SPECIAL REPORT
TD Economics

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DEMOGRAPHY AS DESTINY? THE IMPLICATIONS OF AGING ON SPENDING

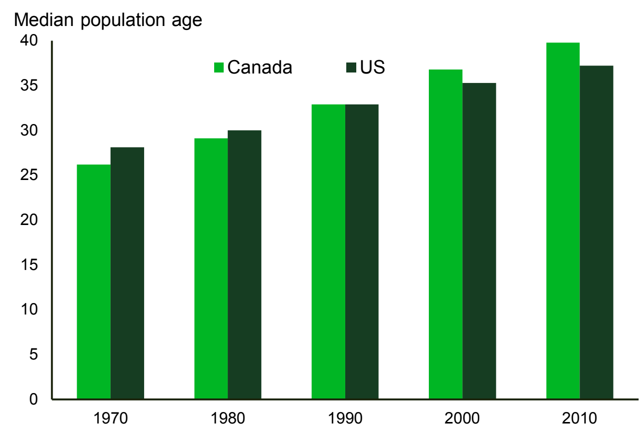
Highlights

- Demographics in both the U.S. and Canada continue to shift as the baby boomers increasingly reach retirement age and millennials, now the largest population group in the U.S., exert a larger influence on the economy.
- Shifting demographics play an important role in consumer spending. Consumption tends to fall as people move past middle age. As a result, real spending growth may fall below 2.0% in both the U.S. and Canada in the coming decade. A larger share of indebted retirees and savings gaps among near-retirees, both in the U.S. and Canada, present an important downside risk to this expectation.
- Consumer spending on both goods and services is expected to decelerate somewhat, with the key exception of spending on medical services, which are forecast to rise as much as 7% per year between 2016 and 2025.
- Borrowing patterns are also affected, with consumer credit growth expected to slow to about 4%-6% on average in the coming decades. Millennials, now entering the 'debt building' stage of life, will play an important role in supporting credit demand.
- Canada's high household debt level poses a particular risk to consumer spending, especially in the context of population aging. International experience suggests that if households enter a deleveraging phase, Canadian spending growth could reach as low as 1% per year on average for as long as four to six years.

Consumer spending has long been a driver of both the Canadian and U.S. economies, accounting for more than half of all Canadian economic activity in recent years and more than two-thirds in the U.S. Since the mid-1970s, consumer spending has benefitted from a 'demographic' dividend: as the baby boomer generation (born 1946 to 1964) aged, its income rose, leading to increased support for consumption. Now, however, this generation has reached retirement age, associated with a slower pace of spending and changing consumer habits. At the same time, the so-called 'millenial' generation (roughly speaking, those born between 1982 and 2004) continues to rise as a demographic force, now outnumbering baby boomers in both the United States and Canada. However, this generation remains in the early stages of their careers, and – particularly in the U.S. – continue to deal with elevated student debt levels and the after-effects of the Great Recession on the job market.[1] The prime earning years are still some ways away for this generation.

This report examines the implications of these demographics shifts on the outlook for consumption, finding that the future pace of growth is likely to be somewhat slower than past trends. More-

CHART 1. POPULATION AGE CONTINUES TO RISE



Source: Statistics Canada, Census Bureau. Note that median age for 1971 is reported for 1970 for Canada.

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over, shifting demographics also imply that some sectors may perform better than others as tastes change. Relative outperformance is expected for the sales of durable goods (such as motor vehicles, furniture, and large appliances), and of medical services, the strongest performing category examined.

