

GENERATION  
**squeeze**

# POPULATION AGING, GENERATIONAL EQUITY & THE MIDDLE CLASS

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# GENERATION **Squeeze** **Suit up, Spread out, Squeeze back.**

Generation Squeeze is a national campaign to build A Canada that Works for All Generations.

The campaign is co-hosted by the Association for Generational Equity (AGE) and the Human Early Learning Partnership in the University of BC School of Population and Public Health, Vancouver, BC.

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## ABSTRACT

Canadian Premiers launched a new Task Force on Aging in 2014. The author links this governmental focus to the issue of intergenerational equity. New empirical evidence is provided for Canada about age patterns in income, cost of living, wealth, debt and government spending, examining trends since 1976. Data reveal diverging age patterns for the “middle class:” declines for younger cohorts and improvements for older Canadians. These market driven patterns have been reinforced by government policy investments. The evidence supports Canadian governments to integrate more attention to generational equity into deliberations about policy adaptations as Canada’s population grows older.

## POPULATION AGING, GENERATIONAL EQUITY AND THE MIDDLE CLASS

At the 2014 Council of the Federation, Canadian Premiers and Territorial leaders announced a new Task Force on Aging. They intend the Task Force to “raise awareness on the changing social and economic needs associated with an aging population and highlight work that provinces and territories are undertaking to address these issues”(Council of the Federation 2014). Their joint press release repeats the now common concern that Canada’s population over age 64 will rise from 15 per cent of the national population to 23 per cent over the next two decades. Since Canadian government spending increases with age, this demographic shift has substantial implications for public spending on retirement income subsidies, and especially spending on medical care (for different perspectives about the scale of the impact on public spending, see Barer et al. 1995; Evans et al. 2001; Robson 2010; Ragan 2012). In previous research (Kershaw, 2015), I estimate that Canadian governments currently combine to spend between \$33,321 and \$40,152 per citizen age 65+, mostly on medical care, the Canada/Quebec Public Pension plans, Old Age Security and other retirement income subsidies. By contrast, I estimate that annual spending per person under age 45 for grade school, postsecondary, medical care, childcare, parental leave, family tax breaks, Employment Insurance, Workers Compensation, tax breaks for housing, etc. all add up to less than \$12,000.

Canada is not alone in adapting to the implications of an aging population. An international literature examines age related trends in public spending as part of a broader conversation about intergenerational justice (eg. Bessant et al. 2011; Kotlikoff and Burns 2012; Bradshaw and Holmes 2013; Vanhuysse 2013). The broader conversation asks not only how do we pay for the aging population, but also examines if there are reasons to reallocate resources to the cohorts that follow in their footsteps. To answer these questions, the literature identifies the need for objective, empirical information about age patterns in income, costs of living, wealth, debt and public spending. I respond in this paper by providing such data for Canada to inform the new national Task Force on Aging. In doing so, I aim to eschew the politics with which the subject is often treated in the US, where partisans pit older generations against younger generations for political gain (Williamson et al. 2003). I also reject the tendency in Canadian journalism to treat the subject of intergenerational justice in inflammatory ways that are more likely to sell papers and magazines (eg. McMahan 2014), but less likely to foster meaningful dialogue about pressing matters of fairness for old and young alike.

The age analyses will inform a second political discourse that has gained momentum in recent years – one that queries how the “middle class” is doing in Canada. Federal Opposition parties, especially the Liberals (2013), claim the middle class is “squeezed.” The governing Conservatives resist the narrative that the middle class has suffered under their watch, claiming instead that it has never been more affluent (Conservative Party of Canada 2014). Corak (2014) shows that the two competing stories are both supported by data, implying the choice between them rests largely with one’s ideological predilections. The age analyses in this paper will offer an alternate understanding of the relationship between the two stories: the squeeze is real, and primarily impacting Canadians under age 45 (see also Graves 2014), while the typical Canadian age 55 and older enjoys more wealth than previous generations of retirees. It is the older age cohort’s gains over the last several decades that drive most of the good news about the affluence of today’s middle class.

I develop the paper in six sections. The first briefly examines some methodological decisions that shape the analysis. The second provides data about changes in median earnings since 1976 at the individual level. The third

examines similar trends at the household level. The fourth compares changes in earnings relative to trends in the primary cost of living – housing. The fifth examines resulting wealth and debt for different age cohorts. The sixth section summarizes social spending changes since 1976 as they unfold along age lines. I conclude by pointing to key implications for Canadian decision makers.

## METHODOLOGICAL DECISIONS

I follow Statistics Canada in organizing age groups by years 18-24 and 25-34 where possible, or under age 35 when these smaller groups are unavailable. These categories are accompanied by age groupings of 35-44; 45-54; 55-64 and 65+. I use these age breakdowns to answer two primary questions motivating the study: (i) how do the socioeconomic circumstances facing the 'typical' younger person today compare to what was encountered by today's older cohorts when they were young; and (ii) how do the socioeconomic circumstances of today's typical retiree, and typical near retiree, compare to similarly aged Canadians a generation ago.

For generational comparisons, I use the years 1976-80 as the starting point for analyses, examining them relative to data that are as contemporary as possible. This base year is determined partly by data availability because many Statistics Canada sources do not provide data earlier than 1976. However, the choice to focus around 1976 is also important analytically. The Baby Boomers (born 1946-1964) who have recently begun to retire were already in their early to mid-30s by 1976; and 1976 marks the beginning of the five year period in which the largest part of the Boomer cohort (born 1958-1962) came of age as young adults. Since 1976 represents a stronger point in the economic cycle compared to the early 1980s, I also offer secondary comparisons to the 1981-1985 time period to assist in interpretation.

