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## Canadians' Retirement Future: Mind the Gap

by Benjamin Tal and Avery Shenfeld

Canada has been well served by its retirement savings system in past decades, as government programs, employee pensions and individual savings have enabled millions to live in comfort after their working years. The typical 70-year-old is able to draw on a mix of income sources that maintains the standard of living they had while working.

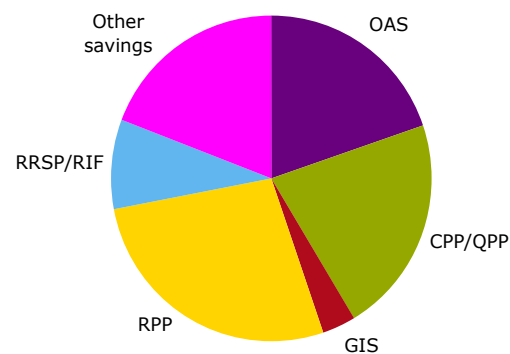
But a look to the future is much less comforting. A growing gap will leave close to six million Canadians facing a more than 20% drop in living standards as they leave the workforce, even accounting for the savings on some expenditures that retirement brings. If left unchecked, current trends in pensions, government programs and savings rates will, particularly for today's younger cohorts, be insufficient to allow today's working Canadians to realize the retirement lifestyle that their elders have achieved. That prospect, one perhaps more serious than many understand, underscores the current debate about the direction for private and public policies affecting retirement incomes.

### Not Your Father's Savings Rate

The typical 70-year-old today has enough income to maintain his or her pre-retirement standard of living, taking into account the typical drop in expenses in one's post working years. Their sources of income are well diversified, drawing on both government programs (CPP/QPP, OAS and GIS), pension plans (RPP), savings accumulated in RRSP and other funds (Chart 1).

Chart 1

### Income Sources of Current Retirees



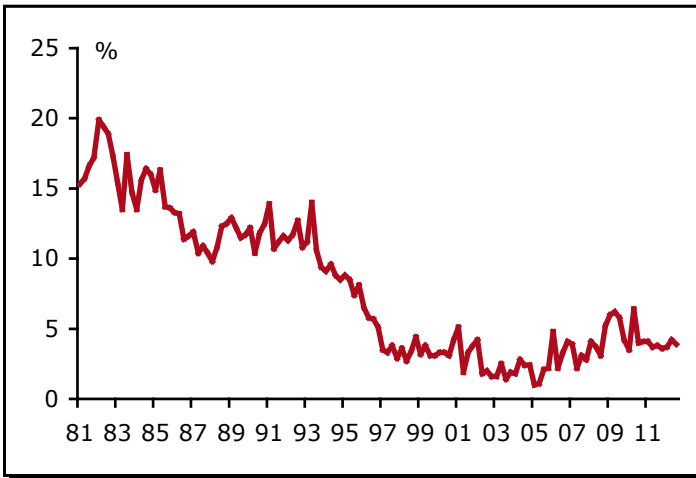
Source: Statistics Canada, CIBC

True, there are those, about one-fifth of current retirees, whose prior employment and savings experiences have left them facing a drop of 20% or more in living standards post-retirement. But no system can fully defend against adverse life outcomes or private investment and savings decisions that result in subsequent shortfalls in income.

To understand what lies ahead for upcoming generations, it's worth reviewing how today's retirees achieved their generally satisfactory retirement lifestyles. The bottom line is that it wasn't just good fortune. Savings rates were substantially higher, private pension plans were more comprehensive, and the public system, through the CPP, GIS and OAS, filled in the remaining gaps.

The trend in the savings rate over recent decades would appear to raise an immediate red flag over what lies ahead for future retirees. On the surface, savings behaviour