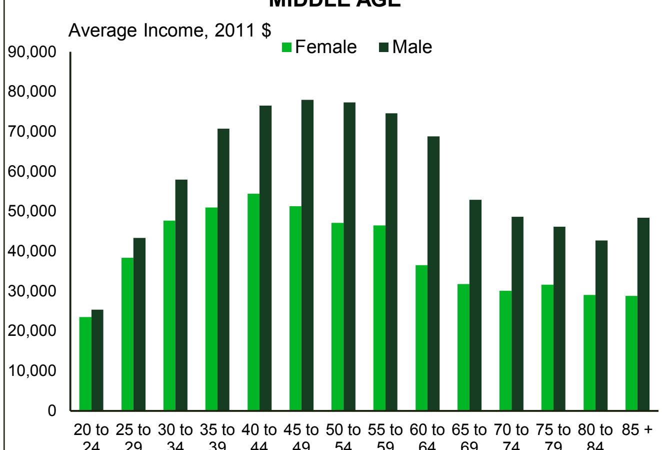
It is not just spending patterns that will change. Aggregate borrowing is likely to rise at a somewhat slower pace, with millennial borrowing only partially offsetting declines elsewhere in the population. Finally, the implications of past debt growth on the future path of spending is considered. For Canada, which has not experienced a prolonged deleveraging cycle, this presents a material downside risk. Conversely, there may be some upside risk to the pace of spending in the U.S., as pent-up demand from the post-crisis period is released.

Both income and consumption fall as age advances

Income follows a clear life cycle. Income is low early in life when young people are more likely to be enrolled in school than participating in the workforce. These investments in human capital early in life pay dividends in terms of higher income later. As individuals gain valuable working experience, their income rises accordingly. Average income peaks around middle age for men and slightly earlier for women (Chart 2).[2] Income begins to trail off thereafter, as people begin to leave the labour force, and drops markedly at the traditional retirement age of 65.

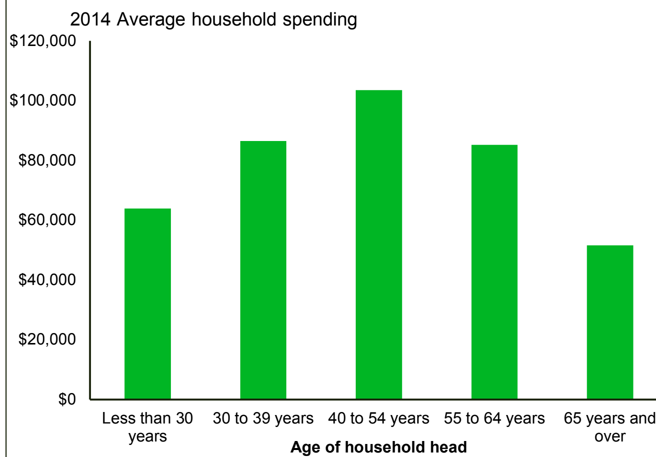
Just as earnings show a clear pattern through life, so too does consumer behaviour. As with income, consumption tends to peak around middle-age (Chart 3). While people consume relatively less when they're younger, they still tend to outspend their still-modest income, often borrowing to do so. As middle age approaches, consumption rises, but not as much as income, allowing savings to be built in order to fund retirement. Finally, in the latter stages of life, consumption tends to fall alongside income.

CHART 2. PEAK EARNING YEARS FALL IN MIDDLE AGE



Source: Statistics Canada, TD Economics. 2011 Data.

CHART 3. SPENDING MATCHES INCOMES, PEAKING IN MIDDLE-AGE



Source: Statistics Canada.

The cycle just outlined is, of course, a stylized one and only tells part of the story. The unplanned surprises of life may lead to increased borrowing in middle age, or the sudden loss of income disrupting one's plans. Furthermore, a growing body of evidence suggests that as age advances, especially past 70 years old, consumption tends to fall relative to income and saving rates move higher.[3]

The implications of falling income and consumption later in life are profound – the savings and spending patterns of a younger population will look different from an older one, and both will look different from a population in its prime earning and spending years. This is more than just a thought exercise. As shown in Chart 1, both Canada and the U.S. have aging populations, and as a result the broad spending and savings patterns of the future are likely to be quite different from those of the past. The subsequent sections detail just what population aging implies for the future.