I generally focus on Canadians age 25-34 and 35-44 to depict trends for "younger generations" compared to Canadians 55-64 and age 65+ for the "aging population." Income and wealth comparisons for 18-24 year olds today are challenging to interpret because of the dramatic rise in postsecondary rates for young people. Lower incomes during a period of study are not looked upon with the same concern that accompanies lower earnings following tertiary education. It is therefore more useful to analyze the 25-34 year old age cohort because this group has passed the common life course stage for a first postsecondary certificate in both the past and contemporary time periods.

Readers who are particularly interested in the 45-54 year age group will find this cohort receives less attention than others. This group often represents the youngest Boomers and oldest Gen Xers (born 1965-1979/80). The analysis shows that this group neither faced the best nor the worst of circumstances when compared over several decades. In this paper, I focus on the age groups for which socioeconomic change today compared to the past is most substantial.

I ensure that discussion of changes in earnings and income for age cohorts are considered relative to major costs like housing, and also in the context of wealth. Readers will see that inflation adjusted changes in earnings are a relatively modest part of the evolution in the middle class story, with the exception of total income for seniors. The much more analytically telling part of the comparisons is the discussion of how inflation-adjusted earnings keep pace with housing prices as the primary cost of living. The ratio between earnings and housing prices is in turn implicated in age-related changes in net wealth and total debt. I focus on housing as the primary cost because recent studies show that changes in the price of housing account for 60 per cent of the changes in median wealth over the last 35 years (Ferley and Janzen 2014).



To complement the focus on market driven trends, I also examine how social spending and public debt evolved along age lines since 1976. In particular, I look at changes in public spending as a share of gross domestic product (GDP) as they relate to major retirement income subsidies and medical care for the aging population, along with expenditures on cash transfers, time subsidies and service investments for the generations raising children. This focus intends for the age-related evolution of socioeconomic circumstances in the marketplace to be evaluated in light of the coinciding policy adaptations prioritized to date by Canadians.

Finally, throughout the paper I rely primarily on median indicators of earnings, income, etc. for the different age groups. This is admittedly a blunt indicator for the “middle class” for which Bigot et al. (2011) observe there are over 150 definitions. Some focus on economic definitions, others sociological and still others psychological. The latter poses significant problems, because polling data in Canada show that upwards of 90 per cent of Canadians self identify as middle class (EnviroNics Institute 2012, p. 14). In this paper, the goal is simply to describe what is happening for the ‘typical’ Canadian of a given age, and how that compares to a ‘typical’ person of the same age a generation ago. Measures for the 50th percentile in different age cohorts at different time periods are excellent for this purpose and straightforward to interpret. One implication, however, is that this paper does not report on inequality within age cohorts; but it does provide new resources with which future research can examine how power dynamics that relate to age intersect with other dynamics that influence inequality, including class, sex, race, sexuality, (dis)ability, colonialism, etc.

## AGE ANALYSIS OF INDIVIDUAL INCOME

In this section, I examine changes in median individual income since 1976-1980. Table 1 shows the working age population under 45 earned seven to 12 per cent less in 2010 than did the same age group several decades ago, while those 45 to 64 have total incomes that are comparable to those of the same age in the late 1970s. By contrast, today’s population age 65+ enjoys a \$10,000 increase in total income after inflation compared to the same age group three decades earlier. Seniors, however, still report lower incomes on average than other age cohorts.

The rise in incomes for those 65+ comes despite the fact that median earnings are down nearly \$12,000 for seniors today compared to the past (Statistics Canada 2014a). This signals that employment is a markedly smaller source of income for the typical Canadian over age 64 than it used to be. Decreased reliance on earnings reflects that seniors now benefit from substantial increases in employer-paid pension income, and income from government transfers, especially the Canada/Quebec Public Pension plans.

In order to control for the influence of variation in the full-time employment rate during the different time periods, Table 1 also provides data about median earnings for those who work full-time, full-year in the working age population. These data show the typical 25-34 year old earns \$4,200 less today for full-time work than three decades earlier. The changes in full-time earnings are less substantial for the older parts of the working age population: +/- \$1,800 compared to full-time workers of the same age between 1976-1980. These findings are consistent with Gill et al. (2014), who concluded that Canadians age 50-54 earn 64 per cent more today than do 25-29 year olds. In the mid-80s, the age gap in earnings was only 47 per cent.

The more substantial decline in full-time earnings for the age group under 35 has occurred despite the fact they are more than twice as likely to have postsecondary education compared to someone of the same age in 1976. Sixty-seven per cent of 25-34 year olds had postsecondary credentials in 2006 compared to 30 per cent

three decades earlier.<sup>1</sup> Because more young people pursue postsecondary education today, more also start with student debt than in the past. Annual undergraduate tuition rates rose from \$2,174 in 1976 to \$5,313 in 2011 after adjusting for inflation,<sup>2</sup> yielding higher average levels of student debt. For example, average four year Canada Student loans increased from \$15,850 in 1976 to \$22,616 in 2010/11.<sup>3</sup>

