

PROBLEM & BACKGROUND

In the last decade, many metropolitan cities in Canada have witnessed inflated housing prices and the ongoing pandemic has forced this issue to grow uncontrollably. In recent times, articles have hit the internet titled, "The Resilience of The Housing Market During The Pandemic" and "House Prices Are Soaring", letting Canadians know that the housing market has had the most successful year in decades despite of COVID-19. Prices and investor housing market sentiment is rising fast, and unaffordability is increasing even faster. Canadians are left with the question of whether or not settling down in their dream home is still a feasible option. Refer to Figure 1 and 2 below.

Figure 1

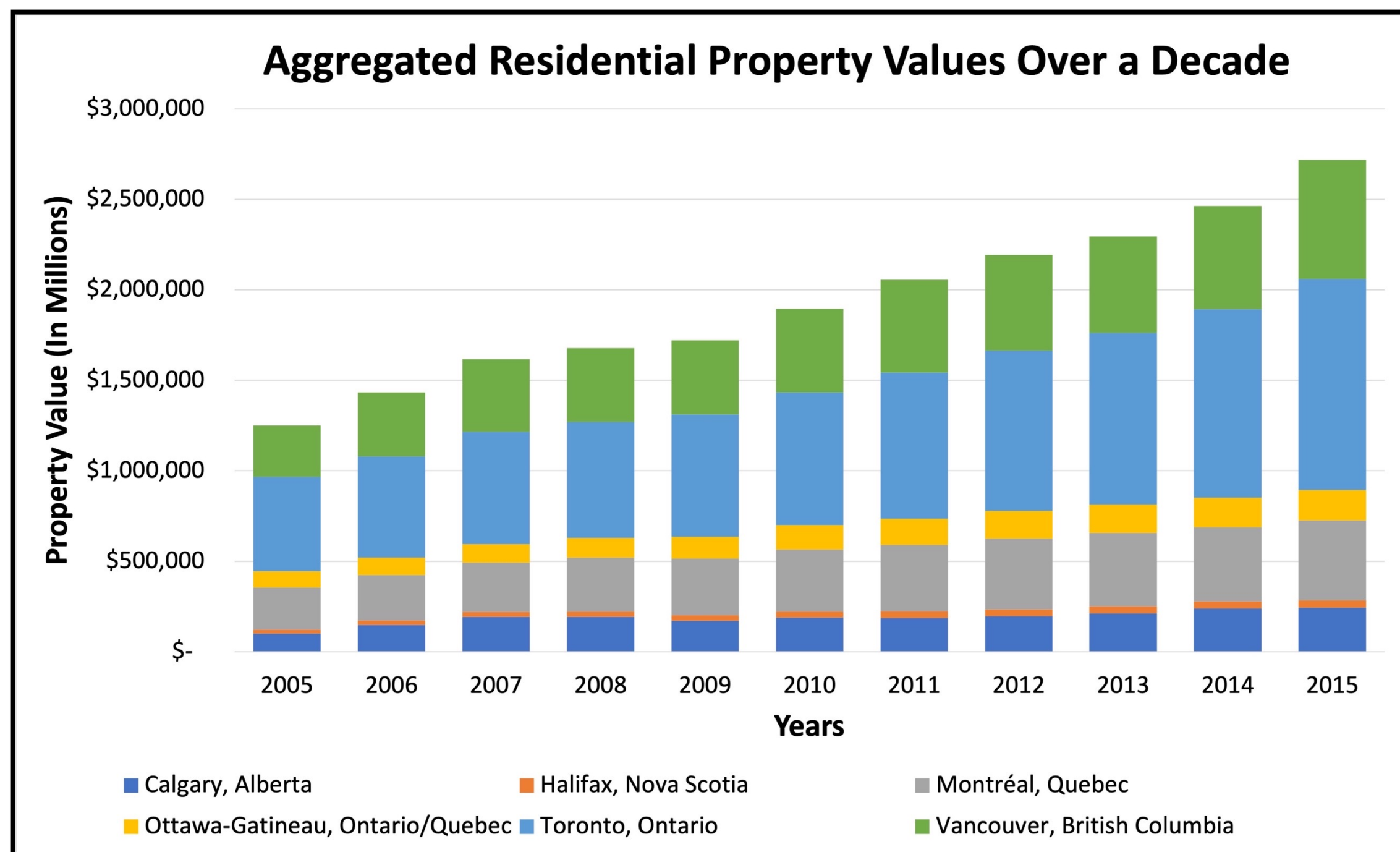
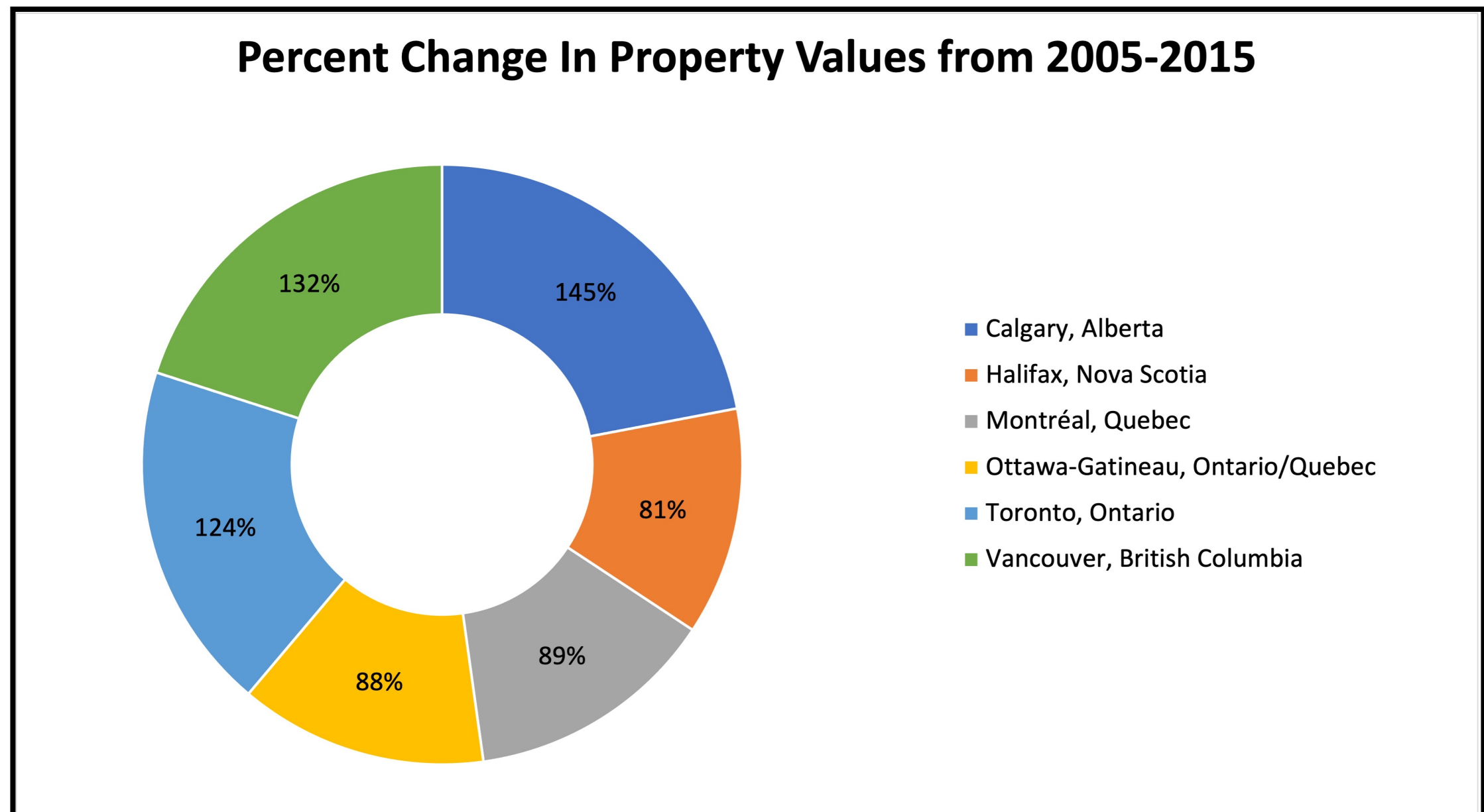


