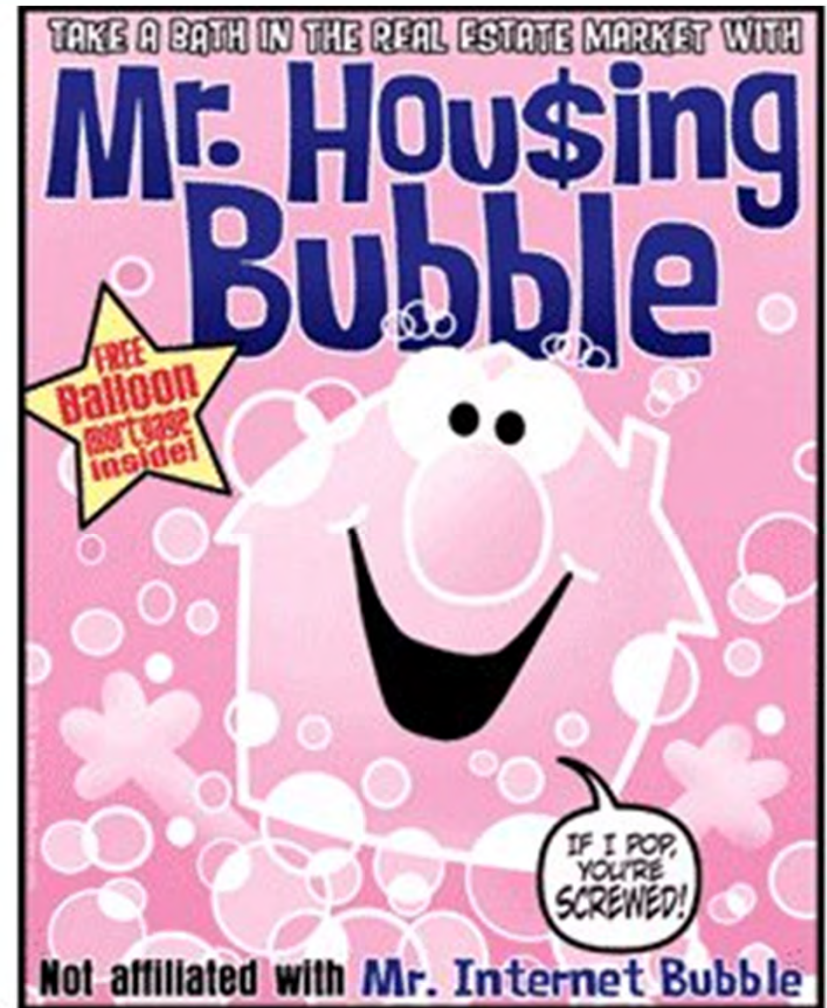


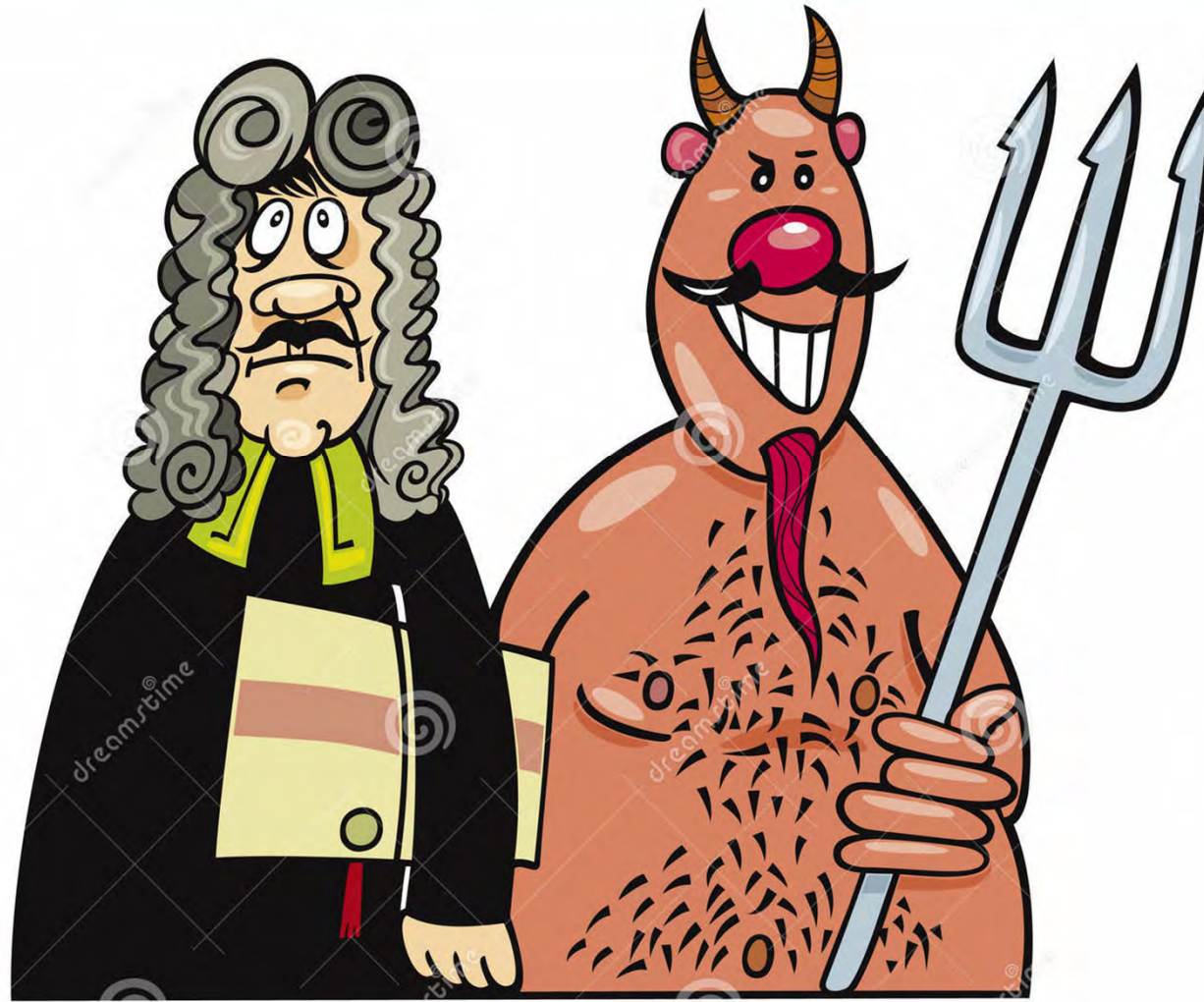
Canada is All Right

Prepared for Pacific Northwest
Regional
Tsur Somerville, PhD
April 2015

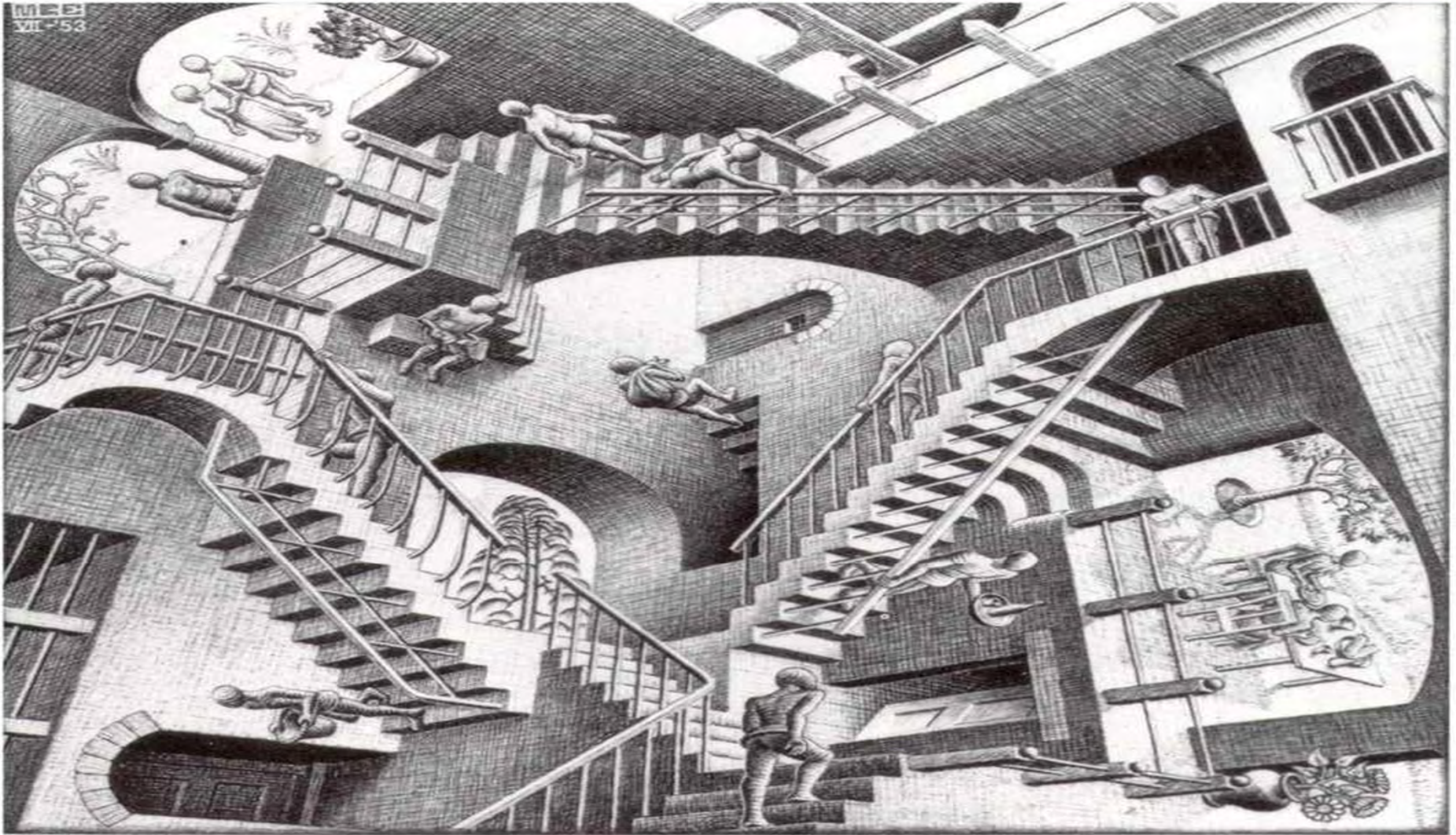
- Bank of Canada (12/14)
– Up to 30% overvalued
- TD – A decade of no growth
- Fitch - (7/14) 20% Overvalued
- Economist (4/15)– 35% Overvalued



