

A Population Aging Analysis for Canada Using the National Transfer Accounts Approach

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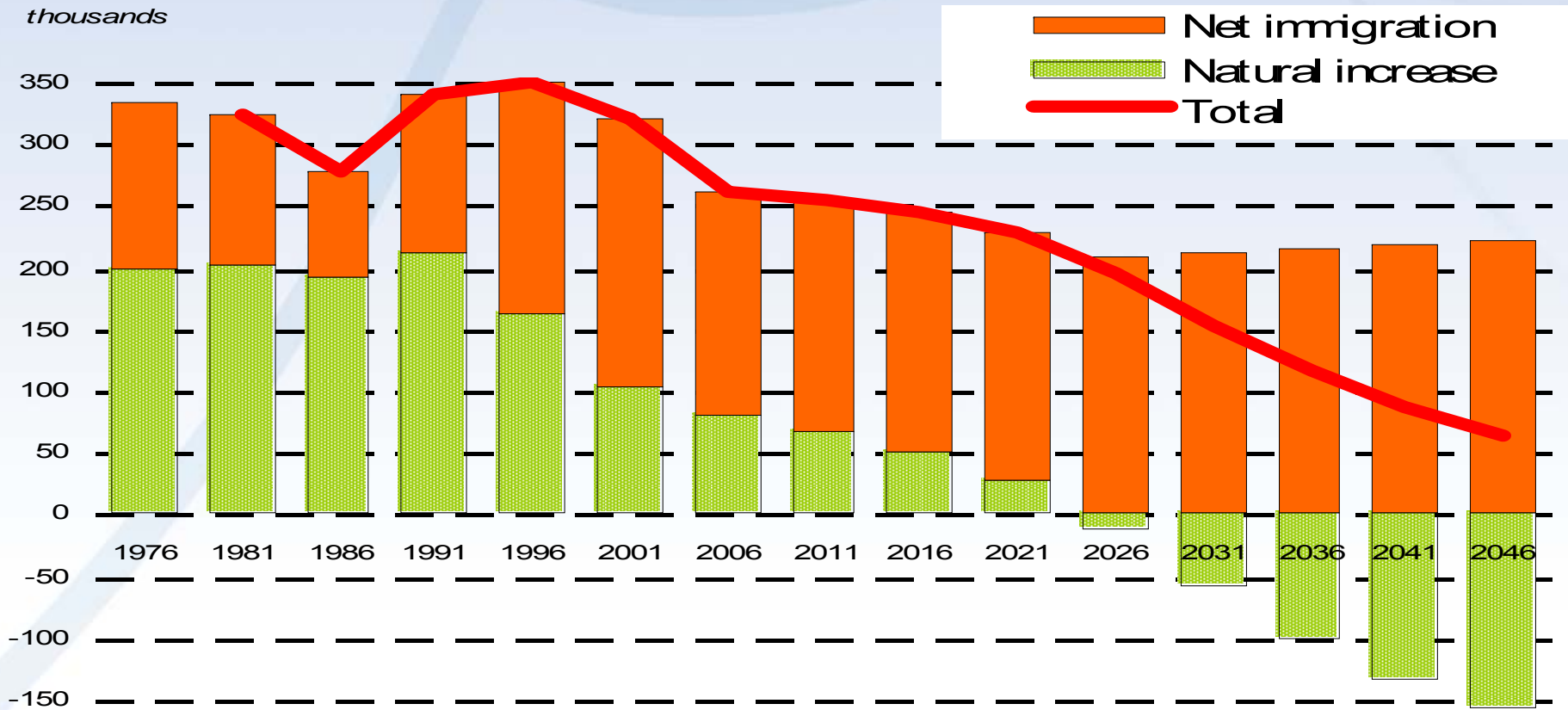
Outline

- Motivation and objective
- Data and methodologies
- Main results
- Conclusions

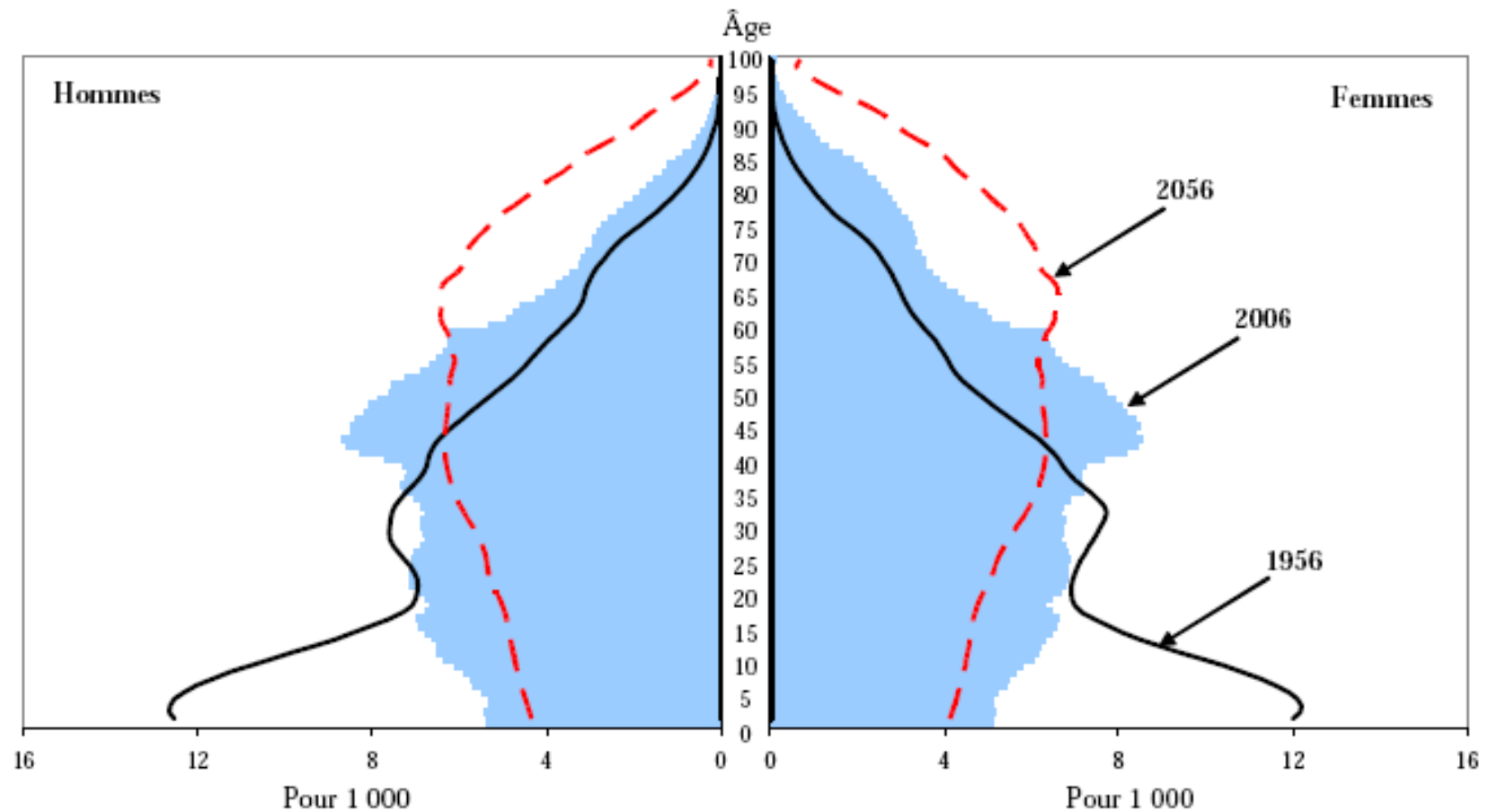
Population Aging

- Baby boom, baby bust, increased life expectancy
- Old-age dependency ratio will more than double in the next 30 years
- Major, slow and long demographic shift
- Canada and most industrialized countries