Figure 2

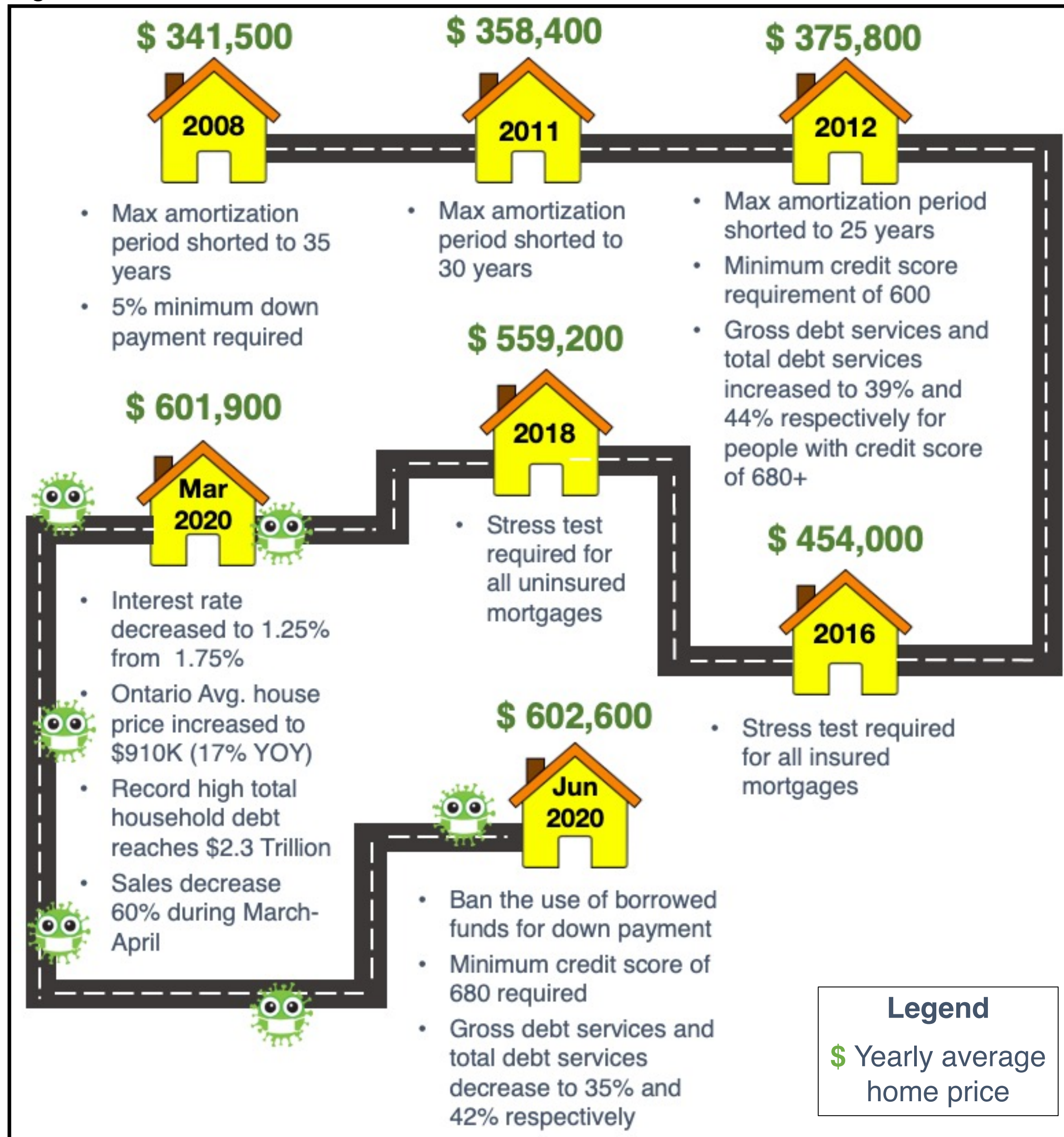


GOAL

- We will pinpoint the leading causes of the housing unaffordability crisis pre-pandemic and during the pandemic.
- Our analysis of the trends and factors will allow us to make appropriate recommendations post-pandemic.
- The recommendations will be guided by a regression analysis coupled with a sensitivity analysis.