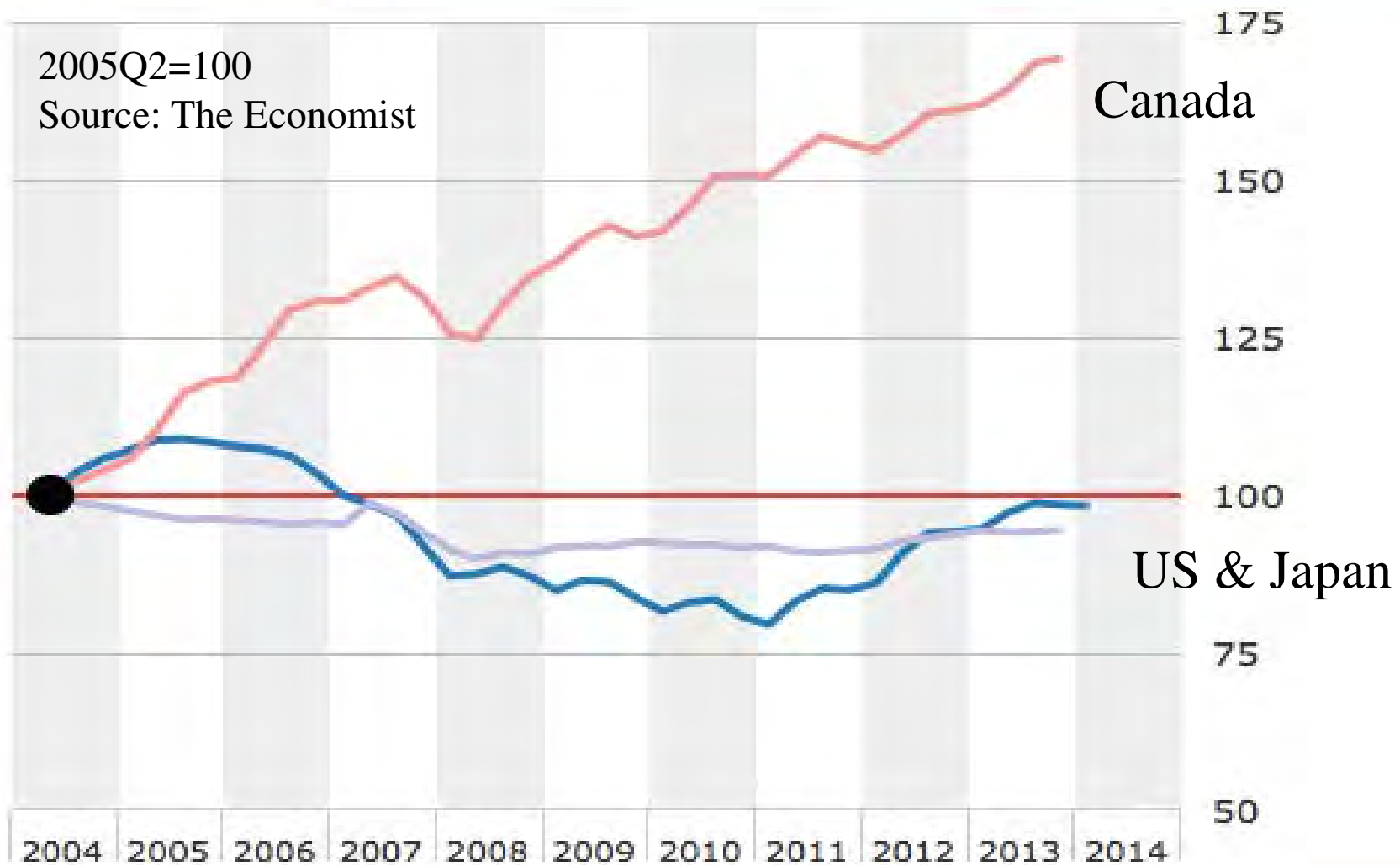
Devil's Advocate on Canadian House Prices



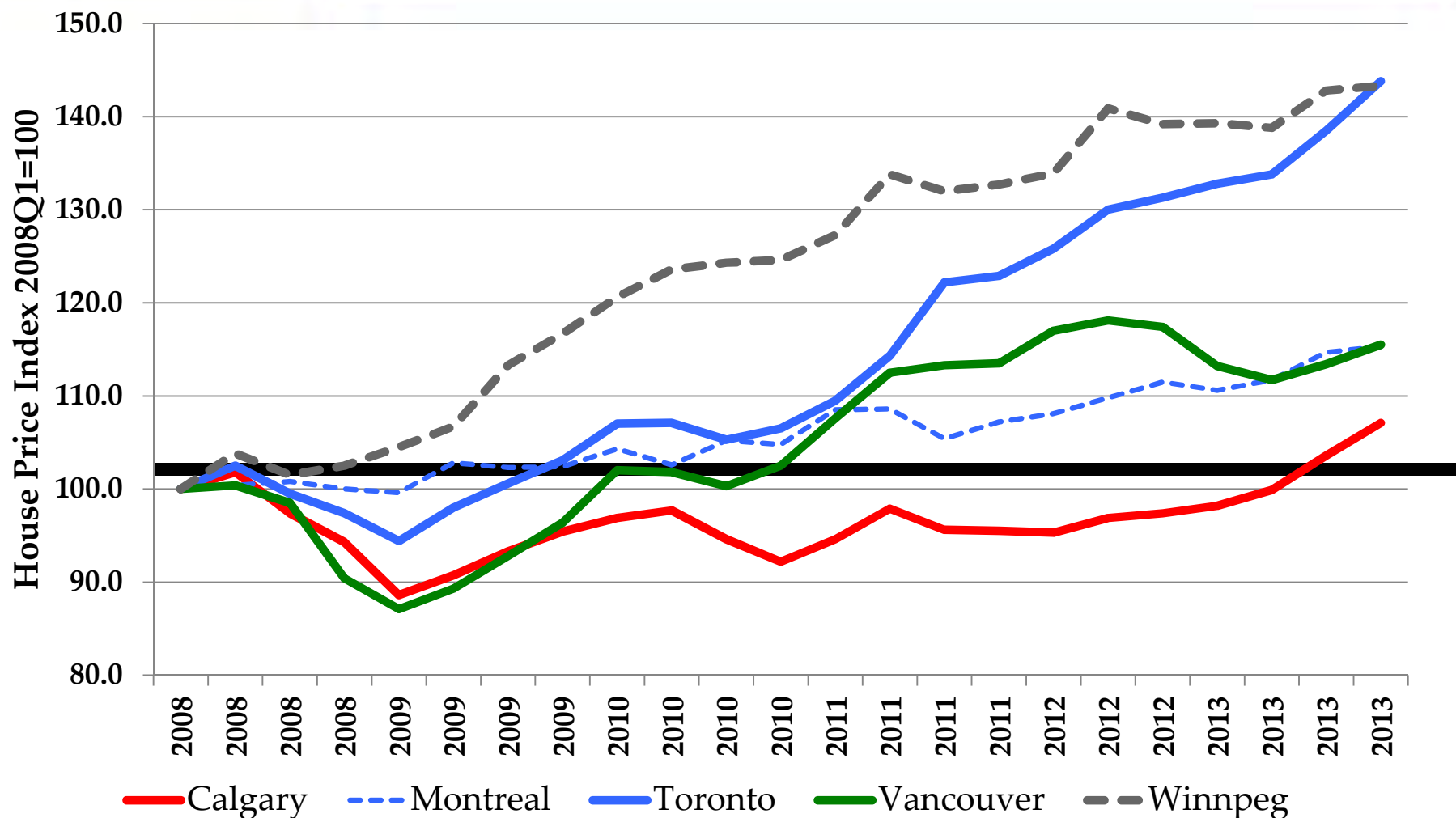
Intellectual Exercise – May Not Be My Actual Opinion



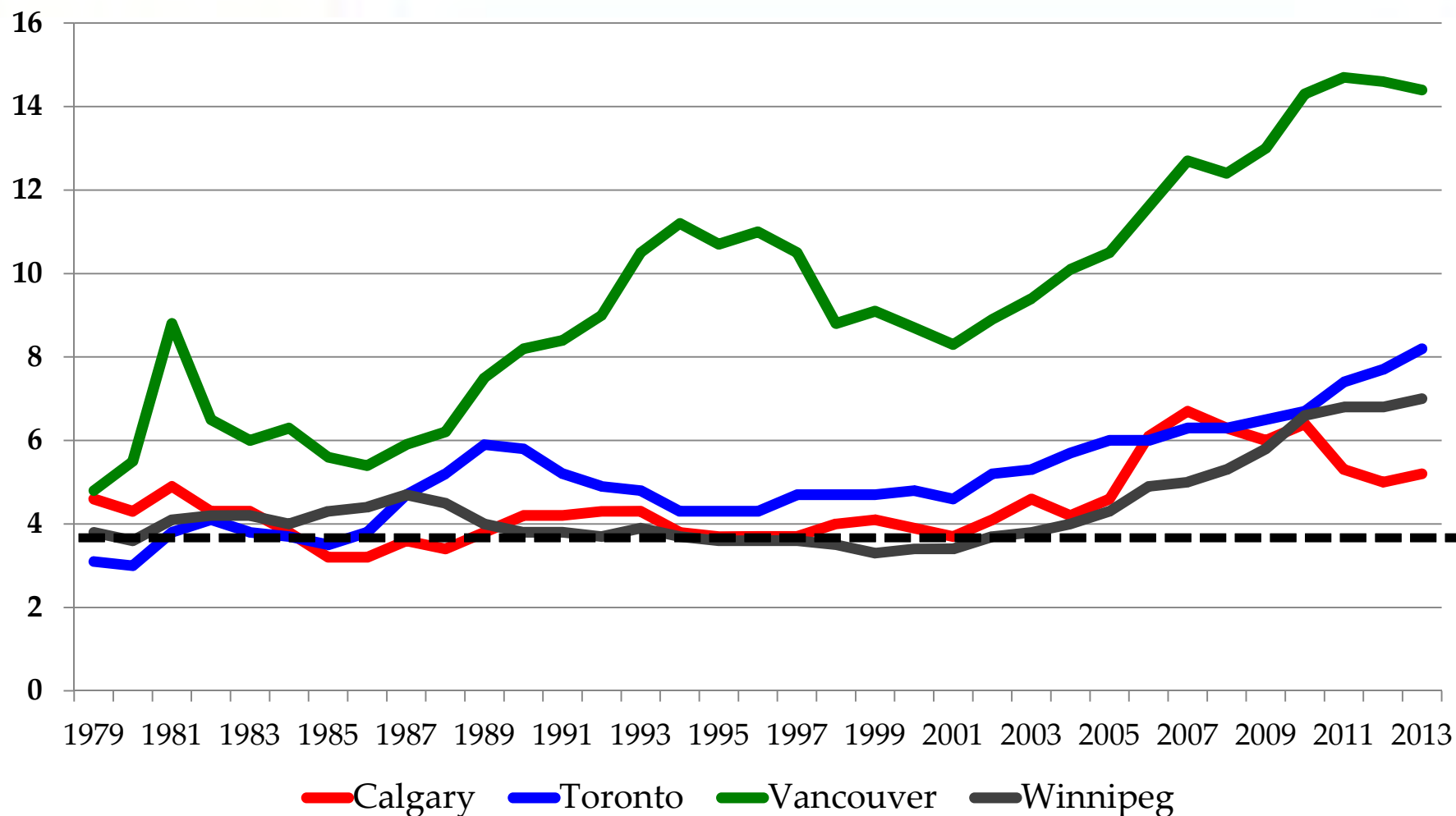
Canada House Price Growth is Huge



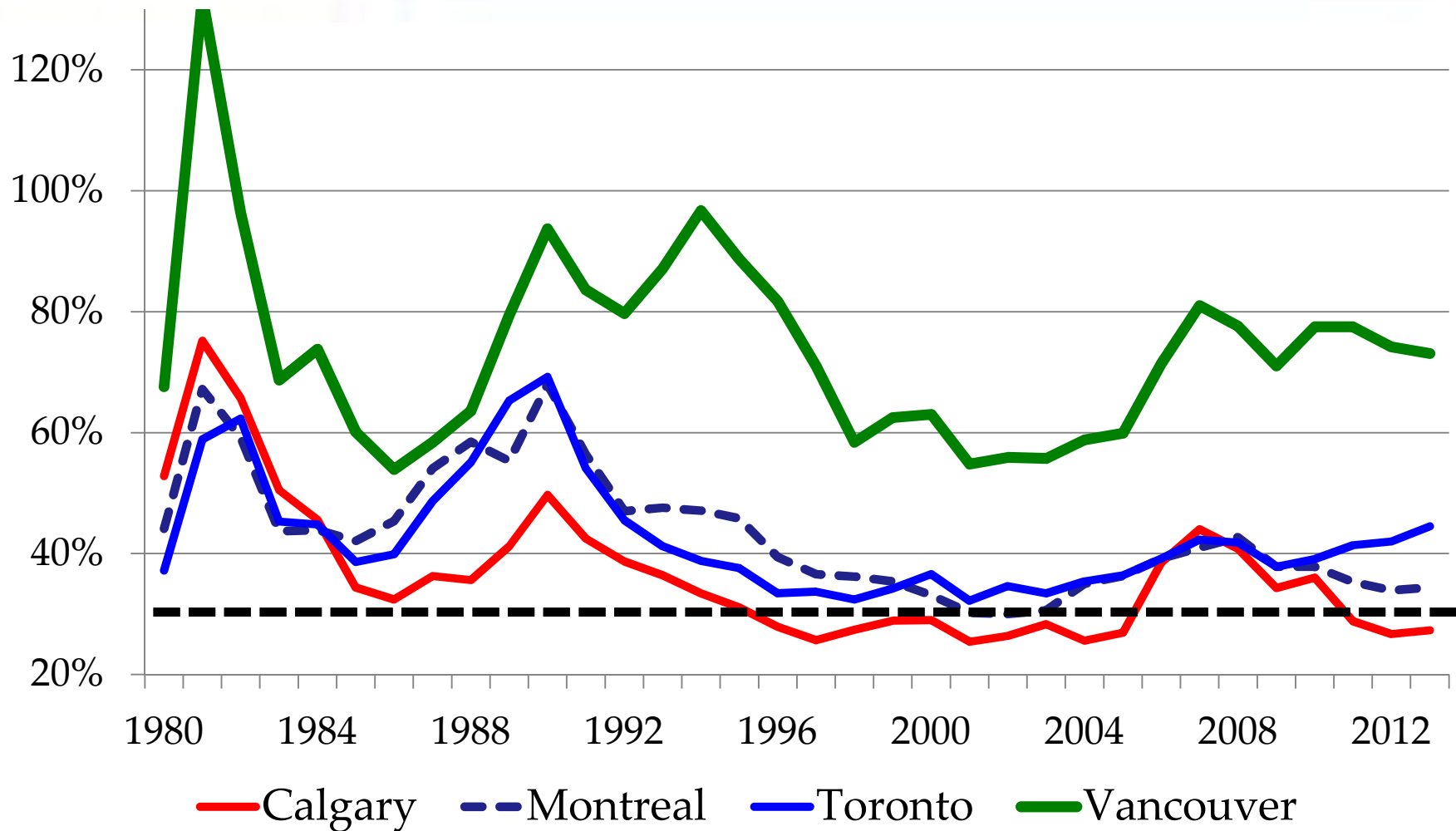
Continued Boom: Wide Variation Post Boom House Prices



