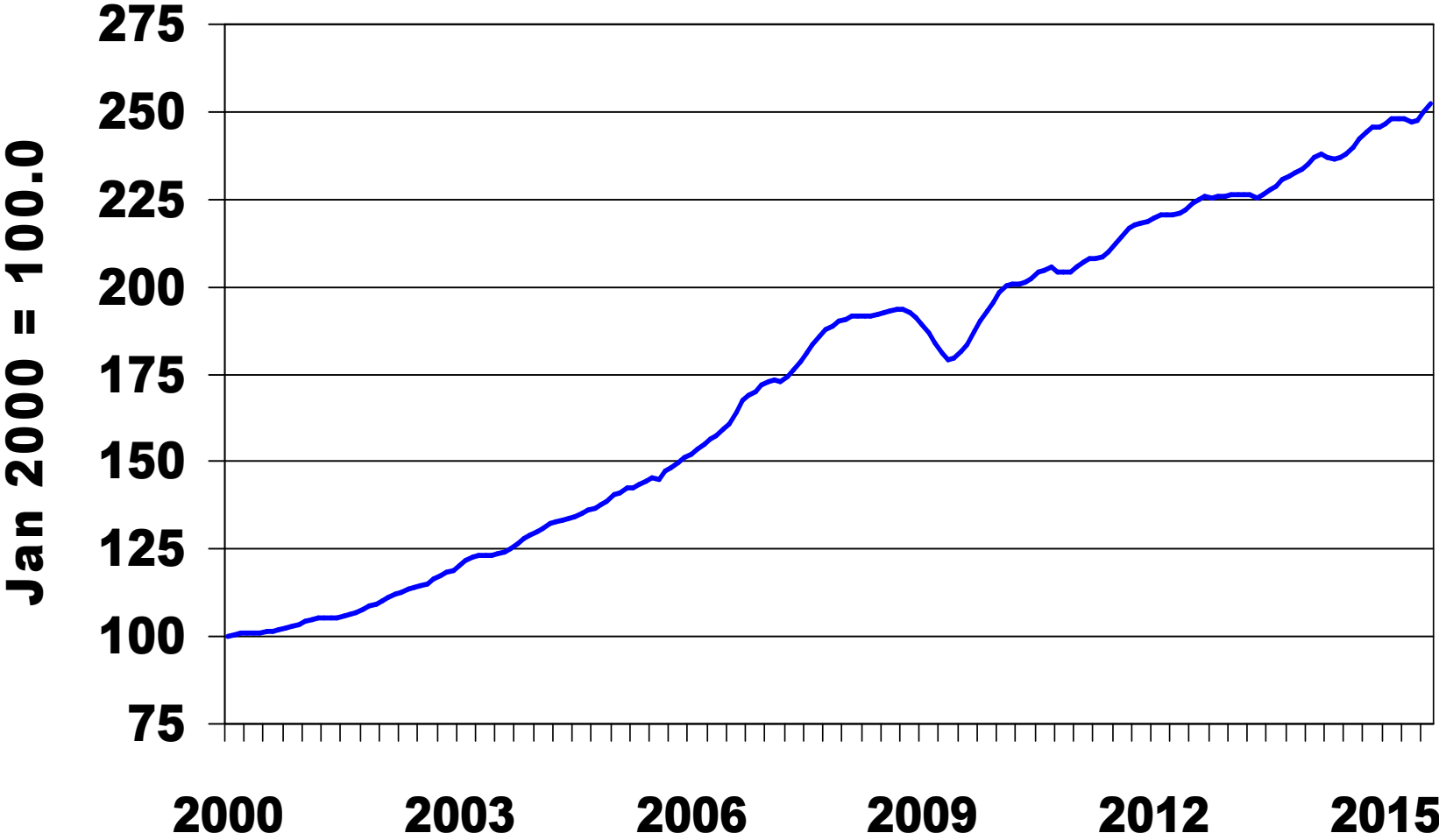


# Overvalued Housing Markets? Not Really

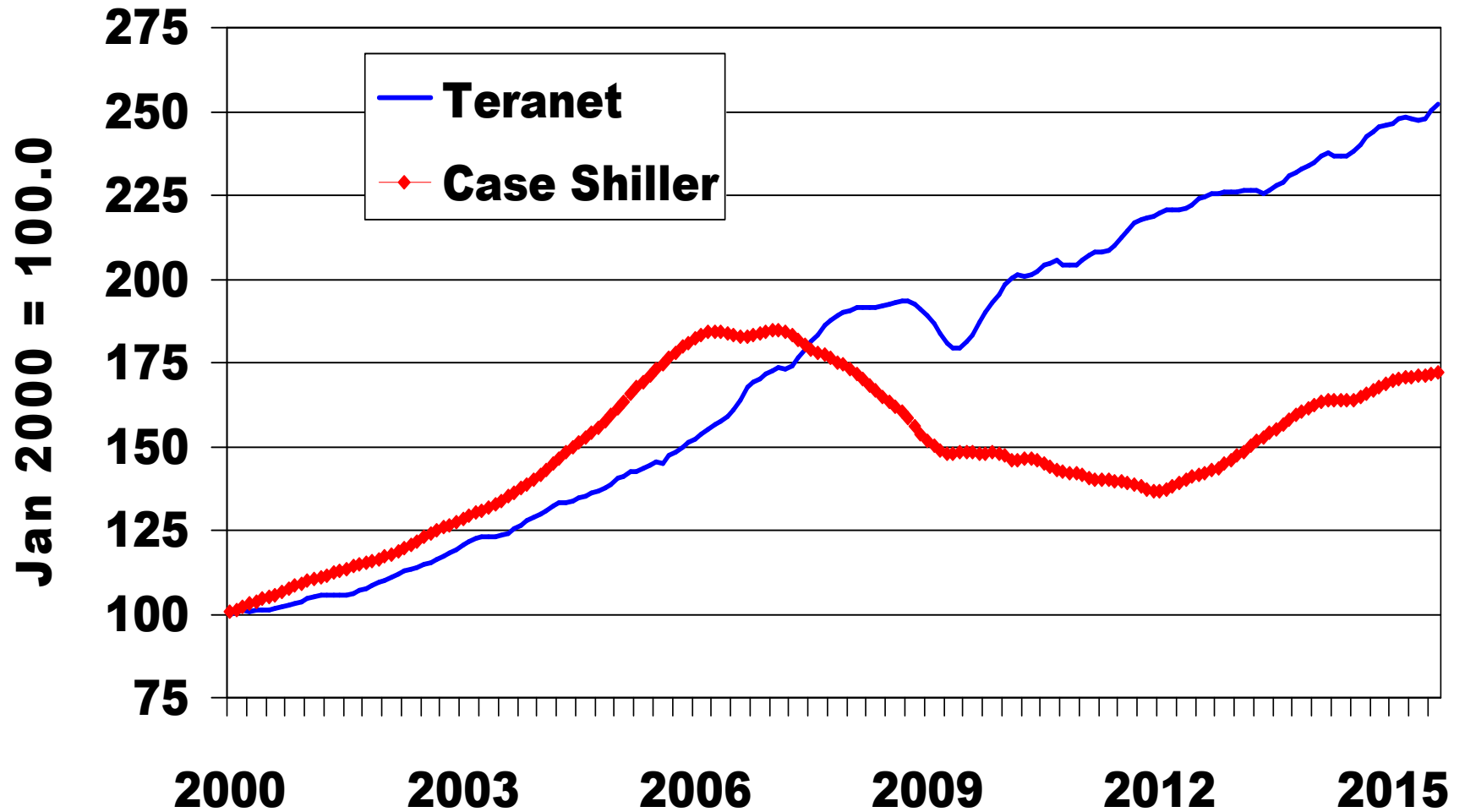
Will Dunning  
November 10, 2015

# Rising House Prices in Canada



Source: Teranet / National Bank

## ... Versus the USA



Source: Teranet / National Bank; S&P

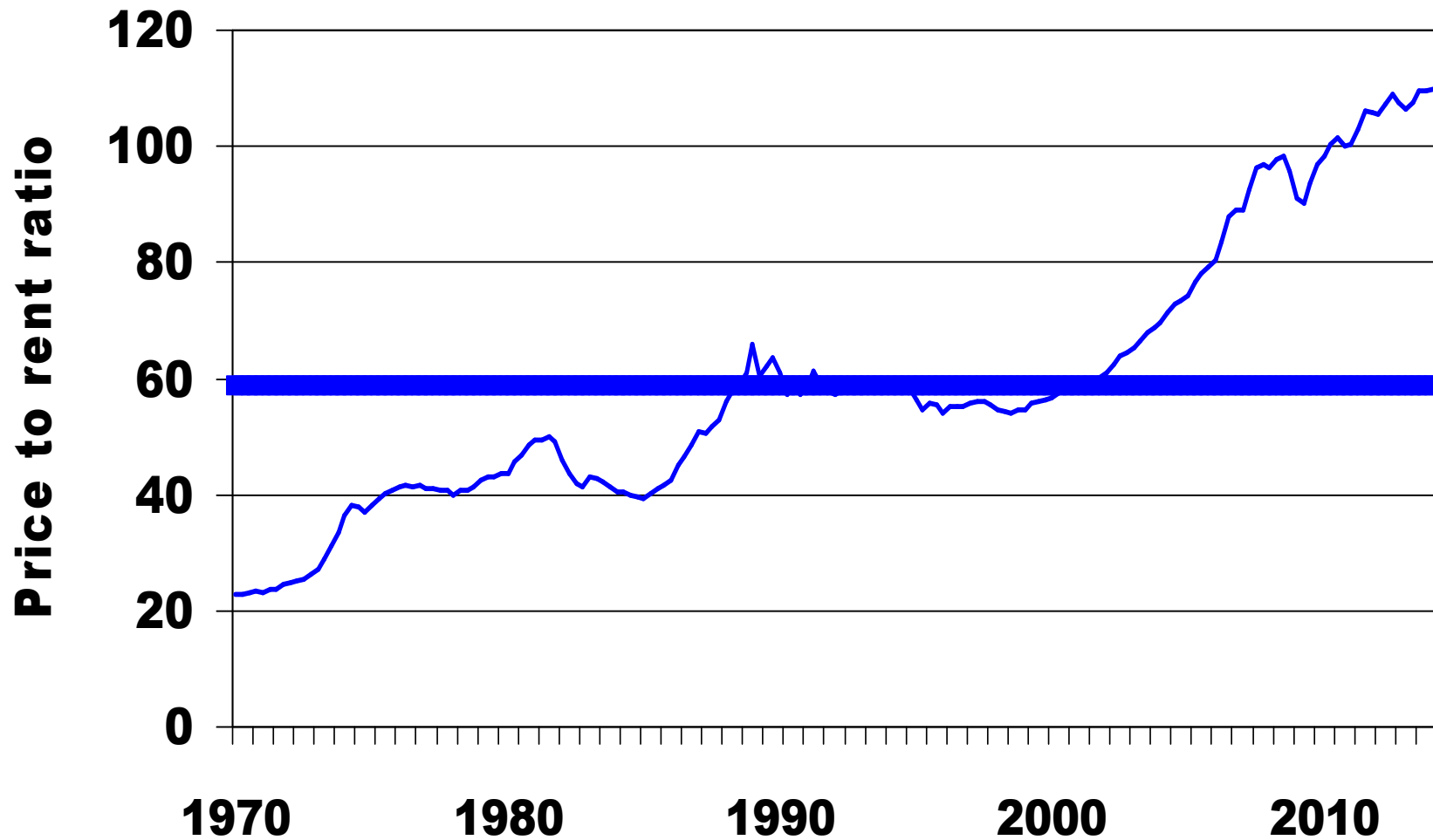
# My Agenda

- Canada's housing markets might be the “most overvalued in the world” – OECD, The Economist...
- Conclusions based on flawed data and an incomplete concept.
- Low interest rates have generated “affordability space”

# Analysis Approaches

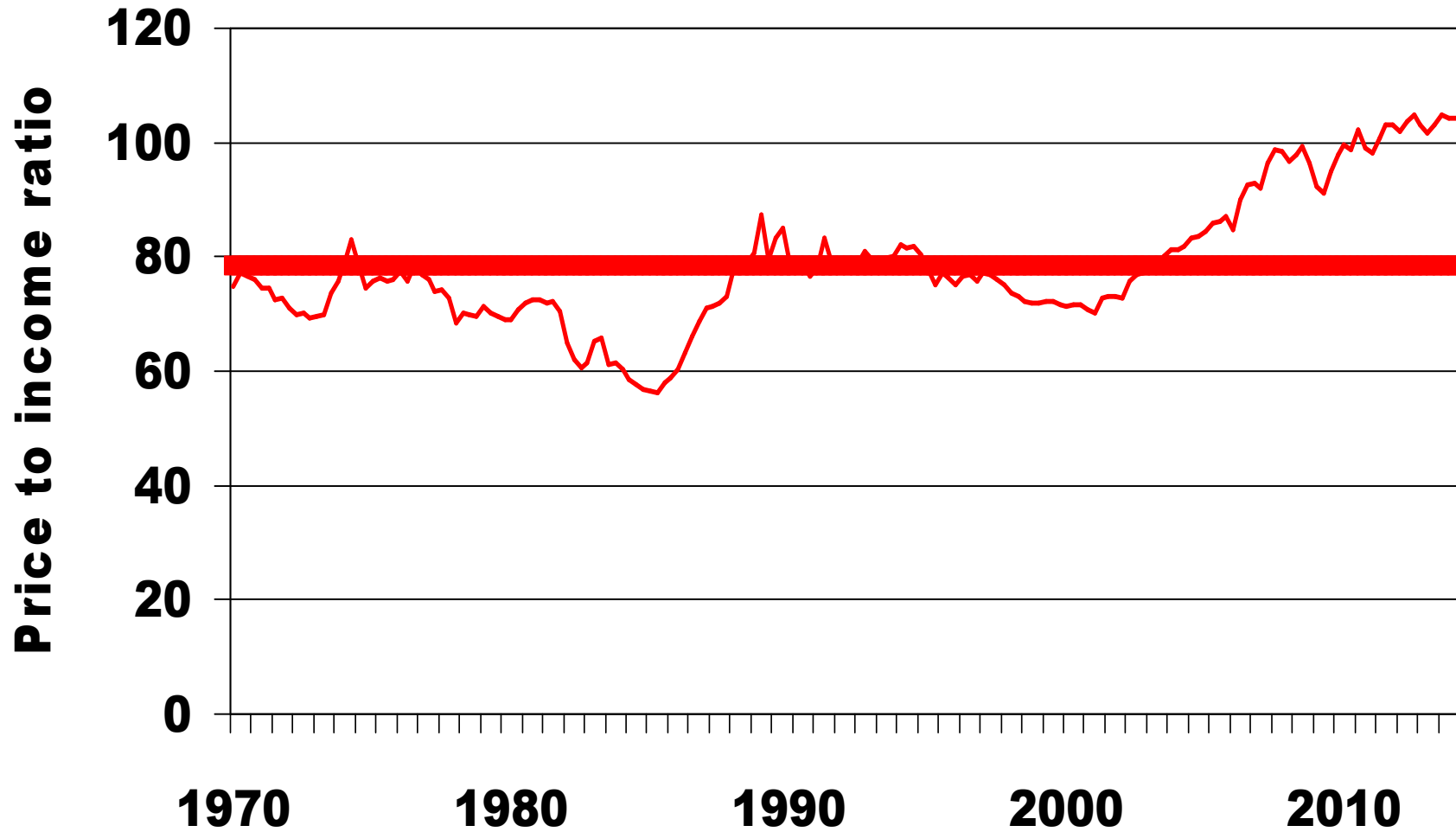
- Standard approach looks at prices versus rents or incomes.
- Need to incorporate interest rates:
  - Home ownership as an investment – capitalization rates (“How to Dissect a Housing Bubble”).
  - Mortgage cost relative to incomes.
  - Compare costs of home ownership with renting equivalent accommodation (forthcoming).