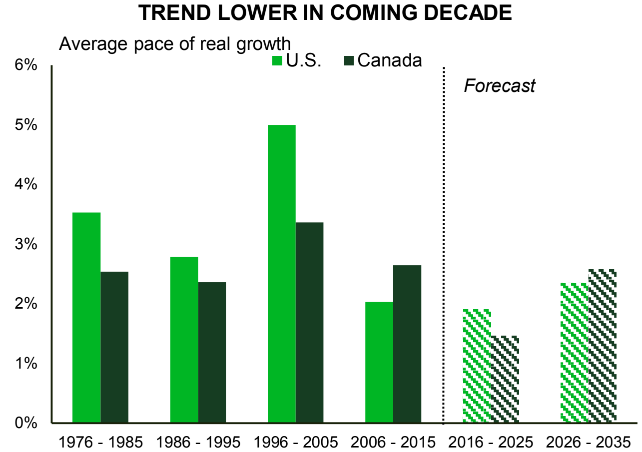
Demographic destiny: slower consumer spending

The demographics in North America result in two opposing forces on consumption. Although well away from peak earnings potential, the millennial generation continues to enter the workforce and gain experience, resulting in increased aggregate earnings and a matching rise in consumer spending among this cohort. At the same time, baby boomers continue to hit 65, the traditional retirement age, implying a decline/levelling off of earnings, and a slowing of consumption growth. This pattern makes itself clear in the data: as Chart 3 shows, household spending among those age 65 years is the lowest among the major age groups.

To understand how these opposing forces are likely to play out, we estimate a relatively straightforward model which relies largely on demographics to explain longer-term trends in consumption growth.[4] In effect, the model relies on the size of the overall population, borrowing costs and relative shares of age groups within that population (such as the share of 25 to 34 year olds or 65 to 74 year olds in the population) to explain the long-term trends in spending patterns. The intuition is fairly straightforward: by using the patterns observed in charts 2 and 3 and applying them through time, we can see how the demographics-spending link may impact spending as generations move through the life-cycle.[5] It should be made clear at the outset that these are simplified models, and the results are not intended as base forecasts. Rather, they are meant to inform further discussion and analysis, and should be considered alongside other economic drivers.

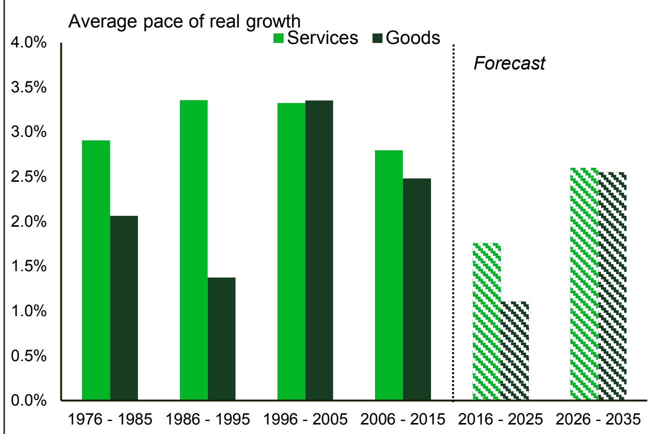
The model estimates suggest that the impact of baby boomer aging is likely to outweigh rising millennial incomes, with a further deceleration of average aggregate consumption growth possible in the coming decade (Chart 4).[6] This effect reverses through time however, and by the decade beginning in 2026, the demographic influences appear consistent with consumption returning to roughly its average historic pace (the unusually strong, credit-driven 1996 to 2005 period excluded). This roughly aligns with the millennial generation reaching their 40s – the peak earning years. Canada is expected to see a slightly faster pace of growth in this period relative to the U.S., reflecting a smaller negative influence from older age groups, but the difference in growth rates is not statistically meaningful.

CHART 4. CONSUMPTION GROWTH LIKELY TO TREND LOWER IN COMING DECADE



Source: Bureau of Economic Analysis, Statistics Canada, TD Economics.

CHART 5. SPENDING ON GOODS DRIVES NEAR-TERM WEAKNESS IN CANADIAN CONSUMPTION



Canadian Results. Source: Statistics Canada, TD Economics.

