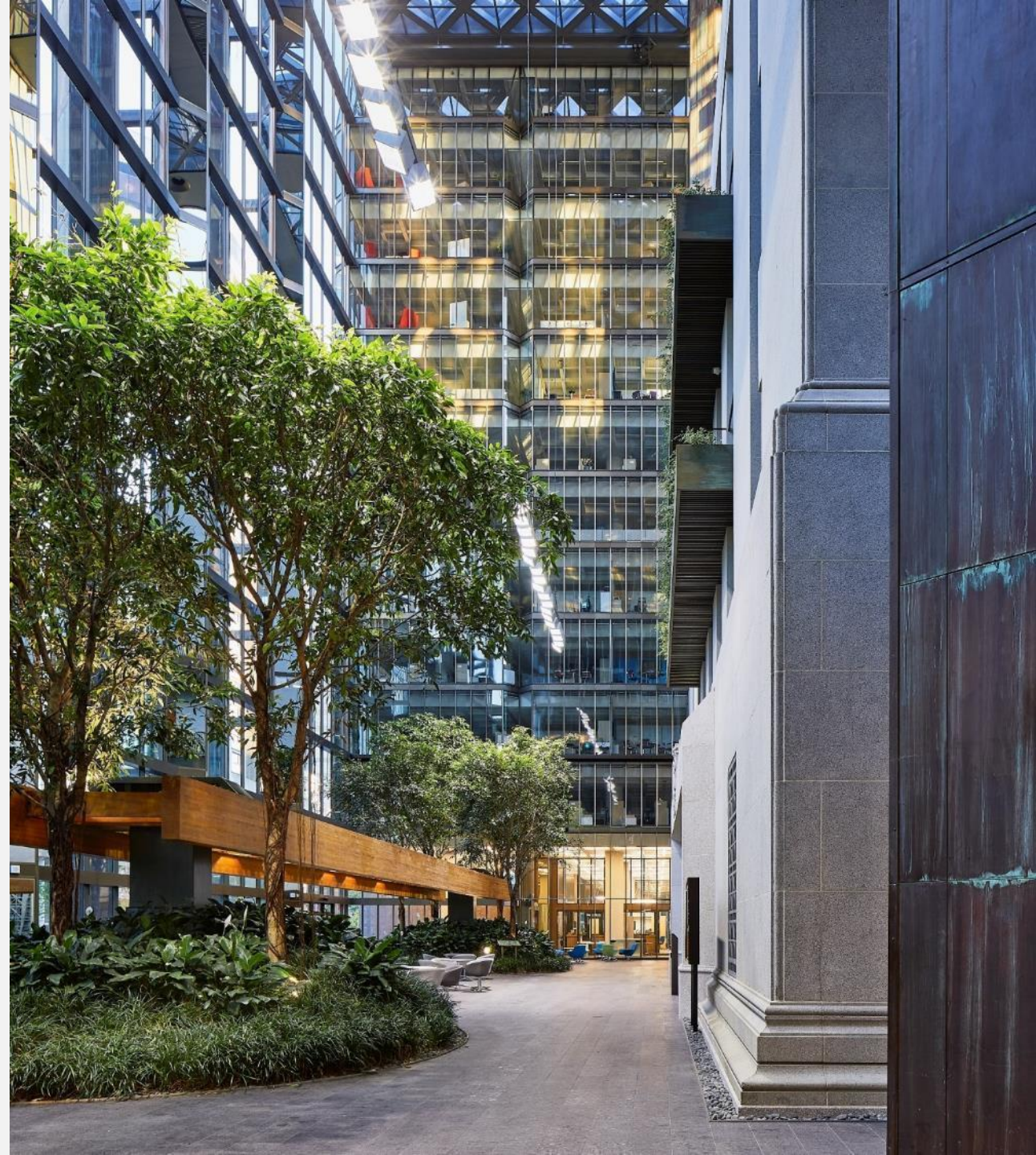# Policy Challenges After COVID: What Can Research Tell Us?

