



CANADIAN HOUSING MARKET

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Overview:

The project centers on analyzing the Canadian Housing Market and offering insights into its trends over the last four decades.

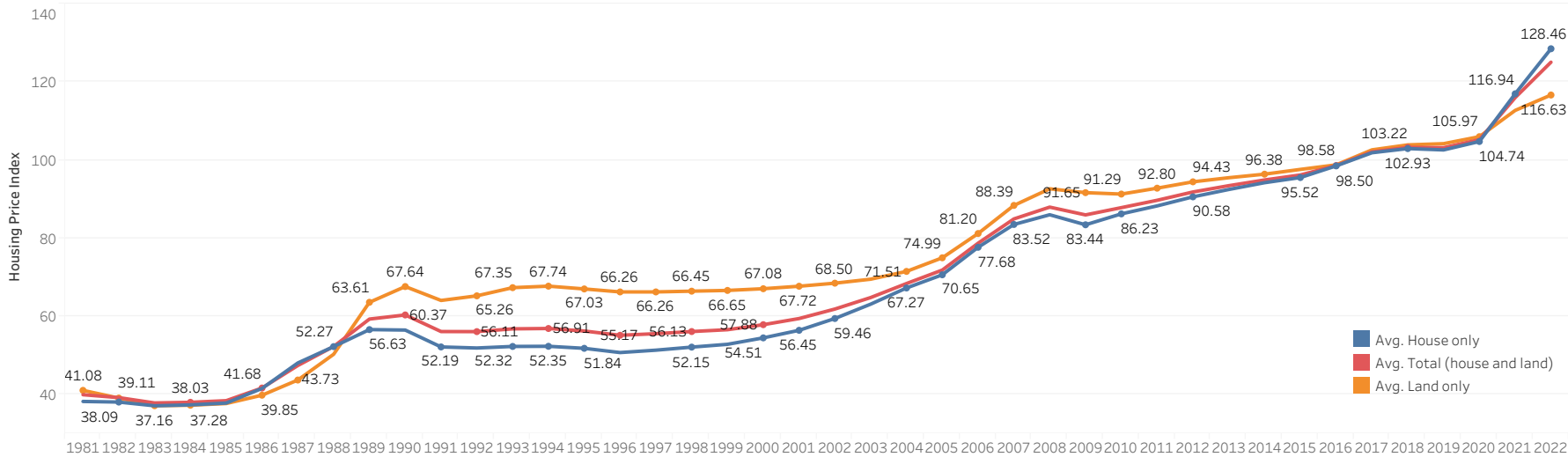
Available dataset: Housing Price Index, Consumer Index, Office Reale State Index, Real Estate numbers, Real Estate Prices

Goal:

