

Exploring Various Approaches to Measuring Owned Accommodation in the Canadian CPI

Canadian Association for Business Economics

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The views expressed in the paper are those of the authors and do not necessarily reflect the positions of Statistics Canada or the Bank of Canada.

Outline



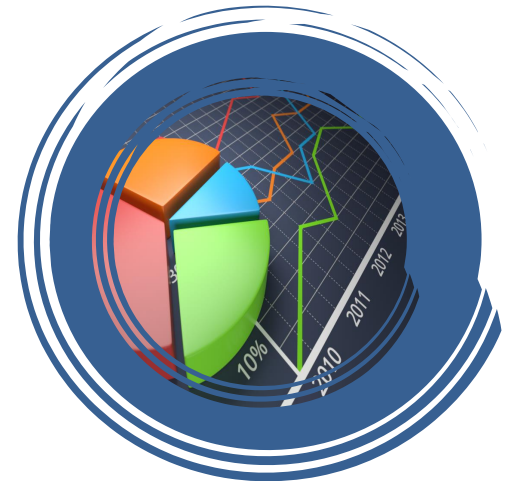
Motivation



**Approaches to
measuring
owned
accommodation
(OA)**



**Evaluation of
approaches**



**Impact on analytical
CPI inflation**



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Motivation



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Motivation

- The Consumer Price Index (CPI) measures the average change over time in the prices paid by consumers for a basket of consumer goods and services.
- The CPI measured in each country differs based on methods, data sources, and importantly, the principal purpose of the CPI.
 - This includes differences in approaches used to measure owned accommodation, geographical coverage and frequency of CPI basket updates.
- What do different approaches to measuring owned accommodation (OA) in the Canadian CPI reveal?



Primary uses of the CPI

Countries produce the CPI for various purposes:

- 1. Guide monetary policy:** Central banks use the CPI (and other economic indicators) to guide monetary policy and interest rate decisions.
- 2. Facilitate contract indexation:** Pensions, income tax brackets and some government social payments are adjusted using the CPI; some private sector organizations choose to use it as well.
- 3. Assess economic health:** Helps monitor the economic environment, more generally. Changes in the underlying economic environment flow through to and are reflected in consumer prices.

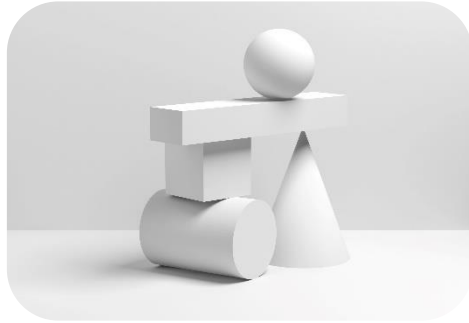


Treatment of owned accommodation (OA) services in CPI

- One of the most challenging issues faced by Statistical agencies
 - How to exclude assets from shelter services components of OA?
 - What is the impact on the CPI and measured inflation?
 - Which approach should be adopted?
- International standards do not stipulate a preferred approach or prescribe a singular, universal approach for the treatment of OA in the CPI.
- Statistical agencies make well-informed decisions that align with their CPI intended use and data availability.



Criteria to consider



Alignment with the
main purpose of the
CPI



Meeting user needs



Practicality of
implementation



Data needs and
limitations



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Approaches to measuring OA in the CPI



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Approaches to measuring OA in the CPI

- **User Approach:** Measures the price change over time of the flow of owned accommodation (OA) services
 - **User cost** : measures the total cost of homeownership and
 - **Rental equivalence** : measures cost of homeownership as if owners were renting their properties to themselves
- **Payments Approach:** Measures changes in cash costs of homeownership
- **(Net) Acquisitions Approach:** Measures changes in acquisition, renovation and maintenance cost of a house, (excluding land)



Canada's approach to OA in the CPI

- Canada's approach reflects the costs incurred by the homeowner to use and maintain the home, but not the direct purchase price of the home.
- Canada's approach is **a variant of the user-cost approach**, which measures the impact of price changes on of costs specific to homeowners, which are:
 - mortgage interest
 - replacement cost
 - property taxes
 - home and mortgage insurance
 - maintenance and repairs
 - other owned accommodation expenses (such as real estate commissions)
- Canada's approach excludes return to homeowners' equity and the capital gains.