Looking further beneath the slowing pace of consumption growth, we find that although consumption of goods and services may both slow down in the near term, the effect is most pronounced for spending on goods (Chart 5). Similar results were found for the United States. In contrast, demographic forces appear consistent with services consumption growth in line with overall economic growth. This split may reflect changing priorities as an aging population spends more on professional services and health care, relative to past patterns.[7]

While demographic influences suggest a slowing in consumer spending that would mark a sizeable deceleration from historic trends, it is important to keep in mind that this is occurring against a backdrop of slower economic growth in general. Indeed, just as the aging population is likely to weigh on consumption, so too will it weigh on economic growth more broadly. This is an extension of the patterns seen in Charts 2 and 3 – older individuals tend to work less, weighing on the labour supply, thereby reducing overall output. TD Economics estimates the speed of potential growth (or economic 'cruising speed') over the coming decade to be roughly 1.4% to 1.6% for Canada, and between 1.8% and 2.2% in the United States.[8] This implies that consumption growth should be in line with, or slightly below, the pace of overall economic activity in coming years, and even on a per-capita basis, consumption is likely to fall somewhat as the two largest population groups remain in the 'low earning/low spending' phase of the lifecycle. Beyond the demographic impacts, a lack of financial readiness for retire-

Table 1. U.S. Spending Patterns Change With Demographics		
	Average Real Growth	
Sector	2016-2025	2026-2035
Goods	**1.7%**	**2.3%**
Durables	2.3%	3.6%
Nondurable Goods	0.8%	1.6%
Services	**2.1%**	**2.3%**
Finance and Insurance	1.8%	3.1%
Medical Services	6.9%	1.3%
Transportation	1.4%	2.5%
Food Services + Accomodation	1.5%	1.6%
Recreation Services	1.5%	2.3%
Other Services	1.6%	2.0%
Forecast by TD Economics, June 2016		

ment poses a futher downside risk (Box 1).

Not just a slower pace, but different patterns

Beyond the slowing growth of both goods and services consumption, shifting demographics are likely to also change the composition of spending. Using data for the United States, we further examine the implications for a number of spending categories.[9] Spending growth within the goods sector is expected to be close to the overall average of about 1.7% annual growth in the coming decade, with disproportionate strength expected for durable goods (Table 1).[10]

The coming shifts in demography suggest that U.S. services consumption growth should be more resilient, with average growth of around 2.1% expected. Beneath this headline figure lies some variation. Spending on recreation, food and accommodation, and transportation services is expected to be somewhat weak, trending closer to 1. 5%. In contrast, medical services are expected to outperform overall spending, with growth expected to average nearly 7% over 2016 to 2025 – perhaps unsurprising given the rising share of the population in the latter stages of life. While the strong implied spending outlook for medical services does not translate directly to Canada, the implications for government spending on healthcare should be self-evident, particularly as Canada has a relatively less favourable overall population mix (Chart 1).

When we look beyond the coming decade, the effects of the population 'waves' become more clear – by the 2026 to 2035 period, millennials will be increasingly reaching their prime earning years, helping to support consumer spending growth. Per Table 1, much of the softness in spending expected over the prior decade will reverse, bringing overall consumption growth to as high as 2.3%. Perhaps unsurprising, the only major subsector not forecast to re-accelerate over this period are medical services, although it is possible that increased life expectancy may result in a stronger pace of medical services spending than our model suggests. It is also possible that the increased access to healthcare resulting from health care reform may also support medical services spending over this period.[11]

A softer outlook for credit

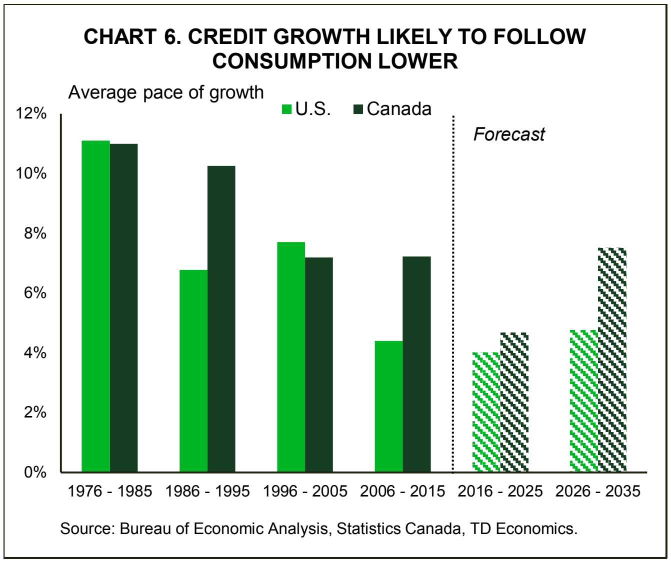
The pattern of slowing growth in the coming decade followed by a rebound is not limited to consumer spending. As discussed earlier, borrowing patterns also tend to change through the lifecycle. Young people tend to borrow more heavily than older individuals. The progression of the baby boomer generation through its lifecycle can already be observed in Chart 6; credit growth averaged more than