Table 1: Median Individual Total Income & Earnings, by Age: 1976-2010

Age Cohort	Median Total Income				Median Full-Time Full-Year Earnings					
	1976-1980	2006-2010	2006/10-1976/80	% Change	1976-1980	1981-1985	1996-2000	2006-2010	2006/10-1976/80	% Change
25-34	\$38,940	\$34,300	-\$4,640	-12%	\$46,680	\$42,780	\$39,620	\$42,480	-\$4,200	-9%
35-44	\$43,840	\$40,660	-\$3,180	-7%	\$51,700	\$49,220	\$47,020	\$50,120	-\$1,580	-3%
45-54	\$41,840	\$41,040	-\$800	-2%	\$49,020	\$47,180	\$48,640	\$50,800	\$1,780	4%
55-64	\$31,920	\$32,700	\$780	2%	\$45,220	\$44,040	\$42,900	\$44,220	-\$1,000	-2%
65+	\$13,440	\$23,440	\$10,000	74%						

**Sources:**

Median Total Income: Statistics Canada, CANSIM Table 202-0407. "Income of individuals, by sex, age group and income source, 2011 constant dollars"; Median Full-Time Full-Year Income: Statistics Canada, Income Statistics Division, Survey of Labour and Income Dynamics. Custom table R512819, 2010 constant dollars.

Although today's 25-34 year olds earn less than did the same age group in 1976-1980, and about the same as those who began their careers in the early 1980s, Table 1 shows they are doing seven per cent better than did 25-34 year olds in the late 1990s. In the last four decades, the late 1990s generated the weakest earnings for full-time work for all parts of the working age population, with the exception of 45-54 year olds.

There is an important gendered reality underpinning these trends. It is primarily men under 35 who experience reductions in median earnings compared to the past: their incomes are down 10 per cent. Males age 35-44 report relatively stable earnings for full-time work, down 1 per cent compared to 1976-1980, while older men report slight gains of two to three per cent. By contrast, all age groups of women working full-time report substantial percentage gains compared to women of the same age a generation ago: up 6 per cent for those 25-34; up 25 per cent for 35-44 year olds; up 35 per cent for 45-54 year olds; and up 17 per cent for 55+. However, median earnings for all age groups of women have not yet reached that of their male counterparts.

## AGE ANALYSIS OF HOUSEHOLD EARNINGS

Understanding the rise in median full-time earnings for women and the deterioration for young men is helpful when interpreting how increases in female labour force participation have influenced median household incomes since 1976. For instance, women age 25-44 increased their participation from 54 per cent in 1976 to 83 per cent in 2013 – a large increase of 29 percentage points – while men's participation remained relatively stable above 92 per cent (Statistics Canada 2014b). This dramatic shift in the allocation of young women's time coincides with just a \$5,900 (nine per cent) increase in total income for households of two or more adults in the 25-34 age group; and \$9,500 (12 per cent) for households in the 35-44 age group.

The devotion of more female time to the labour market has paid larger dividends for households over age 44. Women age 45-64 years increased their labour force participation from 29 to 49 per cent over the same period – a substantial 20 percentage point increase, but still one-third smaller than for younger women. Men age 45-64 have reduced slightly their participation in the labour market from 66 to 60 per cent. These labour force patterns

among the older part of the working age cohort coincide with total income increases of \$11,660 (14 per cent) and \$14,420 (21 per cent) for households headed by 45-54 and 55-64 year olds respectively.

The most dramatic increase in total household income has occurred for those age 65 and older. Their incomes are up \$17,380 compared to 1976. In this age group, it remains the case that very few people work. The labour force participation rate for women is 9 per cent, up from 4 per cent a generation ago where it stayed constant until the year 2000. The rate for men is now 18 per cent, up slightly from 15 per cent in 1976. Public policy investments in C/QPP and Old Age Security have ensured that median retiree households have enjoyed a linear improvement in total income regardless of downturns in the economic cycles since 1976. For instance, labour force participation for men age 65+ fell as low as 10 per cent during this period without median household income decreasing.

Table 2: Median Household Income, by Age: 1976-2011

Median Household Total Income						
Age Cohort	1976-1980	1981-1985	1996-2000	2007-2011	2007/11-1976/80	% Change
25-34	\$68,460	\$64,740	\$63,340	\$74,360	\$5,900	9%
35-44	\$76,180	\$75,120	\$75,160	\$85,680	\$9,500	12%
45-54	\$82,220	\$80,960	\$84,680	\$93,880	\$11,660	14%
55-64	\$67,720	\$66,940	\$66,860	\$82,140	\$14,420	21%
65+	\$34,220	\$37,580	\$43,860	\$51,600	\$17,380	51%

**Source:** Statistics Canada. CANSIM Table 202-0404. "Total income, by economic family type, age group and income source, 2011 constant dollars, annual." Household defined as "economic families, two persons or more."

While the re-allocation of young women's time to the labour force did not generate as impressive gains for younger households as it has done for older households, Table 2 shows today's younger group does enjoy better income starting points than other recent cohorts. Those starting out in the early 1980s and especially the late 1990s started with lower household incomes than do today's young households. Indeed, Table 2 shows all parts of the working age population report gains in median household income since 2000.

## YOUNG PEOPLE'S INCOME RELATIVE TO THE MAJOR COST OF LIVING: HOUSING

The re-allocation of female time to the labour market over the last several decades was a response to growing commitments to gender equality, and to the stagnation in men's incomes. While this shift may be boosting household incomes by 9 to 12 per cent for people under 45, this relatively minor boost by comparison with other age groups has not kept pace with the primary cost of living: housing. Canadian Real Estate Association data show that the average cost of housing in 1976 was \$202,794 (adjusted to 2013 currency). Prices dipped to \$195,219 by 1980, and then rose to an average of \$211,092 in 2000, when they then began to take off. Average housing cost \$311,738 by 2006; \$357,380 by 2010; and \$382,513 as of 2013.

