
House Price	540 k\$	367 k\$	0.86 %
Price per ft²	264 \$	110 \$	7.44 %
Living area [ft²]	2080	918	-4.5 %
Age of house [yr]	42	29	-

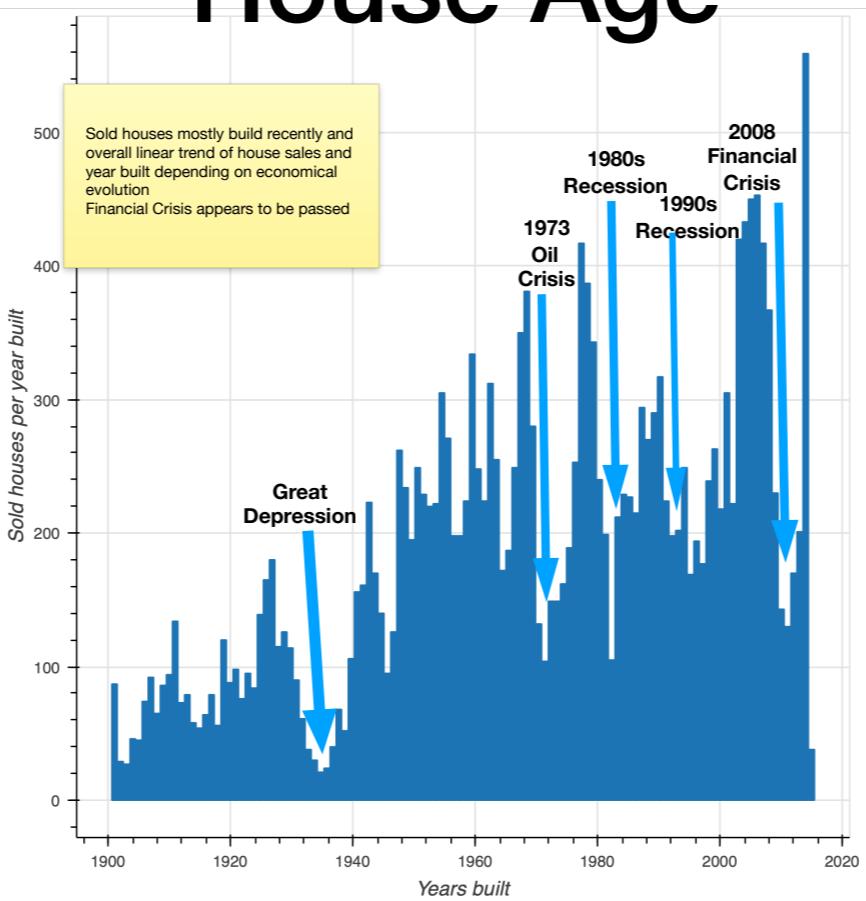
Monthly Revenue



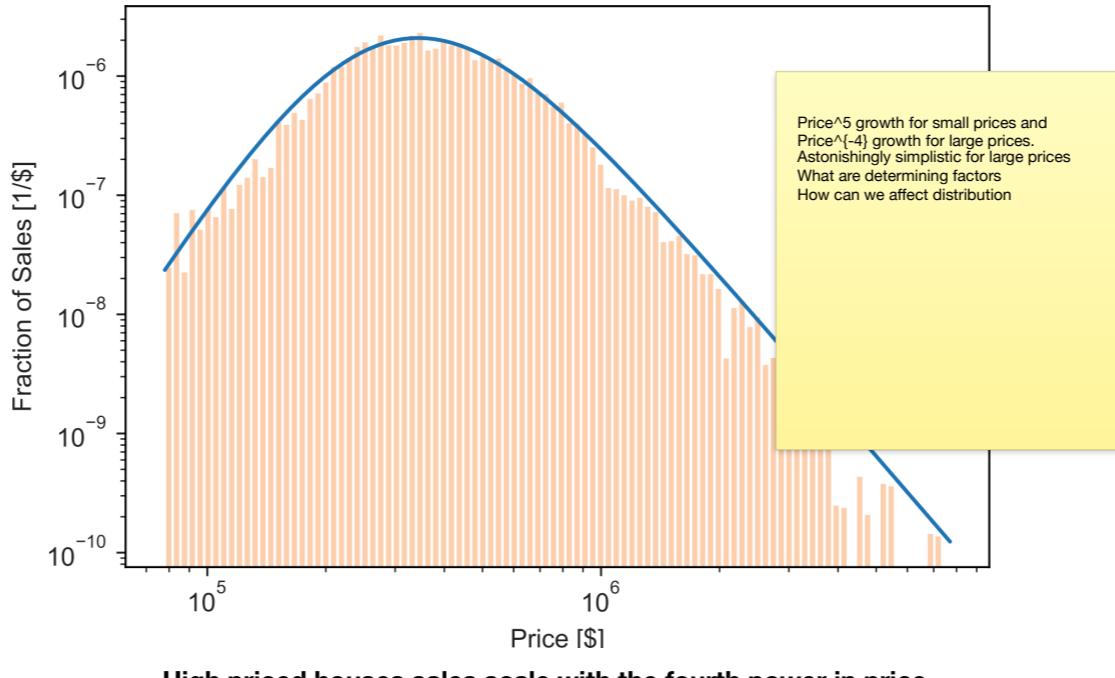
Monthly Fluctuations



House Age



Sales per Price



Sales per Price - Model

$$\text{pdf}(x = \text{price}) = A \frac{(x/E)^B}{(C + (x/E)^D)^4}$$