# OECD – 87% Overvaluation Based on Rents



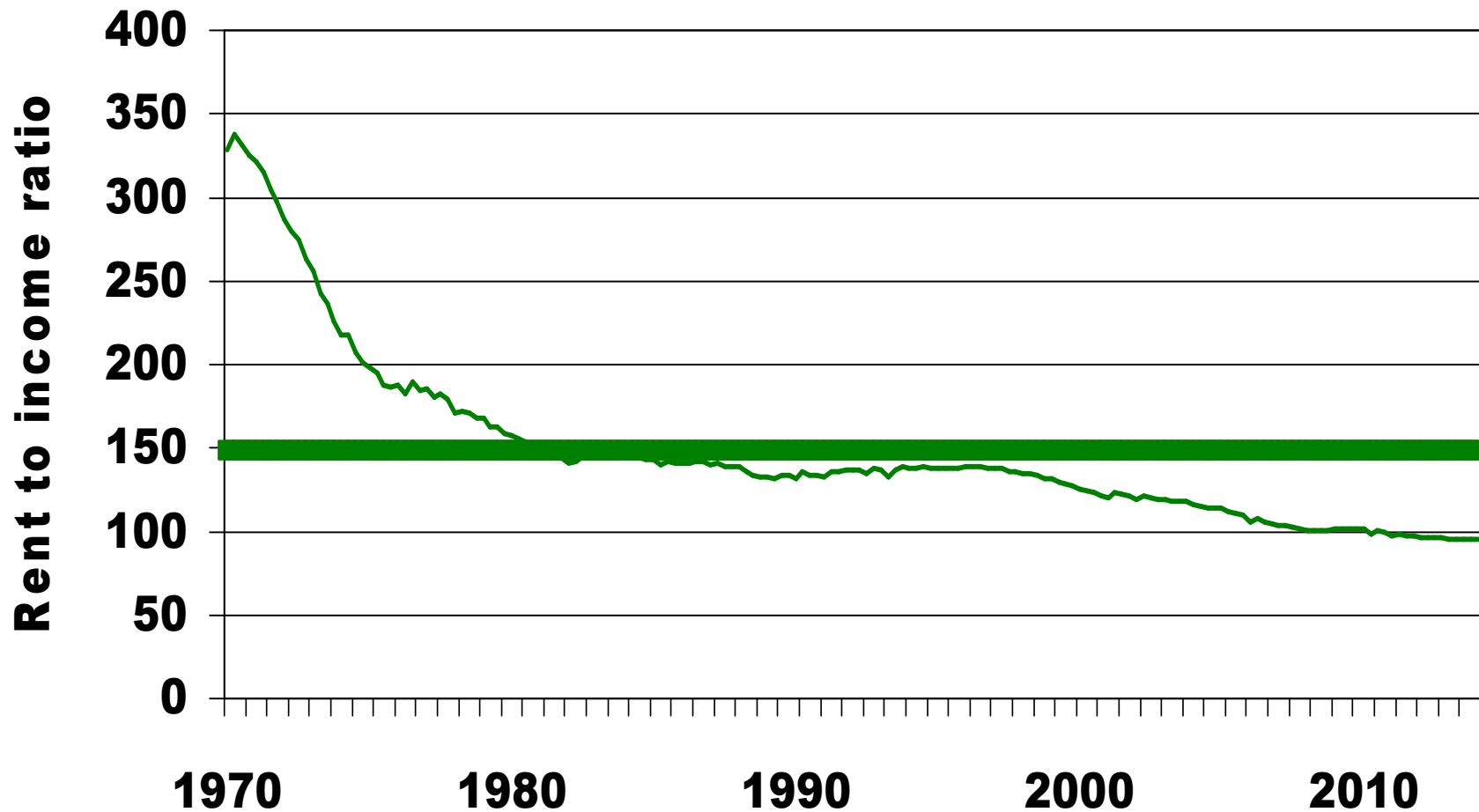
Source: OECD

# OECD – 33% Based on Incomes



Source: OECD

# OECD Implies Rents are 36% Undervalued Based on Incomes



Source: Will Dunning, using OECD data

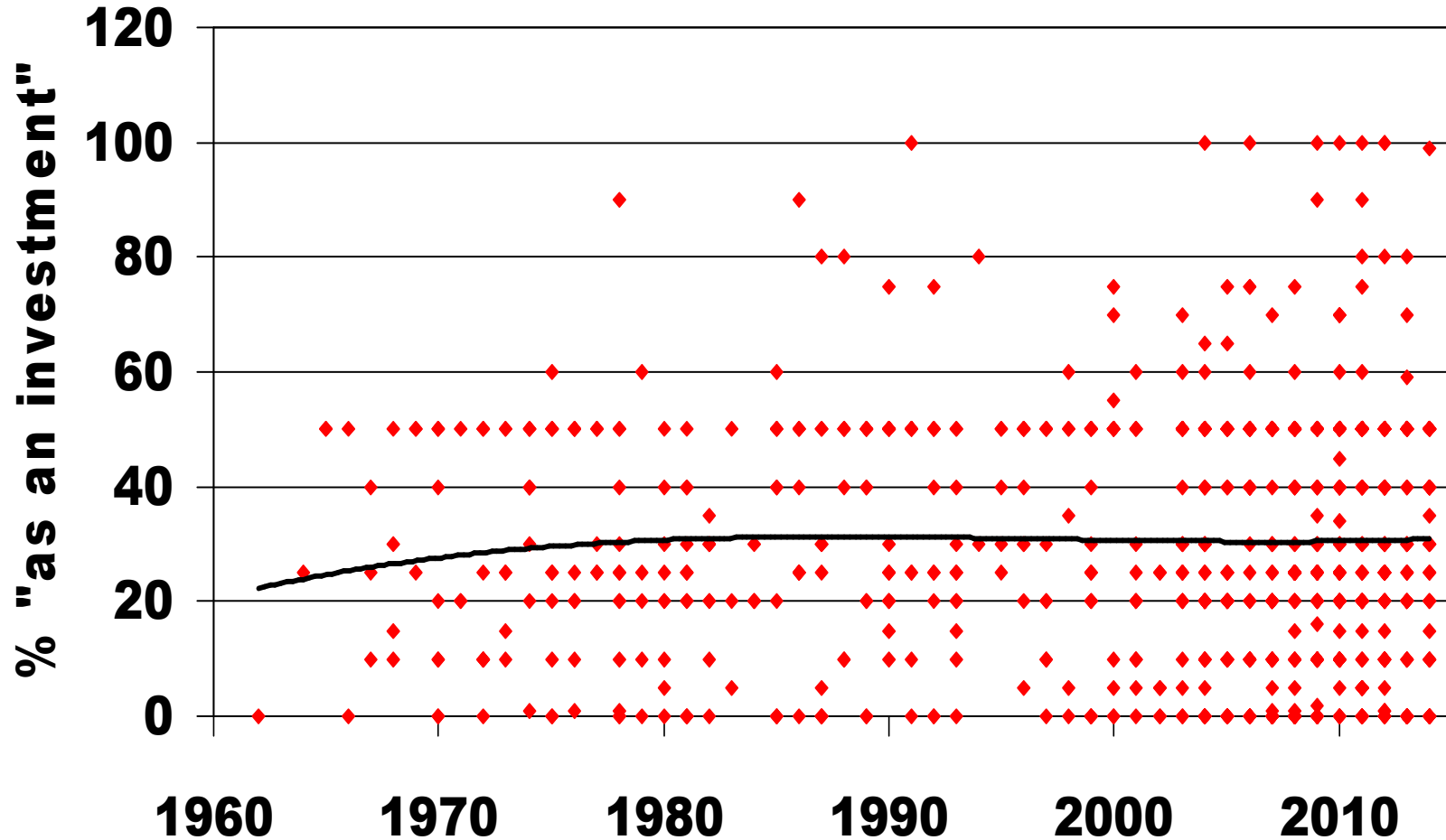


# Critique of OECD Analysis

“How to Dissect a Housing Bubble”

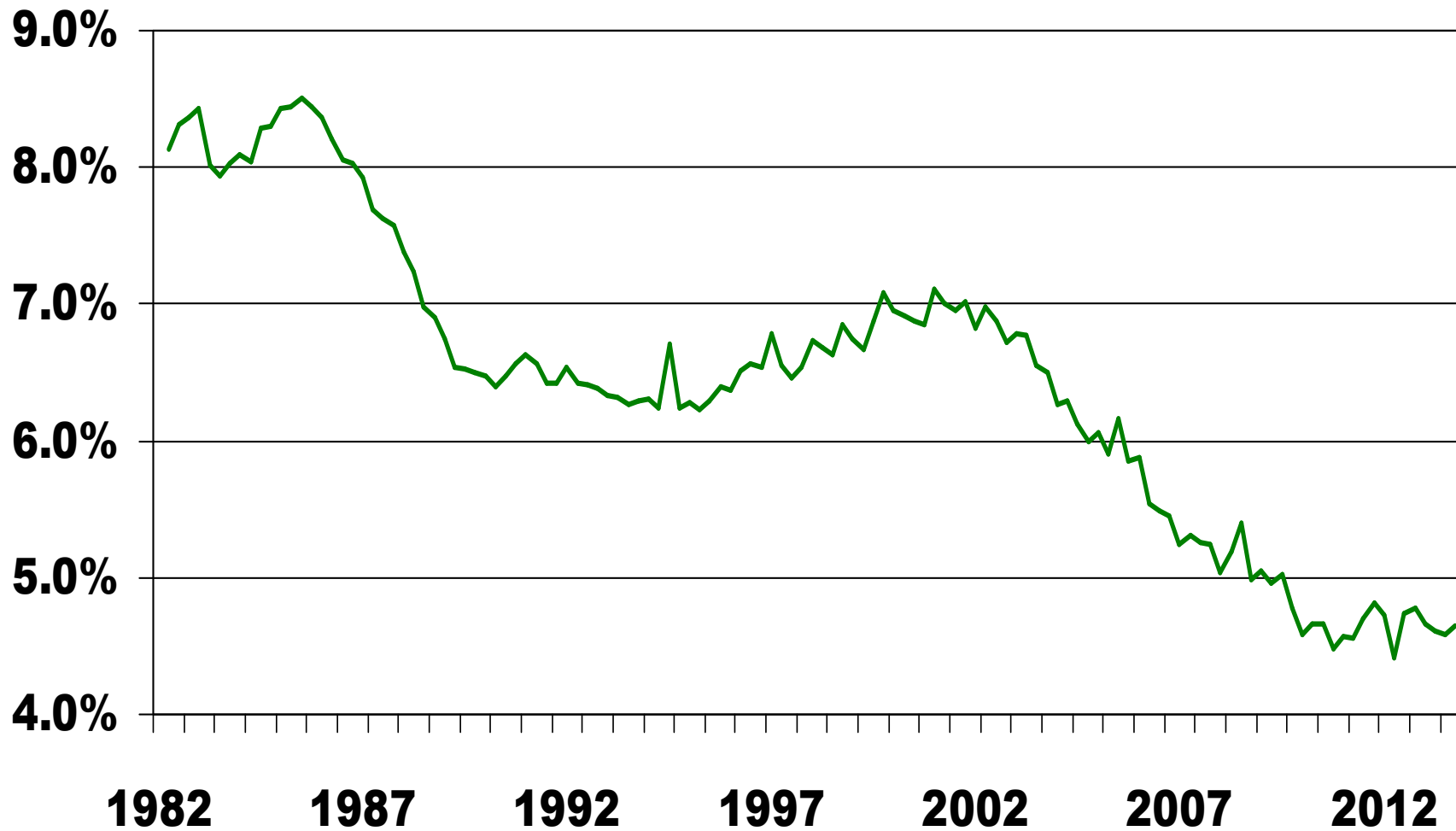
- Rent data not fit for the purpose.
- Should we rely on the price-to-income ratio?
- Where is the causality?
- Interest rates are key.
- Housing is not just a place to live...
- Data from Royal LePage House Price Survey used to calculate capitalization rates

# Housing is Partly an Investment (by Year of 1<sup>st</sup> Purchase)



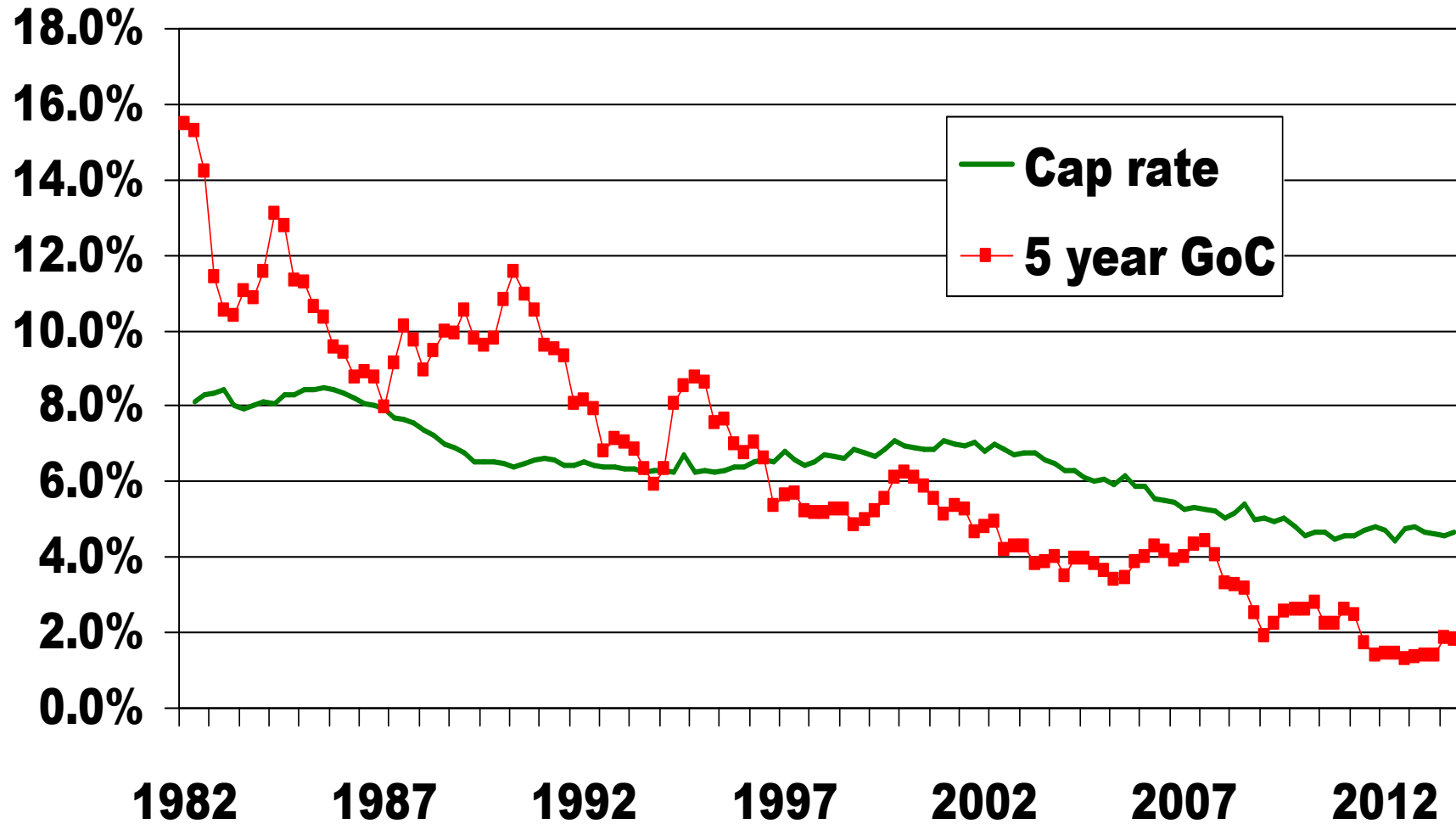
Source: Will Dunning, CAAMP data, fall 2014

# Cap Rates Have Fallen for Canadian Housing



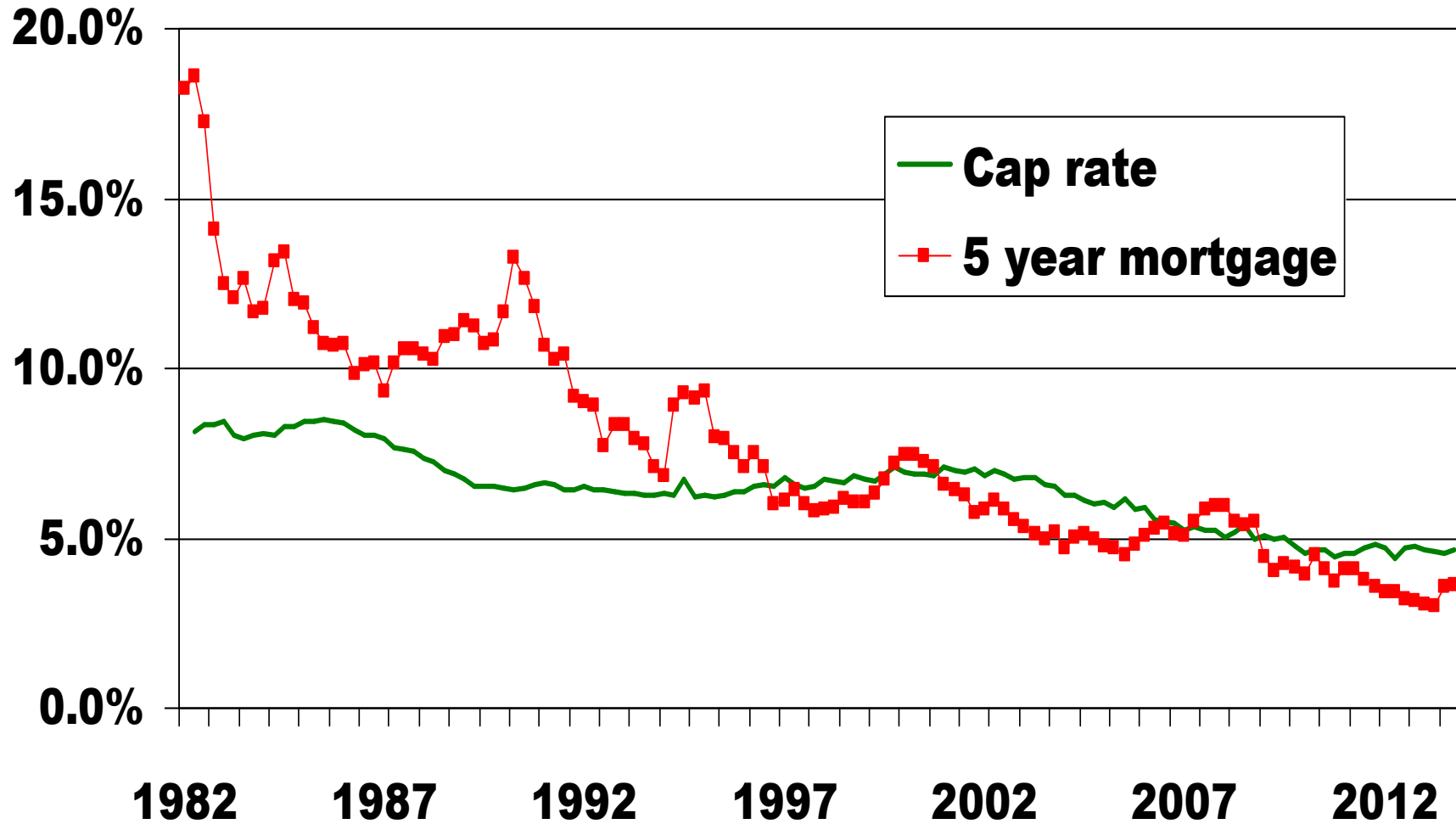
Source: Will Dunning, using Royal LePage data