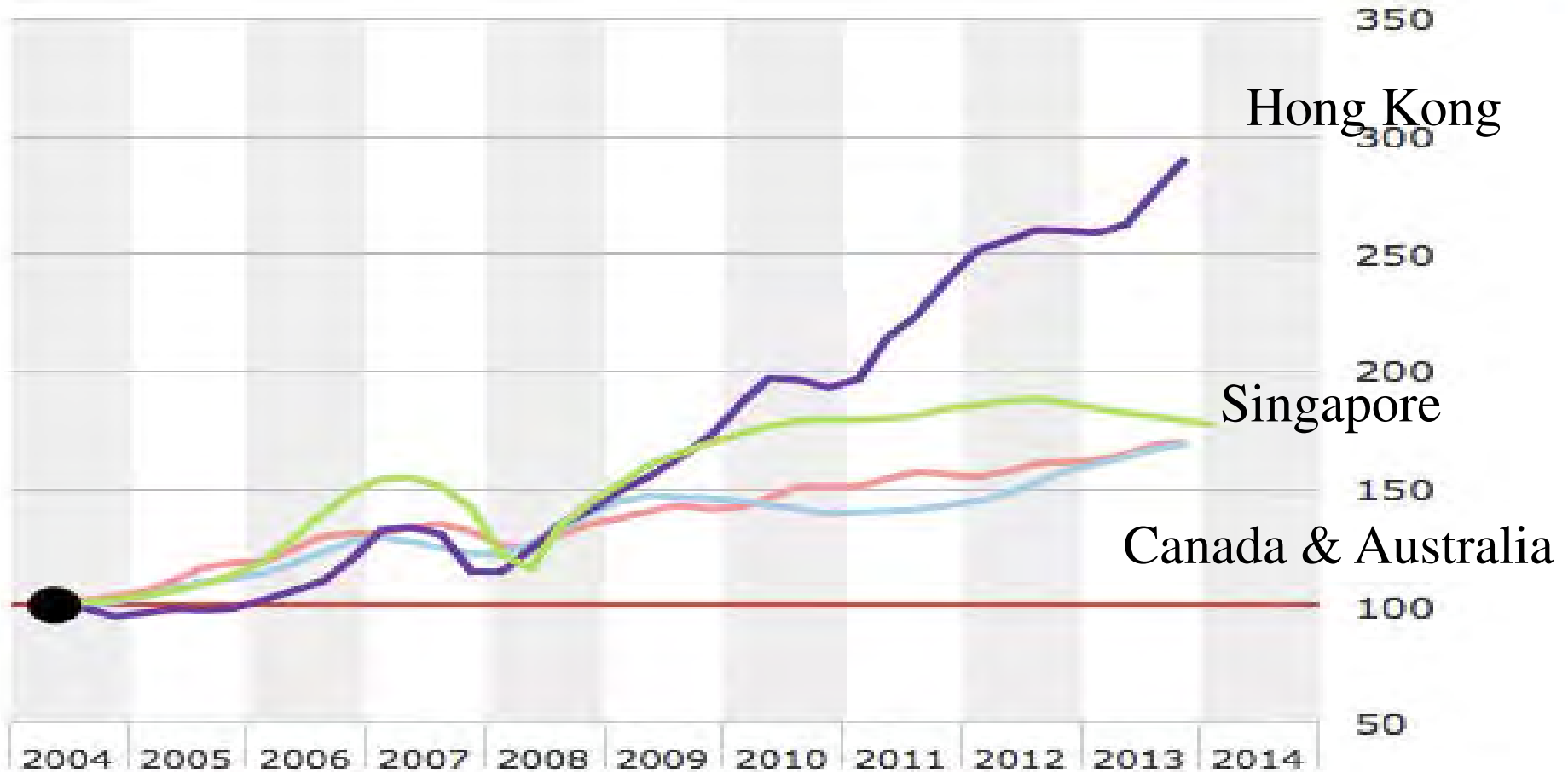
Canada House Price: Income Ratio



House Payment: Income Ratio



Canada House Price Growth is Moderate



High End Condo Prices in Perspective

Source: <http://www.globalpropertyguide.com>

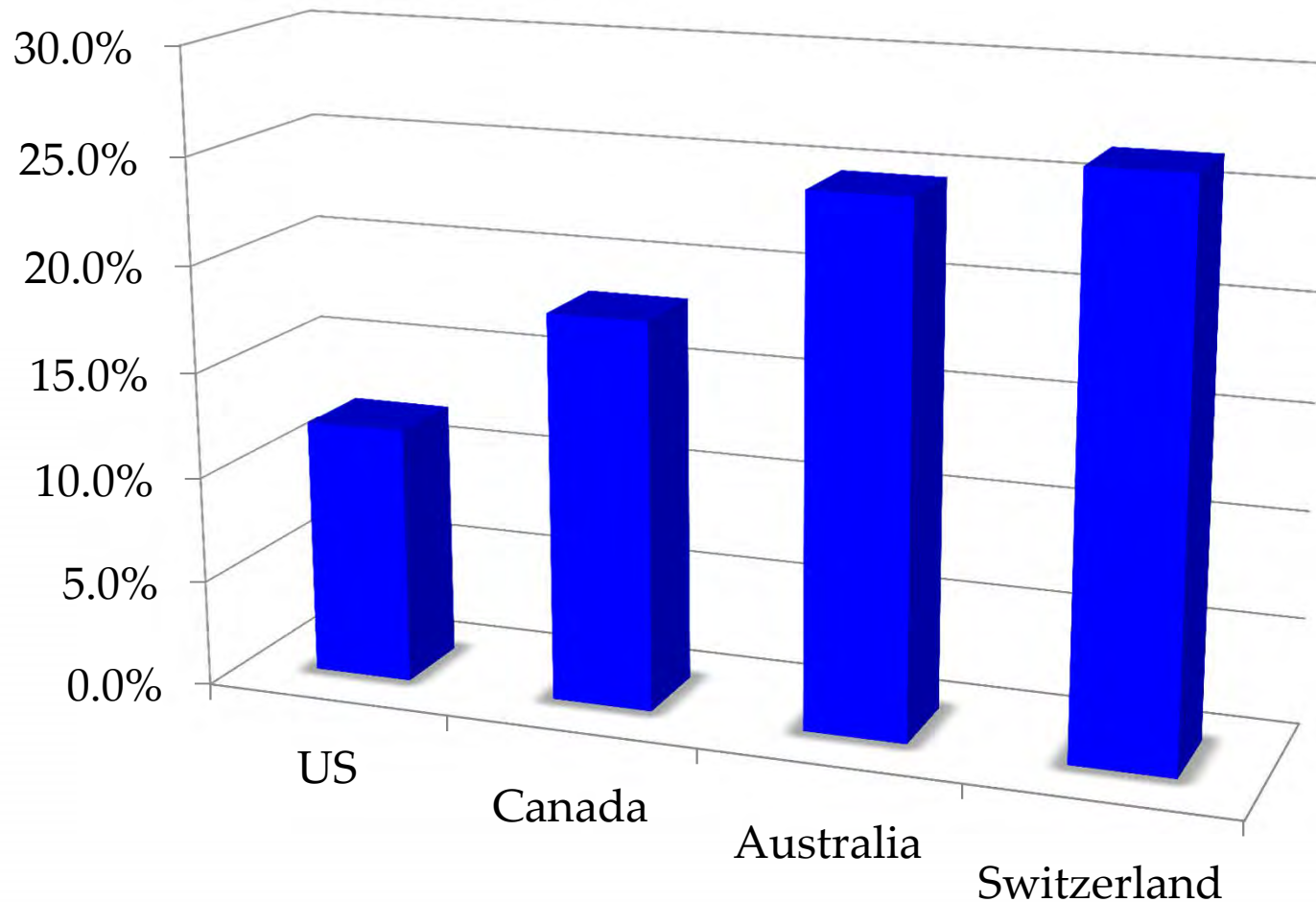
Country/City	US\$ per Sq. M.	Price/Rent	Rent per Month (\$)	Gross Rental Yield
Monaco	60,114	n.a.	n.a.	n.a.
UK, London	34,531	31x	11,089	3.21%
Hong Kong, Hong Kong Island	22,814	35x	6,431	2.82%
US, New York	18,499	26x	7,225	3.91%
France, Paris	18,415	35x	5,317	2.89%
Russia, Moscow	16,021	31x	5,158	3.22%
Switzerland, Geneva	15,265	32x	4,737	3.10%
Singapore	15,251	35x	4,322	2.83%
India, Mumbai	11,455	45x	2,540	2.22%
Japan, Tokyo	10,784	20x	5,413	5.02%
Israel, Tel Aviv	9,511	29x	3,280	3.45%
Sweden, Stockholm	9,439	n.a.	n.a.	n.a.
Finland, Helsinki	8,390	28x	3,043	3.63%
Canada, Toronto	8,288	27x	3,047	3.68%

- **Housing Market: Supply & Demand**
 - Fewer single family units than US
 - Lots of immigrants

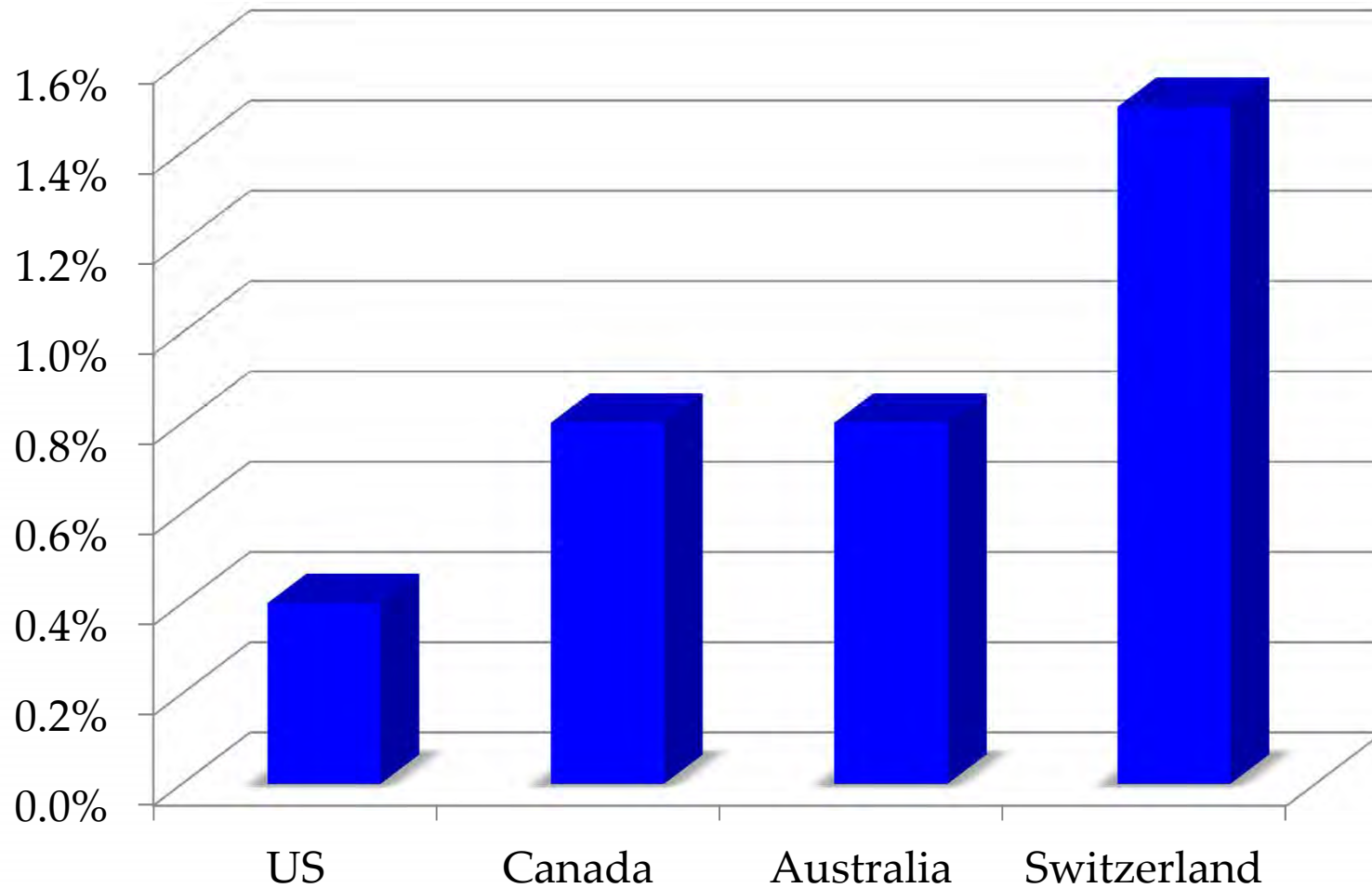
- **Mortgage Market**
 - Plain vanilla products
 - More regulated