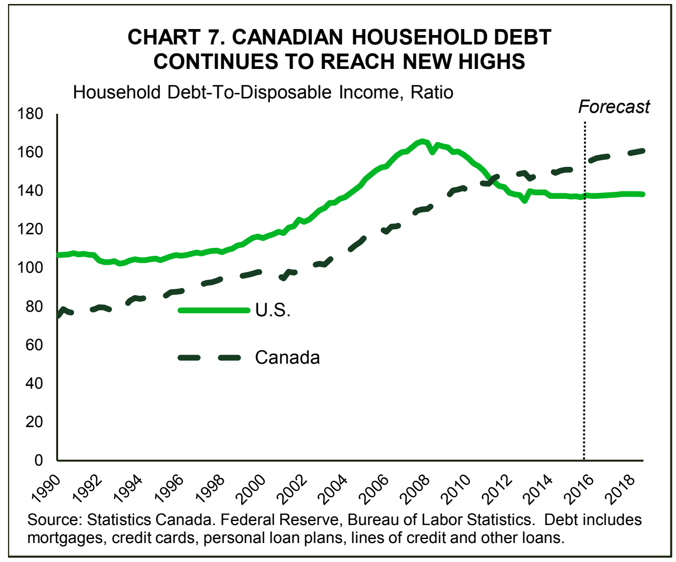
Box 1. Lack of Financial Readiness for Retirement May Pose Downside Risk

Our forecasts are based on extrapolating past relationships into the future. These relationships are estimated over a long period of time, with the result being that any recent changes in trends or behaviours are likely to be underweighted. One particular change bears noting: the risk that a lack of financial preparation for retirement may further constrain spending in the coming decade than our model suggests.

As past TD Economics reports have shown, the median U.S. worker faces a significant shortfall relative to their retirement needs of as much as $142,000.[12] The situation in Canada is similar, with those over age 65 now making up a significant share of consumer bankruptcies,[13] and more than 70 per cent of people aged 55 to 64 continued to carry debt in 2012, with the level of debt carried up sharply relative to historic patterns, even accounting for inflation.

Entering the retirement years with inadequate savings or sizeable debt burdens leaves less money available for consumption, likely to amplify the demography-led retrenchment in spending. The impact would likely be largest for discretionary spending as retirees attempt to balance debt obligations and reduced incomes against the maintenance of consumption patterns. This poses a clear downside risk to our already-low consumer spending forecast.





10% per year in the late 1970s and early 1980s, as the bulk of this generation entered the earlier stages of adulthood, before moderating as this cohort continued to age.

Looking at the decades ahead, shifting demographics may slow credit growth somewhat, resulting in an average expansion of around 4% to 6% per year. In contrast to the outlook for consumer spending, the deceleration of credit growth is much more modest. This reflects the influence of the millennial generation, who are increasingly entering the 'debt-building' stage of life, helping to support credit growth in the coming decade, with this influence growing larger over the 2026-2035 period.

Aging and deleveraging amplify each other

We have so far focused on the potential impacts of demographics on spending patterns and credit growth. The result in both cases is that as the population continues to age, a lower trend pace of growth is likely. In the Canadian context, however, the backdrop of record high household debt levels cannot be ignored. Unlike the U.S., where debt levels have largely stabilized following post-crisis deleveraging, Canadian household debt continues to rise (Chart 7).