## ... So Have Bond Yields



Source: Will Dunning, using Royal LePage and BoC data

## ... And Mortgage Rates



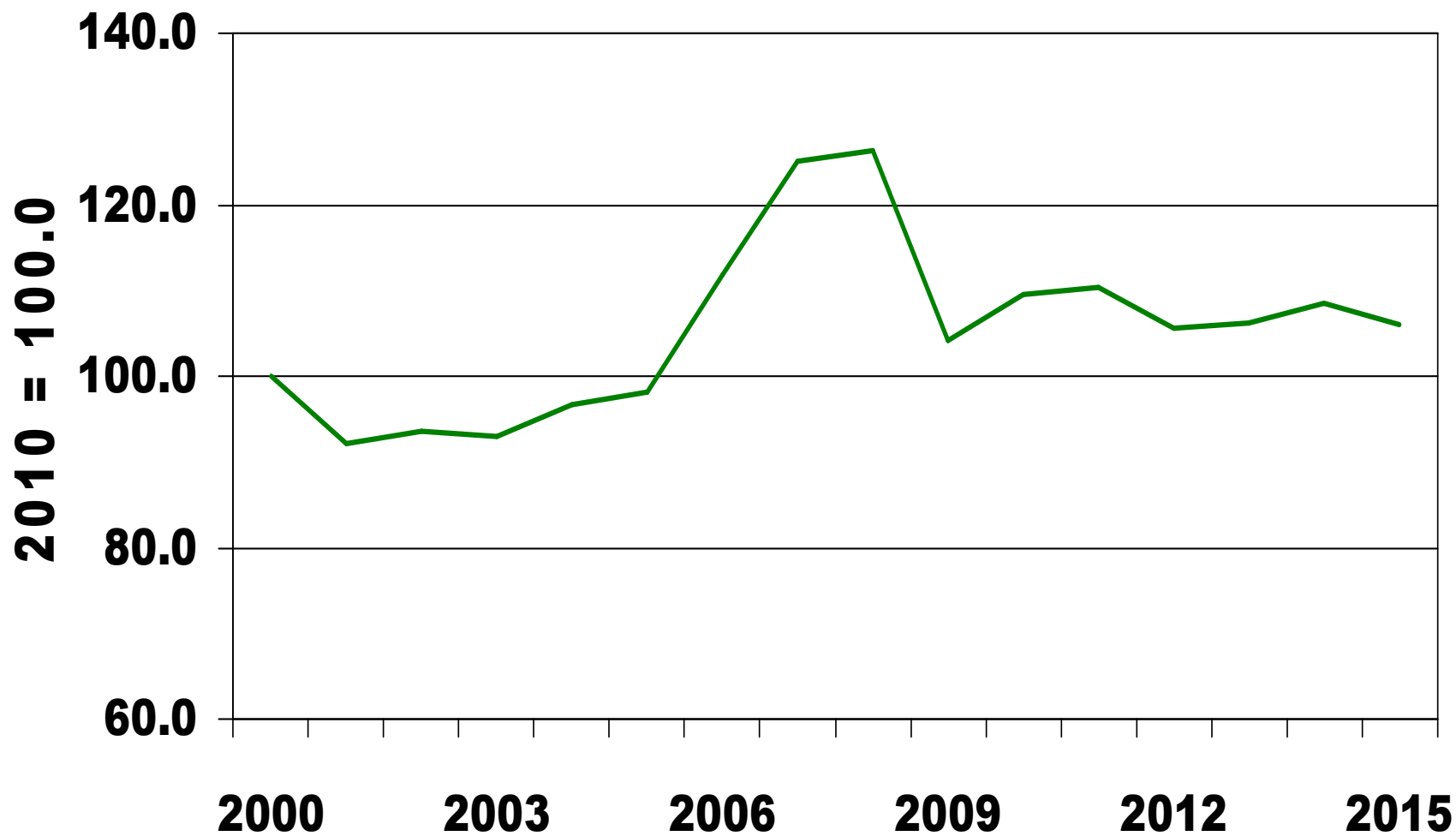
Source: Will Dunning, using Royal LePage data

# Revisiting the OECD Approach

But, use the ratio of mortgage costs (not house prices) to incomes:

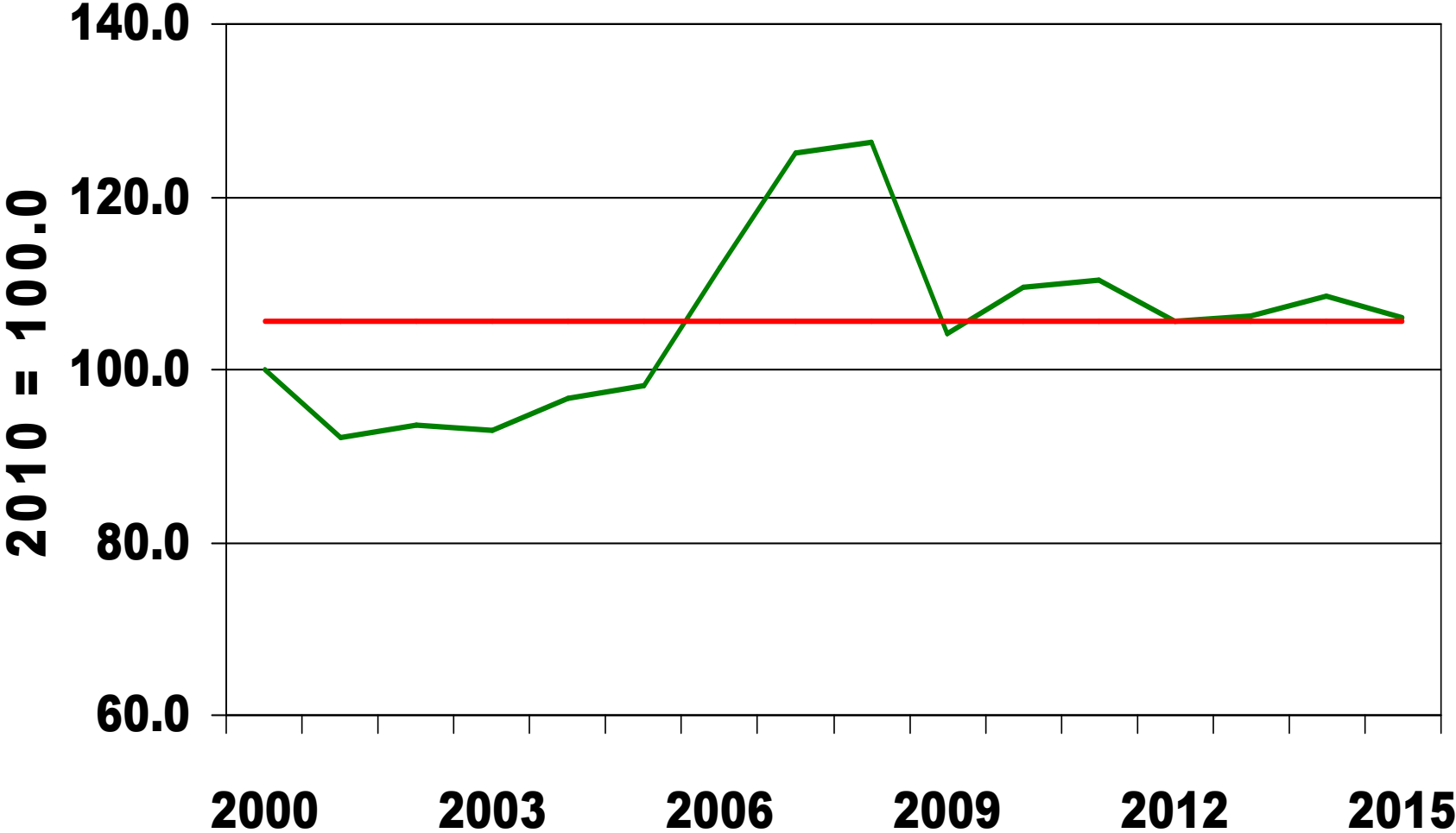
- Further, distinguish between the mortgage cost versus the interest cost.
- Principal repayment goes to the owner's bottom line.
- (Charts for 11 major markets at [www.wdunning.com](http://www.wdunning.com) – all 11 show current “undervaluation”).