- **Growing population**
 - Immigration
 - Immigrants with skills and or wealth
- **Commodity economy**
 - Until recently – strong global demand
- **Limited land supply in major cities**
 - Vancouver, Toronto, Montreal, Halifax
 - “affordable” cities have land – Calgary, prairie cities

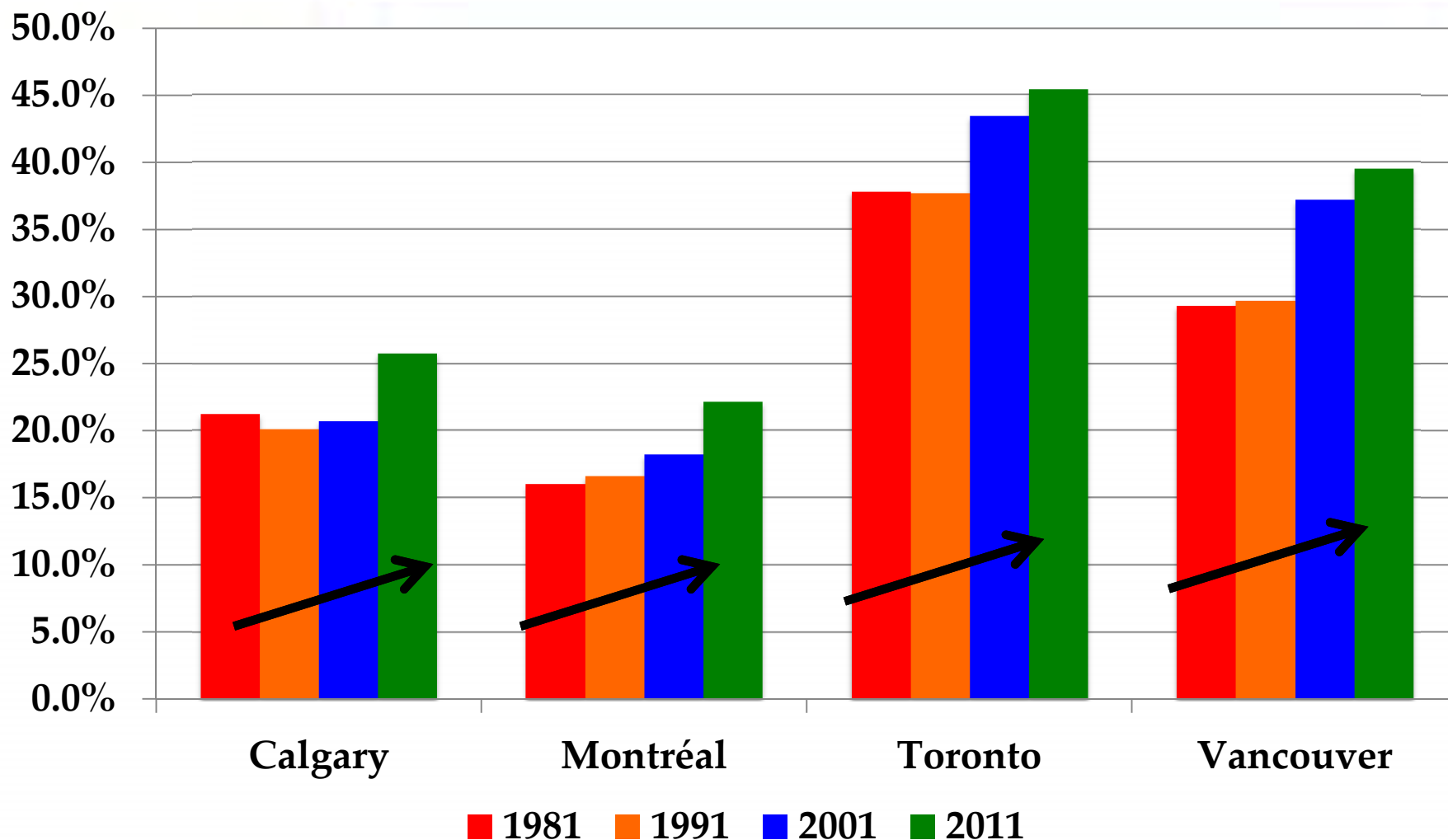
Immigrant Share of Population



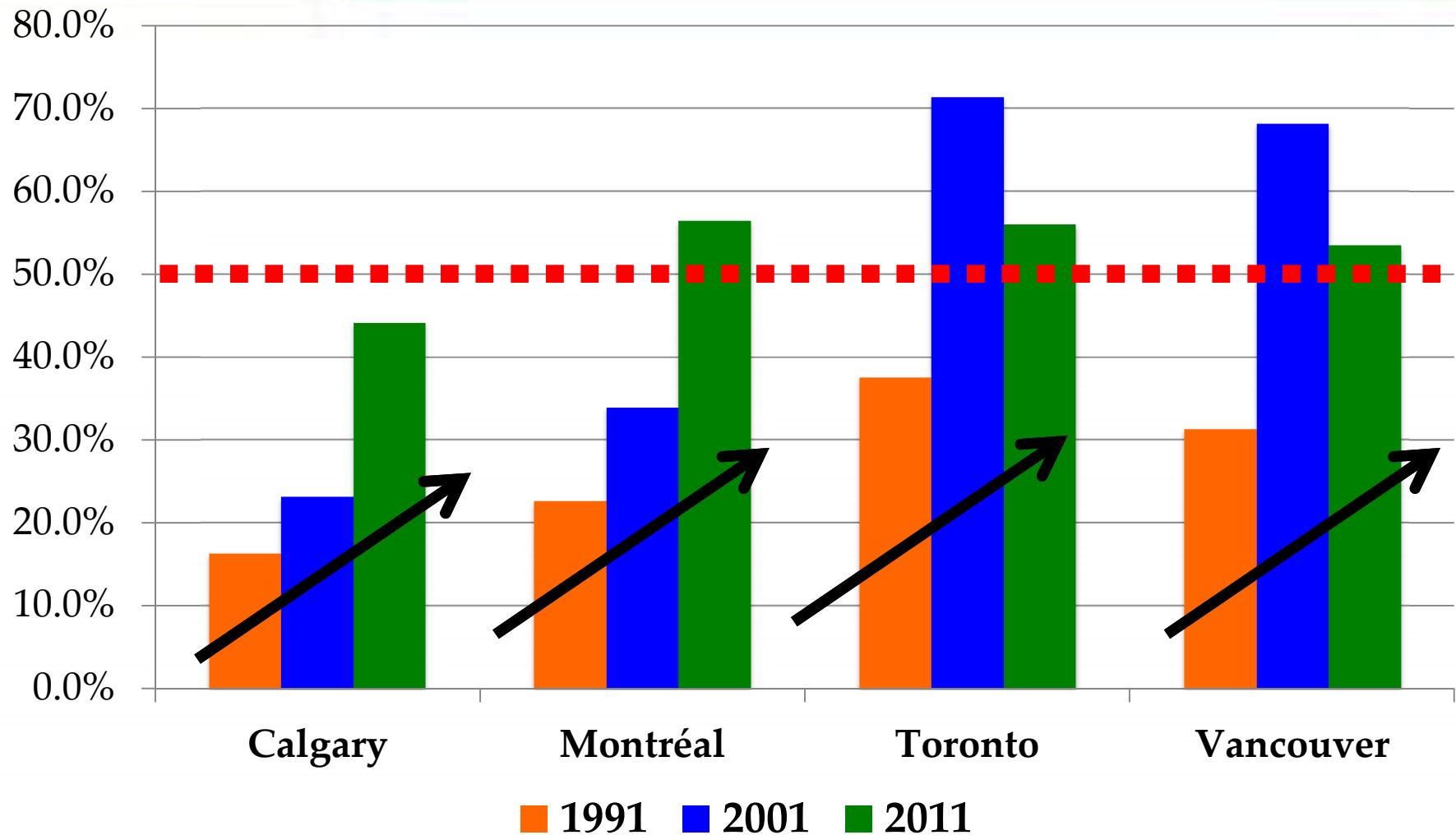
Immigrant Flow as Percent of Population



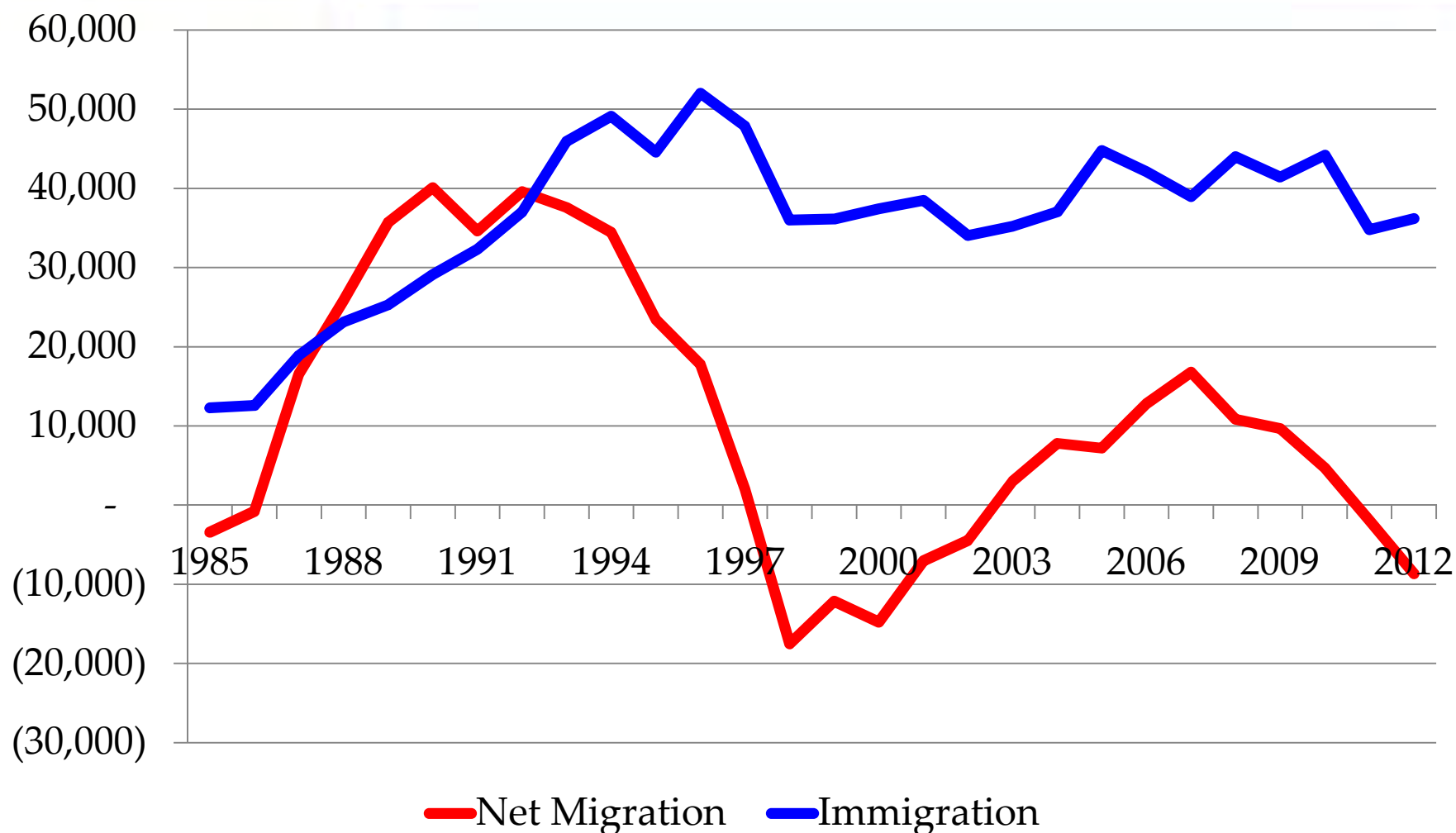
Immigrants Are Important: Share of Population