Canada's approach to OA in the CPI

- Changes in the housing market are reflected through the majority of owned accommodation components:
 - Mortgage interest cost index is affected by new and resale house prices (more expensive houses means larger mortgages and more interest paid)
 - Commission fees are also affected by the sale price of properties
 - Homeowners' replacement cost reflects the “depreciated”/worn-out portion of a house as it is lived in. It is measured as the amount of money that would be required to maintain the market value of an existing residence; thus, as market values increase, so do the costs to maintain that value.
 - Property values factor into the calculation of property taxes and home and mortgage insurance



Approaches to measuring OA in the CPI: components included

Components	Canada – User cost variant	User cost	Rental equivalence	Payments	(Net) Acquisitions
Home purchase (structure only)					✓
Renovations					✓
Property taxes	✓	✓		✓	✓
Insurance premiums	✓	✓	✓	✓	✓
Maintenance & repairs	✓	✓	✓	✓	✓
Other expenses (commission fees and legal fees)	✓	✓		✓	✓
Mortgage interest cost	✓	✓		✓	
Replacement cost	✓	✓			
Opportunity cost		✓			
Capital gain		✓			
Equivalent rent			✓		
Principal mortgage payment	No approach considers principal mortgage payments, or down payments				



Approaches to measuring OA in the CPI: International practices

No consensus on measurement of OA in CPI

Country	Excluded	User cost	Rental equivalence	Payments	Net acquisitions*
EU (HICP)	✓				
Australia, Austria, Finland, New Zealand					✓
France, Germany, Italy, South Africa, UK, US, ...			✓		
Canada, Iceland, Sweden		✓(variant)			
Republic of Ireland				✓	

*No country applies the acquisition approach.

Source: OECD, Methodological Notes Compilation of G-20 Consumer Price Index, <http://www.oecd.org/sdd/prices-ppp/CPI-G20-methodology.pdf>, pages 19-20



Evaluation of approaches



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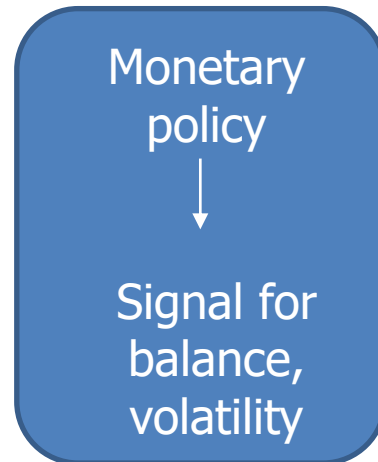
Approaches evaluated according to specific criteria

**Aligned with main
purpose of the CPI**

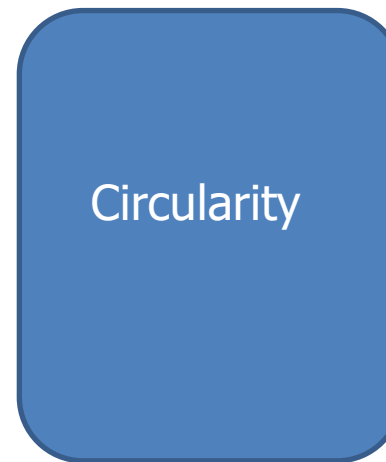


**Meeting users'
needs**

Useful
information for



Communication



**Practicality and
data limitations**



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Approaches: each has pros ✓ & cons ✗

Criteria	Canada – User cost variant	User Cost	Rental equivalence	Payments	(Net) acquisition
Aligned with purpose of CPI					
Cost-of-living index	✓	✓	✓	✓ *	✗
Housing market information useful for monetary policy					
Signal for balance (between supply and demand in housing sector)	✓ **	✓ **	✗	✓ **	✓
Not volatile	✓	✗	✓	✓	✗
Communication					
Non-circularity	✗	✗	✓	✗	✓
Practicality and data limitations					
Transaction data	✓ ***	✗	✗	✓	(✗), ✓
Non-negative weights	✓	✗	✓	✓	✓