A determines height of distribution
E is a fixed scaling factor, corresponding to peak
B corresponds to small price power law
C corresponds to peak of spectrum
D is related to high price power law

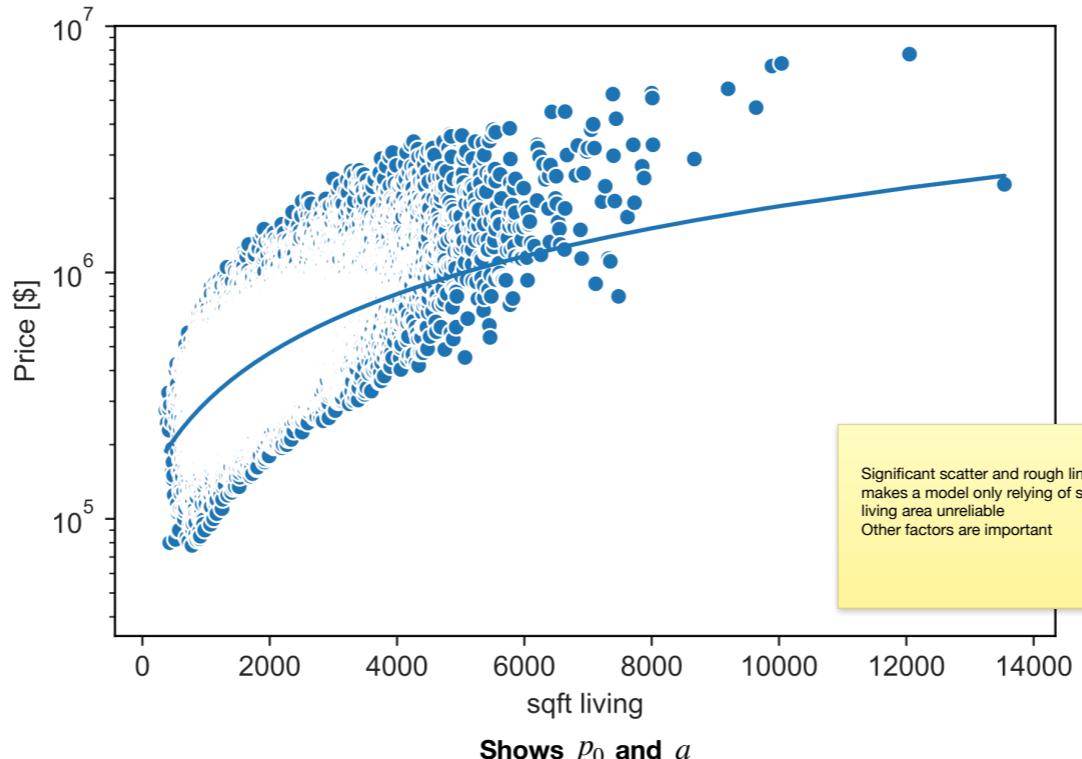
	Mean	Std. err.
B	$4.48 \cdot 10^{-6} \text{ } \$^{-1}$	$4.88 \cdot 10^{-7} \text{ } \$^{-1}$
C	5.22	0.26
B-4D	0.31	0.034
E	-3.84	0.3
	$5 \cdot 10^5 \text{ } \$$	-