1. Explore six different datasets
2. Observe trends and patterns
3. Provide visualization to the questions



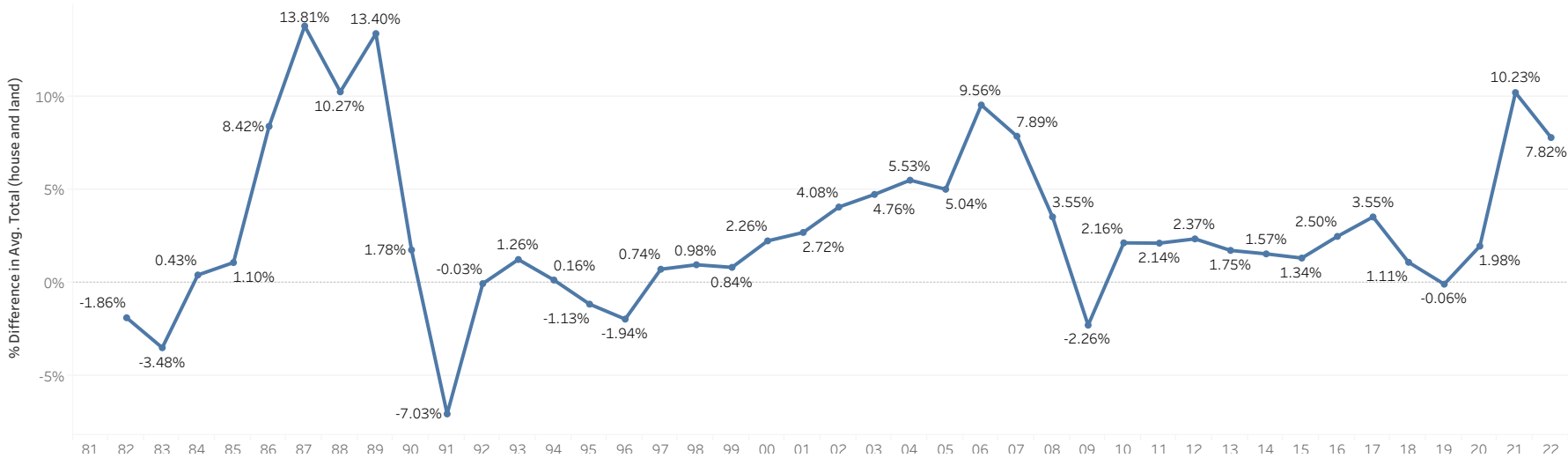
HPI Over 40 Years



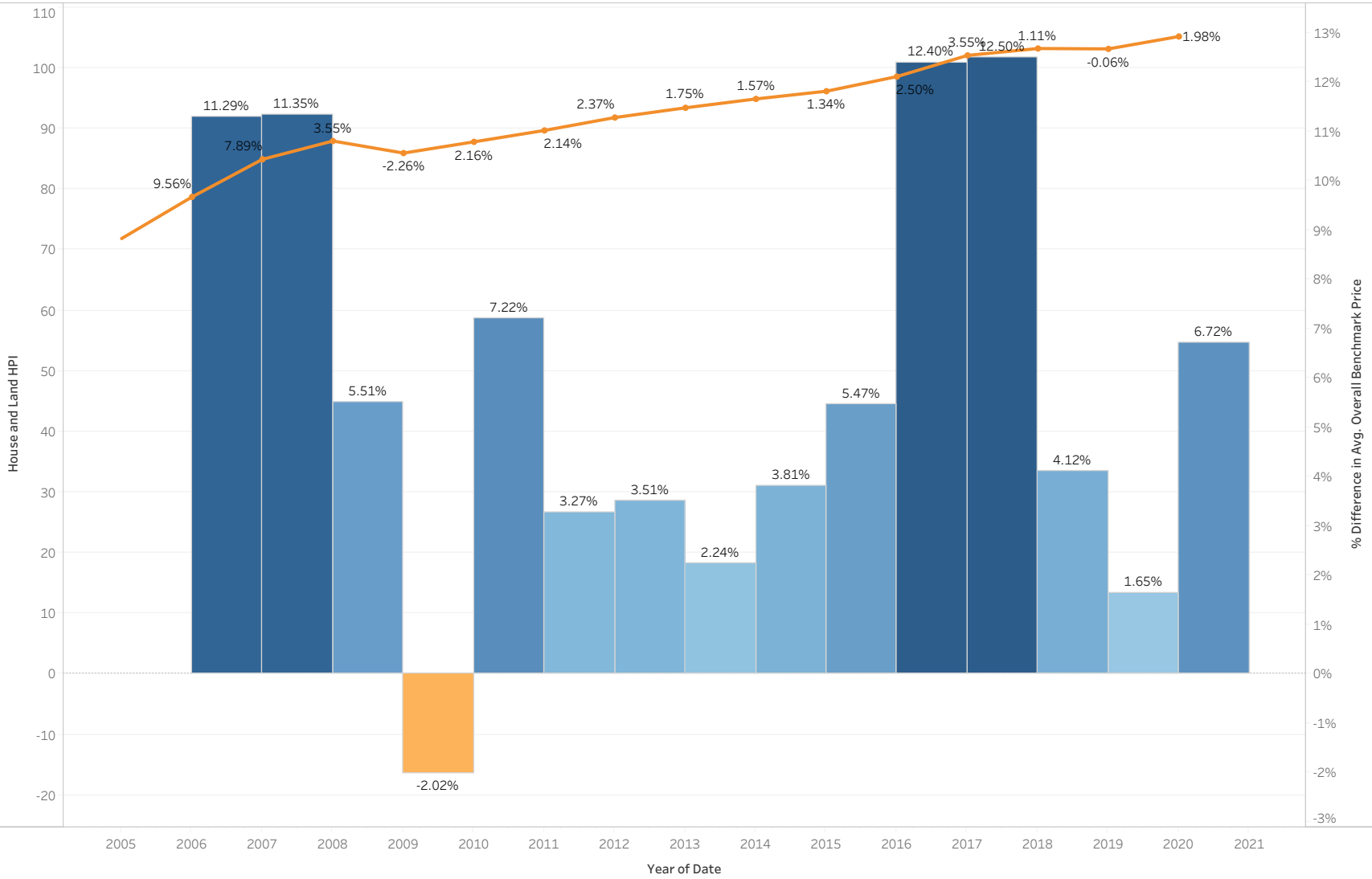
Observations:

Overall HPI increased during 40 years period, and increased at a steady rate after 2000. HPI had rapid decreases and increases at a few points in history.