Chart 2  
**Household Savings Rate**



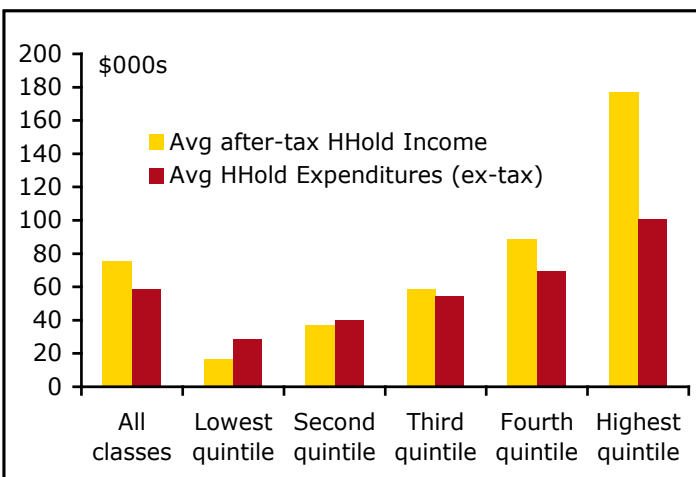
Source: Statistics Canada, CIBC

looks to have fallen off a cliff, with the savings rate dropping from 15-20% a few decades ago to as little as 4% today (Chart 2).

If that seems low, remember that low income families have daily needs that make it difficult to save. Indeed, at the lowest income quintile, savings rates are negative (Chart 3), as households' use of debt swamps money set aside, allowing spending to exceed incomes. That of course can be rational for young families whose future incomes will be higher.

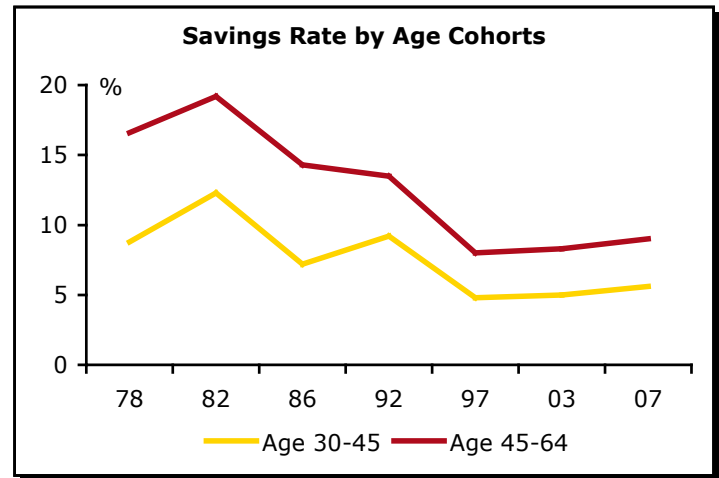
But the drop in savings over recent decades is not a demographic story. Since the early 1980s, savings rates

Chart 3  
**Expenditures vs Income (2010)**



Source: Statistics Canada, CIBC

Chart 4  
**The Decline in Savings Was Among All Age Cohorts**



Source: Statistics Canada, CIBC

have declined for all age cohorts. Today's 30- to 45-year-olds save notably less than their parents did at that same age group in the 1980s, as do those in their prime savings years (45-64) (Chart 4). Indeed, the ageing of the baby boom bulge should be seeing a rise in the aggregate savings rate, but that rate has barely moved off the lows set in the middle of the last decade. And it's not simply a case of more people being too poor to save, since relative to a generation ago, living standards have generally moved higher.

**Call Me Irresponsible?**

Are Canadians of working age simply being irrational and irresponsible relative to the prudence of their forebears? The truth is a bit more complex than the superficial savings rate data suggests. For one, real returns on both fixed income and equity investments have tailed off. The rational, textbook response to a lower real rate of interest is to save less, given that the trade-off between current consumption foregone, and future consumption room generated, is less favourable in a world of lower rates of return.

Moreover, the savings rate, as defined in national income accounts, does not fully capture what one conventionally thinks of as the funds being set aside each year. Savings are measured as a residual, the difference between after-tax incomes and the national accounts measure of consumption. The former excludes capital gains income, and the latter differs somewhat from actual dollar outlays in any given period.