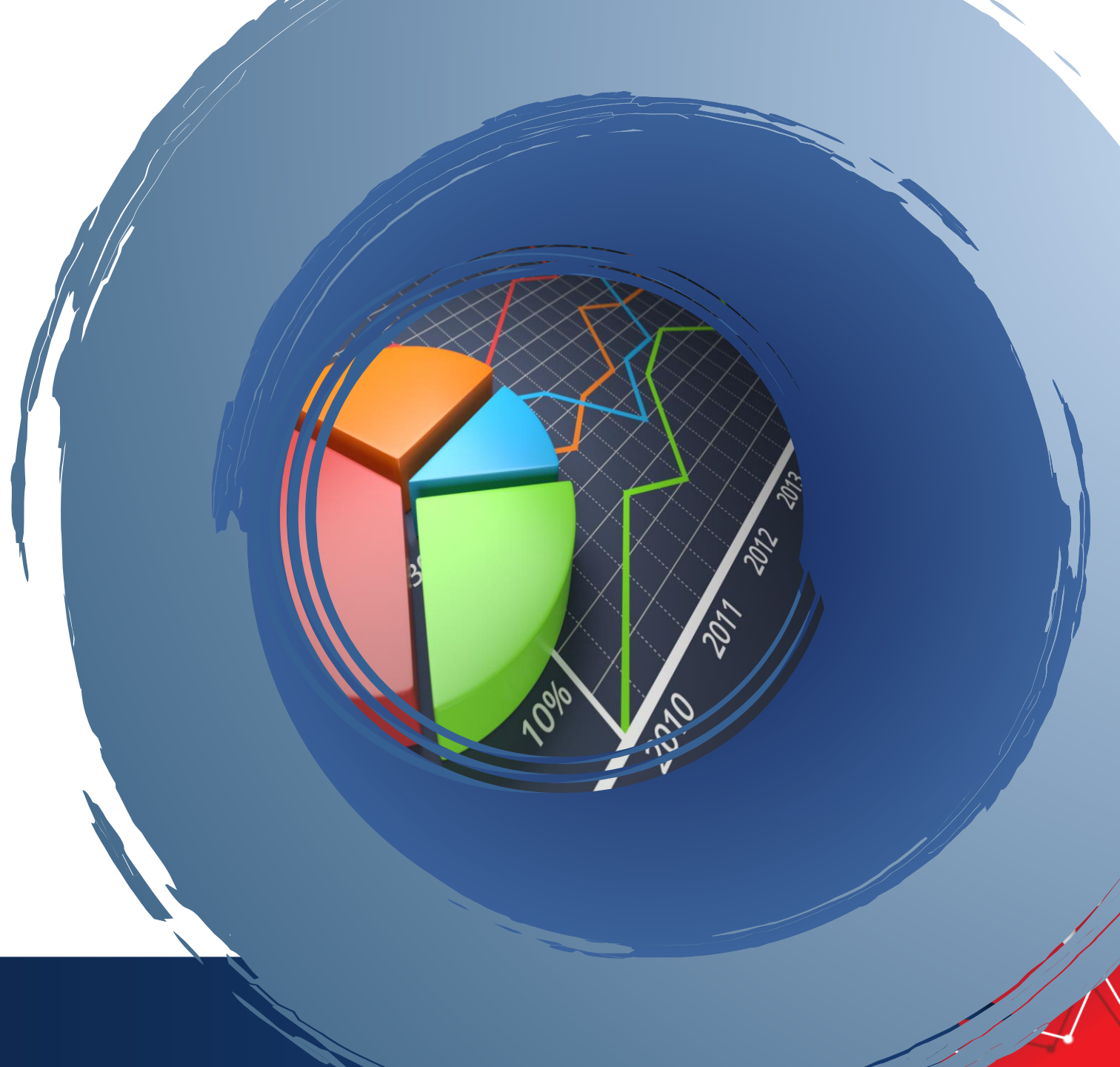
* It not fully consistent with COLI

** Changes in housing market are reflected through the majority of OA components

*** Except for depreciation



Impact on analytical CPI inflation



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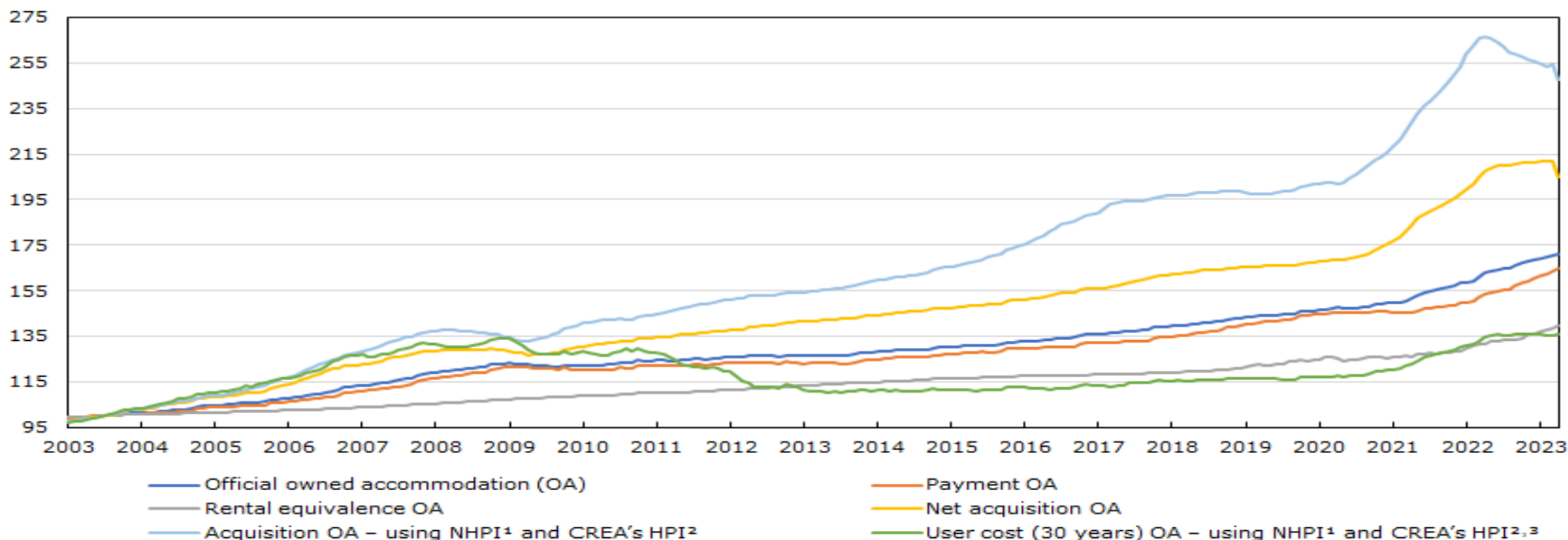
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Different approaches result in a range of estimates for analytical OA price indexes

Chart 6

Analytical owned accommodation price index levels based on different owned accommodation approaches

index (2003=100)