I adapt work by Robert Frank (2011a) to interpret the ratio between average housing prices and median full-time earnings. He observes how socioeconomic changes alter subjective evaluations of what is good enough in the housing market and the associated cost of achieving non-luxury goals. This is important for monitoring average housing values, because one might think that a rise in prices primarily reflects expectations that houses should be bigger, grander etc. While some will point to this factor, it must be balanced by recognition of a coinciding trend toward more condo and apartment living in urban areas where people have no or little yard compared to the



past. Unfortunately, data about housing and lot size are limited in Canada, and there are no longitudinal studies of which I am aware that systematically disaggregate housing size data by age cohort.<sup>4</sup>

Suppose, however, one concedes that the rise in housing prices was driven primarily by increased expectations across age cohorts. Frank's (2011b) point is that this will still leave younger generations in a bind when it comes to pursuing a fundamental, non-luxury goal like sending one's children to a good school.

*School quality is an inherently relative concept... and good schools tend to be in more expensive neighborhoods... This link implies that the median family must outbid 50 percent of all parents to avoid sending its children to a below-average school. Families that failed to rent or buy a house near the median of the local price range would have to send their children to below-average schools. The only alternative to seeing their children fall behind is to keep pace with what others are spending.*

While the association between housing location and school success may be moderated by policy factors more in Canada than the US, it is not unreasonable for parents to factor school quality into their decisions about where to live. Guided by Frank's insight, I therefore examine the number of years of full-time work required now and in the past to save a 20 per cent down payment on an average home, thereby increasing the likelihood that one's children can attend a school of average or better quality. My calculations are based on research by Rea et al. (2008) who show that the majority of middle quintile earners in Canada spend on average 15 per cent of their pre-tax income on shelter costs. Following Statistics Canada, they calculate that citizens reach the upper limits of housing affordability when they spend 30 per cent of their pre-tax income on shelter. Given these findings, I assume that the typical person trying to buy into the housing market can save 15 per cent of their income for a down payment on top of whatever rent or other shelter payments they make.

At this rate of saving,<sup>5</sup> a 25-34 year old making median full-time earnings between 1976-1980 had to work 5.3 years to save a 20 per cent down payment on an average home. By 2006-2010, it took the same aged person 10.1 years. This means that socioeconomic conditions for younger Canadians deteriorated over the 35 year period to a degree that requires five years of extra work to pursue home ownership. For many, these additional years of earning come on top of several more years of postsecondary education.

Saving a down payment is one factor in home ownership. Managing mortgage payments is another. To compare how this pressure has changed, we not only need to consider earnings relative to housing costs, but also interest rates. I worked with the mortgage calculator used by Vancity Credit Union to calculate total monthly payments (capital plus interest) for 25 year mortgages on average home prices less a 20 per cent down payment. Again, I compare the periods 1976-1980 and 2006-2010.

Data provided by the Canadian Mortgage and Housing Corporation<sup>6</sup> show that average interest rates fluctuated from a low of 10.32 per cent to a high of 13.26 per cent between 1976 and 1980, more than double the low of 4.8 per cent and the high of 6.81 per cent during the period ending in 2010. Average monthly mortgage payments in the earlier period equaled \$1,479 (of which \$1,408 went to interest), compared to \$1,615 (of which \$1,244 went to interest) in 2006-2010. In addition to working five additional years to save a down payment, the typical 25-34 year old in the contemporary context must also cover mortgage payments that are 9 per cent higher than in 1976-1980, and do so with full-time earnings that are 9 per cent lower. An extra 13 hours of labour a month are required to cover this average mortgage, or an extra month of work per year, compared to a generation ago. The financial

and time pressure imposed by mortgage payments will only rise for the younger cohort if/when interest rates lift from the historical low where they have remained since the 2008 recession.

Given the change in the ratio of housing costs and young people's earnings, it is not surprising that home ownership is being pushed further out of reach for the 20-34 age cohort. Their rate of home ownership dropped from 42 per cent in 1976 to 32 per cent by 2005. Lower interest rates since then have helped to bump the home ownership rate back to 37 per cent as of 2012. Home ownership is also down for 35-44 year olds, falling from 73 per cent in 1976 to 65 per cent. By contrast, rates of home ownership are up slightly for the 55-64 age cohort, rising from 70 to 73 percent. Data also show that Canadians age 65+ are continuing to stay in their owner-occupied homes more than they did a generation ago. The rate of home ownership for seniors was 63 per cent in 1976. It is 71 per cent as of 2012.<sup>7</sup>

## UNEARNED WEALTH AND DEBT FROM HOUSING

The high housing prices that require younger Canadians to work five years more than in 1976-1980 to save a down payment, and an extra month per year to pay the mortgage, are simultaneously powering the wealth accumulation of the their parents' and grandparents' generations. Table 3 uses Survey of Consumer Finance (1977) and Survey of Financial Security (2012) data to analyze how net wealth in housing and total mortgage debt has changed over time for the average person in different age groups. It shows that the rise in housing prices since 1977 has made the mean household headed by someone age 65+ richer by \$185,202 compared to the same age person in 1977 when measuring the market value of their home minus the outstanding mortgage debt. Achieving this substantial gain required the typical household of retirees to take on slightly under \$12,000 in extra mortgage debt. This works out to six cents of extra debt for every dollar in additional wealth gained.