KEY EVENTS TIMELINE

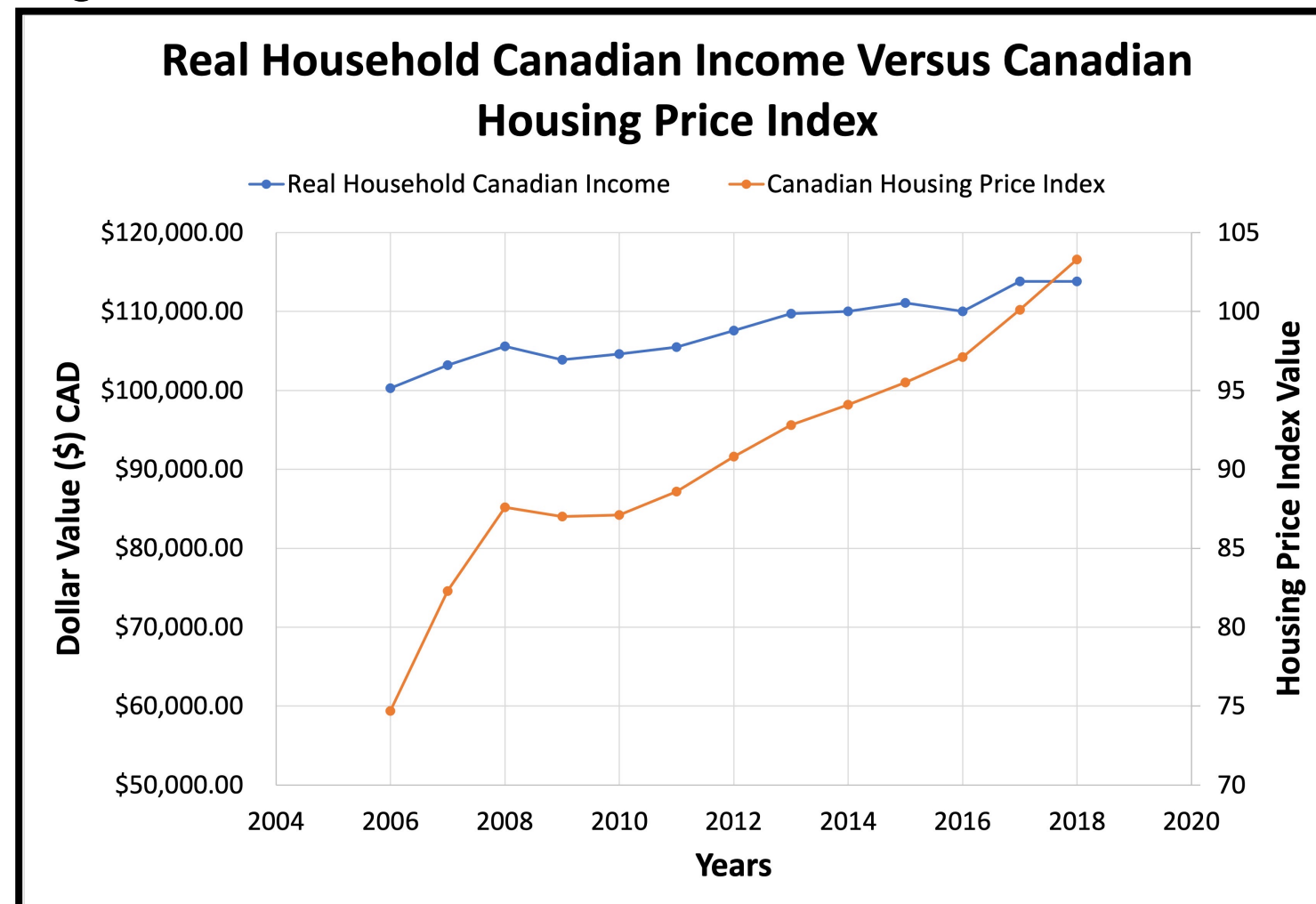
Figure 3



PRE PANDEMIC

CORRELATION OF INCOME & HOUSING PRICES

Figure 4



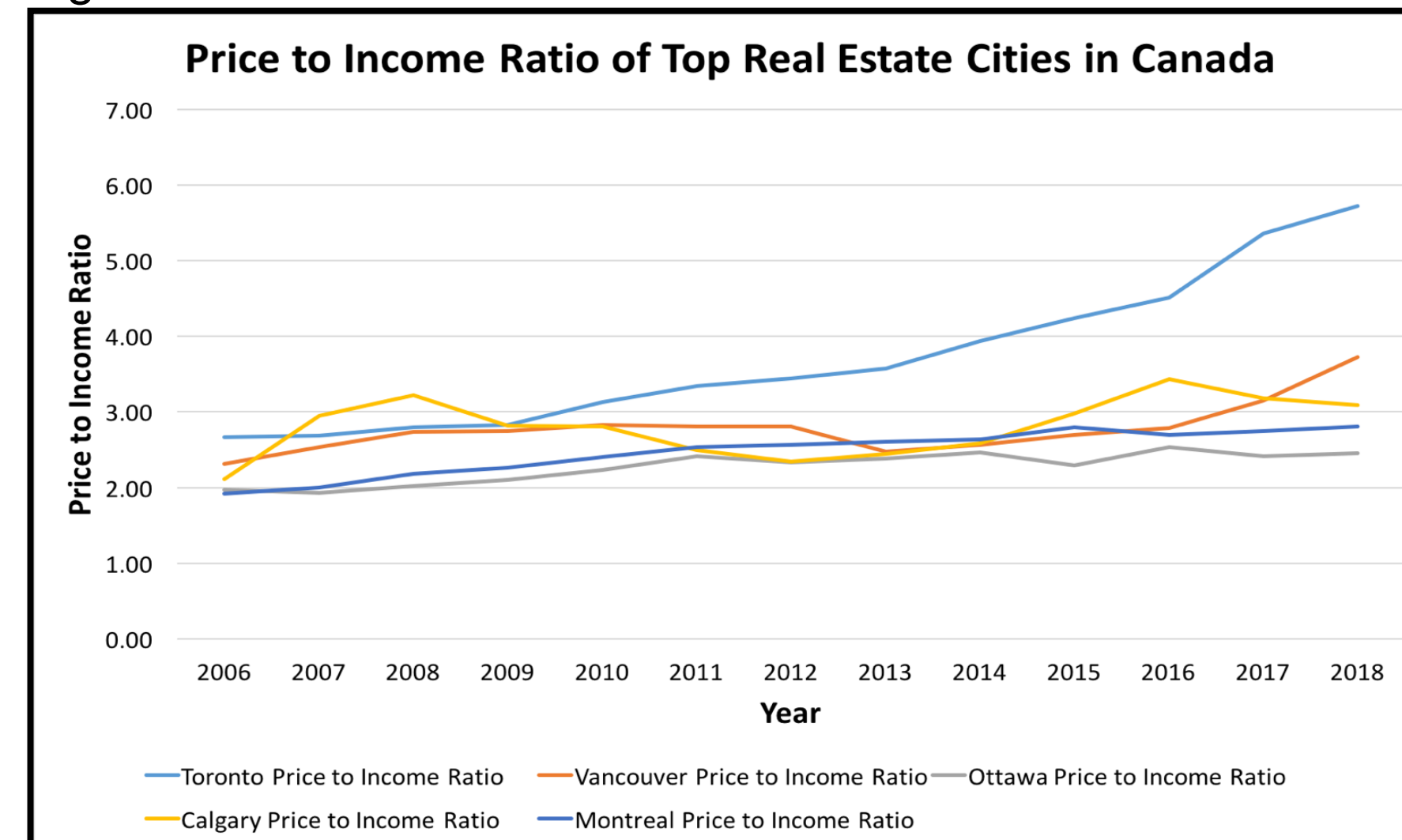
- Price to income ratio represents the cost of the house relative to average income. As this ratio increases unaffordability also increases.