HPI % Difference



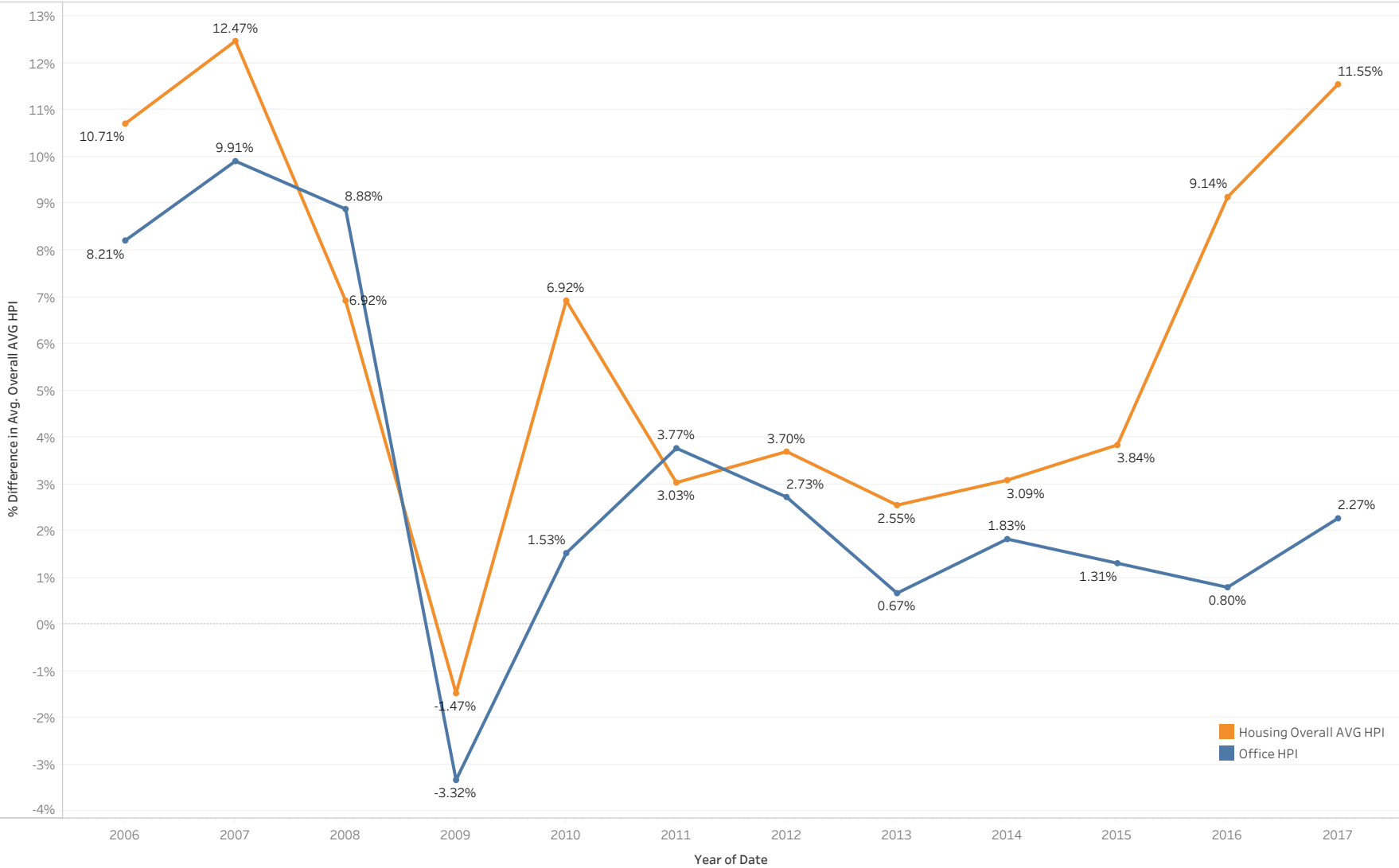
HPI vs Benchmark Price



Observations:

HPI and overall Benchmark price both increase during the period after 2005. HPI increase gradually while benchmark price % difference changed significantly from time to time.

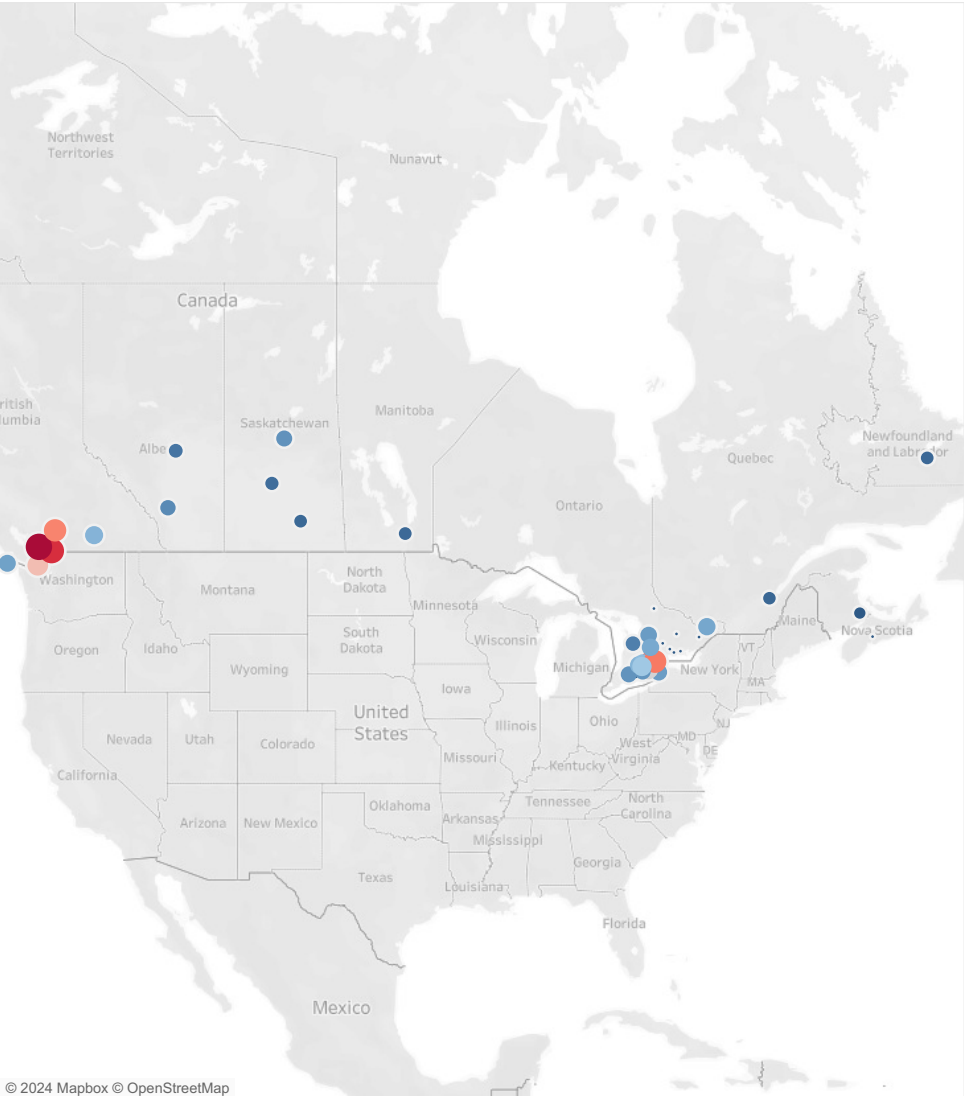
Housing Price Index vs Office Price Index