Growth of Population



Age Pyramid of Canada Population



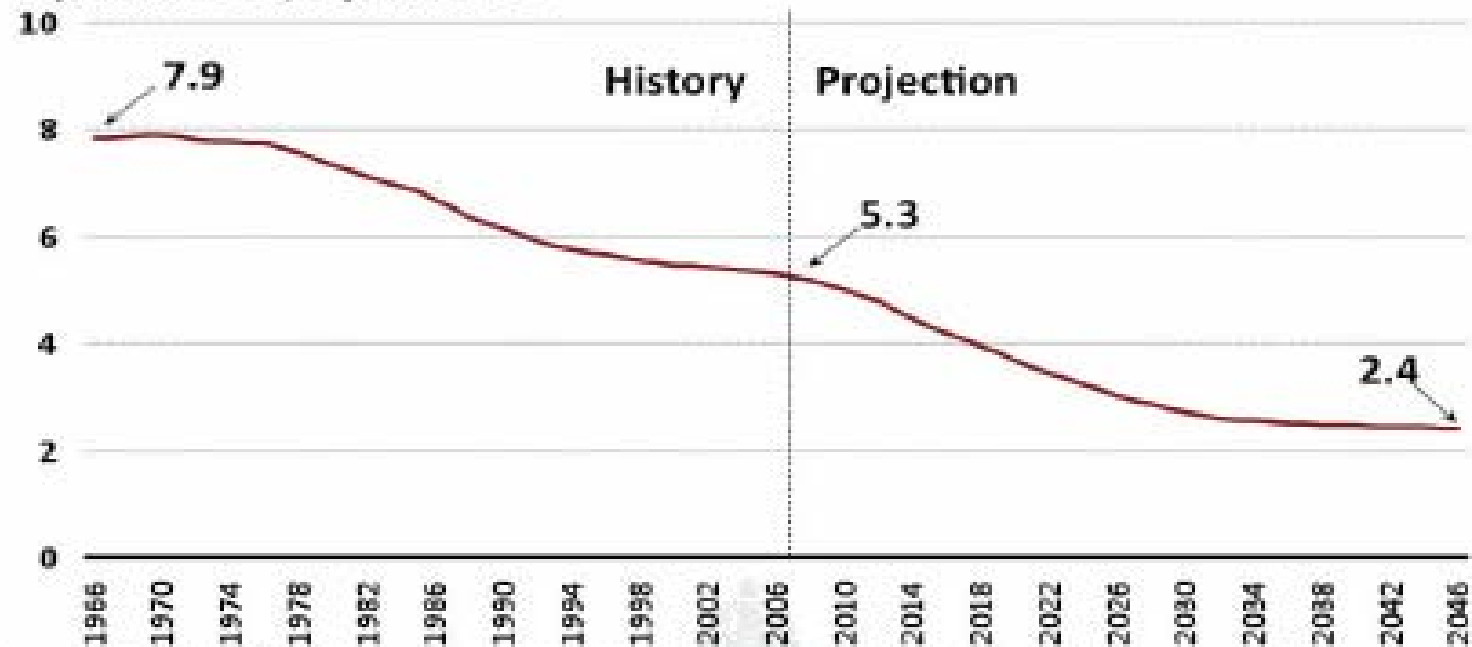
Source: Statistique Canada (2008)

Dependency Ratio

Population ageing means fewer workers to support an older population

Working-age Population relative to Population 65+

Population 15-64/Population 65+



Source: Office of the Chief Actuary

Objective

- Build a NTA database for Canada
- Apply LCD data by using demographic projections for the next 50 years to project LCD in Canada (2007-2056)

Data and Methodology

Surveys

- Household Spending (SHS)
- Labour Income Dynamics (SLID)
- Canadian Community Health (CCHS)

Years: 2004-2007 (LCD); 2006 (example)