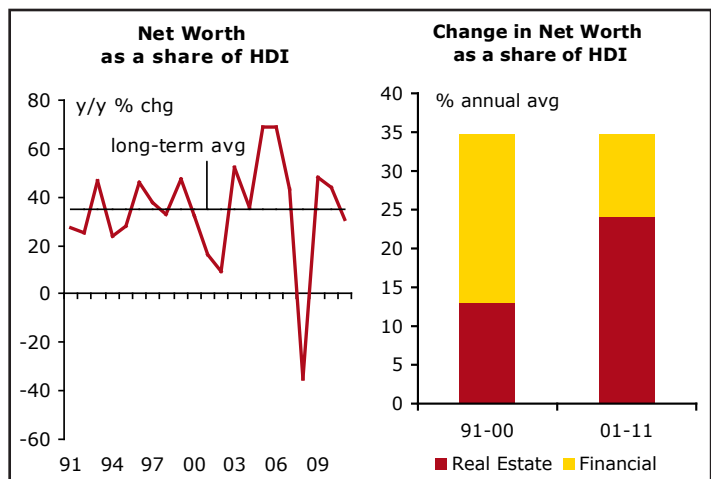
Most importantly, active savings — funds set aside each year — can and has differed widely from the trend in what really counts, the accumulation of household assets. The latter benefits from what could be thought of as passive savings, the growth in the value of the portfolio of assets previously accumulated. Net worth can still be climbing, even absent any new investment, amidst a strong trend in capital gains. In the best of times, for those seeing such good fortune, it might be perfectly rational to eschew new contributions to retirement funds as capital gains provide a sufficient lift to retirement incomes.

In fact, although annual results are volatile, Canadians net worth has been rising by more than 30% of household disposable income (HDI) annually, a trend rate that is not materially different from decades gone by (Chart 5, left). That makes the 4% official savings rate look a bit less worrisome.

If there is a concern within that trend, it's that since 2001, the majority of that annual gain in net worth has come from appreciating home equity (Chart 5, right), mostly generated by inflation in real house prices. Selling a house can convert those valuations into cash, but replacement housing or rents are also more expensive. Financial assets, which are more liquid and easier to draw down for retirement, have grown much more slowly than they did in the 1990s (with the trend even weaker since 2007), impeded by weak returns in equities and low interest rates.

In addition to private savings and government programs, pensions represent another key slice of the retirement pie,

Chart 5  
**Trajectory of Net Worth (L) Masks Changing Composition (R)**



Source: Statistics Canada, CIBC

one that is less ubiquitous, and less certain, than was the case for earlier retirees. Only one-third of the Canadian workforce is covered by a registered pension plan, down from 37% in 1992 (Chart 6).

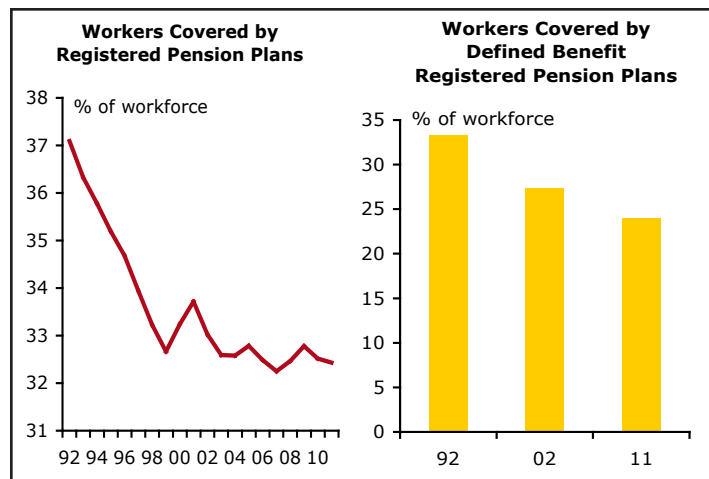
Moreover, of those pension plans, fewer now offer workers the certainty of a defined benefit in their post-working years, with that trend likely to continue given that many employers have left defined benefit plans in place for existing workers, but offer defined contribution plans for new hires.

**A Look Ahead**

To this point, all of the data we have reviewed have one serious shortcoming: they deal with averages, not individuals. Average net worth can climb because of asset gains accruing to a narrow group of high net worth households, or could be concentrated in particular age cohorts. To assess whether trouble lies ahead, we have to drill down to consider how Canadians of various age groups will fare, and what the distribution of outcomes will look like in the years ahead.

Statistics Canada's powerful LifePaths Model enables us to simulate where we are headed if current trends continue: savings rates stay lower than historical levels, and defined benefit pensions and overall pension coverage continues to erode. Appendix A outlines the nature of these current trends and how these are built into the simulation. While the model does not allow for inheritances (mostly of benefit to those in upper income socio-economic groups anyway), it also assumes a move back to historical average

Chart 6  
**Pensions: Fewer Covered, Less Certainty**



Source: Statistics Canada, CIBC

rates of return from recently depressed levels.