# Mortgage Costs vs Wages



Source: calculations by Will Dunning

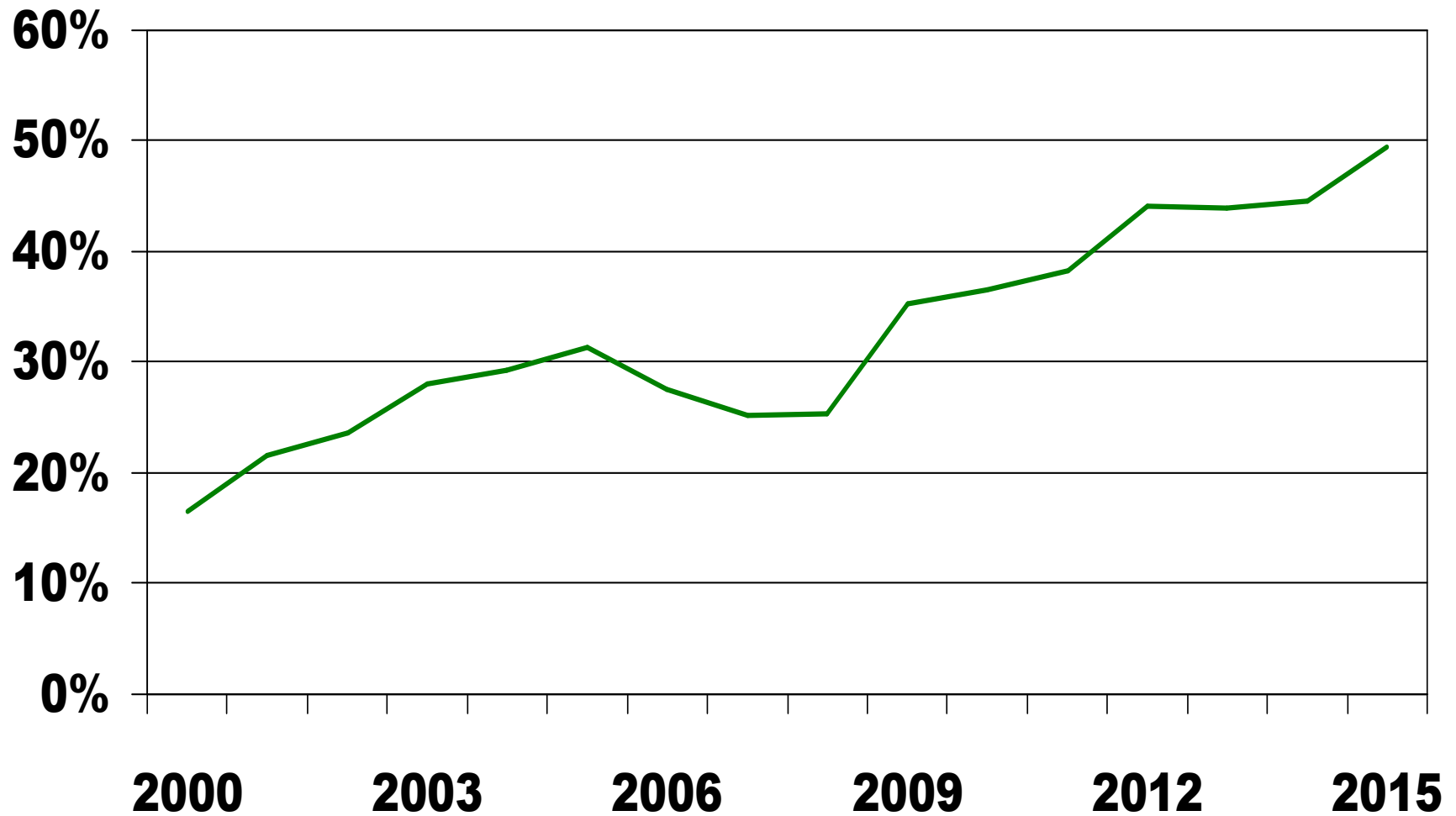
# Compare to the Average



Source: calculations by Will Dunning

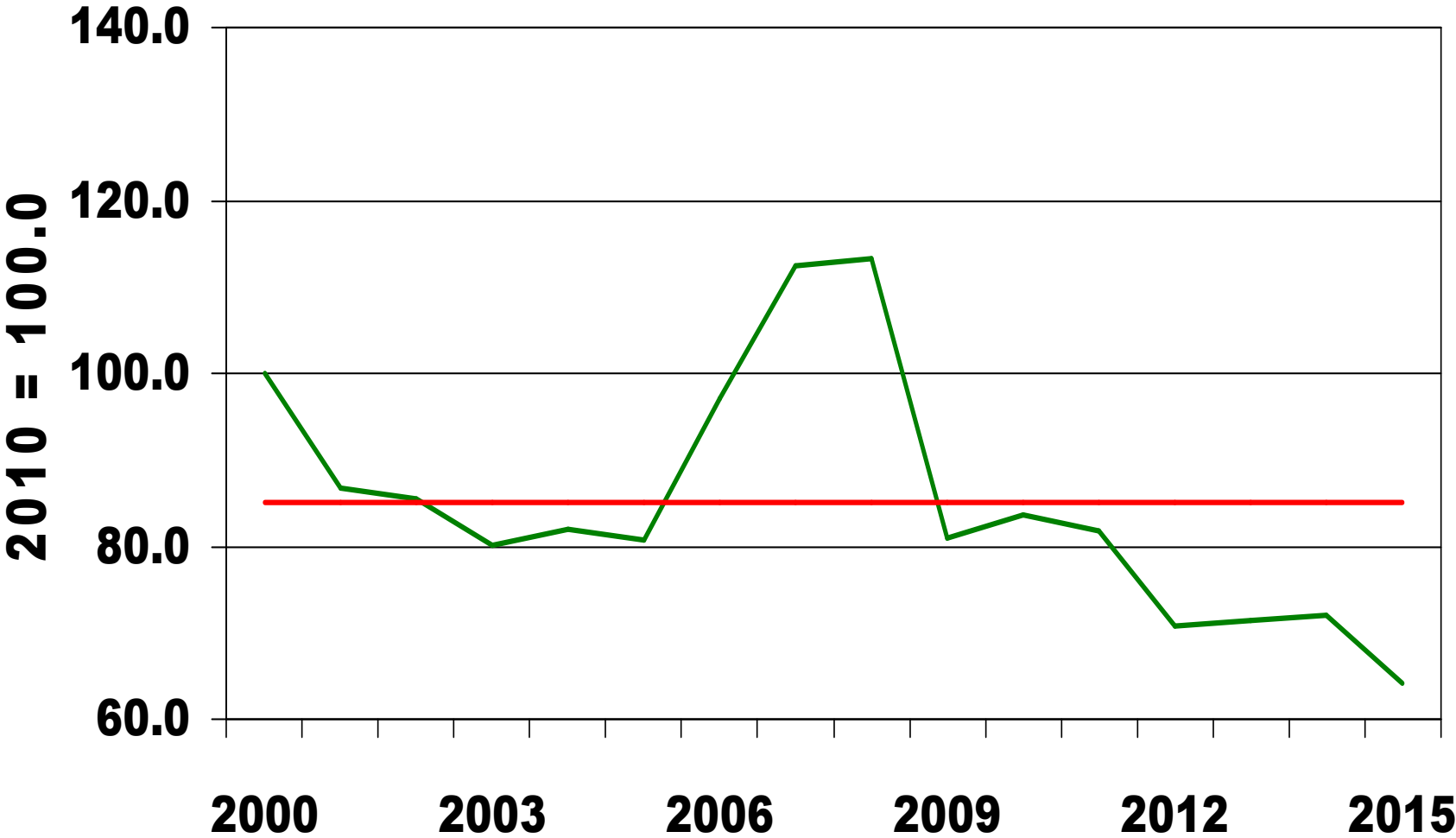


# Principal Repaid as % of First Payment



**25-year amortization; 5-year fixed rate mortgage**

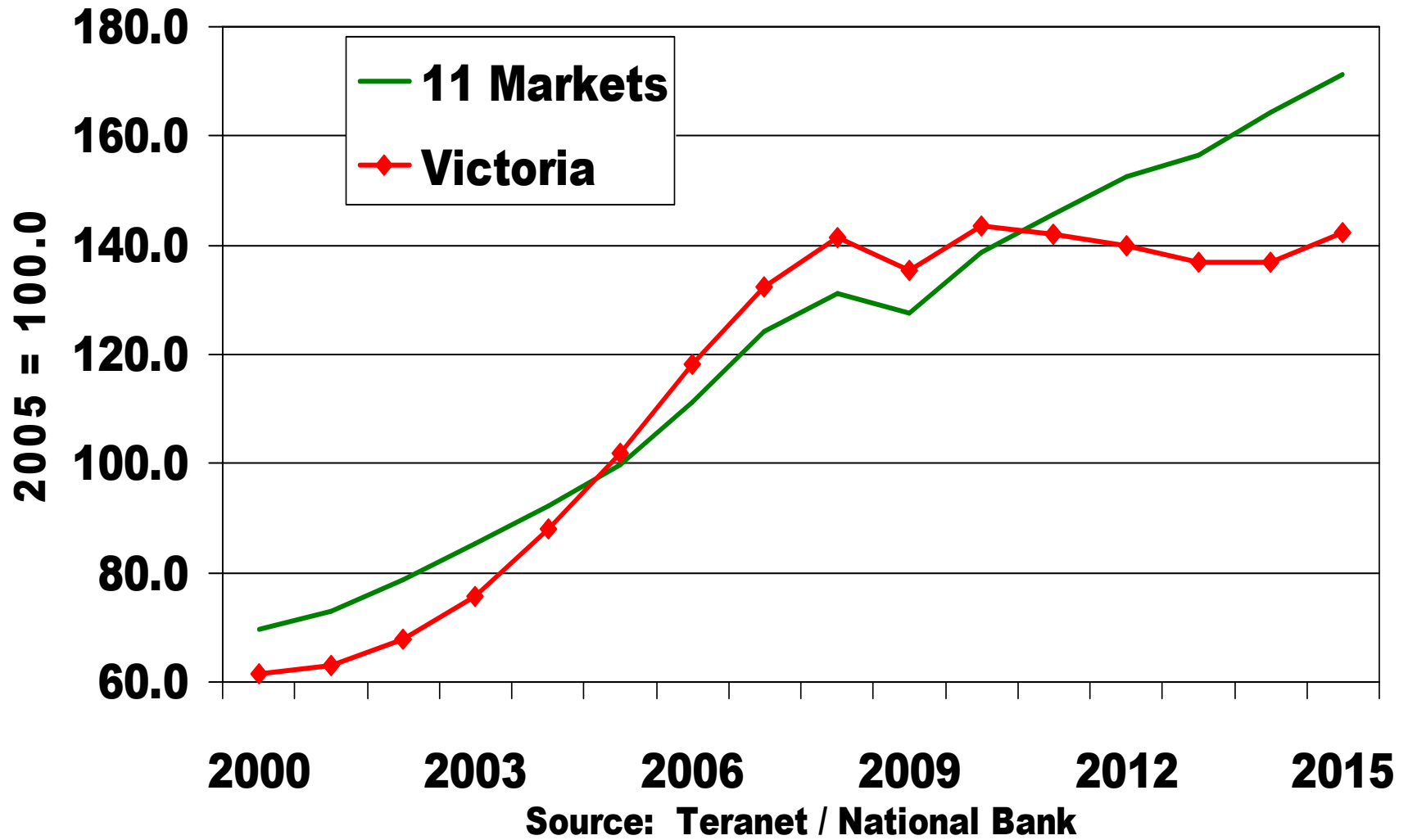
# Net Mortgage Cost (Interest) vs Wages



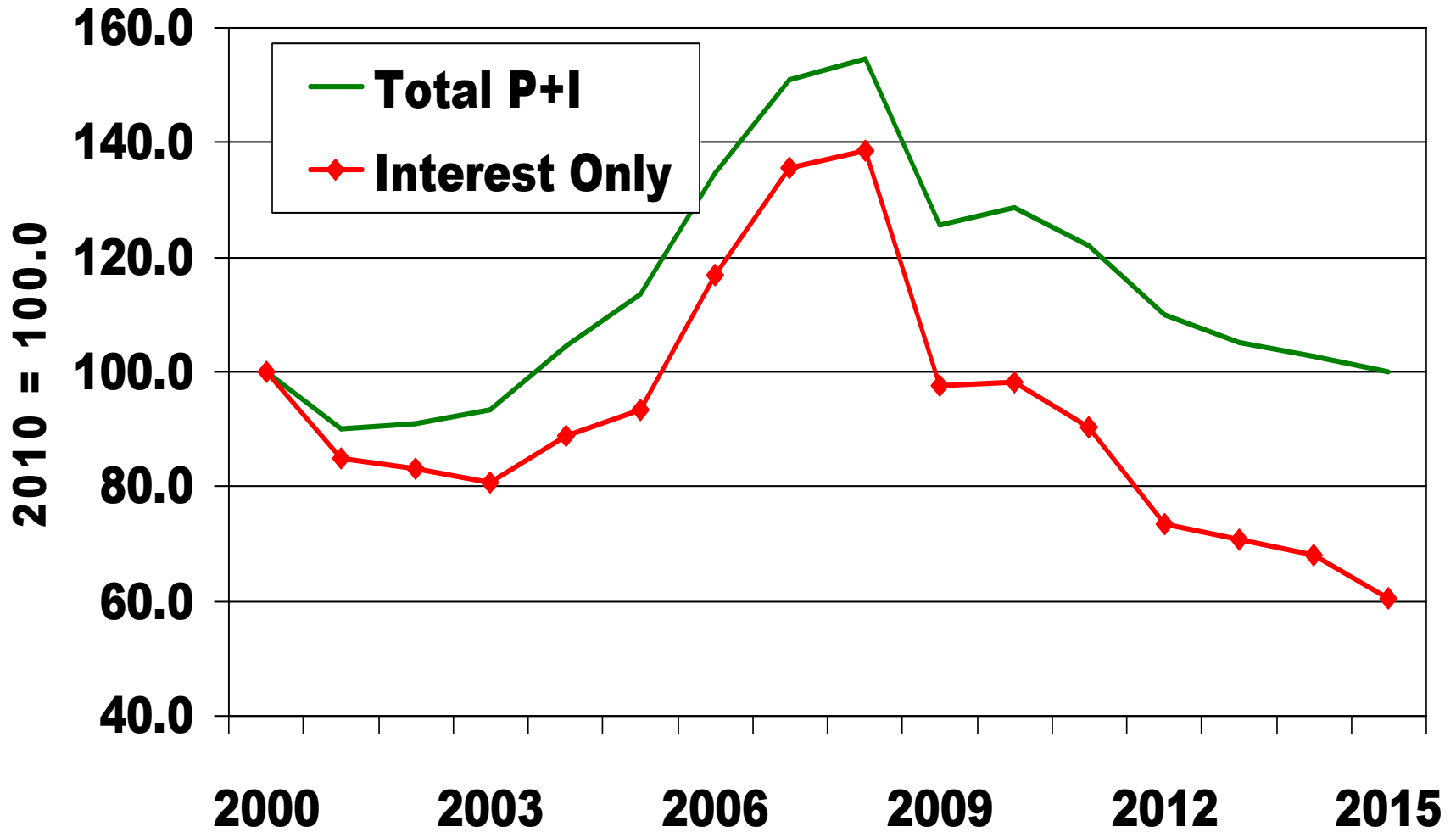
Source: calculations by Will Dunning

# 11 Major Markets

# Victoria House Price Index

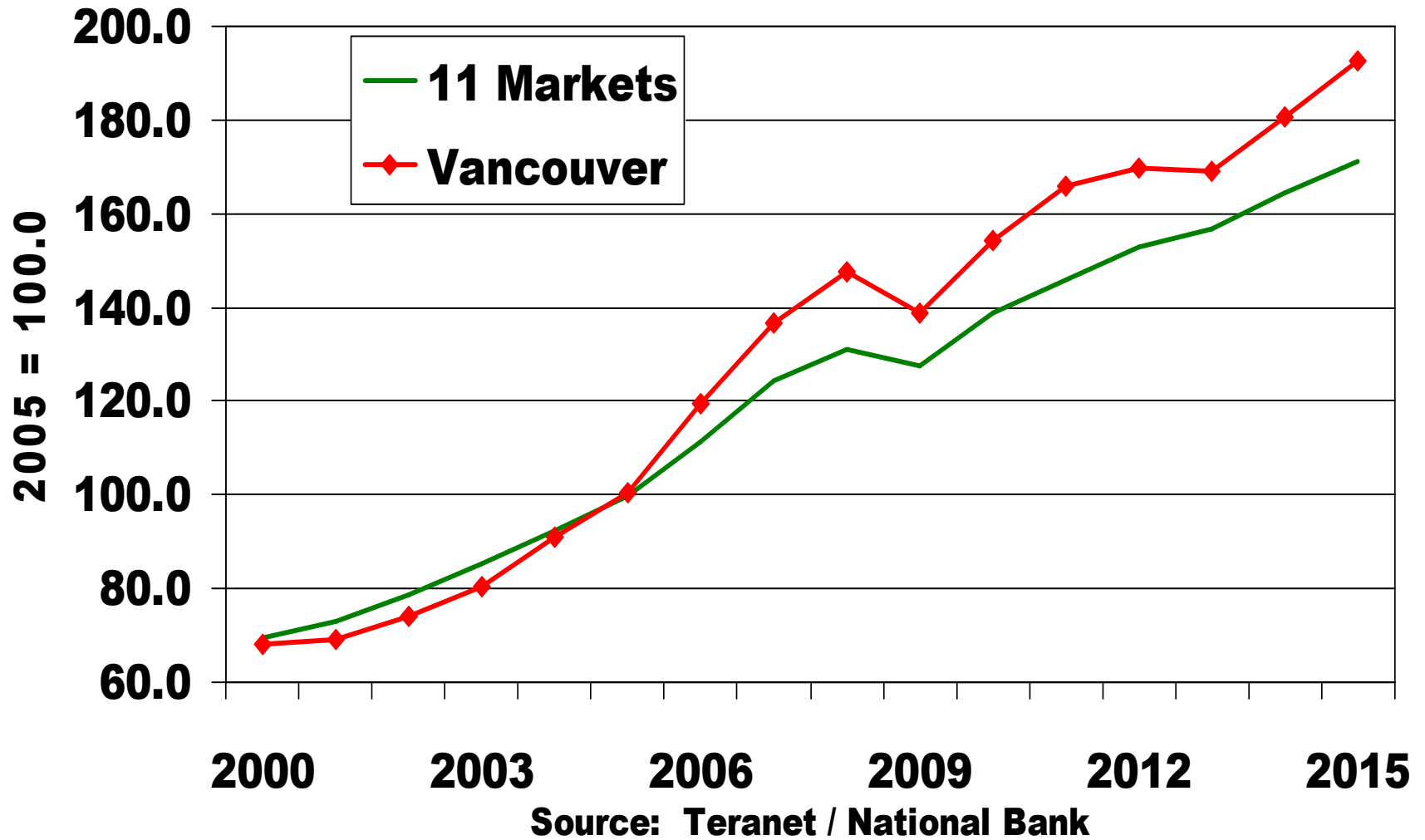


# Victoria Mortgage Cost Index

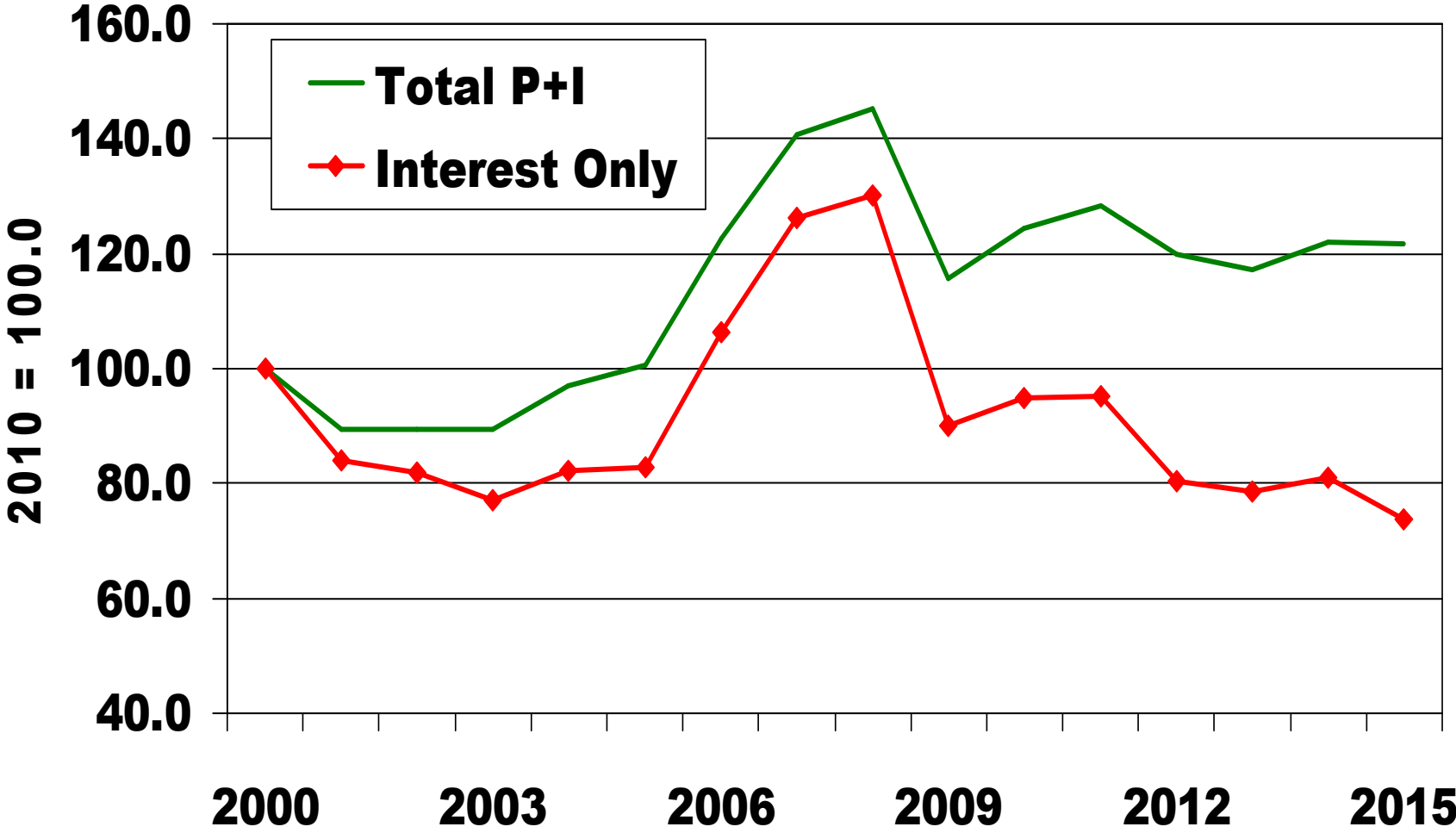


Source: calculations by Will Dunning

