



Leo Kamps, 15 December 2023

King County Real Estate

Analysis and investment recommendations for Erin Robinson

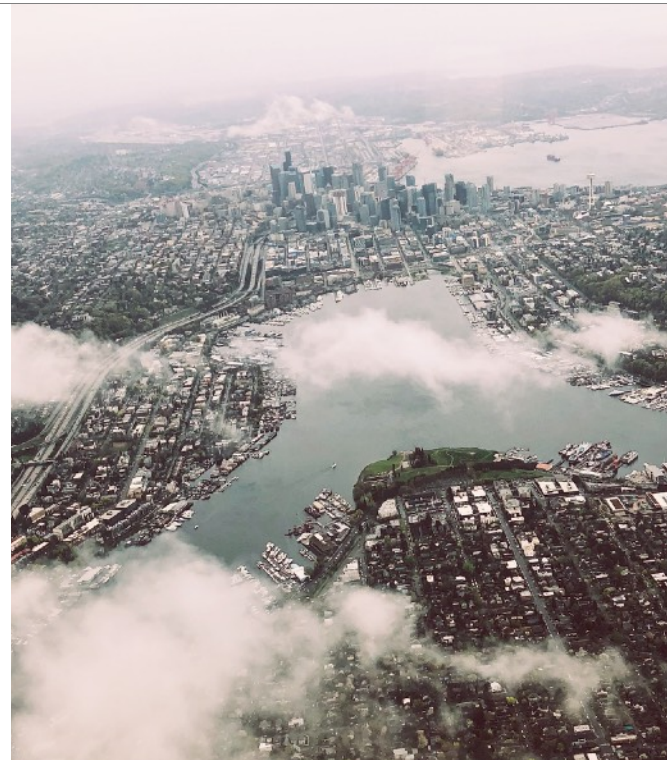
Leo Kamps

Aspiring data scientist

- Background in social science
- Recently moved into an old house

Erin Robinson investment strategies

- Poor neighbourhoods
- Profit of secondary importance
- Socially responsible



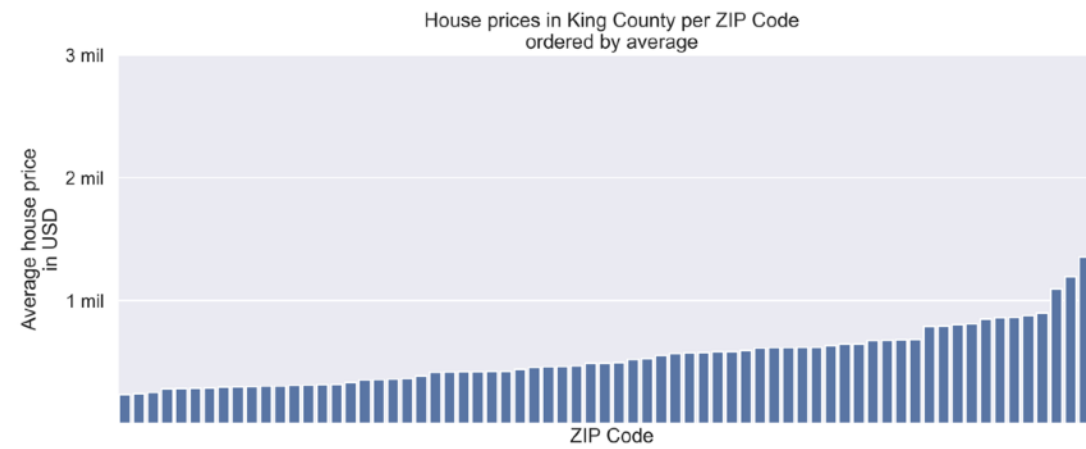
You told me, you wanted to invest in "poor neighborhoods" and invest "socially responsible", so profit is not top priority. I can give you recommendations on how to do that! I see where you're coming from, wanting to invest in poor neighborhoods, but I will suggest a slightly different approach on how to invest socially responsible.

I got myself a dataset on house sales for the King County area. It includes for how much houses went for in 2014, so that's our price for the moment. The values might go up or down, but the average gives us a pretty good overview already. It also contains zip codes, that's convenient to find areas for you to invest in.

What I think you wanted to know from me by saying that you wanted to invest in poor areas, is that the houses there might be cheaper, so not as big of an investment.

Let's take a look at the market from the perspective of areas. Are there any particularly cheap areas? Here's what I found looking for cheap areas for you to invest in.