11th BIS Consultative Council of the Americas Research Conference

Paul Beaudry
Deputy Governor, Bank of Canada

Outline

- Contribution of Bank research during the pandemic

  - Theme: New data and heterogeneity

- Financial vulnerabilities: three examples
  1. Housing and house price expectations
  2. Effects of pandemic on savings and indebtedness
  3. Implications of climate change for household vulnerabilities

- Post-COVID and beyond

# Investment in research helped us assess impact of the COVID-19 pandemic and provided new insights

- Bank researchers helped address pandemic related issues

  › Identifying High-Frequency Network (Payment) Expenditure Data; Alternative CPI (to track shift in spending patterns due to COVID)
  › Implications of lockdowns across households & firms
  › Effectiveness of extended monetary policy tools

- Key contributions to major longer term policy projects

  › Inflation Target Renewal;
  › CBDC and payments
  › Model development initiatives: Nexus MP-FS
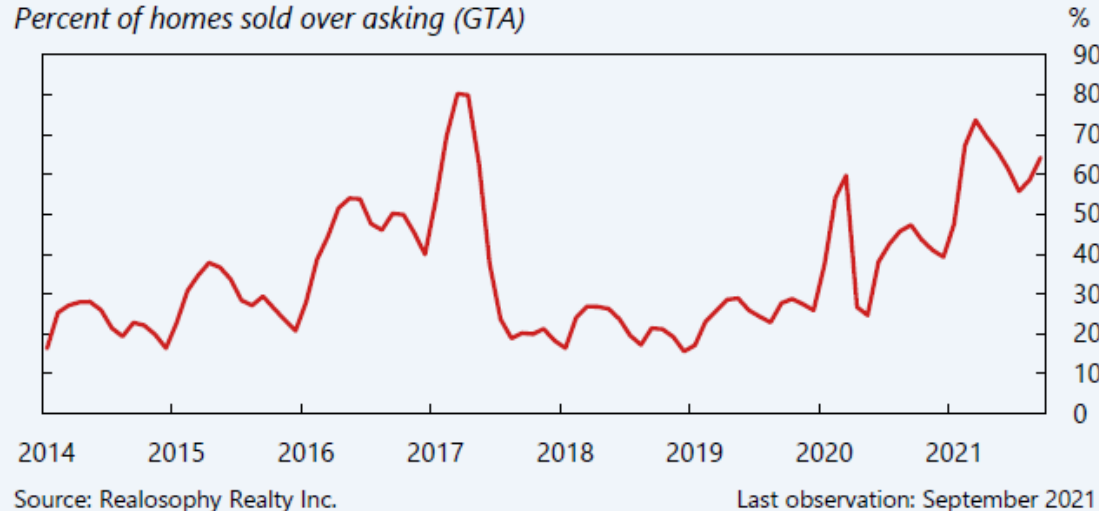
Example 1: House Price Dynamics

- Canadian housing market has been exceptionally strong during the pandemic

- Strong increase in house prices driven by fundamental factors

  › Shift to working from home led and preference for more living space

  › Record-low mortgage rates further contributed to strong demand

- But, some markets showed signs of extrapolative expectations

- Bank researchers built a model to detect periods of extrapolative expectations in house prices across Canadian cities