# Vancouver House Price Index

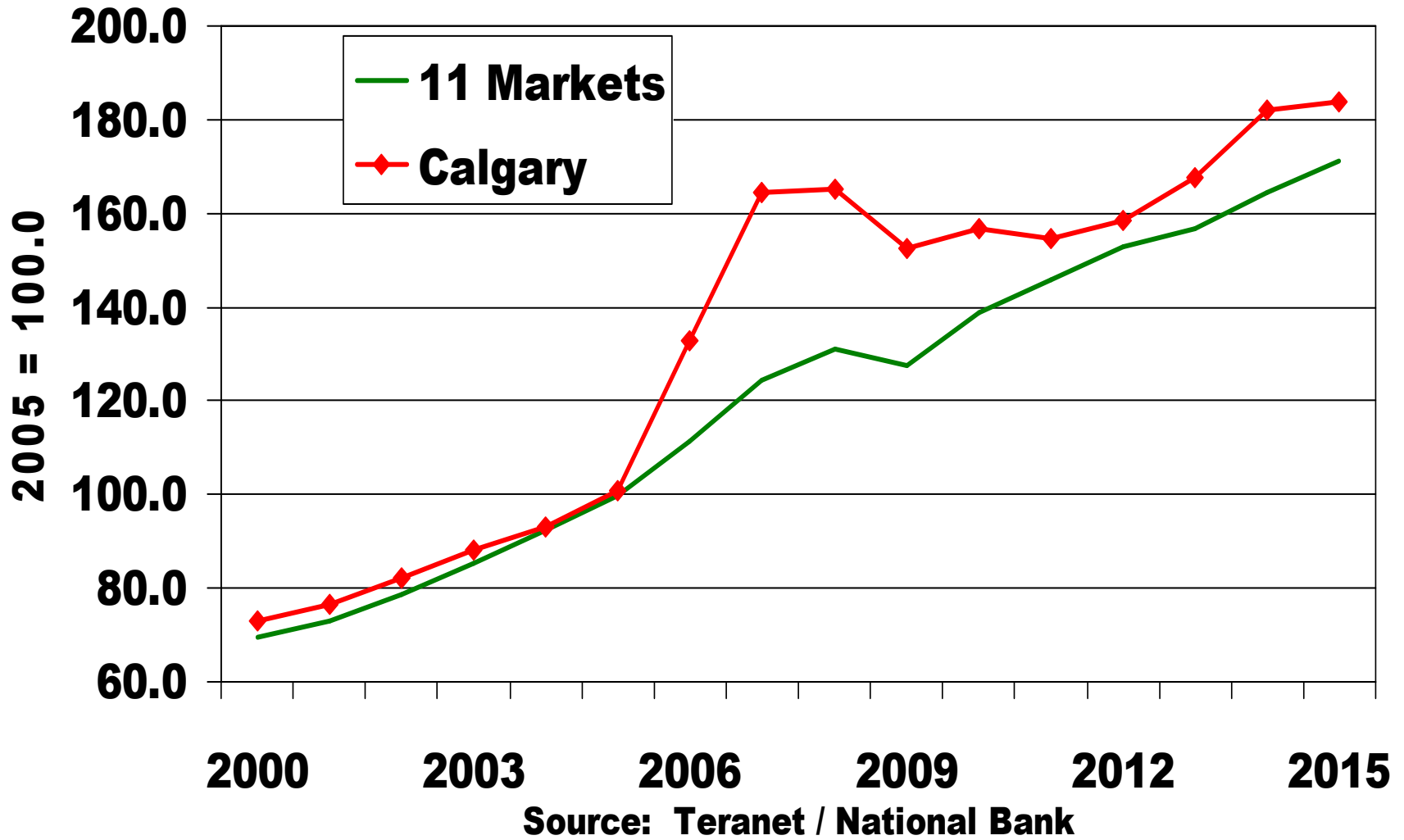


# Vancouver Mortgage Cost Index



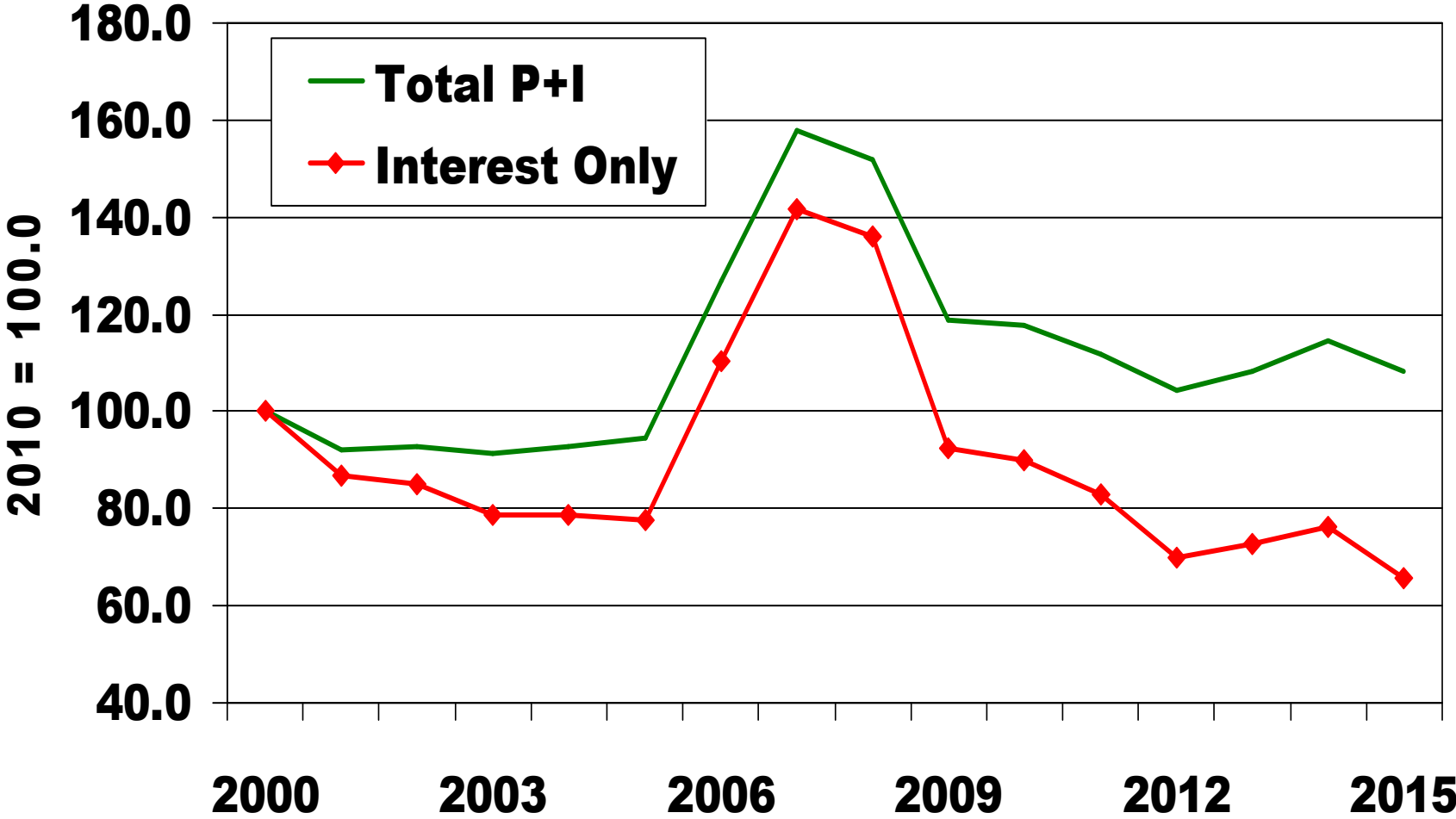
Source: calculations by Will Dunning

# Calgary House Price Index



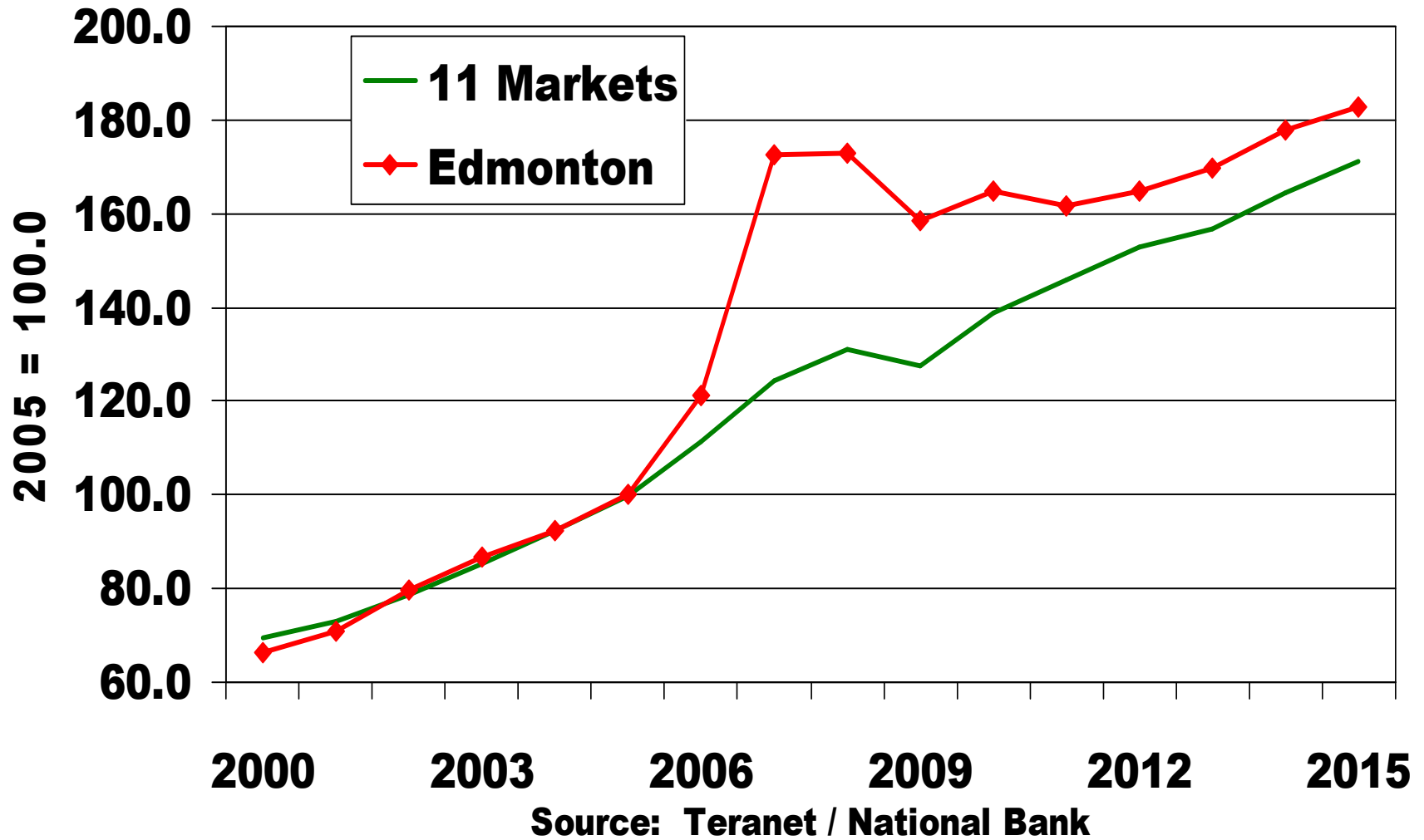


# Calgary Mortgage Cost Index

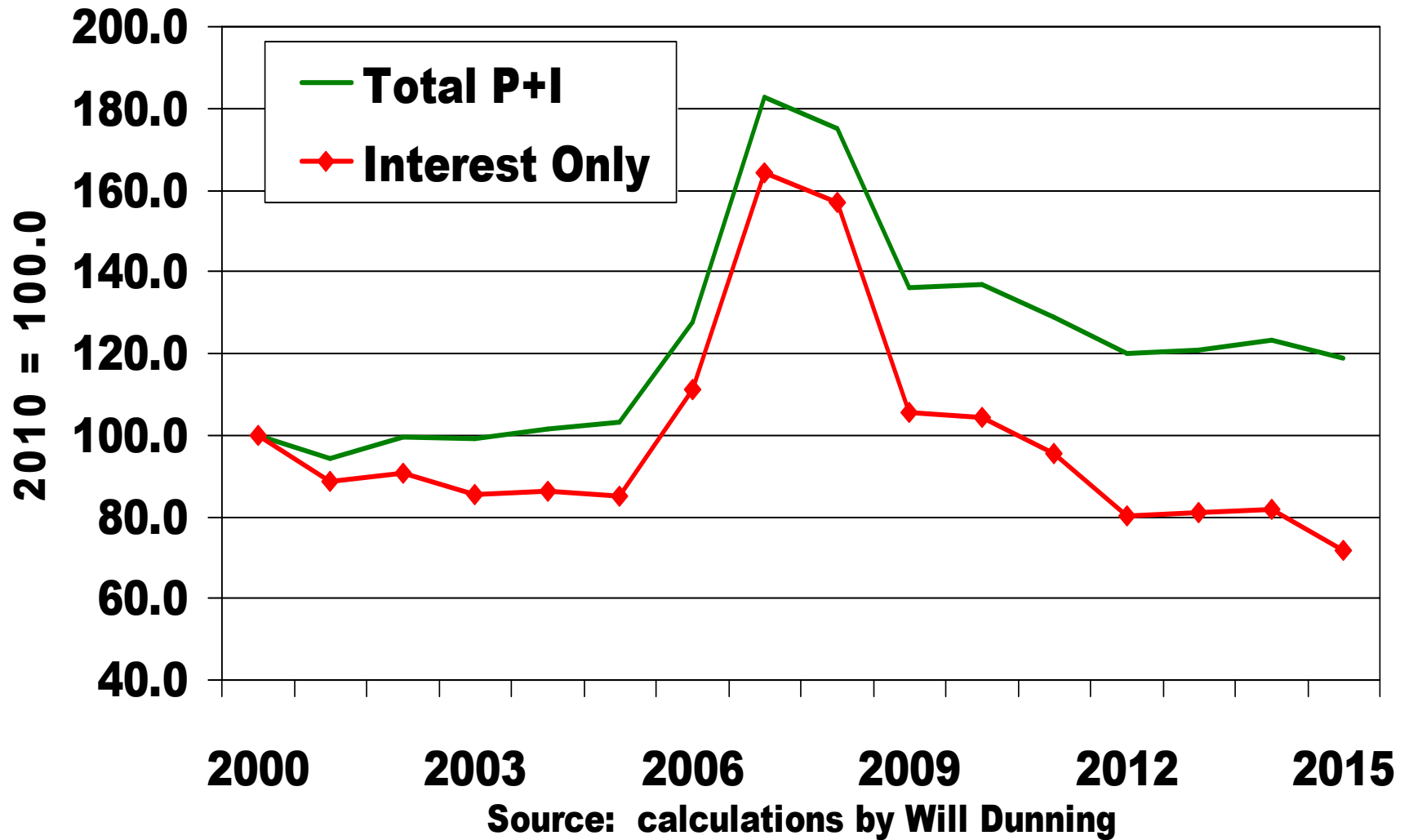


Source: calculations by Will Dunning

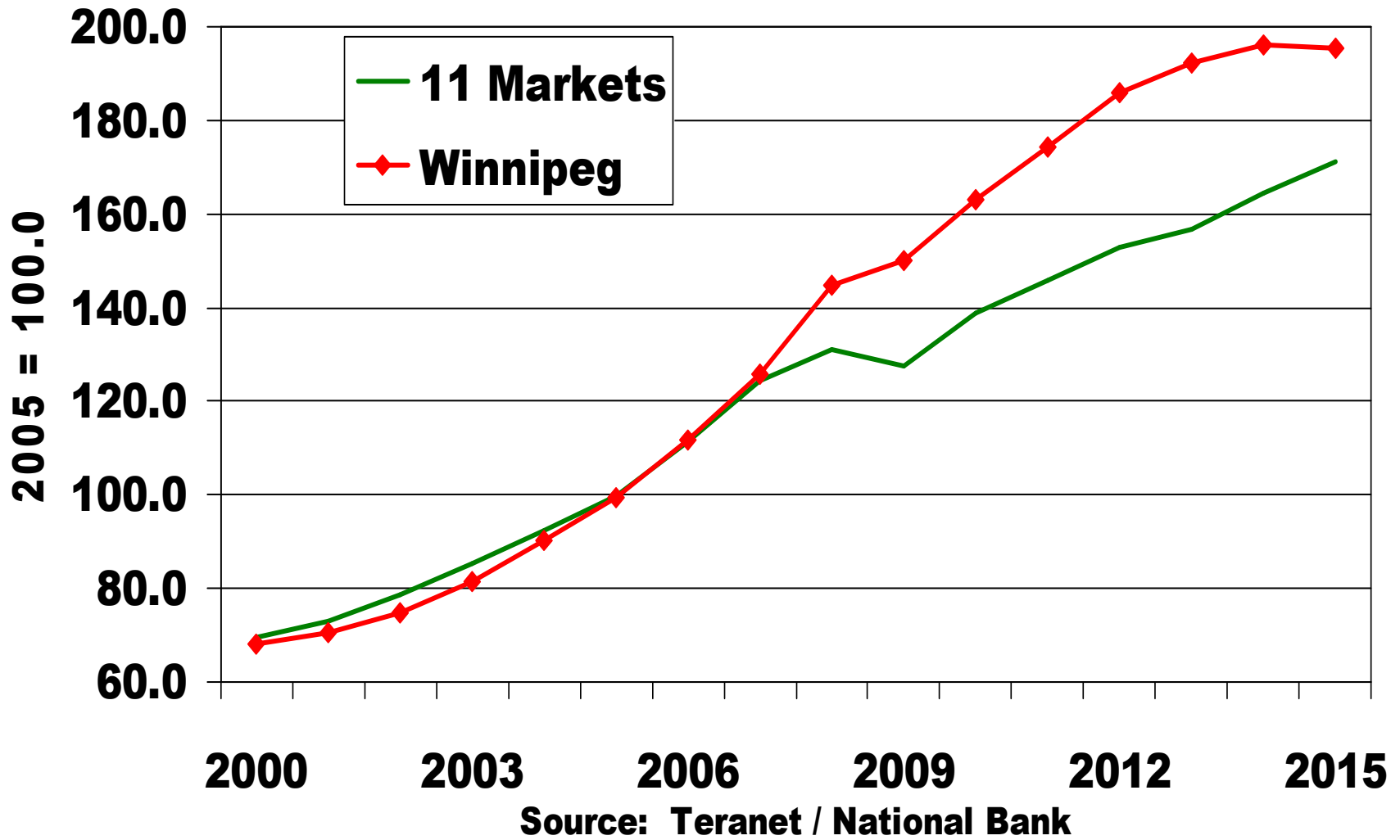
# Edmonton House Price Index



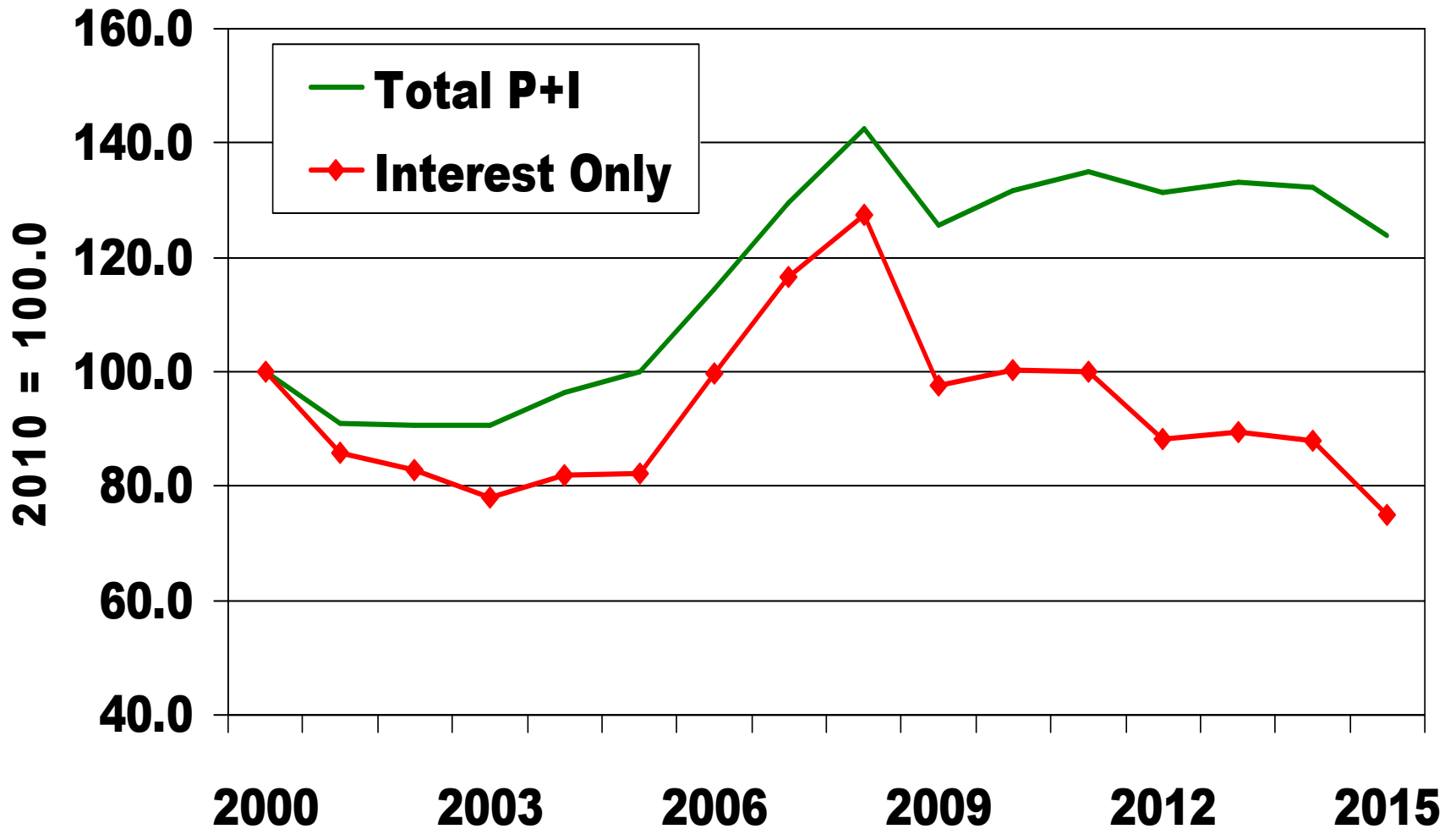
# Edmonton Mortgage Cost Index



# Winnipeg House Price Index

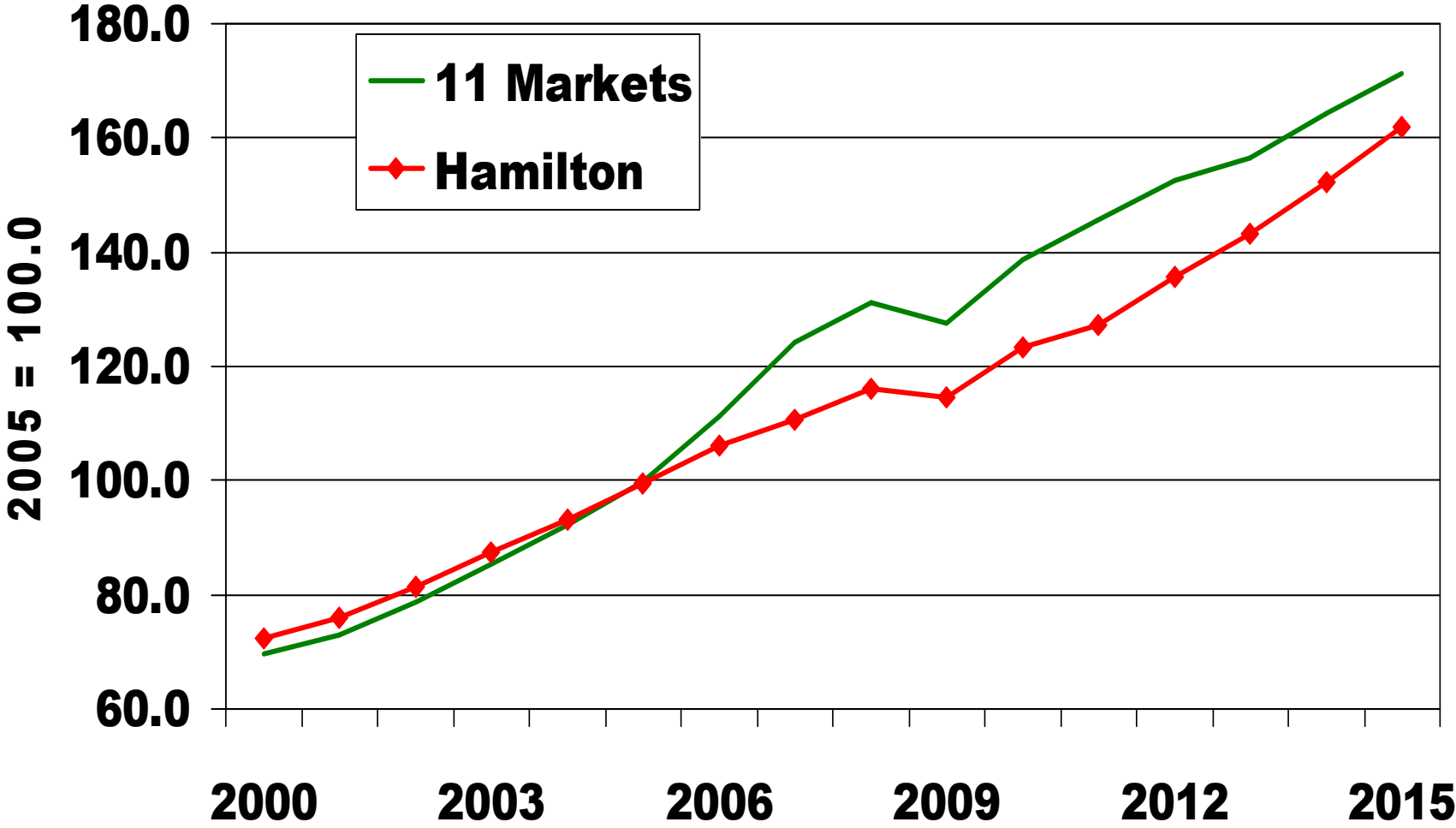


# Winnipeg Mortgage Cost Index



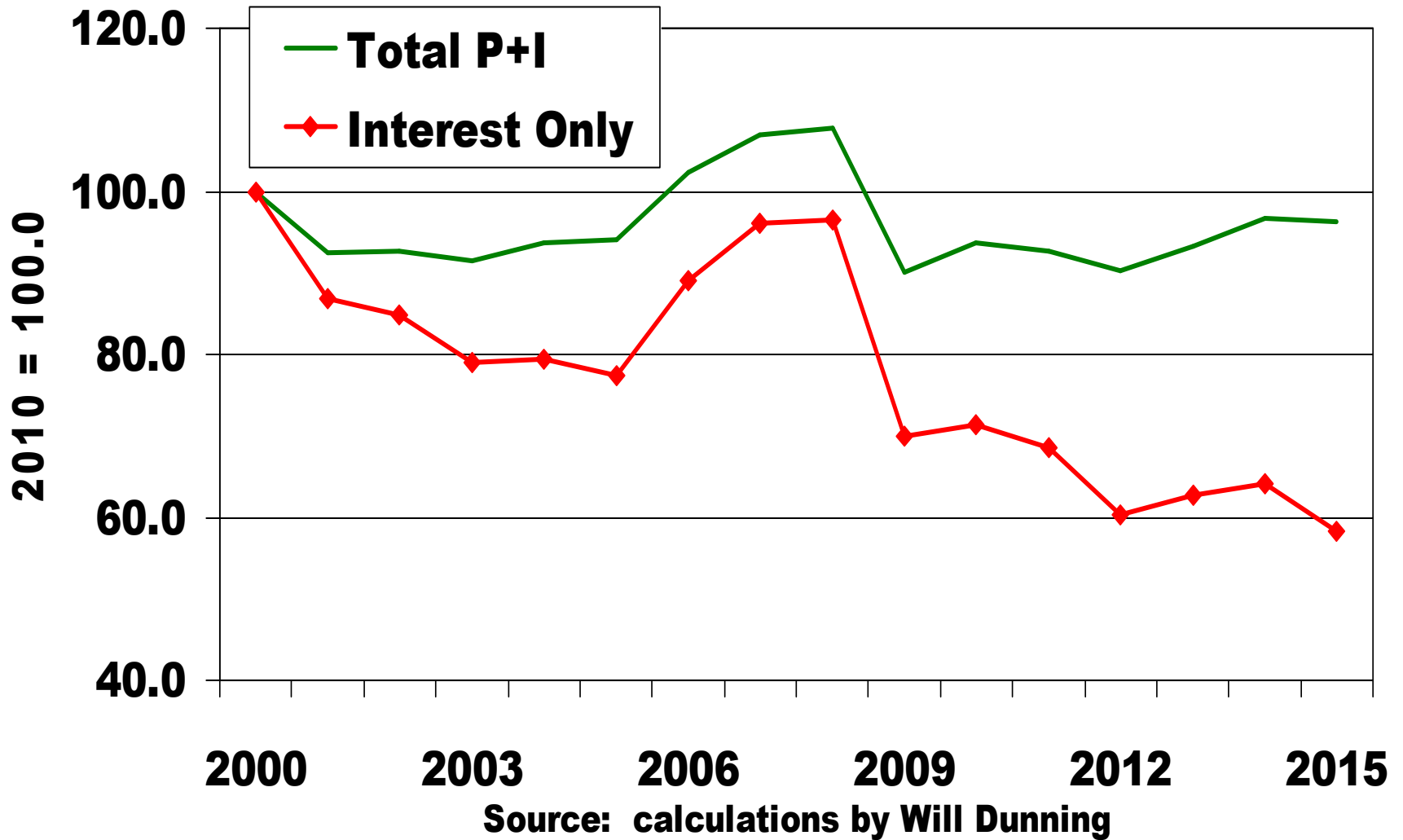
Source: calculations by Will Dunning