- If the housing price and income rates follow the trends seen in Figure 4, we can expect the price to income ratio to increase as well.

TORONTO ↑ 114%

INCOME ↑ 13% HOUSING PRICE ↑ 38%

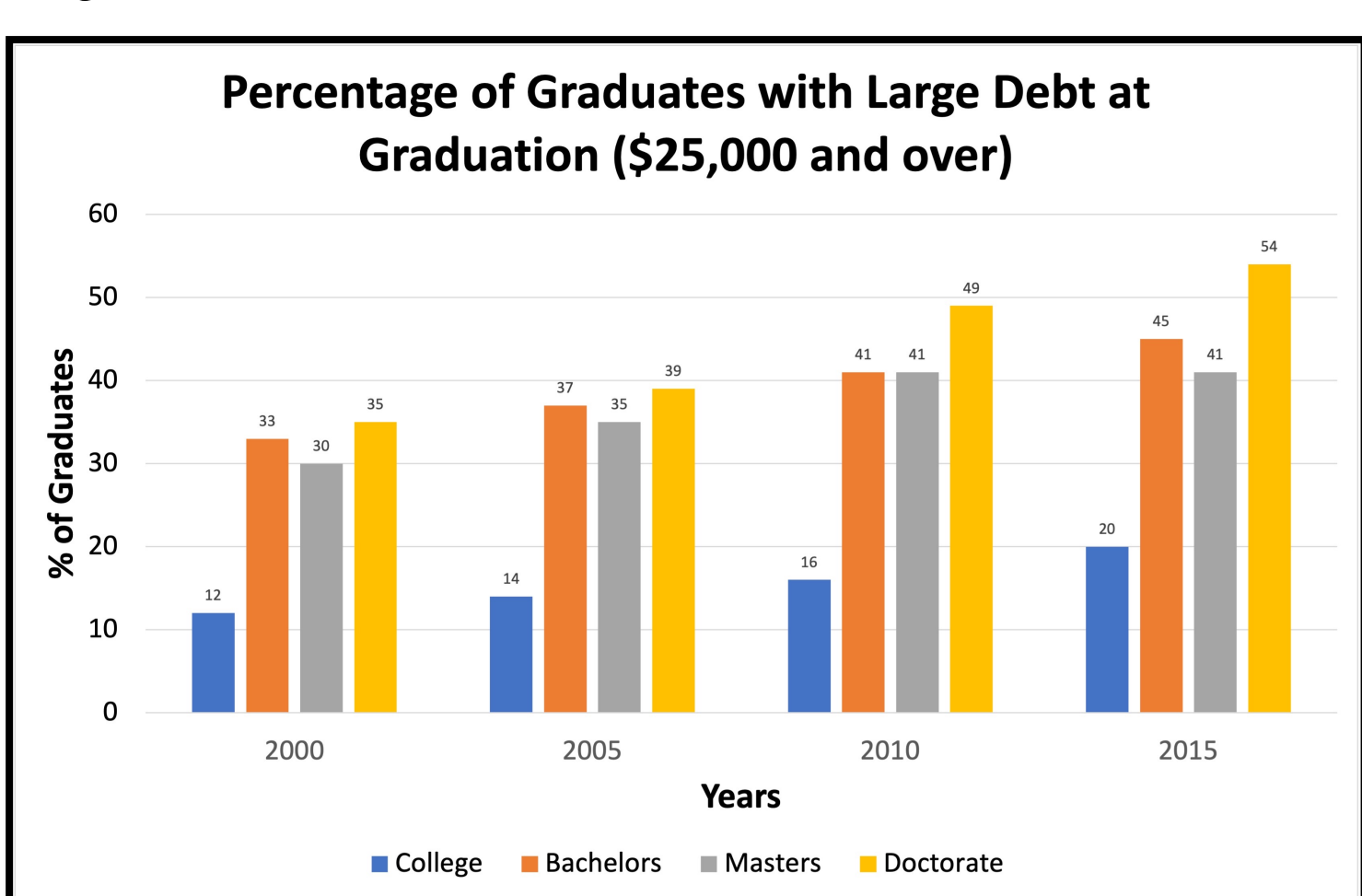
- This disproportionate increase between housing prices and income contributes heavily to the increasing unaffordability and will continue to pose a problem in the future.