We find that while many Canadians, particularly those now close to 65, are on a path to the retirement of their dreams, the data show that millions of others are headed for a steep decline in living standards in the decades ahead, particularly those who are currently younger and who are in middle-income brackets.

At retirement, living costs do go down, as children become self supporting and housing needs are therefore reduced, and as commuting and other job-related costs drop off. We therefore look at the extent to which, after these cost of living savings, individuals are able to use retirement income to replace the income they had while working. A replacement rate of 1.0 is defined as the level at which living standards are left unchanged (relative to their best 10 years from age 40 to 60), and lower levels showing the share of pre-retirement consumption patterns that can be maintained.

Those born during WWII, are positioned to maintain virtually all of their pre-retirement consumption patterns: after allowing for the drop in living costs, they have a replacement rate close to 1.0 (Chart 7). The leading edge of the baby boom generation that followed is only slightly less advantaged.

But their children are much less well positioned, given current trends towards lower savings rates and reduced private pension coverage. On average, the replacement

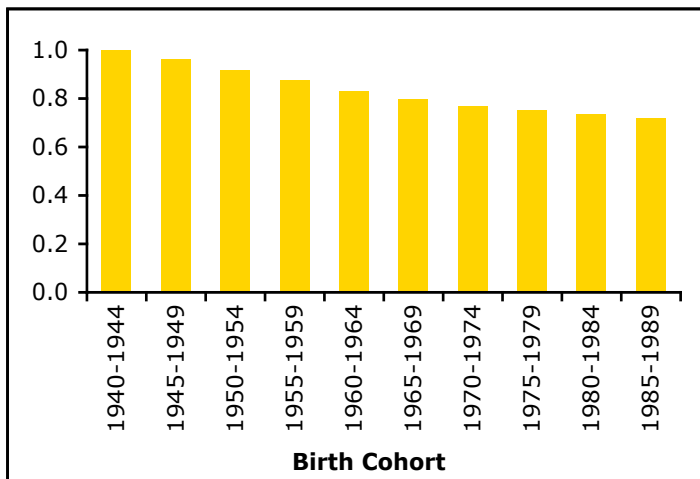
rate of those born in the 1980s, who will retire towards the middle of this century, will be only 0.7, implying a 30% drop in their standard of living. To some extent, the fact that the problem is more severe for those who are now in their early working years is a blessing. They have time to address these future shortfalls with shifts in savings, pensions or public policies.

Across income groups, future replacement rates look a bit counterintuitive on the surface. Those in the lowest income decile will, on retirement, replace the greatest share of their pre-retirement consumption. Indeed, they might actually be in a position to improve on their living standards, with the replacement ratio of 1.9 (Chart 8). That shouldn't be interpreted as a bountiful retirement, of course, since it's benchmarked relative to their very low pre-retirement status. Still, the system now in place does offer important protections for the lowest economic status households.

Similarly, the low replacement ratio for the highest decile is also misleading. Although they have on average the lowest average share of their pre-retirement living standards maintained on retirement, in absolute terms, they will on average enjoy a very high consumption pattern. In the balance of this paper, we therefore remove those individuals in the top 10% of income earnings (who today earn roughly more than \$100,000 per year in individual income) in order to avoid making a big deal about percentage drops in living standards to what will still be reasonably comfortable retirements.

Chart 7

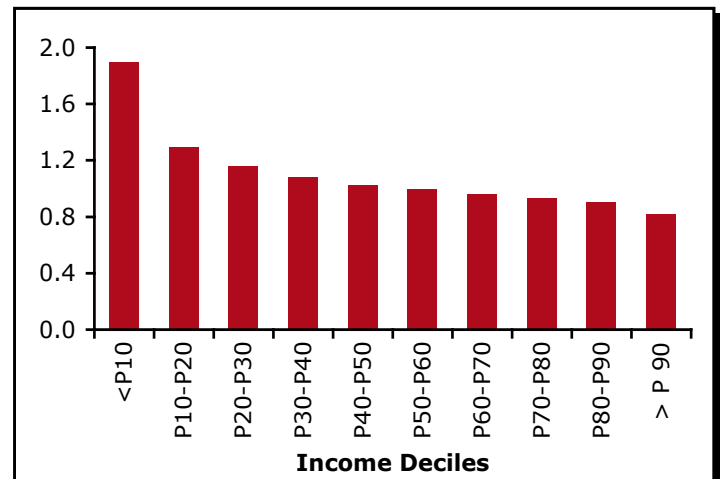
**Average Consumption Replacement Rate by Birth Cohort**