# Hamilton House Price Index

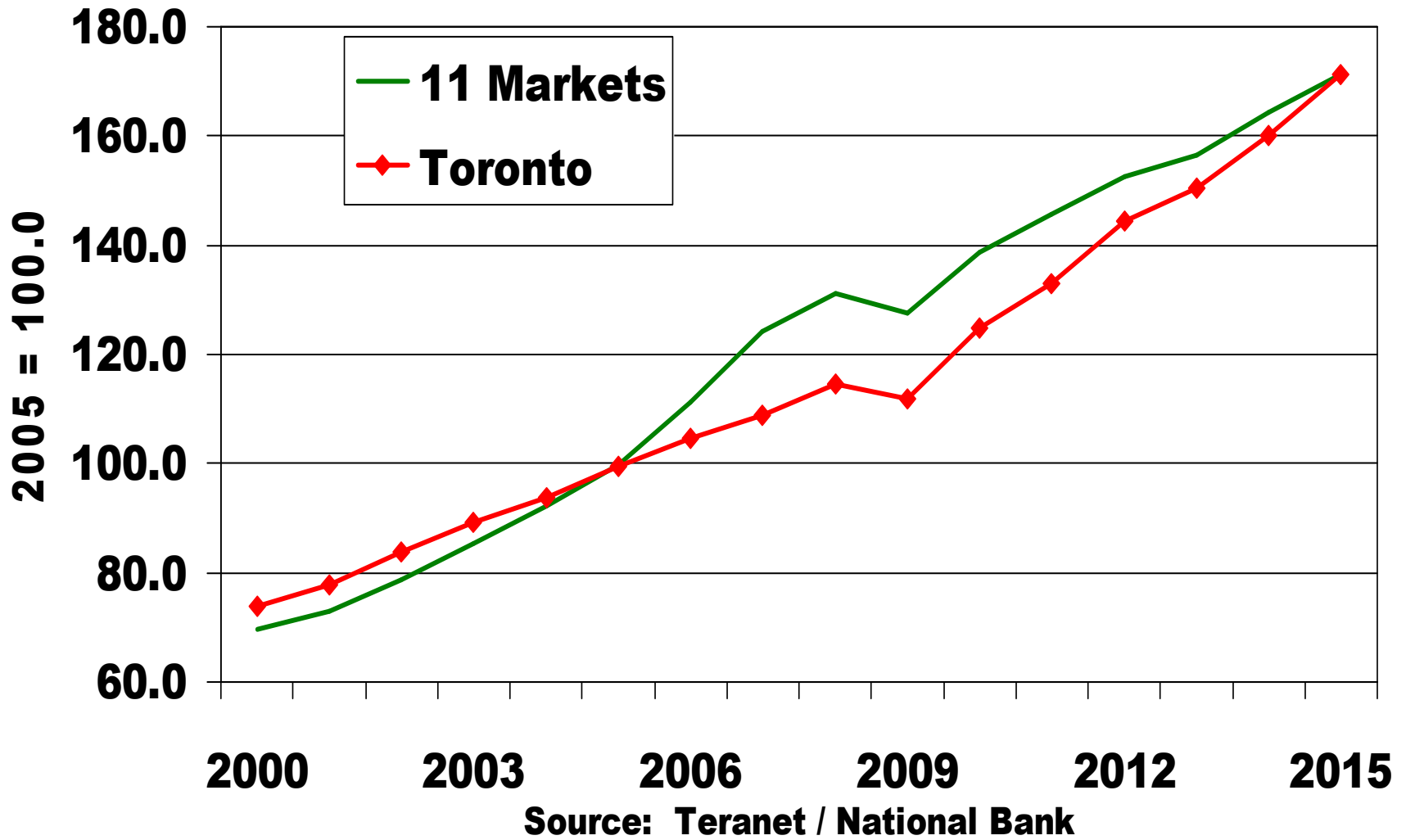


Source: Teranet / National Bank

# Hamilton Mortgage Cost Index

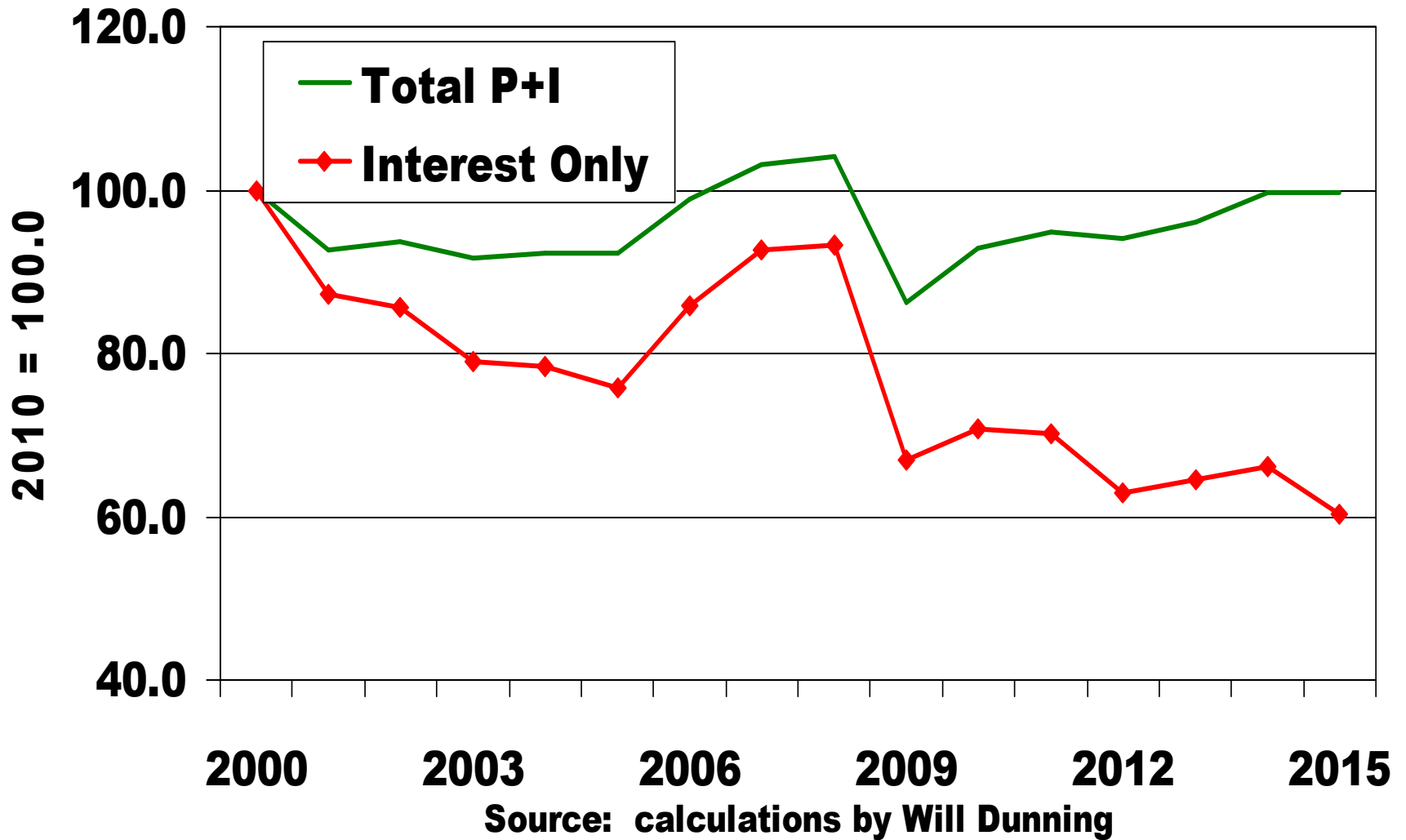


# Toronto House Price Index

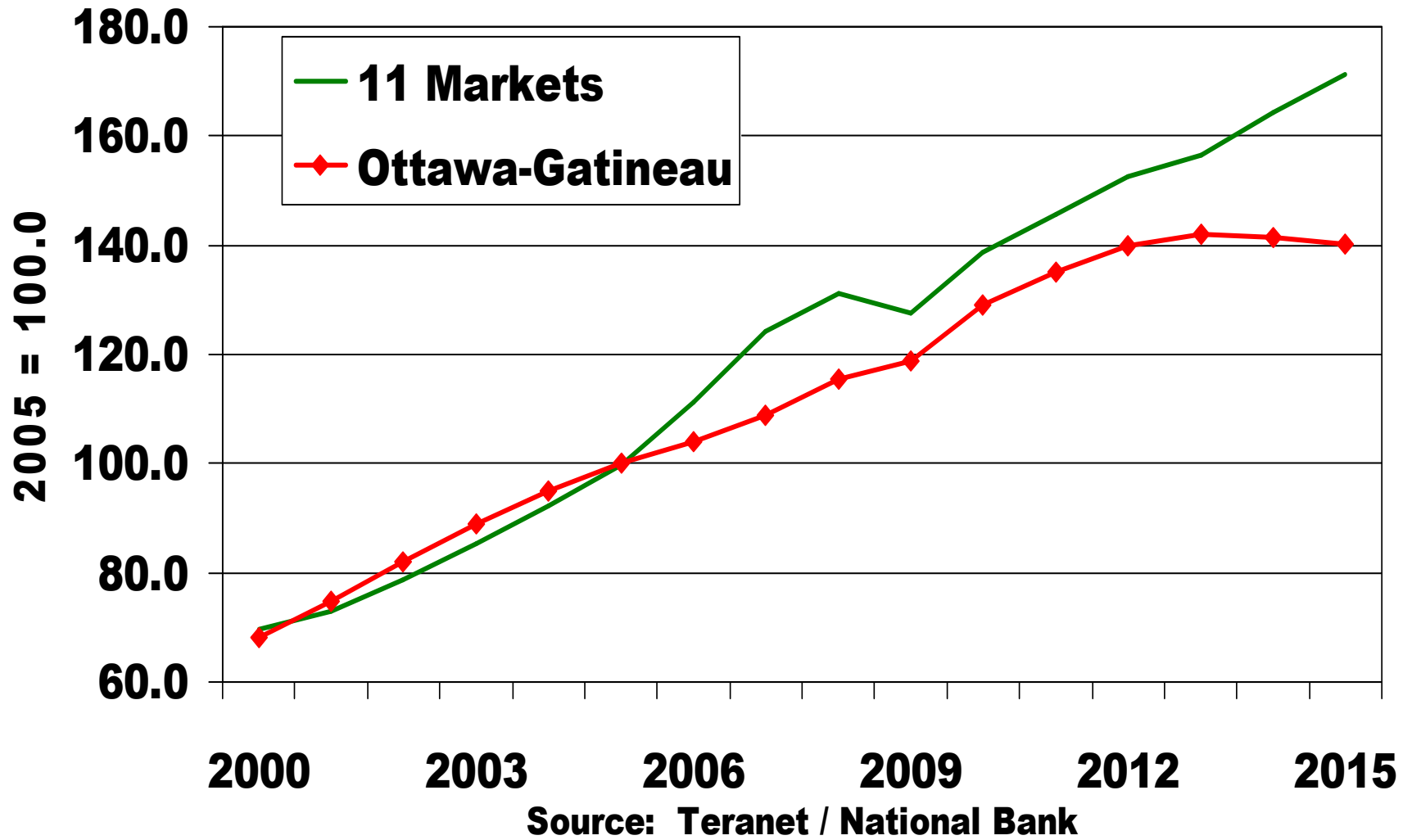




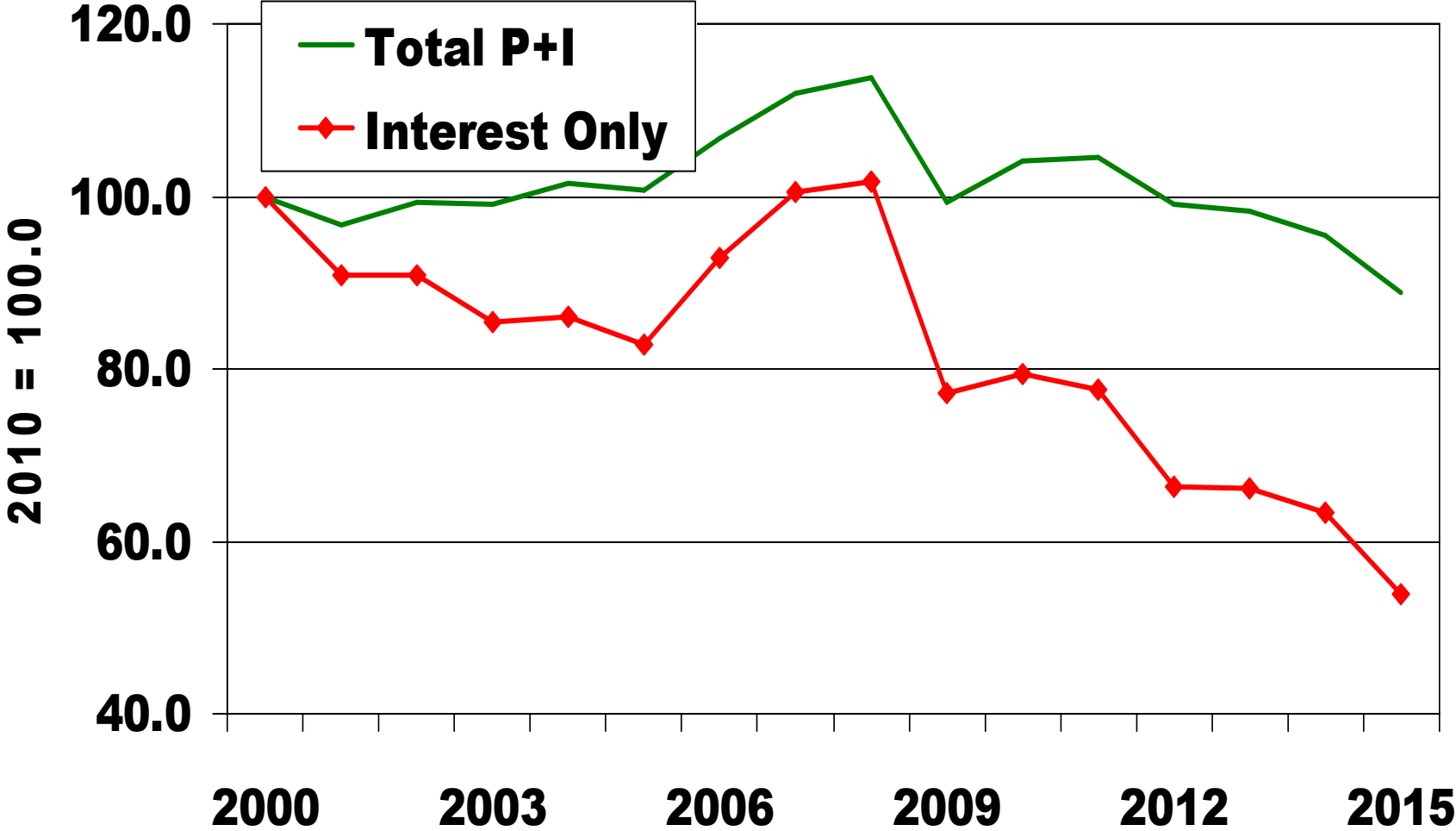
# Toronto Mortgage Cost Index



# Ottawa-Gatineau House Price Index

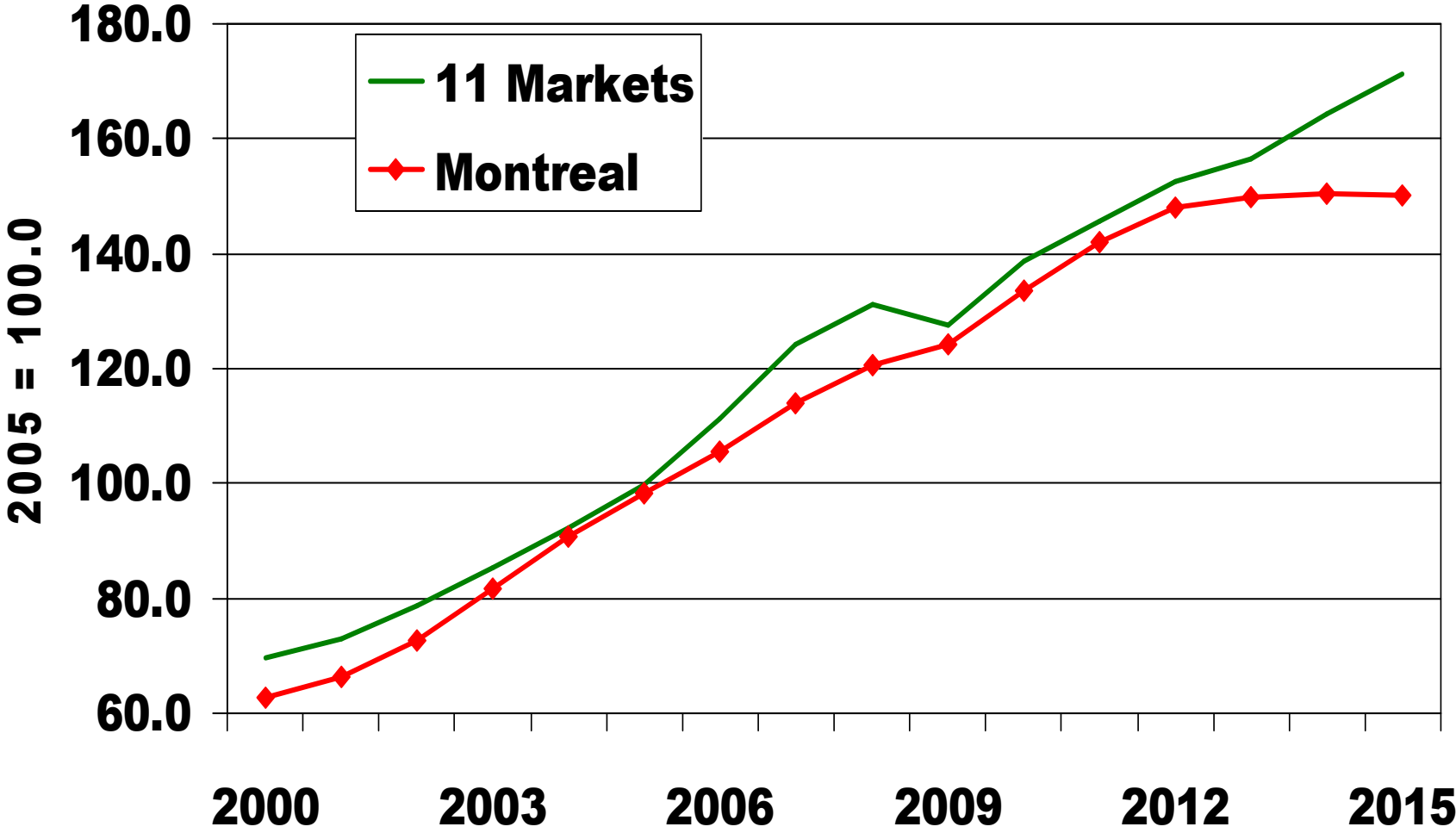


# Ottawa-Gatineau Mortgage Cost Index



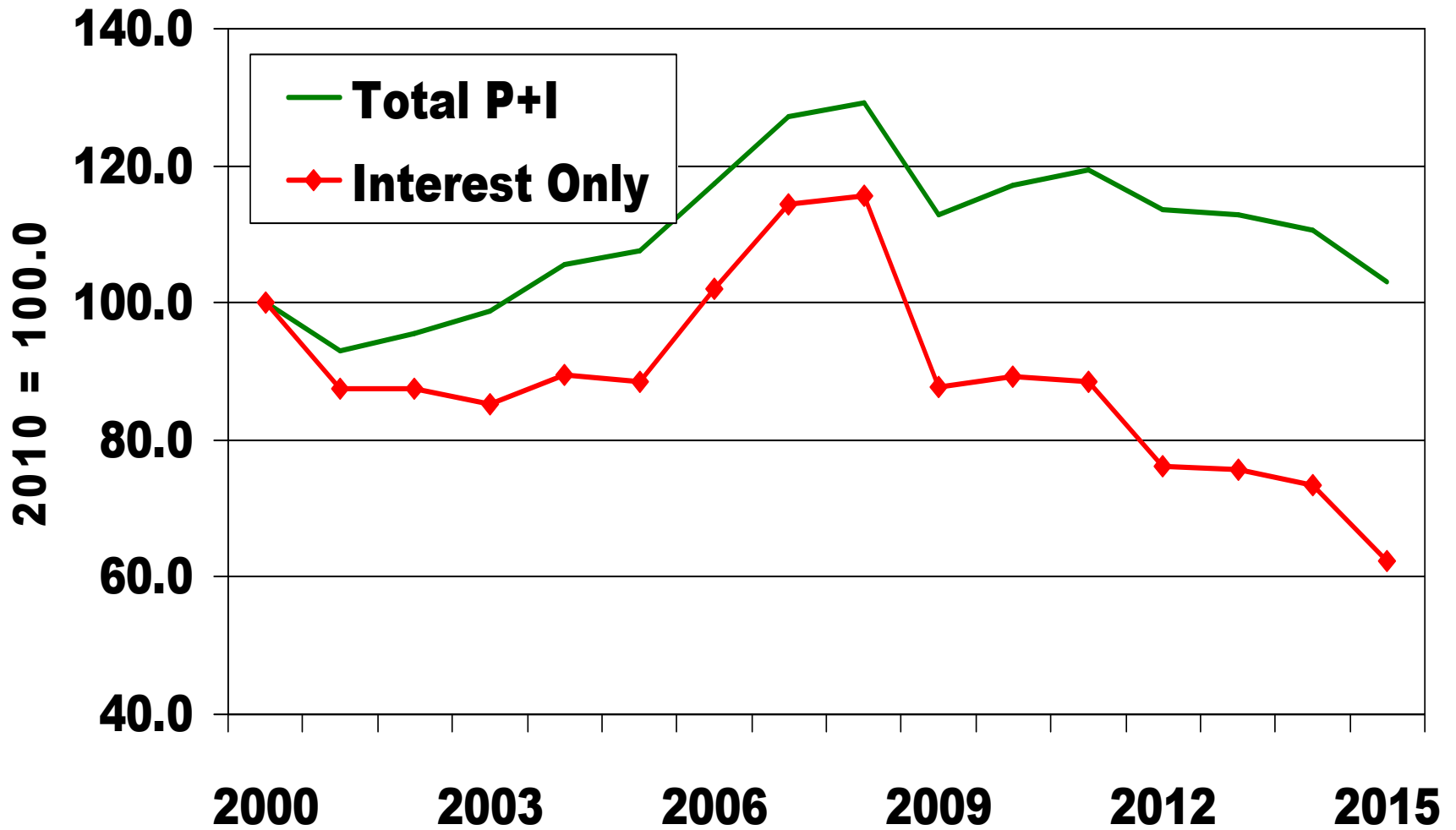
Source: calculations by Will Dunning

# Montreal House Price Index



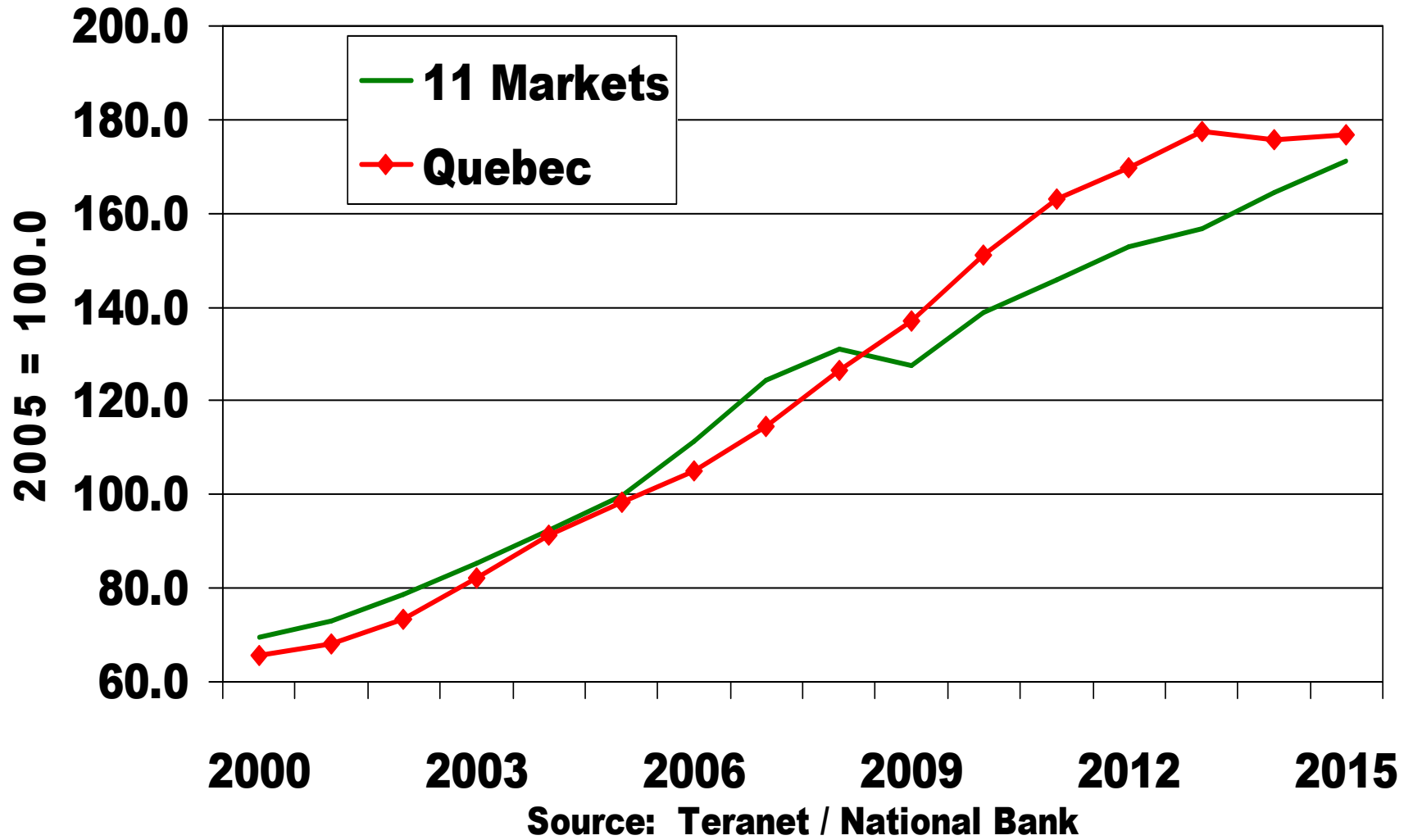
Source: Teranet / National Bank

# Montreal Mortgage Cost Index

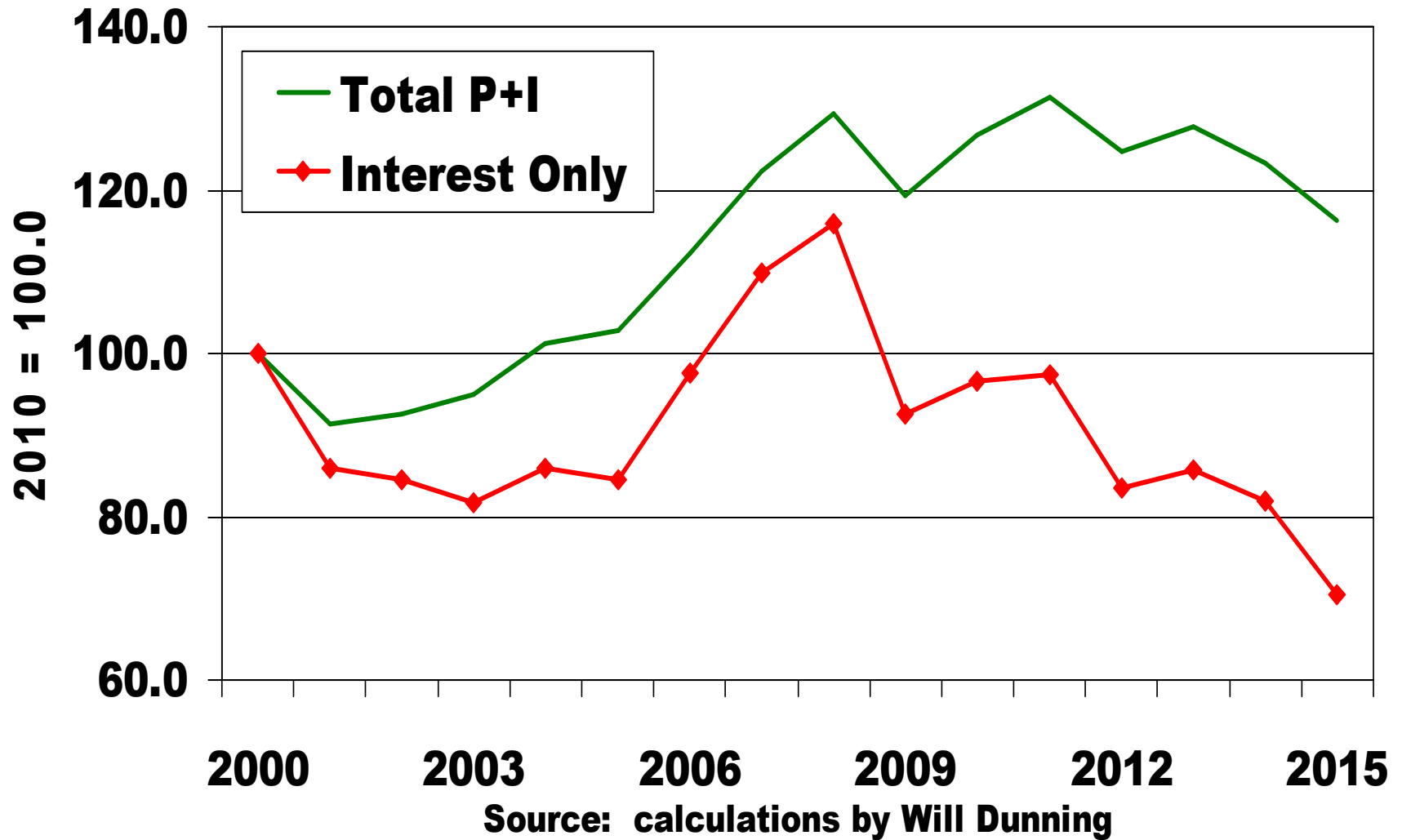