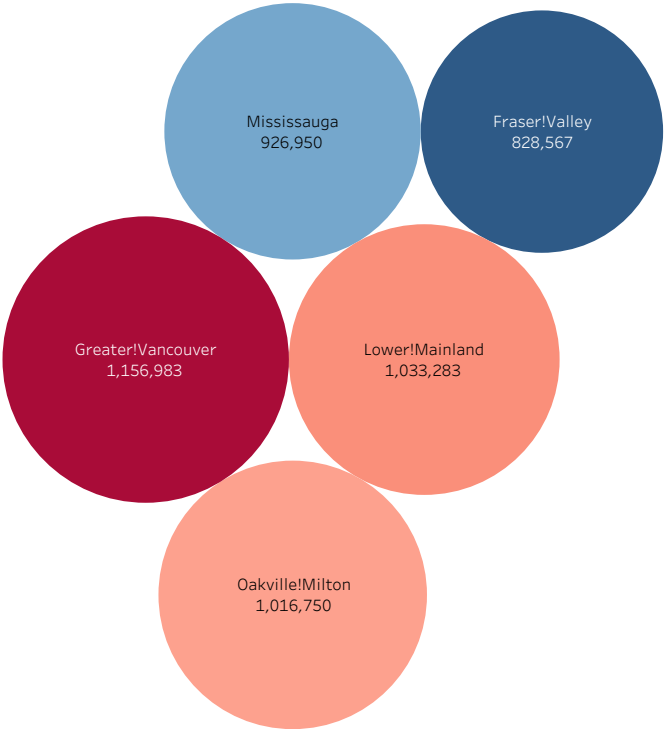
Observations:

Housing HPI and Office HPI follows similar path for most of the time, however in 2016 the office price index decreased while HPI increased at a steady rate.