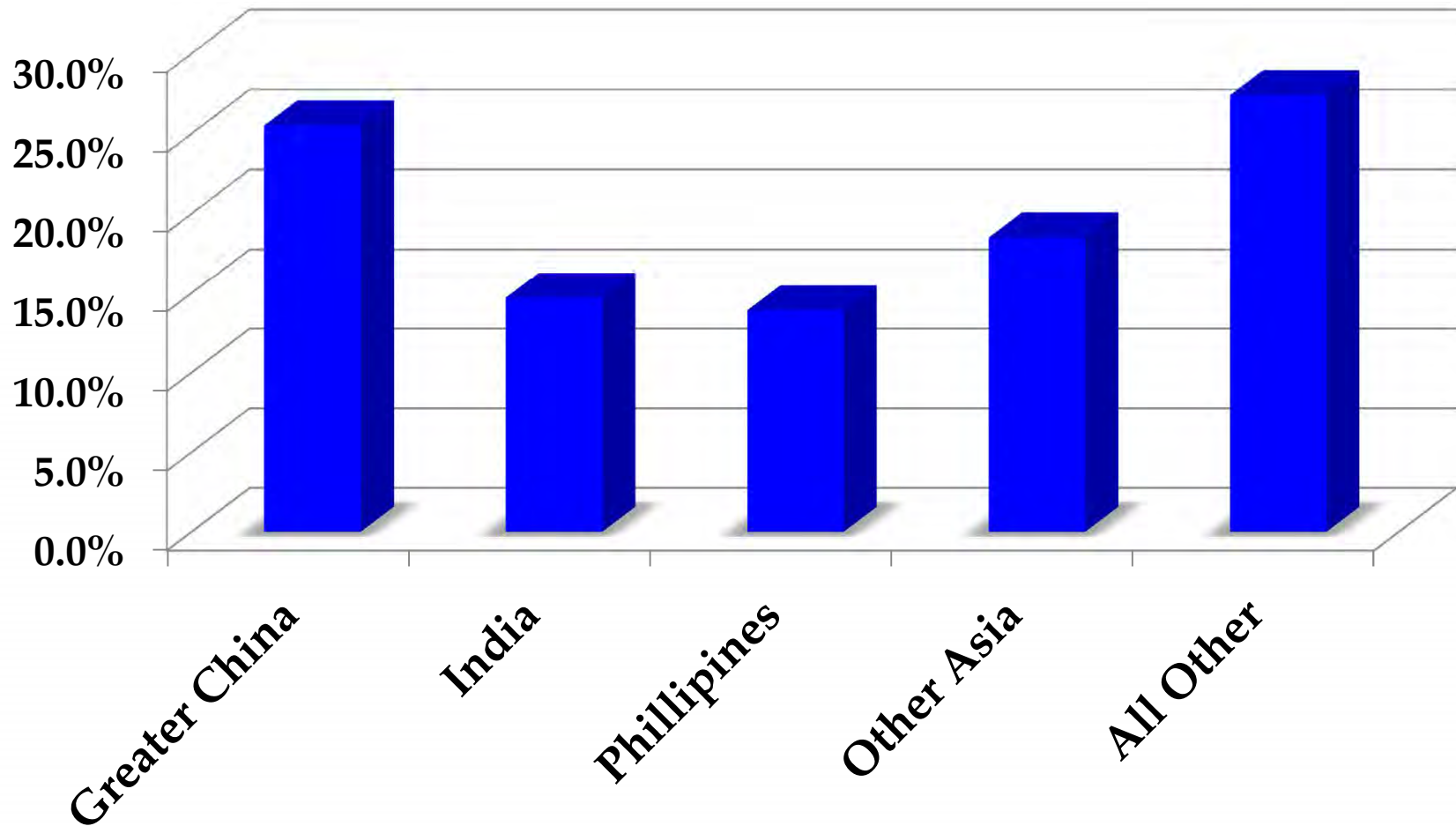
Growth is Immigrants Share of Growth Over Previous Decade