Source: calculations by Will Dunning

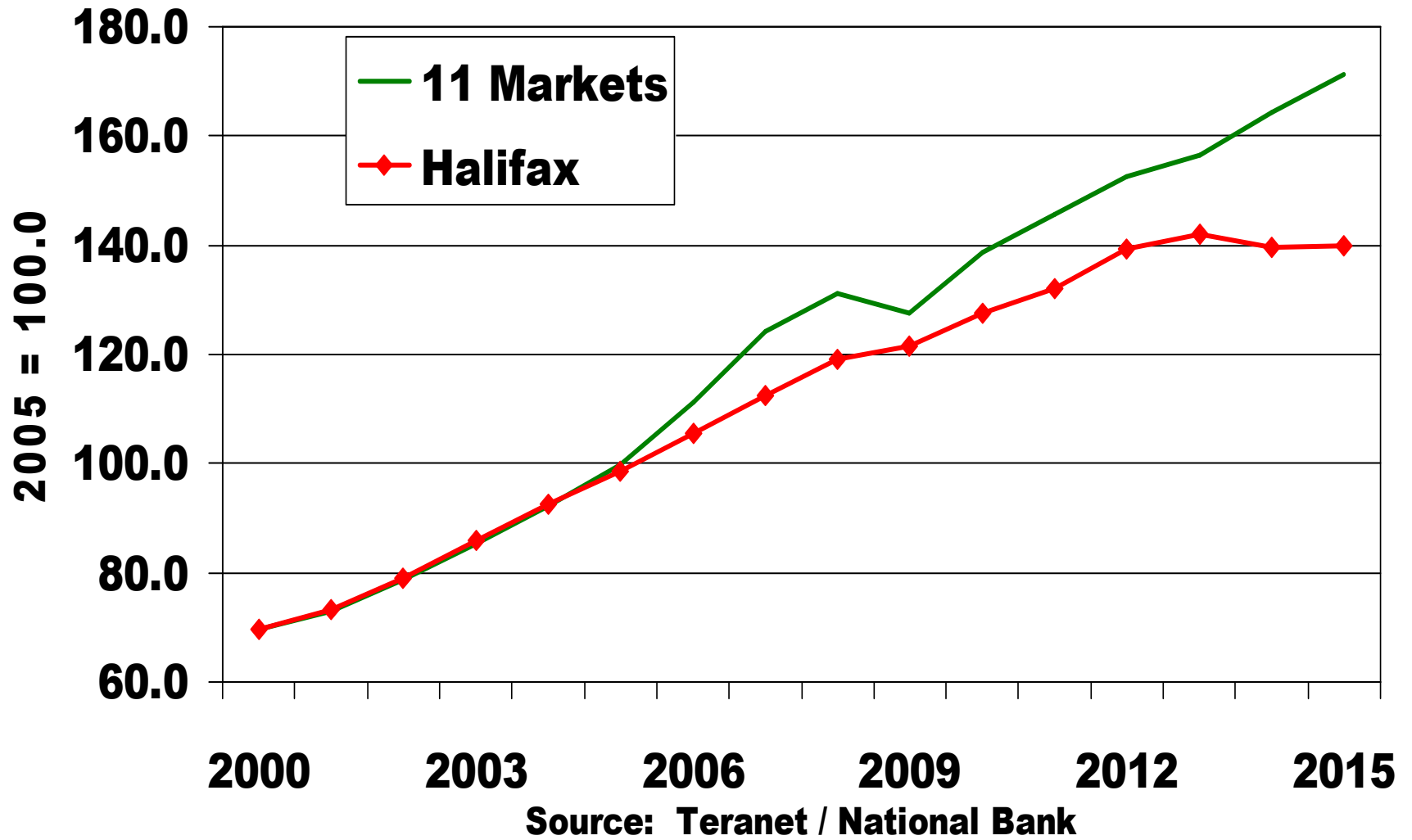
# Quebec House Price Index



# Quebec Mortgage Cost Index

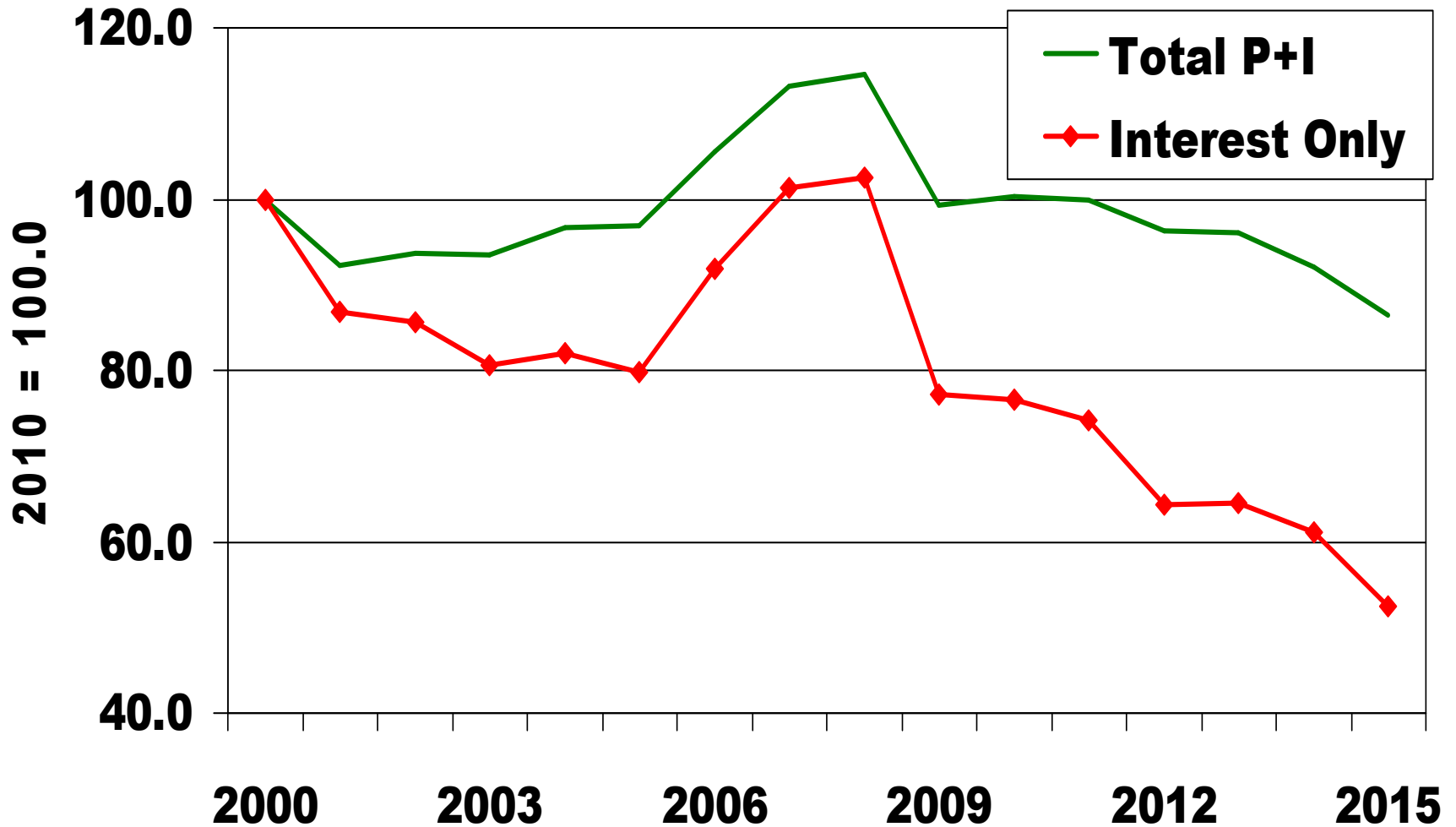


# Halifax House Price Index



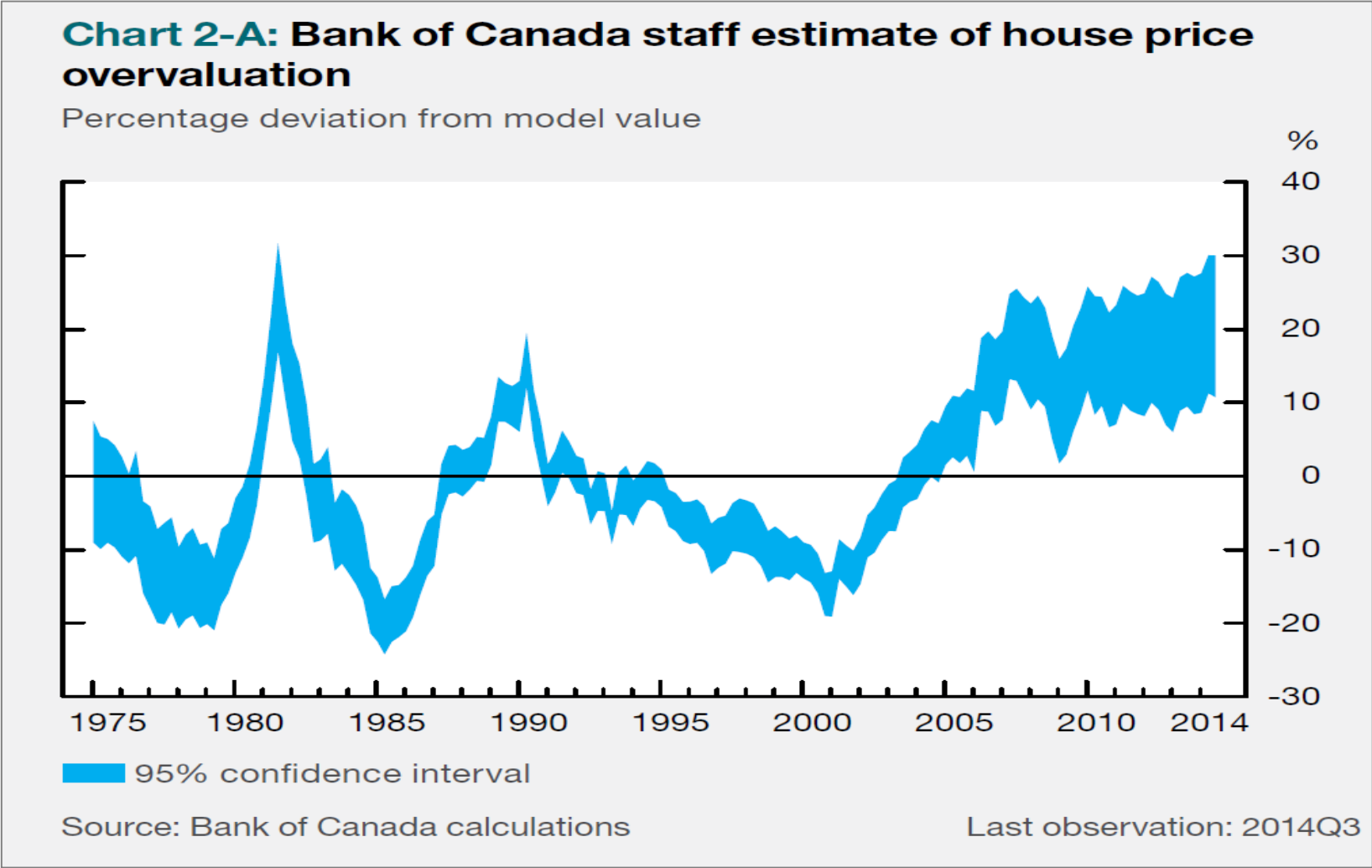


# Halifax Mortgage Cost Index

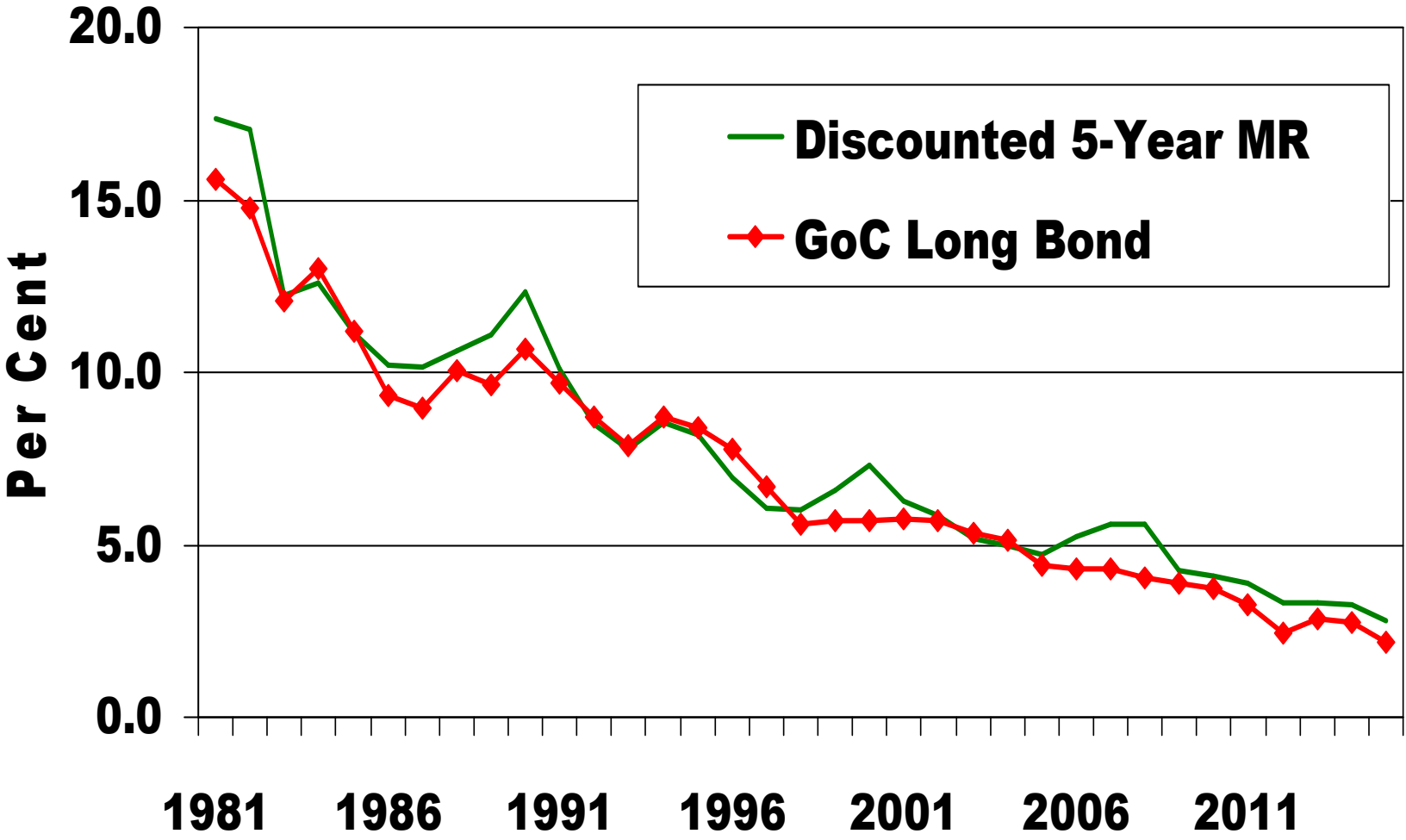


Source: calculations by Will Dunning

# Bank of Canada Sees 10-30% Overvaluation

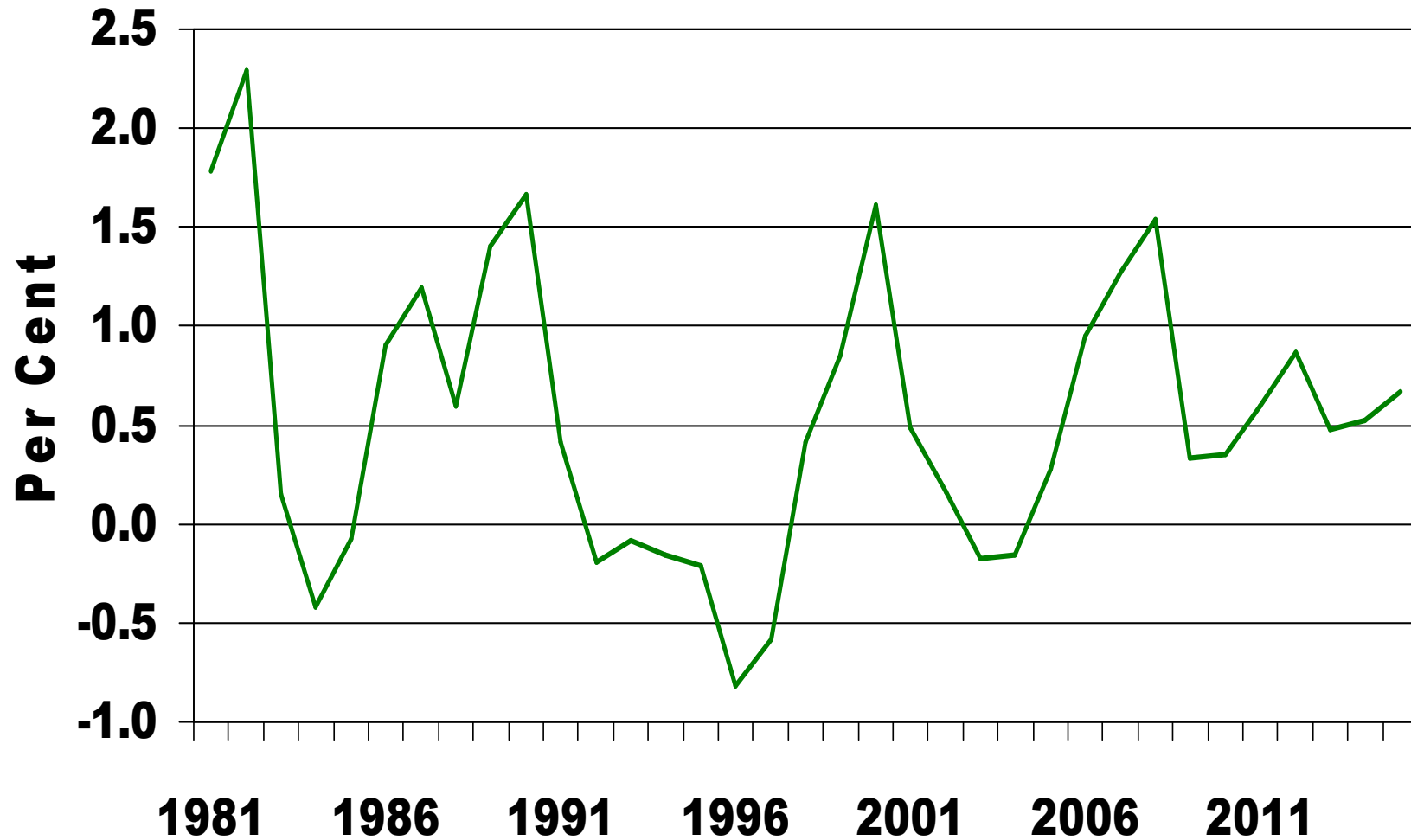


# BoC Used the Wrong Interest Rate



Source: Bank of Canada, Will Dunning

# Varying Spread - Impact of Rate Choice Varies Over Time



Source: Bank of Canada, Will Dunning

# No Bubbles Here

A normal circular relationship:

- Job growth creates housing demand, which determines price growth, both of which influence job creation, etc.
- A bubble occurs when there is a short circuit, and housing demand results inordinately from expectations of price growth (an excessive “speculative motive”).
- That happened in the US prior to 2008, not here at present.

What is the risk related to future interest rates?

Policy matters:

- Mortgage insurance policy has deliberately suppressed housing activity.
- Kill dragons, not unicorns.

# About Will Dunning

Analysis of housing markets since 1982

Services include:

- Custom research on economics and housing markets.
- Briefings and presentations.

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