Heat Map



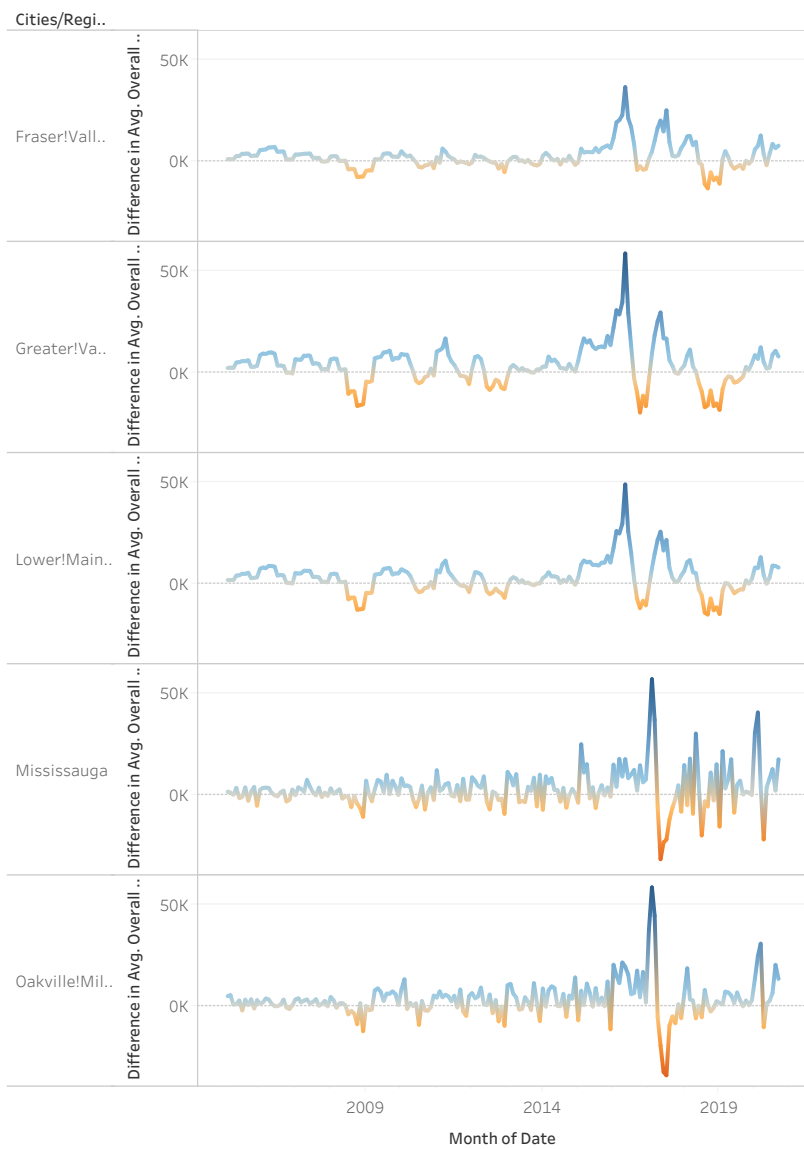
Bubble Chart



Observations:

Two regions with expensive homes in 2020 are located in two provinces: British Columbia and Ontario with highest average benchmark price located in Greater Vancouver.

Top N Parameter
5



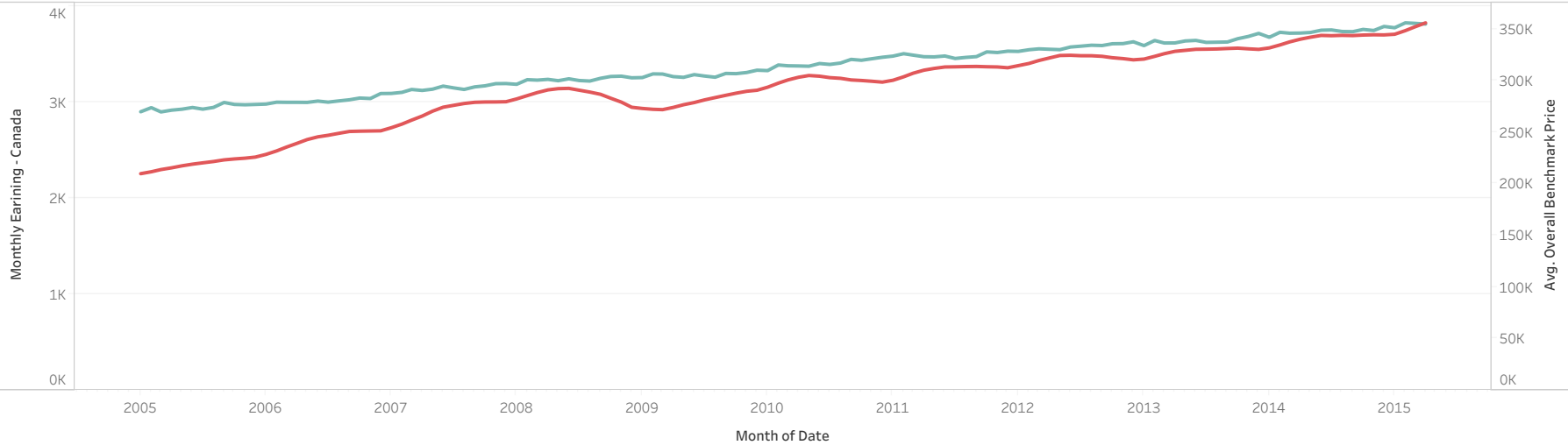
Top N Parameter
5

Observations:

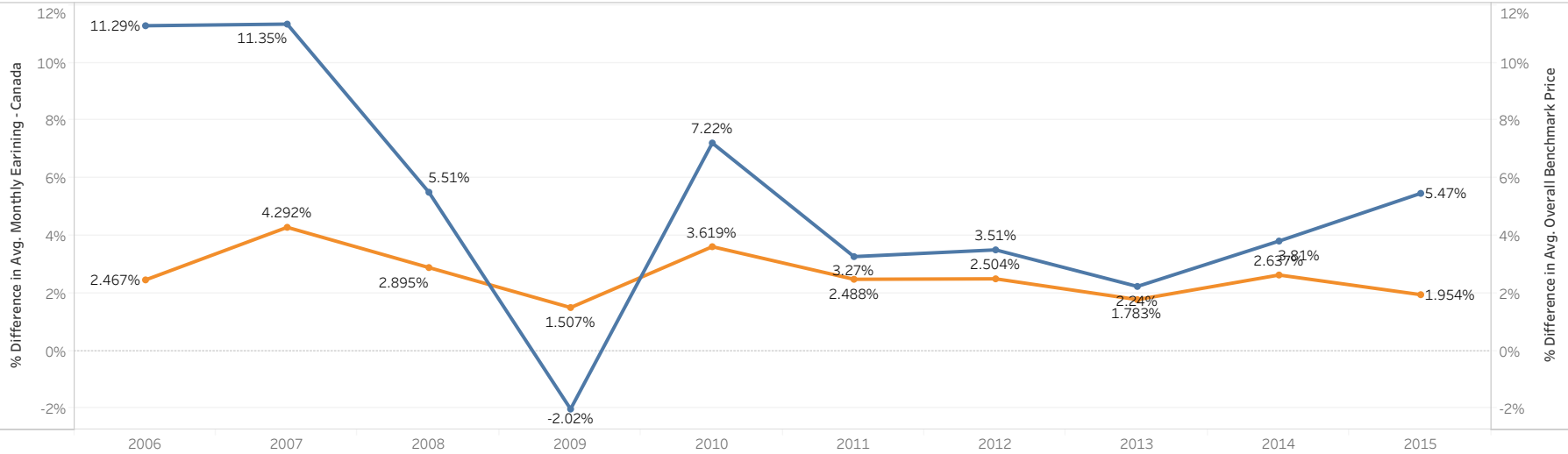
Regarding the top 5 cities/regions, housing prices exhibit fluctuations over time.