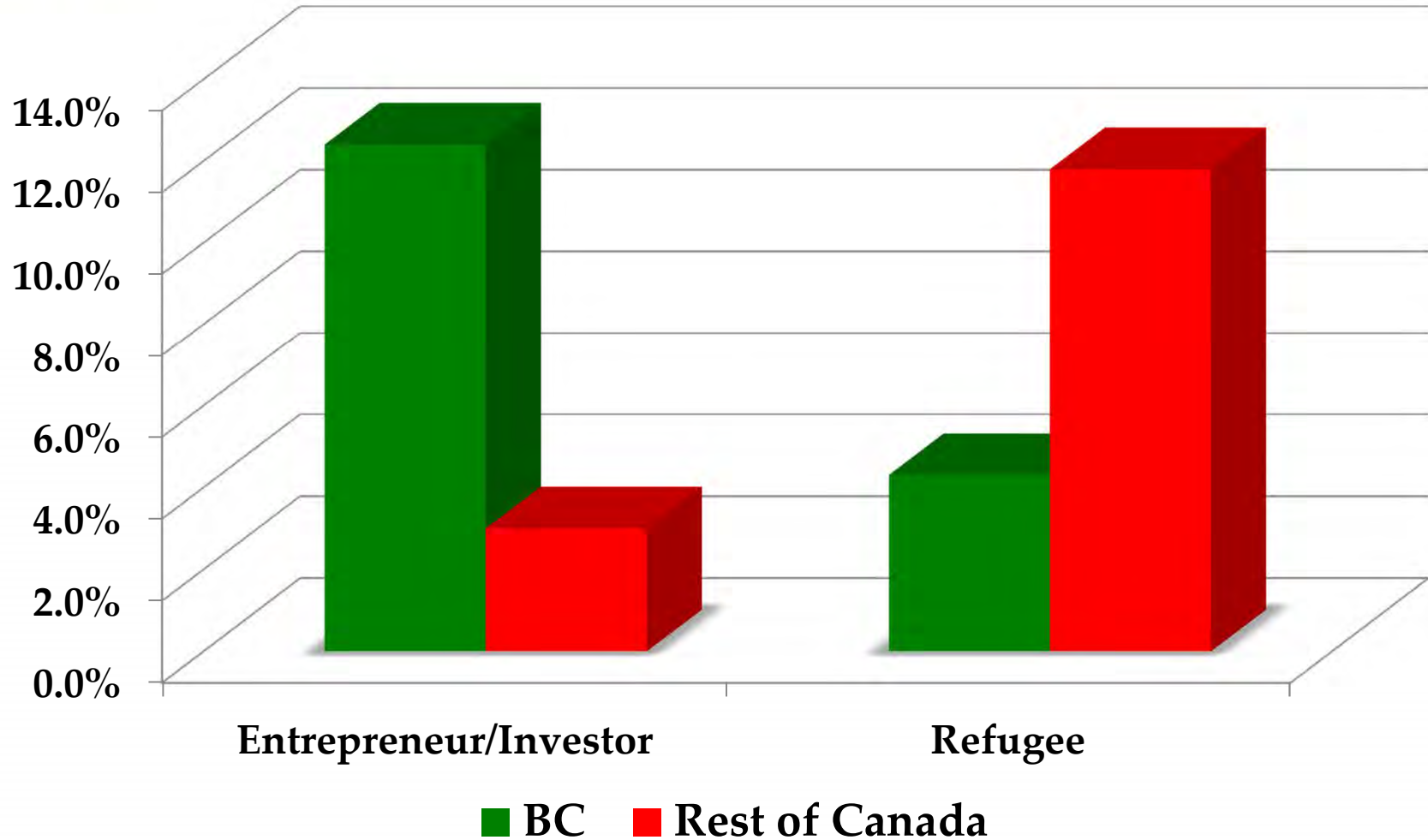
BC Migration vs. Int'l Immigration



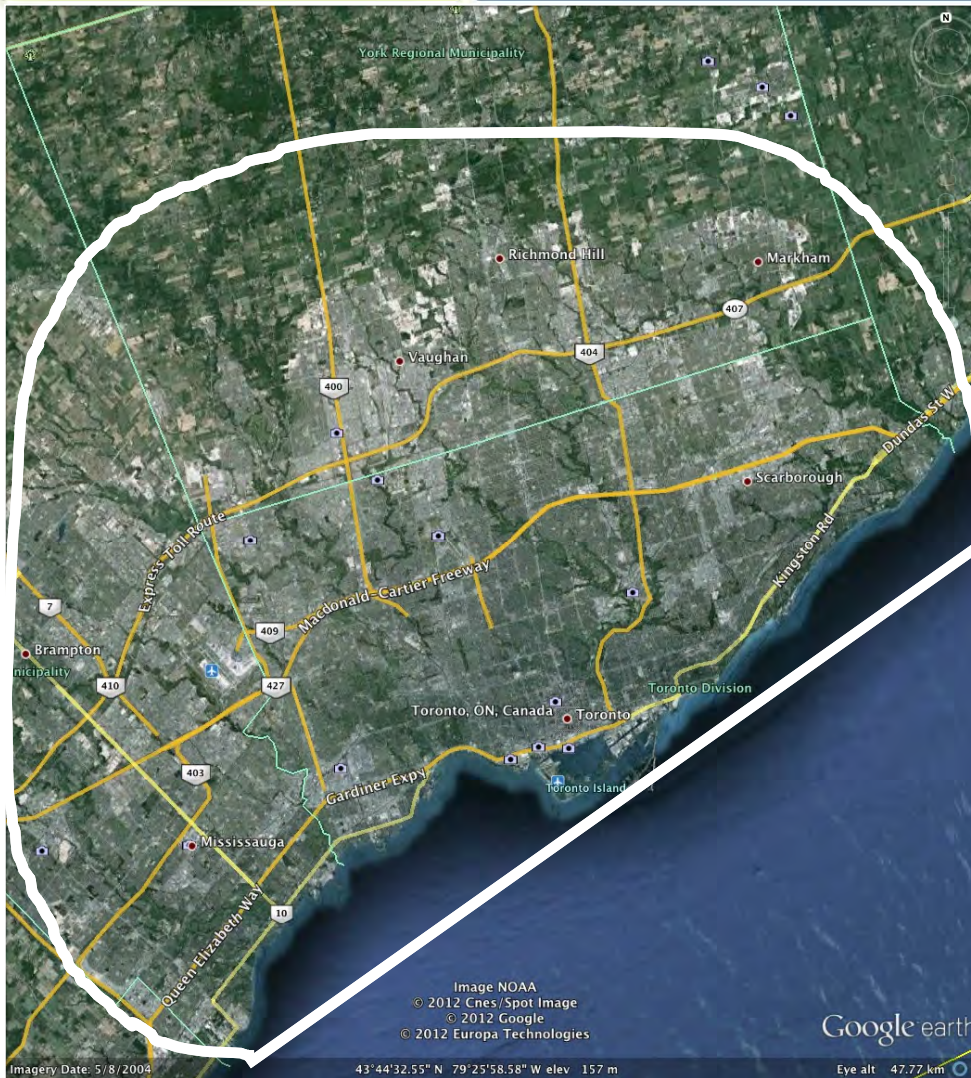
Source of BC Immigrants: 2012



2005-12 Share by Immigrant Type

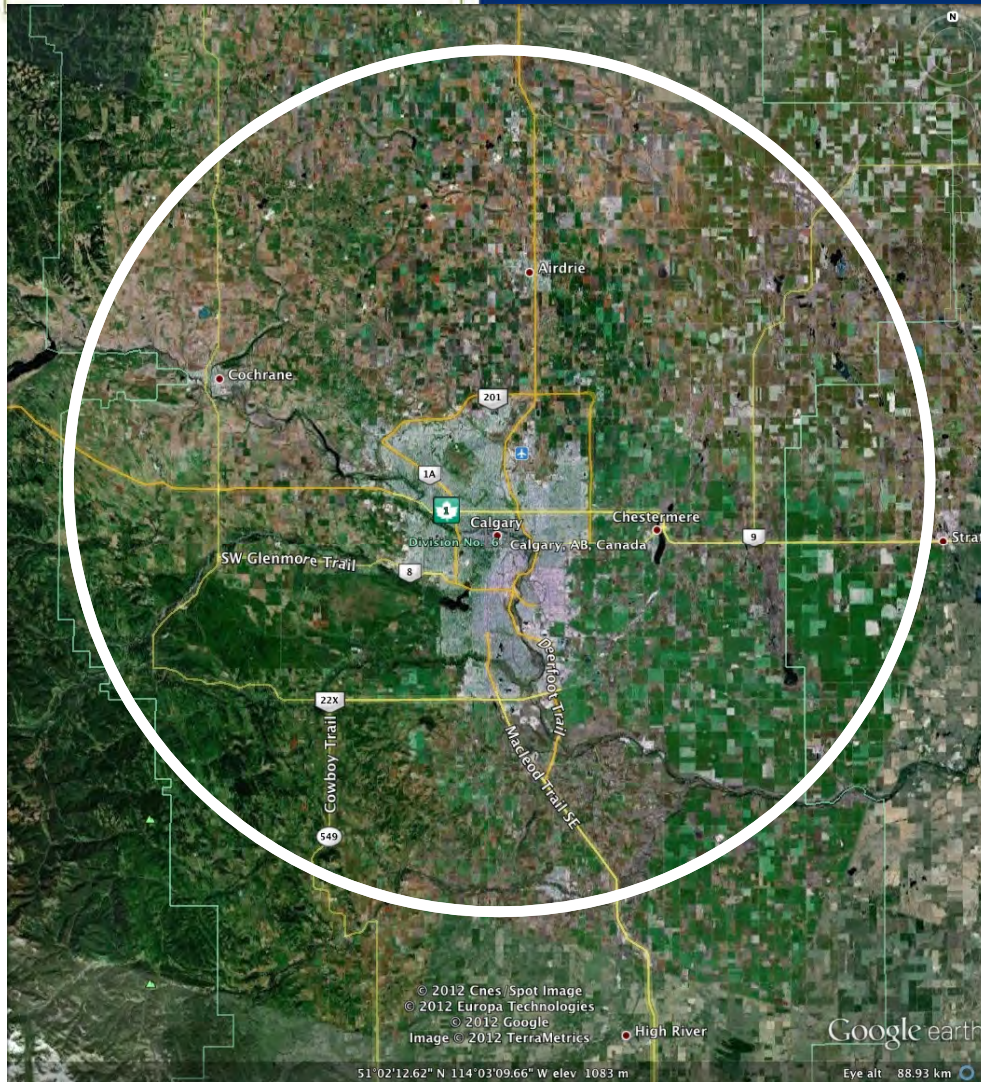


Toronto – from 89 km



- About 180° (that's 1/2) of area around city centre is developable
- Radius includes lots of undeveloped area

Calgary – 89 km

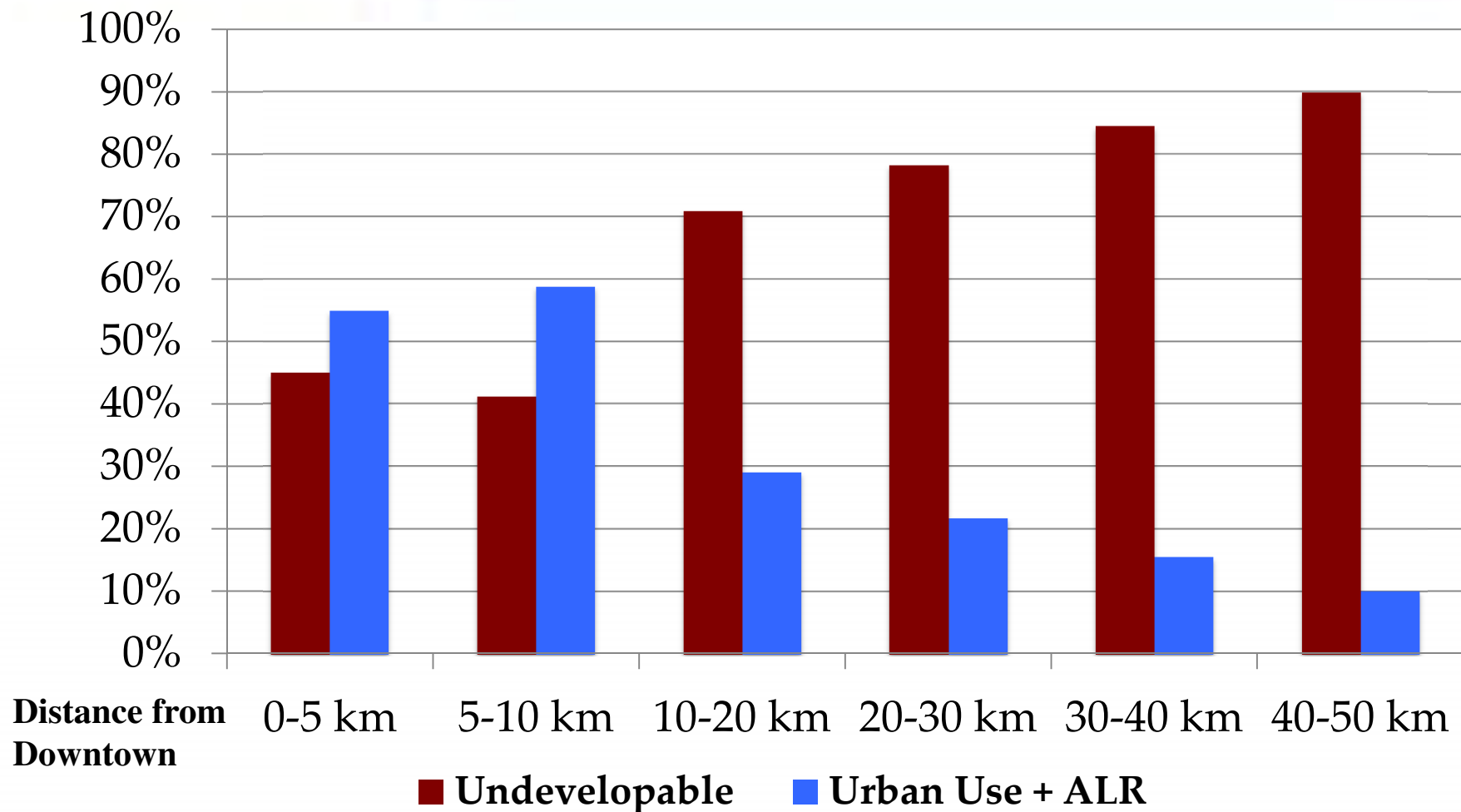


- All 360° around the city centre is developable
- Vast areas of undeveloped but developable land



- Maybe 50° around the city centre is developable
- Vast areas of undevelopable land
 - Mountains
 - Water
 - Crazy Gingrich supporters

Vancouver: Land Share in Rings from Downtown: Potentially Developable vs. Not



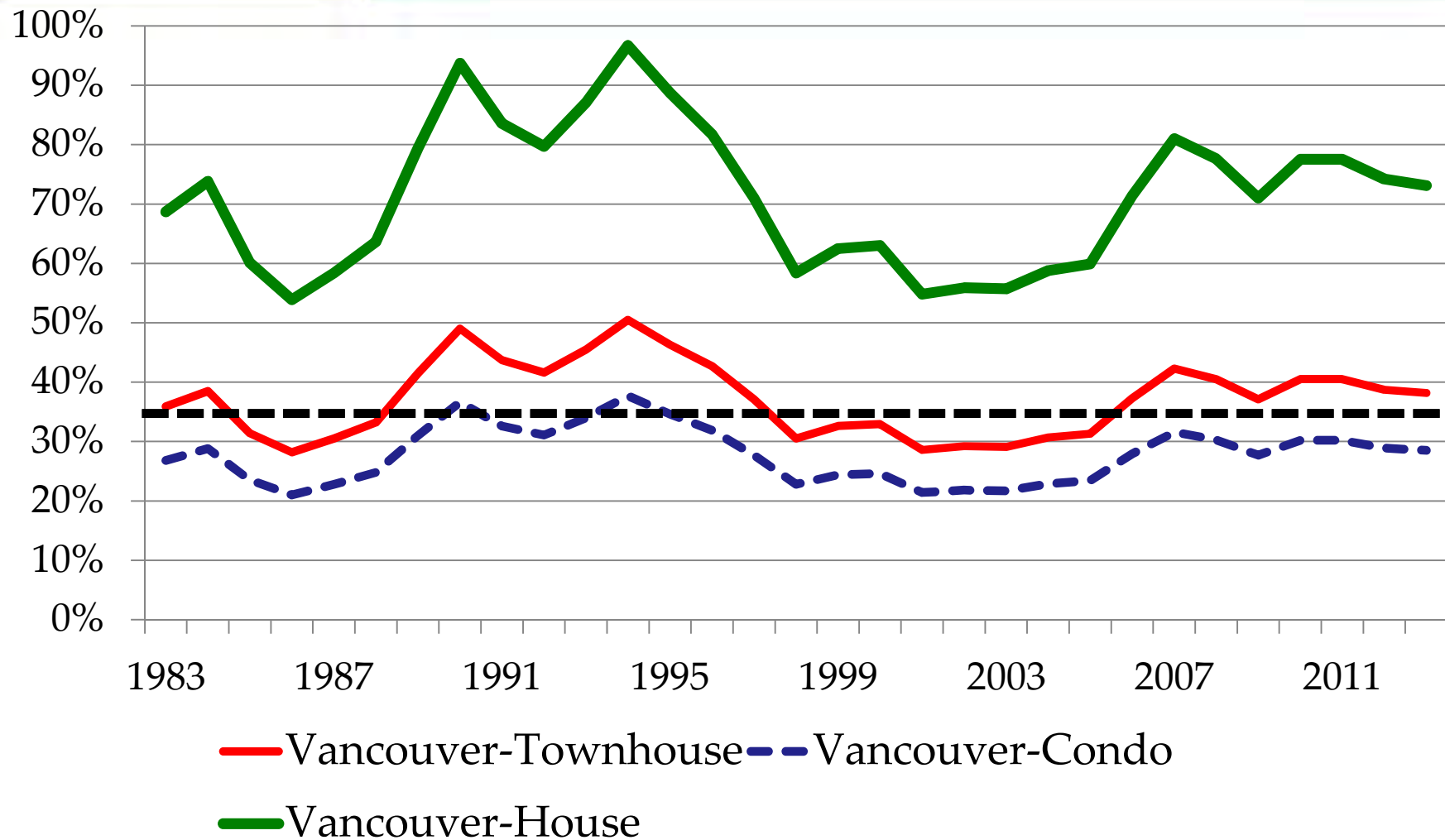
Single Family Detached as Share of Housing Stock (2011-13)

Dallas / Ft. Worth	65.7%	Calgary	60.6%
Denver	61.3%	Toronto	41.3%
Seattle	59.9%	Vancouver	33.8%
Los Angeles	55.2%	Montréal	32.6%
San Francisco Bay Area	52.5%		
Chicago	51.4%		
Washington DC	48.5%		
Boston	46.6%		
NYC+Jersey	38.1%		
New York City	29.1%		

- **Urban economics 101: compared to US**
 - High land prices
 - Higher density
- **Implications – measures**
 - Limited supply of single family units – make them relatively expensive
 - Ratios are not always applicable
 - > Price to income – which price
 - > Price to rent – same price for same rent?