A similar pattern is evident for the cohort age 55 to 64. The mean household in this group reports net wealth in housing that is nearly \$165,000 higher than for the same aged household in 1977. For every extra dollar of wealth produced by the housing market for the typical home headed by a 55 to 64 year old, the household accumulated 25 cents in additional debt.

Table 3: Mean Change in Net Housing Wealth and Debt, by Age: 1977-2012

	1977 (all \$ adjusted to 2012)		2012		2012 minus 1977		
	Net Wealth: Market Value Minus Mortgage	Mortgage Debt	Net Wealth: Market Value Minus Mortgage	Mortgage Debt	Change in Net Wealth	Change in Mortgage Debt	Change in Debt for extra \$1 of Net Wealth
20-34	\$76,996	\$72,519	\$143,674	\$162,826	\$66,678	\$90,308	\$1.35
35-44	\$123,372	\$48,463	\$221,855	\$164,545	\$98,483	\$116,083	\$1.18
45-54	\$148,604	\$27,933	\$297,292	\$95,808	\$148,688	\$67,875	\$0.46
55-64	\$143,402	\$11,923	\$308,087	\$53,413	\$164,685	\$41,490	\$0.25
65+	\$124,703	\$3,027	\$309,905	\$14,795	\$185,202	\$11,768	\$0.06

Sources: Statistics Canada, Survey of Consumer Finance, 1977; Survey of Financial Security, 2012.

The story is very different for the kids and grandchildren of these older cohorts. The typical owner-occupied home for those aged 35-44 reports an additional \$98,483 in net housing wealth compared to 1977. But to gain this extra wealth, the contemporary household had to take on an additional \$116,083 in mortgage debt – or an

extra \$1.18 in debt for every dollar of net wealth gained. The pattern is worse for those aged 20 to 35. The typical home owner reports an extra \$66,678 in housing wealth, and a mean mortgage that is over \$90,000 higher than in 1977 – an extra \$1.35 in debt for every additional dollar in net worth.

My analysis of age related changes in average wealth since 1977 are consistent with recent studies published by the BMO group and RBC. Guatieri (2014) reports that the typical senior now enjoys nearly nine times more wealth than the typical 25-34 year old. In the early 1980s, the wealth gap was only four times. Ferly and Janzen (2014) conclude that the doubling in housing prices over the last decades has generated much more wealth for Canadians age 55+, while leaving those age 35-44 especially burdened with debt, and most vulnerable to interest rate hikes or drops in housing prices. Fry et al. (2011) find a similar pattern in the United States.

Generational trends in wealth and debt accumulation from the housing market are particularly troublesome from the standpoint of fairness because the wealth gains reported by Canadians 55+ do not primarily represent smart decisions, hard work or other factors that would suggest this wealth has been 'earned'. There is no clear evidence that these generations purchased and consumed housing resources more cleverly and productively than did their parents' generations. The accumulation of housing wealth by today's aging population largely reflects good luck in the lottery of housing price trends.

Similarly, the higher mortgage debts reported by the average young person today do not reflect a lesser work ethic, or poorer judgment with respect to the housing market. Higher mortgages reflect the reality of getting into the housing market when the timing is not nearly as fortuitous as it was in 1977. While some may argue that the dramatic increase in housing costs should give young people pause before committing to home ownership, home ownership has been a strong Canadian norm for many decades now. It is understandable that many younger people believe this goal is worthy of pursuit – at least to the same degree it was prioritized by their parents' generation.

## POLICY ADAPTATIONS

The socioeconomic circumstances of different age groups are shaped not only by how markets influence the demand for labour, wages, cost of housing, etc., but also by public policy responses to market and demographic trends. The policy analysis in this section considers changes in government spending as it relates to age, along with changes to government revenue between 1976 and 2011 (the latest year for which comparable data are available). In 1976, 8.7 per cent of Canada's population was age 65+, and 72.2 per cent was under age 45. By 2011, 14.8 per cent of Canadians were 65+, with 56.2 per cent under 45.

In anticipation of the medical care and retirement income needs of an aging population, Table 4 reveals that Canadian governments did not increase general revenue. Total general revenue collected by federal, provincial and local governments represented approximately 37 per cent of GDP in both 1976 and 2011 (Statistics Canada 2014c). The 0.36 percentage point reduction in 2011 amounts to a \$6.3 billion decline in general revenue that year. Medical care and Old Age Security (OAS), including the Guaranteed Income Supplement (GIS) for seniors, are paid from general revenue.

While federal and provincial governments did not combine to increase total general revenue as a share of GDP, they did substantially increase medical care spending on the population age 65+ from 1.72 per cent of GDP to 3.61 per cent. This increase equals \$32.5 billion in 2011 dollars. I use Canadian Institute of Health Information

(2012) data to make this estimate, drawing on its historical reporting of total health spending by governments (Table A.2.1), and analysis of per capita health spending by age group (Table E.1.13). Since the latter only dates back to 1998, I calculate the average annual yearly change in per capita spending over this time period, and attribute the average yearly change for each age group back to 1976.