Both British Columbia and Ontario cities follow a similar trajectory, although BC cities experience increases and decreases earlier than their counterparts in Ontario.

Housing vs Earnings



Housing vs Earnings % Diff

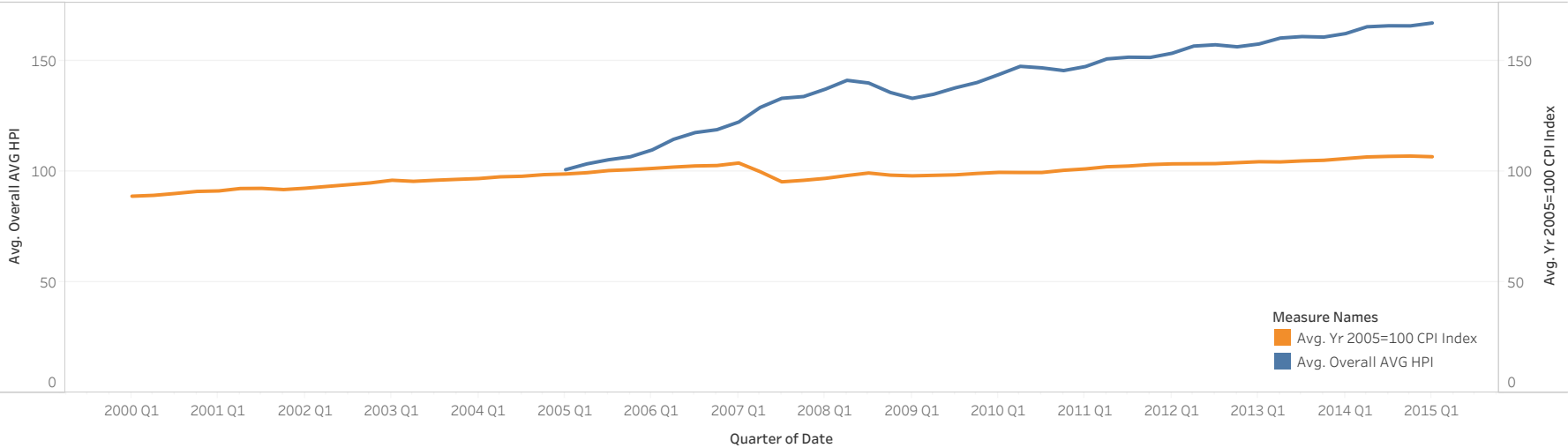


Observations:

Over the periods, there is a gradual increase in both housing and earnings.

In 2009, both earnings and housing prices experienced a decline, with housing prices decreasing more significantly than earnings.