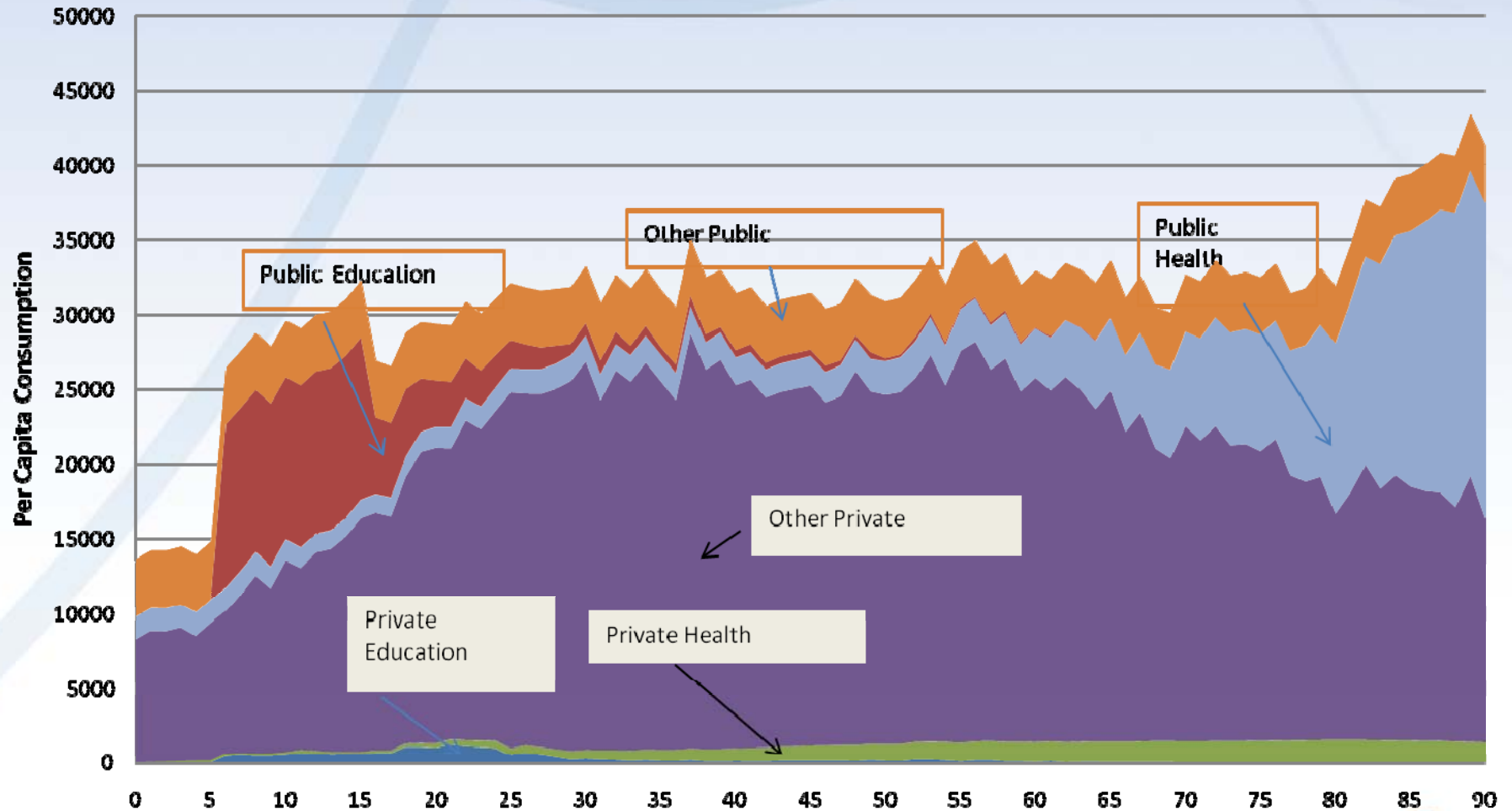
Components

- LCD
- Public Transfer
- Private Transfer

Methodology: data availability and NTA

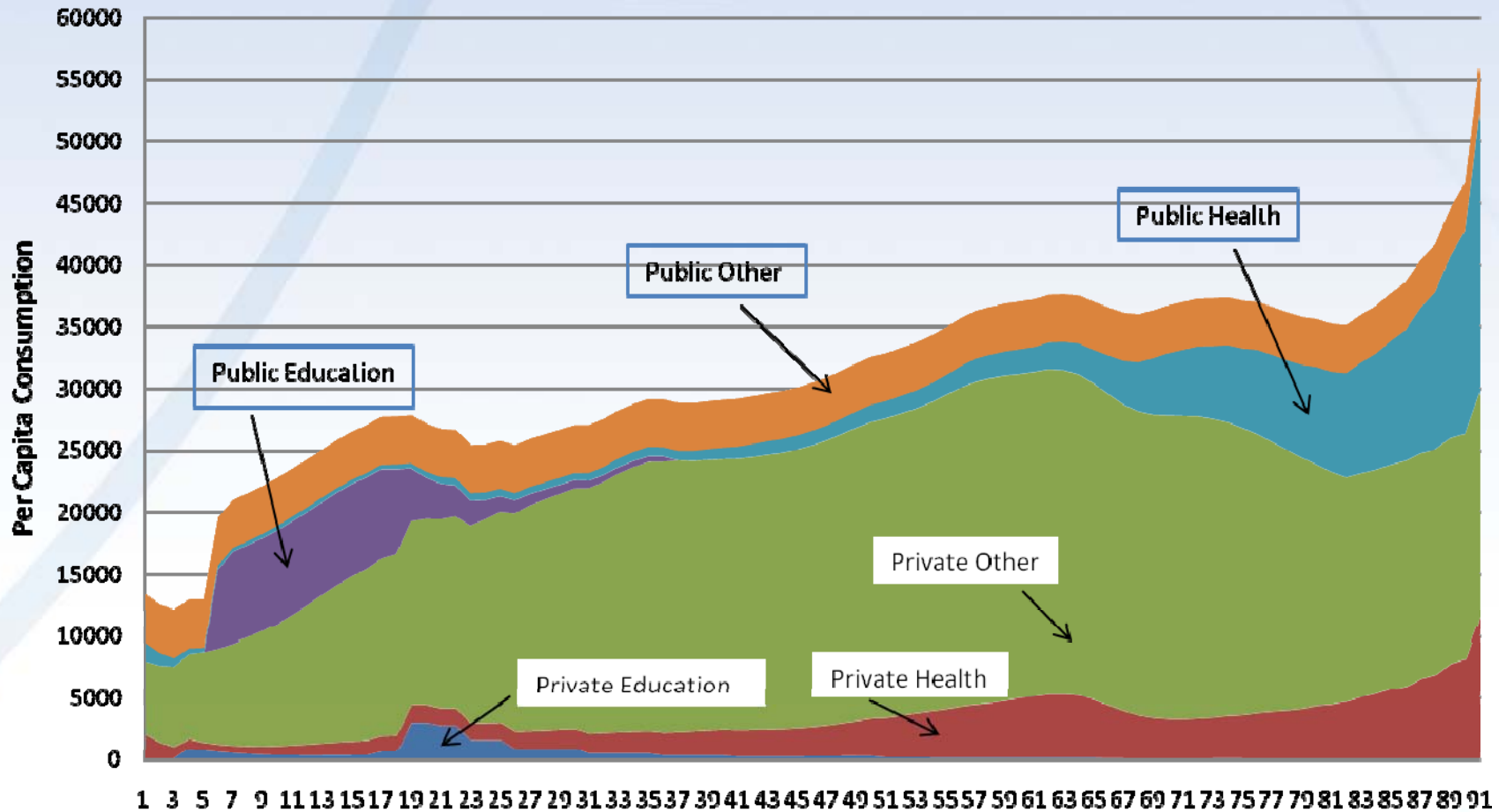
Private and Public Consumption

Per Capita Consumption, Private and Public by Sectors, Canada, 2006



Private and Public Consumption

Per Capita Consumption, Private and Public by Sector, USA, 2003



Data source: NTA website



Comparison of Per Capita Consumption Profiles

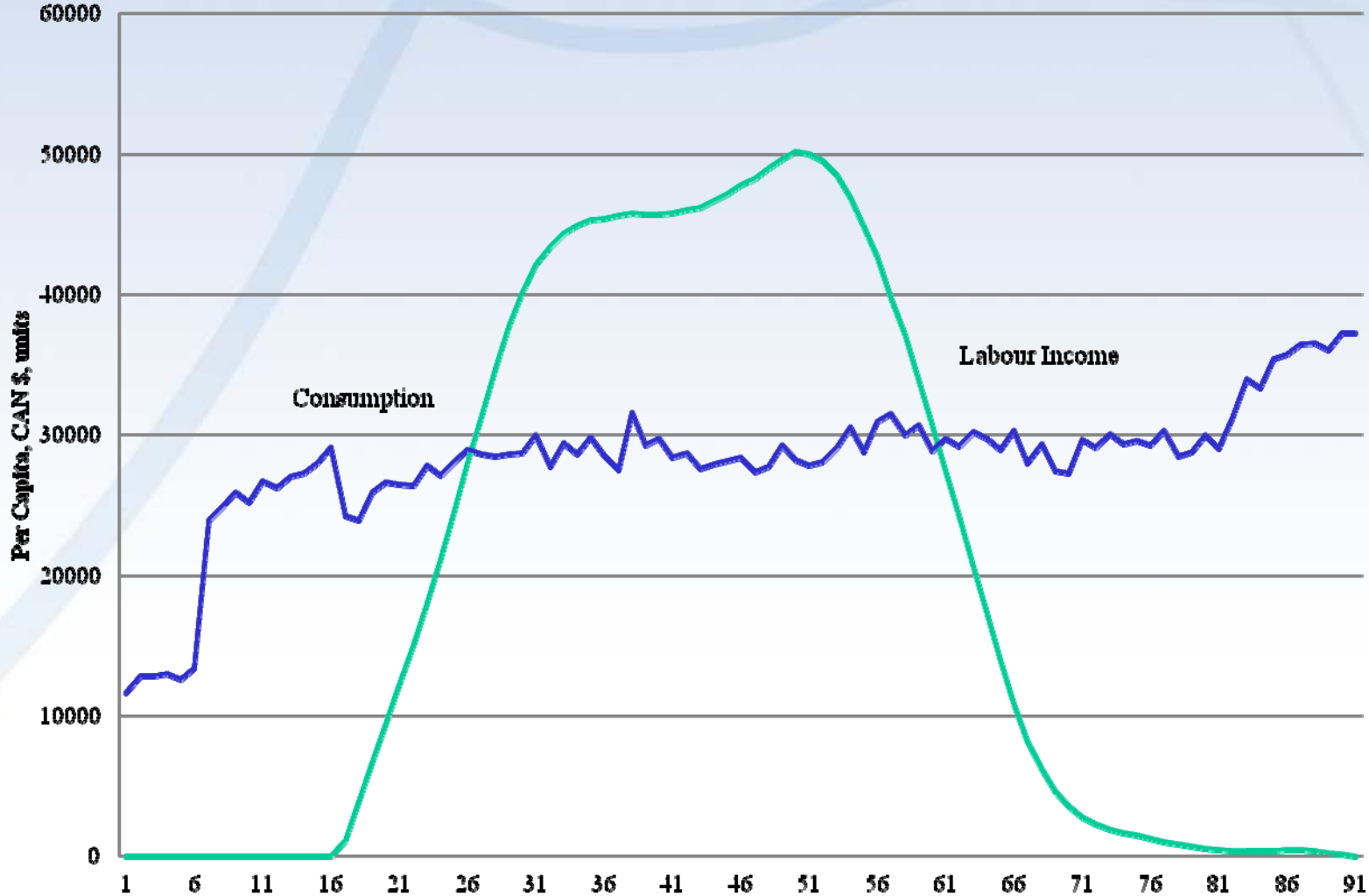
Summary

	Canada (2006)	USA (2003)
	% of Total	% of Total
Consumption	100%	100%
Private consumption	67.38	73.02
Education	0.74	1.24
Health	3.21	9.68
Others	63.42	62.10
Public consumption	32.62	26.98
Education	5.66	4.25
Health	14.70	10.17
Others	12.26	12.56