The Office of the Chief Actuary (2011, Table 9; 2014, Table 10) provides longitudinal data about the proportion of GDP allocated to the Old Age Security (OAS) system. In 1976, the Canadian government allocated 2.18 per cent of GDP to OAS, including the Guaranteed Income Supplement (GIS). By 2011, OAS spending was 2.20 per cent of GDP, an increase of just \$0.3 billion in 2011 currency.

Table 4: Change in Revenue and Spending, by Age: 1976 and 2011

	1976	2011		
<b>% POPULATION</b>				
65+	8.7%	14.8%		
45-64	19.1%	29.1%		
<45	72.2%	56.2%		
<b>REVENUE</b>				
	<b>%GDP</b>	<b>%GDP</b>	<b>Difference %GDP</b>	<b>2011 \$ Value (millions)</b>
Total Gov't General Revenue	37.51%	37.15%	-0.36%	-\$6,266
CPP/QPP Revenue	1.64%	3.23%	1.59%	\$27,390
<b>SPENDING</b>				
Medical Care to 65+	1.72%	3.61%	1.89%	\$32,476
OAS	2.18%	2.20%	0.02%	\$343
CPP/QPP	1.10%	2.57%	1.47%	\$25,254
<b>Total</b>			<b>3.37%</b>	<b>\$58,073</b>
Child care services	0.05%	0.22%	0.17%	\$2,982
Parental leave	0.07%	0.18%	0.11%	\$1,872
Family income support	0.98%	0.72%	-0.26%	-\$4,472
Elementary & Secondary	4.04%	2.94%	-1.10%	-\$18,985
Postsecondary	2.14%	2.28%	0.14%	\$2,449
Medical care spending <45	2.51%	2.55%	0.04%	\$680
<b>Total</b>			<b>-0.90%</b>	<b>-\$15,475</b>

Author calculations, based on sources cited in the text.

As OAS spending held fast, spending on the Canada and Quebec Public Pensions grew from 1.10 per cent of GDP to 2.57 per cent (Statistics Canada 2014c) – an increase of \$25.3 billion in 2011. Whereas governments did not grow revenue to pay for medical care spending increases for those age 65+, they did plan for C/QPP increases. Revenue for these programs rose by 1.59 per cent of GDP since 1976, or \$27.4 billion in 2011 dollars (Statistics Canada 2014c). Legislation governing the Canada and Quebec Public Pensions require that their revenues be treated apart from other taxation in recognition that the C/QPP are unique policy measures for which citizens partially prepay for later use.

In combination, government efforts to adapt to the health and fiscal pressures of an aging population add to approximately 3.4 per cent of GDP – \$58 billion – in annual spending compared to 1976. This spending consumes more than twice the additional revenue collected by governments in 2011 compared to 1976; and the only revenue increase occurred in the C/QPP programs, which cannot be spent as general revenue.

The analysis in Table 4 does not imply anything about the adequacy of the policy adaptation for the older demographic. For example, since the proportion of Canada's population over age 65 grew from 8.7 per cent in 1976 to 14.8 per cent in 2011, there occurred a significant per capita reduction in OAS spending because it remained a relatively constant share of GDP over the period. Further research is required to evaluate whether this per capita OAS reduction is appropriate to contemporary circumstances in which there have been increases to aggregate C/QPP spending, improvements in household earnings and wealth for the older demographic, along with substantial reductions to low-income rates for seniors. The latter have fallen from 29 per cent in 1976 to six per cent in 2011, which means that seniors now enjoy the lowest rates of low-income status of any age group in the country (Statistics Canada 2014h).

Rather than address the adequacy of policy adaptations for Canadians age 65+, Table 4 illuminates the scale of spending increases for the aging population relative to revenue changes, and relative to changes in spending for programs on which younger Canadians disproportionately rely. For the latter, I examine the aggregate change in spending on childcare services, parental leave, cash supports for families with children, education, and medical care for those under age 45. These represent major policy mechanisms by which governments can adapt costs and services for younger generations, although it is not an exhaustive list.

Utilizing early childhood education and care data from Friendly et al. (2013), I calculate that total spending on this policy envelope is 0.22 per cent of GDP in 2011 for children age zero to 12, excluding kindergarten and tax expenditures. Since comprehensive data on childcare spending does not exist for 1976, I estimate spending based on the Province of British Columbia (1977, p. D 41), and then adjust for the portion of the national population represented by BC in 1976 to generate a national estimate. Given these estimates, spending on early childhood education and care increased approximately 0.17 per cent of GDP since 1976, or \$2.98 billion, mostly in Quebec.

Maternity, parental and adoption leave spending increased 0.11 per cent of GDP – \$1.9 billion – over the same period, driven largely by the near doubling of the benefit's duration around the year 2000 (Canadian Tax Foundation 1979, Table 7.9; Treff and Ort 2012, Table 8.2). This increase, however, was accompanied by an even greater decrease in other cash transfers. Canada still had the Family Allowance in 1976 that allocated a universal payment for every child into their mid-teens, which cost governments just under 1 per cent of GDP (Canadian Tax Foundation 1979, Table 7.4). The family allowance was eventually replaced by income-targeted transfers, which today are represented by the Canada Child Tax Benefit (CCTB) and the National Child Benefit Supplement (NCBS). Upon the election of Mr. Harper's Conservatives, the Government of Canada re-introduced a universal benefit for children under age six: the Universal Child Care Benefit (UCCB). Total spending on these three programs adds to 0.72 per cent of GDP in 2011 (Government of Canada 2012, Table 4.2.6), or over \$4 billion less a year than the Family Allowance program cost in 1976 when measured as a share of GDP.