- **Would you evaluate affordability in Hong Kong, Manhattan, Singapore for single family units?**
- **Vancouver pricing for affordability**
 - Condo in core
 - Townhouses in inner suburbs
 - Houses in outer suburbs

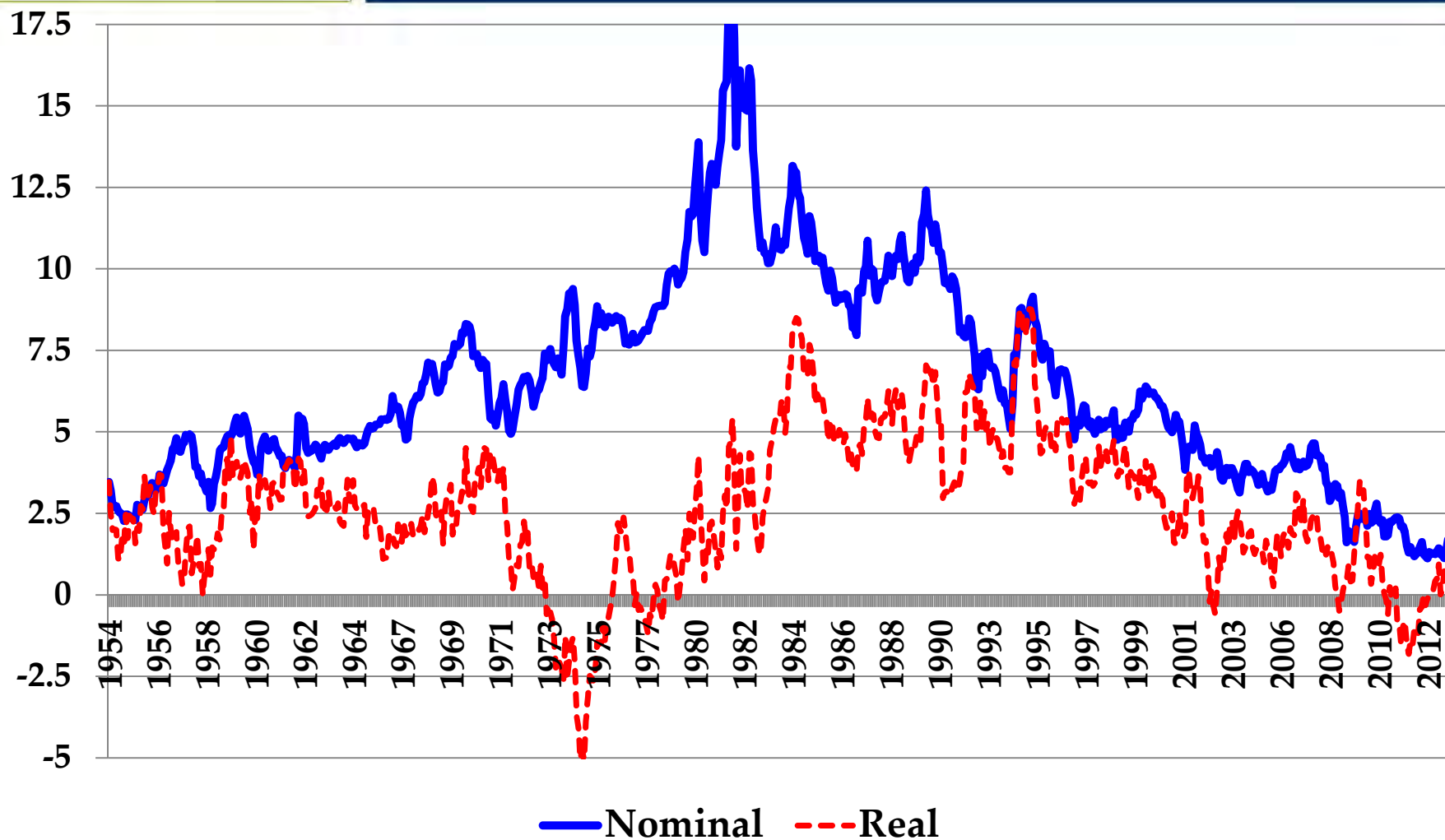
Affordability Re-Evaluated



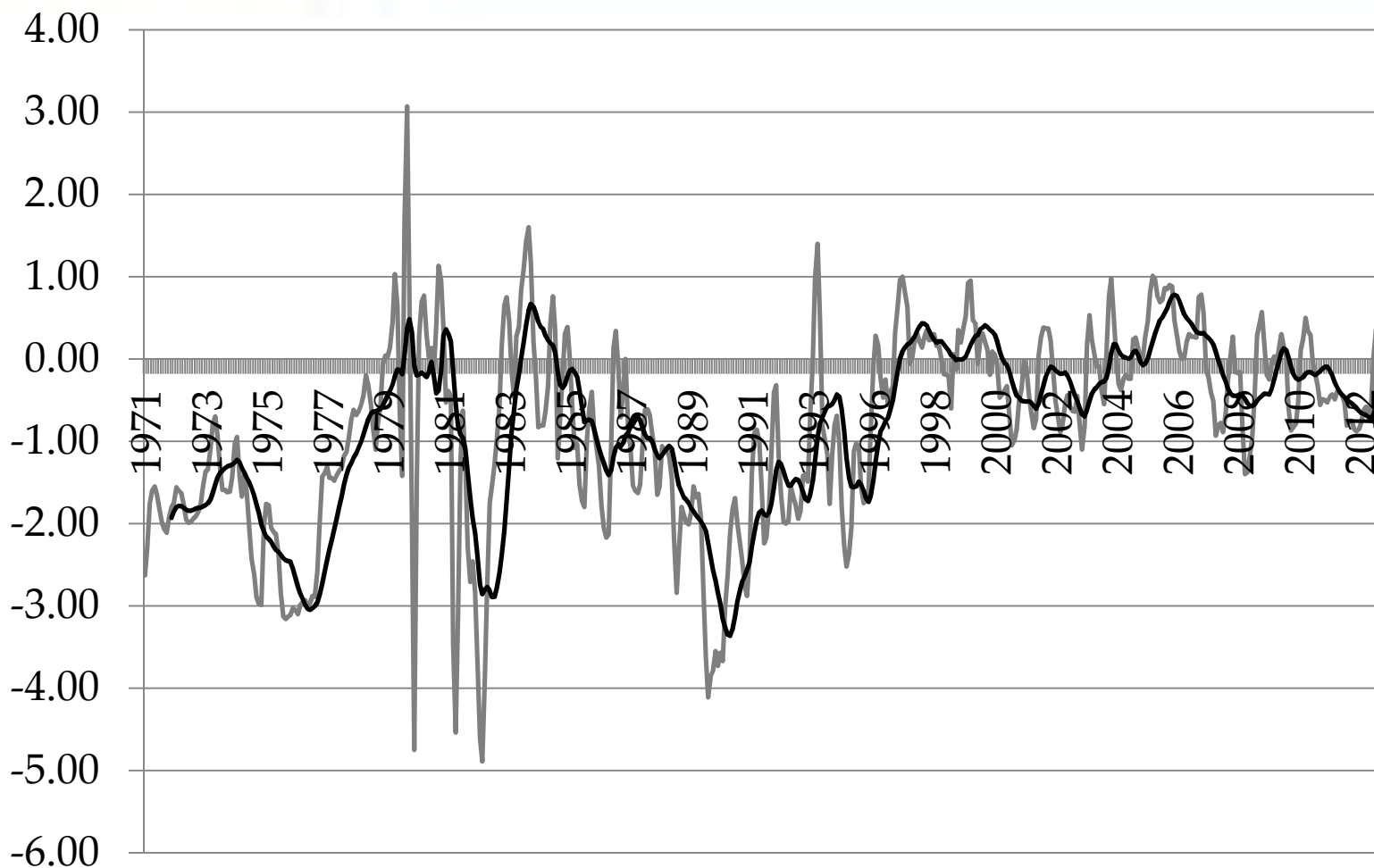
- **US is the world outlier**
 - 30 year term
 - Fixed
 - Prepayable w/o penalty
- **Rest of the world**
 - Terms less than 10 years, usually less than 5 years
 - Prepayment with penalty
 - Lower LTVs

- **85% of mortgages have 5 year term or less**
- **Overwhelmingly “closed” (VanCity rates)**
 - 5 years open rate – 5.79%%
 - 5 years closed rate – 2.99% to 3.89%
 - 10 year closed – 4.29% - 6.10%
- **LTV 80% and up w/ insurance**
 - Max 95%, never got above 97%
 - Insurance is “private” but government backed

