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Forget Retirement:

Are you prepared for Decumulation?

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Some Canadians are fortunate to reach their elder years with sufficient financial assets to generate all the retirement income they need without drawing down their wealth, but they are the minority. Most investors cannot afford to live off the amount of real income their nest egg can safely yield and, thus, they then must decide with professional help at what rate to drawdown their nest egg. The scientific consensus is that no universal decumulation rate is appropriate for everyone and, in particular, the optimal drawdown strategy depends critically on each investor's longevity risk aversion (LoRa). In this article, we explain (i) what LoRa means, (ii) why it should be part of the standard investment know-your-client process, (iii) how to measure LoRa with a simple survey and (iv) provide survey results on how Canadians plan to decumulate.

1. Introduction and motivation

A simple Google search for the phrase "retirement strategy" results in approximately 176 million hits, whereas a search for the phrase "decumulation strategy" leads to only 78,000 results. That is a ratio of almost 2,300 to 1 favouring retirement over decumulation. Yet, an investor's strategy for the latter is likely to be infinitely more important than the former.[3] In fact, the current thinking among gerontologists and pension economists is that retirement (i.e. the complete secession of work at age 65, for example) is unlikely to be affordable for the average Canadian and a recipe for shortened longevity.[4]

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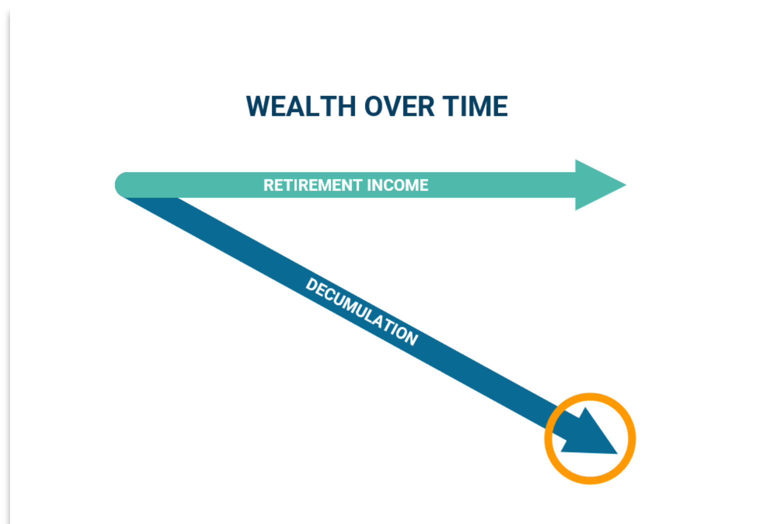
[3] Google search results on 10 June 2023.
[4] Example of one of the many studies published by Harvard Medical School. Harvard Health Publishing, *Working later in life can pay off in more than just income*, Harvard Medical School, Staying Healthy Blog, published June 1, 2018. https://www.health.harvard.edu/staying-healthy/working-later-in-life-can-pay-off-in-more-than-just-income

However, even if people continue working part-time until an older age, the decumulation process, which is the drawing down of accumulated wealth as one ages, is inevitable for most Canadians.

We are all destined to follow the lower arrow in Figure 1, but how to do this in an optimal and tax-efficient manner is a subject of much research in the field of mathematical optimization. It is a problem that Professor William Sharpe, a Nobel Laureate in Economics, called the "nastiest, hardest problem in finance." While most of the above is "old news" to many Canadian financial advisors, this paper aims to draw attention to one aspect of decumulation that has not received as much attention: the need to know your **longevity risk** and level of **aversion** to that hazard, also known as **longevity risk aversion (LoRA).** As depicted in Figure 1, recall that the decumulation process differs from one in which only the income from a portfolio is spent in retirement, and wealth is targeted to remain relatively constant over time.