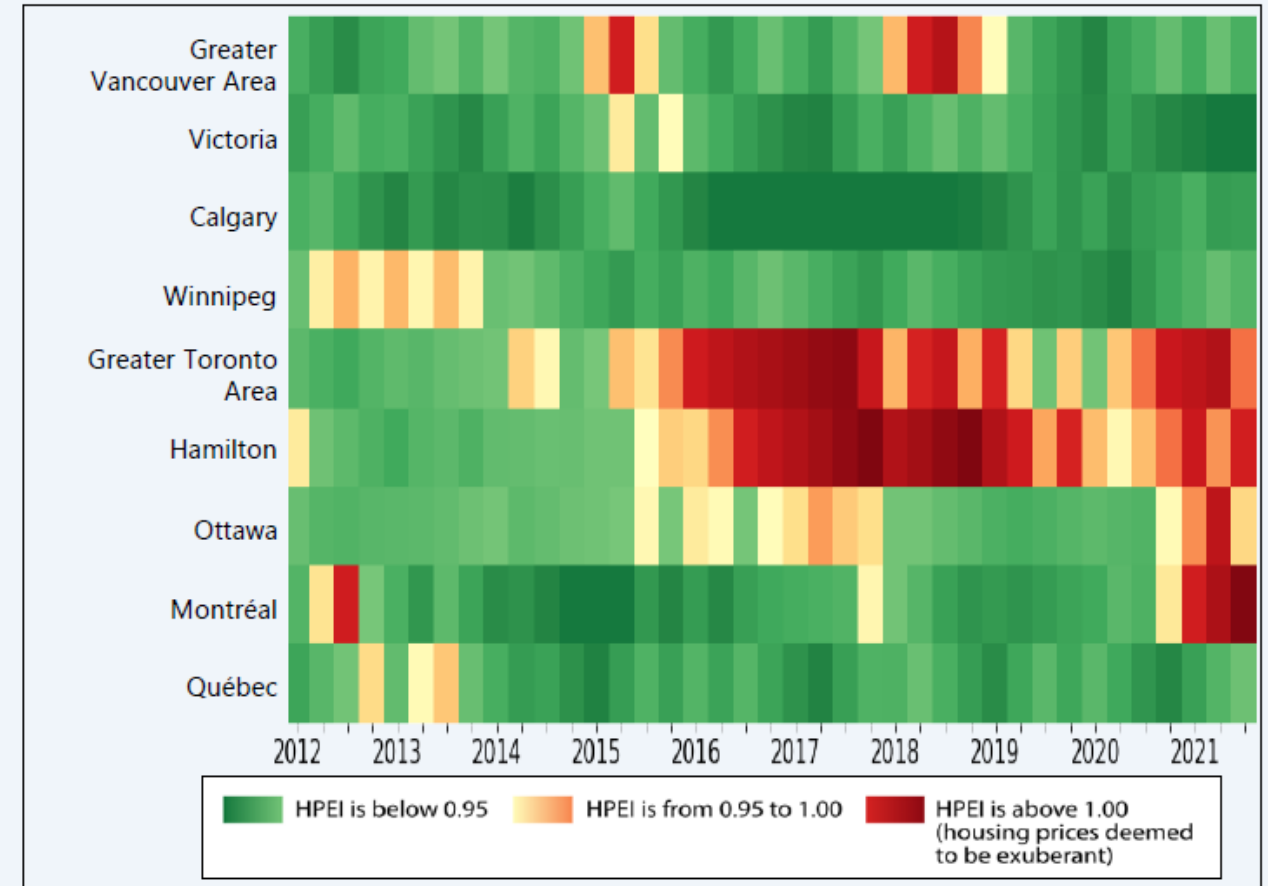# Housing, house prices and extrapolative expectations

House price expectations edged lower but remain above pre-COVID levels
Median expected change in house prices over next 12 months

Source: Canadian Survey of Consumer Expectations   Last observation: 2021Q3
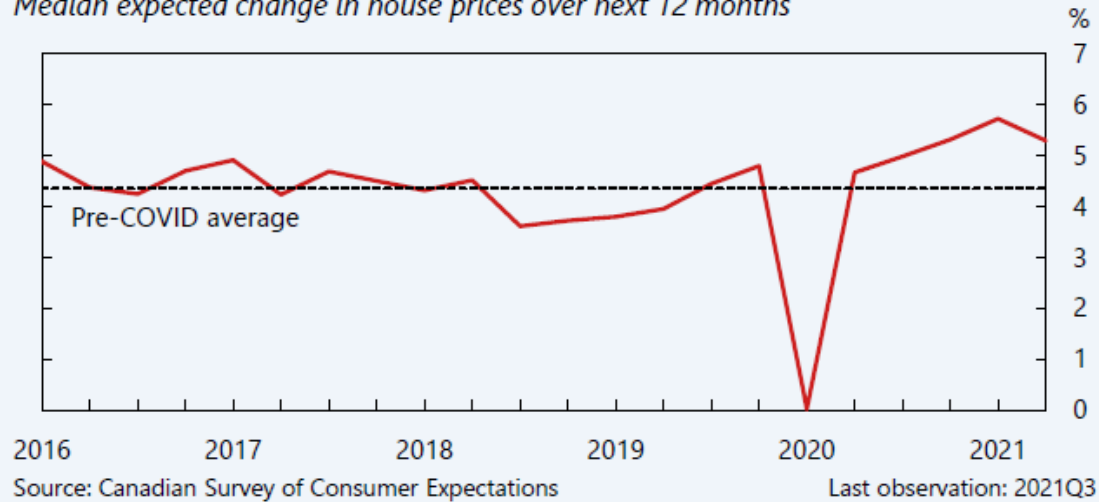
A large share of GTA homes are still selling over asking
Percent of homes sold over asking (GTA)