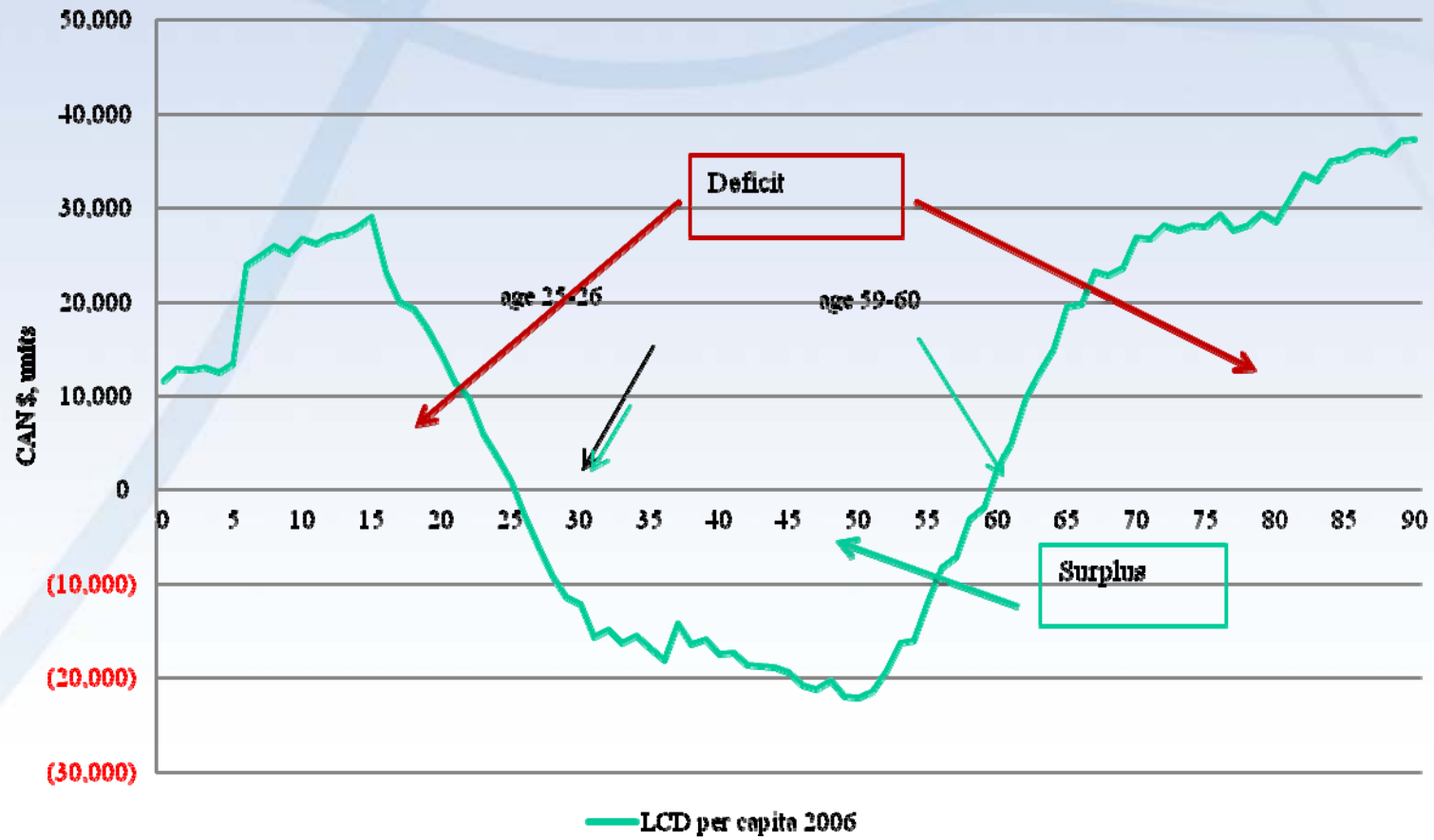
Comparison Health and Education Consumption, (%)

Age group	CAN	USA
Private education under age 25 / Total education consumption for all ages	8.48	15.46
Public education under age 25/ Total education consumption for all ages	78.21	73.50
Private health above age 65/ Total health consumption for all ages	8.05	22.71
Public Health Above age 65/ Total health consumption for all ages	57.15	39.41

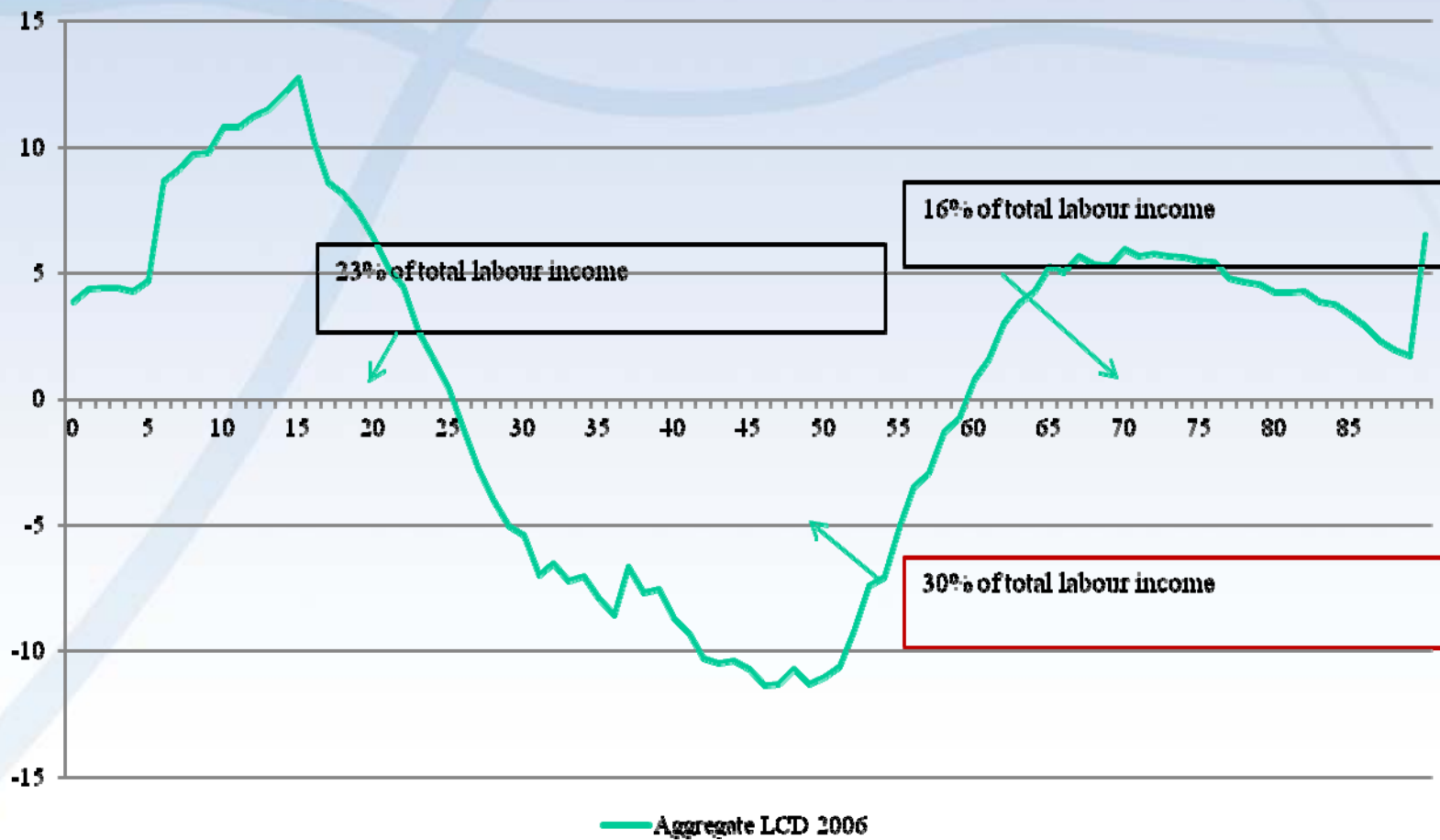
Labour Income and Consumption per Capita Canada, 2006