Market overview



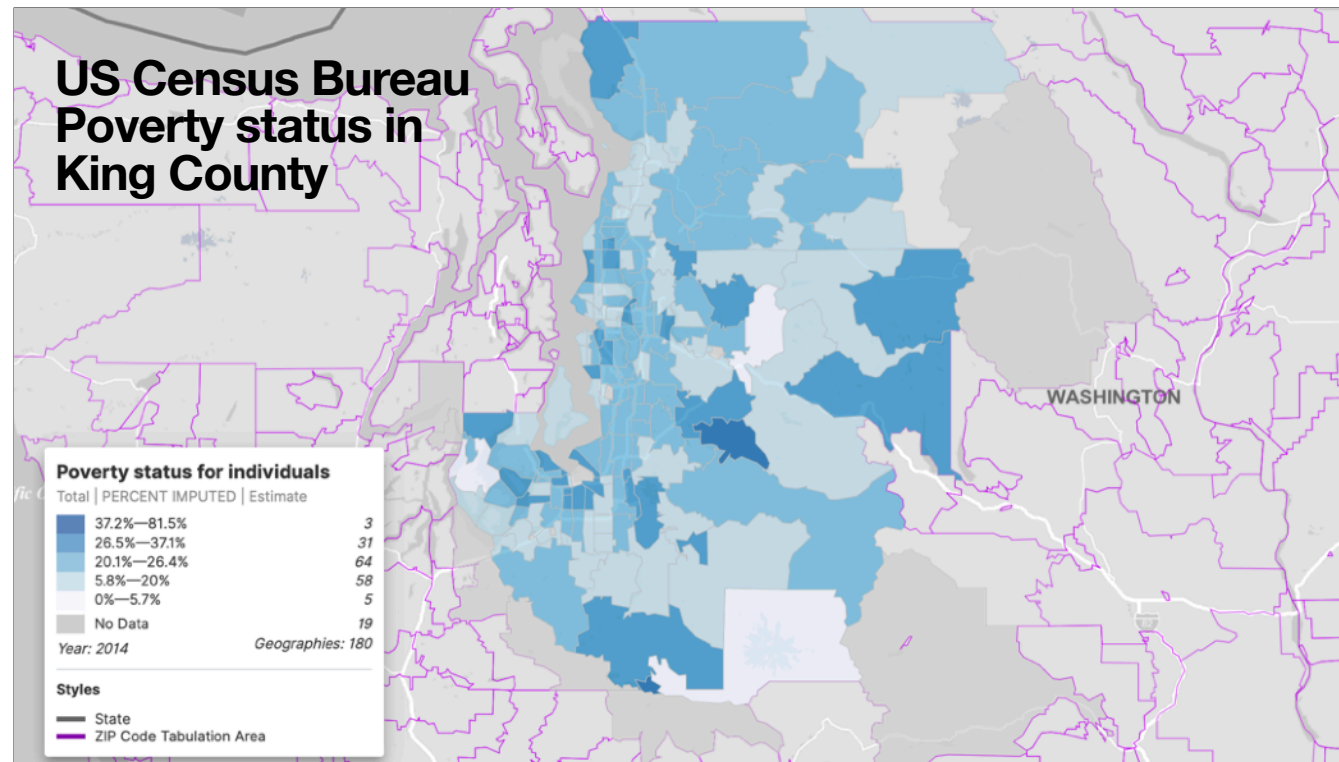
These are the average prices people paid for a house by the different areas. I ordered them by how high the average is in an area

What you can see here is that there are not really cheap areas, only quite normal and then on the side a few more expensive areas.

If there were cheaper, medium and high priced areas in our dataset, this graph wouldn't have a slope but would look more like stairs.

So from what I can say, there wouldn't be any particular areas that I could point out to you to invest in

Next, I went out to find more data on poverty rates

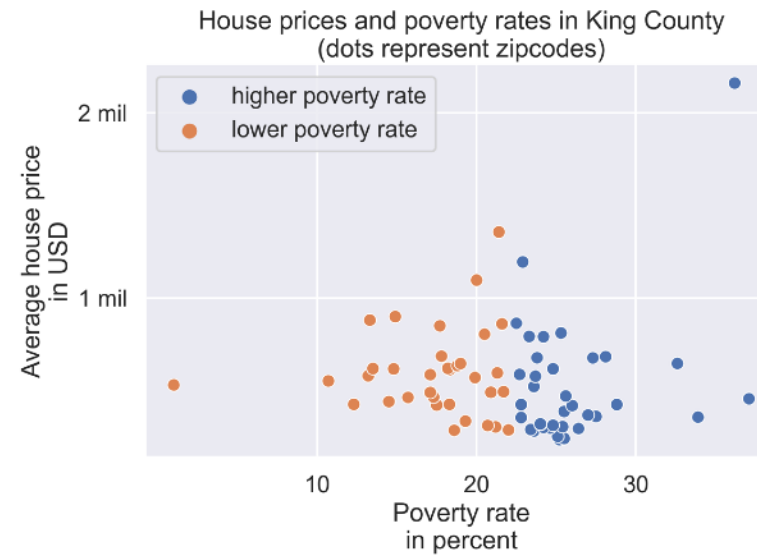


The United States Census Bureau provides a dataset on the poverty status of individuals by area.