Table 2. Slower Credit Growth Associated with Slower Spending

	Real Credit Growth	Consumption Growth
1970 - 1979	9.6	4.3
1980 - 1985	-1.5	2.0
1986 - 1990	9.9	3.4
1991 - 1996	3.8	1.6
1997-2008	6.2	3.6
2009-2015	4.2	2.1

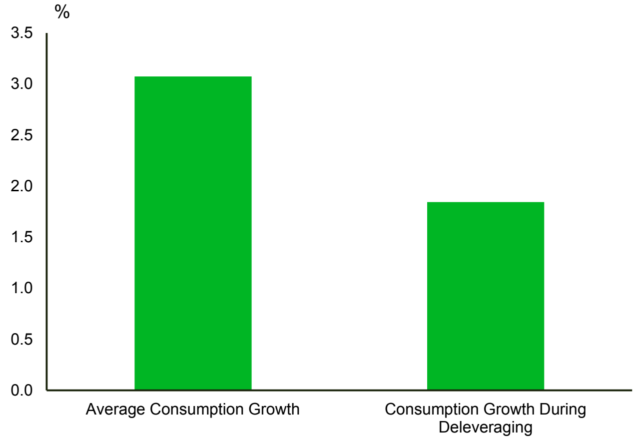
Source: Bank of Canada, Statistics Canada, TD Economics. Credit growth deflated by CPI.

This raises a new question: what is likely to happen to consumption should Canadian households begin to delever? While the domestic evidence shows that consumption growth tends to slow during periods of softer credit growth (Table 2), nothing meaningful can be said about periods of 'true' deleveraging, which are described by falling debt to income ratios.[14] This is because Canada has only experienced limited, short-lived deleveraging periods.[15] However, a number of advanced economies have experienced prolonged periods of deleveraging, and can provide insight into how consumption tends to react.

To determine the impact of deleveraging on consumer spending, we use a panel regression analysis that includes 15 advanced economies, including 8 deleveraging cycles.[16] Deleveraging cycles are defined as any period at least two years in length over which household debt remains stable or falls as a share of disposable income. The key result of the analysis is summarized in Chart 8. Across these countries, consumption growth averages roughly 3% per quarter, at annual rates. During periods of deleveraging, however, consumption is nearly 40% slower than during 'normal' times, expanding by about 1.8% per quarter.

What drives deleveraging episodes? Within the sample considered, with the exception of Germany, all instances of deleveraging appear to have been triggered by significant shocks, particularly debt crises (mortgage debt in the case of the U.S.; sovereign debt in the Eurozone). There does not appear to be a demographic component to instances of

CHART 8. DELEVERAGING ASSOCIATED WITH SLOWER CONSUMPTION GROWTH



Source: TD Economics.

deleveraging. However, a deleveraging cycle in an aging country is likely to act as an amplifier, further weighing on growth beyond the impacts of demographics.

The potential implications for Canada are stark – should a deleveraging period occur, the result, once the demographic implications are taken into account, is likely to be a trend pace of consumption growth as low as 1.0%. And while demographics are unlikely to trigger a nationwide deleveraging cycle, the record high level of household debt presents clear downside risks to our estimates. This debt appears to be largely manageable in the current low interest rate and high asset price environment, but may prove unsustainable when interest rates begin to rise, particularly if policymakers are too aggressive in raising interest rates. Such a scenario could prove a catalyst for deleveraging, further depressing consumption growth. Even absent a clear catalyst, rising rates and high household indebtedness should lead to a gradual deleveraging as credit growth slows to below the rate of income expansion. To some extent this process should be self-limiting, as the slower overall pace of growth resulting from demographic changes implies a lower equilibrium interest rate. Our forecasts for Canada incorporate these debt effects: were the demographic effects to be excluded growth would nevertheless be modest. It is important to bear in mind that this discussion is based on estimates from international experience that may or may not translate to Canada, and the risk of a deleveraging cycle remains only a risk. It is nevertheless clear that neither demographics nor household debt are likely to be particularly supportive of consumer spending on a trend basis in the coming decade.