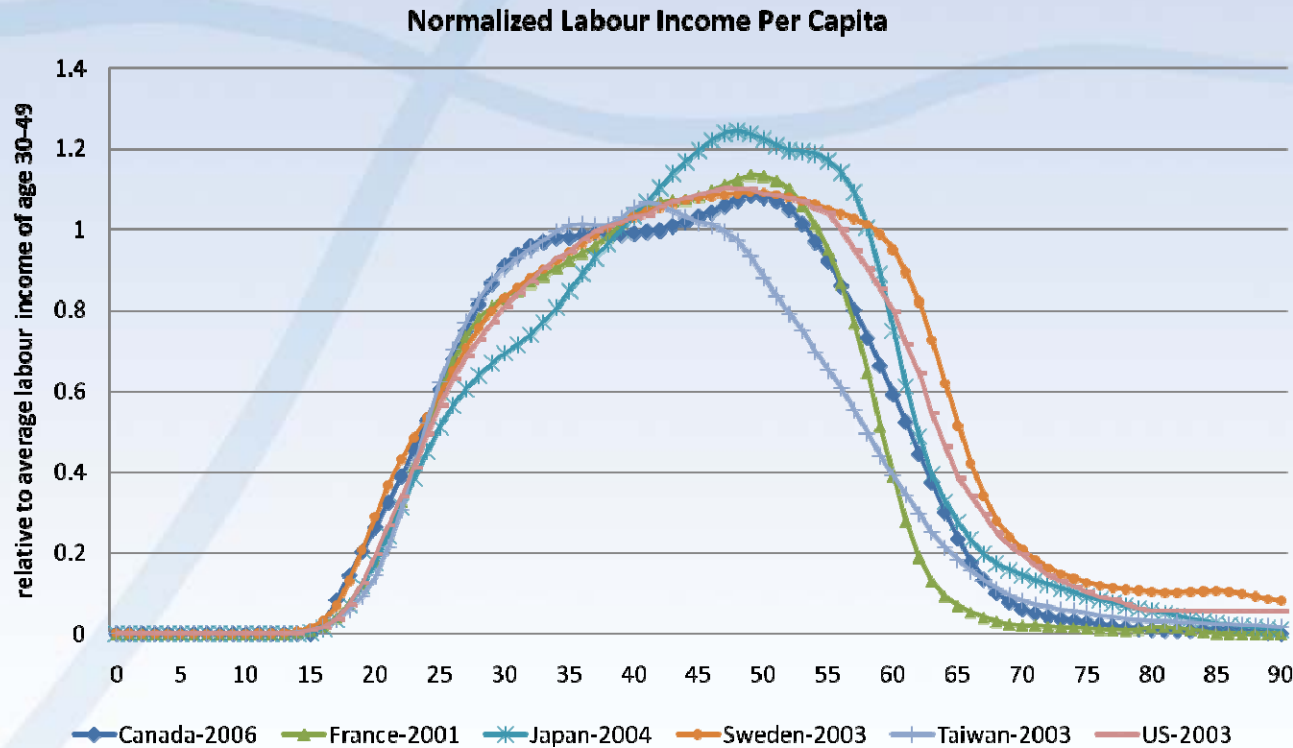
Lifecycle Deficit, Per Capita, 2006



Aggregate LCD, Canada, 2006



Comparison of Per Capita Labour Income



Summary

	USA	CAN	Sweden	France	Japan	Taiwan
Peak Age	47	49	49	49	48	41
Share under age 25 (%)	6.04	7.83	7.07	7.01	5.66	6.89
Share above age 65 (%)	7.76	2.91	9.60	1.15	5.73	4.19

Data source: NTA website

Comparison of LCD Per Capita— Main Results (5/9)

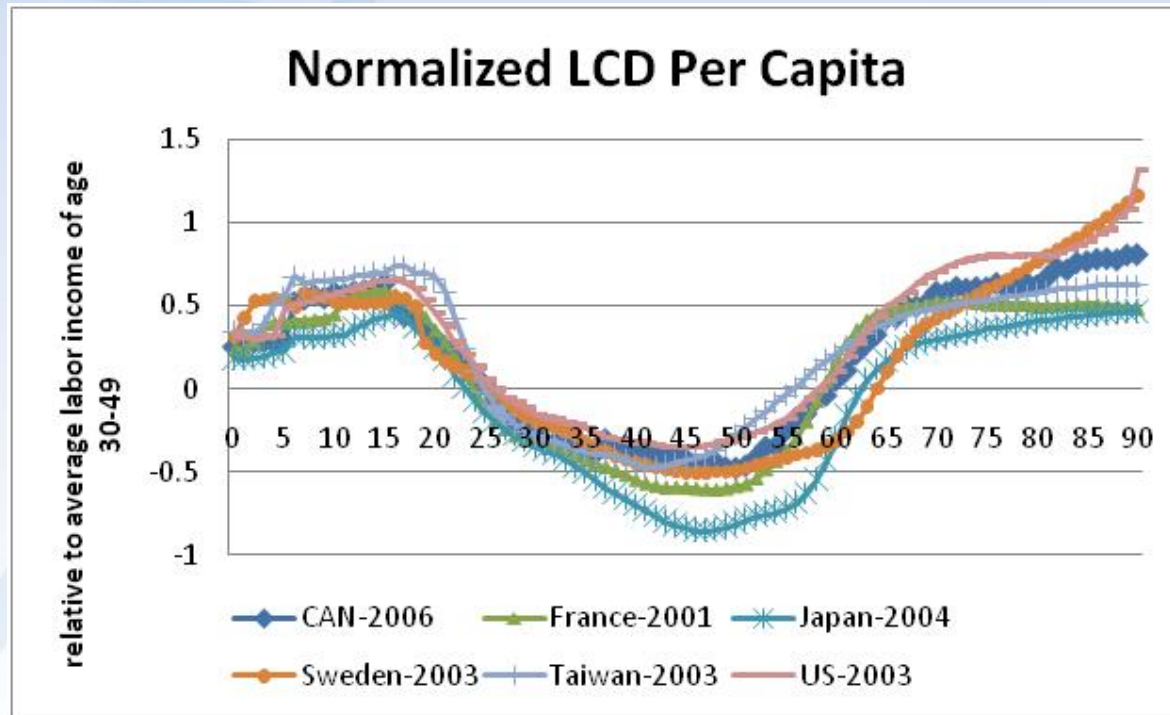
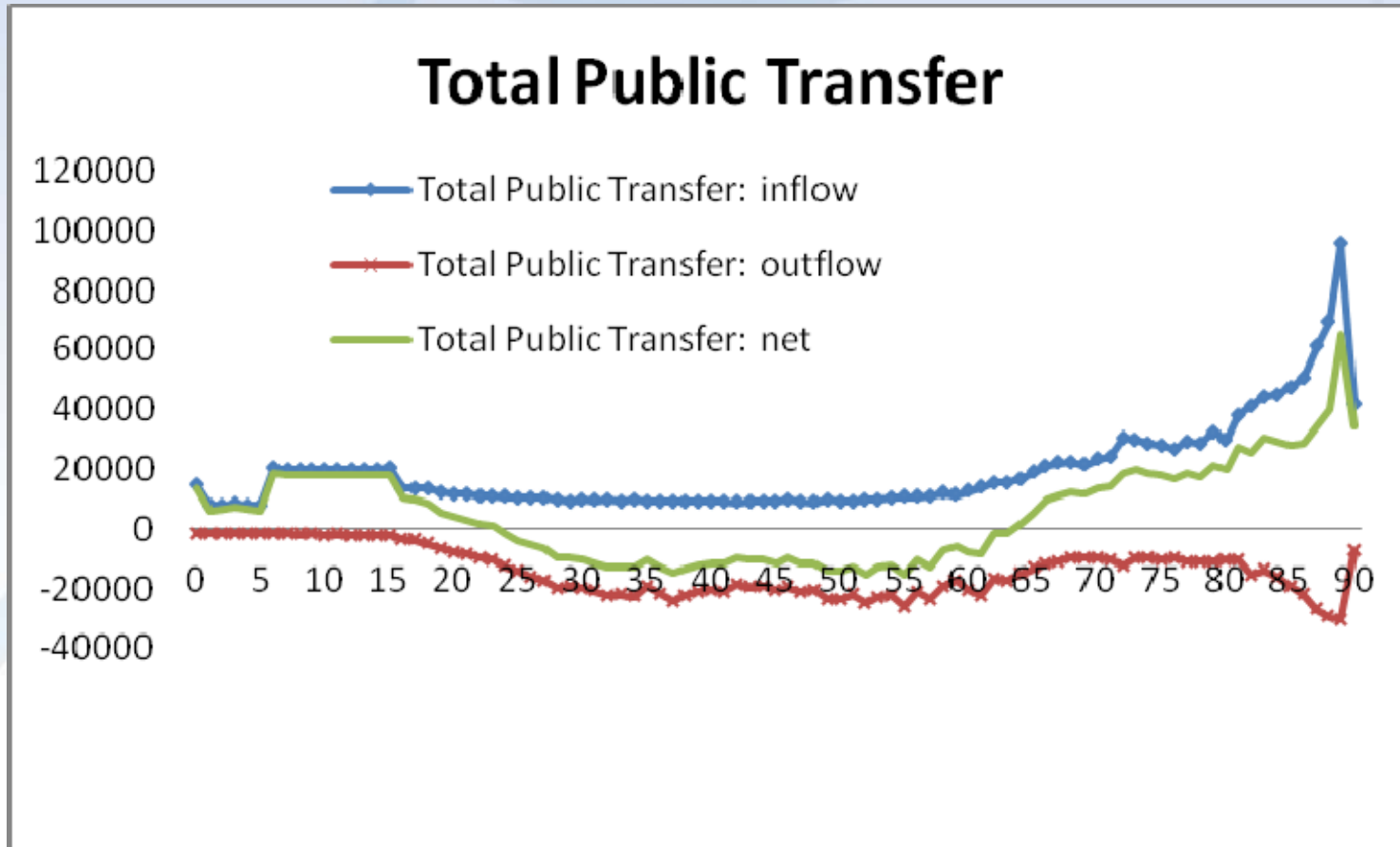