Source: Statistics Canada's LifePaths Model, CIBC calculations

Chart 8

**Average Consumption Replacement Rate by Income Deciles**



Source: Statistics Canada's LifePaths Model, CIBC calculations

### Behind the Averages: Nearly 6 Million Face Trouble

While all income deciles, on average, are replacing 80% or more of their pre-retirement incomes, averages mask the problem. Within each age cohort and income group lie a substantial number of Canadians headed for trouble. Nearly 60% of Canadians born between 1985-89 and almost half of those born in the late 1960s will end up with a below 80% replacement rate (Chart 9). In contrast, that fate was faced by only a quarter or less of those born during or shortly after WWII.

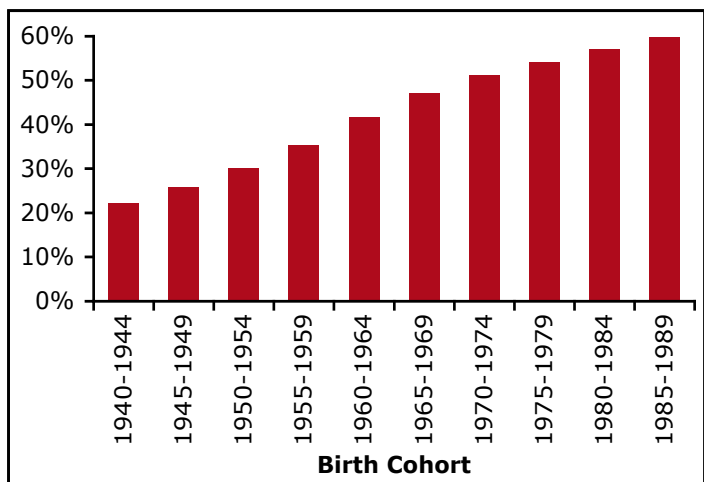
Add it all up, and there are some 5.8 million working age Canadians who will see more than a 20% drop in their living standards upon retirement (Chart 10), and 8.4 million Canadians facing at least a 5% drop, even excluding the top income decile. Allowing these individuals to monetize

half the value of their home equity (which few actually do) doesn't dent the numbers much, as there would still be 5.2 million headed on a course that will result in a 20% or more drop in living standards.

None of this is set in stone. The problem, as we have found, will be at its worst decades from now, when those born in the 1970s and 1980s or later begin to retire. Policymakers, individual Canadians, and their financial advisors, have time to set a new direction. The issues will surround determining where the added savings will come from, how quickly these can be increased without too much of a dent to current economic growth, and where the funds should be invested. But as they say, recognition that there is a problem, and getting a handle on its magnitude, is the first step towards a cure.

Chart 9

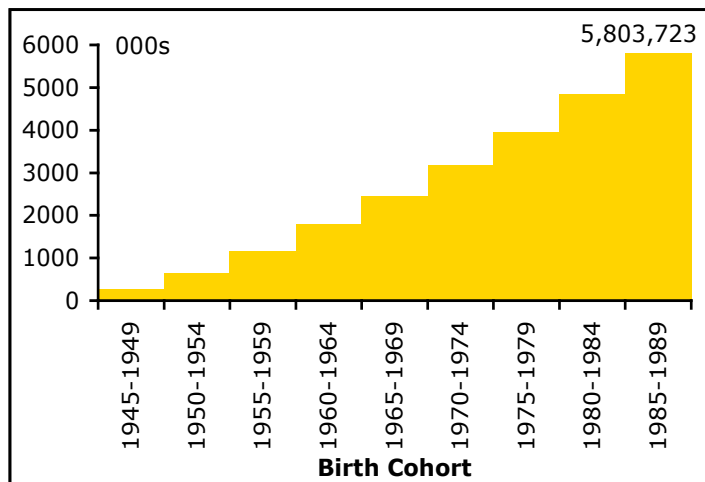
#### Projected Percentage of Population with Consumption Replacement Rates <80%



Source: Statistics Canada's LifePaths Model, CIBC calculations

Chart 10

#### Projected Cumulative No. of Working Age CDNs with Consumption Replacement Rates <80%



Source: Statistics Canada's LifePaths Model, CIBC calculations

## APPENDIX A

This analysis relied heavily on Statistics Canada's LifePaths model (Internal/Public) Version 5.1.4.1.