Price Model

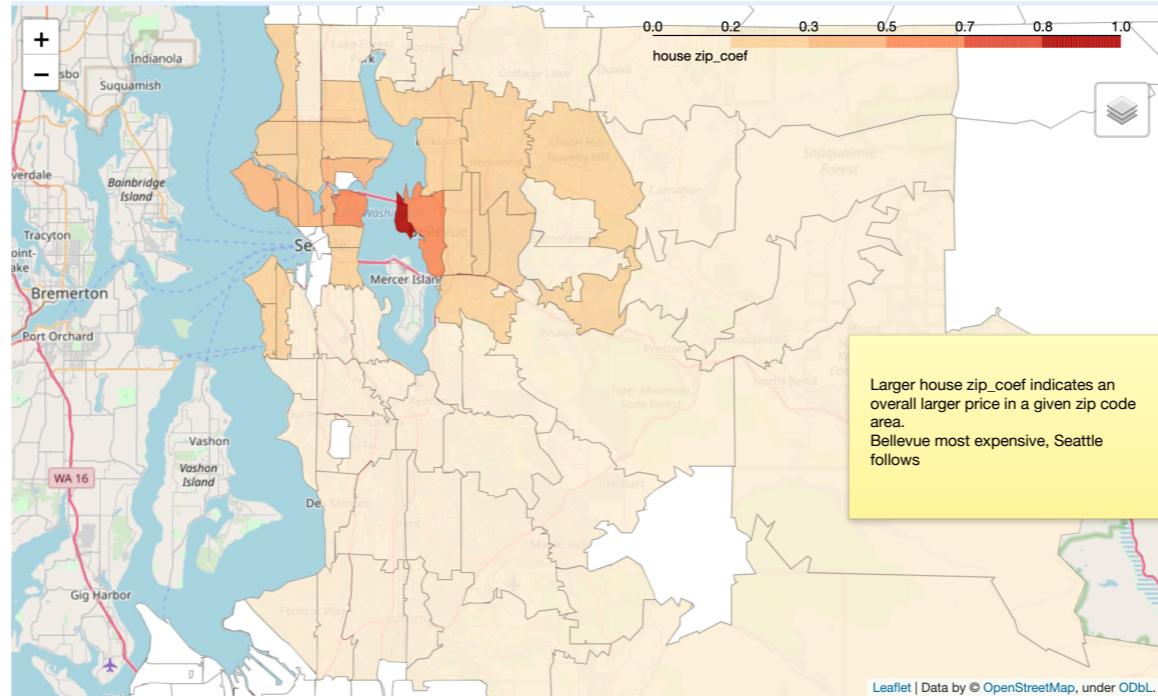
price $\approx p_0 + a \cdot \text{sqft_living} + b \cdot \text{zipcode} + c \cdot \text{grade}$