Here you can see the percentage of people with poverty status by the bureau's definition.

Not all of the ZIP codes in this dataset match with the dataset we have on houses. I think that some of the areas with the highest poverty rates are not included in our house dataset because there just aren't so many houses there but rather apartment buildings.

Poverty and real estate market

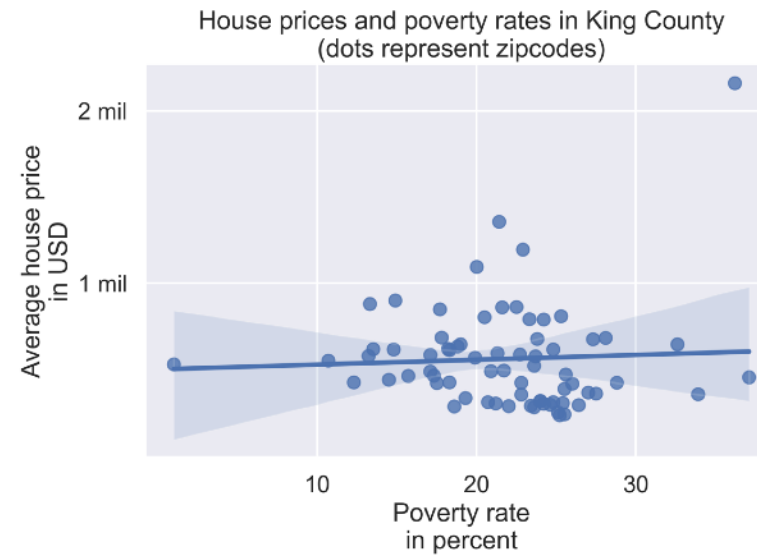


Back to our house dataset. Using the poverty rate is a better indicator for poor neighborhoods than the price alone.

Here you can see the average house price and the poverty rate in the area. On the left in orange are half of the areas that have a lower poverty rate and on the right in blue are the areas with a higher poverty rate.

There's a big blob in the middle, so many areas where houses are being sold have a similar poverty rate and a similar average price for the houses.

Poverty and real estate market



The poverty rate does not really correlate with the prices. This trend line in reality could be anywhere in the blue area.

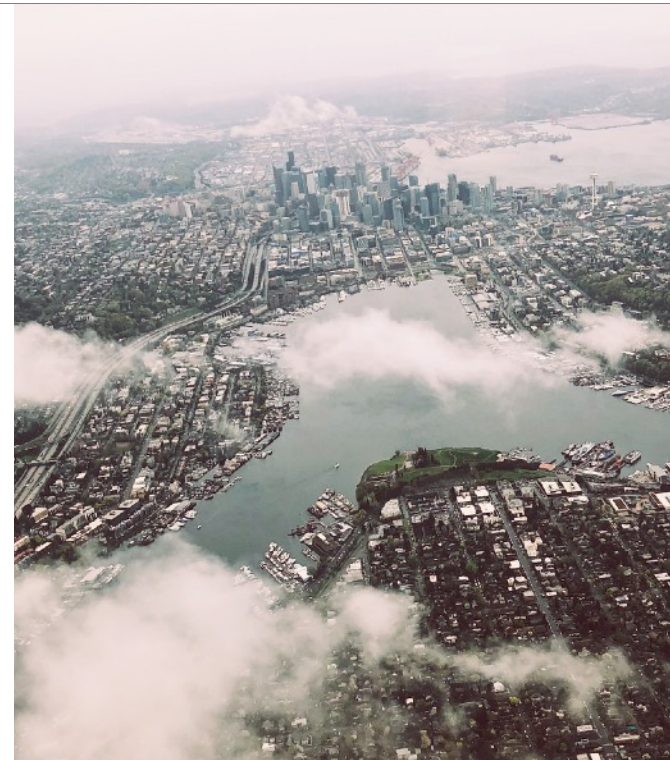
So from the average prices AND the poverty rate, I cannot point out any particularly interesting areas for you to invest in.

Now comes the part where I want you adjust your investment strategy slightly towards another goal.