FIGURE 1



2. What do you need to know about your decumulating portfolio?

In Canada, investment dealers have a know-your-client (KYC) obligation that requires them to collect and maintain information about their clients' personal and financial circumstances.[5] Personal circumstances are obvious parameters, such as date of birth, address, civil status, number of dependents and employment status – standard KYC information. Determining basic financial information is equally objective, easy to collect and includes facts such as annual income, liquidity needs, financial assets, net worth and whether there are plans to finance the purchase of securities with

[5] Investment Regulatory Organization of Canada (IIROC), *Know-your-client and suitability determination for retail clients,* IIROC Rules Notice, Guidance Note GN-3400-21-004, issued December 17, 2021. https://www.iiroc.ca/news-and-publications/notices-and-guidance/know-your-client-and-suitability-determination-retail-clients#toc-client-s-risk-profile-

borrowed money. Beyond these facts, advisors and dealers are also responsible for determining something softer and more difficult to gauge. Namely, a client's investment knowledge and risk profile, all of which can be rather subjective, and the latter often being broken down into **risk tolerance** versus **risk capacity.**

Risk tolerance is usually meant to denote an investor's personal and very subjective attitude towards the chances of losing money, which is incurred in the hopes of making capital gains. In contrast, risk capacity is a more objective attempt to measure whether an investor's personal balance sheet is able to incur and sustain those losses. The process for determining tolerance versus capacity or ensuring they are commensurate with each other is usually gauged by the response to standard questionnaires, which might differ from dealer to dealer.

Oddly enough, when one looks at the standard questions that have become canonized as part of the risk tolerance or capacity questionnaires, they all seem to ignore one important risk that looms large for older Canadians in the 21st century – longevity risk, or one's financial tolerance and capacity to withstand long and unknown years of retirement. How long will they live? How uncertain is it? How do they feel about it? Managing longevity risk is the key to building a proper decumulation strategy, at least for those Canadians not fortunate enough to live off the income generated from their nest egg alone, as depicted in Figure 1.

In fact, the key word "risk" in the standard KYC questionnaires is mostly concerned with financial losses, the ability to withstand declines in portfolio values or the volatility of investments. But those are not the only risks affecting finances in old age. Longevity risk may present the greatest uncertainty, which is higher for males than females and depends on income and wealth. More importantly, some investors might be more willing to pool and diversify longevity risk, others might be averse to this trade-off and take their longevity chances.[6] By trade-off, we mean pooling or sharing retirement resources with strangers (funds that might be partially lost to the estate and beneficiaries) in exchange for more income while living. Alas, this new-age risk spectrum is entirely ignored in the conventional KYC process. Should a financial advisor, mutual fund dealer or investment consultant not be required to know this about their client?

Some readers may wonder why information about longevity risk or knowledge about the investor is necessary in relation to retirement investing. It might generate an odour of insurance, health care or other non-investment factors. Readers may ponder, does it affect portfolio construction? We believe that while in the past, attitudes towards longevity risk might not have been as relevant, the emergence of decumulation funds and other investments that trade-off portfolio longevity versus human longevity have made such knowledge now critical. We will explain why and hope to convince readers of the same. Namely, that KYC is not aging well.

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[6] Milevsky, Moshe A., *Swimming with wealthy sharks: longevity, volatility and the value of risk pooling*, Cambridge University Press, Journal of Pension Economics & Finance, published March 15, 2019. https://www.cambridge.org/core/journals/journal-of-pension-economics-and-finance/article/abs/swimming-with-wealthy-sharks-longevity-volatility-and-the-value-of-risk-pooling/D13B63707ACD976EF41B7AF9AECA5B08

3. Measuring longevity risk aversions

Longevity risk assessment is currently not widely used in the KYC process for onboarding new investors and clients in Canada. To this exact point, in a document prepared for the Investment Advisory Panel of the Ontario Securities Commission entitled "Current Practices for Risk Profiling in Canada and Review of Global Best Practices,"[7] the phrases "longevity risk", "mortality risk", "life expectancy" and "lifetime horizon" do not appear. We can understand the omission for investors in their 20s-40s, but this is no longer true for investors in their 50s-70s. For aging Canadians, this risk is material. The report's omission of these key risks may signal to readers that the uncertainty associated with longevity and personal attitudes toward that risk should not impact investment decisions or portfolio contributions. Arguably, it becomes imperative to understand longevity risk tolerance at a certain age or potentially face KYC outputs (components of a financial plan) that completely miss the mark.