Table: Comparison of Economic Lifecycle of Selected Countries

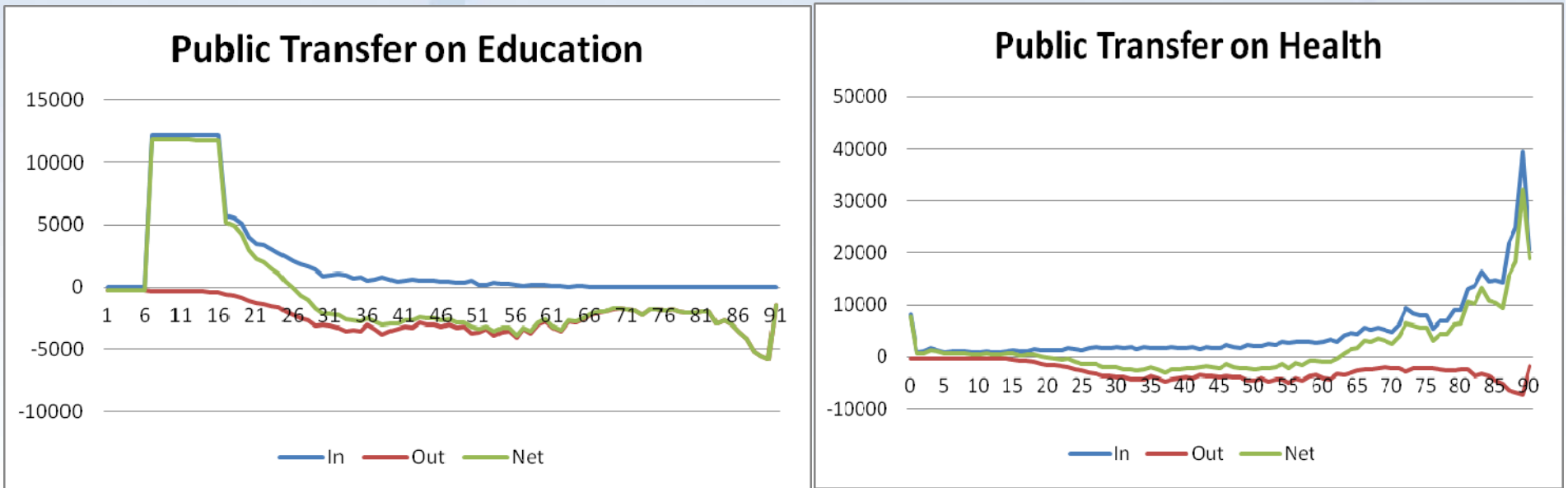
	USA	CAN	Sweden	France	Taiwan
Cross age (LCD to LCS)	26	25	23	23	23
Cross age (LCS to LCD)	59	60	65	59	56
Span (years)	33	35	42	36	33

Data source: NTA website www.ntaccounts.org

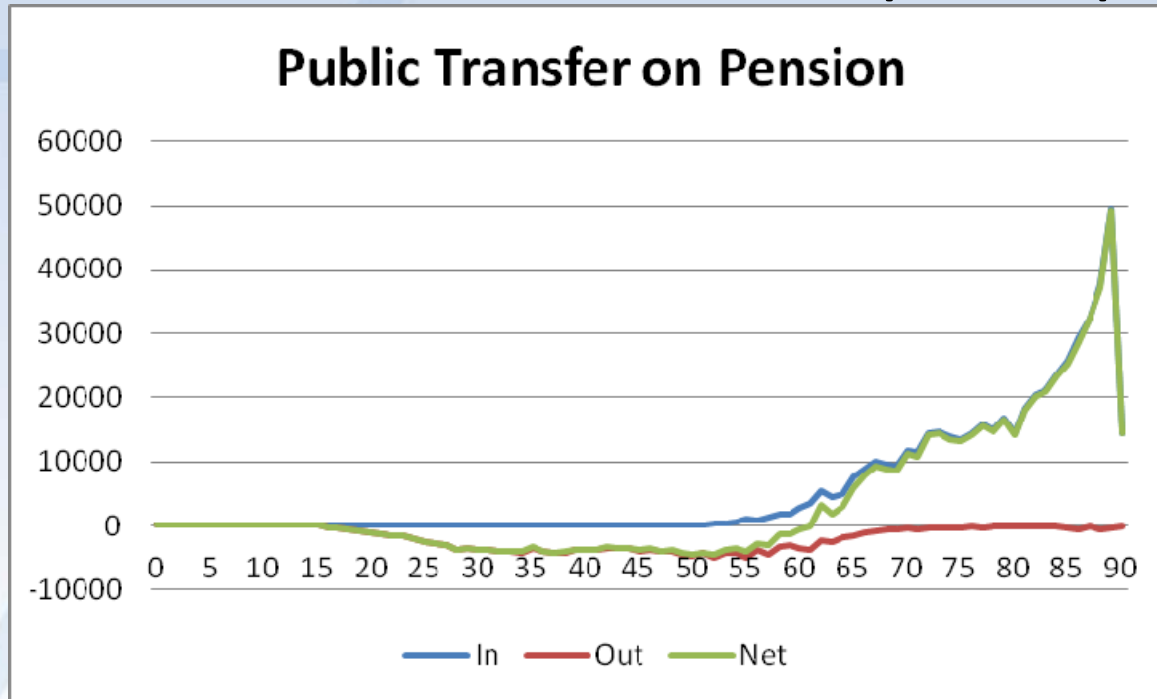
Total Public Transfer, per capita Canada 2006