Figure 5



DEBT IMPACT ON AFFORDABILITY

Figure 6



- These increases of large debt at graduation from 2000 to 2005 shows one reason why recent graduates have difficulty purchasing their first home.

COLLEGE DEBT ↑ 66% BACHELORS DEBT ↑ 36%
MASTERS DEBT ↑ 36% DOCTORATE DEBT ↑ 54%

Figure 7

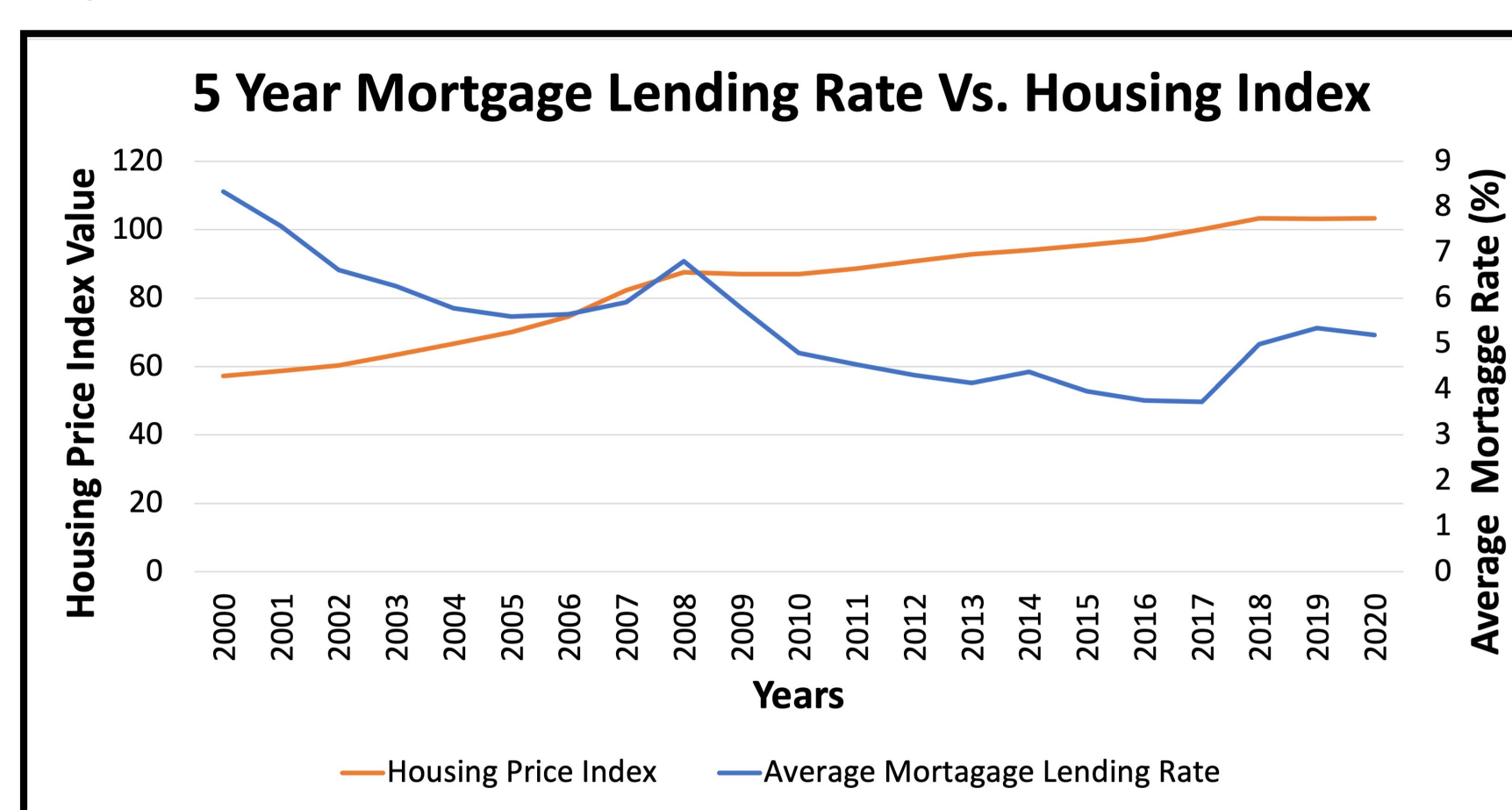
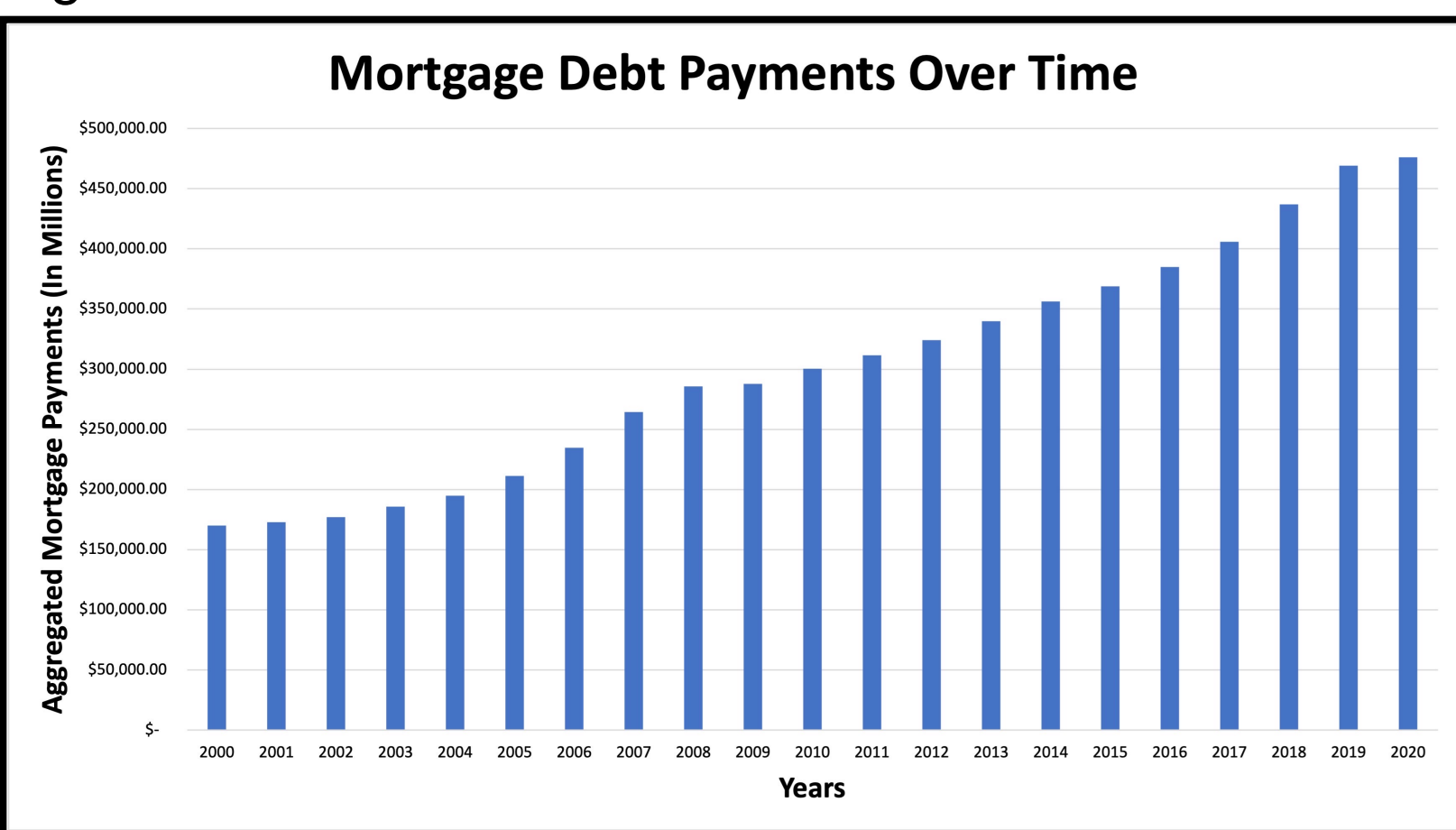