Noted Wharton Professor Olivia Mitchell and her co-authors revealed in their 2020 article "Testing Methods to Enhance Longevity Awareness"[8] that "good consumer financial decision-making requires people to have a clear idea of their life expectancy and longevity risk so as to save, invest, and decumulate thoughtfully and avoid running out of money in old age." Interestingly, the same authors report that providing soon-to-be retirees with information about their likely longevity changes their perception of the risks, whereas only "giving them life expectancy information has no effect." Accordingly, this research suggests that while individuals are aware of simple averages like long-term average stock or bond returns, they are much less informed about the risk of extreme statistical events, often called tail probability. Investors near or approaching retirement need to be educated on longevity risk, not just averages. In this paper, we offer some questions that an advisor or planner might want to ask, and we asked a swath of participants the same questions we propose. More on this in a moment.

A recent survey[9] by Professor Annamaria Lusardi and her co-authors released by the US think tank, TIAA Institute, noted that longevity literacy is the key to better investor retirement readiness. Yet, like financial literacy, this understanding tends to be low among adults – "only 37% of consumers have strong longevity knowledge." According to the authors, "over one-half of adults either have poor longevity knowledge or tend to underestimate longevity." Along the same lines, in conjunction with

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[7] PlanPlus Inc, *Current Practices for Risk Profiling in Canada And Review of Global Best Practices*, Research paper prepared for the Investment Advisory Panel of the Ontario Securities Commission, October 28th, 2015. https://www.osc.ca/sites/default/files/2021-02/iap_20151112_risk-profiling-report.pdf

[8] Hurwitz, A., Mitchell, O.S. and Sade, O., *Testing Methods to Enhance Longevity Awareness*, The Wharton School, University of Pennsylvania, Pension Research Council, PRC WP2021-07, published November 2, 2020. https://repository.upenn.edu/server/api/core/bitstreams/cdf900c3-c2d2-4894-a900-4110eff1c097/content

[9] Hasler, A., Lusardi, A. and Yakoboski, P., *Financial literacy, longevity literacy, and retirement readiness; The 2022 TIAA Institute-GFLEC Personal Finance Index* TIAA Institute-GFLEC Personal Finance Index (P-Fin Index), collaborative survey by the TIAA Institute and the Global Financial Literacy Excellence Center at the George Washington University School of Business, January 12, 2023. https://www.tiaa.org/content/dam/tiaa/institute/pdf/insights-report/2023-01/longevity_literacy_financial_literacy_and_retirement_readiness.pdf

Mercer, the World Economic Forum released a report[10] in which they advocate for greater longevity literacy among policymakers and the public more generally.

With this backdrop on the importance of focusing on longevity risk, the following questions are meant to gauge longevity risk aversion or an individual's attitudes, feelings and concerns about the uncertainty associated with the length of their life. Thus, the mathematical statement or declaration that "you have a 7% probability of becoming a centenarian" is an objective statement about longevity risk. But how people react, adapt and financially prepare for that number is subjective and a phenomenon we seek to understand.

4. Questions for financial advisors

For all questions, regardless of their actual current economic and health situation, we asked financial advisor participants to hypothetically assume that they were 65 years old, single with no dependents and had $1,000,000 in investable assets that they wanted to decumulate over the remainder of their life. We asked these financial advisors to assume they would be satisfying or covering other financial goals, like bequests and charity, through other means and that they had no debts, obligations or other financial assets meant to finance retirement. This money is meant to be spent in retirement as we wanted to gauge how survival probabilities might affect that spending.

We started with the following question:

1. We asked participants to review the following (unisex) survival probabilities. To interpret and understand these numbers, we encouraged them to think of a large group of Canadians who are alive at the age of 65 and the fraction of that group expected to survive to given ages.