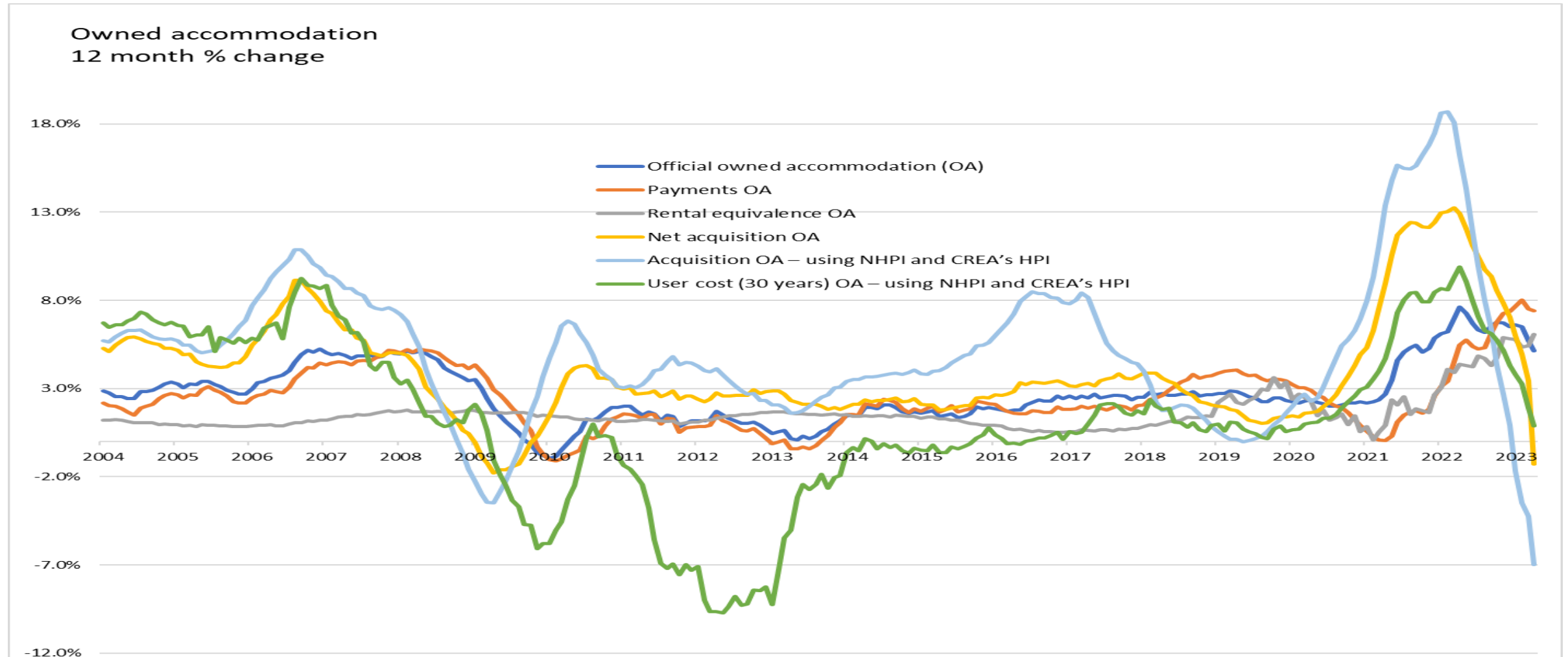
1. NHPI represents the New Housing Price Index.

2. CREA's HPI represents the Canadian Real Estate Association's Home Price Index.

3. User cost estimates are estimates of expected capital gain based on 30 years of horizon length of expectation formation, applying the CREA's HPI and the NHPI.

Source: Statistics Canada, Consumer Prices program.