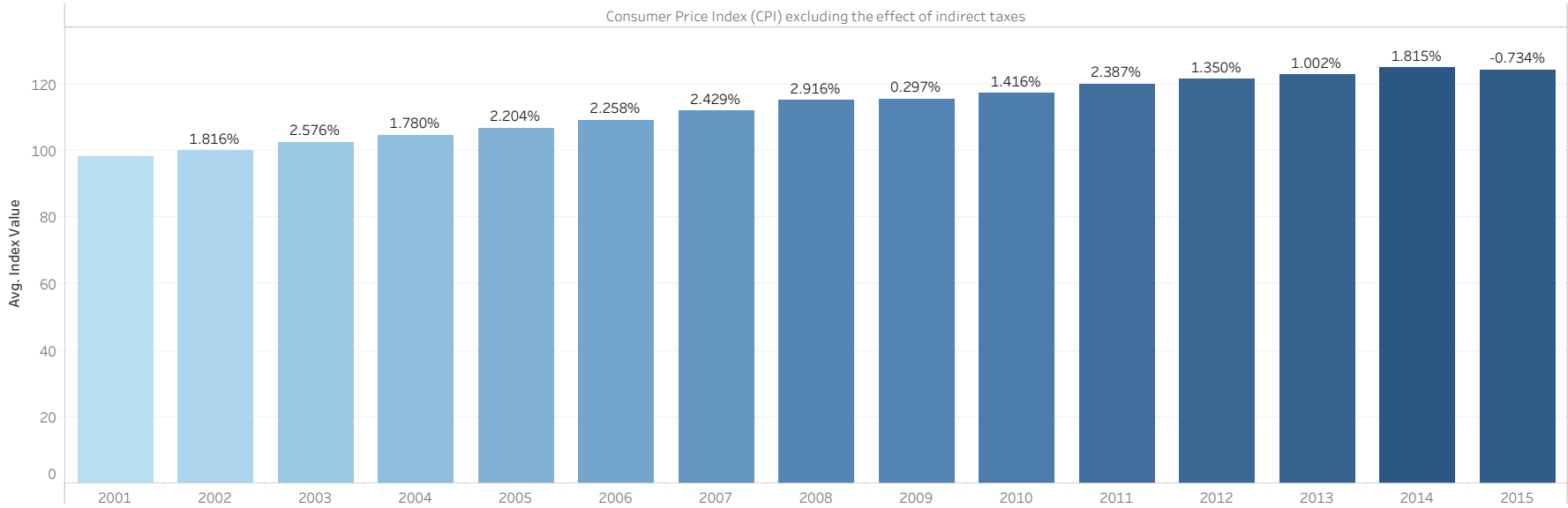
HPI vs CPI



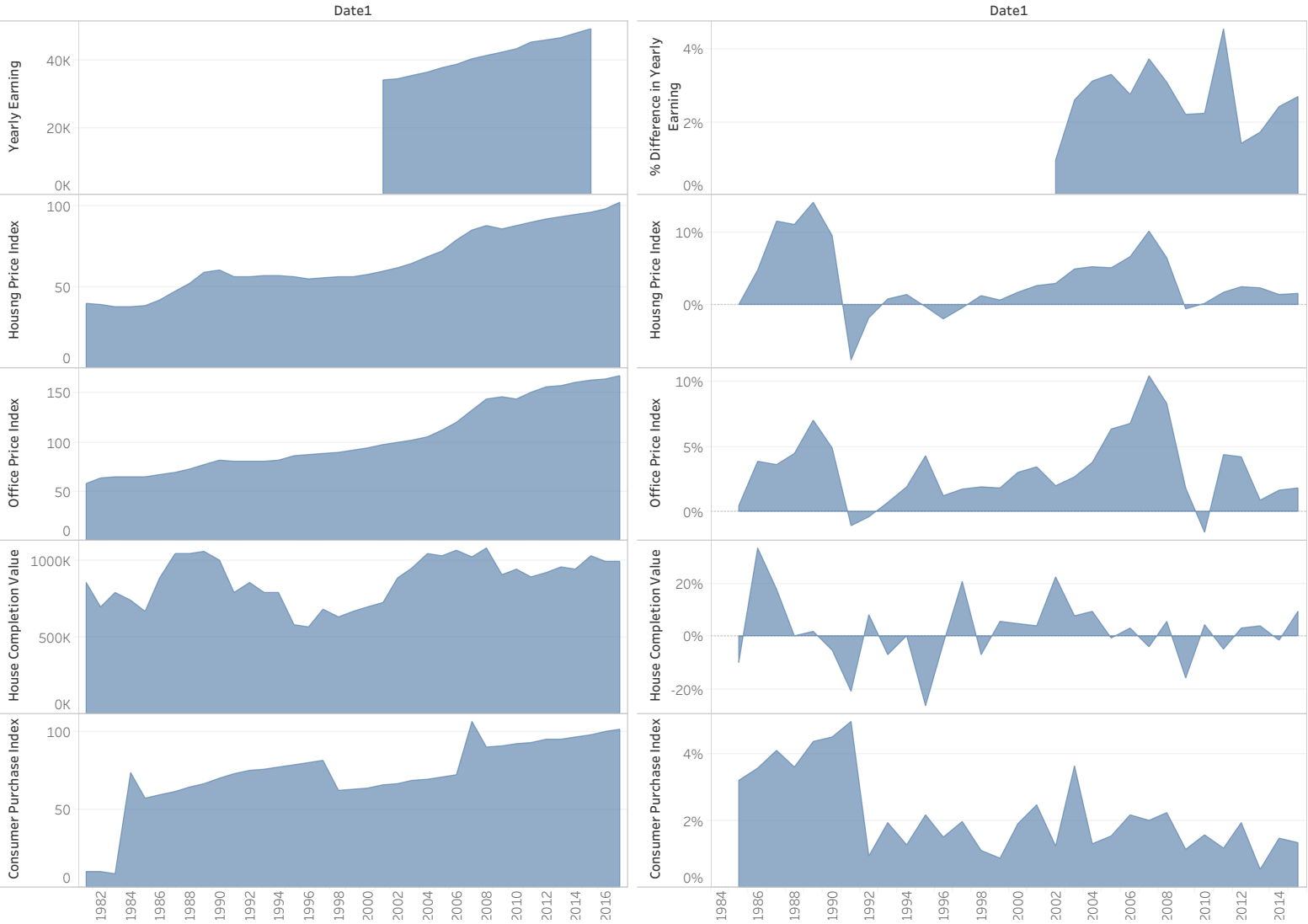
Observations:

The Housing Price Index (HPI) exhibited a greater increase compared to the Consumer Price Index (CPI) over the years.

The CPI demonstrated a gradual increase, suggesting that people spent more in 2014 than in 2001.



Economic Crisis Impact



Observations:

Black Monday:

No negative impact on the average office price index or CPI. The value of housing construction completions decreased.

Recession in the Early '90s:

Significant drops in the value of housing construction completions, CPI, and Office Price Index.