Transfers: Public, per capita



Public Transfer-Pension, per capita



Three pillars of the retirement income system

Old Age Security Program

- Old Age Security Pension

- Guaranteed Income Supplement

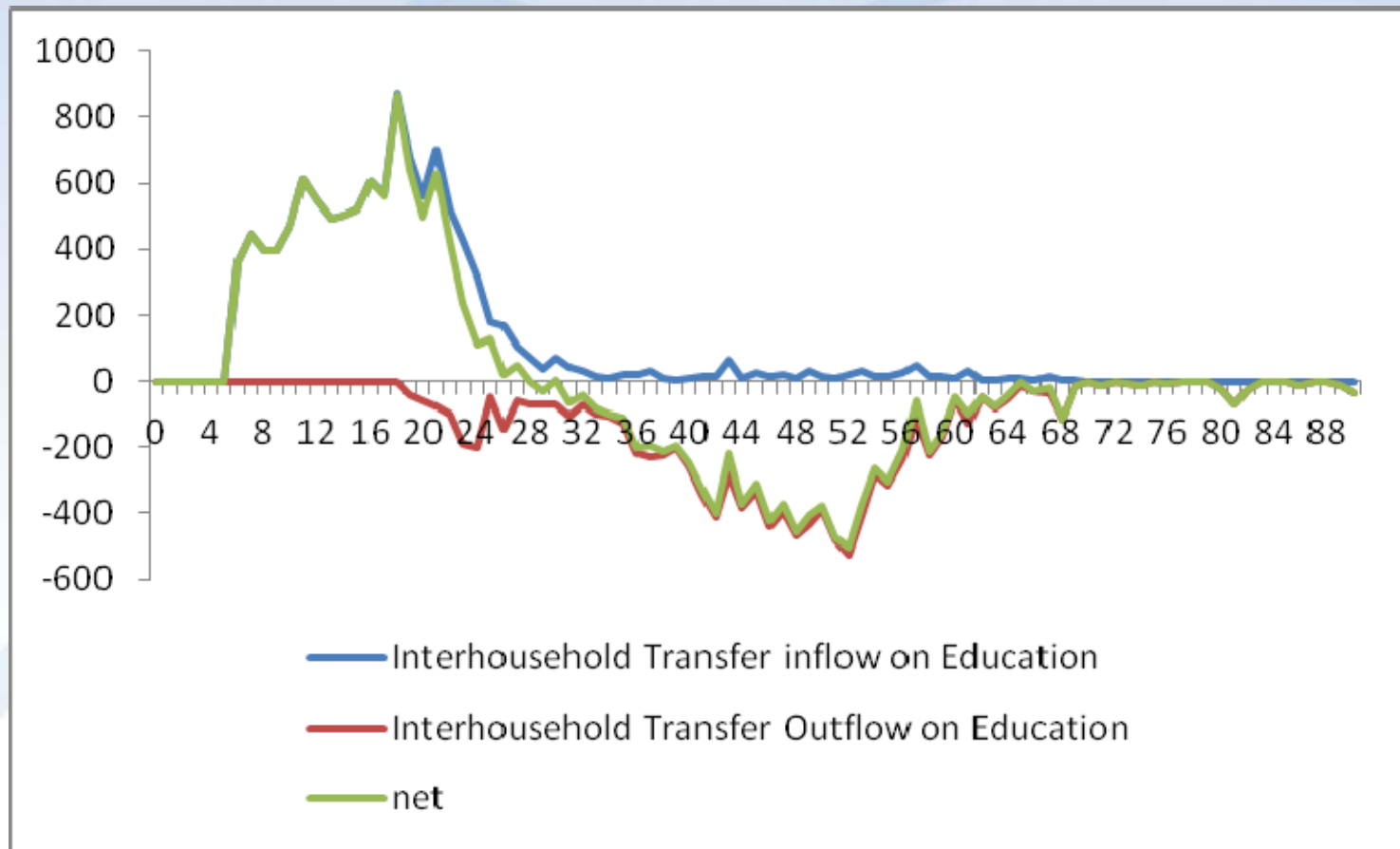
- Spouse's Allowance

- Canada/Quebec Pension Plans

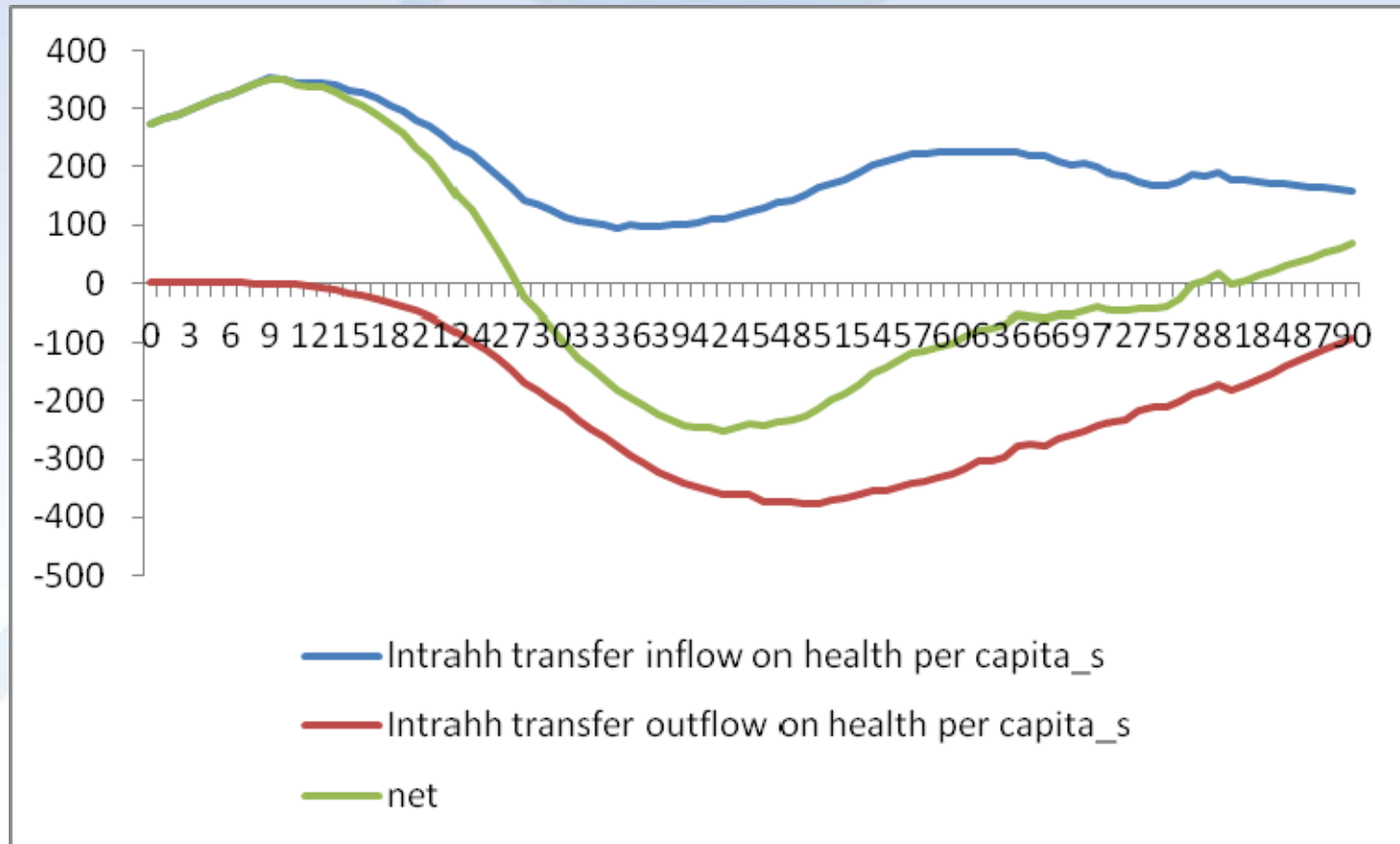
- Private savings, private pensions, RRSPs, etc

Service Canada statistics: 73\$ billion to pension benefit in 2008

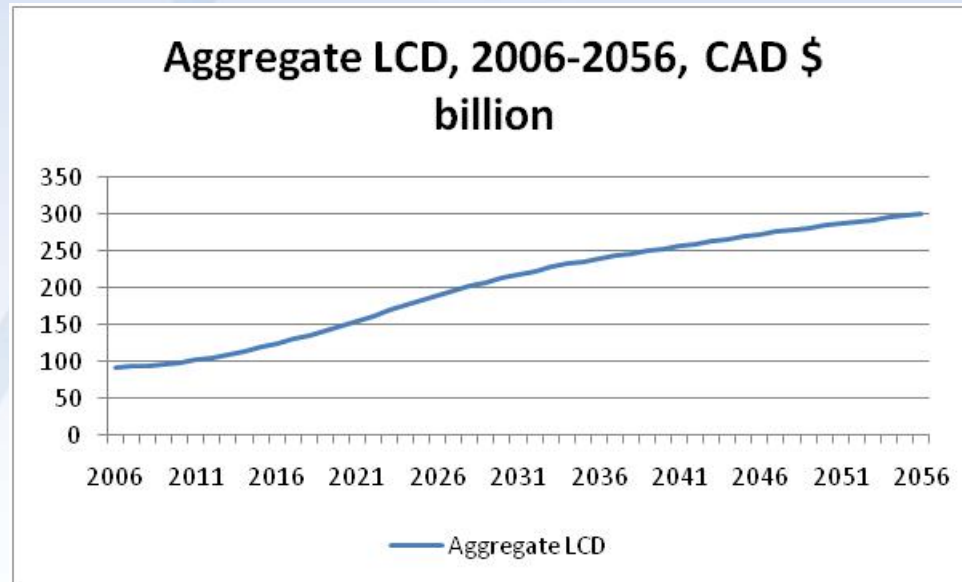
Intra-household Transfer-Education per capita, Canada 2006



Intra-household Transfer-Health per capita, Canada 2006



Lifecycle Deficit-Projection (2006-2056)



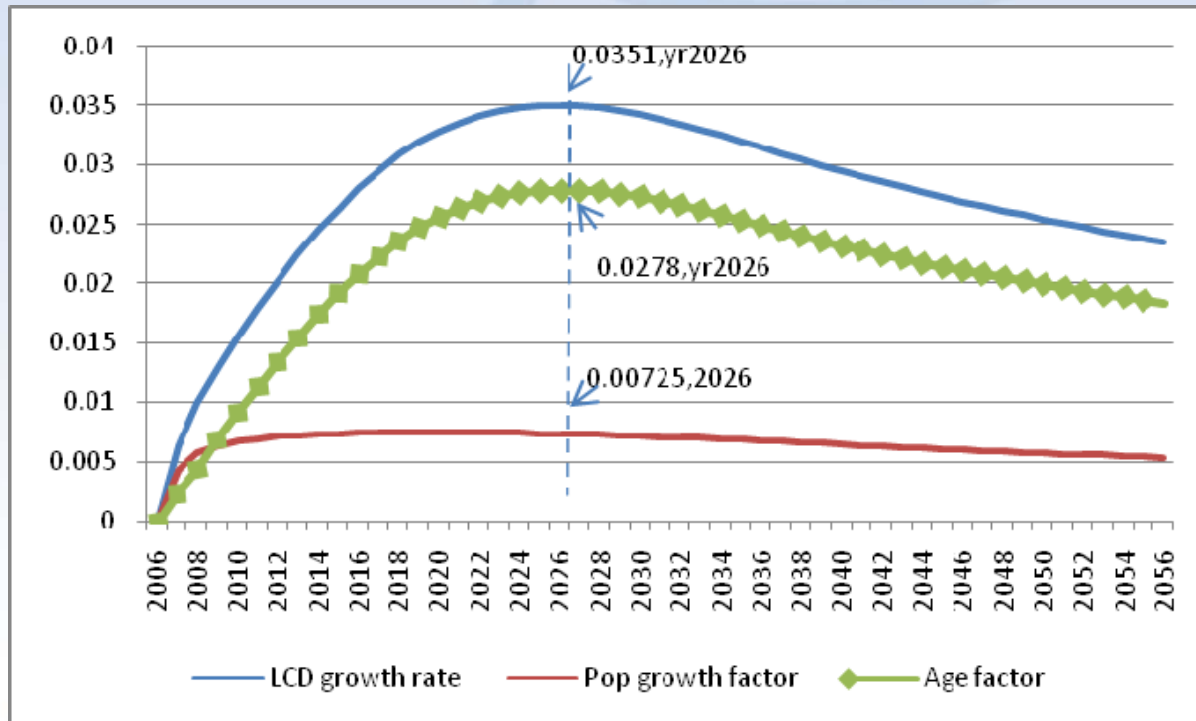
Assumptions

- Constant lifecycle pattern as 2006
- The only factor changing is population

Keys

- 2010, 100\$ billions →2056, 300\$ billions→3 times

Projection of growth rate of aggregate LCD, population, and ageing factor



Definitions

Age factor-change of age structure (ageing: more elderly, less working age population)