Source: Realosophy Realty Inc.   Last observation: September 2021

Housing markets identified as exuberant in the May FSR continue to hover around the exuberance threshold
House price exuberance indicator

HPEI is below 0.95   HPEI is from 0.95 to 1.00   HPEI is above 1.00 (housing prices deemed to be exuberant)

Source: Bank of Canada calculations   Last observation: 2021Q3

Example 2: Model simulations provide insights into heterogeneous impact of COVID on Canadian household finances…
## Savings by income groups during COVID; savings highest for the wealthy
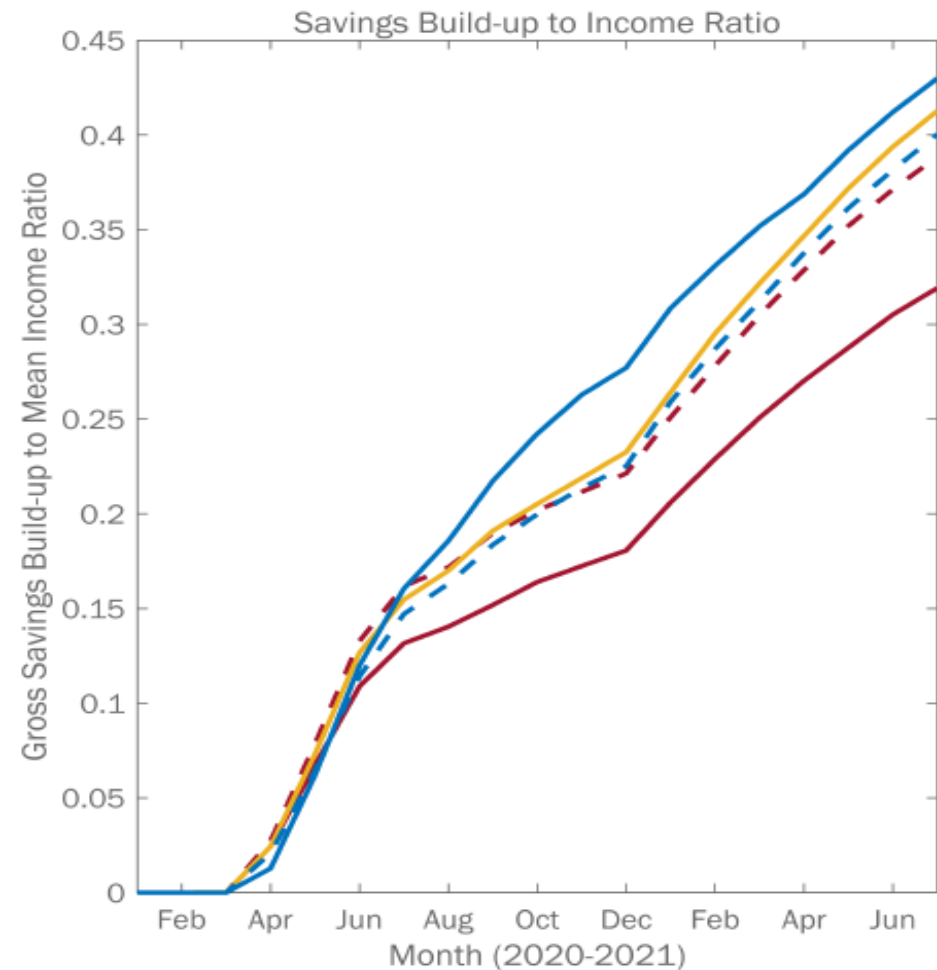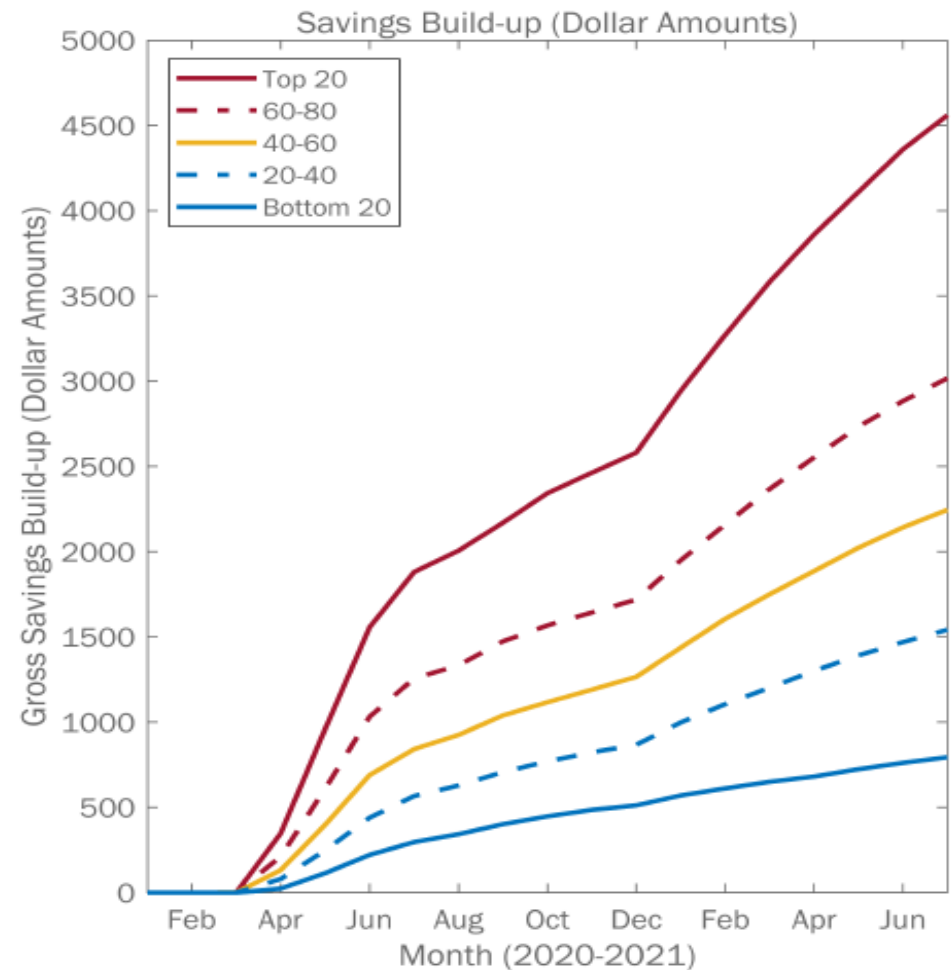
… debt increases for some households, increasing number of those seen as financially vulnerable