Dot Com Bubble Burst (Early 2000s):

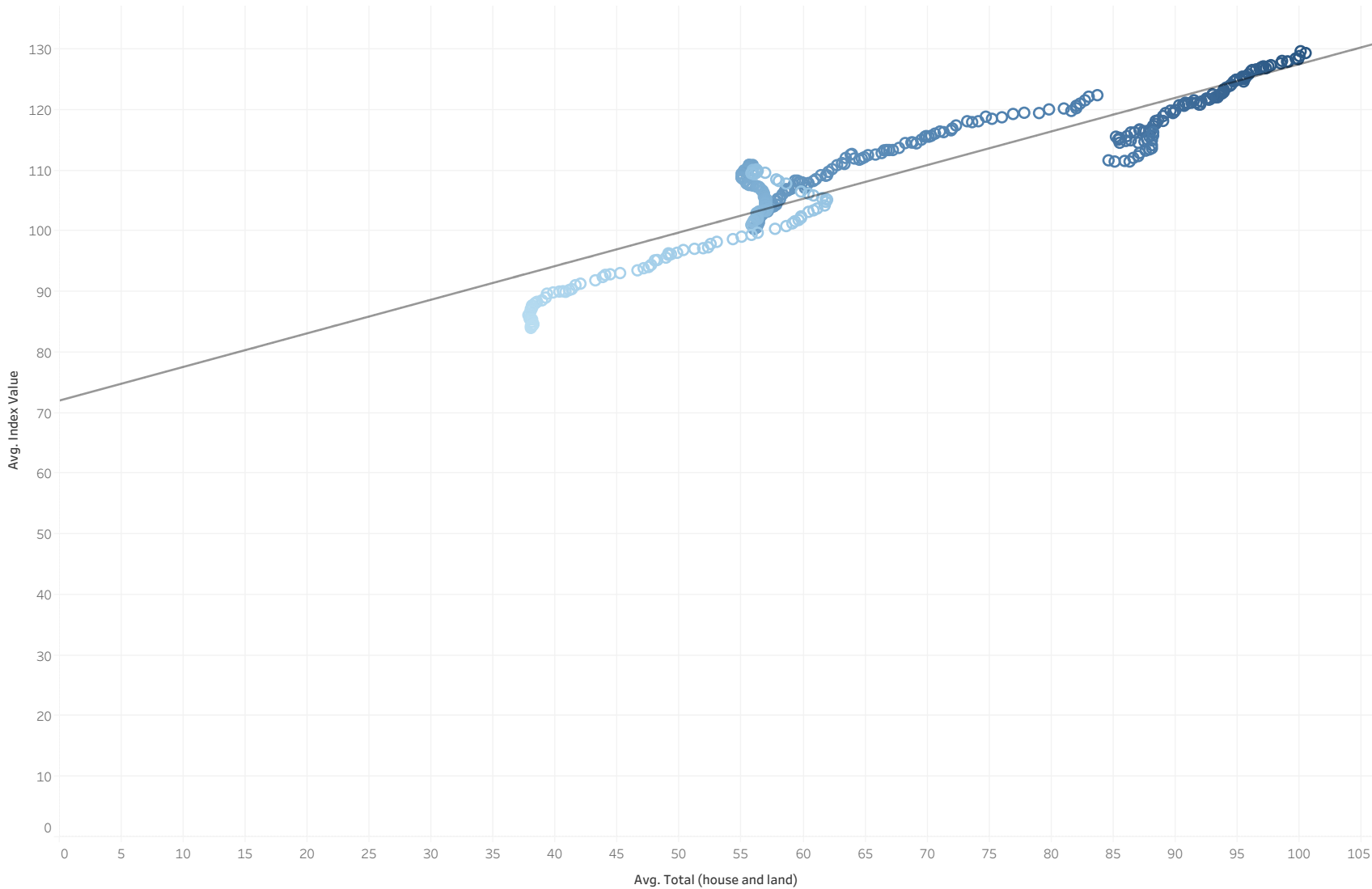
No adverse effects on the office price index, CPI, or the value of housing construction completions.

Financial Crisis (2007-2009):

Yearly earnings increased at a slightly lower rate compared to previous periods. Both the housing price index and office price index experienced significant declines.

The value of housing construction completion and CPI fluctuated, but no substantial changes were observed.

Regression Line between CPI and HPI



Observations:

The p-value of less than 0.0001 suggests that the relationship between Avg. Total (house and land) and Avg. Index Value is statistically significant.

HPI can be fairly reliable to predict the consumer purchase index.

Key Takeaways:

Steady Increase in Home Ownership Costs:

The cost of home ownership has shown a consistent upward trend over the past 40 years.

Brief Drops in Home Prices at Key Historical Points:

Brief declines in home prices occurred during significant historical events, such as the early '90s recession and the 2008 financial crisis.

Earnings Increase at a Slower Rate Than Home Prices:

While earnings have been steadily increasing, the rate of increase is lower compared to the rise in house prices.

Widening Regional Price Differences After 2015:

Price differences between regions expanded notably after 2015, with substantial increases in home prices in the Southwestern BC and Southern Ontario areas.

Conclusion:

Challenging Landscape for Prospective Homeowners:

Prospective homeowners face a more challenging situation than in previous years, as the rate of increase in housing prices surpasses that of earnings.

Lucrative Returns for Real Estate Investors:

Real estate investors or homeowners who purchased properties decades ago and sold in recent years have likely realized substantial returns on their investment.