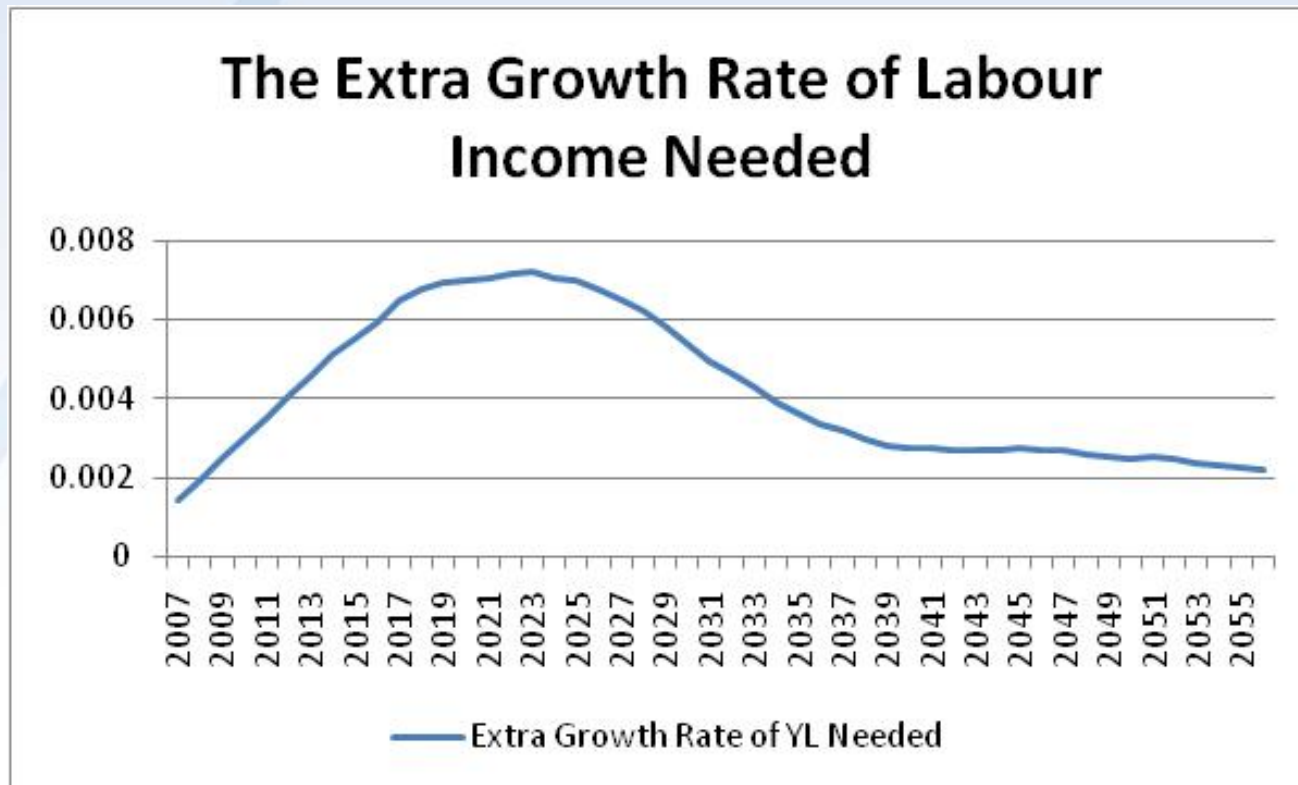
Keys

1/3 impact of LCD growth is from the growth of total population

2/3 impact of LCD growth is from the growth of age factor.

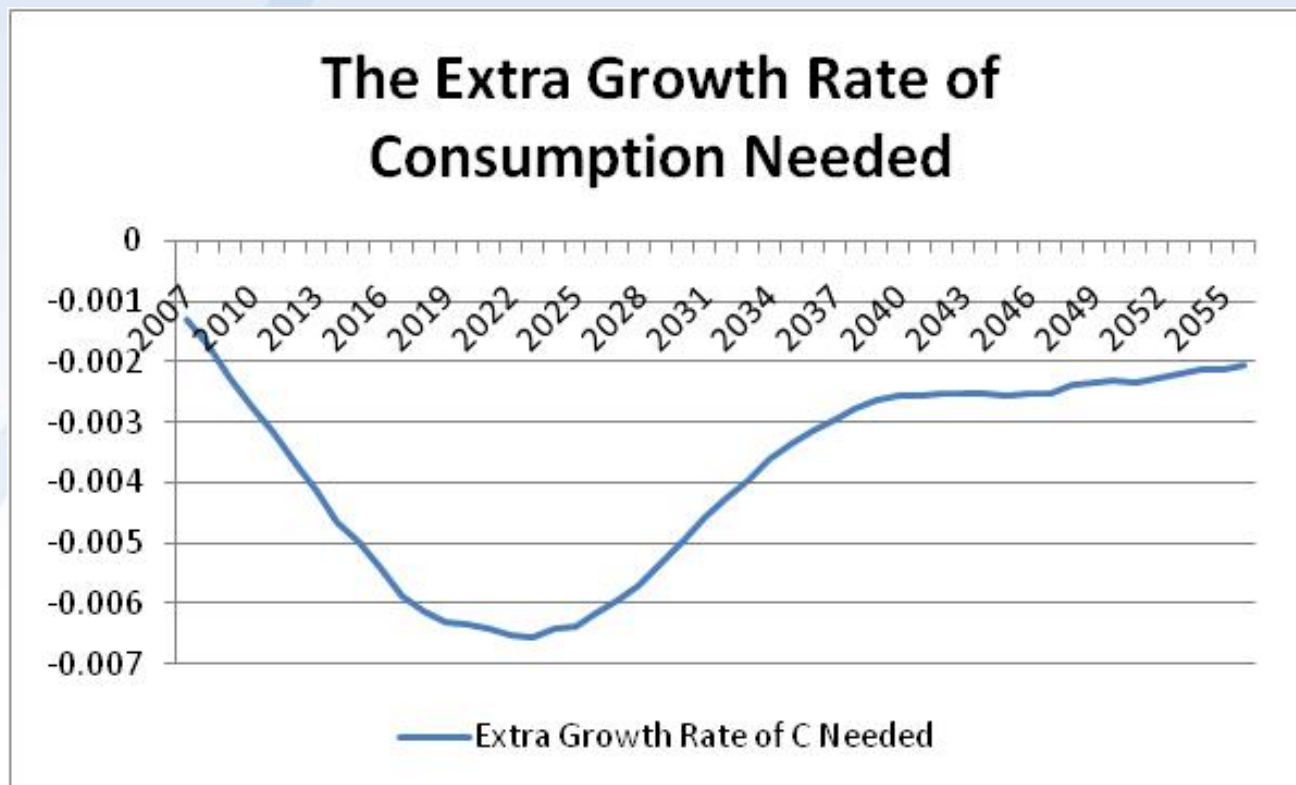
Scenario1

Growth Rate of Labour Income in Projection if Constant LCD
2006



Scenario 2

Figure: b) Growth Rate of Consumption in Projection if Constant LCD 2006



Conclusion

- Impact of age factor is significant, even no changing in the total population
- Ageing factor increases rapidly after 2008, and reaches maximum 2.78% in 2026
- Average growth rate of aggregate LCD is 2.59%
Average growth rate of age factor (2006-2026): 1.89%. → age factor captures 73%.
- To keep aggregate LCD constant
 - Scenario 1: labour income must increase from less than 0.2% in 2007 to 0.75% in 2023
 - Scenario 2: consumption must be cut at a rate from less than 0.2% in 2007 to 0.7% in 2023
- Canada: future in NTA
 - Full NTA across years → applications
 - Immigrants (new and old) versus citizen

Thank you.