Finally, total operating spending for elementary and secondary education is down more than one full point of GDP since 1976 (Statistics Canada 2014f). This amounts to a nearly \$19 billion reduction in 2011 currency. Provincial spending on postsecondary is up slightly, by approximately \$2.5 billion (Statistics Canada 2014e). Spending on medical care for Canadians under age 45 has also been relatively flat, up \$0.7 billion in 2011 dollars.



When viewed together, spending for this selection of key programs on which younger generations rely disproportionately dropped by nearly one per cent of GDP, or \$15.5 billion in 2011 currency. From a strictly demographic standpoint, one may have expected a reduction because the proportion of the population under age 45 also declined. However, this assumption merits some qualification. For instance, the proportion of the population under age 45 may be smaller than in the past; but the proportion of young people getting postsecondary credentials is twice as high as in 1976. Similarly, the proportion of women under 45 in the labour market is nearly 30 percentage points higher than in 1976, which substantially increases demand for child care services. These noteworthy demographic shifts did not drive total dollar spending increases in postsecondary or childcare to a degree that approximates the total dollar increase in medical care spending for the population age 65+. Thus, we cannot explain the growth in medical care spending for the aging population simply as a policy outcome that reflects only demographic shifts. It also reflects government priorities.

When evaluating who and what should become priorities for public spending, the age variation in socioeconomic trends merits attention. Recognizing that it is the under age 45 cohorts (in their prime child bearing years) who have suffered the steepest declines in individual median earnings, and that these income declines are exacerbated by steep increases in the price of housing, there is reason to question the degree to which Canadian governments have prioritized adapting public spending as urgently for younger generations as they do for older age cohorts. Indeed, one can ask whether governments found an extra \$32.5 billion to spend on medical care for those age 65+ without collecting any new revenue, because governments simultaneously chose not to invest in building a population-level child care system across the country (outside of Quebec); or chose not to maintain postsecondary tuition at their 1976 levels?

The risk that Canadian provincial and federal governments have not prioritized adapting for younger generations with the same urgency that they adapt for the aging population is made more evident still by the fact that the government debt/GDP ratio has grown over the period. In 1976, young adults inherited a consolidated federal, provincial and local government debt/GDP ratio of 26 per cent. By 2008 (the last year for which consolidated data are available), young adults inherited a debt/GDP ratio that was 46 per cent (Statistics Canada 2014g; Statistics Canada 2014d), even though Canada's economy more than doubled in size over the same period after adjusting for inflation. Since the recession of 2008, provincial and federal governments routinely incurred deficits to re-stoke economic growth, which means the consolidated debt/GDP ratio is likely higher than it was six years ago. It is therefore safe to conclude that today's younger adults inherit government debts that are nearly twice as large as did the same aged Canadians in 1976. This large increase in debt/GDP ratio coincides with substantial increases to medical care spending for those age 65+ without governments making corresponding increases to general revenue to pay for the additional spending.

The larger public fiscal debts being left to younger Canadians are exacerbated by the environmental debts that they also inherit today. In 1976, the International Energy Association (2014) reports that Canadians ranked among the very worst per capita polluters of carbon dioxide on the planet, at 16.73 tonnes per person. Although we have since learned far more about the risks of climate change, Canadian practices have not shifted. By the year 2008, we were still polluting over 16 tonnes per person, and per capita emissions only dipped to 15.37 tonnes per capita following the recession – a rate that leaves us among the top per person polluters on the planet (ibid.). Similarly, Vanhulle (2013, p. 14) finds that Canada is among the worst five of 29 OECD countries for its per capita ecological footprint in his comparative analysis of intergenerational justice.

The failure of the Canadian population and governments to reduce our per capita environmental footprints mean that younger generations today do not have the same opportunities to deal with larger government fiscal debts and stagnant wages as did their parents' and grandparents' generations, because they cannot rely on status quo approaches to economic growth without taking on far more immediate risks of environmental degradation. In other words, today's younger generations must deal with larger government debts on salaries that are lower, while paying housing prices that are higher, and simultaneously adapting to new environmental realities. The latter will likely require higher energy costs as we move to sustainable sources of power, as well as higher remediation costs in response to melting polar ice, etc.

## DISCUSSION

There is no uniform "squeeze" on the middle class as some federal opposition parties suggest, nor a uniform gain as urged by the incumbent government. There are two divergent trends occurring at the middle of the class spectrum in Canada, trends that we discern only when we disaggregate the data by age.

The first is socioeconomic deterioration for Canadian adults in their mid-40s and younger. Median full-time earnings for this demographic have declined even though they are more likely to have postsecondary than the same age group in 1976. After devoting more years to school, the typical young person must work five years more to save a down payment on an average home, because of the dramatic rise in housing prices across the country. Even at historically low interest rates, they have to labour a month more each year to pay the annual mortgage than did the same age person in 1976-1980. High home prices further weigh down today's younger cohorts with particularly heavy debt loads that make them vulnerable to even modest increases in interest rates or modest decreases in housing prices.

The same housing prices that squeeze younger generations for time and money are powering wealth accumulation for those aged 55 and older. The net wealth in owner-occupied housing for the typical household in this demographic is between \$165,000 and \$185,000 higher than it was for the same age group in 1977. This additional wealth was accrued while taking on relatively little extra debt. Added wealth for the demographic age 55 and older comes on top of improvements to median total household income that are \$14,000 to \$17,000 higher than in 1976-1980, after adjusting for inflation. These well out pace annual household income increases for the younger cohorts, even though the latter rely on larger increases in female labour force participation to generate household income.