12-month changes of different OA approaches



Note: This chart summarizes the results presented in Charts 1 to 5 in the paper



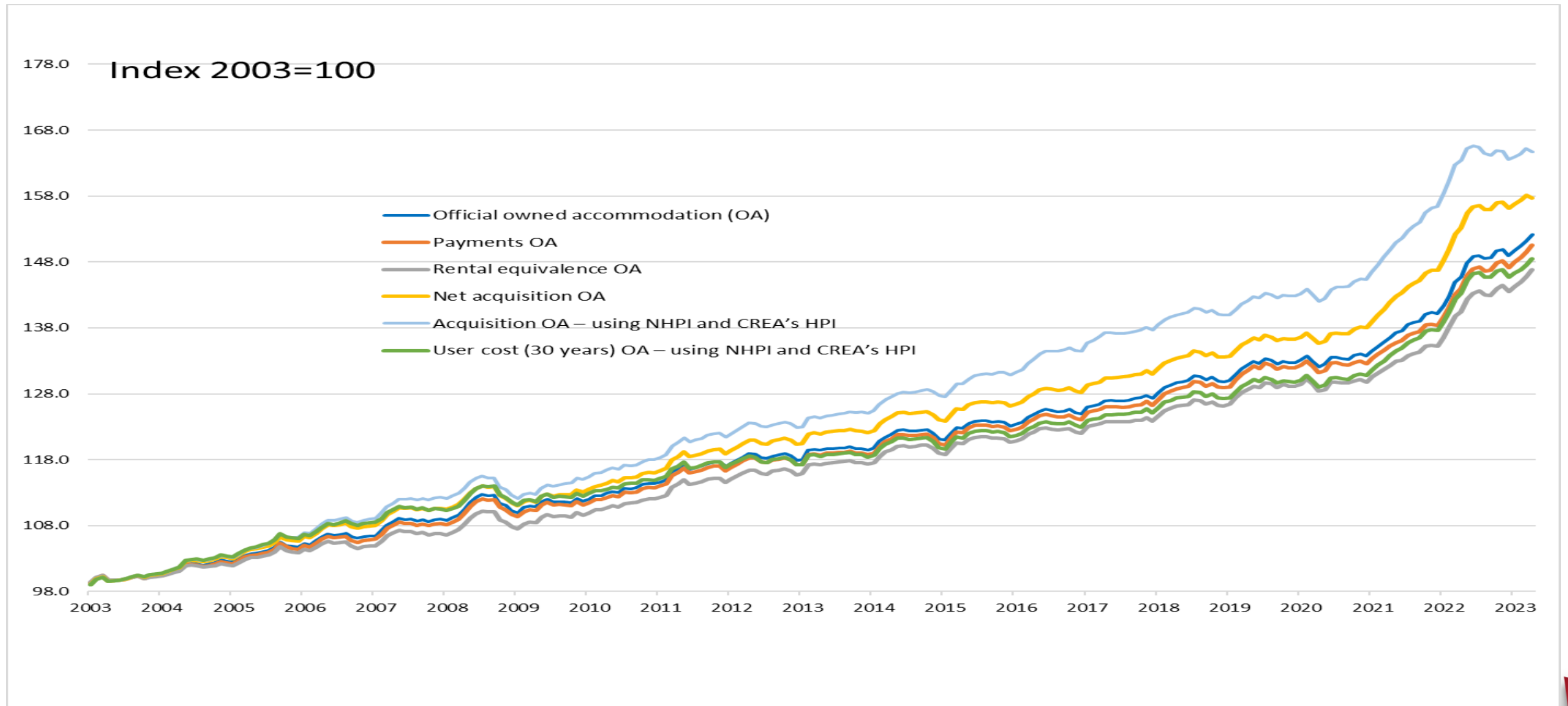
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Different OA approaches result in a range of estimates for analytical CPIs