Figure 8

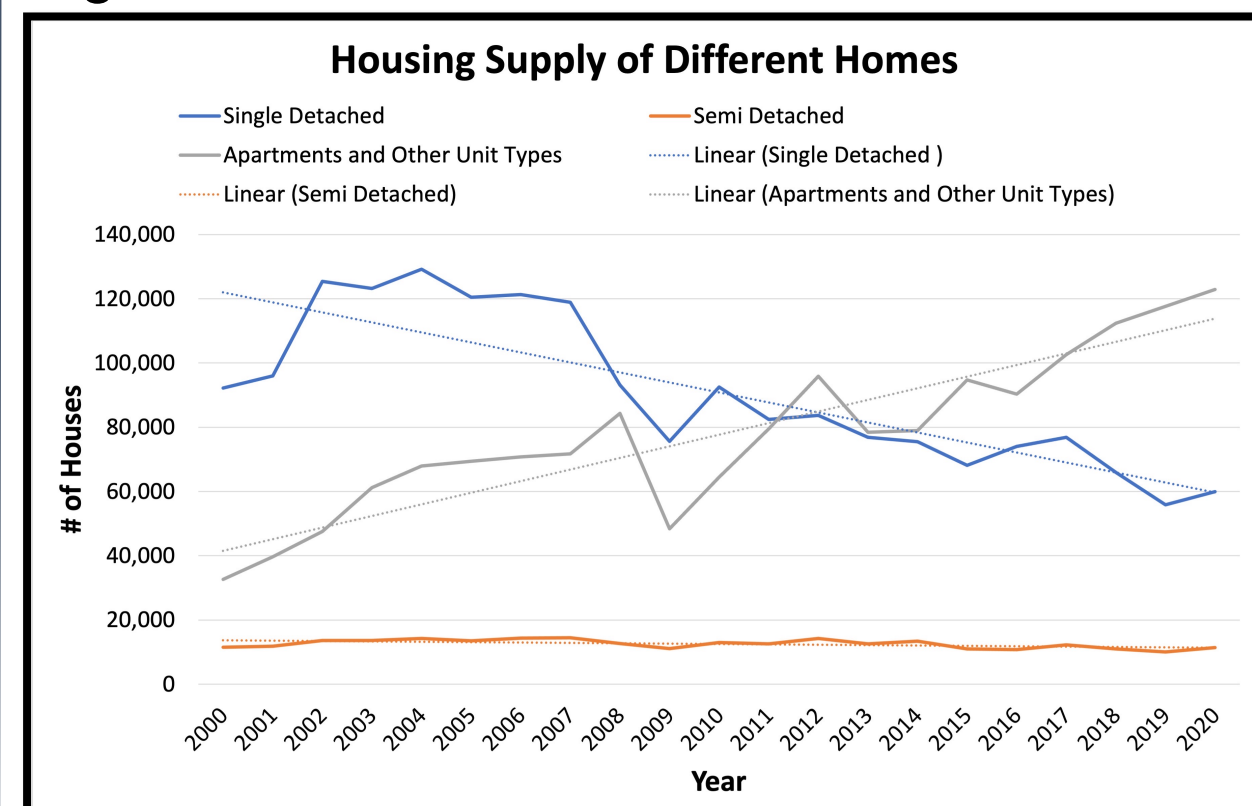


- The ability to secure a higher mortgage directly impacts the housing prices as sellers are seeking more money for their property and buyers can meet their uncapped demands.

MORTGAGE DEBT PAYMENTS ↑ 180%

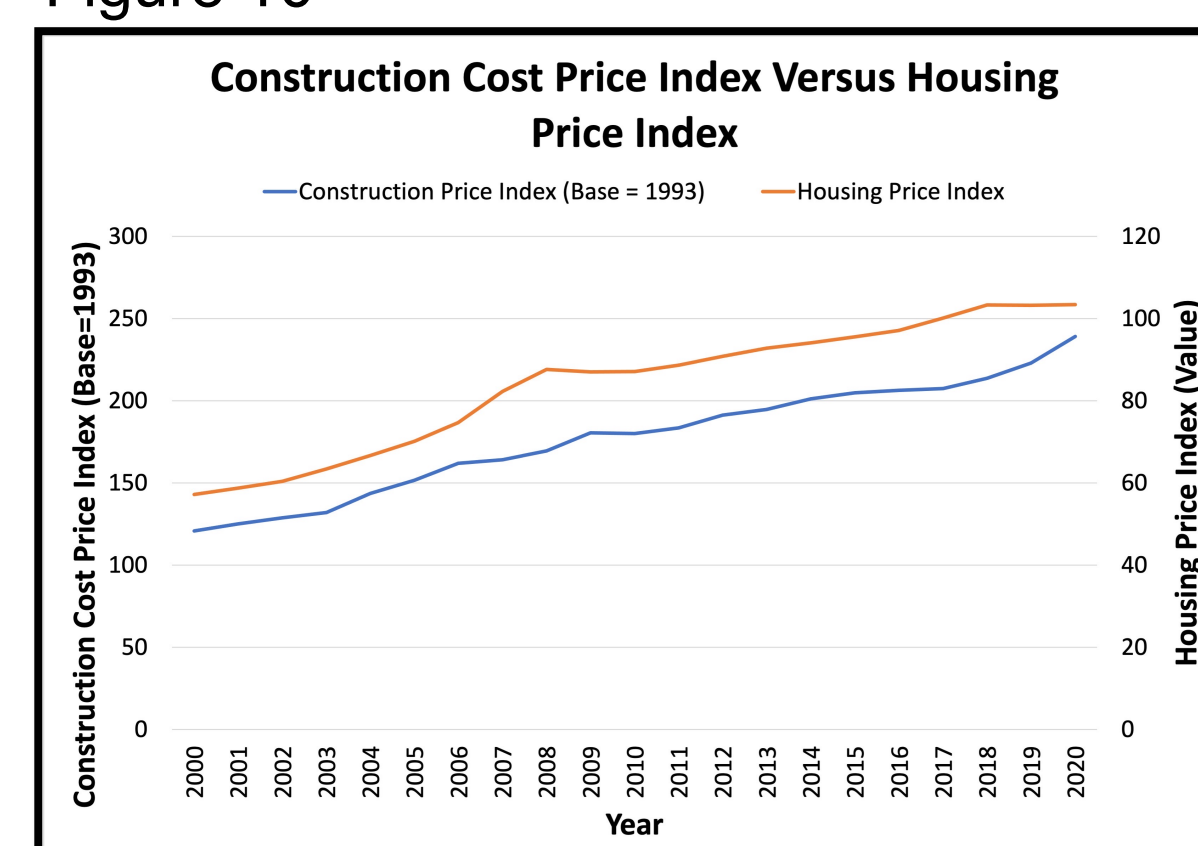
CONSTRUCTION AND HOUSING SUPPLY

Figure 9



SINGLE DETACHED ↓ 35%
SINGLE SEMI-DETACHED ↓ 1%
APARTMENTS & OTHER ↑ 276%

Figure 10



- As developers are faced with rising construction costs, the price of real estate has increased proportionally.