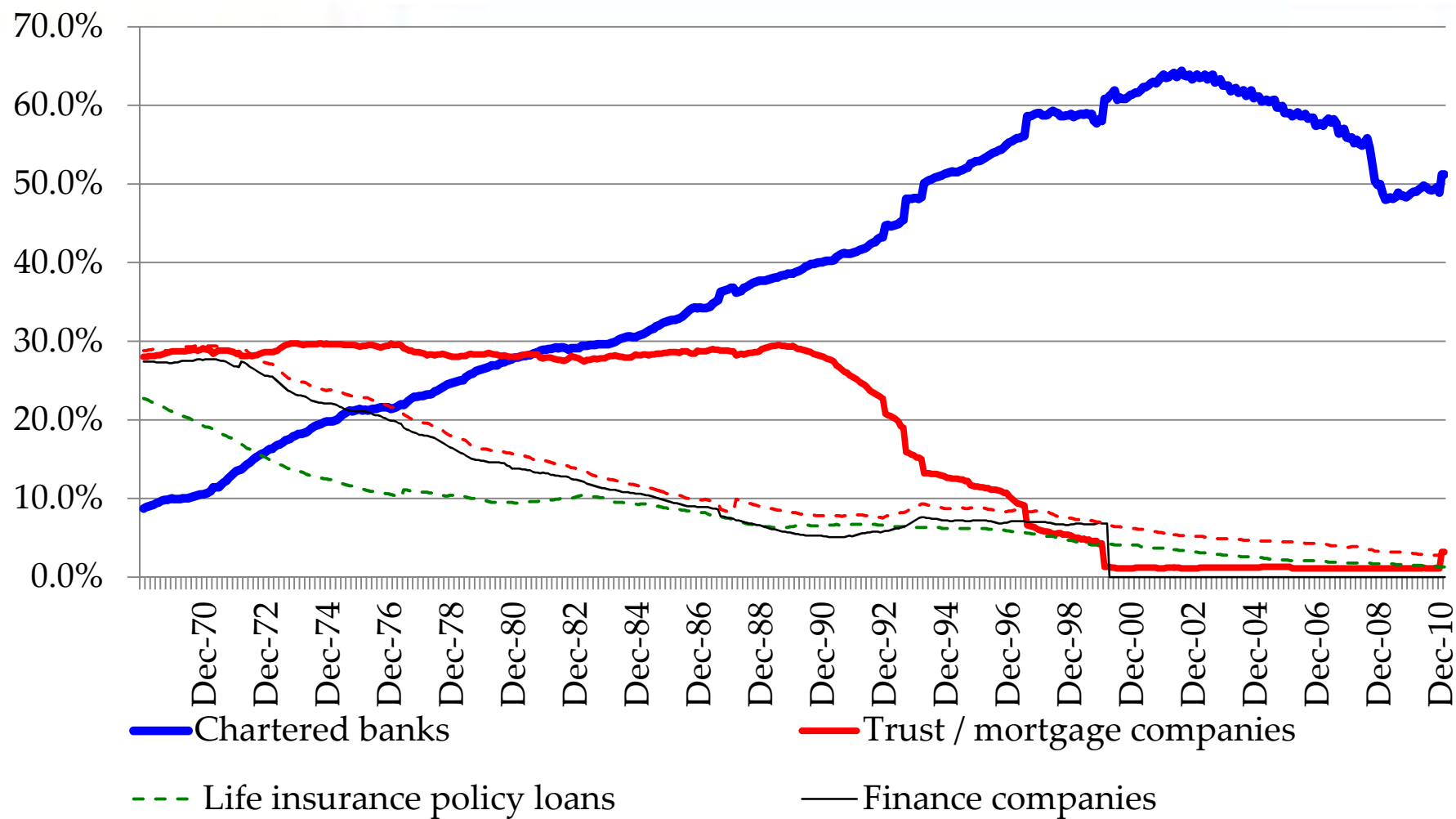
Govt of Canada 3-5 Year Bond Yields



Spread: US Avg 30 Year Mortg - Avg Canadian 5 Year Mortg Rate



Mortgage Debt Shares



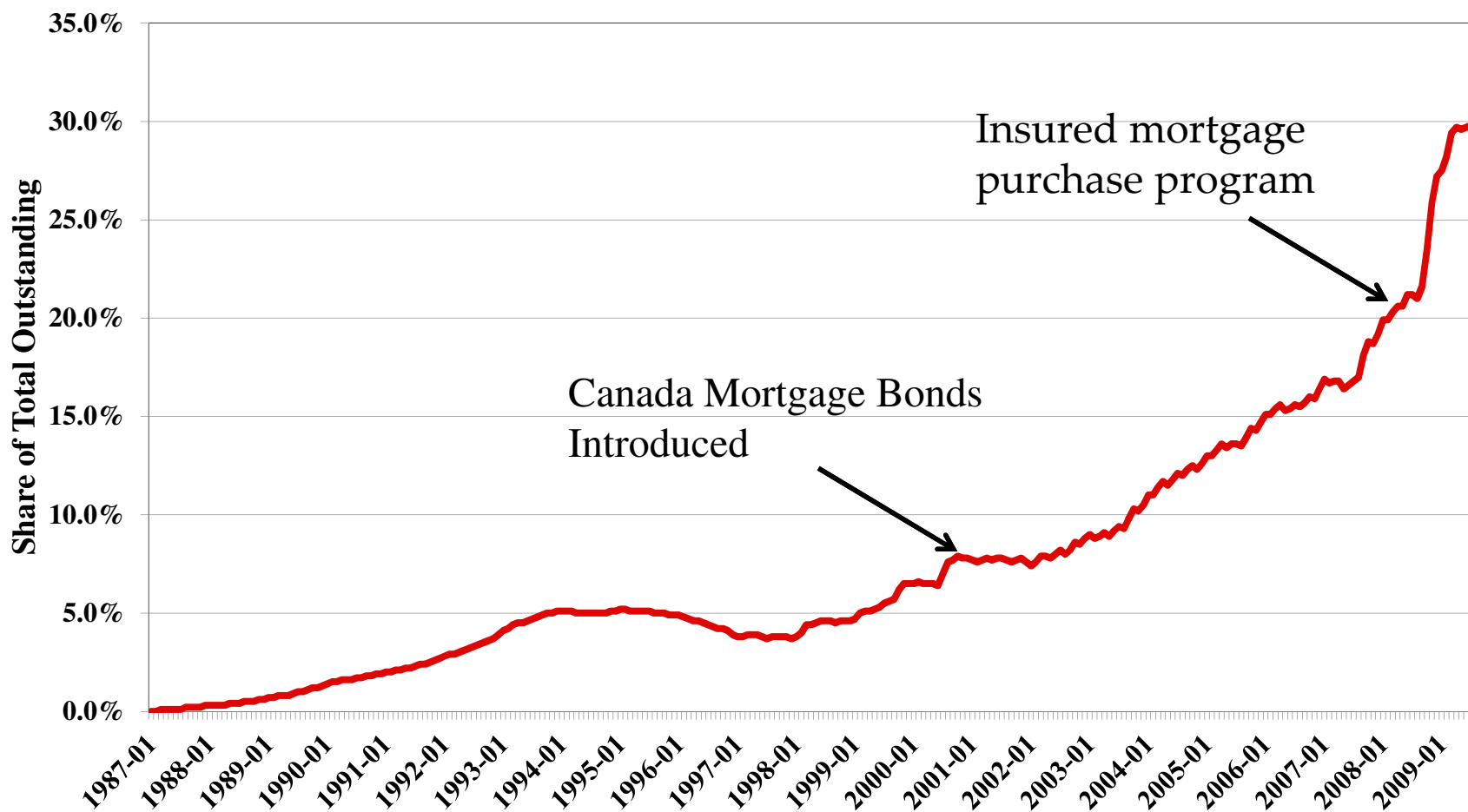
- **Two types**

- NHA- MBS: simple pass through w/ single lender providing loans
- Canadian Mortgage Bonds
 - > Bonds, small spread over Canadian govt bonds
 - > Backed by NHA-MBS

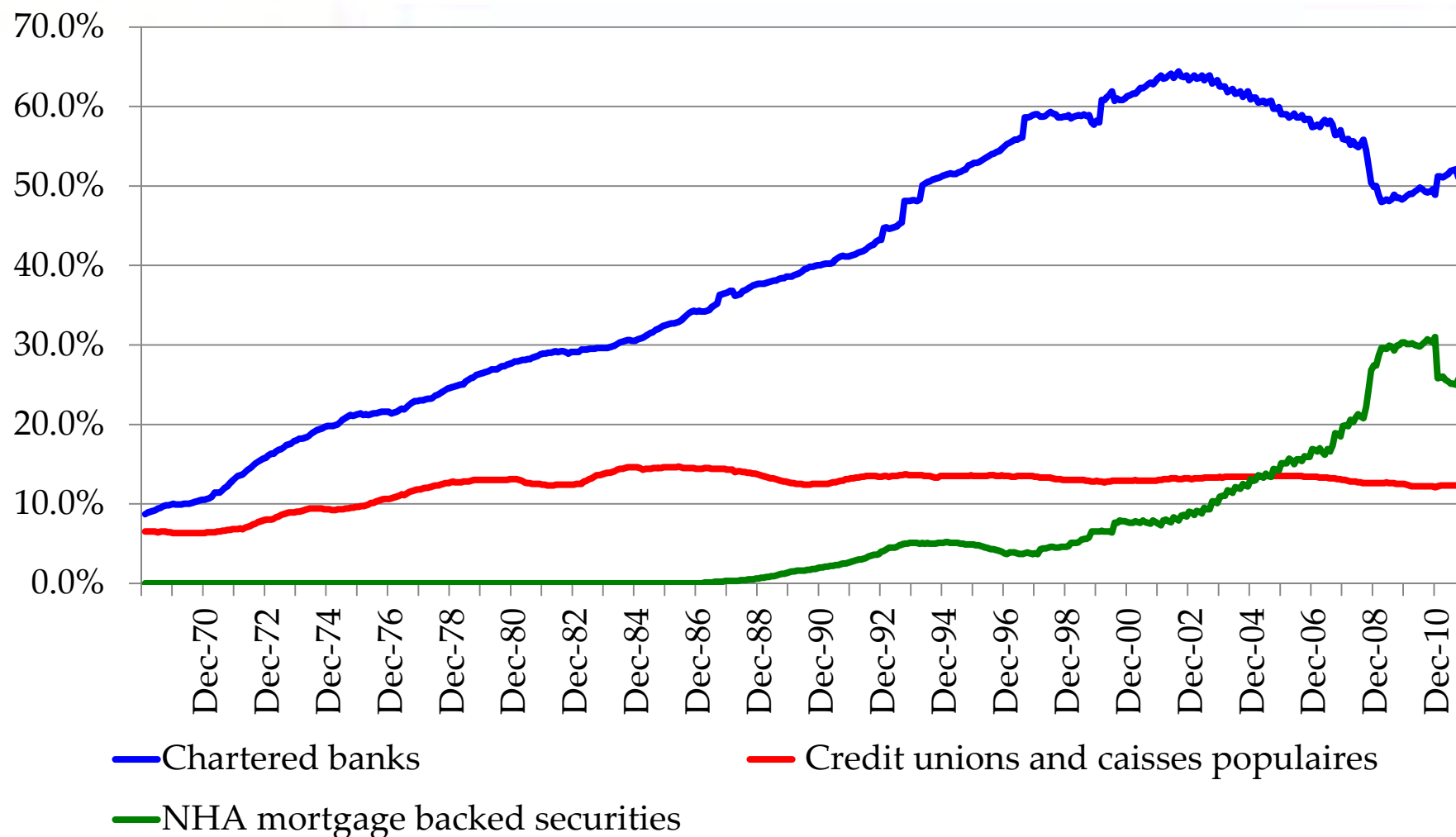
- **Small**

- Lenders have had limited motivation to securitize mortgages
 - > National lenders, limited pre-payment, short term
 - > Exception is in recovery, govt pledged to buy mortgages for MBS

NHA-MBS Share of Outstanding Mortg Debt

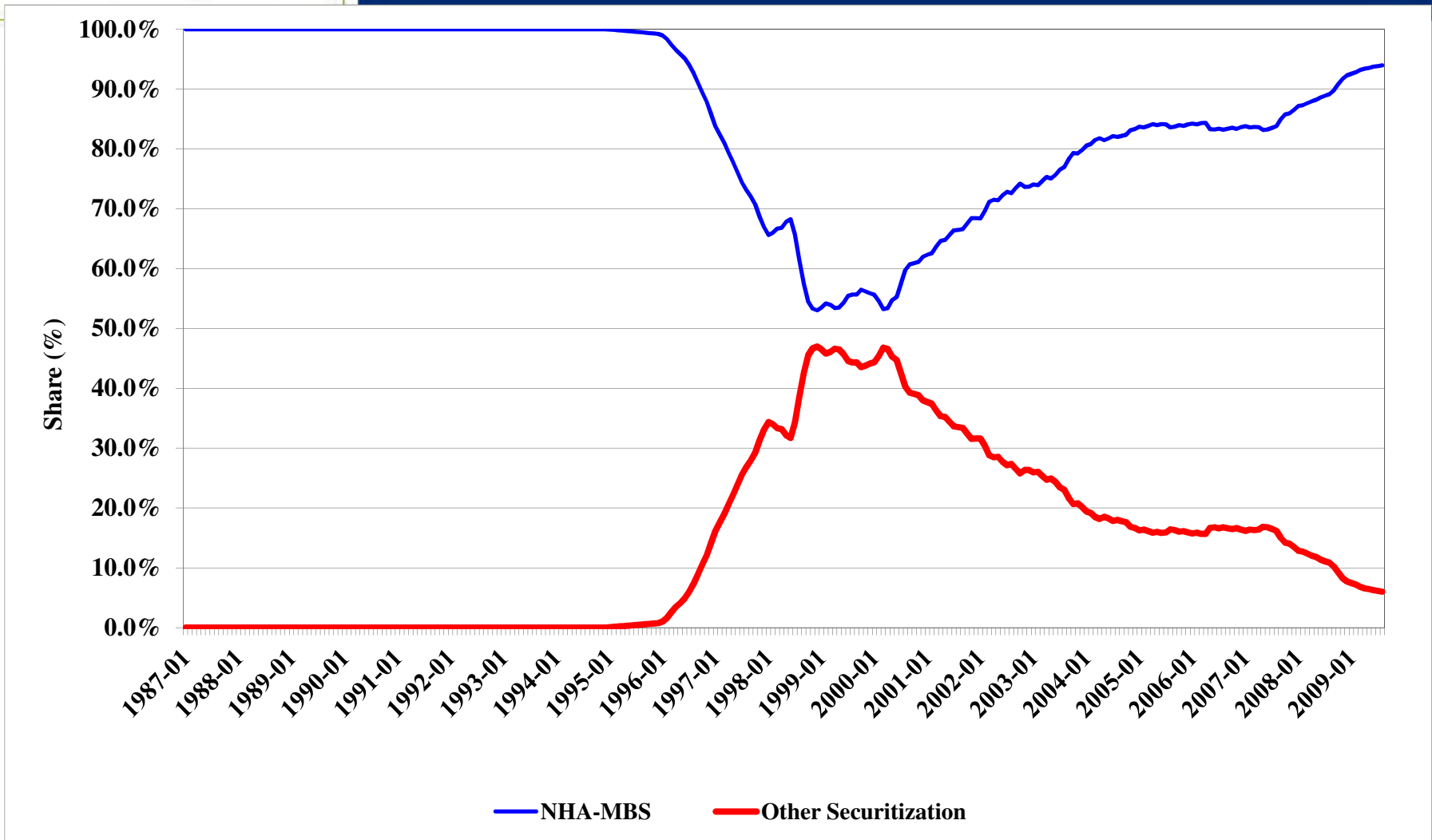


MBS vs Bank Shares



- **Banks are biggest holders**
 - Approximately 80% of Canadian MBS held by chartered banks
 - With MBS, 75% of Canadian mortgages are on books of Chartered banks (6 of them)
- **Sub-prime never really developed**
 - Sub prime loans pooled in general asset backed commercial paper
- **Canadian Mortgage Bonds important for development of demand for NHA-MBS**

Share of Securitized Mortgage Debt: NHA-MBS vs Other Securitization (subprime via SPC created ABS)



- **Canada is not the US**
- **A lot of how things unfold depends on interest rates**
- **Why do we believe rates “have” to rise**
 - History preceded 1964
 - Demographics
 - Fighting the last war