Agent-base model simulations:

- Only include employed (pre-covid) households who borrow after the COVID shock.

- Middle-income households account for the largest rise in debt
  - Middle-income earners see <u>only partial replacement</u> of loss income from CERB
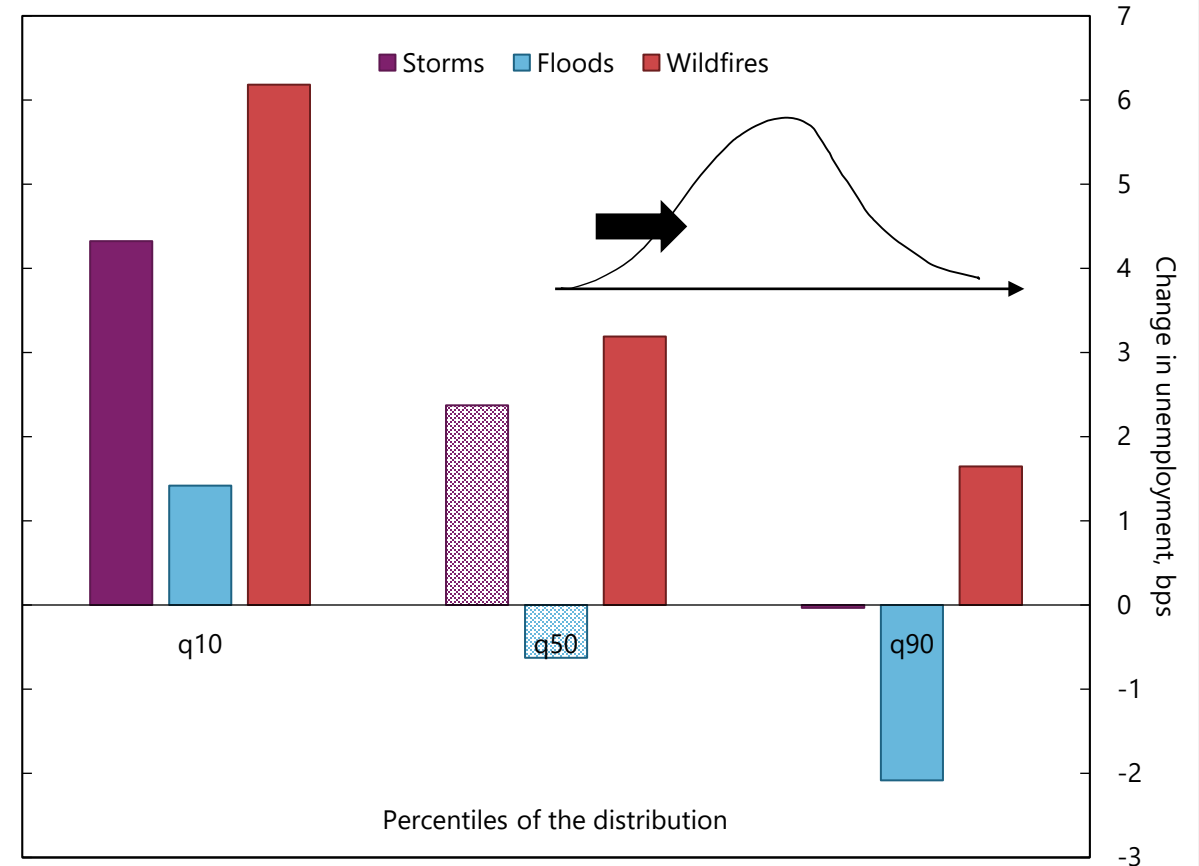 - Some middle-income households have relatively large mortgage

Rise in Debt by Pre-COVID Earnings Quintiles (Employed Households Who Borrow Only)
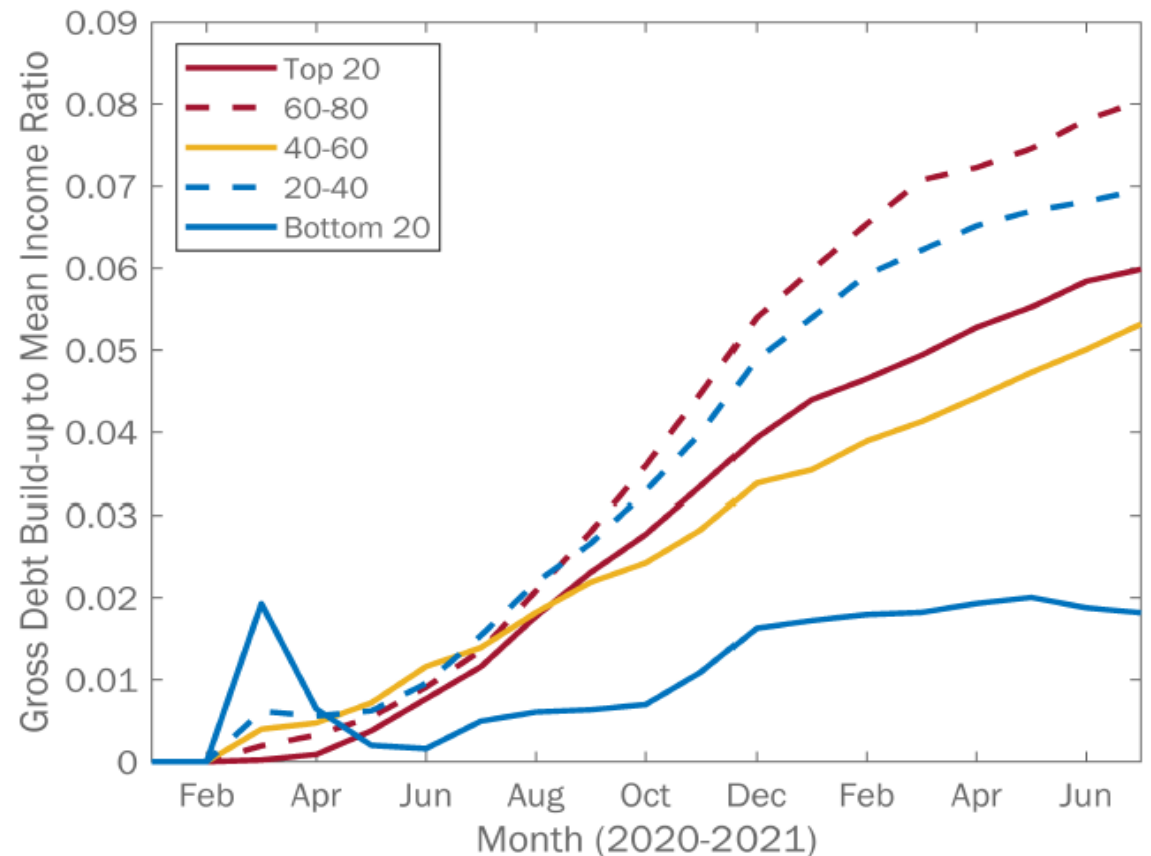
Example 3: Natural disasters can stretch consumers…