- LifePaths is a microsimulation model of individuals and families. It creates detailed, realistic individual life histories from birth to death, using behavioural equations estimated from a wide variety of micro-data sources. The resulting synthetic population is representative of Canada's population and of its historical evolution, is consistent with available microdata and sums to aggregate statistics. LifePaths incorporates rich modeling of individual-level demographics, education, income, retirement saving, home ownership and the most of the tax/transfer system. Results for the future should be considered conditional projections, not forecasts.
- We used the following assumptions to derive our results:
  1. Replacement rate is defined as "potential retirement consumption" divided by a "proxy for actual pre-retirement consumption from earnings".
  2. The unit of analysis is the individual.
  3. Consumption is derived at the family level and then adult equivalized using the square root of family size.
  4. The "potential retirement consumption" is derived at age 70 and includes after-tax income from OAS, C/QPP, GIS, RPPs, RPPs, and annuitized "other" wealth. When indicated, we also allowed for the annuitization of 50% of home equity.
  5. The "proxy for actual pre-retirement consumption from earnings" is gross earnings minus taxes minus net retirement savings in RPPs and RRSPs plus imputed rent minus payments of mortgage principal on home plus investment income minus savings.
  6. The "proxy for actual pre-retirement consumption from earnings" was derived as average over the best 10 years from age 40-60, price-indexed, family adjusted.
  7. Replacement rates are calculated at the age of 70. People who die prior to reaching the age of 70 are excluded.
  8. People who immigrate to Canada after the age of 35 are excluded from the analysis.
  9. People who, at age 70, have a spouse who is eligible to receive RPP or CPP but who have not yet taken up their benefits (usually a much younger spouse) are excluded. This represents a small proportion of the population.
  10. Earnings deciles are calculated as the best 15 years' earnings.
  11. Real wage growth in the future is projected to be 1.3% per annum.
  12. The increase of OAS from age 65 to age 67 is excluded.
  13. Recent changes in the actuarial factors for CPP take-up are excluded.
  14. Behavioural changes in CPP due to recent changes are not modelled.
  15. It is assumed that there will be a trend to lower private sector RPP coverage and continuing movement from defined benefit to defined contribution plans in the private sector.
  16. Individual RRSP wealth roughly calibrated to 1999 and 2005 Surveys of Financial Security by applying MERs and annual rate of return penalties to historical market rates of return for various asset classes.
  17. Future real market rates of return of the various asset classes held by RRSPs and defined contribution RPPs assumed to be their average real rate of return over the last 72 years. Future real market rate of return for the aggregate portfolio is roughly 4%. Note that in LifePaths, individuals receive a lower rate of return, due to transactions and other costs. Those costs are estimated based on the actual results of the Survey of Financial Security. Accordingly, aggregate net real rate of return realized by individuals, after adjustments, is roughly 1.4% for RRSPs and 2.8% for defined contribution RPPs. Importantly, these are aggregate rate of returns. LifePaths actually models portfolio composition and rates of return at the level of the individual. Note that using the past 72 years as a base for future returns might overstate the level of retirement readiness we reported in this analysis.
  18. Individuals' homes appreciate at 2.85% (nominal) per year in the future, the midpoint between the assumptions for nominal inflation and nominal wage growth. This also might be a somewhat optimistic assumption, given where we are in the housing market cycle.

19. Most home-owners will reach retirement age having largely paid off their mortgages (i.e., consistent with the distribution of home equity ratios at age 65 in the 1999 and 2005 SFS). Note however, that this trend is changing as a growing portion of seniors retire with some debt. Potentially leading our model to underestimate the retirement income gap.
20. Business wealth and intergenerational transfers (e.g. inheritances) are excluded from savings. This admittedly is a shortcoming of the model and this might work at the margin to improve the retirement readiness of Canadians relative to our estimates, but mostly among higher income individuals.

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