DURING PANDEMIC

KEY CHANGES (AFTER INITIAL SHOCK)

DISPOSABLE INCOME ↑ 37% UNEMPLOYMENT RATES IN MARCH 2020 ↑ 14%
HOUSEHOLD SAVINGS ↑ 7.6% CONSUMER CONFIDENCE INDEX ↓ 36.50
HOME SALES IN ONTARIO ↑ 39% MEDIAN HOME PRICE ↑ 8.6%

- Mortgage deferral program delayed houses that needed to be sold due to insufficient debt servicing. This increased demands due to the low supply of houses in the market.
- Household savings increased from 3% (average during 2015-2020) to 7.6% (highest since 1960s)
- Funds from savings were diverted into real estate increasing the median home prices by 8.6%.
- Home sales activity in Ontario was up 39% in February 2021 YOY.

POST-PANDEMIC

REGRESSION & SENSITIVITY ANALYSIS

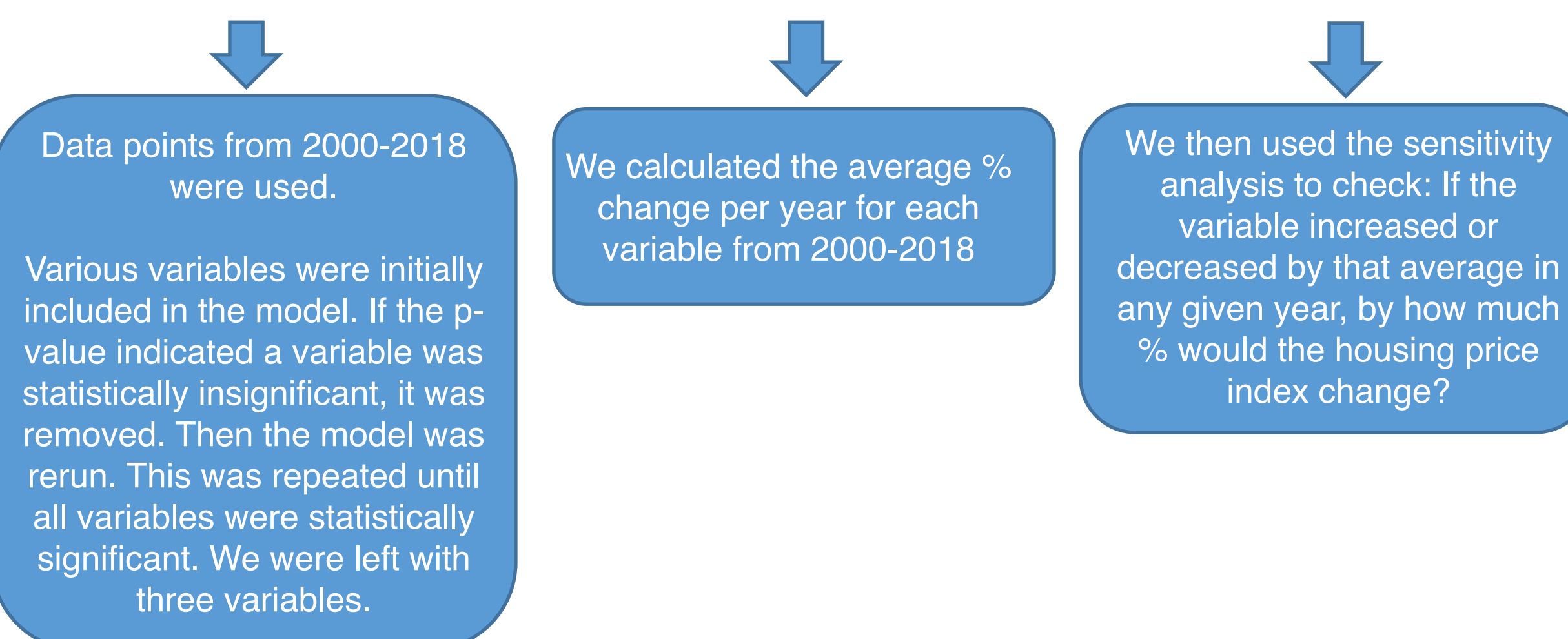
Figure 11

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3$$
$$Y = -44.033 + 266.817 * X_1 + 0.615 * X_2 + 5.53895E-05 * X_3$$

B_0 = Y-Intercept
 X_1 = Mortgage Rate (in Decimals)
 X_2 = Construction Price Index
 X_3 = Supply of Single Detached & Semi-Detached Homes
 Y = Predicted House Price Index

Table 1

Variable	Sensitivity Analysis	
	Average % Change Per Year Per Variable	% Effect on Housing Price Index
Average 5 Year Mortgage Lending Rate	9%	1.14%
Supply of Single Detached and Semi-Detached Homes	9%	0.36%
Construction Prices Index	3%	3.97%



Why is this useful?

Identifying the variables the housing price index is most sensitive to allows us to tailor our recommendations accordingly to get this crisis under control. These three variables were targeted in our recommendations.

RECOMMENDATIONS

Managing Supply & Mortgage Rates

- Government needs to increase consumer incentive for condominiums for first time homebuyers.
- Government establishes minimum amount of housing units per annum.
- Increase interest rates which increases mortgage rates, this will decrease housing demand.

General

- Increase academic scholarship marketing to provide financial aid and reduce debt at graduation.
- Pre-fabricated and modularized homes will decrease construction costs and improve affordability.

Lowering Construction Costs

- To combat labour shortages, the government can incentivize and promote recruitment in the trade industry using apprenticeships programs or Specialist High Skills Major.
- Use technology to promote productivity in existing labour force, cut costs and keep projects on schedule.
- Promote tree planting to combat deforestation which increases lumbar supply to decreases raw material costs.

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