- Panel regression across provinces (1980m1-2019m12)
  - Shocks: 520 storms, floods and wildfires
  - Quantile regression to get tail elasticities

- Higher odds of high unemployment on impact
  - More persistent for wildfires

- Consumption patterns change after disaster
  - On impact move away from durables towards non-durables
  - Later, sales of non-durables increases (esp. after floods) to replace damaged goods

Natural disasters increase the odds of high unemployment
Effect within a month of a disaster that destroys 1% of monthly provincial GDP

Legend: Storms, Floods, Wildfires

Y-axis (right): Change in unemployment, bps (−3 to 7)

X-axis: Percentiles of the distribution — q10, q50, q90

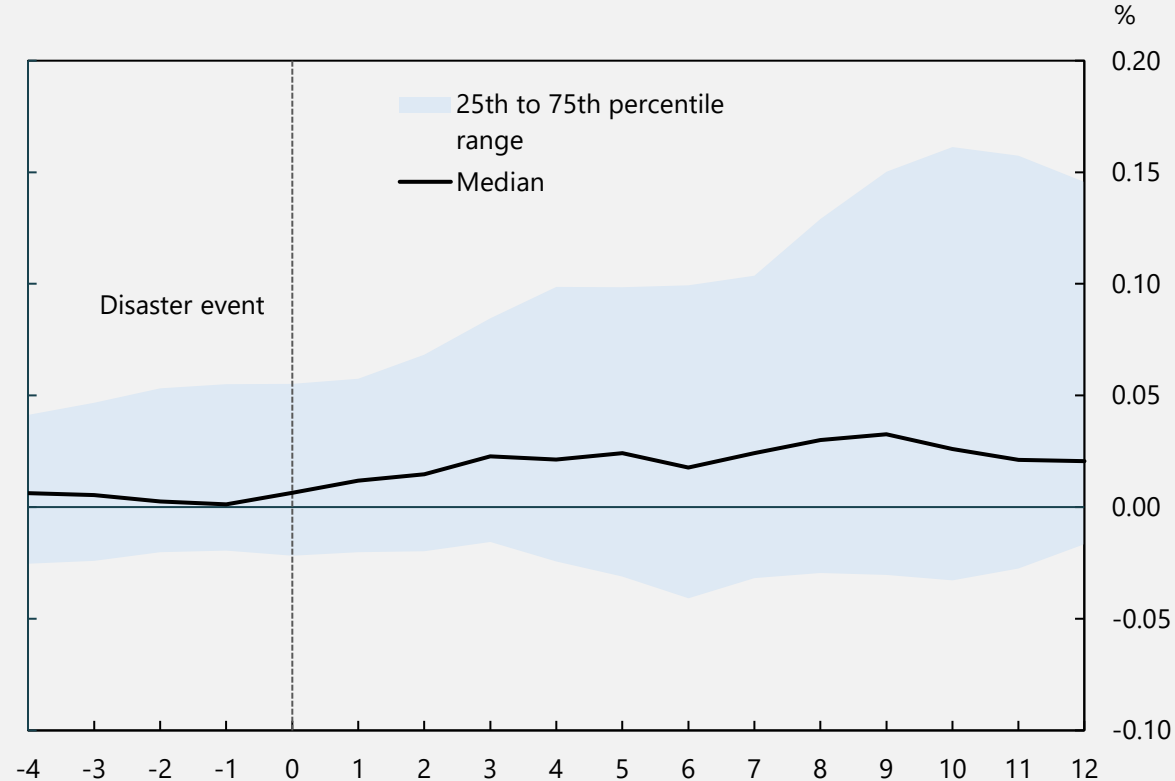Note: Shaded areas represent insignificant results.