Beating gentrification

Economic perspective

- From (very) low value to (very) high value
- Driving out communities
- Areas of high variance in prices



Socially responsible real estate investment, especially in cities and metropolitan areas like around Seattle should consider gentrification.

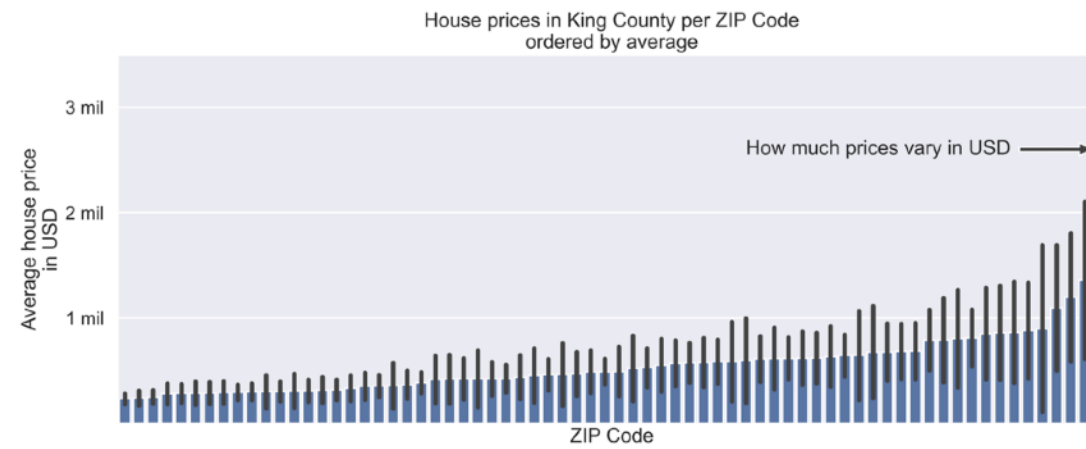
I'm simplifying a lot but from an economic perspective, gentrification works through driving the value of real estate from very low to very high. Very cheap houses are being bought, flipped and resold for a high profit. This drives out the original community and replaces it with another community of a higher socioeconomic status.

To find areas that have a high risk for gentrification, I used a simple metric: the variance of prices. If there are very low value houses and very high value houses in an area, there is an incentive to close the gap by flipping a house with very high profit.

Market overview

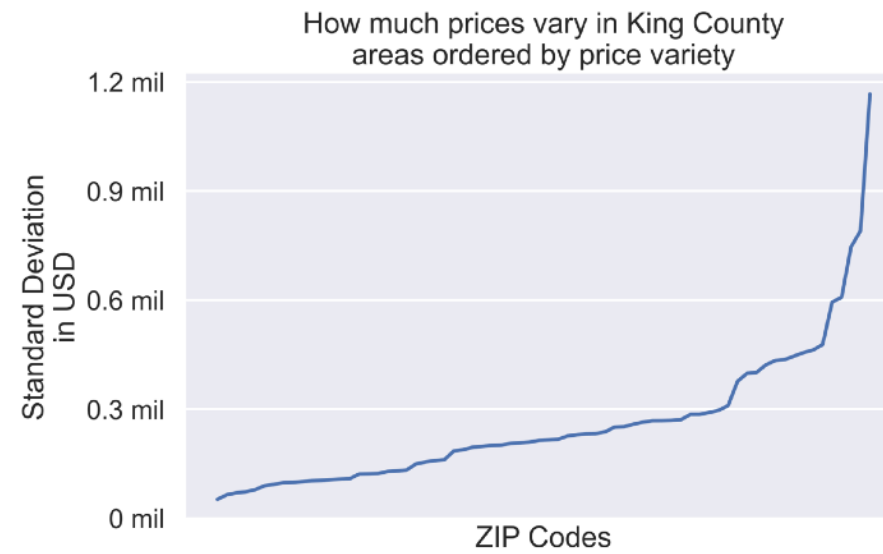
Going back to our first graph where we see the average prices for houses in order. In each of these areas, something else is going on.