The diverging age patterns in socioeconomic trends generated by the marketplace are being reinforced, not mitigated, by public policy decisions. Canadian governments have prioritized adapting to the health and retirement income needs of the aging population by adding \$58 billion in annual spending compared to 1976 when measured as share of GDP. There has been no corresponding increase in government revenue to pay for the additional spending outside of the Canada and Quebec Public Pension plans. These policy investments coincide with the population over 65 enjoying the largest income and wealth gains since 1976, both in numerical and percentage terms, and for both the household and individual level. Income gains have arisen for this demographic even though their earnings from labour market participation are down considerably compared to the past, in part because earnings have been replaced by public policy investments like the C/QPP. This pattern signals the power of public policy decisions to substantially improve the living standard for the majority within generational cohorts.

By contrast, governments have not shown a similar intent to adapt policy for younger generations. Combined spending on parental time, household income and community services like childcare and medical care has remained flat over the same period, while education spending has dropped. What has increased markedly is the government debt/GDP level that young people inherit today compared to the same age group in 1976, along with risks associated with climate change.

The seeming imbalance in policy adaptation for older and younger Canadians is a significant issue for intergenerational fairness – one that must be considered by the Premiers' New Task Force on Aging, and by governments more generally. At the very least, age analyses of what is happening to the middle of the income and wealth distribution in Canada give serious reason to resist reallocating from young to old to pay for the aging population. There is also reason to think twice about deficit financing to cover these expenses, because older cohorts already leave larger fiscal and environmental debts than they inherited.

These observations are particularly relevant to health care in Canada. While annual spending on medical care and the Canada/Quebec Pension plans have both increased by tens of billions of dollars, governments followed different strategies to finance these investments. In particular, Canadians do not prepay for medical care in the way we do for C/QPP. When paying for medical care, our tax rates over the last two decades reflect what is possible for governments to collect when a relatively small cohort of seniors is supported by a larger working age population. This has generated savings for those who paid taxes at these favourable rates while in their primary earning years. Multiple studies now question whether tax rates can be sustained at current levels as the population over age 65 grows relative to the working age population (Robson 2010; Ragan 2012). To the extent this is the case, younger generations may wonder whether their parents' or grandparents' generations are paying the full share of the medical care they will consume. This theme will be important for the new Task Force on Aging to examine.

More broadly, Canadians must acknowledge that we risk fostering intergenerational inequity if our governments continue to show less urgency in responding to challenges facing younger generations than we do in responding to challenges facing older Canadians, which this study suggests has occurred since 1976. Presently, the national preoccupation with the aging population, as revealed by the Premiers' announcement of the new Task Force, risks crowding out both the space for public dialogue about the needs of younger Canada, and fiscal capacity to adapt for younger Canada. This is not to imply that older cohorts do not face significant pressures that come with managing the health and financial realities of longer retirements that result from improvements in life expectancy. It is to suggest, however, that there is no obvious reason to believe that challenges facing older cohorts today are intrinsically more deserving of government attention than are the pressures facing younger generations who are squeezed by lower incomes, higher costs, less time and a deteriorating environment. A Canada committed to working for all generations would pursue adjusting simultaneously for older and younger alike in proportion to the circumstances they face contemporarily as well as relative to the advantages and disadvantages that they inherited.

## ENDNOTES

1. Author's calculations based on data from two Statistics Canada Tables. "Highest Certificate, Diploma or Degree (14), Age Groups (10A) and Sex (3) for the Population 15 Years and Over of Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2006 Census - 20% Sample Data." And "Population 15 years and over, not attending school full-time, by age groups and sex, showing level of schooling, for Canada and Provinces, 1976." Tables provided by Stewart.Deyell@statcan.gc.ca on September 7, 2012.
2. Table 8E.1a: "Weighted average tuition fees for full-time Canadian Undergraduate students by province and Canada total, in current dollars." Data from the Tuition and Living Accommodation Costs for Full-time Students at Canadian Degree-granting Institutions (TLAC) Survey. Table provided by Derek.Adams@statcan.gc.ca September 12, 2012.
3. Author's calculations based on data from "Amount Disbursed for Full-Time Canada Student Loans by Loan Year." Table provided by alex.randall@hrsdc-rhdcc.gc.ca August 13, 2012.
4. One Canada Mortgage and Housing Corporation (2002) publication refers to the interaction of housing size and age, noting that "Not long ago, the popular perception was that empty nester Boomers would be rushing to down size from their large family home into a smaller townhouse or condominium. In many cases, however, the reverse is happening. Many boomers are using the equity from their first homes to finance a trade-up into a larger home. The second-home market is also exploding as Boomers begin planning for their retirement, investing in vacation homes that will eventually serve as their retirement homes."
5. The rate of saving I assume is more aggressive than the 10 per cent saving rate assumed by CityLab (2012) when making similar calculations for US cities.
6. Historical interest rate data provided by Debra Conner (dconner@cmhc-schl.gc.ca), Housing Information Analyst, Canadian Housing Information Centre in the Canada Mortgage and Housing Corporation. Data provided by email on December 2, 2011.
7. All of the home ownership data come from Statistics Canada, Survey of Consumer Finance, 1977, and the Survey of Financial Security, 2012.

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