Sqft Living Dependence

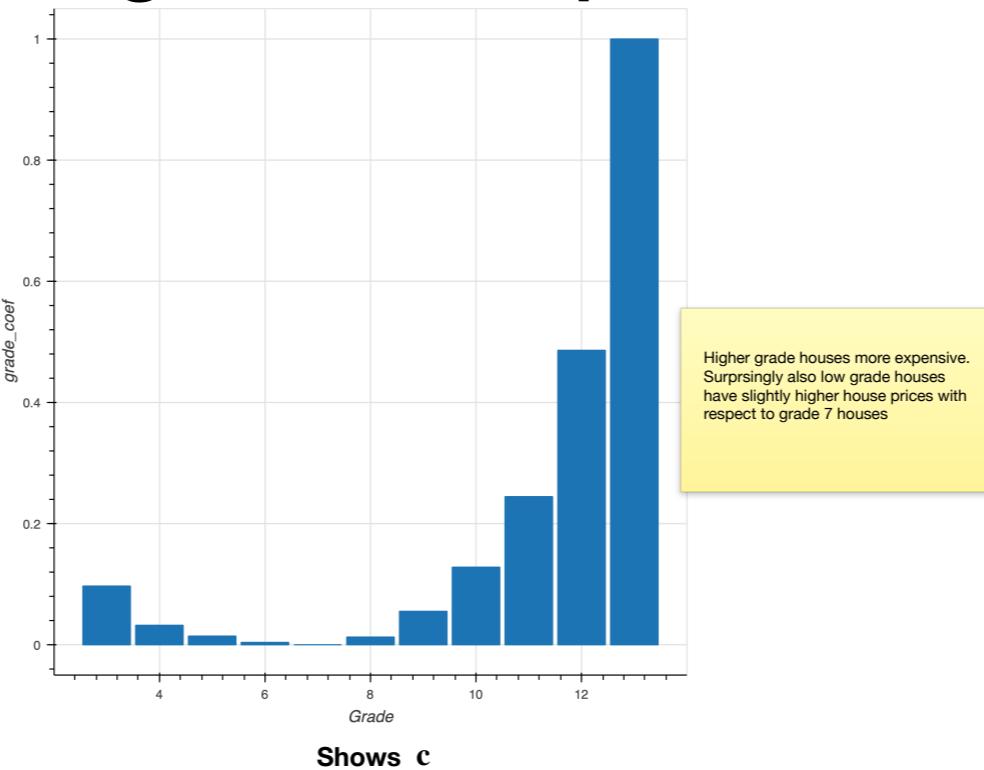


Zip Code Dependence



Shows b

Building Grade Dependence



Summary

- Monthly house sale revenue is lowest in winter and highest in late spring
- Total price per sqft living area increased significantly in the beginning of 2015
- Avg. sqft living area per sold house decreases
- Financial crisis no longer strangles housing market
- Sales per price follows universal scaling that dictates revenues
- House price is primarily affected by
 - Sqft living area
 - Zip code
 - King County house grading index

House sale revenue
Price per sqft living growth
Financial crisis house age
Universal scaling
House price denominators

Recommendations

- In winter house demand lower means lower prices
 - Buy in winter, try to sell in summer
- Price per sqft living area has risen
 - Buy now or you may only afford smaller house
 - House value may rise
- Very expensive houses are rarely sold
 - focus on a portfolio that is in accordance with our distribution model to maximize sales and profits
- Do not invest in Bellevue as it is very expensive and saturated
 - Invest in south Seattle
- Grade 7 houses (solid) are overall the cheapest category, grade 3 to 10 overall mild price variations

Buy in winter, sell in late spring
Buy now
Very expensive houses are rarely sold
Bellevue too expensive, invest elsewhere
Grade 7 houses are cheapest 3 to 10 roughly comparable

Future Prospects

- Resolving factors that dictate sales per price scaling law
 - Analysing scaling law for different subjects
 - Taking economical data account
 - Resolving price relation for different zip code areas
 - Taking more years of data into account to predict temporal house price evolution
 - Understanding the cause or significance of fluctuations

Study scaling law dependencies
Economical data into account
Price relation for different zip code areas
More data, over several years
Understanding source of fluctuations

Thanks for the Attention

Thanks to all members of the Data Science Team and especially to Florian F. and Simon.

Any Questions?