   You are currently 65 years old, and your age survival probability is:

   - Live to 70: 95.0% probability
   - Live to 75: 87.0% probability
   - Live to 80: 75.0% probability
   - Live to 85: 60.0% probability
   - Live to 90: 40.0% probability
   - Live to 95: 21.0% probability
   - Live to 100: 7.0% probability

[10] World Economic Forum in collaboration with Mercer, *Living Longer, Better: Understanding Longevity Literacy*, Insights Report, published June 2023. https://www.weforum.org/reports/living-longer-better-understanding-longevity-literacy

Then we asked a follow-up: Do you think the above probabilities reflect your own personal situation and circumstances?

a) I actually think I have better odds.
b) Yes, looks about right.
c) No, I'll never get to age 95.

Next, we posed a second question:

2. How much of the original $1,000,000 do you think would be prudent to have remaining in the retirement account, if-and-when you reach the **age of 80**? (75% probability according to survival probability provided in the first question)

    a) All of it ($1,000,000)
    b) Four fifths ($800,000)
    c) Three quarters ($750,000)
    d) Half of it ($500,000)
    e) A quarter of it ($250,000)
    f) A tenth of it ($100,000)
    g) One twentieth ($50,000)

Continuing along the same trajectory, we asked:

3. How much of the $1,000,000 do you think would be prudent to have remaining in the retirement account if and when you reach the **age of 90**? (40% survival probability)

    a) All of it ($1,000,000)
    b) Four fifths ($800,000)
    c) Three quarters ($750,000)
    d) Half of it ($500,000)
    e) A quarter of it ($250,000)
    f) A tenth of it ($100,000)
    g) One twentieth ($50,000)

Then, naturally, we asked:

4. How much do you think would be prudent to have remaining in the retirement account if and when you reach the **age of 100**? (7% probability)

    a) All of it ($1,000,000)
    b) Four fifths ($800,000)
    c) Three quarters ($750,000)
    d) Half of it ($500,000)
    e) A quarter of it ($250,000)
    f) A tenth of it ($100,000)
    g) One twentieth ($50,000)

Questions 1-3 aimed to gauge the rate at which individuals would like to decumulate wealth in an idealized world in which their legacy and bequests are satisfied from other sources. We were also interested in seeing the extent of dispersion of results and how they correlated to the response to the first question.

We wondered: Did longevity optimism or pessimism affect the replies?

Our last question aimed to get a sense of their willingness to *pensionize* a fraction of their nest egg:

5. What is the absolute most of the initial $1,000,000 you would be willing to invest or contribute right now (at age 65) to secure **a real inflation-adjusted yield of 5%** (ex: $50,000 on the $1,000,000) of guaranteed cash flows per year for the rest of your life?

    Note that once you invest/contribute, your principal is not redeemable, and there is no residual value. Think retirement pension for life.

    a) All of it ($1,000,000)
    b) Four fifths ($800,000)
    c) Three quarters ($750,000)
    d) Half of it ($500,000)
    e) A quarter of it ($250,000)
    f) A tenth of it ($100,000)

The motivation for this final question was to understand if Canadians who are more longevity risk averse (that is, they budget or set aside more wealth for the older ages) have a greater desire to allocate a fraction of their liquid wealth to an irreversible annuity-like product.

This is another way to measure longevity risk aversion. The more they are willing to allocate (responses closer to [a] versus [f]) in the above list of six allocations, the higher their risk aversion.

Survey statistics and insights

Guardian Capital LP conducted this survey, and the survey's sample audience consisted of financial advisors (those providing direct service to investing clients) together with a broader group of other financial professionals from across Canada. The final dataset consisted of 137 scored responses from a diverse array of financial companies, with ages ranging from 23 to 79; notably, 75% of the surveyed population identified as male.

In total, 80% of the respondents expressed optimism and bullishness when responding to the first question. Recall, these were related to the probabilities of attaining the ages specified in the survey's preamble. The majority thought they had better odds of survival. For example, believing they exceeded a 40% chance of getting to age 90, but a notable fifth of respondents were pessimistic.