The situation in the United States is very different from Canada. The consumer deleveraging cycle appears to have come to an end, providing some potential upside for credit growth, and by extension consumer spending. Further support may result from pent-up demand, particularly for housing. Household formation rates have fallen below historic norms in the post-2008 period, and the reversal of this pattern is likely to provide additional near-term support for spending and credit, particularly related to housing.

Bottom Line

Shifting demographics have implications for nearly all aspects of the economic system. Focusing on consumption and credit, we found that the future pace of growth may be slower than in the past as the baby boomers enter their retirement years and dial back their spending. Notable exceptions are medical services within the United States, and by extension government healthcare expenditures in Canada. As discussed in Box 1, increased debt levels among retirees and savings gaps present a downside risk to consumption growth. Credit growth is also likely to slow, but the deceleration should be relatively minor, as millennials are already beginning to accelerate their borrowing. Debt poses a particular risk to Canada, which, unlike the United States, has not experienced a period of deleveraging.

Demographics alone are unlikely to trigger a deleveraging cycle, but rising interest rates combined with record-high debt levels pose a risk for Canada. Should deleveraging occur, consumption growth could drop even further. In contrast, a number of factors, particularly the end of the deleveraging cycle, present upside risk to spending and credit growth within the United States. Finally, it is important to place these results in context – just as demographics are likely to result in a slower pace of consumer spending, in many ways this is a reflection of the outlook for the economy as a whole, as shifting demographics pull the economic cruising speed lower in coming years.

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ENDNOTES

1. Outcomes across a number of measures have been more positive for millennials in Canada than for their U.S. counterparts. See Canadian and U.S. Millennials: One of These Is Not Like the Other
2. This analysis is based on the Statistics Canada National Household Survey, 2011. All computations, use and interpretation of these data are entirely that of the author.
3. A recent C.D. Howe Institute report also reports this pattern, focusing on its implications for pensions. See How Spending Declines with Age, and the Implications for Workplace Pension Plans
4. Specifically, we estimate a cointegrating regression on the level of consumer spending. Typically this type of regression occurs as part of an error-correction model to forecast movements around a longer-term trend. However, in this report we are concerned with the trend itself, and thus focus on the long-term relationship. In addition to demographic data, interest rates were also found to be a crucial determinant of the path of consumer spending.
5. This model is not intended to fully explain or forecast all movements in consumption. Rather the goal is to provide insight into how demographic movements may impact consumer spending. All results provided should be considered as guidance to inform forecasts, rather than as forecasts.
6. It is worth noting that these results are an extrapolation of past patterns into the future. Recent trends, notably the rising average age at retirement in the United States may provide some offset as incomes remain elevated later in life.
7. Within the services category, research from the U.K. suggests that spending is likely to be concentrated within essentials, including health, housing, water, electricity and transport. See Understanding retirement journeys: Expectations vs reality
8. See the report Potential To Improve: A Comparison of Canadian and U.S. Trend Output Growth
9. The data for Canada does not go back far enough to allow for meaningful estimation.
10. It is interesting to note that this pattern differs somewhat from the previously cited C.D. Howe Institute study (See Note 3). The cited study suggests that durables are likely to see the largest reduction in spending of the major consumption categories.
11. Due to the recent introduction of the Affordable Care Act, our model would likely not capture its impact on medical spending.
12. See the report Americans Face Tin-Plated Golden Years
13. See http://www.ic.gc.ca/eic/site/bsf-osb.nsf/eng/br03377.html
14. This occurs when credit grows more slowly than income, and so does not necessarily require a contraction in borrowing.
15. Debt as a share of income declined in 1982, 1984/1985, 2000/2001, and 2013. None of these periods lasted longer than five quarters.
16. Included are Australia, Denmark, France, Germany, Greece, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, the U.K., and the U.S. Identified deleveraging episodes include Denmark (2009 to 2015), Germany (2005 to 2015), Greece (2013 to 2015), Ireland (2011 to 2015), Portugal (2011 to 2015), Spain (2011 to 2015), the U.K. (2011 to 2015), and the U.S. (2008 to 2014).