Source: Canadian Disaster Database, Statistics Canada, and Bank of Canada calculations

Last observation: 2019

... with asymmetric impact on mortgage arrears

Quantify the impact of 40 natural disasters between 2016-2019 on mortgage arrears using machine learning and synthetic control method
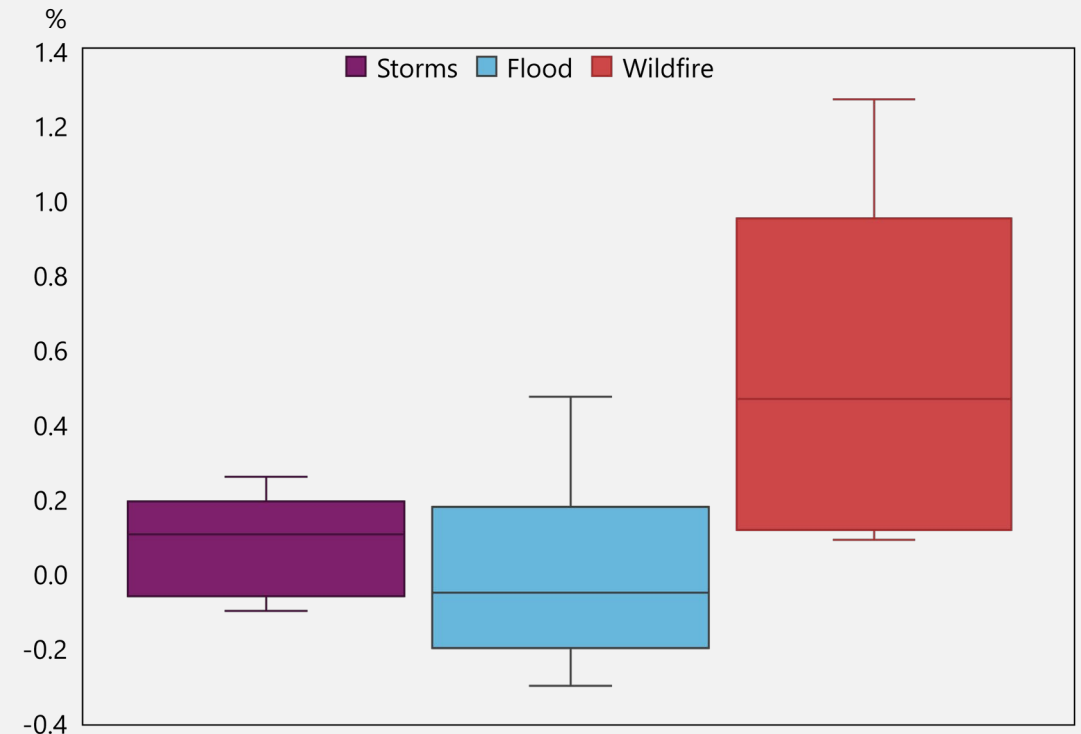
Natural disasters can lead to increases in mortgage arrears
Effect on mortgage arrears across 40 different natural disasters

Different types of disasters responsible for asymmetry, with wildfires posing highest risk
Range of peak effect within 12 months post-disaster

Sources: Canadian Disaster Database, TransUnion and Bank of Canada calculations

Going forward: research will continue to be key for a robust post-pandemic recovery

- Inflation dynamics and risks
  - › Supply chains, stock-out and expectations
  - › Price-wage interactions
  - › Co-existence of Labour shortages and unemployment

- Forces affecting $r*$
  - › Inequality
  - › digitalization
  - › Debt

  - Implications of climate change
  - › Physical risk and Transition risk

Thank you