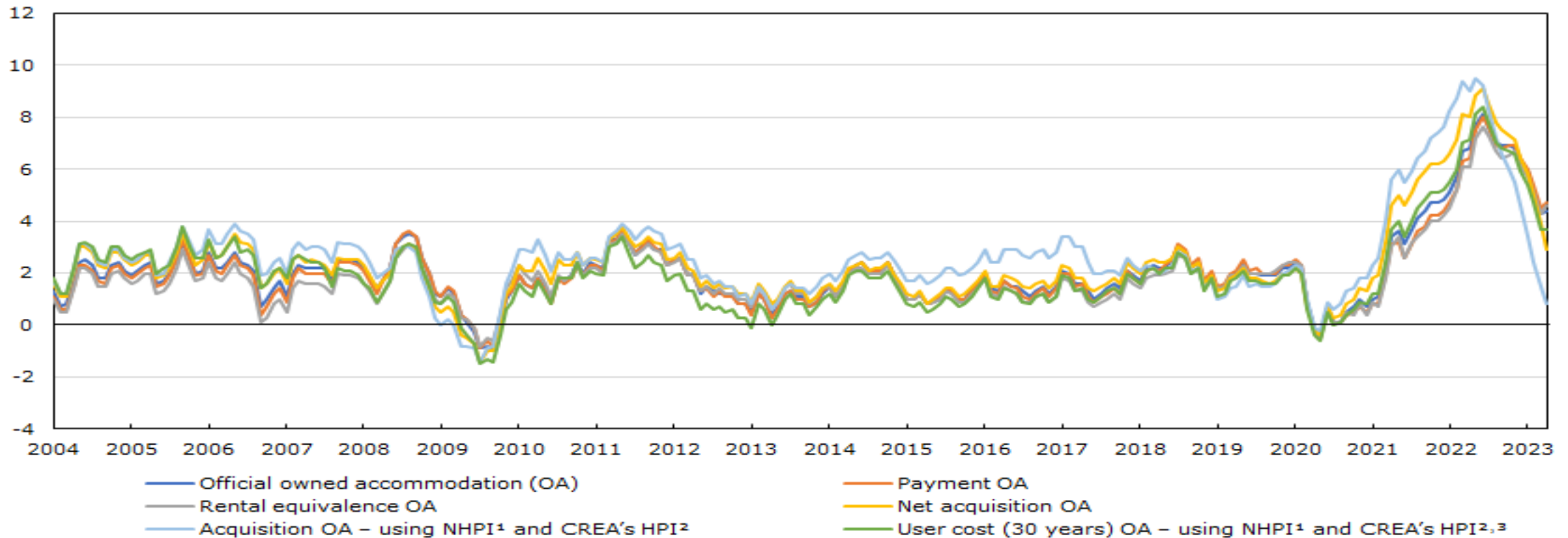


Comparison between the 12-month changes of the analytical CPI using different OA approaches

Chart 7

12-month change of the analytical Consumer Price Index based on different owned accommodation approaches

12-month % change



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2. CREA's HPI represents the Canadian Real Estate Association's Home Price Index.

3. User cost estimates are estimates of expected capital gain based on 30 years of horizon length of expectation formation, applying the CREA's HPI and the NHPI.

Source: Statistics Canada, Consumer Prices program.



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Summary

- The Canadian approach seeks a balance between various uses of the CPI (e.g. monetary policy and income indexation)
- There is no single best approach that fits all needs
- Policy makers use a broad range of indicators to inform decisions and programs



Closing Remarks

- This research provides insight into how different measurement approaches of OA would impact inflation, while weighing the pros and cons of each approach.
- This analysis serves as another tool for policymakers and reinforces that the Canadian method remains the best choice for Canada.
- There are no plans to change the approach to measuring OA in the Canadian CPI as it is aligned with the conceptual purpose of the CPI and the data available in Canada.





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Useful housing affordability metrics

- [Housing statistics portal](#)
 - Indicators on housing costs and affordability, Canada, provinces/territories
 - New housing price index: new housing, new condominium apartments, residential building construction
 - Housing and living arrangements statistics (Persons living in acceptable housing, persons in core housing need, housing characteristics, etc.)
- [Canadian Housing Survey](#)
 - Collects important information on housing experiences
 - The [Public Use Microdata File](#) now available free online!
- **Household economic accounts**
 - [Annual data on the distributions of household economic accounts, income, consumption and saving, by characteristic \(income group, age group, family structure, etc.\)](#)
 - [Distributions of household economic accounts, number of households, by income quintile and by socio-demographic characteristic](#)
 - [Recent analysis of the distributions of household economic accounts for income, consumption, saving and wealth of Canadian households, third quarter 2023](#)
- [Economic Well Being](#)
 - Bringing together data, tools and reports to provide you with the latest information on income, pensions, spending and wealth in Canada.
- [CREA MLS Home Price Index \(HPI\)](#)
- [Teranet–National Bank House Price Index](#)
- [Bank of Canada: Indicators of financial vulnerabilities](#)
 - Quarterly data to track the evolution of two vulnerabilities in the Canadian economy: household indebtedness and high house prices



For more information on the Canadian CPI

Find us at the [CPI Portal](#)!

✓ One stop shop for information relating to all CPI data, publications, interactive tools, and announcements highlighting new products and upcoming changes to the CPI in one convenient location.

• Prices Analytical Series

- [Canadian CPI reference paper](#)
- [Shelter in the Canadian CPI: An overview, 2023 update](#)
- [Evaluating different approaches to measuring owned accommodation in the Consumer Price Index](#)
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