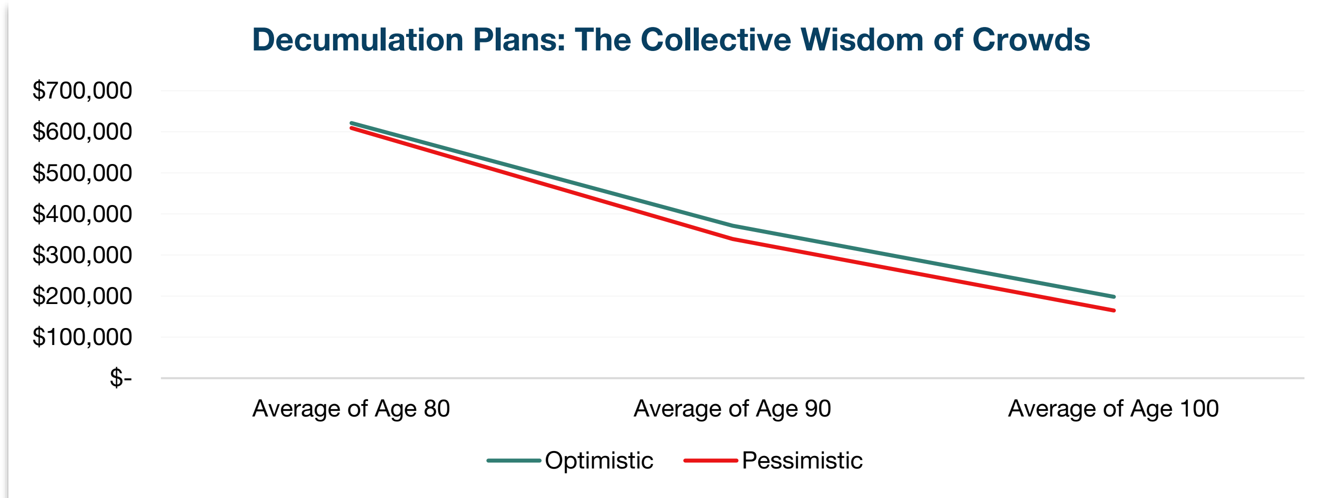
Yet, both the optimistic (80%) and pessimistic (20%) groups reported needing or requiring similar average asset requirements at age 80. However, a discernible disparity emerged as the projected age advanced to 100, with the optimistic group identifying they required an average of $78,000 more relative to the pessimistic group. In some sense, this result is intuitive because if a respondent doesn't believe they will experience above-average longevity, they require less assets to finance their retirement. Rather, the point is that "knowing" one's attitude towards longevity and its risks is critical for decumulation.

It is also noteworthy that both groups displayed a preference for a slow, gradual decumulation of assets at a rate that was lower than the decline in the stated probabilities themselves. For example, while the probability of survival might decline by 10 percentage points over some age bands, the desired level of the portfolio only declined by five percentage points. This is a relatively high level of longevity risk aversion in aggregate.

This trend can be visualized in Figure 2, which is an average of all the responses, where respondents not only aspire to decumulate their wealth but also demonstrate a preference for a slow and gradual approach. Again, the implication of this exceedingly high level of aversion to longevity risk is noteworthy and is evident even among individuals with pessimistic sentiments regarding their prospects for longevity. More specifically, the financial aspiration of retaining an average of almost $200,000 as a reserve from an initial nest egg of one million at the age of 65 in the event they reach the age of 100 is striking.

Recall that this desire does not reflect a preference for bequest or inheritance, which was to be achieved from other sources. This phenomenon highlights individuals' concerns regarding the potential inadequacy of resources in the face of an extended lifespan despite the low likelihood of such an outcome. This pronounced degree of **longevity risk** aversion evidenced by the respondents appears much higher than typical levels of **financial risk** aversion and further substantiates the present study's findings about the need to measure, monitor and distinguish between these two risk domains relevant for decumulation.

FIGURE 2



5. Conclusion and takeaways

With the questions and results behind us, here are high-level takeaways from the survey administered to a large group of Canadian financial advisors and other investment professionals. The results of both groups were consistent, so this can be extrapolated to Canadians in general.