Market overview



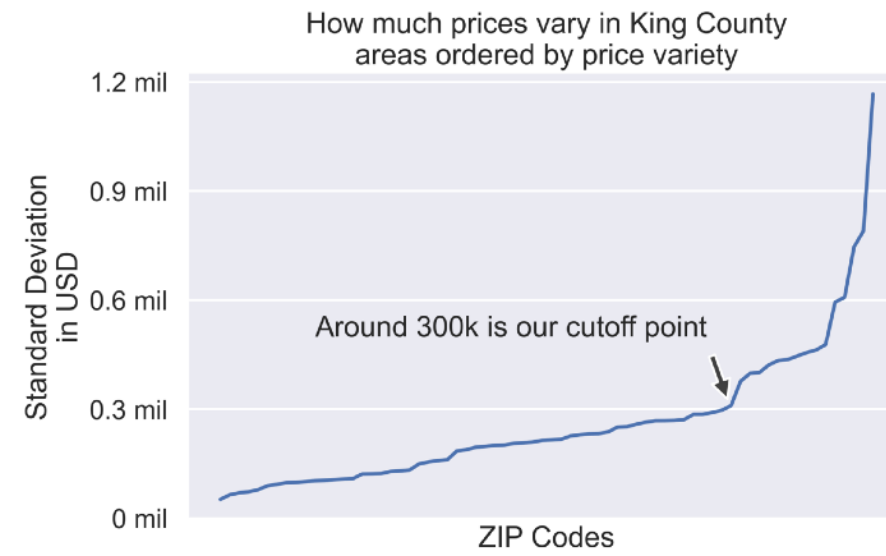
Here you can see the „average“ differences in prices. They are pretty volatile. You can picture that the bigger the black bar, the more often cheap houses stand next to expensive houses.

Identifying potential for gentrification



I took these black bars and put them in order here. This is a good measure to identify areas that are of a higher risk of gentrification. Because you are motivated to invest socially responsible, I wanted to find the areas you could make the most of a difference in and contribute to protecting communities from being driven out.

Identifying potential for gentrification



As you can see here, there's a point separating two groups of areas that have lower variance and higher variance in prices. This cutoff point is about 300k USD

Potential for gentrification

98004 98006 98008
98024 98027 98033
98034 98039 98040
98102 98105 98109
98112 98119 98144
98166 98177 98199

I went through the dataset of house sales and found 18 ZIP Codes that might be interesting for your investments. There the prices of the houses are spread out farther than in the other areas. You going in and investing there, could make more of a difference for the poor communities in these areas.

Potential for gentrification

98004 98006 98008
98024 98027 98033
98034 98039 98040
98102 98105 98109
98112 98119 98144
98166 98177 98199

In 2014, **28 houses in poor condition** were sold in these areas

If you want to take social responsibility even further into account, try to look for houses with a poorer condition. Somebody else might take these houses, renovate them extensively and boost the value of the house by much much more than the local community can afford. If you were interested in doing renovations, I would recommend gentle renovations, that maintain the general condition of the house. That way you could make a little buck for yourself without driving away the community that would have been able to afford that house before you came in.

Socially responsible real estate investment in King County

Insights

- Most areas are close to the average prices except for high priced
- Poor neighbourhoods \neq cheap neighbourhoods
- There is a group of areas with higher variance of prices

Recommendations

- Invest in areas with high variance in real estate value
- Gentle renovation of low-quality houses
- Aim at mediocre profits

To sum up – these are my insights and recommendations for you

- Socially responsibly real estate investment can help poorer communities.



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Research questions & hypotheses

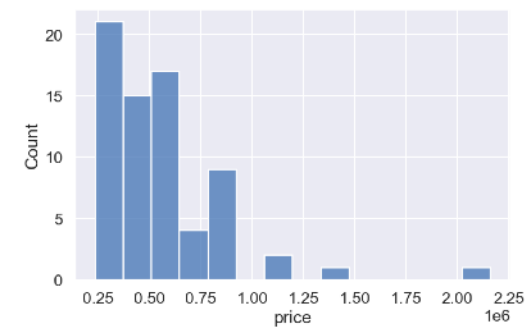
Research questions

- What are cheap neighbourhoods?
- Are poor neighbourhoods cheaper?
- What areas have a risk for gentrification?

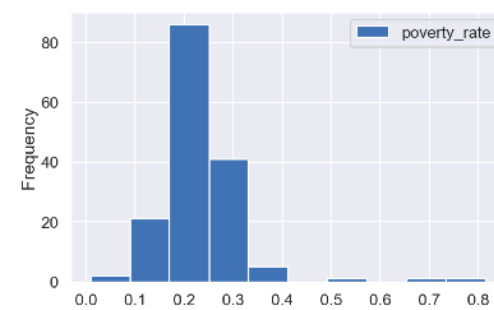
Hypotheses

- The lower the mean of prices, the cheaper a neighbourhood
- The lower the mean prices, the higher the poverty rate
- The higher the standard deviation of prices, the higher the potential for gentrification

```
sns.histplot(df.groupby('zipcode').price.mean())
```



df_poverty_complete.plot(kind='hist')



df_poverty.plot(kind='hist')