1. Some individuals are more optimistic about their longevity prospects than others, and there is substantial heterogeneity and dispersion around those attitudes. This should come as no surprise and can be linked to health, environmental and hereditary factors. The key is knowing and incorporating these attitudes into the KYC and suitability process for investing.
2. When asked to design or forecast their wealth trajectory, individuals more pessimistic about their longevity prospects are inclined to drawdown slightly faster, as depicted in Figure 2. To put it bluntly, the economic intuition is that those who believe they are not as likely to survive to an older age want to enjoy their money while they still can. Advisors and planners should know whether their clients have this attitude.
3. Referring to the same figure, the aggregate or average plan across all segments and groups of Canadians indicates a slowly declining pattern – they want to decumulate wealth, not just generate a retirement income. Though, the amount of investable wealth they would like to retain at a (very) advanced age is fairly high. While the odds of becoming a centenarian are less than 10%, they want to retain at least 20% of their wealth in case of that scenario. This level of caution is the hallmark of what financial economists have labelled **high longevity risk aversion**.
4. Of course, Figure 2 represents an average across over a hundred survey participants. The wide dispersion of responses across participants indicates widely varying attitudes to longevity risk. Some respondents revealed a preference for reserving even more than 20% of their wealth for the centenarian scenario, with greater-than-average levels of longevity risk aversion. Others were willing to drawdown more rapidly and reserve very little for the age of 100, indicating lower-than-average longevity risk aversion levels.

It would, therefore, be a grave error and perhaps even abrogation of responsibility to advise all Canadians to spend a fixed x% of their initial nest egg when they retire. Decumulation must be tailored. Not only does x% static advice conflate retirement strategy with decumulation strategy, but it is clear that Canadians view the longevity risk and return trade-off very differently and personally. Some would like to enjoy their wealth earlier and are willing to take their chances; others are more conservative. This is no different than risk and return attitudes around investment portfolio construction, which are at the core of the KYC process but must be ascertained separately. How willing are your clients to **live** with longevity risk?

An obvious corollary to these empirical results is to understand whether current KYC questions and processes do an adequate job of measuring the longevity risk tolerance of clients and whether they provide advisors with enough information to empower them to make informed choices with respect to portfolio allocation and solution selection. Is there enough information in the KYC to create a decumulation strategy?
Current KYC questionnaires were designed for the accumulation phase of wealth management, geared to understanding risk tolerance and investing personality while trying to grow assets to prepare for retirement and decumulation or maintenance and income generation. They do a relatively good job of measuring attitudes towards **financial risk**, but that is distinct from longevity risk. As discussed above and to our knowledge, nowhere do current KYC questions incorporate or try to measure a client's attitude towards **longevity risk**.

We believe that to address this deficiency, a different or supplemental KYC questionnaire must be developed for clients entering their retirement years and proceeding into the decumulation process. Understanding sentiment related to how long someone expects to live, how quickly they wish to drawdown their assets and how they wish to mitigate the risk they outlive their assets is critical information in helping clients to have successful outcomes. One-size drawdown rates do not fit everyone. More generally, mitigating economic risks is a part of our everyday lives. Canadians tend to purchase insurance of one form or another for all major life risks, except for one: longevity risk, the least mitigated risk we face. It is time to recognize that optimal decumulation planning is a process of both risk management and financial management. They can not be separated, treated individually or outsourced and delegated to different individuals, as if human longevity were just a car that needs stand-alone insurance from a one-off broker.

At its economic core, insurance is simply the pooling of risk, packaged and underwritten by insurance companies. An alternative type of risk pooling that also mitigates longevity risk and does not need to involve an insurance company is the accumulation tontine, which pools the yields from the investments and mortality for the survivors' benefits. An accumulation tontine provides lump sum payments that can be deployed later in life, thus significantly reducing the risk of outliving one's capital. Used as a risk pooling tool since the middle ages, tontines are part of our everyday life, although often hidden in the background or DNA of common social staples like the Canadian Pension Plan (CPP), Old Age Security (OAS) and corporate and insurance company-managed pension plans and annuities. To learn more about tontines, please visit our website.

In summary, attitudes towards longevity risk and the tools available to mitigate those risks must be on the radar of anyone who claims to be in the decumulation business. Absent a real focus on this critical element of later-in-life financial planning, individuals without the luxury of a defined benefit plan – or for whom the Canadian Pension Plan (CPP) or Old Age Security (OAS) will not be enough income – face an outsized risk of disappointment and regret.

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